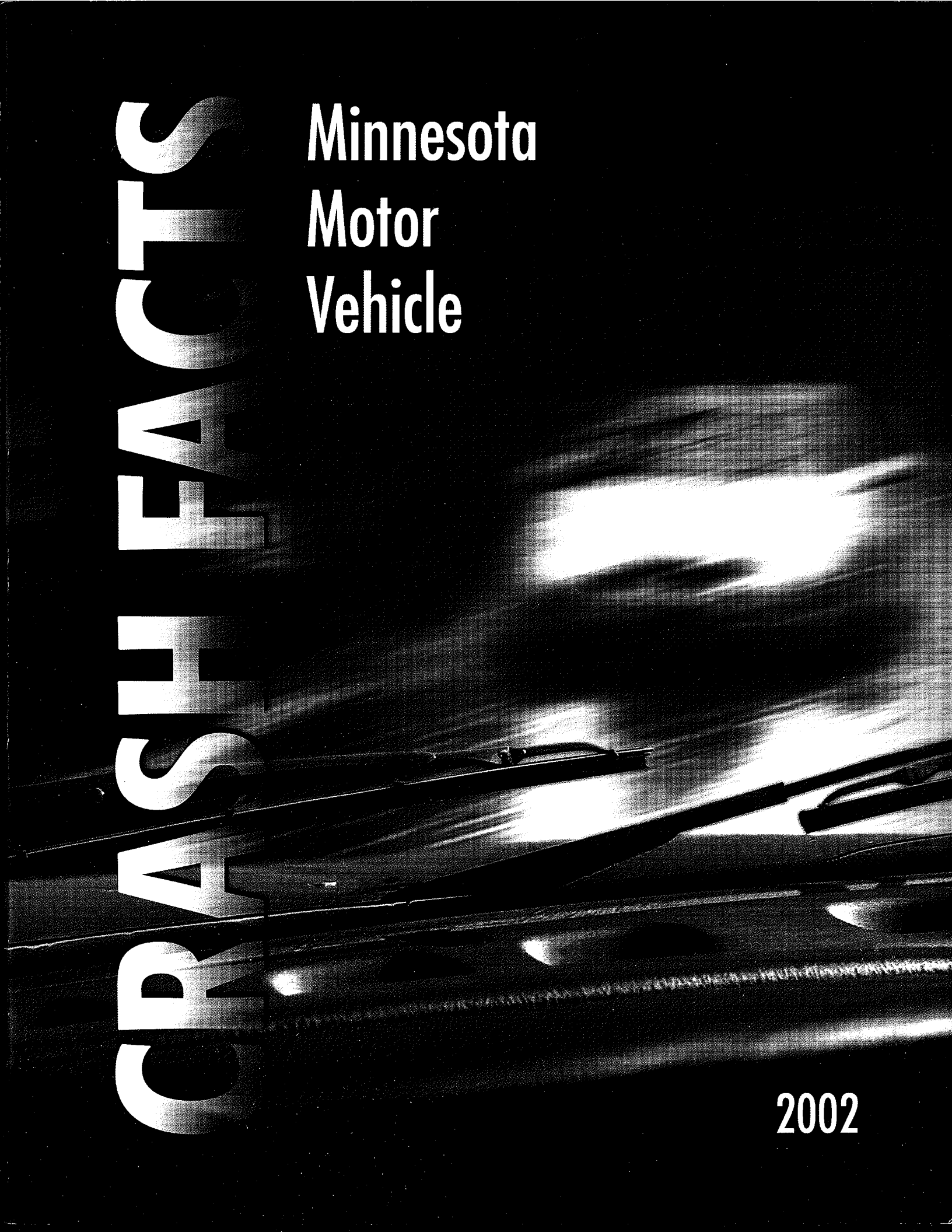
CRASH FACTS

Minnesota Motor Vehicle



2002

Suggestions for Using *Crash Facts*

Crash Facts is designed to meet the needs of different audiences. If you are unfamiliar with this report, here are some suggestions that may make it easier for you to find the information you are seeking.

Legislators:

Section II though IX focus on particular traffic safety sub-areas (alcohol, seat belts, crashes involving motorcycles, pedestrians, and so on). Each section begins with a narrative that provides background, mentions highlights for the years, and discusses some legislative history (where appropriate). The first table in each section gives a ten-year history outlining key parameters of the problem.

Students studying traffic safety issues:

Of all age groups, teenagers and young adults pay the heaviest price in traffic safety (in terms of deaths and injuries). Each section contains tables focusing on age of drivers and victims in crashes.

Law Enforcement Community:

There are over 500 city, county, and state law enforcement agencies in Minnesota. Each agency has access to its own reports on traffic crashes, but the data are brought together here. Table 1.26 shows statistical information arranged by county. Table 1.27 reports on the traffic crash experience of almost 200 cities with populations over 2,500.

Public Health:

Traffic crashes cause deaths and injuries; they are the leading cause of death to people from age 1 to 33 (people generally thought of as ìto o young to dieî). Crash Facts is filled with tables that show age and sex of drivers and victims, and many tables focus on the contributing factors in crashes. Section II is relevant to chemical dependency issues.

City and county government agencies:

Information about your county will be found in Tables 1.26; your cityís statistics may be listed in Table 1.27. The Office of Traffic Safety can provide additional information on traffic crashes in your county or city; just contact us at the address shown below.

Data Availability:

This report presents a wide spectrum of information in more than 100 tables and figures, but it may not answer every question. You may request additional data. Each response usually requires from one day to two weeks, depending on the complexity of the request.

Such requests should be directed to:

Department of Public Safety
Office of Traffic Safety
444 Cedar Street, Suite 150
St. Paul, MN 55101-5150
(651) 296-9492 or 297-4516

MINNESOTA MOTOR VEHICLE CRASH FACTS 2002

A summary of crashes occurring on Minnesota roadways based on crash reports submitted to the Minnesota Department of Public Safety by investigating police officers and drivers

Produced by:
Office of Traffic Safety
Minnesota Department of Public Safety
444 Cedar Street, Suite 150
St. Paul, MN 55101-5150
Alan Rodgers: (651) 296-9489
Jonathan Walseth: (651) 297-4516
Scott Hedger: (651) 296-9492
[TTY (651) 282-6555]
< http://www.dps.state.mn.us/trafsafe >

For more copies, contact:

Office of Communications
Minnesota Department of Public Safety
444 Cedar Street, Suite 155
St. Paul, MN 55101-5155
Phone (651) 296-6652
[TTY (651) 282-6555]

This material is available in alternative format, upon request.

(Special thanks to Office of Communications for cover design.)

MINNESOTA DEPARTMENT OF PUBLIC SAFETY

Office of the Commissioner

445 Minnesota Street, Suite 1000, North Central Life Tower, St. Paul, Minnesota 55101-5000
Phone: 651/296-6642 FAX: 651.297.5728 TTY: 651/282-6555
Internet: http://www.dps.state.mn.us

Alcohol & Gambling Enforcement

Bureau of Criminal Apprehension

Capitol Security

Driver & Vehicle Services

Emergency Management/ Emergency Response Commission

State Fire Marshal/ Pipeline Safety

State Patrol

Traffic Safety

June 2003

In Minnesota, there are almost nine registered motor vehicles for every ten people in this State. The mobility these vehicles provide our citizens comes at a terrible price: In traffic crashes last year, 657 people died, 2,807 were severely injured, and almost 40,000 received moderate or minor injuries. A conservative estimate of the economic loss for Minnesota in 2002 as a result of these crashes exceeded $1.7 billion.

Traffic "accidents" are not random occurrences. They can be prevented. The Department of Public Safety (DPS) is committed to carrying out programs to promote traffic safety, and it is committed to vigorous enforcement of traffic safety laws. Compilation of these statistics is required by Minnesota statute, but that is not the only reason we publish this book. 'Minnesota Motor Vehicle Crash Facts' is also a concrete expression of the Department's commitment to monitor and control the problem of tragic and costly traffic crashes.

There are specific, practical steps that people can take to avoid traffic crashes, or to reduce the severity of crashes that do occur. The following list provides the most important steps you can take:

- **Pay Attention.** Drive defensively, not aggressively.
- **Do Not Drive While Impaired.** Never drive while under the influence of alcohol or other drugs. Impaired driving greatly increases the risk of a serious crash causing injury or death. DWI enforcement in Minnesota is vigorous and the consequences are appropriately harsh. Even a first time DWI arrest can lead to over $10,000 in fines, fees, and insurance costs – plus jail terms, license revocation, and treatment requirements.
- **Do Not Speed.** Last year, speed was the most commonly reported causal factor in fatal crashes. Always drive at speeds that are legal and safe for the conditions.
- **Wear Your Seat Belt.** If you are in a crash, your best chance for survival comes from using your seat belt. Plus, it is the law!

The mission of DPS is to do everything possible to reduce threats to public safety. We will continue to vigorously enforce the laws against impaired driving and speeding, and the laws requiring seat belt use. But our resources are limited. Ultimately, the individual citizen must take responsibility for his or her own life and health. As Commissioner of Public Safety, I urge you to do all you can to avoid being a statistic in this annual report.

Sincerely,

Richard W. Stanek
Commissioner

Minnesota Traffic Crashes in 2002
OVERVIEW

Driving may be the most dangerous thing you do. This edition of *Minnesota Motor Vehicle Crash Facts* summarizes the crashes, deaths, and injuries that occurred in Minnesota during 2002. We hope that the information contained within this book will help you and others use our roadways more safely.

In 2002,

- 94,969 traffic crashes occurred
- 175,160 motor vehicles were involved
- 251,033 people were involved
- 657 people died
- 40,677 people were injured
- $1,711,601,500 estimated economic cost to Minnesota

On an average day in 2002,

- 260 crashes
- 1.8 deaths
- 111 people injured
- $4,689,319 average daily cost

2002 crashes that involved alcohol

- 5,652 crashes
- 239 deaths
- 4,221 people injured
- $344,237,400 estimated economic cost

Highlights from the 2002 Crash Facts edition

- **Traffic fatalities increased 15.7 percent (from 568 in 2001 to 657 in 2002).**
  Traffic fatalities in Minnesota have reached epidemic proportions. Fortunately, we know the cause of, and the cure for, this epidemic. We urge all drivers to pay attention while driving, to insist that all passengers use seat belts, to drive at legal speeds (and slow down when weather conditions warrant it), and to always be sober and clear headed when driving.

- **Safety belt use increased to a record high of 80% (from 74% in 2001).**
  This good news means that, compared to prior years, more people in 2002 escaped severe injury or death because they were wearing their safety belts.

- **The fatality rate in Minnesota per 100 million Vehicle Miles Traveled (VMT) increased.**
  The preliminary estimate of the VMT-based fatality rate is 1.21. This is a slight increase from 2001 when the fatality rate was 1.07. However, the VMT fatality rate has shown dramatic improvement in the last three decades. For example, 1990 had a rate of 1.47, 1980 had a rate of 3.03, and 1970 had a rate of 4.41. This means that, as more drivers travel more miles each year, the number of people killed in proportion to the number of miles driven has decreased as a general rule.

CRASH FACTS ORGANIZATION

Crash Facts has a wealth of statistical information about traffic crashes in Minnesota. To help you find your way around the book, we've prepared this basic user's guide.

Introduction

Starting on page 1, the introduction discusses the history, societal costs, and general cause of crashes. Use it to find the following information:

- How crash costs are estimated.
- Contributing factors in crashes
- Historical analysis of traffic deaths over the last 35 to 40 years.

Section I: All Crashes
This section starts on page 4, and it describes the aggregate of all the crashes in the state last year. Information provided includes:

- Licensed drivers by age (Table 1.12)
- Registered vehicles by category (Table 1.13)
- Contributing factors to crashes (Tables 1.09, 1.10 and 1.19)
- Holiday crashes, deaths and injuries (Table 1.30)

Section II: Alcohol-Related Crashes
Starting on page 37, you'll find data about impaired driving and traffic crashes. This section focuses on crashes involving alcohol and spells out answers to commonly-raised questions, including:

- Historical overview since 1980 (Table 2.01)
- "DWI" arrest statistics since 1990 (Tables 2.02, 2.03, and 2.04)
- Persons killed and injured in alcohol-related crashes by age (2.05)

Section III: Safety Equipment Use by Vehicle Occupants in 2002 Crashes
Seat belt and related information can be found starting on page 50. This section focuses on safety belt use by people in cars and trucks, and includes a table showing seat belt use rates since 1986.

Section IV: Motorcycle Crashes
The motorcycle section starts on page 59; it focuses on crashes involving a motorcycle.

- This section does not include all-terrain vehicles, motorscooters, or motorized pedalcycles ("mopeds").

Section V: Truck Crashes
This section, which starts on page 68, focuses on crashes that involved a truck, normally a "heavy commercial vehicle."

- Crashes involving pickup trucks are not included in this section.

Section VI: Pedestrian Crashes
Pedestrian crash information starts on page 76. The section does not include crashes unless a motor vehicle was involved (so there are no data from pedestrian/train crashes or pedestrian/bicycle crashes).

Section VII: Bicycle Crashes
This section focuses on motor-vehicle/bicycle crashes, and it starts on page 85.

- Does not include bicycle crashes not on public highways and roadways.
- Does not include bicycle crashes unless a motor vehicle was involved.

Section VIII: School Bus Crashes

- School bus crash information starts on page 90. This section focuses on crashes that involved a school bus as a "contact vehicle."
- Does not include crashes where a school bus was indirectly involved. (This will be changed beginning in 2003.)

Section IX: Motor Vehicle/Train Crashes
Information about train crashes starts on page 95. Crashes that do not involve a motor vehicle (that is, a crash between a pedestrian and a train) are not included in this book.

Definitions
The definitions section at the end of the book attempts to succinctly define key terms.

TABLE OF CONTENTS

INTRODUCTION

At the end of the 2002 calendar year, 3,757,493 people held Minnesota driver licenses and 4,490,149 motor vehicles were registered in the state. Vehicles traveled approximately fifty-five billion miles on public roadways in the state. There were 94,969 traffic crashes; 657 people died and 40,677 people were injured in those crashes. This report provides a statistical summary of those crashes.

The purpose of *Crash Facts* is to provide summary statistical information about the crashes reported to the state each year. The term "crash" is used in preference to "accident." The latter term suggests there is a random, unavoidable quality about the events in question. In fact, though, the experience of the last two decades strongly demonstrates that advances in engineering and technology, coupled with changes in public policy and individual human behavior, can dramatically reduce the number and severity of traffic crashes.

Cost of Traffic Crashes

The necessity of getting from one place to another and the efficiency of motor vehicles for this purpose result in significant costs to society. The National Safety Council reports that crashes (from all causes) are the leading cause of death among persons aged 1 to 33 and the fifth leading cause of death among all persons (*Accident Facts, 2001 Edition,* p. 10).

It is possible to estimate economic costs of traffic crashes, although the results can vary depending on definitions and estimating procedures. Many states use the National Safety Council's economic cost figures, the most recent of which are based on 2001 data. Based on those, the total economic loss from 2002 traffic crashes in Minnesota was $1,711,601,500 a figure that is calculated as follows:

Cost of Motor Vehicle Crashes in 2002

657	deaths	@	$1,040,000	=$683,280,000
2,807	severe injuries	@	$49,500	=$138,946,500
14,485	moderate injuries	@	$16,500	=$239,002,500
23,385	minor injuries	@	$9,400	=$219,819,000
66,239	property damage crashes	@	$6,500	=$430,553,500
		Total	=	$1,711,601,500

Factors Affecting Traffic Crashes

Many factors may contribute to even a single crash. A domestic quarrel may lead to driver distraction, which together with wet, slippery pavement and high traffic congestion at an intersection causes a traffic crash. Public policy cannot address the infinite number of individual causes imaginable.

There are a more limited number of factors that significantly affect the aggregate of traffic crashes. These can be organized into logical groups, such as human behavior factors or vehicle safety factors. The following paragraphs outline some of the factors most frequently thought to affect crash incidence and severity.

Vehicle Safety Factors: Engineering and design standards for vehicle performance can help prevent crashes from occurring. When there is a crash, vehicles designed for safety can increase survivability. For example, the design of windshield glass and the location and durability of gas tanks can increase safety. The "passenger packaging" inside a vehicle can reduce injury severity through means such as padded dashboards and collapsible steering wheel columns. Passenger protection systems in vehicles (airbags, safety belts, etc.), if used, can eliminate injuries or reduce their severity.

Behavior factors: For all crashes, the driver behaviors police cite most often as contributing factors are, in order of frequency, driver inattention or distraction, failure to yield right of way, and illegal or unsafe speed. In fatal crashes, illegal or unsafe speed is cited most often, followed by physical impairment (usually by alcohol). Reducing these behaviors would reduce crashes. Further, when there is a crash, using safety equipment will reduce severity. Motorcyclists and bicyclists should wear helmets. Vehicle occupants should use safety belts. Infants and toddlers should always be placed in child safety seats, and booster seats should be used for older children.

Roadway characteristics: Limited access highways carry about a fifth of the traffic volume in Minnesota, yet account for only about a twelfth of fatal accidents. They are built to high roadway engineering standards and are very safe, relatively speaking. In general, roadway characteristics conducive to safety include wide lanes, clearly visible striping, flared guardrails, wide shoulders of good quality, shoulders and roadsides free of obstacles, well-located crash attenuation devices, well-planned use of traffic signals, and effective communication to roadway users through clear and visible signing.

Environmental factors: Weather conditions affect crash incidence and severity. Clear dry roads are conducive to high speeds; consequently, fatal crashes have a pronounced seasonal variation, peaking in the warm summer months and falling in the winter months. The total number of crashes is driven by the incidence of the less serious property damage crashes, which tend to have a reverse seasonal variation, peaking in the winter months.

Volume of traffic, or vehicle miles traveled (VMT), is a predictor of crash incidence. All other things being equal, as VMT increases, so will traffic crashes. The relationship may not be simple, however; after a point, increasing congestion leads to reduced speeds, changing the proportion of crashes that occur at different severity levels.

The quality and availability of emergency medical services might be classified as an environmental factor. The first hour after a traumatic episode, such as a traffic crash, has been called the "golden hour." Victims who receive emergency services within that time have markedly improved chances of survival.

The age structure of the population has a strong effect on crash incidence, although it is not generally thought about since demographic changes are so gradual. In Minnesota, about one in eight teenage drivers are involved in crashes each year. The involvement rate drops off for successive age groups. For example, it is about 1 in 25 for drivers in their forties. The aging of the 'baby boom' has reduced crash incidence, however, their children who are now reaching driving age may cause an increase.

Historical Perspective

In 1966, there were 53,041 traffic fatalities in the country, or 5.7 for every hundred million miles of travel. In Minnesota in 1968, there were 1,060 traffic fatalities, or 5.3 per hundred million miles of travel. Those were the worst years. Since then, both the rate and the number of fatalities have declined in a fairly steady pattern. Last year, there were 42,850 traffic fatalities (preliminary estimate) throughout the country and 657 in Minnesota. The respective rates per hundred million miles of travel were 1.5 and 1.2. A dramatic benefit has been achieved.

The benefit is in large part the result of conscious decision-making on traffic safety issues. The National Highway Traffic Safety Administration (originally called the National Highway Safety Bureau) was established in the US Department of Transportation in 1967. Since then it has promoted, and Congress has passed, legislation mandating the manufacture of safer cars. At the same time, the federal interstate highway system has expanded, contributing to a safer roadway environment.

Simultaneously there has been an effort to change human behavior factors. Minnesota was a leader among the states in the development of innovative drunk driving countermeasures. The Legislature made significant amendments to the DWI law in 1971, 1976, 1978, and in almost every year of the 1980s. It also passed the child passenger protection law in 1981, and the mandatory seat belt law in 1986. It subsequently amended those laws, closing loopholes, broadening their scope, and strengthening penalties.

The benefits of action in these areas are clear. The graph shown in Figure 1 is one illustration. It shows a steady increase in the number of drivers and vehicles, but a steady decrease in the fatality rate per hundred million miles of travel.

Legislative requirement

Minnesota Motor Vehicle Crash Facts is produced annually by the Office of Traffic Safety, Minnesota Department of Public Safety, in accordance with state law. Minnesota Statutes, Section 169.10, requires that traffic crashes be reported to the Department. Section 169.10 then requires the Department to ". . . tabulate . . . all crash reports . . . and publish annually . . . statistical information based thereon as to the number and circumstances of traffic accidents."

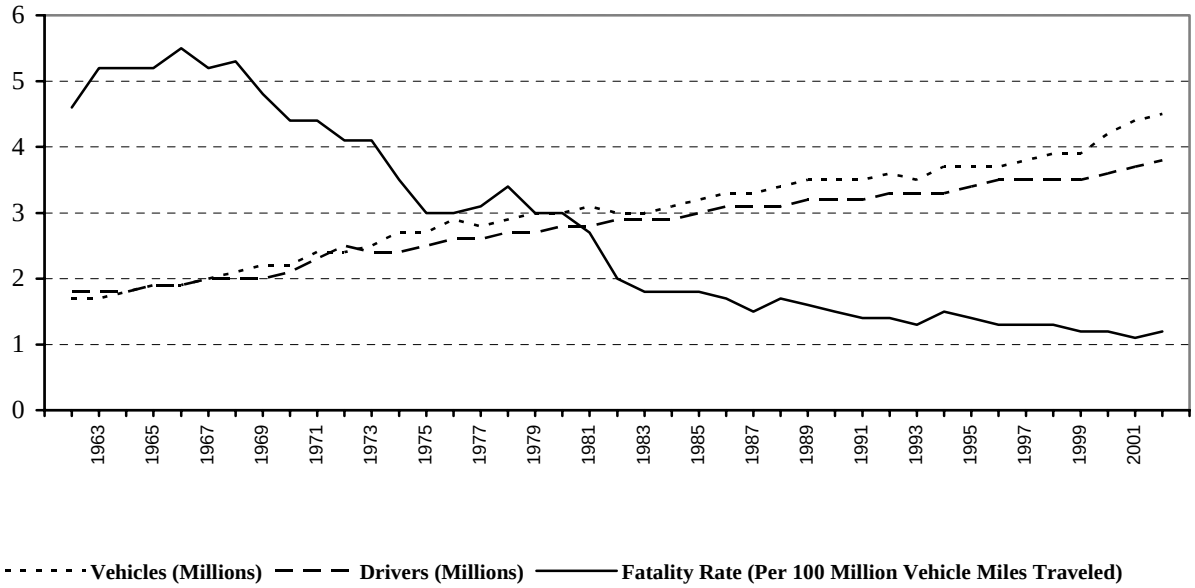
Section 169.09 specifies that a driver involved in an accident that results in injury to or death of any person or total property damage of $1,000 or more must submit a report within ten days of the crash. The law enforcement officer who investigates the crash must also submit a report within ten days.

The minimum dollar amount for crashes involving only property damage has changed over the years. The first minimum was set at $50 in 1939. It was raised to $100 in 1965, to $300 on August 1, 1977, and then to $500 on August 1, 1981. The current minimum of $1,000 took effect August 1, 1994.

Crash Facts is divided into nine sections. The first present's information on the aggregate of all crashes reported to the state during the preceding calendar year. The remaining eight sections focus on specific areas of interest to policy makers and the public. Section II deals with alcohol-related crashes. Section III is about the use of safety equipment by occupants of vehicles required to be equipped with passenger protection systems, including child safety seats and safety belts. The following five sections focus on crashes that involved motorcycles (section IV), trucks (section V), pedestrians (section VI), bicycles (section VII), and school buses (section VIII). The final section (IX) summarizes information on collisions between motor vehicles and trains.

FIGURE 1

Vehicles, Drivers, and Fatality Rate, 1962-2002



I: ALL CRASHES

Overview of Traffic Crashes in Minnesota

In the past decade, approximately 100,000 traffic crashes each year are reported to the Minnesota Department of Public Safety. This is a very large number that is commensurate with the critical dependence we have on motor vehicles for all sorts of transportation needs. By the end of the calendar year 2002:

- The population of Minnesota exceeded 5 million.
- Over 4.4 million motor vehicles were registered.
- There were just over 3.7 million licensed drivers.
- Almost 55 *billion* miles were driven.

And, as more and more roads are constructed, the reader can see that the citizens of Minnesota face an extreme challenge in reducing this dependence on the motor vehicle, and with it, the high number and severity of traffic crashes.

Traffic Crashes in 2002

There were 94,969 crashes reported to the State last year. This number represents a 4% decrease from the previous year. The warm winter months of 2002 may be a reason for this, as more crashes will occur if roads are slick and icy. However, another result of warmer weather is more traffic fatalities. There were 657 deaths on Minnesota roads in 2002, almost a 16% increase from 2001. In actuality, the number of traffic deaths has been very high in the past few years. Since 1997, Minnesota has averaged 621 traffic deaths per year. Along with the weather, many other factors contribute to the crash death epidemic. Among them; speed, failure to wear seat belts, drinking and driving, driver inattention, and inexperienced younger drivers.

The following facts will help to give an overall picture of 2002 traffic crashes; In addition to the 657 killed...

- 40,677 were injured.
- 2,807 of these were severe injuries.
- 14,485 of these were moderate injuries.
- 23,385 of these were minor injuries.

- In all crashes, 251,033 people were involved.
- In all crashes, 173,031 motor vehicles were involved.
- In addition, there were 927 bicyclists involved, and,
- There were 1,211 pedestrians involved.

- One-third of all crashes involved just one vehicle.
- Almost 25% of those killed were less than 21.
- In all, 6,126 crashes were "hit-and-run".
- 2 of 3 crashes occurred under clear and dry conditions.
- 3 of 4 fatalities occurred in rural areas (< 5,000 pop.).
- Crashes and deaths occur most often from 4pm-7pm.
- The economic loss to Minnesota was $1.7 billion.

WHO was involved?

Among drivers, young people and males are over represented in traffic crashes in Minnesota. There are 3,757,493 licensed drivers in the state. Fifteen to 24 year olds make up 17% of the licensed drivers, yet they accounted for 30% of the crash-involved drivers. Teenage drivers are the worst, from this perspective. In 2002, they represented 7% of the licensed drivers, but 14% of the crash-involved drivers. By contrast drivers over 65 made up 14% of the driving population, but accounted for just 7% of the crash-involved drivers in 2002. Crash-involved drivers are also more likely to be males: 72% of drivers in fatal crashes were male; 56% of drivers in all crashes were female.

Traffic crashes are a leading cause of death to young people. In the state last year, 263 people under age 30 died in crashes. That represents 40% of all traffic deaths. As mentioned previously, people over 65 are safe drivers as a general rule, but are more likely to be killed if they are involved in a traffic crash. Senior citizens make up 12% of the state's population, but accounted for 16% of the traffic fatalities.

Among people injured, young people especially pay a price. There were 19,493 people under age 30 who were injured; that represents 48% of the total number of people injured. People aged 65 and over accounted for just 7% of all traffic injuries.

WHY they happened

About one-third of all crashes involve only one vehicle and about two-thirds involve two or more vehicles. Single-vehicle and multiple-vehicle crashes have different characteristics. In single vehicle crashes, "illegal or unsafe speed" is the contributing factor cited most often for younger drivers. For older drivers, "driver inattention or distraction" is cited most often. "Physical impairment" (typically meaning alcohol impairment) is the third most cited factor for all age groups after age 20. In multiple-vehicle crashes, for drivers through age 64, "driver inattention or distraction" is cited most often, and "failure to yield right of way" is cited second most often. After age 65, the pattern reverses: failing to yield is most common, and inattention or distraction is second most common. For the under-65 drivers, two additional contributing factors are also frequently cited. These are "following too closely" and "illegal or unsafe speed."

WHAT the conditions were

Victims of traffic crashes are mostly car, pickup, or van occupants. Of the 657 traffic fatalities, 529 (80%) were passenger car, van, or pickup truck occupants. There were also 50 pedestrians, 47 motorcyclists, and 7 bicyclists who died in traffic crashes. There were no deaths among school bus occupants, and only 10 fatalities among truck occupants. There is a similar pattern among people who were injured: of the 40,677 injured, 88% were car, van, or pickup occupants, and the remainder were from several categories, mainly motorcycle riders, pedestrians, and bicyclists.

A collision with another vehicle is the leading crash type. Almost half (44%) of the fatal crashes and almost two-thirds (66%) of all crashes involve one vehicle colliding with another vehicle. In fatal and injury crashes, collisions with fixed objects and overturns are also common. For property damage crashes, the other leading crash types are collision with fixed object (12% of the total), collision with a parked motor vehicle (7% of the total), and collision with deer (8% of the total).

Most crashes occur in good driving conditions. Almost half (48%) of fatal crashes, and 63% of nonfatal crashes occurred during daylight hours. A majority of crashes occur also in good weather conditions. Over half (57%) of fatal crashes, and 56% of nonfatal crashes occurred during "clear" weather. Road surface conditions where crashes occurred were usually good. For fatal crashes, 73% were on dry roads, 11% were on wet roads, and 12% were on snowy or icy roads. For nonfatal crashes, 70% were on dry roads, 13% on wet roads, and 13% on snowy or icy roads.

WHERE they happened

Fatal crashes tend to occur on roads in rural areas that permit high speeds and do not have interstate-type safety designs. In the year 2002, 425 (72%) of all fatal crashes occurred in rural areas, which are defined as having a population of less than 5,000 people. And, 436 (74%) of all fatal crashes occurred on trunk or county state aid highways, and 339 of those were in rural areas. The injury and property damage crashes are more common in urban areas. Over two-thirds of them happened inside cities of 5,000 or more population. The seven county metro area, with over half the state's population, accounted for only 29% of the fatal crashes, but 59% of all crashes.

WHEN they occurred

In the year 2002, fatal crashes occurred most often in the afternoon hours between 4:00-7:00pm. In fact, one out of every five fatal crashes occurred during that time period. This observable fact has changed since the early 1990's when most fatal crashes occurred during the time period of 10:00pm-1:00am at night. This phenomenon may be explained by the smarter deployment of law enforcement, and the public's awareness of the dangers of drinking and driving. Total crashes were also concentrated in the late afternoon: Almost 25% occurred in the three hours from 4:00 to 7:00 PM. This event has not changed over the years, as most crashes have always occurred during the afternoon rush hour period. Fridays and Saturdays had the most fatal crashes (together accounting for 36%). Total crashes are more evenly distributed across days of the week, though Fridays had the most (17%) and Sundays had the least (10%).

As a general rule, harsh winter weather results in more, but less severe, traffic crashes. And, in most years, fatal crashes follow a strong seasonal pattern, peaking in the late summer and fall months. The year 2002 was a bit unusual. The total number of crashes decreased from the previous year because of the warmer winter weather, but as a result, more traffic fatalities than usual occurred in the winter months. For example, there were 74 deaths in December of 2002, as compared to 55 in 2001.

Can traffic crashes be prevented?

In the past two decades, approximately 600 people have been killed and 45,000 people have been injured on our roadways each and every year. We must acknowledge the fact that Minnesota is experiencing an "epidemic" concerning traffic crashes. In a public health sense, epidemics that kill and injure fewer people are usually attacked vigorously until they are no longer a threat to public safety.

The Department of Public Safety uses the term "crash" instead of "accident." This is because a traffic crash can be prevented. Coupled with engineering solutions, changes in the behavior of all drivers will surely help attack the public threat of tragic roadway fatalities and injuries.

Thus, the Office of Traffic Safety implores the reader to spread the word: Driving is a privilege; aggressive driving is not. Do not drink and drive! Wear your seat belt! Slow down! Pay attention!

TABLE 1.01

TRAFFIC SAFETY STATISTICS SUMMARY, 1965 - 2002

Year	Total Crashes	Persons Killed	Persons Injured	Licensed Drivers (million)	Motor Vehicles (MV) (million)	State Population (million)	Vehicle Miles Travelled (VMT) (billion)	Crash Rates Per 100,000 MV	Crash Rates Per 100,000 Population	Crash Rates Per 100 Mil VMT	Fatality Rates Per 100,000 MV	Fatality Rates Per 100,000 Population	Fatality Rates Per 100 Mil VMT
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1965	83,329	875	50,847	1.85	1.86	3.57	16.8	4,480	2,334	496	47.0	24.5	5.2
1970	99,404	987	38,538	2.05	2.24	3.80	22.4	4,438	2,616	444	44.1	26.0	4.4
1975	123,206	777	41,931	2.51	2.69	3.92	25.6	4,580	3,143	481	28.9	19.8	3.0
1980	103,612	863	45,227	2.77	3.01	4.08	28.5	3,446	2,546	364	28.7	21.2	3.03
1981	97,879	763	43,739	2.83	3.09	4.10	28.6	3,163	2,387	342	24.7	18.6	2.67
1982	89,443	581	38,692	2.87	3.01	4.13	29.2	2,972	2,181	304	19.3	14.2	1.98
1983	97,371	558	41,086	2.90	3.03	4.15	30.5	3,214	2,356	319	18.4	13.5	1.83
1984	93,741	584	41,808	2.91	3.13	4.16	32.2	2,995	2,262	291	18.7	14.1	1.81
1985	99,168	610	44,316	3.04	3.22	4.19	33.1	3,080	2,380	300	18.9	14.7	1.84
1986	95,460	572	42,130	3.07	3.25	4.21	34.2	2,937	2,266	279	17.6	13.6	1.67
1987	94,095	530	42,091	3.10	3.31	4.25	35.1	2,840	2,233	268	16.0	12.6	1.51
1988	102,094	615	44,415	3.13	3.39	4.31	36.4	3,012	2,371	280	18.1	14.3	1.69
1989	105,996	605	45,404	3.16	3.46	4.35	37.6	3,060	2,435	282	17.5	13.9	1.61
1990	99,236	568	44,634	3.18	3.52	4.38	38.8	2,817	2,268	256	16.1	13.0	1.47
1991	101,419	531	42,748	3.22	3.51	4.43	39.3	2,890	2,288	258	15.1	12.0	1.35
1992	96,808	581	43,249	3.27	3.55	4.48	41.3	2,730	2,161	235	16.4	13.0	1.41
1993	100,907	538	44,987	3.28	3.48	4.52	42.3	2,899	2,234	239	15.5	11.9	1.27
1994	99,701	644	46,403	3.34	3.67	4.57	43.4	2,720	2,183	230	17.6	14.1	1.48
1995	96,022	597	47,161	3.39	3.68	4.61	44.1	2,606	2,083	218	16.2	13.0	1.35
1996	105,332	576	48,963	3.46	3.70	4.66	45.9	2,845	2,261	230	15.6	12.4	1.26
1997	98,625	600	46,064	3.49	3.77	4.69	46.9	2,065	2,105	210	12.6	12.8	1.28
1998	92,926	650	45,115	3.53	3.90	4.74	48.5	2,380	1,962	192	16.6	13.7	1.34
1999	96,813	626	44,538	3.54	3.92	4.78	50.7	2,470	2,027	191	16.0	13.1	1.24
2000	103,591	625	44,740	3.65	4.20	4.92	52.4	2,469	2,106	198	14.9	12.7	1.19
2001	98,984	568	42,223	3.69	4.38	4.97	53.2	2,262	1,991	186	13.0	11.4	1.07
2002	94,969	657	40,677	3.76	4.49	5.02	54.4	2,115	1,892	175	14.6	13.1	1.21

Note:

(1) Statistics are susceptible to error from different sources. For example, the number of "total crashes" or "persons injured" cannot include the number of crashes or persons injured that by law should have been reported to the state but were not. Fatalities are not likely to be unreported, but even they are subject to error. Estimates of population and of miles traveled are subject to the errors of the estimating procedures, which may vary over time, and which will influence the rates shown, as well.

(2) The numbers shown for licensed drivers includes those who have only permits.

(3) Estimates for miles traveled are provided by Minnesota Department of Transportation.

(4) Numbers of licensed drivers and registered motor vehicles are from the Driver and Vehicle Services Division, Minnesota Department of Public Safety.

TABLE 1.02

TRAFFIC CRASH TRENDS
1997 - 2002

	1997	1998	1999	2000	2001	2002	Record High	
Total Crashes	**98,626**	**92,926**	**96,813**	**103,591**	**98,984**	**94,969**	**123,106**	**(1975)**
Fatal Crashes	**528**	**575**	**567**	**557**	**508**	**590**	**878**	**(1973)**
Injury Crashes	**31,290**	**30,571**	**30,279**	**30,830**	**29,273**	**28,140**	**33,686**	**(1978)**
Severe	2,855	2,702	2,677	2,471	2,274	2,226	5,109	(1984)[1]
Moderate	11,227	11,391	11,352	11,445	10,851	10,460	12,326	(1985)[1]
Minor	17,208	16,478	16,250	16,914	16,148	15,454	18,578	(1996)[1]
Property Damage Crashes	**66,808**	**61,780**	**65,967**	**72,204**	**69,203**	**66,239**	**94,810**	**(1975)**
Total Injuries	**46,064**	**45,115**	**44,538**	**44,740**	**42,223**	**40,677**	**50,332**	**(1978)**
Severe	3,673	3,409	3,460	3,174	2,949	2,807	6,573	(1984)[1]
Moderate	15,948	16,189	16,002	15,903	14,861	14,485	17,670	(1985)[1]
Minor	26,443	25,517	25,076	25,663	24,413	23,385	28,631	(1996)[1]
Total Fatalities	**600**	**650**	**626**	**625**	**568**	**657**	**1,060**	**(1968)**
Pedestrian	58	56	51	41	46	50	157	(1971)
Motor Vehicle/Train[2]	6	11	10	4	6	9	62	(1932)
Bicycle	7	9	8	14	7	7	24	(1977)
Motorcycle	24	40	29	35	42	47	121	(1980)
All Terrain Vehicle	6	7	7	5	4	1	9	(1986)
Snowmobile	5	2	8	5	3	2	9	(1984)
Motor Vehicle Occupants	488	532	516	520	460	544	544	(2002)[1]
Minnesota Fatality Rate[3]	1.28	1.34	1.24	1.19	1.07	1.21	23.6	(1934)
U.S. Fatality Rate[3]	1.6	1.6	1.5	1.6	1.5	1.5	18.0	(1925)
Minnesota Economic Loss (millions)	$1,457	$1,621	$1,635	$1,680	$1,619	$1,712	$1,712	(2002)[4]

[1] The available records on which this categories "record highs" are based only go back to 1984.
[2] Fatalities occurring in motor vehicle/train crashes are included in other categories as well.
[3] Rate is based on 100 million vehicle miles of travel.
[4] Economic loss is a function of health care costs, inflation, and other factors, in addition to trends in traffic crashes.

TABLE 1.03

2002 FATALITIES BY TRAFFIC ROLE, GENDER, AND AGE

Type of Vehicle	Position in Vehicle	Gender	Age 0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 & Older	Total
Car or Truck	Driver	Male	0	39	59	48	38	30	18	39	271
		Female	0	17	12	12	20	14	12	20	107
	Passenger	Male	6	24	18	4	6	10	2	2	72
		Female	10	21	7	9	7	1	0	23	78
	Unknown	Male	1	2	3	1	1	0	0	0	8
		Female	0	3	0	0	0	0	0	0	3
Motorcycle	Operator	Male	0	2	8	7	11	7	3	0	38
		Female	0	0	0	0	2	0	1	0	3
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	1	2	1	1	1	0	0	6
Motor scooter or Moped	Driver	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
All Terrain Vehicle	Driver	Male	0	0	1	0	0	0	0	0	1
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
Snowmobile	Driver	Male	0	1	0	0	0	1	0	0	2
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
Other Motor Vehicle	Driver	Male	0	0	0	1	2	1	1	0	5
		Female	0	0	1	0	1	1	0	0	3
	Passenger	Male	0	0	0	0	0	1	0	0	1
		Female	0	1	1	0	0	0	0	0	2
	Unknown	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
Bicyclist		Male	1	1	0	0	2	1	0	1	6
		Female	0	1	0	0	0	0	0	0	1
Pedestrian		Male	4	3	8	2	2	4	4	6	33
		Female	2	2	1	0	4	4	2	2	17
Total Fatalities		Male	12	72	97	63	62	55	28	48	437
		Female	12	46	24	22	35	21	15	45	220
		Total	24	118	121	85	97	76	43	93	657

Note: The eleven people who died who had been occupants of an "other motor vehicle" type included: two motorhome drivers, one driver and one passenger of a military vehicle, one passenger of a police vehicle, four drivers and one passenger of an "other privately owned vehicle," and one driver of an "other vehicle type".

TABLE 1.04

AGE AND GENDER OF PERSONS KILLED OR INJURED IN 2002 CRASHES

	Persons Killed			Persons Injured			
Age Group	**Male**	**Female**	**Total**	**Male**	**Female**	**Unknown**	**Total**
0 – 3	5	5	10	181	164	10	355
4 - 10	9	7	16	651	670	23	1,344
11 - 14	7	12	19	586	584	15	1,185
Total Under 15	21	24	45	1,418	1,418	48	2,884
15	6	6	12	288	344	2	634
16	12	14	26	748	1,028	3	1,779
17	15	5	20	821	1,014	4	1,839
18	13	6	19	807	857	6	1,670
19	17	3	20	736	718	6	1,460
20	9	2	11	699	696	3	1,398
Total 15 - 20	72	36	108	4,099	4,657	24	8,780
Total Under 21	93	60	153	5,517	6,075	72	11,664
0 - 4	6	6	12	283	245	13	541
5 - 9	6	6	12	429	473	15	917
10 - 14	9	12	21	706	700	20	1,426
15 - 19	63	34	97	3,400	3,961	21	7,382
20 - 24	63	11	74	3,004	2,736	22	5,762
25 - 29	34	13	47	1,675	1,773	17	3,465
30 - 34	34	13	47	1,547	1,643	13	3,203
35 - 39	29	9	38	1,487	1,542	16	3,045
40 - 44	35	20	55	1,484	1,555	19	3,058
45 - 49	27	15	42	1,194	1,357	17	2,568
50 - 54	36	13	49	1,073	1,144	8	2,225
55 - 59	19	8	27	683	733	7	1,423
60 - 64	20	9	29	475	536	4	1,015
65 - 69	8	6	14	359	390	3	752
70 - 74	13	7	20	310	345	4	659
75 - 79	12	11	23	280	338	6	624
80 - 84	10	14	24	226	280	0	506
85 & Older	13	13	26	152	142	1	295
Not Stated	0	0	0	482	731	598	1,811
Total	437	220	657	19,249	20,624	804	40,677

See Figure 1.01 on page 12 for a graphic depiction of how many persons are killed and injured by age and gender groups.

TABLE 1.05

AGE AND GENDER OF DRIVERS IN 2002 CRASHES

	Drivers in Fatal Crashes				Drivers in All Crashes			
Age Group	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total
14 & Younger	0	0	0	0	104	67	14	185
15	6	0	0	6	226	183	5	414
16	18	17	0	35	3,179	2,882	41	6,102
17	16	13	0	29	3,705	3,066	41	6,812
18	17	8	0	25	3,787	2,685	40	6,512
19	22	7	0	29	3,376	2,423	44	5,843
20	15	3	0	18	3,073	2,322	34	5,429
Total Under 21	94	48	0	142	17,450	13,628	219	31,297
5 – 9	0	0	0	0	6	5	12	23
10 - 14	0	0	0	0	98	62	2	162
15 - 19	79	45	0	124	14,273	11,239	171	25,683
20 - 24	84	17	1	102	14,125	10,016	193	24,334
25 - 29	57	23	0	80	9,786	6,713	164	16,663
30 - 34	61	25	0	86	9,167	6,206	145	15,518
35 - 39	61	19	0	80	8,809	6,102	152	15,063
40 - 44	65	30	0	95	8,682	6,235	119	15,036
45 - 49	50	17	0	67	7,224	5,110	86	12,420
50 - 54	50	18	0	68	6,026	4,001	66	10,093
55 - 59	31	9	0	40	4,287	2,663	47	6,997
60 - 64	28	11	0	39	2,881	1,761	35	4,677
65 - 69	17	7	0	24	2,064	1,221	27	3,312
70 - 74	16	4	0	20	1,665	1,104	16	2,785
75 - 79	12	7	0	19	1,394	987	17	2,398
80 - 84	11	11	0	22	904	759	17	1,680
85 & Older	17	6	0	23	604	381	13	998
Not Stated	1	0	2	3	862	426	6,644	7,932
Total	640	249	3	892	92,857	64,991	7,926	165,774

Most crashes involve more than one driver, causing the total number of drivers to exceed the total number of crashes. (Pedestrians and bicyclists are not shown in this table.)

TABLE 1.06

LICENSED VS. CRASH-INVOLVED DRIVERS BY AGE, 2002

Age Group	Percentage of All Licensed Drivers	Percentage of Drivers in Fatal Crashes	Injury Crashes	Property Damage Crashes	All Crashes
14 & Younger	0.0%	0.0%	0.1%	0.1%	0.1%
15	0.8	0.7	0.3	0.2	0.2
16	1.5	3.9	3.8	3.6	3.7
17	1.7	3.3	4.3	4.0	4.1
18	1.8	2.8	4.2	3.8	3.9
19	1.8	3.3	3.6	3.5	3.5
20	1.9	2.0	3.4	3.2	3.3
Total Under 21	9.4%	15.9%	19.8%	18.5%	18.9%
15 - 19	7.5%	13.9%	16.2%	15.2%	15.5%
20 - 24	9.4	11.4	15.0	14.6	14.7
25 - 29	8.5	9.0	10.1	10.0	10.1
30 - 34	9.2	9.6	9.6	9.2	9.4
35 - 39	9.8	9.0	9.3	9.0	9.1
40 - 44	10.9	10.6	9.3	9.0	9.1
45 - 49	10.1	7.5	7.7	7.4	7.5
50 - 54	8.7	7.6	6.3	6.0	6.1
55 - 59	6.7	4.5	4.3	4.2	4.2
60 - 64	5.1	4.4	2.8	2.8	2.8
65 - 69	4.0	2.7	2.1	2.0	2.0
70 - 74	3.5	2.2	1.7	1.7	1.7
75 - 79	3.0	2.1	1.6	1.4	1.4
80 - 84	2.1	2.5	1.1	1.0	1.0
85 & Older	1.5	2.6	0.6	0.6	0.6
Age Not Stated	0.0	0.3	2.2	6.0	4.8
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%
Total Number	3,757,493				

See Figure 1.02 on page 12 for a graphic depiction of crash-involved drivers compared to licensed drivers by age group.

FIGURE 1.01
Age and Gender of Persons Killed or Injured, 2002

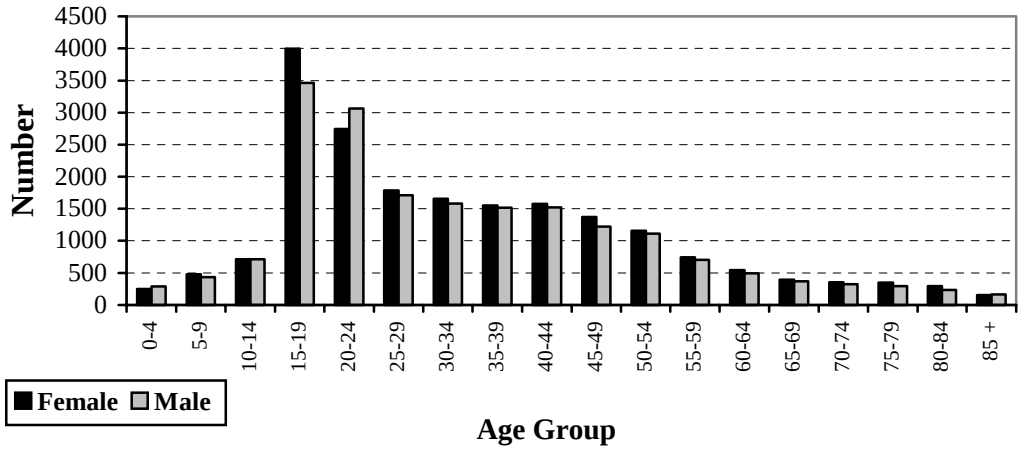


FIGURE 1.02
Licensed vs Crash-Involved Drivers by Age, 2002

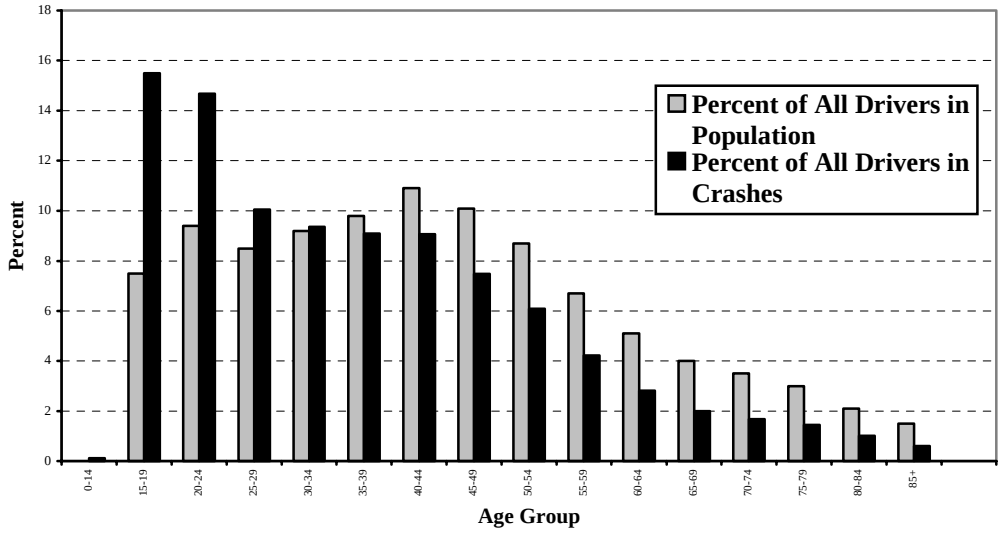


TABLE 1.07

PERCENTAGE OF DRIVERS IN 2002 CRASHES BY AGE AND FIRST HARMFUL EVENT

First Harmful Event	Age Group 15-19	20-24	25-29	30-34	35-64	65-79	80 +	All Ages
Collision With:								
Other Motor Vehicle	75.4%	77.9%	81.2%	81.7%	81.8%	84.2%	84.1%	79.1%
Parked Motor Vehicle	2.6	2.5	2.3	2.1	1.8	2.5	4.4	3.4
Railroad Train	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Bicycle	0.4	0.4	0.5	0.4	0.6	0.6	0.6	0.5
Pedestrian	0.7	0.6	0.7	0.6	0.6	0.6	0.9	0.7
Deer	1.9	2.5	3.0	3.6	4.7	3.8	1.2	3.4
Other Animal	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.2
Fixed Object	11.1	9.7	7.4	6.7	5.8	4.9	5.8	7.5
Other Object	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2
Non-Collision:								
Overturn	5.6	3.9	2.7	2.7	2.4	1.4	1.0	3.0
Other Non-Collision	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2
Other or Unknown	1.8	1.8	1.6	1.5	1.6	1.4	1.7	1.7
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0
Total Drivers	25,683	24,334	16,663	15,518	64,286	8,495	2,678	165,774

Percentages are based on the number of crash-involved drivers in each age group (some driver ages are not available). They may not sum to 100% due to rounding. Bicyclists and pedestrians are not included.

TABLE 1.08

DRIVERS IN 2002 CRASHES BY PHYSICAL CONDITION*

Physical Condition	Drivers in Fatal Crashes	Drivers in Injury Crashes	Drivers in Property Damage Crashes	Drivers in All Crashes
Normal	484	42,029	82,571	125,084
Under the Influence	72	1,745	1,716	3,533
Had Been Drinking	52	1,024	941	2,017
Had Been Using Drugs	3	61	61	125
Asleep	3	329	299	631
Fatigued	4	137	150	291
Ill	7	171	85	263
Other	17	324	240	581
Unknown	250	4,444	28,555	33,249
Total	892	50,264	114,618	165,774

* As noted by police officer on accident report. Note that in the absence of alcohol or drug test results (not usually available at the time the crash report is completed), officers are conservative in reporting impairment. Compare these figures with those from Section II. Pedestrians and bicyclists are excluded from this table.

TABLE 1.09

SINGLE-VEHICLE CRASHES:
CONTRIBUTING FACTORS, BY PERCENT, WITHIN DRIVER AGE GROUPS, 2002

	Age Group							All
Contributing Factor	**15-19**	**20-24**	**25-29**	**30-34**	**35-64**	**65-79**	**80+**	**Ages**
Human Factors								
Illegal/Unsafe Speed	24.5%	25.3%	23.0%	21.0%	17.7%	11.7%	5.5%	21.3%
Driver Inattention/Distraction	18.2	18.3	17.8	18.4	19.3	23.7	23.9	18.8
Physical Impairment	4.9	12.7	11.8	12.7	10.7	11.6	15.1	9.3
Driver Inexperience	17.1	4.1	3.4	2.5	1.9	1.0	1.0	6.3
Improper/Unsafe Lane Use	2.6	3.7	3.9	4.2	3.7	5.1	6.0	4.4
Failure to Yield Right of Way	1.7	2.0	3.1	1.9	3.1	3.5	4.3	2.7
Unsafe Backing	0.3	0.2	0.2	0.1	0.5	0.1	0.0	1.9
Vision Obscured	1.1	1.0	1.0	1.5	1.6	3.1	3.8	1.3
Improper Turn	0.7	1.2	1.5	1.3	1.3	2.0	1.0	1.3
Driving Left of Center--Not Passing	0.9	1.0	0.9	1.0	0.8	1.8	2.0	1.1
Disregard for Traffic Control Device	0.5	0.9	0.8	0.6	0.9	0.6	1.3	0.8
Improper Parking/Starting/Stopping	0.3	0.5	0.8	0.6	0.8	1.4	4.0	0.8
Improper Passing/Overtaking	0.5	0.4	0.5	0.6	0.5	0.6	1.3	0.6
Following Too Closely	0.2	0.5	0.3	0.7	0.5	0.1	0.2	0.4
Driver on CB Radio or Cell Phone	0.3	0.2	0.5	0.3	0.2	0.0	0.0	0.2
Failure to Use Lights	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1
Impeding Traffic	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.1
Other Human Factors	2.3	3.2	3.0	3.6	4.0	5.6	11.1	3.3
Vehicular Factors								
Skidding	8.4	7.2	6.9	7.6	7.9	5.4	2.8	7.2
Defective Equipment	1.3	1.2	1.5	1.4	1.9	1.8	0.8	1.4
Other Vehicular Factor	0.7	1.0	1.1	1.2	1.3	1.1	0.2	1.0
Miscellaneous Factors								
Weather	8.2	9.8	11.6	11.9	13.1	10.5	6.3	9.9
Other	4.3	4.8	4.8	5.4	7.0	6.1	5.3	6.0
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Contributing Factors Cited	7,827	5,769	2,967	2,439	8,629	984	397	31,500
Drivers for Whom There Was "No Clear Contributing Factor"	792	874	652	657	3,252	325	60	6,804
Total Number of Drivers	5,920	4,896	2,783	2,502	10,377	1,209	376	31,354

Percentages are based on all contributing factors cited within each age group (some driver ages are not available). Zero, one, or two contributing factors may be associated with each driver. The percentages may not sum to 100% due to rounding. Contributing factors for bicyclists and pedestrians are excluded.

For contributing factors in multiple-vehicle crashes, see Table 1.10. For contributing factors in crashes at different levels of severity, see Table 1.19.

TABLE 1.10

MULTIPLE-VEHICLE CRASHES:
CONTRIBUTING FACTORS, BY PERCENT, WITHIN DRIVER AGE GROUPS, 2002

	Age Group							All
Contributing Factor	**15-19**	**20-24**	**25-29**	**30-34**	**35-64**	**65-79**	**80 +**	**Ages**
Human Factors								
Driver Inattention or Distraction	27.2%	28.0%	27.6%	27.9%	27.4%	25.6%	24.2%	26.9%
Failure to Yield Right of Way	20.1	16.8	16.3	16.6	19.0	30.2	37.4	19.4
Following Too Closely	10.4	13.2	13.8	12.9	11.8	6.9	3.5	11.5
Illegal or Unsafe Speed	8.0	9.8	8.3	8.5	6.4	3.7	2.5	7.6
Improper or Unsafe Lane Use	3.6	4.4	4.8	4.9	5.0	5.3	3.8	4.8
Disregard of Traffic Control Device	3.6	4.8	5.0	4.3	4.6	6.4	6.8	4.7
Improper Turn	2.2	2.4	2.1	2.5	2.6	3.8	4.3	2.6
Vision Obscured	2.5	2.1	2.2	2.4	2.6	2.7	3.5	2.4
Driver Inexperience	7.5	1.7	1.2	0.8	0.5	0.2	0.3	2.2
Improper Passing or Overtaking	1.6	1.5	1.8	1.7	1.7	1.5	0.7	1.8
Physical Impairment	0.5	1.8	2.4	2.2	2.2	1.2	1.1	1.7
Improper Parking, Starting, or Stopping	1.1	1.1	1.3	1.4	1.4	1.5	2.0	1.3
Unsafe Backing	0.7	0.8	1.1	0.9	1.5	1.3	1.2	1.1
Driving Left of Center (Not Passing)	0.8	0.8	0.5	0.8	0.9	0.7	1.1	0.8
Improper or No Signal	0.3	0.2	0.3	0.3	0.4	0.4	1.0	0.4
Impeding Traffic	0.2	0.2	0.4	0.4	0.3	0.3	0.2	0.3
Driver on Cell Phone or CB Radio	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.2
Failure to Use Lights	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Other Human Factors	0.6	0.8	1.0	1.0	1.0	1.0	1.9	0.9
Vehicular Factors								
Skidding	2.2	2.1	1.8	2.2	2.0	1.2	0.7	1.9
Defective Equipment	0.9	0.8	0.5	0.5	0.7	0.4	0.1	0.7
Other Vehicular Factor	0.2	0.3	0.4	0.4	0.4	0.2	0.1	0.3
Miscellaneous Factors								
Weather	3.2	3.5	3.5	3.9	3.9	2.9	1.5	3.4
Other	1.9	2.7	3.2	3.5	3.5	2.4	2.0	3.0
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Contributing Factors Cited	17,747	14,352	8,791	7,733	28,963	4,916	2,132	87,889
Drivers for Whom There Was "No Clear Contributing Factor"	6,110	7,288	5,961	5,948	26,327	2,935	577	55,592
Total Number of Drivers	19,711	19,381	13,821	12,963	53,640	7,270	2,295	134,068

Percentages are based on all contributing factors cited within each age group (some driver ages are not available). Zero, one, or two contributing factors may be associated with each driver. The percentages may not sum to 100% due to rounding. Contributing factors for bicyclists and pedestrians are excluded.

For contributing factors in single-vehicle crashes, see Table 1.09. For contributing factors in crashes at different levels of severity, see Table 1.19.

TABLE 1.11

PERSONS INVOLVED IN CRASHES BY TYPE OF VEHICLE OCCUPIED AND INJURY SEVERITY, 2002

Vehicle Type	Killed	Injured				Not Injured	Total Persons
		Severe	Moder-ate	Minor	Total		
Automobile	371	1,644	9,224	16,062	26,930	127,944	155,245
Pickup Truck	123	380	1,996	2,893	5,269	32,577	37,969
Van	35	177	1,278	2,266	3,721	21,808	25,564
Motorhome/Camper	2	1	15	36	52	789	843
Taxicab	0	1	22	35	58	389	447
Police Vehicle	1	2	34	68	104	421	526
Fire Department Vehicle	0	0	1	6	7	121	128
School Bus	0	2	17	135	154	6,409	6,563
Other Bus	0	8	20	61	89	1,992	2,081
Ambulance	0	4	11	4	19	112	131
Military Vehicle	2	2	2	2	6	34	42
Snowmobile	2	12	6	11	29	16	47
All Terrain Vehicle	1	13	21	12	46	22	69
Farm Tractor or Equipment	0	2	10	10	22	156	178
Motorcycle*	47	216	544	311	1,071	235	1,353
Motor scooter/Motorbike*	0	12	20	3	35	1	36
Motorized Bicycle (Moped)*	0	2	7	5	14	1	15
Hit and Run Vehicle	0	7	33	57	97	7,081	7,178
Road Maintenance Vehicle	0	0	3	9	12	169	181
Single Truck (2-axle, 6-tire)	2	1	27	50	78	1,063	1,143
Single Truck (3 or more axles)	0	2	41	37	80	501	581
Single Truck with Trailer	0	2	6	11	19	503	522
Truck Tractor with No Trailer	1	0	1	3	4	87	92
Truck Tractor with Semi Trailer	4	6	67	96	169	2,450	2,623
Truck Tractor with Double Trailers	0	0	1	0	1	36	37
Other or Unknown Truck Type	3	0	3	3	6	137	146
Other or Unknown Motor Vehicle	6	30	216	330	576	4,573	5,155
Bicycle	7	79	412	369	860	60	927
Pedestrian	50	202	447	500	1,149	12	1,211
Total	657	2,807	14,485	23,385	40,677	209,699	251,033

* On the accident report form, police may show that a vehicle is a "motorcycle," a "motor scooter/motorbike," or a "moped or motorized bicycle." Since 1986, however, the law recognizes just two categories. If the vehicle has an engine capacity of more than 50 cc, it is classified as a motorcycle; if it has 50 cc or smaller engine capacity, it is classified as a motorized bicycle. The term moped is short for motorized pedal cycle, which is the same as motorized bicycle.

TABLE 1.12

DRIVER LICENSE* SUMMARY BY AGE, 1997 - 2002

Age	1997	1998	1999	2000	2001	2002
15	27,514	24,610	24,944	28,479	27,878	28,880
16	55,564	50,028	52,576	55,792	56,361	55,286
17	61,052	60,389	59,336	60,724	62,068	63,011
18	63,711	64,337	60,177	65,830	64,963	66,876
19	63,460	66,023	67,779	68,697	69,232	68,609
20	61,875	64,484	67,816	69,306	70,351	70,985
Under 21	333,176	329,871	332,629	348,828	350,853	353,647
15 – 19	271,301	265,387	264,812	279,522	280,502	282,662
20 – 24	291,004	302,019	316,452	327,545	339,486	352,022
25 – 29	325,020	318,360	316,642	310,399	309,079	320,420
30 – 34	356,278	347,382	346,159	347,932	344,952	343,933
35 – 39	407,334	405,914	401,755	391,515	377,905	366,661
40 – 44	381,214	389,126	398,519	405,043	408,621	411,413
45 – 49	330,259	340,673	352,585	362,105	368,930	379,702
50 – 54	260,406	273,059	290,428	306,566	316,321	325,664
55 – 59	201,963	210,483	218,555	222,828	238,022	252,631
60 – 64	160,789	165,519	170,263	174,735	180,723	192,074
65 – 69	146,590	144,903	145,284	145,334	146,107	149,272
70 – 74	133,750	134,081	134,225	133,774	133,205	132,368
75 – 79	107,838	108,977	111,888	112,404	111,876	113,370
80 – 84	71,267	73,848	76,147	76,888	78,351	80,361
85 & Older	42,757	46,310	51,903	52,854	51,419	54,940
Total	3,487,770	3,526,041	3,595,617	3,649,444	3,685,499	3,757,493

* This information is provided by the Department of Public Safety, Driver and Vehicle Services Division (DVS). Counts of licensed drivers include drivers who only hold learner's permits. The 1999 totals for ages 15, 16, and 17 have recently been revised by DVS and are included above.

TABLE 1.13

MOTOR VEHICLE REGISTRATIONS, 1997 - 2002

Type of Vehicle*	1997	1998	1999	2000	2001	2002
Passenger Cars	2,724,529	2,798,548	2,774,170	2,957,883	3,072,081	3,156,906
Pickups	674,547	723,543	747,650	821,148	866,434	890,648
Trucks	159,939	165,491	172,487	182,469	190,314	194,695
Recreational Vehicles	37,731	39,034	39,569	39,827	39,649	39,584
Motorcycles	113,443	118,275	122,676	132,352	142,822	149,360
Motorized Bicycles	5,784	5,643	5,656	5,819	6,277	6,500
School Buses	5,788	5,887	6,012	6,017	5,926	5,938
Buses	4,260	4,648	4,860	5,018	5,037	5,001
Van Pool	291	287	315	260	267	246
Tax Exempt Vehicles	43,533	42,978	45,476	45,233	48,008	41,271
Motor Vehicle Subtotal	3,769,845	3,904,334	3,918,871	4,196,026	4,376,815	4,490,149
Trailers	897,794	1,028,612	1,000,730	1,122,330	1,052,751	875,677
Classic Motor Vehicles	105,659	111,492	116,863	121,934	127,239	132,964
Classic Motorcycles	2,595	2,966	3,314	3,666	4,077	4,599
Total Registrations	4,775,893	5,047,404	5,039,778	5,443,956	5,560,882	5,503,389

* Information provided by Department of Public Safety, Driver and Vehicle Services Division.

Minnesota license plates on a vehicle signify that it has been registered with the state and that the owner has paid the registration fee. The vehicle classification used for registration purposes is similar, but not identical, to the vehicle classification (shown in Tables 1.11 and 1.14) police use in reporting accidents. Following are some notes on the registration categories shown above:

- Passenger cars include vans, except for "van pools." A van pool is a van used exclusively for car pooling purposes.
- Pickup trucks are rated three-fourths ton or less.
- Motorcycles have engines exceeding 50 cc; otherwise the vehicle is classified as a motorized bicycle.
- Tax exempt vehicles are vehicles owned by city, county, or state offices. They have license plates but no registration fees are paid on them. (Police and fire department vehicles are tax exempt but are not included since they do not have state license plates and are not registered.)
- Trailers (such as utility trailers pulled by cars, or semi or twin trailers pulled by trucks) are pulled by motorized vehicles and do not themselves have motors.
- Classic Motor Vehicles and Classic Motorcycles must be at least 20 years old and cannot be used for normal transportation purposes. They can only be driven, for example, to car shows.

TABLE 1.14

TYPES OF MOTOR VEHICLES IN 2002 CRASHES

Motor Vehicle Type*	Vehicles in Fatal Crashes	Vehicles in Injury Crashes	Vehicles in Property Damage Crashes	Vehicles in All Crashes
Automobile	466	33,659	76,976	111,101
Pickup Truck	202	8,069	20,419	28,690
Van	70	4,708	10,319	15,097
Motorhome/Camper	2	53	413	468
Taxicab	1	73	224	298
Police Vehicle	5	129	336	470
Fire Department Vehicle	1	14	41	56
School Bus	3	150	578	731
Other Bus	1	78	197	276
Ambulance	0	24	33	57
Military Vehicle	2	11	30	43
Snowmobile**	2	29	15	46
All Terrain Vehicle**	1	45	19	65
Farm Tractor or Equipment	2	66	103	171
Motorcycle*	49	977	180	1,206
Motor scooter/Motorbike*	0	33	1	34
Motorized Bicycle (Moped)*	0	14	1	15
Hit and Run Vehicle	4	841	5,337	6,182
Road Maintenance Vehicle	0	39	133	172
Single Truck (2-axle, 6-tire)	10	271	696	977
Single Truck (3 or more axles)	13	181	305	499
Single Truck with Trailer	2	115	290	407
Truck Tractor with No Trailer	1	22	64	87
Truck Tractor with Semi Trailer	48	603	1,808	2,459
Truck Tractor with Double Trailers	0	8	29	37
Other or Unknown Truck Type	6	32	97	135
Other or Unknown Motor Vehicle	11	932	2,309	3,252
Total***	902	51,176	120,953	173,031

* On the accident report form, police may show that a vehicle is a "motorcycle," a "motor scooter/motorbike," or a "moped or motorized bicycle." Since 1986, however, the law recognizes just two categories. If the vehicle has an engine capacity of more than 50 cc, it is classified as a motorcycle; if it has 50 cc or smaller engine capacity, it is classified as a motorized bicycle. The term moped is short for motorized pedal cycle, which is the same as motorized bicycle.

** Snowmobiles and ATV's in crashes are not counted in this table unless the crash occurred on a public roadway.

*** Most crashes involve more than one vehicle, causing total vehicles to exceed total crashes. Bicyclists and pedestrians are excluded from this table.

TABLE 1.15

2002 CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured	Fatality Rate Per 1,000 Crashes
Collision With:							
Another Motor Vehicle	257	18,216	43,822	62,295	301	28,241	4.8
Parked Motor Vehicle	2	472	4,661	5,135	2	592	0.4
Railroad Train	6	27	44	77	9	37	116.9
Bicycle	7	791	54	852	7	820	8.2
Pedestrian	46	1,064	17	1,127	46	1,129	40.8
Deer	5	417	5,135	5,557	5	523	0.9
Other Animal	2	85	303	390	2	115	5.1
Fixed Object	136	3,725	8,182	12,043	145	4,770	12.0
Other Object	1	45	180	226	1	56	4.4
Non-Collision:							
Overturn	116	2,624	2,199	4,939	125	3,559	25.3
Fire/Explosion	2	12	179	193	4	16	20.7
Submersion	3	14	58	75	3	18	40.0
Other or Unknown	7	648	1,405	2,060	7	801	3.4
Total	590	28,140	66,239	94,969	657	40,677	6.9

TABLE 1.16

2002 "HIT-AND-RUN" CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	2	486	2,626	3,114	2	633
Parked Motor Vehicle	0	19	1,898	1,917	0	25
Railroad Train	0	0	1	1	0	0
Bicycle	0	72	7	79	0	74
Pedestrian	2	176	4	182	2	188
Deer	0	0	4	4	0	0
Other Animal	0	2	0	2	0	2
Fixed Object	0	49	581	630	0	59
Other Object	0	3	8	11	0	3
Non-Collision:						
Overturn	0	11	35	46	0	15
Fire/Explosion	0	0	1	1	0	0
Submersion	0	0	2	2	0	0
Other or Unknown	0	16	121	137	0	20
Total	4	834	5,288	6,126	4	1,019

TABLE 1.17

2002 CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Not Applicable	434	15,722	36,862	53,018	474	22,183
Traffic Signal	32	6,495	12,549	19,076	35	9,385
Overhead Flashers	1	73	133	207	1	111
Stop Sign-All Approaches	2	472	1,187	1,661	2	664
Other Stop Sign	86	3,775	6,834	10,695	99	6,085
Yield Sign	12	473	909	1,394	16	757
Flagman, Officer, or School Patrol	0	41	71	112	0	62
School Bus Stop Arm	0	20	43	63	0	24
School Zone Sign	0	10	20	30	0	13
No Passing Zone	6	149	286	441	8	226
RR Crossing Gate	3	10	35	48	5	15
RR Flashing Lights	0	21	18	39	0	32
RR Crossing Stop Sign	1	8	13	22	1	12
RR Other	1	17	36	54	1	22
Other	8	239	1,479	1,726	11	328
Unknown	4	615	5,764	6,383	4	758
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.18

2002 CRASHES BY WEATHER CONDITION

Weather Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Clear	340	16,325	36,684	53,349	380	23,667
Cloudy	162	7,207	15,693	23,062	182	10,509
Rain	19	1,591	3,823	5,433	21	2,254
Snow	35	1,778	5,453	7,266	38	2,519
Sleet/Hail/Freezing Rain	8	375	1,000	1,383	9	535
Fog/Smog/Smoke	4	160	303	467	5	241
Blowing Sand/Dust	4	199	522	725	4	292
Severe Crosswinds	4	41	78	123	4	56
Other	0	44	144	188	0	73
Not Stated/Unknown	14	420	2,539	2,973	14	531
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.19

CONTRIBUTING FACTORS IN 2002 CRASHES

Contributing Factors	Percent of Factors Cited in Crashes by Severity of Crash: Fatal Crashes	Injury Crashes	Property Damage Crashes	Number of Crashes in which the Factor was Cited: Fatal Crashes	Injury Crashes	Property Damage Crashes	Number of People Affected: Killed	Injured
Human Factors								
Driver Inattention/Distraction	14.2%	24.6%	24.6%	127	9,941	18,345	137	14,612
Failure to Yield Right of Way	11.7	16.4	14.1	107	6,774	10,675	118	10,591
Illegal/Unsafe Speed	18.3	11.4	10.8	166	4,648	8,114	184	7,004
Following Too Closely	0.9	7.1	9.3	6	2,706	6,687	6	3,852
Improper/Unsafe Lane Use	4.4	3.2	5.5	41	1,325	4,183	50	1,946
Driver Inexperience	3.2	3.5	3.1	30	1,475	2,387	37	2,250
Disregard Traf Contr Device	5.0	5.2	2.9	46	2,159	2,211	62	3,598
Improper Turn	1.0	1.6	2.6	9	697	2,001	10	1,050
Physical Impairment	11.7	5.6	2.5	108	2,321	1,951	119	3,360
Vision Obscured	1.0	2.2	2.0	9	853	1,480	9	1,265
Unsafe Backing	0.1	0.4	1.8	1	149	1,421	1	186
Improper Passing/Overtaking	0.9	0.9	1.7	8	389	1,332	8	610
Improper Park/Start/Stop	0.4	1.1	1.4	4	437	1,079	4	632
Driving Left of Center (Not Passing)	5.0	1.1	0.7	45	464	560	53	828
Improper or No Signal	0.2	0.2	0.3	2	87	227	2	139
Impeding Traffic	0.0	0.2	0.2	0	87	178	0	141
Driver on CB/Cell Phone	0.1	0.2	0.2	1	85	137	1	104
Failure to Use Lights	0.3	0.2	0.1	3	64	87	3	103
Pedestrian Violation or Error	2.2	0.7	0.0	20	297	2	20	311
Other Human Factor	2.7	1.9	1.4	25	785	1,019	27	1,064
Vehicular Factors								
Skidding	4.9	3.1	3.4	45	1,250	2,495	48	1,755
Defective Equipment	0.5	0.8	0.9	5	346	677	5	487
Other Vehicular Factor	0.5	0.4	0.6	5	169	421	5	235
Miscellaneous Factors								
Weather	4.3	4.3	5.5	35	1,558	3,751	37	2,194
Other	6.6	3.7	4.2	49	1,293	2,593	58	1,774
Total Percent	100.0%	100.0%	100.0%					
Total Contributing Factors	925	42,315	78,011					
Vehicles Where There Was "No Clear Contributing Factor"	332	21,563	45,879					
Total Number of Vehicles	965	53,177	121,018					

Zero, one, or two contributing factors may be associated with a vehicle, causing the number of factors cited to vary from the number of crashes, vehicles, and persons affected by the factors. Note that in the absence of alcohol or drug test results (not usually available at the time the crash report is completed), officers are conservative in reporting impairment. Compare these figures with those from Section II. Bicyclists and pedestrians are considered as vehicles in this table, and factors associated with them are included. For contributing factors by age of drivers, see tables 1.09 and 1.10.

TABLE 1.20

2002 CRASHES BY LIGHT CONDITION

Light Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Daylight	282	18,502	40,699	59,483	319	26,837
Dawn (Morning)	20	746	2,042	2,808	22	953
Dusk (Evening)	22	1,155	2,978	4,155	26	1,701
Dark/Street Lights On	63	4,251	10,711	15,025	67	6,122
Dark/No Street Lights	191	2,893	6,624	9,708	211	4,256
Other/Unknown	12	593	3,185	3,790	12	808
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.21

2002 CRASHES BY ROAD SURFACE CONDITION

Road Surface Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Dry	432	20,688	45,462	66,582	484	30,114
Wet	65	3,680	8,436	12,181	74	5,271
Snow/Slush	25	1,243	3,804	5,072	28	1,734
Ice or Packed Snow	44	1,906	5,660	7,610	47	2,687
Other	13	375	762	1,150	13	536
Not Stated/Unknown	11	248	2,115	2,374	11	335
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.22

2002 CRASHES BY ROAD DESIGN

Road Design	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Freeway (Including Ramps)	72	3,446	9,818	13,336	83	4,778
Other Divided Highway	79	4,314	7,479	11,872	86	6,642
One-Way Street	1	744	1,261	2,006	1	1,020
4-6 Lanes Undivided	29	5,062	8,942	14,033	31	7,222
3 Lanes	6	288	548	842	6	422
2-Lane--2-Way	384	12,379	24,724	37,487	429	18,113
Alley/Driveway	0	138	509	647	0	158
Other	14	639	1,294	1,947	16	896
Not Stated/Unknown	5	1,130	11,664	12,799	5	1,426
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.23

2002 CRASHES BY DIAGRAM

Diagram	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Rear End	20	7,244	14,942	22,206	21	10,575
Sideswipe Passing	8	743	4,962	5,713	8	978
Left Turn -- Oncoming Traffic	11	1,749	2,920	4,680	11	2,697
Ran Off Road - Left	102	2,156	3,072	5,330	112	2,826
Right Angle	115	6,398	9,808	16,321	133	10,124
Right Turn -- Cross Street Traffic	1	134	380	515	1	180
Ran Off Road - Right	129	2,818	4,445	7,392	135	3,720
Head On	86	1,102	1,474	2,662	106	1,956
Sideswipe Opposing	15	366	925	1,306	15	552
Other / Unknown / Incomplete	103	5,430	23,311	28,844	115	7,069
Total	590	28,140	66,239	94,969	657	40,677

Note: It is known that there is significant error in the "diagram" field on the Police Accident Report. Two specific types of error are most common: First, the field is often left blank. Second, a large proportion (estimated by some traffic engineers to be as high as one-half) of crashes coded as "right-angle" are not right angle crashes, but are some other type of crash--most frequently "left turn into oncoming traffic."

TABLE 1.24

2002 CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
100,000 & Over	25	5,427	15,727	21,179	27	7,366
50,000 - 99,999	28	4,298	8,714	13,040	30	6,055
25,000 - 49,999	42	3,410	8,173	11,625	46	4,848
10,000 - 24,999	41	4,131	10,142	14,314	43	5,968
5,000 - 9,999	29	1,724	4,147	5,900	32	2,507
2,500 - 4,999	24	1,001	2,797	3,822	28	1,478
1,000 - 2,499	6	487	1,457	1,950	6	708
Under 1,000	395	7,662	15,082	23,139	445	11,747
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.25

2002 CRASHES BY TYPE OF ROADWAY

Type of Roadway	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Urban						
Interstate	31	1,975	6,570	8,576	34	2,708
US Trunk Highway	21	1,614	3,717	5,352	23	2,355
MN Trunk Highway	31	3,012	6,705	9,748	35	4,409
County State Aid Highway	45	5,674	11,986	17,705	47	8,155
County Road	1	208	334	543	1	295
Local Street	36	6,507	17,591	24,134	38	8,822
Total	165	18,990	46,903	66,058	178	26,744
Rural						
Interstate	30	646	1,821	2,497	38	941
US Trunk Highway	72	1,577	3,254	4,903	80	2,578
MN Trunk Highway	102	2,157	4,578	6,837	119	3,437
County State Aid Highway	165	2,879	5,125	8,169	184	4,291
County Road	27	480	833	1,340	28	721
Township Road	23	778	1,176	1,977	24	1,147
Local Street	2	438	1,719	2,159	2	579
Other Road	4	195	830	1,029	4	239
Total	425	9,150	19,336	28,911	479	13,933
All Roadways						
Interstate	61	2,621	8,391	11,073	72	3,649
US Trunk Highway	93	3,191	6,971	10,255	103	4,933
MN Trunk Highway	133	5,169	11,283	16,585	154	7,846
County State Aid Highway	210	8,553	17,111	25,874	231	12,446
County Road	28	688	1,167	1,883	29	1,016
Township Road	23	778	1,176	1,977	24	1,147
Local Street	38	6,945	19,310	26,293	40	9,401
Other Road	4	195	830	1,029	4	239
Total	590	28,140	66,239	94,969	657	40,677

("Urban" refers to an area having a population of 5,000 or more; "rural" refers to an area of less than 5,000.)

TABLE 1.26

2002 COUNTY CRASH REPORT

	Crashes				Average	Number	Average	Number	Average
			Property		Crashes	Killed	Killed	Injured	Injured
County	**Fatal**	**Injury**	**Damage**	**Total**	**1997-2001**	**2002**	**1997-2001**	**2002**	**1997-2001**
Aitkin	5	74	226	305	318	5	5	115	142
Anoka	19	1,527	2,965	4,511	4,787	24	24	2,243	2,607
Becker	5	158	218	381	383	6	9	265	223
Beltrami	5	246	536	787	781	5	7	413	346
Benton	12	221	488	721	633	13	8	376	351
Big Stone	1	18	62	81	91	1	1	26	37
Blue Earth	4	360	987	1,351	1,344	5	8	482	525
Brown	3	146	272	421	457	3	3	209	200
Carlton	9	109	203	321	422	11	5	160	216
Carver	11	370	830	1,211	1,114	14	12	550	527
Cass	16	160	255	431	457	19	11	272	287
Chippewa	2	58	103	163	181	5	2	92	104
Chisago	10	277	547	834	810	11	7	433	393
Clay	12	234	601	847	1,005	13	9	336	381
Clearwater	4	30	51	85	104	4	4	48	58
Cook	2	39	93	134	137	2	2	61	63
Cottonwood	0	40	111	151	170	0	3	66	88
Crow Wing	8	355	789	1,152	1,205	8	14	562	618
Dakota	21	1,681	4,015	5,717	5,509	22	27	2,431	2,539
Dodge	3	62	173	238	267	3	5	101	140
Douglas	1	203	618	822	900	1	5	278	355
Faribault	3	53	87	143	189	3	2	83	106
Fillmore	2	101	182	285	314	2	4	145	142
Freeborn	6	216	490	712	770	8	5	305	321
Goodhue	7	304	697	1,008	1,027	7	11	421	453
Grant	4	38	62	104	106	4	1	57	47
Hennepin	56	7,409	19,299	26,764	28,625	61	57	10,167	12,025
Houston	2	83	245	330	322	4	2	123	143
Hubbard	7	116	151	274	252	8	6	184	153
Isanti	8	195	378	581	601	9	5	305	310
Itasca	5	213	453	671	716	5	9	300	369
Jackson	2	66	109	177	197	3	3	96	99
Kanabec	8	80	154	242	241	8	5	149	132
Kandiyohi	7	288	526	821	800	9	7	471	451

TABLE 1.26 CONTINUED

2002 COUNTY CRASH REPORT

County	Crashes Fatal	Injury	Property Damage	Total	Average Crashes 1997-2001	Number Killed 2002	Average Killed 1997-2001	Number Injured 2002	Average Injured 1997-2001
Kittson	3	14	79	96	84	3	1	22	23
Koochiching	0	54	89	143	185	0	2	81	117
Lac Qui Parle	1	28	51	80	77	1	2	42	43
Lake	3	56	153	212	212	3	2	84	95
Lake of the Woods	4	16	42	62	48	4	2	20	22
Le Sueur	6	121	324	451	471	6	5	198	225
Lincoln	3	38	71	112	96	3	2	55	32
Lyon	1	113	280	394	422	1	4	173	207
McLeod	6	174	423	603	650	7	6	289	315
Mahnomen	2	40	53	95	65	2	2	58	52
Marshall	3	31	55	89	90	3	2	46	44
Martin	3	108	244	355	364	3	4	164	168
Meeker	5	107	219	331	313	5	5	172	192
Mille Lacs	6	137	273	416	406	7	6	232	254
Morrison	12	184	309	505	482	15	8	299	263
Mower	6	202	524	732	689	7	5	305	273
Murray	2	28	79	109	128	2	1	40	59
Nicollet	0	111	369	480	488	0	4	157	194
Nobles	3	85	260	348	409	4	5	118	186
Norman	4	34	52	90	98	4	1	54	40
Olmsted	13	806	1,443	2,262	2,333	15	19	1,181	1,165
Otter Tail	11	307	592	910	951	11	12	452	463
Pennington	4	68	94	166	222	4	2	97	140
Pine	8	191	293	492	548	9	6	293	282
Pipestone	2	38	63	103	135	3	3	58	66
Polk	6	128	306	440	466	6	4	190	225
Pope	4	36	82	122	150	4	2	46	67
Ramsey	31	3,295	10,053	13,379	13,883	36	30	4,519	5,243
Red Lake	2	16	46	64	60	3	2	18	24
Redwood	0	78	128	206	212	0	3	114	128
Renville	4	91	142	237	236	5	6	127	133
Rice	14	390	776	1,180	1,114	14	12	569	555
Rock	1	43	169	213	238	1	2	63	89

TABLE 1.26 CONTINUED

2002 COUNTY CRASH REPORT

County	Crashes Fatal	Injury	Property Damage	Total	Average Crashes 1997-2001	Number Killed 2002	Average Killed 1997-2001	Number Injured 2002	Average Injured 1997-2001
Roseau	2	65	147	214	187	3	4	108	83
St. Louis	31	963	1,513	2,507	2,783	32	27	1,453	1,532
Scott	19	529	1,038	1,586	1,442	19	16	812	733
Sherburne	15	424	930	1,369	1,064	15	10	639	533
Sibley	0	74	112	186	218	0	3	116	99
Stearns	14	861	1,471	2,346	2,447	16	17	1,243	1,394
Steele	3	183	591	777	773	3	7	242	253
Stevens	2	34	64	100	131	3	1	57	60
Swift	2	31	47	80	116	2	2	41	64
Todd	1	107	260	368	415	1	5	147	189
Traverse	1	7	14	22	39	3	0	7	19
Wabasha	4	94	217	315	342	5	6	146	165
Wadena	2	75	124	201	227	2	4	113	114
Waseca	4	102	182	288	298	4	4	155	151
Washington	14	962	2,270	3,246	3,088	16	13	1,391	1,342
Watonwan	2	48	104	154	165	2	1	66	71
Wilkin	3	52	108	163	153	3	2	72	69
Winona	8	243	771	1,022	1,113	11	11	342	450
Wright	17	530	1,015	1,562	1,462	17	14	781	795
Yellow Medicine	3	43	100	146	156	3	4	66	82
Unknown	0	15	49	64	7	0	0	19	4
Minnesota Total	590	28,140	66,239	94,969	98,188	657	614	40,677	44,536

TABLE 1.27

2002 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

	Crashes				Persons	
City	Fatal	Personal Injury	Property Damage	Total	Killed	Injured
Afton	0	18	25	43	0	27
Albert Lea	1	108	250	359	1	159
Albertville	0	26	41	67	0	41
Alexandria	0	86	275	361	0	113
Andover	1	75	133	209	1	118
Annandale	0	4	7	11	0	6
Anoka	3	128	401	532	4	178
Apple Valley	2	174	394	570	2	235
Arden Hills	2	88	357	447	2	119
Aurora	0	4	5	9	0	4
Austin	0	105	341	446	0	150
Baxter	2	70	126	198	2	113
Bayport	0	3	15	18	0	3
Becker	0	14	31	45	0	16
Belle Plaine	0	13	58	71	0	17
Bemidji	0	102	288	390	0	172
Benson	0	4	25	29	0	7
Big Lake	1	37	64	102	1	62
Blaine	4	293	385	682	7	455
Bloomington	5	614	1,677	2,296	5	866
Blue Earth	0	6	14	20	0	11
Brainerd	0	105	327	432	0	149
Breckenridge	2	7	41	50	2	9
Brooklyn Center	3	232	559	794	4	345
Brooklyn Park	2	414	541	957	3	608
Buffalo	0	60	159	219	0	88
Burnsville	0	329	727	1,056	0	466
Byron	0	4	16	20	0	6
Caledonia	0	7	24	31	0	9
Cambridge	1	45	132	178	1	73
Cannon Falls	1	20	60	81	1	25
Centerville	0	6	9	15	0	9
Champlin	1	76	127	204	1	107
Chanhassen	2	84	274	360	2	114
Chaska	0	72	177	249	0	108
Chisago City	0	13	20	33	0	26
Chisholm	1	24	48	73	1	47
Circle Pines	0	7	23	30	0	9
Cloquet	1	29	41	71	1	42
Cokato	0	2	13	15	0	2
Cold Spring	0	15	39	54	0	18
Columbia Heights	0	97	170	267	0	121
Coon Rapids	3	358	780	1,141	3	492
Corcoran	0	25	45	70	0	34
Cottage Grove	1	93	256	350	1	133
Crookston	0	36	81	117	0	49

TABLE 1.27

2002 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

	Crashes				Persons	
City	Fatal	Personal Injury	Property Damage	Total	Killed	Injured
Crystal	0	120	175	295	0	163
Dayton	0	33	67	100	0	43
Deephaven	0	5	15	20	0	6
Delano	1	17	30	48	1	32
Detroit Lakes	0	52	49	101	0	80
Dilworth	2	6	33	41	2	7
Duluth	2	352	381	735	2	510
Eagan	3	281	669	953	4	374
East Bethel	0	40	67	107	0	97
East Grand Forks	0	29	84	113	0	39
Eden Prairie	0	204	583	787	0	286
Edina	3	220	574	797	3	302
Elk River	1	130	272	403	1	191
Ely	0	5	37	42	0	8
Eveleth	0	13	39	52	0	20
Fairmont	1	51	124	176	1	70
Falcon Heights	0	19	56	75	0	29
Faribault	1	153	310	464	1	228
Farmington	0	24	70	94	0	38
Fergus Falls	0	75	205	280	0	105
Forest Lake	2	106	241	349	2	152
Forest Lake Twsp	0	5	8	13	0	9
Fridley	2	171	257	430	2	253
Gilbert	1	5	11	17	1	11
Glencoe	1	12	56	69	1	22
Glenwood	0	6	30	36	0	9
Golden Valley	1	156	499	656	1	216
Goodview	0	4	18	22	0	5
Grand Rapids	1	60	194	255	1	84
Granite Falls	0	4	22	26	0	10
Grant	0	12	36	48	0	15
Greenfield	1	14	33	48	2	19
Ham Lake	0	61	102	163	0	88
Hastings	2	85	250	337	2	122
Hermantown	2	49	74	125	2	85
Hibbing	1	119	222	342	1	187
Hopkins	0	72	171	243	0	93
Hoyt Lakes	0	2	12	14	0	6
Hugo	1	33	64	98	1	46
Hutchinson	0	65	168	233	0	98
Independence	1	24	43	68	2	37
International Falls	0	30	35	65	0	46
Inver Grove Heights	1	101	288	390	1	157
Jackson	0	10	24	34	0	17
Jordan	1	15	43	59	1	20

TABLE 1.27

2002 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

	Crashes				Persons	
City	Fatal	Personal Injury	Property Damage	Total	Killed	Injured
Kasson	0	6	53	59	0	9
La Crescent	0	17	48	65	0	24
Lake City	0	16	46	62	0	23
Lake Elmo	2	48	100	150	4	85
Lakeville	4	165	402	571	4	241
Le Sueur	0	8	51	59	0	13
Lindstrom	1	8	33	42	1	9
Lino Lakes	2	73	180	255	2	108
Litchfield	0	25	56	81	0	32
Little Canada	1	89	266	356	1	125
Little Falls	0	28	70	98	0	38
Long Prairie	0	6	20	26	0	6
Luverne	0	9	63	72	0	13
Mahtomedi	0	17	50	67	0	24
Mankato	2	234	672	908	2	311
Maple Grove	4	233	647	884	4	321
Maplewood	3	289	691	983	3	431
Marshall	0	59	144	203	0	100
May Township	0	12	33	45	0	14
Medina	1	24	95	120	1	36
Melrose	1	4	34	39	1	6
Mendota Heights	0	75	177	252	0	106
Minneapolis	15	3,441	9,590	13,046	15	4,664
Minnetonka	3	235	515	753	3	315
Minnetrista	1	18	57	76	1	24
Montevideo	0	23	52	75	0	33
Monticello	2	58	126	186	2	91
Moorhead	4	137	390	531	4	180
Mora	0	20	35	55	0	33
Morris	0	8	41	49	0	17
Mound	0	18	73	91	0	21
Mounds View	1	37	111	149	1	64
Mountain Iron	0	24	38	62	0	37
New Brighton	2	76	218	296	2	97
New Hope	1	60	104	165	1	85
Newport	1	65	184	250	1	94
New Prague	1	8	32	41	1	17
New Scandia Twsp	0	18	48	66	0	24
New Ulm	0	76	167	243	0	104
North Branch	2	49	115	166	3	67
Northfield	2	66	132	200	2	95
North Mankato	0	26	102	128	0	37
North Oaks	0	5	23	28	0	6
North St. Paul	1	60	152	213	1	77
Oakdale	1	91	229	321	1	145

TABLE 1.27

2002 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

	Crashes				Persons	
City	Fatal	Personal Injury	Property Damage	Total	Killed	Injured
Oak Park Heights	0	17	54	71	0	22
Olivia	0	6	16	22	0	9
Orono	2	42	148	192	2	56
Ortonville	0	5	28	33	0	7
Otsego	2	32	51	85	2	45
Owatonna	0	95	353	448	0	124
Park Rapids	1	14	24	39	2	22
Pine City	0	25	32	57	0	39
Pipestone	1	15	17	33	1	24
Plainview	0	4	15	19	0	8
Plymouth	3	242	672	917	4	324
Princeton	1	19	60	80	1	33
Prior Lake	1	87	70	158	1	139
Proctor	1	11	22	34	1	12
Ramsey	3	71	166	240	4	112
Red Wing	0	99	306	405	0	130
Redwood Falls	0	14	62	76	0	22
Richfield	2	300	679	981	2	420
Robbinsdale	2	83	189	274	2	113
Rochester	5	586	1,081	1,672	5	836
Rockford	0	14	33	47	0	18
Rogers	0	45	110	155	0	59
Roseau	0	13	28	41	0	19
Rosemount	0	84	197	281	0	134
Roseville	4	225	696	925	4	298
St. Anthony	1	21	62	84	1	25
St. Charles	0	0	25	25	0	0
St. Cloud	0	507	581	1,088	0	727
St. Francis	1	28	39	68	1	43
St. James	0	10	30	40	0	12
St. Joseph	0	17	24	41	0	21
St. Louis Park	0	240	620	860	0	307
St. Michael	0	38	58	96	0	55
St. Paul	10	2,025	6,436	8,471	12	2,741
St. Paul Park	0	23	39	62	0	34
St. Peter	0	24	105	129	0	29
Sartell	0	17	32	49	0	22
Sauk Centre	1	14	78	93	2	22
Sauk Rapids	2	37	118	157	2	56
Savage	3	100	189	292	3	151
Shakopee	2	114	311	427	2	163
Shoreview	3	75	260	338	3	104
Shorewood	1	26	68	95	1	41
Silver Bay	0	3	12	15	0	3
Sleepy Eye	0	11	40	51	0	18

TABLE 1.27

2002 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

	Crashes				Persons	
City	Fatal	Personal Injury	Property Damage	Total	Killed	Injured
South St. Paul	0	99	292	391	0	124
Spring Lake Park	0	44	75	119	0	59
Spring Valley	0	20	27	47	0	25
Staples	0	9	35	44	0	11
Stewartville	0	11	22	33	0	16
Stillwater	0	83	218	301	0	103
Stillwater Twsp	1	21	43	65	1	33
Thief River Falls	1	47	69	117	1	65
Two Harbors	0	6	43	49	0	9
Vadnais Heights	1	90	235	326	1	130
Victoria	0	23	32	55	0	37
Virginia	0	50	114	164	0	70
Waconia	1	35	64	100	1	51
Wadena	0	25	53	78	0	32
Waite Park	0	52	154	206	0	72
Waseca	1	32	78	111	1	47
Watertown	0	11	20	31	0	24
Wayzata	1	44	139	184	1	60
Wells	0	6	11	17	0	10
W. Lakeland Twsp	2	13	27	42	2	20
West St. Paul	1	99	213	313	1	148
White Bear Lake	1	184	437	622	1	265
White Bear Twsp	1	13	45	59	4	16
Willmar	1	138	333	472	1	205
Windom	0	17	48	65	0	30
Winona	1	144	454	599	1	183
Woodbury	2	193	425	620	2	282
Worthington	1	38	155	194	1	48
Wyoming	1	27	33	61	1	44
Zimmerman	1	17	55	73	1	27

TABLE 1.28

2002 CRASHES BY TIME AND DAY

Hour Beginning	All Days		Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal
Midnight	1,464	22	363	6	154	2	136	3	135	3	158	1	172	2	346	5
1:00	1,965	40	471	12	163	4	162	2	171	2	219	6	258	5	521	9
2:00	1,129	19	275	5	107	2	92	0	100	1	107	1	163	3	285	7
3:00	768	10	175	2	67	1	77	1	74	0	81	2	112	1	182	3
4:00	708	11	155	2	81	2	72	0	72	1	93	0	96	2	139	4
5:00	1,166	23	149	4	199	0	166	3	158	4	173	3	178	5	143	4
6:00	2,535	15	129	0	435	4	471	2	445	3	431	3	421	1	203	2
7:00	5,002	26	180	2	800	4	1,075	7	1,001	6	924	2	763	3	259	2
8:00	4,636	15	188	3	817	3	906	1	882	1	718	1	744	5	381	1
9:00	3,558	18	280	2	588	1	567	1	551	5	549	4	552	2	471	3
10:00	3,660	24	347	4	679	7	475	2	484	1	559	4	558	4	558	2
11:00	4,470	20	466	0	628	1	644	3	609	2	658	4	727	5	738	5
Noon	5,111	28	574	2	745	5	677	6	702	6	744	2	906	4	763	3
1:00	5,100	24	632	4	748	0	662	4	690	5	753	3	883	6	732	2
2:00	5,974	20	591	3	832	0	796	4	894	3	912	4	1,196	1	753	5
3:00	7,629	24	638	2	1,131	2	1,112	3	1,227	2	1,329	3	1,414	8	778	4
4:00	7,566	37	652	9	1,197	3	1,170	1	1,194	3	1,266	7	1,313	9	774	5
5:00	8,153	47	666	8	1,267	7	1,312	6	1,388	9	1,416	6	1,350	5	754	6
6:00	5,824	36	576	8	783	2	834	6	1,019	6	939	4	960	6	713	4
7:00	4,115	31	559	9	528	1	545	2	634	5	568	3	650	4	631	7
8:00	3,442	33	467	3	422	2	444	3	530	6	470	3	566	9	543	7
9:00	3,492	19	432	1	440	2	424	2	471	1	564	3	611	6	550	4
10:00	2,812	20	313	1	275	5	332	3	374	2	443	2	549	5	526	2
11:00	2,090	19	218	3	216	1	228	1	230	2	290	1	438	5	470	6
Unknown	2,600	9	312	2	399	0	357	0	359	0	383	2	435	1	355	4
Total	94,969	590	9,808	97	13,701	61	13,736	66	14,394	79	14,747	74	16,015	107	12,568	106

FIGURE 1.03

Total Crashes vs Fatal Crashes, by Time, 2002

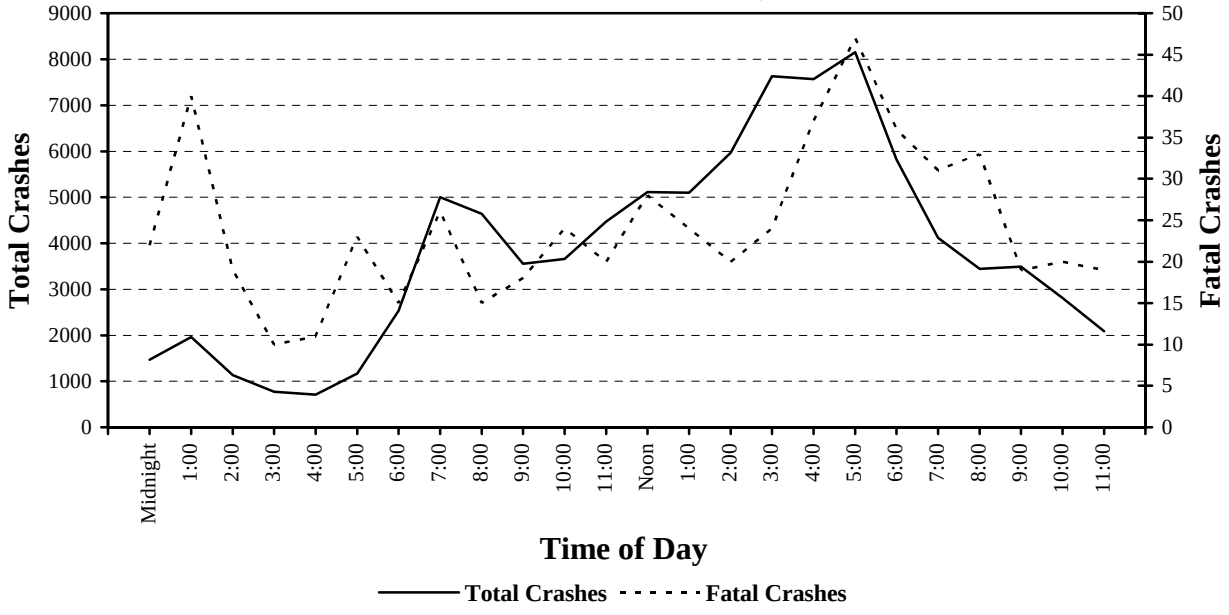


TABLE 1.29

2002 CRASHES, FATALITIES, AND INJURIES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	39	2,265	6,377	8,681	41	3,296
February	45	2,050	5,322	7,417	51	2,920
March	33	2,128	6,083	8,244	34	3,061
April	45	2,217	5,088	7,350	48	3,175
May	43	2,309	4,920	7,272	51	3,277
June	60	2,502	5,137	7,699	71	3,661
July	45	2,571	5,184	7,800	56	3,853
August	65	2,625	5,024	7,714	68	3,825
September	52	2,540	5,249	7,841	53	3,643
October	60	2,434	5,928	8,422	68	3,545
November	40	2,152	5,942	8,134	42	3,073
December	63	2,347	5,985	8,395	74	3,348
Total	590	28,140	66,239	94,969	657	40,677

TABLE 1.30

HOLIDAY CRASH SUMMARY, 1997 - 2002

Holiday Period	Year	Hours*	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Memorial Day	1997	78	4	223	353	580	4	357
(For 2002, the holiday	1998	78	6	214	356	576	8	332
period was 6 PM Fri.,	1999	78	5	215	375	595	8	347
May 24 - midnight	2000	78	4	215	441	660	4	327
Monday, May 27.)	2001	78	7	169	388	564	7	260
	2002	78	6	208	387	601	7	297
July 4th	1997	78	3	228	390	621	3	358
(For 2002, the holiday	1998	78	8	287	432	727	10	473
period was 6 PM Wed,	1999	78	5	236	376	617	6	358
July 3 - midnight	2000	102	12	302	524	838	14	503
Sunday, July 7.)	2001	30	2	122	161	285	3	189
	2002	102	6	342	606	954	6	541
Labor Day	1997	78	6	264	364	634	6	455
(For 2002, the holiday	1998	78	7	212	344	563	10	360
period was 6 PM Fri.,	1999	78	7	212	344	563	7	348
Aug 30 - midnight	2000	78	6	218	426	650	8	347
Monday, Sep. 2.)	2001	78	4	220	394	618	4	326
	2002	78	7	233	389	629	7	377
Thanksgiving	1997	102	7	307	652	966	7	474
(For 2002, the holiday	1998	102	11	292	637	940	17	447
period was 6 PM Wed.,	1999	102	6	309	729	1,044	6	564
Nov. 27 - midnight	2000	102	8	252	658	918	10	393
Sunday, Dec. 1.)	2001	102	9	309	698	1,016	10	473
	2002	102	8	232	593	833	8	357
Christmas	1997	102	4	293	625	922	7	455
(For 2002, the holiday	1998	78	6	227	514	747	8	365
period was 6 PM Tue,	1999	78	12	285	854	1,151	14	435
Dec 24 – midnight	2000	78	2	245	812	1,059	2	351
Wednesday, Dec. 25.)	2001	102	9	491	1,552	2,052	10	719
	2002	30	1	37	84	122	1	56
New Year's**	1997/98	102	10	362	872	1,244	11	528
(For 2002, the	1998/99	78	2	296	937	1,235	3	419
holiday period was	1999/00	78	6	240	564	810	6	380
6 PM Tue, Dec. 31 -	2000/01	78	6	196	684	886	7	300
midnight Wednesday,	2001/02	102	8	213	760	981	11	342
Jan 1, 2003.)	2002/03	30	NA	NA	NA	NA	NA	NA

* Holiday period hours vary depending on the day of the week on which the holiday falls.
** Crash data for January 1st, 2003 was not available at the time of this publication.

II: ALCOHOL - RELATED CRASHES

BACKGROUND AND DEFINITIONS

1. Impaired driving incidents.

As used here, an "impaired driving incident" is one where there was an arrest for driving while under the influence of alcohol or drugs and a violation from that incident was subsequently entered on the person's driving record. In prior years, tables in this section reported "DWI Arrests." "DWI" is an older term that usually connotes intoxication by alcohol. "Impaired driving" is a broader and thus more descriptive term, and it conforms better to current Minnesota law. Law enforcement agencies and courts report violations to Driver Licensing, making driver license records the most complete centralized source of data for statistics on impaired driving. Additionally, since it is almost impossible for a person, once arrested, to evade all of the criminal charges and administrative actions the law calls for, the number of impaired driving incidents on record is almost the same as the number of arrests.

(2) Alcohol-related crashes

While the term "impaired driving" covers many possible types of impairment, the term "alcohol-related" is restrictive: *only* alcohol-related crashes are counted. For example, if a driver tests positive for cocaine, but negative for alcohol, the crash will not be counted in this section.

A crash is classified as "alcohol-related" if any driver, pedestrian, or bicyclist is shown by a chemical test to be positive for alcohol. Thus, alcohol at the *.01-or-higher* level or higher makes the crash alcohol-related. In the absence of test data, if the officer reports that he or she believes the person had been drinking, or was under the influence, the crash is also classified as alcohol-related. Though rare, an officer sometimes reports he or she believed a person had been drinking or was under the influence, but the alcohol test is negative. In these cases, the test result takes priority over the officer's perception, and the crash is not classified as alcohol-related.

Alcohol-related fatalities and injuries

Once a crash is so classified, no matter whether it was a driver, pedestrian, or bicyclist that was drinking, then every fatality and injury in the crash is classified as alcohol-related.

Officers' reported perceptions are conservative

Officers are cautious, or conservative, in reporting that a driver, pedestrian, or bicyclist had been drinking or was under the influence. However, officers' cautiousness is less a factor in fatal crashes, because every effort is made to obtain alcohol test results. For less severe crashes, though, the officer's judgment is all that is available. Therefore, alcohol-related non-fatal crashes are almost certain to be considerably underestimated.

Important caveats to the definition

Not all alcohol-related traffic fatalities are due to driving while intoxicated. If a drinking pedestrian or bicyclist is in a crash, and then he or she (or anyone in the crash) dies, the death is an alcohol-related traffic death. In 2002, nine drinking pedestrians and one drinking bicyclist died after colliding with a vehicle driven by a non-drinking driver. (Two more drinking pedestrians died after colliding with drinking drivers.)

Additionally, the definition given above makes an assumption that the person drinking caused, or contributed significantly to the crash. Experts who study fatal traffic crashes in detail confirm that this is almost always true, but it is important to recognize that the assumption is not invariably true. There will be exceptions to the rule.

Sometimes a crash is alcohol-related, but is not classified as such due to inadequate data. For example, a drunk driver may die in a fiery crash and the body may be incinerated. In this case, there may be no evidence remaining that the crash involved alcohol. Or a driver may die and lose all his or her blood from wounds received in the crash, which likewise prevents alcohol tests from being performed.

"Known" versus "estimated" alcohol-related deaths.

Testing drivers for alcohol is the key to accurately classifying crashes. Minnesota is much better at testing than most states. Because many drivers are still not tested, the National Highway Traffic Safety Administration (NHTSA) developed a sophisticated statistical procedure that estimates how many fatalities really were alcohol-related. The idea that a computerized statistical procedure can accurately make such estimates initially invites skepticism. However, NHTSA developed the procedure with the greatest care over many years. (This procedure was once again improved in 2002). Tests of the procedure, performed by having it make estimates for datasets from which critical data was removed and then comparing the estimates against the true parameters (putting back in the data that has been removed), show that the procedure is accurate to within about plus or minus one percentage point.

Tables 2.01 and 2.07 show alcohol-related fatalities for Minnesota using the two procedures (NHTSA's estimating procedure and the state's procedure based on known data). NHTSA's estimate of the true percentage of alcohol-related fatalities is always higher than, but very close to, the state's numbers. The reason the two numbers are so close is that Minnesota does a good job of collecting test results on drivers, pedestrians, and bicyclists in fatal crashes.

Alcohol-related crashes in Minnesota - 2002

Drinking and driving remains a serious problem in Minnesota and across the nation. For 2002, the National Safety Council has made a conservative estimate of $345 million as the cost of alcohol-related crashes in Minnesota. Predictably, there is a strong positive relationship between alcohol use and crash severity. That is, as crash severity increases, alcohol is more likely to have been a factor in the crash. Last year, 7% of minor injures, 13% of moderate injuries, 22% of severe injuries, and 36% of deaths were alcohol-related. In all, 239 known people died and 4,221 known people were injured in crashes classified as alcohol-related. (NHTSA estimates will be higher).

Impaired driving incidents (DWI's) remain steady

There were 32,948 impaired driving incidents last year in Minnesota. This number represents a slight drop of one percent from 2001. There would surely be more impaired driving arrests each year if staffing levels of State Troopers and police officers in Minnesota had not remained static over the past 20 years. These low staffing levels are inconsistent with the fact that the population and the number of roads continue to rise, and the fact that the number of licensed drivers in Minnesota is now quickly approaching 4 million people.

Males and young people especially incur the incidents

Males made up 72% of the DWI offenders last year. Females are getting arrested more and more often though. In 2002, they accounted for 28% of the incidents. (Ten years ago, they were 20% of the offenders.) Impaired driving is especially a problem among young adults. A person can legally buy alcohol at age 21 (raised from 19 in 1986), and drinking and driving too often follows that. Last year, 21-to-34 year-olds committed fully 50% of the incidents on record. Drivers under age 21 accounted for 9%.

Young people and the drinking drivers themselves pay the price.

Young people may have better reflexes than their elders, but as drivers they take more risks and have less experience than older people. They pay a clear price for this. Fifteen-to-thirty-four year-olds accounted for 40% of all traffic deaths, and for fully 53% of the alcohol-related deaths. It is also the drinkers themselves who are more likely to pay the price for their dangerous behavior. Last year, 154 (64%) of the 239 people who died in alcohol-related crashes were themselves the people whose drinking behavior caused the crash to be classified as alcohol-related. In short, drinking drivers, pedestrians, and bicyclists mostly kill and injure themselves. The remaining 85 people who died in the alcohol crashes were non-drinking drivers, pedestrians, or bicyclists, or were drinking or non-drinking vehicle passengers.

When the crashes occur: Weekends, late night

Most alcohol-related crashes occur on Fridays, Saturdays, and Sundays. Combined, these three days accounted for 40% of all traffic crashes, but 61% of the alcohol-related crashes. The late night hours from 9:00 PM to 3:00 AM accounted for 14% of all crashes, but 50% of the alcohol crashes.

Alcohol crashes usually involve just the single vehicle

Fifty-five percent of non-alcohol-related fatal crashes involved collision with another motor vehicle in transport, compared to only 24% of alcohol fatal crashes. Most of the alcohol fatal crashes involved a single vehicle colliding with a fixed object (36%), or a single vehicle losing control and overturning (28%).

The proportion of all deaths that are alcohol-related may fluctuate each year

Across the six years 1996 through 2001, the percentage of all deaths that were alcohol-related started at 36%, then dropped to 30%, then soared to 42%, then plummeted to 31%, and then soared back to 39%. Finally, in 2001, the percentage showed a more plausible deviation, declining by two points, to 37%. In 2002, this percentage was 36%. The base for this percentage--the total number of deaths--is large enough, at around 600 per year, that one would not expect such volatility in the proportion.

The explanation that comes first to mind is that inconsistencies in record-keeping cause the appearance of erratic changes. However, in Minnesota, more effort is invested in accurate data keeping on this problem than on almost any other aspect of traffic safety. Minnesota is consistently at or near the top among the states in the proportion of drivers in fatal crashes who are tested for alcohol. Also, NHTSA developed a procedure (explained on page 38) that compensates for missing data, and NHTSA's estimates of alcohol-related deaths for Minnesota show the same erratic fluctuation in the recent years.

To date, we have no explanation that feels immediately or overwhelmingly persuasive. Still, here is a conjecture: In recent years, Minnesota experienced sharply contrasting winters. Early 2000 is remembered for its mildness and early 1999 is remembered for its harshness. Again, the early months of 1998 were mild. Perhaps the climate--the mere niceness of the weather--causes drinking drivers to be out in greater numbers. Many other factors are at work here also. Speeding and driver inattention continue to be two of the most often reported contributing factors. Plus, we know aggressive driving is on the increase. In conjunction with all of these factors, drinking and driving makes for a volatile mixture. A mixture that will surely result in fluctuating amounts of tragic alcohol-related death and injury.

TABLE 2.01

ALCOHOL-RELATED FATAL CRASH SUMMARY, 1980 - 2002

	Alcohol Concentration Test Results on Fatally Injured Drivers Only									All Traffic Fatalities				
	Drivers Killed			Results on Drivers Tested							Alcohol-Related Fatalities			
	Total	Tested for Alcohol		Negative for alcohol		.01 to .09 alcohol		.10 or higher alcohol		Total	Known *		Estimated **	
Year		number	% of total	number	% of tested	number	% of tested	number	% of tested		number	% of total	number	% of total
1980	519	337	65	103	31	37	11	197	58	863				
1981	437	288	66	110	38	28	10	150	52	763				
1982	321	232	72	106	46	14	6	112	48	581			322	56
1983	345	258	75	113	44	28	11	117	45	558			314	56
1984	383	318	83	133	42	36	11	149	47	584	305	52	332	57
1985	372	295	79	156	53	31	10	108	37	610	261	43	287	47
1986	347	281	81	143	51	24	8	114	41	572	264	46	284	50
1987	297	265	89	132	50	18	7	115	43	530	224	42	248	47
1988	361	313	87	163	52	32	10	118	38	615	277	45	294	48
1989	368	313	85	158	51	26	8	129	41	605	275	45	289	48
1990	334	260	78	129	50	23	9	108	41	568	235	41	258	46
1991	327	242	74	135	56	22	9	85	35	531	212	40	233	44
1992	344	237	69	135	57	13	5	89	38	581	229	39	240	41
1993	355	283	80	174	61	19	7	90	32	538	196	36	216	40
1994	377	303	80	183	60	23	8	97	32	644	226	35	250	39
1995	383	343	90	198	58	30	9	115	34	597	246	41	269	45
1996	359	314	87	209	67	22	7	83	26	576	205	36	222	38
1997	384	345	90	226	66	19	6	100	29	600	178	30	197	33
1998	406	369	91	218	59	29	8	122	33	650	273	42	285	44
1999	426	370	87	254	69	16	4	100	27	626	195	31	206	33
2000	403	375	93	226	60	22	6	127	34	625	245	39	258	41
2001	361	322	89	198	62	23	7	101	31	568	211	37	226	40
2002	430	365	85	223	61	24	7	118	32	657	239	36	NA	NA

* For explanation of the difference between “known” and “estimated” alcohol-related fatalities, see page 38.

** NHTSA recently improved its method of estimating the true percentage of alcohol-related fatalities for each year. The above table reflects these changes back to the year 1982.

TABLE 2.02

IMPAIRED DRIVING INCIDENTS ("DWIs") BY GENDER AND BY AREA OF STATE WHERE ARREST WAS MADE, 1990 - 2002

		Gender				Area of State			
		Male		Female		Metro Area		Non-Metro	
Year	Total	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1990	36,884	29,304	79.4	7,580	20.6	20,709	56.1	16,175	43.9
1991	32,466	25,741	79.3	6,725	20.7	17,591	54.2	14,875	45.8
1992	30,834	24,706	80.1	6,128	19.9	16,315	52.9	14,519	47.1
1993	30,111	24,108	80.1	6,003	19.9	15,595	51.8	14,516	48.2
1994	29,739	22,999	77.3	6,740	22.7	15,477	52.0	14,262	48.0
1995	30,255	22,956	75.9	7,299	24.1	15,678	51.8	14,577	48.2
1996	30,515	23,182	76.0	7,333	24.0	15,774	51.7	14,741	48.3
1997	30,905	23,219	75.1	7,686	24.9	15,954	51.6	14,951	48.4
1998	32,001	23,852	74.5	8,149	25.5	16,537	51.7	15,464	48.3
1999	34,529	25,710	74.5	8,819	25.5	17,126	49.6	17,403	50.4
2000	34,803	25,406	73.0	9,397	27.0	16,739	48.1	18,064	51.9
2001	33,305	24,170	72.6	9,135	27.4	16,284	48.9	17,021	51.1
2002	32,948	23,692	71.9	9,256	28.1	16,147	49.0	16,801	51.0

TABLE 2.03

IMPAIRED DRIVING INCIDENTS ("DWIs") FOR SELECTED AGE GROUPS, 1990 - 2002

		Age										
Year	Total	0-14	15	16	17	18	19	20	Total Under 21	21-34	35-49	50 & Older
1990	36,884	3	19	184	454	989	1,346	1,477	4,472	21,778	8,191	2,443
1991	32,466	9	13	143	328	747	1,033	1,252	3,525	19,062	7,854	2,025
1992	30,834	3	12	111	290	594	830	1,036	2,876	18,055	7,887	2,016
1993	30,111	2	8	89	254	500	744	837	2,434	17,299	8,379	1,999
1994	29,739	5	7	108	233	545	644	761	2,303	16,481	8,871	2,084
1995	30,255	1	20	111	243	519	723	799	2,416	16,368	9,302	2,169
1996	30,515	2	10	135	300	608	791	826	2,672	15,815	9,762	2,266
1997	30,905	5	17	102	273	627	751	886	2,661	15,495	10,283	2,466
1998	32,001	2	17	102	297	675	888	911	2,892	15,624	10,973	2,512
1999	34,529	4	18	114	285	740	1,004	1,032	3,197	17,100	11,479	2,753
2000	34,803	5	10	124	330	691	984	1,104	3,248	17,245	11,472	2,838
2001	33,305	2	14	118	277	636	911	1,030	2,988	16,791	10,740	2,786
2002	32,948	6	13	122	298	655	849	1,086	3,029	16,594	10,379	2,946

FIGURE 2.01

PERCENT OF IMPAIRED DRIVING INCIDENTS ("DWIs") COMMITTED BY OFFENDERS IN FOUR AGE GROUPS, 1990 - 2002

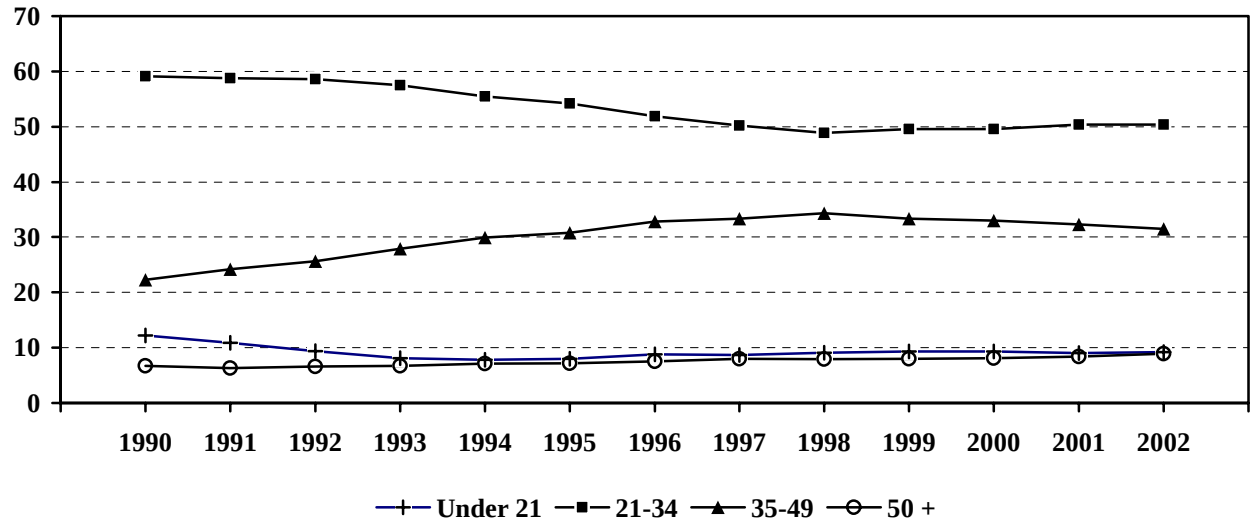


TABLE 2.04

IMPAIRED DRIVING INCIDENTS ("DWIs") BY AGE, 1990 - 2002

	Age Group																
Year	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total
1990	3	2,992	8,287	8,548	6,420	4,073	2,629	1,489	997	591	420	238	127	52	15	3	36,884
1991	9	2,264	7,167	7,051	6,096	3,985	2,580	1,289	815	482	355	216	92	49	13	3	32,466
1992	3	1,837	6,940	6,284	5,867	3,916	2,498	1,473	828	510	357	173	100	35	9	4	30,834
1993	2	1,595	6,377	5,944	5,815	4,295	2,577	1,507	870	512	296	184	94	35	5	3	30,111
1994	5	1,537	5,819	5,608	5,815	4,224	2,891	1,756	849	567	339	188	81	44	12	4	29,739
1995	1	1,616	5,850	5,517	5,800	4,536	3,034	1,732	957	550	324	185	93	43	17	0	30,255
1996	2	1,844	5,731	5,507	5,403	4,719	3,144	1,899	991	589	317	213	96	43	16	1	30,515
1997	5	1,770	5,733	5,651	4,997	4,888	3,295	2,100	1,154	615	335	204	96	46	14	2	30,905
1998	2	1,979	6,176	5,513	4,846	5,160	3,591	2,222	1,137	671	333	192	102	57	18	2	32,001
1999	4	2,161	7,389	5,843	4,900	5,267	3,844	2,368	1,330	670	405	190	98	45	12	3	34,529
2000	5	2,139	7,725	5,819	4,805	5,071	3,922	2,479	1,396	692	368	191	118	55	18	0	34,803
2001	2	1,956	7,839	5,437	4,545	4,408	3,887	2,445	1,450	649	333	194	99	43	14	4	33,305
2002	6	1,937	8,080	5,255	4,345	4,030	3,849	2,500	1,451	754	355	198	105	60	18	5	32,948

TABLE 2.05

AGE OF PERSONS KILLED AND INJURED IN ALL CRASHES AND IN ALCOHOL - RELATED CRASHES, 2002

	Persons Killed		Persons Injured by Severity						Total Persons Injured	
			Severe		Moderate		Minor			
Age Group	All	Alcohol-Related[1]	All	Alcohol-Related[2]	All	Alcohol-Related[2]	All	Alcohol-Related[2]	All	Alcohol-Related[2]
0 - 4	12	1	23	4	150	11	368	16	541	31
5 - 9	12	1	56	8	337	14	524	24	917	46
10 - 14	21	4	102	15	572	34	752	31	1,426	80
15	12	1	56	3	277	17	301	13	634	33
16	26	4	117	15	760	48	902	33	1,779	96
17	20	6	126	19	779	63	934	38	1,839	120
18	19	9	119	21	717	88	834	47	1,670	156
19	20	12	95	25	611	98	754	67	1,460	190
20	11	7	101	29	545	99	752	95	1,398	223
Total Under 21	153	45	795	139	4,748	472	6,121	364	11,664	975
0 - 14	45	6	181	27	1,059	59	1,644	71	2,884	157
15 – 19	97	32	513	83	3,144	314	3,725	198	7,382	595
20 - 24	74	49	442	146	2,218	484	3,102	373	5,762	1,003
25 - 29	47	21	235	81	1,193	234	2,037	163	3,465	478
30 - 34	47	25	221	61	1,080	188	1,902	169	3,203	418
35 - 39	38	23	197	63	992	175	1,856	168	3,045	406
40 - 44	55	24	238	63	976	147	1,844	147	3,058	357
45 - 49	42	13	174	33	795	115	1,599	109	2,568	257
50 - 54	49	17	137	20	725	64	1,363	47	2,225	131
55 - 59	27	8	102	17	484	48	837	35	1,423	100
60 - 64	29	8	70	8	372	20	573	25	1,015	53
65 - 69	14	1	50	5	261	19	441	12	752	36
70 - 74	20	3	56	3	244	8	359	12	659	23
75 - 79	23	3	46	2	215	8	363	7	624	17
80 - 84	24	2	46	2	198	4	262	7	506	13
85 & Older	26	4	28	0	115	1	152	2	295	3
Not Stated	0	0	71	13	414	65	1,326	96	1,811	174
Total	657	239	2,807	627	14,485	1,953	23,385	1,641	40,677	4,221

1 Based on alcohol test results plus officer's perception of possible alcohol involvement as noted on crash report.

2 Based only on officer's perception of possible alcohol involvement as noted on crash report.

***** As shown, there were 239 alcohol-related traffic deaths in year 2002. Fifteen of those deaths were to pedestrians, and 11 of those 15 pedestrians were drinking. In 2 of the 11 crashes involving drinking pedestrians, the motor vehicle driver had also been drinking. Additionally, 1 bicyclist was among the 239 alcohol-related deaths, and it was the bicyclist (not the driver) who had been drinking.

TABLE 2.06

2002 ALCOHOL - RELATED FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TRAFFIC ROLE

Traffic Role	Killed	Tested	Alcohol Concentration (.00)	(.01 - .09)	(.10 or more)
Car or Truck Driver	141	134	10	21	103
Car or Truck Passenger	55	36	6	6	24
Motorcycle Driver	18	18	2	3	13
Motorcycle Passenger	3	1	0	0	1
Snowmobile Driver	1	1	0	0	1
ATV Driver	1	1	0	0	1
Pedestrian	15	13	2	0	11
Bicyclist	1	1	0	0	1
Other/Unknown	4	3	0	1	2
Total	239	208	20	31	157

TABLE 2.07

PERCENT OF DEATHS, INJURIES, AND PROPERTY DAMAGE CRASHES DETERMINED TO BE ALCOHOL - RELATED, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Deaths* (Known)	36%	35%	41%	36%	30%	42%	31%	39%	37%	36%
(Estimated)	40%	39%	45%	38%	33%	44%	33%	41%	40%	NA
Injuries**	12%	11%	11%	11%	11%	11%	10%	10%	10%	10%
Property Damage Crashes**	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

* Based on alcohol test results plus officer's perception of possible alcohol involvement as noted on crash report. See pp. 37-38 regarding known and estimated alcohol-related fatalities. Estimated deaths are not available for 2002.
** Based only on police officer's perception of possible alcohol involvement as noted on crash report.

TABLE 2.08

FIRST HARMFUL EVENT IN ALCOHOL-RELATED FATAL CRASHES AND ALL FATAL CRASHES, 2002

First Harmful Event	All Fatal Crashes Number	Percent	Alcohol-Related Fatal Crashes * Number	Percent
Collision with:				
Another Motor Vehicle	257	43.6%	50	23.7%
Parked Motor Vehicle	2	0.3	1	0.5
Railroad Train	6	1.0	1	0.5
Bicycle	7	1.2	1	0.5
Pedestrian	46	7.8	14	6.6
Deer	5	0.8	0	0.0
Other Animal	2	0.3	2	1.0
Fixed Object	136	23.0	77	36.5
Non-Collision:				
Overturn	116	19.7	59	28.0
Fire/Explosion	2	0.3	0	0.0
Other/Unknown	11	1.9	6	2.8
Total	590	100.0%	211	100.0%

* Based on alcohol test results plus officer's perception of possible alcohol involvement as noted on crash report.

TABLE 2.09

TEST RESULTS OF DRIVERS KILLED, 1993 - 2002

Year	Killed	Tested	Alcohol Concentration* (.00)	(.01 - .09)	(.10 or more)
1993	355	283	174 (61%)	19 (7%)	90 (32%)
1994	377	303	183 (60%)	23 (8%)	97 (32%)
1995	383	343	198 (58%)	30 (9%)	115 (34%)
1996	359	314	209 (67%)	22 (7%)	83 (26%)
1997	384	345	226 (66%)	19 (5%)	100 (29%)
1998	406	369	218 (59%)	29 (8%)	122 (33%)
1999	426	370	254 (69%)	16 (4%)	100 (27%)
2000	403	375	226 (60%)	22 (6%)	127 (34%)
2001	361	322	198 (61%)	23 (7%)	101 (31%)
2002	430	365	223 (61%)	24 (7%)	118 (32%)

* Percents based on drivers tested.

TABLE 2.10

DRIVERS KILLED WHO TESTED .01 OR HIGHER, 1993 - 2002 ("Any Alcohol")

Year	Total	Male		Female		Occurred Between Midnight - 3 AM		Under Legal Age	
1993	109	92	(84%)	17	(16%)	35	(32%)	11	(10%)
1994	120	100	(83%)	20	(17%)	24	(20%)	15	(13%)
1995	145	121	(83%)	24	(17%)	43	(30%)	12	(8%)
1996	105	81	(77%)	24	(23%)	31	(30%)	16	(15%)
1997	119	102	(86%)	17	(14%)	32	(27%)	13	(11%)
1998	151	126	(83%)	25	(17%)	41	(27%)	26	(17%)
1999	116	98	(84%)	16	(16%)	30	(26%)	16	(14%)
2000	149	125	(84%)	24	(16%)	47	(32%)	15	(10%)
2001	124	104	(84%)	20	(16%)	37	(30%)	17	(14%)
2002	142	124	(87%)	18	(13%)	41	(29%)	23	(16%)

TABLE 2.11

DRIVERS KILLED WHO TESTED .10 OR HIGHER, 1993 - 2002 ("Over Limit")

Year	Total	Male		Female		Occurred Between Midnight - 3 AM		Under Legal Age	
1993	90	75	(83%)	15	(17%)	32	(36%)	7	(8%)
1994	97	83	(86%)	14	(14%)	20	(21%)	8	(8%)
1995	115	97	(84%)	18	(16%)	38	(33%)	6	(5%)
1996	83	65	(78%)	18	(22%)	25	(30%)	13	(16%)
1997	100	89	(89%)	11	(11%)	32	(32%)	13	(13%)
1998	122	104	(85%)	18	(15%)	36	(30%)	19	(16%)
1999	100	87	(87%)	13	(13%)	26	(26%)	14	(14%)
2000	127	105	(83%)	22	(17%)	43	(34%)	14	(11%)
2001	101	86	(85%)	15	(15%)	31	(31%)	15	(15%)
2002	118	102	(86%)	16	(14%)	34	(29%)	16	(14%)

Figure 2.02

Killed Drivers Tested for Alcohol: Percent over .01 Alcohol Level and Percent over .10 Alcohol Level, 1971 - 2002

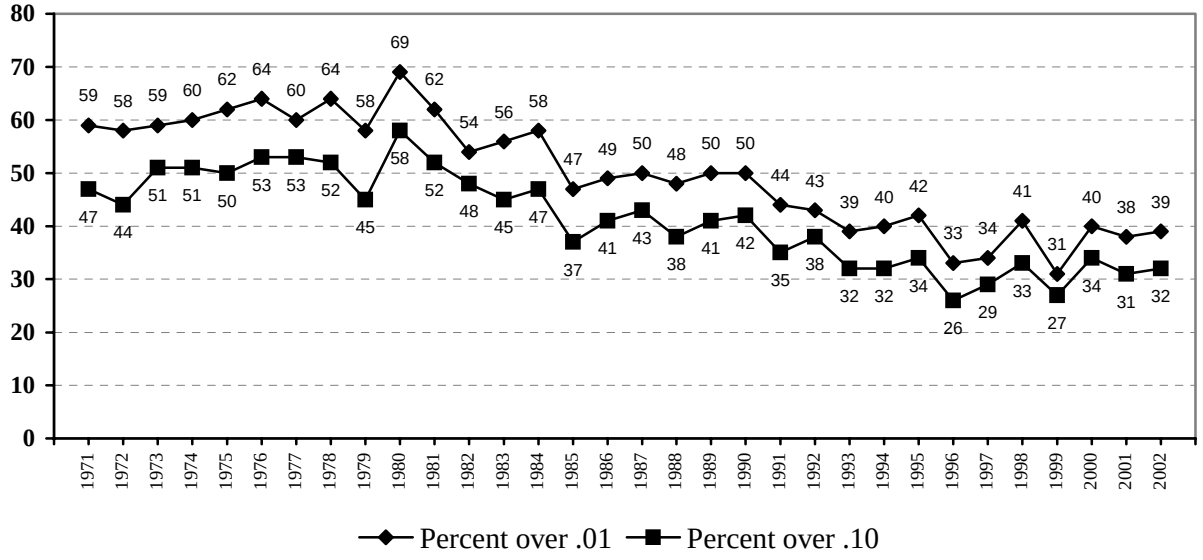


FIGURE 2.03

Percent of Drivers Killed Who Had Been Drinking, by Age, 2002

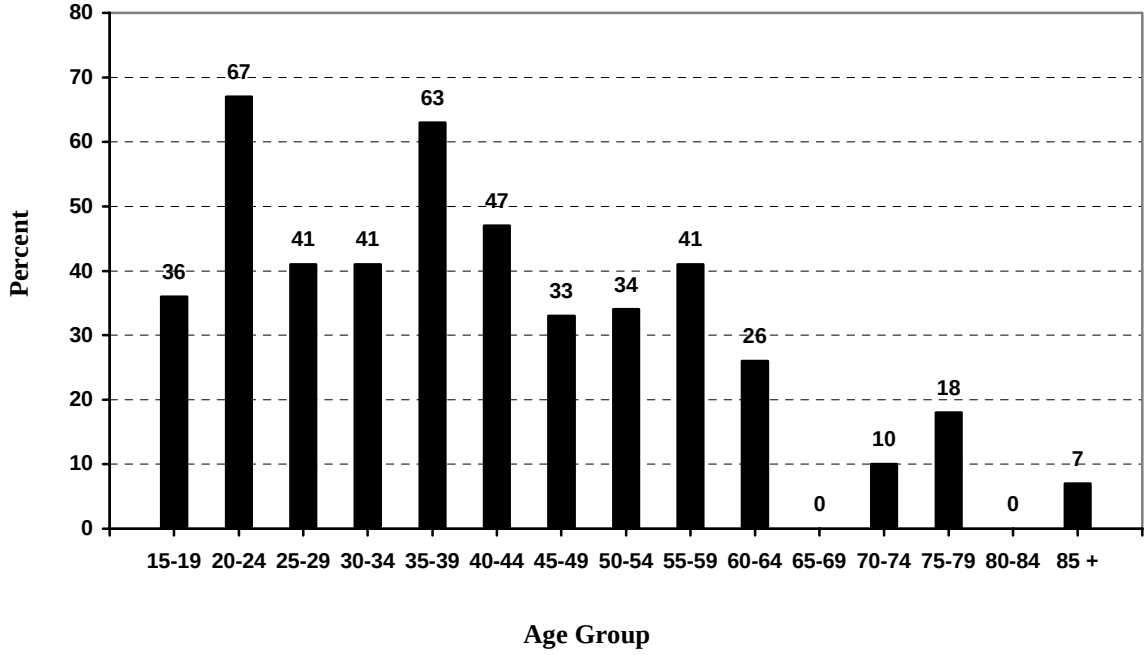


TABLE 2.12

2002 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

			Alcohol Concentration						Alcohol Concentration						
			(.00)		(.01 - .09)		(.10 or more)								
Age	Killed	Tested	number	percent	number	percent	number	percent	.00	.01-.04	.05-.09	.10-.14	.15-.19	.20-.24	.25& over
14 & Younger	0	0	0		0		0		0	0	0	0	0	0	0
15	2	1	1		0		0		1	0	0	0	0	0	0
16	18	14	13		0		1		13	0	0	0	0	1	0
17	13	13	8		1		4		8	0	1	1	3	0	0
18	11	11	6		2		3		6	0	2	0	1	2	0
19	15	14	6		3		5		6	1	2	0	4	0	1
20	5	5	1		1		3		1	1	0	1	1	0	1
Under 21	64	58	35		7		16		35	2	5	2	9	3	2
14 & Younger	0	0	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0	0
15 - 19	59	53	34	64.2	6	11.3	13	24.5	34	1	5	1	8	3	1
20 - 24	46	42	14	33.3	6	14.3	22	52.4	14	2	4	4	7	6	5
25 - 29	35	29	17	58.6	3	10.3	9	31.0	17	1	2	2	3	1	3
30 - 34	34	32	19	59.4	1	3.1	12	37.5	19	1	0	3	2	6	1
35 - 39	34	27	10	37.0	2	7.4	15	55.6	10	1	1	4	6	2	3
40 - 44	43	38	20	52.6	2	5.3	16	42.1	20	2	0	2	3	5	6
45 - 49	31	27	18	66.7	2	7.4	7	25.9	18	1	1	2	1	2	2
50 - 54	36	29	19	65.5	1	3.4	9	31.0	19	1	0	1	1	5	2
55 - 59	18	17	10	58.8	0	0.0	7	41.2	10	0	0	3	1	2	1
60 - 64	21	19	14	73.7	0	0.0	5	26.3	14	0	0	0	1	4	0
65 - 69	14	9	9	100.0	0	0.0	0	0.0	9	0	0	0	0	0	0
70 - 74	12	10	9	90.0	0	0.0	1	10.0	9	0	0	0	0	1	0
75 - 79	16	11	9	81.8	0	0.0	2	18.2	9	0	0	0	1	1	0
80 - 84	14	7	7	100.0	0	0.0	0	0.0	7	0	0	0	0	0	0
85 +	17	15	14	93.3	1	6.7	0	0.0	14	1	0	0	0	0	0
Total	430	365	223	61.1	24	6.6	118	32.3	223	11	13	22	34	38	24

* Percents, based on drivers tested, may not add to 100.0% due to rounding.

TABLE 2.13

2002 ALCOHOL - RELATED CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	13	198	238	449	14	293
February	22	206	204	432	27	328
March	11	213	219	443	11	306
April	22	221	188	431	23	325
May	15	228	190	433	19	337
June	24	230	231	485	27	345
July	13	260	183	456	17	418
August	18	285	237	540	19	423
September	19	251	236	506	20	357
October	16	250	214	480	18	365
November	18	237	230	485	19	356
December	20	248	244	512	25	368
Total	211	2,827	2,614	5,652	239	4,221

TABLE 2.14

2002 ALCOHOL - RELATED CRASHES BY ROADWAY TYPE

Roadway Type	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Urban Interstate	14	192	242	448	15	273
Rural Interstate	7	51	44	102	11	76
Urban Trunk Hwy	16	356	335	707	16	578
Rural Trunk Hwy	54	438	285	777	63	714
County State Aid Hwy	83	917	669	1,669	94	1,344
County Road	14	107	78	199	15	157
Township Road	8	167	101	276	8	245
Local Street	15	574	821	1,410	17	804
Other	0	25	39	64	0	30
Total	211	2,827	2,614	5,652	239	4,221

FIGURE 2.04

2002 Alcohol-Related Crashes by Time of Day

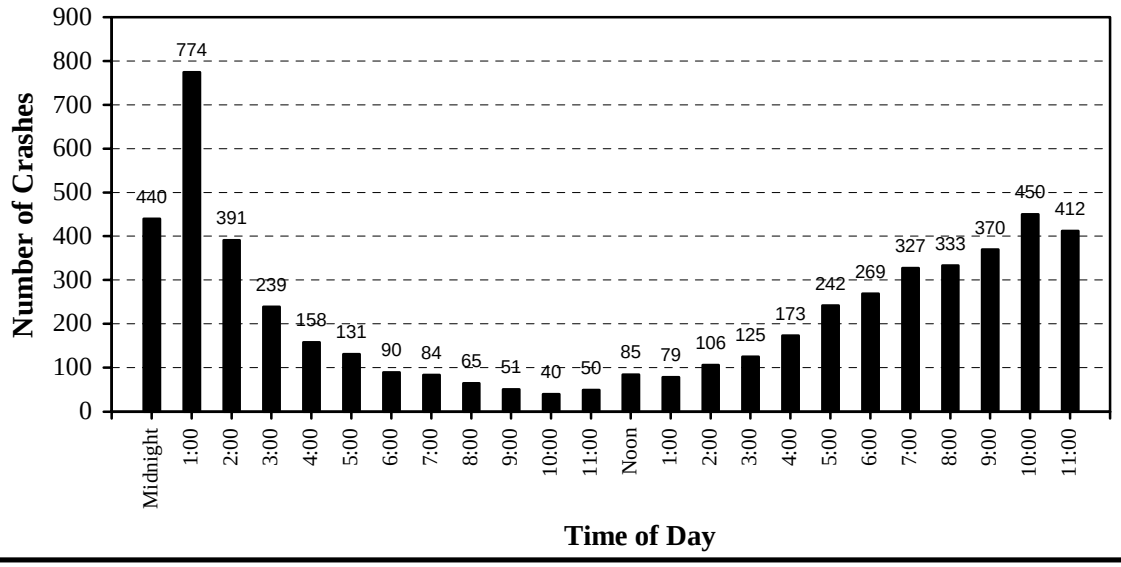


FIGURE 2.05

2002 Alcohol-Related Crashes by Day of Week

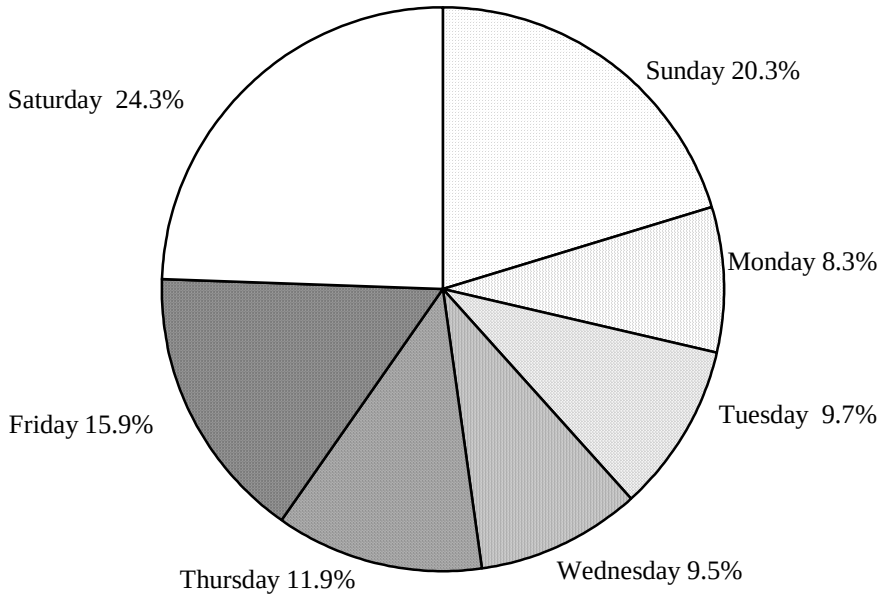


TABLE 2.15

2002 ALCOHOL-RELATED CRASHES BY TIME OF DAY AND DAY OF WEEK

Hour Beginning	Sun-day	Mon-day	Tues-day	Wednes-day	Thurs-day	Fri-day	Satur-day	Total Crashes	Total Killed	Total Injured
Midnight	127	39	33	35	41	48	117	440	19	342
1:00 AM	199	48	63	51	80	103	230	774	42	554
2:00 AM	112	26	27	25	34	55	112	391	14	246
3:00 AM	65	7	24	17	18	35	73	239	7	168
4:00 AM	49	6	4	12	18	14	55	158	7	111
5:00 AM	43	8	9	7	15	14	35	131	14	95
6:00 AM	27	4	6	7	5	11	30	90	3	63
7:00 AM	26	7	8	4	9	7	23	84	6	53
8:00 AM	16	8	6	5	4	5	21	65	1	41
9:00 AM	9	6	7	8	10	3	8	51	1	32
10:00 AM	5	0	4	5	5	10	11	40	1	27
11:00 AM	11	6	4	7	7	7	8	50	0	40
Noon	21	7	9	9	9	11	19	85	4	73
1:00 PM	9	10	10	11	7	13	19	79	1	46
2:00 PM	11	8	12	14	18	24	19	106	1	84
3:00 PM	9	14	11	14	15	23	39	125	2	87
4:00 PM	35	19	19	16	24	29	31	173	6	135
5:00 PM	54	31	24	24	28	36	45	242	17	201
6:00 PM	43	31	38	26	44	37	50	269	13	217
7:00 PM	48	32	47	39	33	49	79	327	15	276
8:00 PM	53	31	42	40	45	66	56	333	17	288
9:00 PM	48	38	38	40	58	80	68	370	12	274
10:00 PM	51	29	51	64	59	104	92	450	15	356
11:00 PM	33	40	37	48	56	92	106	412	15	309
Unknown	41	16	18	9	32	25	27	168	6	103
Total	1,145	471	551	537	674	901	1,373	5,652	239	4,221

III: SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS IN 2002 CRASHES

Safety benefits and legislation

Studies estimate that using safety restraint devices reduces the risk of death and serious injury by 40% to 60%. In view of this, the Minnesota Legislature enacted laws mandating safety equipment use. The Child Passenger Protection Act took effect in 1982, and was amended in 1983 and 1987. It requires children under the age of four to be properly restrained in a federally approved child car seat. In 1993, the Legislature increased the fine for not using a child car seat from $25 to $50. The state's safety belt law went into effect in 1986 and was amended in 1988 and 1991. It requires all front seat occupants (and children ages four through ten, regardless of seating position) to wear safety belts.

Tables in this section focus on the use of safety equipment by people in crashes who were occupants of vehicles normally equipped with safety equipment (e.g., passenger cars and trucks rather than motorcycles). The data pose a problem in that safety equipment use was reported as "unknown" for 7% of the persons killed and 15% of the persons injured in 2002. Assuming, however, that reporting behavior does not change radically from year to year, the data presented here are useful in indicating general trends in usage.

Safety belt use responds to legislation

Observational surveys of safety belt use conducted annually at random sites around Minnesota show that legislation affects safety-belt wearing behavior--thus saving lives and preventing injuries. In June 1986, before the first safety belt law took effect, 20% of vehicle occupants used belts. The use rate jumped to 33% after the 1986 law took effect, to 47% after a $10 fine was added in 1988, and to 53% after the fine was increased to $25 in 1991. Educational and special traffic enforcement strategies also have benefits. After the introduction of *Safe & Sober* (an intensive traffic safety enforcement and public information campaign), the use rate jumped from about 57% in 1994 to 65% in 1995. Other states--especially those with primary seat belt laws--have still higher rates.

Occupant fatalities increase in 2002

In 2002, 544 motor vehicle occupants died in crashes --an 18% increase from year 2001. Also, vehicle occupants injured (36,535) decreased 4% from 2001. However, these figures conceal an even more dramatically beneficial trend that started in the mid-1980s. Specifically, severe injuries have been "trading off" with moderate and minor injuries. They are steadily declining as the less severe injuries are increasing in the decade and a half since the seat belt legislation of the mid-1980s. In 1987, 4,176 motor vehicle occupants suffered severe injuries. In 2002, that number decreased to 2,222. This is encouraging news. By definition, minor (or "possible") and moderate (or "non-incapacitating") injuries do not produce long-term and severe suffering, while severe injuries often cause such suffering, including consequences such as severe and permanent brain damage, paralysis, and dismemberment.

Seat belt use increases in 2002

According to the August 2002 observational survey, belt use among front-seat occupants averaged 80% across all of Minnesota--an increase of six percentage points from 2001.

Airbag update: always wear your seat belt

In 2002, airbag deployment was reported 4,775 times when the occupant was also wearing a seat belt. Fifty-one percent of these incidents resulted in no apparent injury. Airbags deployed 509 times when occupants were not wearing seat belts. Only 26% of these cases resulted in no apparent injury. The message is clear: always buckle up!

TABLE 3.01

PERCENT OF FRONT SEAT OCCUPANTS WEARING SAFETY BELTS, BY DATE OF OBSERVATION STUDY

Date of Survey	Area of State			Class of Roadway	
	Whole State	Metro	Non-Metro	Major Roads	Local Roads
June 1986	20%	30%	15%	23%	17%
August 1986	33	43	26	35	31
August 1987	32	40	28	35	29
August 1988	47	51	45	48	46
August 1989	44	52	40	44	45
August 1990	47	54	42	49	46
August 1991	53	62	47	53	52
August 1992	51	62	46	55	48
August 1993	55	59	52	57	53
August 1994*	57	58	54	65	54
August 1995	65	68	56	68	64
August 1996	64	67	58	68	62
August 1997	65	67	59	69	63
August 1998	64	67	56	68	63
August 1999	72	73	68	72	68
August 2000	73	74	69	75	71
August 2001	74	75	72	75	69
August 2002	80	83	72	81	76

The seat belt law, which requires all front seat passengers and all passengers under the age of eleven to wear safety belts, became effective in Minnesota on August 1, 1986 The June 1986 survey was conducted prior to the implementation of the law; all other studies were conducted after the law went into effect.

The usage rate is not a simple ratio of the number of persons observed belted to the total number of people observed. It is, instead, the ratio of estimated time on the road that front seat occupants are using safety belts to the total estimated time on the road for these occupants.

* A new survey design was initiated in August 1994. The new survey design uses different sites and is not strictly comparable to the prior design.

TABLE 3.02

MOTOR VEHICLE OCCUPANTS KILLED OR INJURED BY EJECTION STATUS AND INJURY SEVERITY, 2002

	Killed		Severe Injury		Moderate Injury		Minor Injury		Total Persons Killed or Injured	
Ejection Status	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Not Ejected	360	1.3	1,629	5.9	9,954	35.8	15,887	57.1	27,830	100.0%
Partly Ejected	35	20.6	34	20.0	64	37.7	37	21.8	170	100.0
Ejected	135	20.3	172	25.8	225	33.8	134	20.1	666	100.0
Not Stated	14	0.2	387	4.6	2,489	29.6	5,523	65.6	8,413	100.0
Total	544	1.5	2,222	6.0	12,732	34.3	21,581	58.2	37,079	100.0

TABLE 3.03

MOTOR VEHICLE OCCUPANTS KILLED OR INJURED, BY AGE AND INJURY SEVERITY, 2002

		Injured			
Age Group	**Killed**	**Severe**	**Moderate**	**Minor**	**Total**
0 - 4	8	12	124	340	476
5 - 9	9	29	243	436	708
10 - 14	18	57	381	571	1,009
15 - 19	89	447	2,915	3,529	6,891
20 - 24	63	378	2,002	2,915	5,295
25 - 29	36	194	1,061	1,917	3,172
30 - 34	40	186	942	1,772	2,900
35 - 39	35	149	867	1,745	2,761
40 - 44	41	167	839	1,680	2,686
45 - 49	32	121	660	1,497	2,278
50 - 54	37	98	611	1,254	1,963
55 - 59	19	77	426	778	1,281
60 - 64	19	54	337	545	936
65 - 69	14	45	237	419	701
70 - 74	18	49	230	346	625
75 - 79	22	40	206	349	595
80 - 84	19	39	189	249	477
85 & Older	25	25	109	144	278
Not Stated	0	55	353	1,095	1,503
Total	544	2,222	12,732	21,581	36,535

FIGURE 3.01
Safety Equipment Use Among Motor Vehicle Occupants Killed and Injured, by Age, 2002

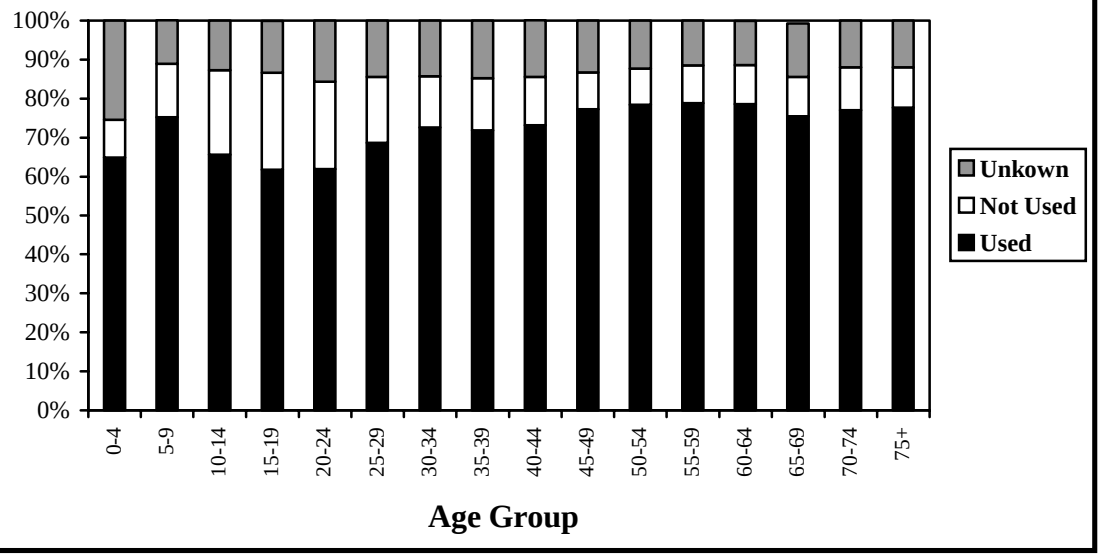


TABLE 3.04

SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS, BY GENDER AND INJURY SEVERITY, 2002

				Injured						
	Killed			Severe		Moderate		Minor		
	Female	Male	Total	Female	Male	Female	Male	Female	Male	Total
Used	96	110	206	581	440	4,570	3,693	9,283	6,558	25,214
Not Used	77	222	299	283	483	1,118	1,562	1,044	1,230	5,742
Unknown	17	22	39	182	245	748	966	1,511	1,442	5,579
Total	190	354	544	1,046	1,168	6,436	6,221	11,838	9,230	36,535

Note: Gender was not reported for 596 persons injured (mostly those with minor injuries), causing the "Total" to be 596 greater than the sum of the "severe," "moderate," and "minor" injury columns.

TABLE 3.05

SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS KILLED OR INJURED, BY AGE AND INJURY SEVERITY, 2002

Age Group	Restraint Use	Killed		Injured							
				Severe		Moderate		Minor		Total	
		#	%	#	%	#	%	#	%	#	%
0 – 3 Years	Used	5	71.4	4	50.0	52	62.2	172	74.1	228	70.6
	Not Used	1	14.3	3	37.5	10	12.1	18	7.8	31	9.6
	Unknown	1	14.3	1	12.5	21	25.3	42	18.1	64	19.8
	Subtotal	7	100.0	8	100.0	83	100.0	232	100.0	323	100.0
4 – 10 Years	Used	5	41.7	19	48.7	250	72.7	470	71.3	739	70.9
	Not Used	7	58.3	15	38.5	48	14.0	78	11.8	141	13.5
	Unknown	0	0.0	5	12.8	46	13.4	111	16.8	162	15.6
	Subtotal	12	100.0	39	100.0	344	100.0	659	100.0	1,042	100.0
Total 0 – 10 Years	Used	10	52.6	23	48.9	302	70.7	642	72.0	967	70.8
	Not Used	8	42.1	18	38.3	58	13.6	96	10.8	172	12.6
	Unknown	1	5.3	6	12.8	67	15.7	153	17.2	226	16.6
	Subtotal	19	100.0	47	100.0	427	100.0	891	100.0	1,365	100.0
0 – 4 Years	Used	6	75.0	6	50.0	77	62.1	225	66.2	308	64.7
	Not Used	1	12.5	4	33.3	12	9.7	30	8.8	46	9.7
	Unknown	1	12.5	2	16.8	35	28.2	85	25.0	122	25.6
	Subtotal	8	100.0	12	100.0	124	100.0	340	100.0	476	100.0
5 – 9 Years	Used	4	44.4	14	48.3	189	77.8	332	76.2	535	75.6
	Not Used	5	55.6	11	37.9	33	13.6	49	11.2	93	13.1
	Unknown	0	0.0	4	13.8	21	8.6	55	12.6	80	11.3
	Subtotal	9	100.0	29	100.0	243	100.0	436	100.0	708	100.0
10 – 14 Years	Used	8	44.4	27	47.4	229	60.1	410	71.8	666	66.0
	Not Used	8	44.4	21	36.8	113	29.7	81	14.2	215	21.3
	Unknown	2	11.1	9	15.8	39	10.2	80	14.0	128	12.7
	Subtotal	18	100.0	57	100.0	381	100.0	571	100.0	1,009	100.0
15 – 19 Years	Used	20	22.5	160	35.8	1,705	58.5	2,431	68.9	4,296	62.3
	Not Used	62	69.7	210	47.0	834	28.6	627	17.8	1,671	24.2
	Unknown	7	7.9	77	17.2	376	12.9	471	13.4	924	13.4
	Subtotal	89	100.0	447	100.0	2,915	100.0	3,529	100.0	6,891	100.0
20 – 24 Years	Used	13	20.6	114	30.2	1,152	57.5	2,036	69.8	3,302	62.4
	Not Used	42	66.7	177	46.8	546	27.3	435	14.9	1,158	21.9
	Unknown	8	12.7	87	23.0	304	15.2	444	15.2	835	15.8
	Subtotal	63	100.0	378	100.0	2,002	100.0	2,915	100.0	5,295	100.0
25 – 29 Years	Used	12	33.3	96	49.5	661	62.3	1,435	74.9	2,192	69.1
	Not Used	22	61.1	64	33.0	249	23.5	207	10.8	520	16.4
	Unknown	2	5.6	34	17.5	151	14.2	275	14.4	460	14.5
	Subtotal	36	100.0	194	100.0	1,061	100.0	1,917	100.0	3,127	100.0
30 – 34 Years	Used	13	32.5	91	48.9	635	67.4	1,394	78.7	2,120	73.1
	Not Used	23	57.5	53	28.5	170	18.0	141	8.0	364	12.6
	Unknown	4	10.0	42	22.6	137	14.5	237	13.4	416	14.3
	Subtotal	40	100.0	186	100.0	942	100.0	1,772	100.0	2,900	100.0
35 – 39 Years	Used	7	20.0	65	43.6	580	66.9	1,358	77.8	2,003	72.6
	Not Used	25	71.4	56	37.6	153	17.6	137	7.8	346	12.5
	Unknown	3	8.6	28	18.8	134	15.5	250	14.3	412	14.9
	Subtotal	35	100.0	149	100.0	867	100.0	1,745	100.0	2,716	100.0

TABLE 3.05 CONTINUED

SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS KILLED OR INJURED, BY AGE AND INJURY SEVERITY, 2002

Age Group	Restraint Use	Killed		Injured							
				Severe		Moderate		Minor		Total	
		#	%	#	%	#	%	#	%	#	%
40 – 44	Used	10	24.4	86	51.5	603	71.9	1,296	77.1	1,985	73.9
Years	Not Used	27	65.8	47	28.1	124	14.8	139	8.3	310	11.5
	Unknown	4	9.8	34	20.4	112	13.4	245	14.6	391	14.6
	Subtotal	41	100.0	167	100.0	839	100.0	1,680	100.0	2,686	100.0
45 – 49	Used	17	53.1	69	57.0	493	74.7	1,206	80.6	1,768	77.6
Years	Not Used	15	46.9	24	19.8	89	13.5	89	6.0	202	8.9
	Unknown	0	0.0	28	23.1	78	11.8	202	13.5	308	13.5
	Subtotal	32	100.0	121	100.0	660	100.0	1,497	100.0	2,278	100.0
50 – 54	Used	20	54.0	66	67.4	449	73.5	1,033	82.4	1,548	78.9
Years	Not Used	15	40.5	17	17.4	79	12.9	75	6.0	171	8.7
	Unknown	2	5.4	15	15.3	83	13.6	146	11.6	244	12.4
	Subtotal	37	100.0	98	100.0	611	100.0	1,254	100.0	1,963	100.0
55 – 59	Used	7	36.8	45	58.4	332	77.9	641	82.4	1,018	79.5
Years	Not Used	11	57.9	16	20.8	54	12.7	45	5.8	115	9.0
	Unknown	1	5.3	16	20.8	40	9.4	92	11.8	148	11.6
	Subtotal	19	100.0	77	100.0	426	100.0	778	100.0	1,281	100.0
60 – 64	Used	4	21.0	40	74.1	268	79.5	439	80.6	747	79.8
Years	Not Used	15	79.0	10	18.5	35	10.4	36	6.6	81	8.6
	Unknown	0	0.0	4	7.4	34	10.1	70	12.8	108	11.5
	Subtotal	19	100.0	54	100.0	337	100.0	545	100.0	936	100.0
65 – 69	Used	10	71.4	22	48.9	159	67.1	349	83.3	530	75.6
Years	Not Used	4	28.6	12	26.7	34	14.4	27	6.4	73	10.4
	Unknown	0	0.0	11	24.4	44	18.6	43	10.3	98	14.0
	Subtotal	14	100.0	45	100.0	237	100.0	419	100.0	701	100.0
70 – 74	Used	8	44.4	29	59.2	167	72.6	291	84.1	487	77.9
Years	Not Used	8	44.4	11	22.4	33	14.4	19	5.5	63	10.1
	Unknown	2	11.1	9	18.4	30	13.0	36	10.4	75	12.0
	Subtotal	18	100.0	49	100.0	230	100.0	346	100.0	625	100.0
75 &	Used	46	70.8	67	64.4	397	79.1	587	79.1	1,051	78.0
Older	Not Used	16	24.6	18	17.3	58	11.6	54	7.3	130	9.6
	Unknown	3	4.6	19	18.3	47	9.4	101	13.6	167	12.4
	Subtotal	65	100.0	104	100.0	502	100.0	742	100.0	1,348	100.0
Age	Used	1	100.0	25	45.4	191	53.8	442	40.4	658	43.7
Not	Not Used	0	0.0	16	29.1	72	20.3	96	8.8	184	12.2
Stated	Unknown	0	0.0	14	25.4	92	25.9	557	50.9	663	44.0
	Subtotal	1	100.0	55	100.0	355	100.0	1,095	100.0	1,505	100.0
All	Used	206	37.9	1,022	46.0	8,287	65.1	15,905	73.7	25,214	69.0
Ages	Not Used	299	55.0	767	34.5	2,688	21.1	2,287	10.6	5,742	15.7
	Unknown	39	7.2	433	19.5	1,757	13.8	3,389	15.7	5,579	15.3
	Subtotal	544	100.0	2,222	100.0	12,732	100.0	21,581	100.0	36,535	100.0

(Persons aged 0 through 3 and 4 through 10 years old are categorized in separate groups because Minnesota law makes special provisions for these age groups. Percentages may not sum to 100.0% due to rounding.)

TABLE 3.06

PERCENT OF INJURED OR KILLED MOTOR VEHICLE OCCUPANTS WHO USED SAFETY EQUIPMENT, BY INJURY SEVERITY AND YEAR, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Killed										
Used	32.1	25.4	27.1	30.3	37.5	30.3	31.6	29.4	31.1	37.9
Not Used	52.6	56.3	48.3	52.6	45.9	48.7	50.0	54.4	54.8	55.0
Unknown	15.3	18.3	24.6	17.1	16.6	21.0	18.4	16.2	14.1	7.2
Injured										
Severe Injuries										
Used	40.7	43.0	41.7	44.8	45.4	43.8	44.9	45.7	47.1	46.0
Not Used	37.4	37.6	37.2	35.9	35.2	36.0	34.2	33.5	34.4	34.5
Unknown	21.9	19.4	21.1	19.3	19.4	20.1	20.9	20.8	18.5	19.5
Moderate Injuries										
Used	51.8	54.5	55.3	57.5	59.0	59.3	61.0	63.1	65.3	65.1
Not Used	31.9	29.6	28.4	27.4	25.7	26.0	24.6	22.9	21.1	21.1
Unknown	16.3	15.9	16.2	15.1	15.3	14.7	14.4	14.0	13.5	13.8
Minor Injuries										
Used	64.8	65.0	66.8	67.9	69.5	69.9	71.1	72.6	73.6	73.7
Not Used	17.0	16.0	15.2	14.6	13.1	13.4	12.7	11.9	11.2	10.6
Unknown	18.1	19.0	18.0	17.5	17.4	16.7	16.2	15.5	15.2	15.7
Total Injured										
Used	58.7	59.9	61.1	62.9	64.2	64.4	65.7	67.6	69.2	69.0
Not Used	23.5	22.1	21.2	20.3	18.9	19.4	18.4	17.1	16.0	15.7
Unknown	17.9	18.0	17.6	16.8	16.8	16.2	15.9	15.3	14.8	15.3

TABLE 3.07

SAFETY EQUIPMENT USE BY MOTOR VEHICLE OCCUPANTS KILLED AND INJURED, BY ROADWAY TYPE, 2002

	Used		Not Used		Unknown		Total	
Roadway Type	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Interstate	2,771	78.2	441	12.4	331	9.3	3,543	100.0%
US Trunk Hwy	3,475	73.6	785	16.6	463	9.8	4,723	100.0%
MN Trunk Hwy	5,310	71.5	1,194	16.1	922	12.4	7,426	100.0%
CSAH	7,606	67.0	1,826	16.1	1,925	17.0	11,357	100.0%
County Road	539	55.8	256	26.5	171	17.7	966	100.0%
Township Road	524	48.6	362	33.6	191	17.7	1,077	100.0%
Local Street	5,108	65.3	1,145	14.6	1,567	20.0	7,820	100.0%
Other Road	87	52.1	32	19.2	48	28.7	167	100.0%
Total	25,420	68.6	6,041	16.3	5,618	15.2	37,079	100.0%

CSAH = County State Aid Highway

TABLE 3.08

SAFETY EQUIPMENT USE BY MOTOR VEHICLE OCCUPANTS KILLED AND INJURED, BY REGION OF THE STATE, 2002

EMS Region	Percent Used	Percent Not Used	Percent Unknown	Number of People
Metropolitan	71.6	11.4	17.0	19,665
Central	68.0	19.3	12.7	5,568
Northeast	66.0	21.7	12.4	2,138
Northwest	54.3	29.0	16.7	1,192
South Central	67.4	21.5	11.0	1,493
Southeast	67.4	18.0	14.6	3,520
Southwest	59.1	27.4	13.5	2,011
West Central	62.6	27.0	10.4	1,477
Unknown	60.0	20.0	20.0	15
Statewide	68.6	16.3	15.2	37,079

*The regions of the state are shown in the map at right.

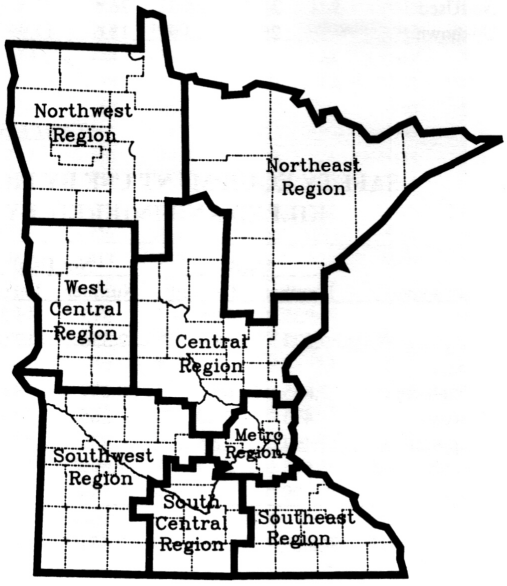


TABLE 3.09

AIRBAG DEPLOYMENTS, 1995 - 2002

		Airbag Deployed		Deployment Not Indicated			
Year	Injury Severity	Belt Used	Belt Not Used	Belt Used	Belt Not Used	Belt Use Unknown	Total
1995	Killed	7	4	127	235	122	495
	Severe Injury	38	14	1,242	1,126	647	3,067
	Moderate Injury	241	46	7,537	3,953	2,281	14,058
	Minor Injury	285	24	16,534	3,817	4,533	25,193
	No Apparent Injury	668	32	93,028	8,393	89,646	191,767
	Total	1,239	120	118,468	17,524	97,229	234,580
1996	Killed	11	8	129	235	79	462
	Severe Injury	67	21	1,298	1,074	590	3,050
	Moderate Injury	356	62	7,964	3,897	2,188	14,467
	Minor Injury	401	47	17,699	3,851	4,653	26,651
	No Apparent Injury	973	51	103,909	8,574	98,418	211,925
	Total	1,808	189	130,999	17,631	105,928	256,555
1997	Killed	12	15	171	209	81	488
	Severe Injury	73	30	1,273	1,012	576	2,964
	Moderate Injury	443	63	7,785	3,524	2,140	13,955
	Minor Injury	457	44	16,549	3,164	4,250	24,464
	No Apparent Injury	1,142	66	98,069	7,600	89,634	196,511
	Total	2,127	218	123,847	15,509	96,681	238,382
1998	Killed	17	8	144	251	112	532
	Severe Injury	88	26	1,129	974	559	2,776
	Moderate Injury	565	113	7,841	3,572	2,079	14,170
	Minor Injury	640	75	15,815	3,082	3,934	23,546
	No Apparent Injury	1,436	89	93,842	7,044	83,677	186,088
	Total	2,746	311	118,771	14,923	90,361	227,112
1999	Killed	20	13	143	245	95	516
	Severe Injury	117	47	1,143	914	588	2,809
	Moderate Injury	746	124	7,883	3,353	2,032	14,138
	Minor Injury	833	73	15,722	2,882	3,766	23,276
	No Apparent Injury	1,777	87	101,556	6,597	84,477	194,494
	Total	3,493	344	126,447	13,991	90,958	235,233
2000	Killed	28	27	125	256	84	520
	Severe Injury	132	38	1,022	809	524	2,525
	Moderate Injury	850	147	7,995	3,067	1,957	14,016
	Minor Injury	936	84	16,320	2,732	3,681	23,753
	No Apparent Injury	2,106	107	111,072	6,275	87,803	207,363
	Total	4,052	403	136,534	13,139	94,049	248,177
2001	Killed	22	23	121	229	65	460
	Severe Injury	149	51	960	760	436	2,356
	Moderate Injury	915	119	7,563	2,624	1,756	12,977
	Minor Injury	976	102	15,664	2,421	3,433	22,596
	No Apparent Injury	2,141	105	105,404	5,519	82,566	195,735
	Total	4,203	400	129,712	11,553	88,256	234,124
2002	Killed	41	28	165	271	39	544
	Severe Injury	140	57	882	710	433	2,222
	Moderate Injury	955	180	7,332	2,508	1,757	12,732
	Minor Injury	1,198	114	14,707	2,173	3,389	21,581
	No Apparent Injury	2,441	130	101,861	5,022	79,687	189,141
	Total	4,775	509	124,947	10,684	85,305	226,220

Note: "Belt use" is used as a shorthand term for safety restraint use. Safety restraint devices are normally lap and shoulder belts, but they can also be child safety seats or booster seats.

IV: MOTORCYCLE CRASHES

Motorcycle crashes decrease
In 2002, there were 1,168 crashes that involved at least one motorcycle. This number represents nearly a 4% decrease from the previous year. The decrease is encouraging, as motorcycle crashes for the most part have been declining the past several years. In fact, the average number of motorcycle crashes per year from 1997 through 2001 was 1,081.

Fatalities increase, injuries decrease
In 2002, 47 motorcyclists were killed in traffic crashes. There were 42 motorcyclist fatalities in 2001. Motorcyclist injuries decreased. There were 1,071 recorded in the year 2002--a 2% decrease from the previous year.

Greater crash severity
When a motorcycle is involved in a traffic crash, the chances of a severe injury are greatly increased. In fact, for every 100 motorcycle crashes in 2002, 4.0 of them were fatal crashes. For all crashes in 2002, 0.6 of every 100 were fatal. Also, in 2002, 82% of motorcycle crashes resulted in a non-fatal injury.

Risk factors: alcohol and no helmet
State law requires that drivers who die in traffic crashes be tested for blood alcohol level. In 2002, 41 motorcycle operators were killed and 40 of them were tested. Sixteen (40%) of the 40 drivers tested positive for alcohol, and 13 of those 16 tested at .10 or greater.

A second risk factor is helmet non-use. Currently, Minnesota does not have a mandatory helmet use law for motorcyclists 18 or older. The need for helmet laws may be debated, but the benefits helmets offer are clear: they protect the head in the event of a collision. In 2002, only 6 (13%) of the 47 motorcycle riders killed were known to be wearing a helmet. Of the 1,071 motorcyclists injured, only 350 (33%) were recorded as wearing a helmet.

Operator training is essential
In 2002, 59% of all motorcycle crashes were single vehicle crashes. This may indicate that further training is needed for a large segment of the motorcycle driver population. Indeed, of the 47 motorcycle drivers in fatal crashes in 2002, 21% of them did not have a driver's license or a valid endorsement to drive a motorcycle.

Males are most often victims
In 2002, 38 of the 48 motorcyclists killed, and 886 of the 1,071 injured, were male. Males account for a full 83% of all motorcyclists killed or injured.

Contributing factors:
Speed by motorcyclists
Failing to yield by other vehicles
As noted, over half of motorcycle crashes are single-vehicle crashes. In these crashes, the factors that reporting officers cite most often are illegal or unsafe speed (22%), driver inexperience (17%), driver inattention or distraction (14%), and physical impairment (8%). In crashes that do involve another motor vehicle, the reporting officers more often associate contributing factors with the other driver than with the motorcyclist. For the other drivers, failure to yield right of way is cited most frequently (36% of all factors cited), then driver inattention or distraction (26%).

TABLE 4.01

MOTORCYCLE CRASH SUMMARY, 1980 - 2002

	Motorcycle Crashes				Killed		Injured		Licensed Oper-	Regis- tered Motor-	Mcy deaths per 10000 Reg.	Fatal Crash Rate Per 100 Crashes	
Year	Fatal	Injury	PDO*	Total	Mcy	Other	Mcy	Other	ators	cycles	Mcy	For Mcy	For all crashes
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1980	112	2,728	468	3,308	121	1	3,359	34	222,330	157,815	7.7	3.4	0.7
1981	92	2,516	455	3,063	96	0	2,874	196	238,926	166,151	5.8	3.0	0.7
1982	72	2,115	331	2,518	70	6	2,381	189	264,134	159,345	4.4	2.9	0.6
1983	70	2,377	364	2,811	73	0	2,678	191	252,808	155,502	4.7	2.5	0.5
1984	59	2,302	407	2,768	62	1	2,590	207	256,836	153,851	4.0	2.2	0.5
1985	75	2,238	435	2,748	77	1	2,500	204	272,317	151,449	5.1	2.7	0.5
1986	63	1,891	364	2,318	66	0	2,152	142	282,087	141,261	4.7	2.7	0.5
1987	51	1,692	378	2,121	51	3	1,853	145	288,424	134,590	3.8	2.4	0.5
1988	57	1,628	284	1,969	58	4	1,817	126	293,347	128,956	4.5	2.9	0.5
1989	37	1,463	248	1,748	37	0	1,617	104	290,000	123,308	3.0	2.1	0.5
1990	46	1,446	243	1,735	50	2	1,605	126	292,074	120,081	4.2	2.7	0.5
1991	38	1,198	225	1,461	40	0	1,357	104	296,624	117,492	3.4	2.6	0.5
1992	29	1,133	199	1,361	28	3	1,288	60	290,722	116,124	2.4	2.1	0.5
1993	33	1,022	190	1,245	34	3	1,151	104	291,756	114,548	3.0	2.7	0.5
1994	41	1,151	189	1,381	43	0	1,324	66	293,164	113,337	3.8	3.0	0.6
1995	32	941	153	1,126	35	2	1,063	76	295,849	113,981	3.1	2.8	0.5
1996	39	934	158	1,131	42	0	1,046	71	297,102	112,551	3.7	3.4	0.5
1997	23	821	127	971	24	1	916	65	298,863	113,443	2.1	2.4	0.5
1998	41	883	141	1,065	40	1	987	69	301,992	118,275	3.4	3.8	0.6
1999	30	867	127	1,024	29	2	991	64	307,009	122,676	2.4	2.9	0.6
2000	34	935	166	1,135	35	1	1,039	45	311,825	132,352	2.6	3.0	0.5
2001	41	997	175	1,213	42	1	1,094	54	317,421	142,882	2.9	3.4	0.5
2002	47	943	178	1,168	47	0	1,071	46	327,604	149,360	3.1	4.0	0.6
Record High*	112	2,728	537	3,308	121	9	3,359	N/A	327,604	166,151	N/A	4.0	0.8
(year)	(1980)	(1980)	(1976)	(1980)	(1980)	(1975)	(1980)		(2002)	(1981)		(2002)	(1970)

* Notes: The abbreviation PDO stands for “property damage only” -- a crash in which no one is killed or injured. The abbrevations Mcy stands for “motorcyclists” or for “motorcycle.” The record high shown is for the period of time back to year 1970. For registered classic motorcycles, see table 1.13 on page 18.

TABLE 4.02

2002 MOTORCYCLE CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
Collision With:						
Other Motor Vehicle	16	416	97	529	16	479
Parked Motor Vehicle	1	12	20	33	1	13
Bicycle	0	2	0	2	0	0
Pedestrian	0	2	0	2	0	2
Deer	1	53	5	59	1	72
Other Animal	1	17	2	20	1	23
Fixed Object	16	88	7	111	16	98
Other Object	0	3	0	3	0	3
Other / Unknown	12	350	47	409	12	381
Total	47	943	178	1,168	47	1,071

TABLE 4.03

2002 MOTORCYCLE CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
100,000 and Over	3	126	45	174	3	136
50,000 - 99,999	5	118	21	144	5	125
25,000 - 49,999	3	103	21	127	3	110
10,000 - 24,999	3	150	27	180	3	163
5,000 - 9,999	6	63	12	81	6	72
2,500 - 4,999	2	46	9	57	2	55
1,000 - 2,499	0	19	4	23	0	23
Under 1,000	25	318	39	382	25	387
Total	47	943	178	1,168	47	1,071

TABLE 4.04

2002 MOTORCYCLE CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
January	0	6	1	7	0	7
February	1	4	0	5	1	4
March	1	7	1	9	1	8
April	2	60	12	74	2	67
May	5	134	20	159	5	155
June	7	188	25	220	7	220
July	9	189	31	229	9	215
August	10	177	34	221	10	203
September	10	125	38	173	10	136
October	2	33	9	44	2	34
November	0	15	5	20	0	17
December	0	5	2	7	0	5
Total	47	943	178	1,168	47	1,071

FIGURE 4.01
2002 Motorcycle Crashes by Time of Day

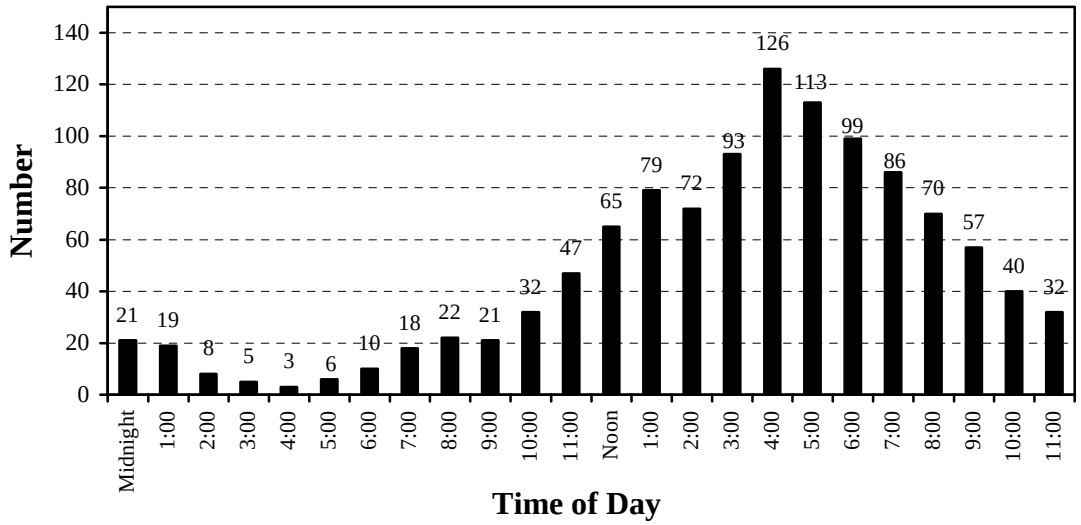


TABLE 4.05

2002 MOTORCYCLE CRASHES BY TIME AND DAY

Hour Beginning	Total Crashes	Fatal Crashes	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
			All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal
Midnight	21	3	5	2	3	0	4	1	0	0	4	0	3	0	2	0
1:00	19	2	4	0	1	0	1	0	2	0	1	0	1	0	9	2
2:00	8	1	5	1	1	0	0	0	0	0	0	0	0	0	2	0
3:00	5	1	0	0	0	0	0	0	0	0	1	0	0	0	4	1
4:00	3	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0
5:00	6	0	0	0	2	0	1	0	1	0	1	0	0	0	1	0
6:00	10	0	1	0	3	0	1	0	1	0	2	0	2	0	0	0
7:00	18	0	0	0	5	0	7	0	1	0	2	0	2	0	1	0
8:00	22	0	2	0	1	0	3	0	4	0	4	0	1	0	7	0
9:00	21	2	4	1	0	0	1	0	2	0	5	0	4	0	5	1
10:00	32	1	4	0	2	1	3	0	5	0	8	0	4	0	6	0
11:00	47	0	11	0	4	0	8	0	3	0	3	0	5	0	13	0
Noon	65	2	11	0	2	0	5	1	6	0	10	1	11	0	20	0
1:00	79	4	21	0	8	0	9	0	6	0	6	0	10	2	19	2
2:00	72	2	7	0	6	0	5	1	10	0	13	0	17	0	14	1
3:00	93	0	21	0	14	0	11	0	9	0	7	0	14	0	17	0
4:00	126	4	23	1	10	0	21	0	13	0	19	0	19	3	21	0
5:00	113	5	18	1	21	1	11	0	9	0	13	1	18	0	23	2
6:00	99	8	13	1	10	0	17	1	15	2	14	1	18	2	12	1
7:00	86	5	17	1	7	0	12	0	8	1	5	0	13	0	24	3
8:00	70	5	7	1	14	1	7	0	8	1	6	1	12	0	16	1
9:00	57	1	7	0	5	0	9	0	8	0	7	0	11	1	10	0
10:00	40	0	3	0	7	0	8	0	3	0	3	0	7	0	9	0
11:00	32	0	5	0	3	0	4	0	4	0	4	0	5	0	7	0
Unknown	24	1	2	0	1	0	4	0	2	0	3	0	7	1	5	0
Total	1,168	47	193	9	130	3	152	4	120	4	142	4	184	9	247	14

TABLE 4.06

MOTORCYCLISTS KILLED OR INJURED BY AGE AND GENDER, 2002

				Injured											
	Killed			Severe			Moderate			Minor			Total		
Age Group	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
0 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	1	1	2	1	0	1	0	0	0	2	1	3
10 - 14	0	0	0	0	1	1	4	3	7	2	0	3	6	4	11
15 - 19	2	1	3	14	1	15	38	8	46	15	2	17	67	11	78
20 - 24	2	2	4	31	3	34	83	6	89	44	7	52	158	16	175
25 - 29	6	0	6	17	3	21	52	4	56	22	5	27	91	12	104
30 - 34	5	1	6	12	6	18	48	6	54	19	4	24	79	16	96
35 - 39	2	0	2	19	7	26	40	18	58	27	9	37	86	34	121
40 - 44	7	3	10	35	7	43	56	12	68	40	10	50	131	29	161
45 - 49	4	0	4	20	7	27	54	13	67	25	4	29	99	24	123
50 - 54	7	1	8	16	0	16	48	3	51	30	4	34	94	7	101
55 - 59	0	0	0	9	0	9	25	1	26	10	3	13	44	4	48
60 - 64	3	1	4	2	0	2	6	2	8	8	2	10	16	4	20
65 - 69	0	0	0	0	0	0	4	1	5	1	1	2	5	2	7
70 & Older	0	0	0	1	0	1	2	0	2	3	0	4	6	0	7
Not Stated	0	0	0	0	1	1	2	4	6	0	6	9	2	11	16
Total	38	9	47	177	37	216	463	81	544	246	57	311	886	175	1,071

* Where columns do not add across to total, gender was not reported on the accident report form.

FIGURE 4.02

Motorcyclists Killed or Injured by Age and Gender, 2002

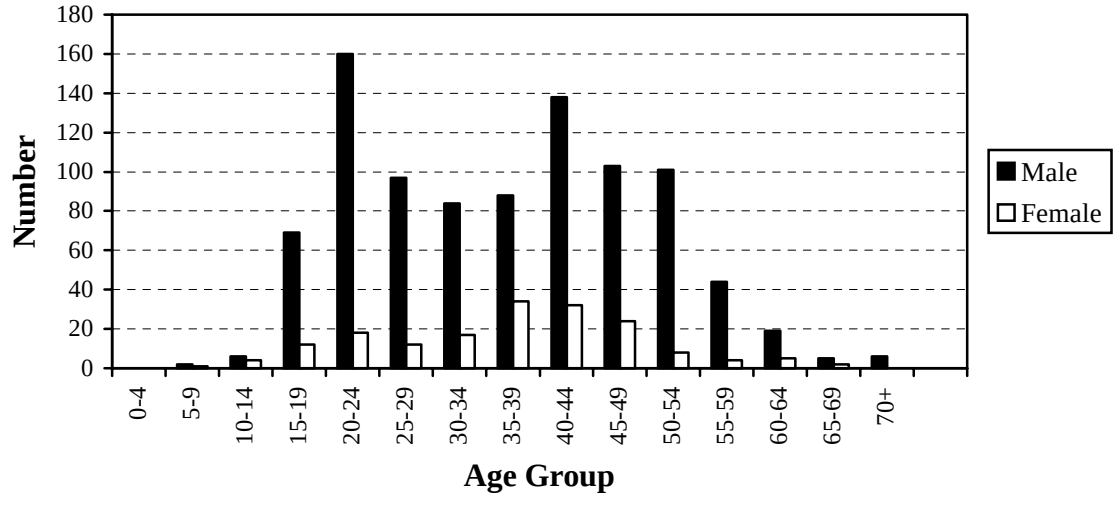


TABLE 4.07

HELMET USE BY MOTORCYCLISTS KILLED OR INJURED, 1993 - 2002

		Helmet Used		Helmet Not Used		Helmet Use Unknown		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Killed									
	1993	2	5.9	30	88.2	2	5.9	34	100.0
	1994	3	7.0	30	69.8	10	23.3	43	100.0
	1995	1	2.9	30	85.7	4	11.4	35	100.0
	1996	9	21.4	29	69.1	4	9.5	42	100.0
	1997	3	12.5	17	70.8	4	16.7	24	100.0
	1998	3	7.5	27	67.5	10	25.0	40	100.0
	1999	8	27.6	18	62.1	3	10.3	29	100.0
	2000	6	17.1	27	77.1	2	5.7	35	100.0
	2001	9	21.4	30	71.4	3	7.1	42	100.0
	2002	6	12.8	30	63.8	11	23.4	47	100.0
Injured									
	1993	298	25.9	599	52.0	254	22.1	1,151	100.0
	1994	375	28.3	641	48.4	308	23.3	1,342	100.0
	1995	279	26.3	544	51.2	240	22.6	1,063	100.0
	1996	269	25.7	546	52.2	231	22.1	1,046	100.0
	1997	225	24.5	470	51.3	221	24.1	916	100.0
	1998	310	31.4	483	48.9	194	19.7	987	100.0
	1999	282	28.4	533	53.8	176	17.8	991	100.0
	2000	317	30.5	519	50.0	203	19.5	1,039	100.0
	2001	379	34.6	541	49.4	174	15.9	1,094	100.0
	2002	350	32.7	534	49.9	187	17.5	1,071	100.0

TABLE 4.08

ENDORSEMENT STATUS OF MOTORCYCLE OPERATORS INVOLVED IN FATAL CRASHES, 1993 - 2002

	Valid Endorsement*		Permit Only		Canceled, Suspended, Revoked		No Endorsement		Total** For Year	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1993	21	65.6	1	3.1	4	12.5	4	12.5	32	100.0
1994	33	75.0	0	0.0	3	6.8	7	15.9	44	100.0
1995	21	65.6	0	0.0	5	15.6	6	18.8	32	100.0
1996	27	64.3	0	0.0	4	9.5	9	21.4	42	100.0
1997	21	91.3	0	0.0	0	0.0	2	8.7	23	100.0
1998	34	75.6	1	2.2	4	8.9	6	13.3	45	100.0
1999	28	90.3	0	0.0	0	0.0	3	9.7	31	100.0
2000	30	83.3	0	0.0	2	5.6	4	11.1	36	100.0
2001	32	78.0	0	0.0	4	9.8	5	12.2	41	100.0
2002	38	79.2	0	0.0	5	10.4	5	10.4	48	100.0

* A valid endorsement means that the driver's license has been "endorsed" to permit operation of a motorcycle.
** Rows may not add to total due to the unknown status of some motorcycle operators.

TABLE 4.09

ALCOHOL USE BY MOTORCYCLE DRIVERS, 1988 - 2002

			Alcohol Concentration*		
Year	Killed	Tested	(.00)	(.01 - .09)	(.10 or more)
1988	52	45	20 (44%)	8 (18%)	17 (38%)
1989	31	30	9 (30%)	3 (10%)	18 (60%)
1990	43	35	10 (29%)	5 (14%)	20 (57%)
1991	36	30	13 (43%)	3 (10%)	14 (47%)
1992	23	21	10 (48%)	0 (0%)	11 (52%)
1993	29	26	9 (35%)	3 (12%)	14 (54%)
1994	36	27	17 (63%)	2 (7%)	8 (30%)
1995	25	22	7 (32%)	2 (9%)	13 (59%)
1996	38	36	22 (61%)	4 (11%)	10 (28%)
1997	22	19	7 (37%)	3 (16%)	9 (47%)
1998	36	35	15 (43%)	2 (6%)	18 (51%)
1999	28	22	12 (55%)	2 (9%)	8 (36%)
2000	32	32	22 (69%)	1 (3%)	9 (28%)
2001	36	31	17 (55%)	6 (19%)	8 (26%)
2002	41	40	24 (60%)	3 (8%)	13 (32%)

*Percentages are based on those motorcycle drivers tested.

TABLE 4.10

2002 MOTORCYCLE DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

					Alcohol Concentration						
			Alcohol Concentration*			.01-	.05-	.10-	.15-	.20-	.25 &
Age	Killed	Tested	(.01 - .09)	(.10 or more)	.00	.04	.09	.14	.19	.24	Over
14 & Younger	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	1	1	0	0	1	0	0	0	0	0	0
19	1	1	0	0	1	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0
Under 21	2	2	0	0	2	0	0	0	0	0	0
14 & Younger	0	0	0	0	0	0	0	0	0	0	0
15 – 19	2	2	0	0	2	0	0	0	0	0	0
20 – 24	2	2	0	0	2	0	0	0	0	0	0
25 – 29	6	6	1	2	3	0	1	2	0	0	0
30 – 34	5	4	1	2	1	1	0	2	0	0	0
35 – 39	2	2	1	1	0	0	1	0	1	0	0
40 – 44	9	9	0	4	5	0	0	0	2	2	0
45 – 49	4	4	0	2	2	0	0	1	0	1	0
50 – 54	7	7	0	2	5	0	0	1	0	1	0
55 – 59	0	0	0	0	0	0	0	0	0	0	0
60 & Older	4	4	0	0	4	0	0	0	0	0	0
Total	41	40	3	13	24	1	2	6	3	4	0

* Percentages are based on those motorcycle drivers tested.

TABLE 4.11

CONTRIBUTING FACTORS IN 2002 MOTORCYCLE CRASHES

	Single Vehicle Crashes		*Multi-Vehicle Crashes*			
	Attributed to Motorcycle Drivers		**Attributed to Motorcycle Drivers**		**Attributed to Other Drivers**	
Contributing Factors	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Human Factors:						
Illegal/Unsafe Speed	143	22.5%	73	19.2%	8	1.6%
Driver Inexperience	106	16.7	21	5.5	7	1.4
Driver Inattention/Distraction	90	14.2	80	21.0	133	26.1
Physical Impairment	54	8.5	10	2.6	9	1.8
Improper/Unsafe Lane Use	25	3.9	23	6.0	33	6.5
Following Too Closely	8	1.3	46	12.1	25	4.9
Failure to Yield Right of Way	6	0.9	45	11.8	183	36.0
Improper Turn	6	0.9	8	2.1	27	5.3
Vision Obscured	2	0.3	5	1.3	22	4.3
Improper Park/Start/Stop	5	0.8	2	0.5	2	0.4
Disregard Traffic Cntrl Device	4	0.6	7	1.8	20	3.9
Improper Passing/Overtaking	3	0.5	18	4.7	5	1.0
Driving Left of Center	2	0.3	3	0.8	5	1.0
Unsafe Backing	1	0.2	0	0.0	5	1.0
Improper or No Signal	0	0.0	2	0.5	1	0.2
Impeding Traffic	2	0.3	0	0.0	3	0.6
Driver on phone or CB radio	0	0.0	0	0.0	1	0.2
Other Human Factor	14	2.2	6	1.6	3	0.6
Vehicular Factors:						
Skidding	49	7.7	13	3.4	2	0.4
Defective Equipment	10	1.6	0	0.0	3	0.6
Other Vehicular Factors	20	3.1	0	0.0	1	0.2
Miscellaneous Factors:						
Weather Conditions	18	2.8	2	0.5	2	0.4
Other	67	10.6	17	4.5	9	1.8
Total	635	100.0%	381	100.0%	509	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	132		328		191	
Total Number Drivers	581		625		575	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding.

V: TRUCK CRASHES

This section summarizes data on crashes involving trucks. On the crash report form, trucks are identified as any of the following eight types of vehicles: (1) two-axle, six-tire single unit truck or stepvan, (2) three-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type. A crash involving any of these vehicles is classified as a truck crash. Pickup trucks and vans are not counted as trucks in this section.

Truck crashes decrease from the prior year
There were 4,409 truck-involved traffic crashes in year 2002 – an 11% drop from year 2001.

Fatalities increase significantly
There were 76 fatal truck crashes, killing 87 people, in 2002. This was a 30% increase from the pervious year. Truck crash fatalities accounted for 13% of all traffic fatalities in 2002. In general, even though truck crashes were lower in 2002 than in recent years, the number of persons killed was significantly higher than the previous year. The increase in truck crash fatalities was 22% of the overall (89 more persons than in 2001) increase in traffic fatalities.

Persons killed or injured are usually in the other vehicles
In two-vehicle collisions, heavier vehicles have the clear safety advantage. Only 10 of the 87 people killed in truck-involved crashes were in the trucks. The other 77 included 1 bicyclist, three pedestrians, two motorcyclists, and 71 people who were in cars, pickups, or vans. Of the 1,674 people injured, only 357 (21%) were truck occupants.

Contributing factors for truck drivers compared to others.
Reporting officers indicated there was no clear contributing factor for 41% of the truck drivers and for 47% of the others. Moreover, the contributing factors the officers do report are more similar for truck and non-truck drivers than they are different. For example, driver inattention or distraction was most frequently cited for truck drivers (25% of the time) as well as for non-truck drivers (24% of the time). Illegal or unsafe speed was reported for 8% of the trucks and for 11% of the other vehicles.
Truck drivers do differ some from other drivers: truck drivers are less likely to be reported for "failure to yield right of way" (9% versus 14%), and for "improper or unsafe lane use" (8% versus 10%), but they are more likely to be reported for "following too closely" (8% compared to 6%) and for unsafe backing (4% compared to 1%).

For the other motorists, and even more so for the truck drivers, it is quite rare that officers report the presence of any type of impairing physical condition, such as fatigue or the use of alcohol or drugs. Only 1% of the truckers and 2% of the other vehicle drivers were reported as having some such impairment.

Truck crashes are workday-related
Truck crashes are strongly tied to the workday. In 2002, Monday through Friday averaged 794 truck crashes per day, compared to just 220 on average for Saturdays or Sundays.

Driving conditions
Driving conditions are usually good in Minnesota, and most truck crashes occurred on dry roads in clear weather. However, 21% of the fatal crashes and 25% of the injury crashes occurred on road surfaces reported to be wet, or to be covered with snow or slush, or with ice or packed snow.

Crash severity increases in rural areas.
For this report, "rural" is defined as an area that has less than 5,000 population. Probably because high speeds are more often possible in the rural open countryside, crashes there are more severe. Thirty percent of property damage crashes, 40% of injury crashes, and fully 78% of the fatal truck crashes occurred in the rural areas of Minnesota.

TABLE 5.01

TRUCK CRASH SUMMARY, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Crashes	**4,931**	**5,132**	**4,752**	**5,358**	**4,991**	**4,761**	**5,156**	**5,306**	**4,976**	**4,409**
Fatal Crashes	63	81	77	60	90	85	84	73	61	76
Persons Killed	77	94	86	79	105	97	94	90	67	87
Injury Crashes	1,268	1,369	1,277	1,473	1,389	1,408	1,400	1,371	1,287	1,179
Severe	148	151	153	176	163	180	150	134	127	82
Moderate	452	481	470	516	505	492	567	490	479	449
Minor	668	737	654	781	721	736	683	747	681	648
Persons Injured	1,764	1,902	1,869	2,074	2,042	2,031	2,026	1,903	1,785	1,674
Severe	198	203	196	217	215	219	212	173	157	115
Moderate	598	630	645	708	721	700	782	659	632	597
Minor	968	1,069	1,028	1,149	1,106	1,112	1,032	1,071	996	962
Property Damage Crashes	3,600	3,682	3,398	3,825	3,512	3,268	3,672	3,862	3,628	3,154

TABLE 5.02

PERSONS KILLED OR INJURED IN 2002 TRUCK CRASHES BY VEHICLE OCCUPIED

		Injured			
Vehicle Type	**Killed**	**Severe**	**Moderate**	**Minor**	**Total**
Automobile	53	67	297	516	880
Pickup Truck	13	20	59	118	197
Van	5	8	65	81	154
Police Department Vehicle	0	0	3	3	6
School Bus	0	0	1	10	11
Motor Home/Camper	0	0	1	0	1
Farm Equipment	0	0	0	3	3
Motorcycle	2	3	10	3	16
Hit and Run Vehicle	0	0	2	1	3
Two-Axle, Six-Tire, Single Unit Truck or Stepvan	2	1	27	50	78
Three or More Axle Single Unit Truck	0	2	41	37	80
Single Unit Truck with Trailer	0	2	6	11	19
Truck Tractor with No Trailer	1	0	1	3	4
Truck Tractor with Semi Trailer	4	6	67	96	169
Truck Tractor with Twin Trailers	0	0	1	0	1
Heavy Truck--Other or Unknown Type	3	0	3	3	6
Other or Unknown Vehicle Type	0	2	6	21	29
Bicycle	1	3	4	1	8
Pedestrian	3	1	3	5	9
Total	87	115	597	962	1,674

TABLE 5.03

CONTRIBUTING FACTORS IN 2002 TRUCK CRASHES

Contributing Factors	Attributed to Truck Vehicles Number	Attributed to Truck Vehicles Percent	Attributed to Non-Truck Vehicles Number	Attributed to Non-Truck Vehicles Percent
Human Factors				
Driver Inattention/Distraction	907	24.6%	727	23.7%
Illegal/Unsafe Speed	308	8.4	351	11.4
Failure to Yield Right of Way	323	8.8	418	13.6
Improper or Unsafe Lane Use	312	8.5	314	10.2
Following Too Closely	293	8.0	186	6.1
Improper Turn	200	5.4	62	2.0
Unsafe Backing	136	3.7	19	0.6
Vision Obscured	112	3.0	64	2.1
Disregard for Traffic Control Device	90	2.4	87	2.8
Improper Passing or Overtaking	60	1.6	139	4.5
Driver Inexperience	52	1.4	81	2.6
Improper Parking, Starting, or Stopping	52	1.4	48	1.6
Physical Impairment	37	1.0	73	2.4
Driving Left of Center (Not Passing)	34	0.9	54	1.8
Improper/No Signal	22	0.6	13	0.4
Impeding Traffic	9	0.2	6	0.2
Driver on Phone/CB/2-Way Radio	2	0.1	2	0.1
Failure to Use Lights	5	0.1	3	0.1
Pedestrian Error/Violation	0	0.0	7	0.2
Other Human Factors	58	1.6	32	1.0
Vehicular Factors				
Skidding	84	2.3	81	2.6
Defective Brakes	58	1.6	10	0.3
Oversize/Overweight Vehicle	53	1.4	2	0.1
Defective Tire	24	0.7	6	0.2
Defective Lights	8	0.2	0	0.0
Other Vehicular Factor	72	2.0	17	0.6
Miscellaneous Factors				
Weather	194	5.3	166	5.4
Other	180	4.9	105	3.4
Total Contributing Factors Cited	3,685	100.0%	3,073	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	1,909		1,935	
Total Number of Vehicles	4,601		4,104	

Zero, one, or two contributing factors may be associated with each vehicle. This may cause the sum of the factors cited to differ from the number of vehicles. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. Bicyclists and pedestrians are included in the "non-truck vehicles" columns in this table. Human factors with a frequency of less than one-tenth of one percent are merged into the category "other human factors."

TABLE 5.04

AGE OF TRUCK DRIVERS IN 2002 CRASHES

Driver Age	Truck or Truck Tractor	Truck with Semi-Trailer	Truck with Twin Trailer	Truck with Other Trailer	Total
10 - 14	0	1	0	1	2
15 - 19	49	22	0	17	88
20 - 24	202	138	1	52	393
25 - 29	199	225	4	35	463
30 - 34	218	265	1	56	540
35 - 39	236	338	3	61	638
40 - 44	220	366	8	50	644
45 - 49	180	349	4	47	580
50 - 54	121	268	10	20	419
55 - 59	84	190	1	22	297
60 - 64	49	133	4	15	201
65 & Older	62	98	1	14	175
Not Stated	10	27	0	4	41
Total*	1,630	2,420	37	394	4,481

* There were 4,601 trucks in crashes in 2002. However, 112 of these trucks were parked vehicles. The driver could not be identified for an additional 8 of these trucks. This table tabulates the ages of drivers for the remaining 4,481 trucks where it was possible to identify a driver.

TABLE 5.05

DRIVERS IN 2002 TRUCK CRASHES BY PHYSICAL CONDITION*

	Truck Driver		Other Driver	
Physical Condition	Number	Percent	Number	Percent
Normal	4,242	94.7%	3,539	90.8%
Under the Influence	8	0.2	53	1.4
Had Been Drinking	3	0.1	31	0.8
Driver >.04 BAC	8	0.2	0	0.0
Had Been Using Drugs	1	0.0	3	0.1
Asleep	13	0.3	15	0.4
Fatigued	17	0.4	11	0.3
Ill	7	0.2	3	0.1
Other	0	0.0	16	0.4
Unknown	182	4.1	228	5.8
Total **	4,481	100.0%	3,899	100.0%

* As noted by police officer on accident report.

** There were 4,601 trucks in crashes in 2002. However, 112 were parked. The driver could not be identified for an additional 8. This table tabulates the apparent physical condition of drivers for the remaining 4,481 trucks where it was possible to identify a driver. Also, there were 4,083 non-truck motor vehicles in 2002 truck crashes. However, 179 of them were parked, and there were 5 more for which a driver could not be identified, leaving 3,899 for which an apparent physical condition was recorded.

TABLE 5.06

2002 TRUCK CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	66	942	2,337	3,345	77	1,405
Parked Motor Vehicle	0	21	155	176	0	27
Railroad Train	0	7	9	16	0	9
Bicycle	1	7	0	8	1	7
Pedestrian	3	7	0	10	3	7
Deer	1	2	43	46	1	2
Other Animal	0	3	20	23	0	4
Fixed Object	1	51	314	366	1	61
Other Object	0	6	31	37	0	7
Non-Collision:						
Overturn	4	110	134	248	4	118
Fire or Explosion	0	0	13	13	0	0
Other	0	23	98	121	0	27
Total	76	1,179	3,154	4,409	87	1,674

TABLE 5.07

2002 TRUCK CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	3	80	244	327	3	121
February	7	82	203	292	7	107
March	4	90	289	383	5	115
April	4	91	229	324	5	130
May	6	82	248	336	7	111
June	8	119	277	404	12	161
July	5	87	290	382	5	145
August	14	136	296	446	14	198
September	3	116	285	404	3	165
October	11	138	313	462	13	200
November	6	78	261	345	6	97
December	5	80	219	304	7	124
Total	76	1,179	3,154	4,409	87	1,674

TABLE 5.08

2002 TRUCK CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	104	10	16	16	22	12	18	10
3:00 - 5:59 AM	133	3	27	20	23	28	20	12
6:00 - 8:59 AM	729	8	135	169	157	118	112	30
9:00 - 11:59 AM	966	27	190	168	153	177	177	74
Noon - 2:59 PM	1,006	21	166	172	173	202	201	71
3:00 - 5:59 PM	889	28	136	168	164	200	143	50
6:00 - 8:59 PM	342	30	56	53	65	65	52	21
9:00 - 11:59 PM	189	23	43	24	26	32	25	16
Unknown	51	2	9	13	8	7	7	5
Total	4,409	152	778	803	791	841	755	289

FIGURE 5.01

2002 Truck Crashes by Time of Day

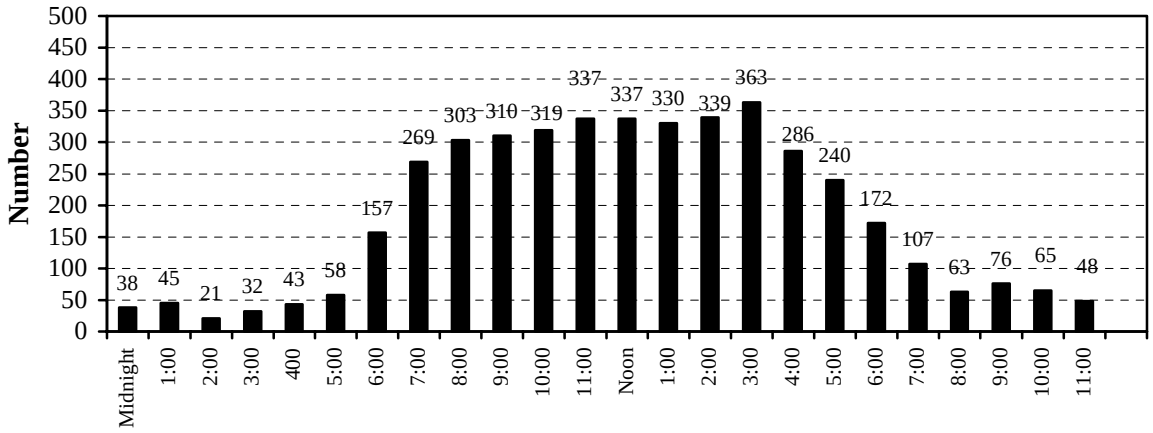


TABLE 5.09

2002 TRUCK CRASHES BY ROAD SURFACE CONDITION

Road Surface Condition	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Dry	57	863	2,329	3,249	65	1,216
Wet	9	147	385	541	10	213
Snow or Slush	5	68	155	228	7	94
Ice or Packed Snow	2	82	233	317	2	124
Muddy	0	4	5	9	0	6
Debris	0	3	6	9	0	4
Other	3	6	17	26	3	8
Unknown	0	6	24	30	0	9
Total	76	1,179	3,154	4,409	87	1,674

TABLE 5.10

2002 TRUCK CRASHES BY WEATHER CONDITION

Weather Condition	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Clear	42	617	1,795	2,454	49	891
Cloudy	23	328	806	1,157	25	448
Rain	2	69	179	250	2	99
Snow	9	110	242	361	11	161
Sleet/Hail/Freezing Rain	0	13	38	51	0	16
Fog/Smog/Smoke	0	14	14	28	0	21
Blowing Sand/Dust/Snow	0	14	32	46	0	20
Severe Cross Winds	0	6	13	19	0	6
Other	0	2	8	10	0	5
Unknown	0	6	27	33	0	7
Total	76	1,179	3,154	4,409	87	1,674

TABLE 5.11

2002 TRUCK CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
100,000 & Over	2	164	530	696	2	209
50,000 - 99,999	2	172	464	638	3	260
25,000 - 49,999	5	126	353	484	6	174
10,000 - 24,999	4	134	480	618	4	185
5,000 - 9,999	2	53	219	274	4	85
2,500 - 4,999	2	61	147	210	2	76
1,000 - 2,499	0	19	83	102	0	29
Under 1,000	59	450	878	1,387	66	656
Total	76	1,179	3,154	4,409	87	1,674

TABLE 5.12

2002 TRUCK CRASHES BY TYPE OF ROADWAY

Roadway Type	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Interstate Highway	12	267	844	1,123	15	369
US Trunk Highway	23	235	503	761	24	353
State Trunk Highway	22	238	594	854	26	348
County State-Aid Highway	18	266	540	824	21	393
County Road	0	22	37	59	0	29
Township Road	1	20	38	59	1	24
Local Street	0	128	567	695	0	155
Other Road	0	3	31	34	0	3
Total	76	1,179	3,154	4,409	87	1,674

VI: PEDESTRIAN CRASHES

This section deals with motor vehicle crashes that injure or kill pedestrians. Prior to 1984, a crash was defined as a pedestrian crash only if the pedestrian was the first "object" struck by a motor vehicle. Since 1984, a pedestrian crash is defined as any crash where a pedestrian is struck and injured.

Pedestrian crashes decline
In 2002, there were 1,151 crashes in which a pedestrian was injured or killed by a motor vehicle. The number of pedestrian crashes in 2002 represents a 2% decrease from the previous year and the lowest number of pedestrian crashes since traffic records have been kept.

Increase in deaths and decrease in injuries
In 2002, fifty pedestrians were killed, four more than in the previous year. There were 1,149 pedestrians injured, nearly a 3% decrease from the previous year. In 2002, nearly 4% of pedestrian crashes resulted in a death, compared to about one-half of one percent for all traffic crashes.

Young people at greater risk
In all pedestrian crashes, persons less than 25 years of age accounted for 40% of the persons killed or injured. The numbers of people injured mostly decreased as age increased. Males were more likely than females to be killed. Males accounted for 66% of all pedestrian fatalities in 2002.

Urban areas and rush-hours
In 2002, 85% of pedestrian crashes occurred in urban areas. However, 21 (42%) of the 50 fatalities occurred in rural areas (defined as less than 5,000 population.) In 2002, nearly one out of three pedestrian crashes (31%) occurred during the weekday rush hour driving time periods. The rush hour driving time period is defined as 6:00-9:00 am and 3:00-6:00 pm.

Prior actions of vehicles and pedestrians
Regarding the motor vehicles that were involved in pedestrian crashes in 2002, 50% of them were simply going straight ahead on the roadway prior to the crash. An additional 26% of the motor vehicles involved were making a right or left turn. As might be expected, one out of five pedestrians injured, and one out of three pedestrians killed, were trying to cross a road where there was no crosswalk and no signal.

Contributing factors
For 35% of the motor vehicle drivers in pedestrian crashes, the reporting officer indicated that there had been “no clear contributing factor” to the crash. For those where a factor was cited, two were mentioned much more than the others: driver inattention or distraction and failure to yield the right of way (27.0% and 27.3% respectively).

Pedestrians and alcohol
Of the 50 pedestrians killed, 31 were tested for alcohol. Of those tested, 35% had concentrations over the legal driving limit of .10.

TABLE 6.01

PEDESTRIAN CRASH SUMMARY, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Pedestrian Crashes	1,383	1,409	1,458	1,378	1,419	1,400	1,329	1,253	1,175	1,151
Pedestrians Killed	47	53	49	46	58	56	51	41	46	50
Pedestrians Injured	1,390	1,400	1,471	1,388	1,434	1,410	1,330	1,269	1,184	1,149

TABLE 6.02

PEDESTRIANS KILLED OR INJURED BY AGE AND GENDER, 2002

				Injured											
Age	Killed			Severe			Moderate			Minor			Total		
Group	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
0 – 4	2	1	3	6	1	7	12	5	17	6	6	14	24	12	38
5 - 9	2	1	3	14	4	18	21	17	39	22	12	34	57	33	91
10 - 14	1	1	2	11	5	16	21	20	42	22	21	46	54	46	104
15 - 19	2	1	3	15	8	23	31	21	53	29	19	49	75	48	125
20 - 24	5	1	6	6	5	12	24	21	45	27	21	51	57	47	108
25 - 29	3	0	3	6	2	8	22	8	30	10	15	27	38	25	65
30 - 34	1	0	1	4	6	12	15	10	25	19	20	41	38	36	78
35 - 39	1	0	1	6	7	14	15	8	23	14	12	27	35	27	64
40 - 44	1	2	3	9	7	16	15	17	32	15	19	36	39	43	84
45 - 49	1	2	3	7	5	12	7	13	23	16	11	31	30	29	66
50 - 54	2	1	3	6	6	12	18	10	28	14	14	29	38	30	69
55 - 59	2	3	5	7	3	10	6	8	14	10	6	17	23	17	41
60 - 64	4	2	6	6	2	8	3	10	15	2	3	5	11	15	28
65 - 69	0	0	0	2	3	5	6	1	7	4	3	7	12	7	19
70 - 74	2	0	2	2	3	5	3	4	7	5	0	5	10	7	17
75 - 79	1	0	1	1	5	6	2	2	4	5	4	10	8	11	20
80 - 84	3	2	5	2	4	6	4	2	6	3	8	11	9	14	23
85 & Older	0	0	0	2	1	3	3	2	5	3	3	6	8	6	14
Not Stated	0	0	0	3	6	9	11	13	32	17	12	54	31	31	95
Total	33	17	50	115	83	202	239	192	447	243	209	500	597	484	1,149

* Where columns do not add across, gender was not stated on accident report.

FIGURE 6.01
Pedestrian Fatalities by Age Group, 1993-2002 Combined

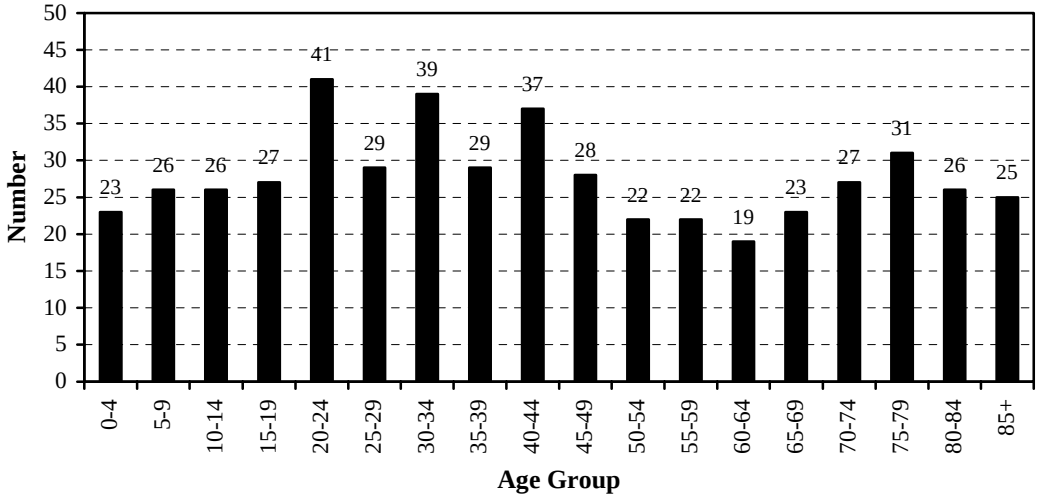


FIGURE 6.02
Pedestrians Killed and Injured by Age and Gender, 2002

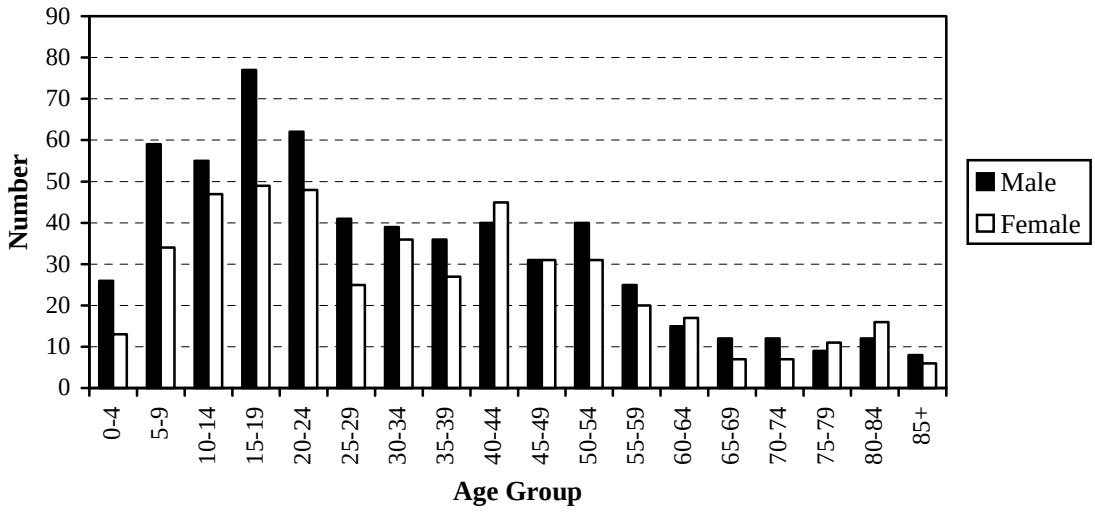


TABLE 6.03

2002 PEDESTRIAN CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Total Crashes	Pedestrians Killed	Pedestrians Injured
January	0	83	83	0	85
February	1	87	88	1	90
March	2	80	82	2	84
April	3	85	88	3	89
May	2	90	92	2	90
June	10	84	94	10	88
July	3	102	105	3	109
August	6	86	92	6	89
September	6	113	119	6	121
October	4	90	94	4	96
November	5	82	87	5	84
December	8	119	127	8	124
Total	50	1,101	1,151	50	1,149

TABLE 6.04

2002 PEDESTRIAN CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Total Crashes	Pedestrians Killed	Pedestrians Injured
100,000 and Over	5	556	561	5	569
50,000 - 99,999	6	108	114	6	115
25,000 - 49,999	6	101	107	6	105
10,000 - 24,999	9	138	147	9	148
5,000 - 9,999	3	42	45	3	43
2,500 - 4,999	4	34	38	4	36
1,000 - 2,499	2	32	34	2	34
Under 1,000	15	90	105	15	99
Total	50	1,101	1,151	50	1,149

TABLE 6.05

2002 PEDESTRIAN CRASHES BY TIME AND DAY

Time of Day	Fatal Crashes	Total Crashes	Sun	Mon	Tues	Wed	Thur	Fri	Sat
Midnight - 2:59 AM	7	53	20	2	3	2	6	6	14
3:00 - 5:59 AM	0	17	1	2	3	3	3	1	4
6:00 - 8:59 AM	8	135	5	32	18	22	23	25	10
9:00 - 11:59 AM	2	122	6	24	23	18	17	23	11
Noon - 2:59 PM	8	175	16	29	22	19	30	36	23
3:00 - 5:59 PM	11	277	14	48	49	45	52	40	29
6:00 - 8:59 PM	5	207	23	21	40	38	27	23	35
9:00 - 11:59 PM	9	130	11	12	16	21	17	25	28
Unknown	0	35	3	8	4	3	7	8	2
Total	50	1,151	99	178	178	171	182	187	156

FIGURE 6.03

2002 Pedestrian Crashes by Time of Day

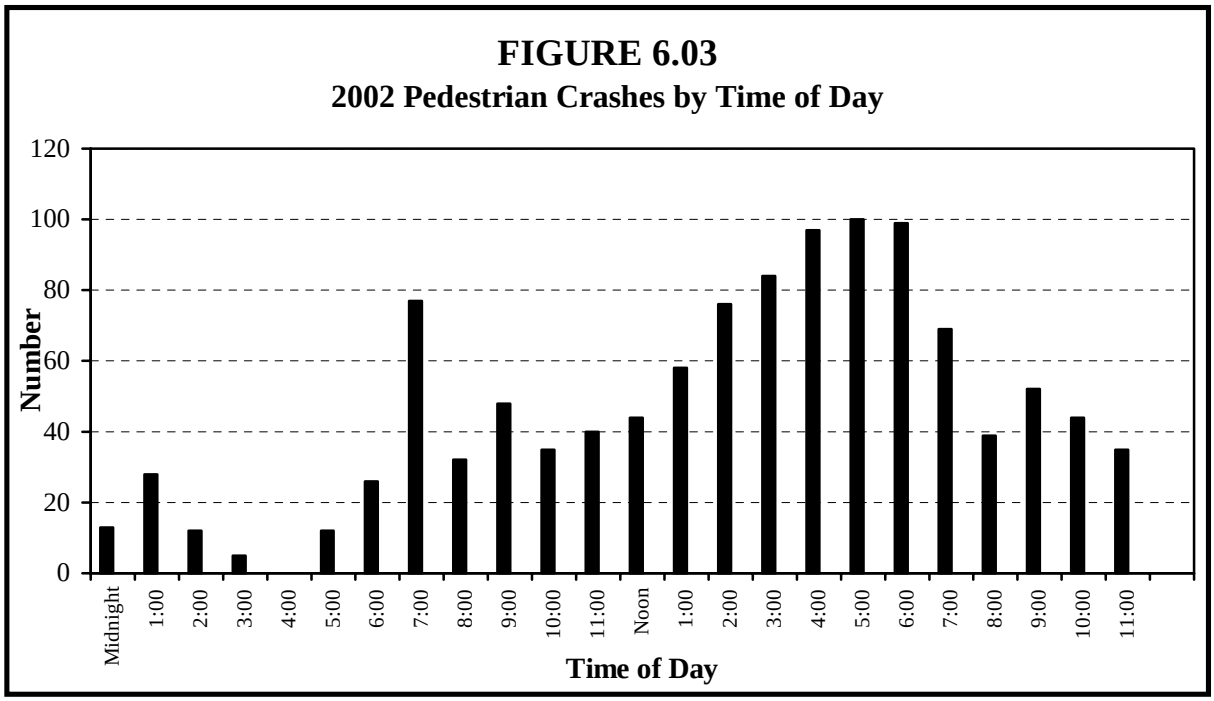


TABLE 6.06

PRIOR ACTION OF VEHICLES IN 2002 PEDESTRIAN CRASHES

Action	Vehicles in Fatal Crashes	Vehicles in Injury Crashes	Vehicles in All Crashes*
Going Straight	38	576	614
Wrong Way Opposing Traffic	0	7	7
Turning Right on Red	0	21	21
Turning Right	0	105	105
Turning Left on Red	0	2	2
Turning Left	4	211	215
Making U Turn	0	2	2
Starting From Parked	0	23	23
Starting in Traffic	1	25	26
Slowing in Traffic	1	11	12
Parking	0	2	2
Avoiding Object in Road	7	8	15
Changing Lanes	0	3	3
Passing	0	6	6
Backing	1	43	44
All Others	6	53	59
Unknown	0	60	60
Total	58	1,158	1,216

* The number of vehicles in total crashes exceeds the number of crashes because some crashes involved more than one vehicle.

TABLE 6.07

PRIOR ACTION OF PEDESTRIANS KILLED OR INJURED IN 2002

	Pedestrians Killed		Pedestrians Injured	
Action	Number	Percent	Number	Percent
Crossing Road (No Crosswalk and No Signal)	16	32.0%	228	19.8%
Crossing Against Signal	0	0.0	55	4.8
Crossing With Signal	1	2.0	173	15.0
Crossing In Crosswalk (No Signal)	4	8.0	118	10.2
Walking In Road With Traffic	5	10.0	71	6.2
Walking In Road Against Traffic	2	4.0	47	4.1
Standing In Road	3	6.0	51	4.4
Emerging From Front/Behind Parked Vehicle	2	4.0	56	4.9
Child Getting On/Off School Bus	0	0.0	1	0.8
Pushing/Working On Vehicle	0	0.0	5	4.4
Working In Road	0	0.0	11	9.6
Getting On/Off Vehicle	0	0.0	9	7.8
Playing In Road	1	2.0	16	13.9
Not In Road	4	8.0	45	3.9
Other Pedestrian Action	2	4.0	27	2.4
Unknown	10	20.0	236	20.5
Total*	50	100.0%	1,149	100.0%

* Percent totals may not sum to 100% due to rounding.

TABLE 6.08

CONTRIBUTING FACTORS IN 2002 PEDESTRIAN CRASHES

Contributing Factors	Attributed to Motor Vehicle Drivers Number	Percent
Human Factors		
Failure to Yield Right of Way	281	27.3%
Driver Inattention / Distraction	278	27.0
Vision Obscured	79	7.7
Illegal or Unsafe Speed	51	5.0
Physical Impairment	34	3.3
Unsafe Backing	25	2.4
Improper / Unsafe Lane Use	25	2.4
Driver Inexperience	22	2.1
Disregard for Traffic Control Device	21	2.0
Improper Turn	19	1.8
Improper Parking/Starting/Stopping	12	1.2
Driving Left of Center	12	1.2
Improper Passing / Overtaking	11	1.1
Following Too Closely	5	0.5
Driver on Phone/CB/Radio	2	0.2
Improper/No Signal	2	0.2
Impeding Traffic	1	0.1
Failure To Use Lights	1	0.1
Other Human Factors	29	2.8
Vehicular Factors		
Skidding	12	1.2
Defective Brakes	5	0.5
Other Vehicular Factors	4	0.4
Miscellaneous Factors		
Weather Conditions	29	2.8
Other	70	6.8
Total Contributing Factors Cited	1,030	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	424	
Total Number of Drivers	1,216	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding.

TABLE 6.09

PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION, 1993 - 2002

Year	Killed	Tested	Alcohol Concentration* (.00)	(.01 - .09)	(.10 or more)
1993	47	17	9 (53%)	0 (0%)	8 (47%)
1994	53	26	18 (69%)	1 (4%)	7 (27%)
1995	49	38	24 (63%)	2 (5%)	12 (32%)
1996	46	34	23 (68%)	0 (0%)	11 (32%)
1997	58	40	29 (73%)	2 (5%)	9 (23%)
1998	56	43	21 (49%)	2 (5%)	20 (47%)
1999	51	37	23 (62%)	3 (8%)	11 (30%)
2000	41	27	16 (59%)	1 (4%)	10 (37%)
2001	46	35	25 (71%)	1 (3%)	9 (26%)
2002	50	31	20 (65%)	0 (0%)	11 (35%)

* The percentage figures shown are based on the number of fatally injured pedestrians who were tested for alcohol concentration. (The law requires testing of all drivers and pedestrians, 16 years of age or older, who die within four hours as a result of a motor vehicle crash.)

TABLE 6.10

2002 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age Group	Killed	Tested	Alcohol Concentration (.00)	(.01 - .09)	(.10 or more)
14 & Younger	8	4	4	0	0
15 - 19	3	3	3	0	0
20 – 24	6	5	0	0	5
25 - 29	3	2	1	0	1
30 - 34	1	1	0	0	1
35 - 39	1	1	0	0	1
40 - 44	3	1	0	0	1
45 - 49	3	1	1	0	0
50 - 54	3	1	1	0	0
55 - 59	5	3	3	0	0
60 - 64	6	3	3	0	0
65 - 69	0	0	0	0	0
70 - 74	2	2	0	0	2
75 - 79	1	0	0	0	0
80 - 84	5	4	4	0	0
85 & Older	0	0	0	0	0
Total	50	31	20	0	11

TABLE 6.11

2002 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TIME OF DAY

Time of Day	Killed	Tested	Alcohol Concentration (.00)	(.01 - .09)	(.10 or more)
Midnight - 2:59 AM	7	7	0	0	7
3:00 - 5:59 AM	0	0	0	0	0
6:00 - 8:59 AM	8	5	5	0	0
9:00 - 11:59 AM	2	1	1	0	0
Noon - 2:59 PM	8	4	4	0	0
3:00 - 5:59 PM	11	4	4	0	0
6:00 - 8:59 PM	5	3	3	0	0
9:00 - 11:59 PM	9	7	3	0	4
Unknown	0	0	0	0	0
Total	50	31	20	0	11

VII: BICYCLE CRASHES

Bicycles are subject to the same traffic laws as motor vehicles, but bicycle crashes are reported to the Minnesota Department of Public Safety only if they involve collision with a motor vehicle. Therefore, this section represents only a portion of the total number of bicycle crashes.

Number of bicycle crashes decline
In 2002, there were 909 bicycle crashes in Minnesota. This number represents a 10% decrease from the previous year. Also, it is the lowest number of bicycle crashes reported in the past ten years.

Injuries decrease in 2002
Due to the decrease in bicycle crashes the number of bicyclists injured decreased in 2002. There were 860 injuries reported, with 79 (9%) of these being severe. There were 7 bicyclist fatalities in 2002, the same number of fatalities as the prior year.

Young people at risk
Of all the bicyclists injured or killed in 2002, nearly 2 out of 3 (64%) were less than 25 years of age. This percentage includes 3 of the 7 bicyclist fatalities.

Warm weather
As expected, bicycle crashes are mostly a warm weather occurrence. In 2002, 5 of the 7 fatalities, 75% of the crashes, and 76% of the injuries occurred in the five-month period of May through September.

Afternoon rush-hour
Bicycle crashes in 2002 were most prevalent in the three-hour time period of 3:00-6:00 p.m. Nearly one-third (32%) of all bicycle crashes occurred during this period.

Big cities
Generally, traffic crashes involving a bicycle and a motor vehicle tend to occur in areas with larger populations. This appears to be true once again in 2002. Nearly two out of five bicycle crashes occurred in cities where the population was over 100,000 people. Only 14% of all bicycle crashes occurred in rural (defined as less than 5,000 people) areas.

Males injured and killed most often
Males were three times more likely than females (625 to 211) to be injured in bicycle crashes. In 2002, all but one of the bicyclists killed and 73% of the bicyclists injured were male.

Actions by bicyclists prior to crash
Bicyclists are supposed to ride with traffic. The most commonly occurring action by bicyclists prior to the crash (for 327, or 36% of the total) was attempting to ride across the trafficway. (However, the prior action was indicated as “other” or “unknown” for 43% of the bicyclists.)

Contributing factors
There were two contributing factors for both the bicyclists and the other motor vehicle drivers that were significant in 2002. These were failure to yield the right of way and driver inattention or distraction. For the bicyclists, two other factors were cited often. These were disregard for traffic control device and improper/unsafe lane use. For the motor vehicle drivers, one other factor was cited often; vision obscured.

TABLE 7.01

BICYCLE CRASH SUMMARY, 1993- 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bicycle Crashes	1,321	1,436	1,333	1,337	1,384	1,363	1,106	1,137	1,016	909
Bicyclists Killed	9	16	5	6	7	9	8	14	7	7
Bicyclists Injured	1,240	1,359	1,283	1,281	1,348	1,310	1,060	1,080	960	860

TABLE 7.02

2002 BICYCLE CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Bicyclists Killed	Bicyclists Injured
January	0	17	0	17	0	17
February	0	14	5	19	0	14
March	0	5	2	7	0	5
April	0	44	2	46	0	44
May	1	94	1	96	1	95
June	0	121	4	125	0	125
July	1	143	9	153	1	145
August	2	161	8	171	2	165
September	1	123	9	133	1	124
October	1	56	6	63	1	57
November	0	47	6	53	0	47
December	1	22	3	26	1	22
Total	7	847	55	909	7	860

FIGURE 7.01

2002 Bicycle Crashes by Time of Day

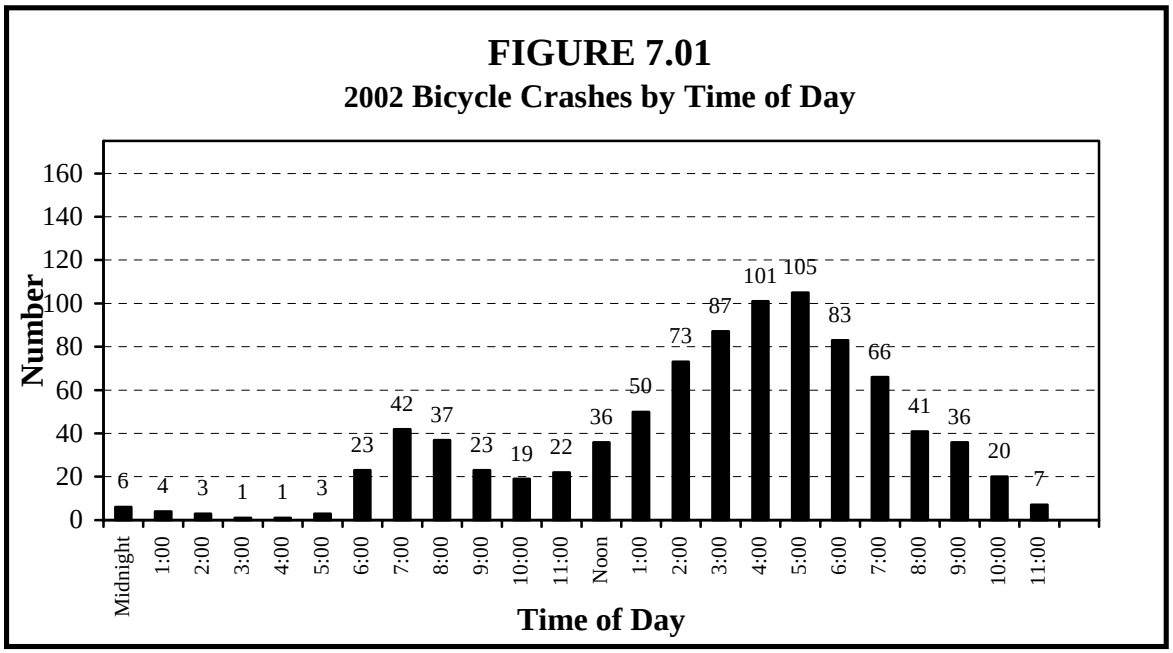


TABLE 7.03

2002 BICYCLE CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	13	3	0	0	1	1	5	3
3:00 - 5:59 AM	5	0	2	0	1	0	2	0
6:00 - 8:59 AM	102	3	18	24	20	22	11	4
9:00 - 11:59 AM	64	12	11	4	12	8	9	8
Noon - 2:59 PM	159	14	26	27	19	25	24	24
3:00 - 5:59 PM	293	28	60	39	47	50	45	24
6:00 - 8:59 PM	190	13	32	28	35	39	23	20
9:00 - 11:59 PM	63	5	12	8	2	12	15	9
Unknown	20	0	1	3	2	6	7	1
Total	909	78	162	133	139	163	141	93

TABLE 7.04

2002 BICYCLE CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Bicyclists Killed	Bicyclists Injured
100,000 and Over	2	296	31	329	2	300
50,000 - 99,999	0	149	3	152	0	151
25,000 - 49,999	3	107	2	112	3	110
10,000 - 24,999	0	142	8	150	0	143
5,000 - 9,999	0	40	2	42	0	42
2,500 - 4,999	0	25	3	28	0	26
1,000 - 2,499	0	11	2	13	0	11
Under 1,000	2	77	4	83	2	77
Total	7	847	55	909	7	860

FIGURE 7.02
Bicyclists Killed and Injured by Age and Gender, 2002

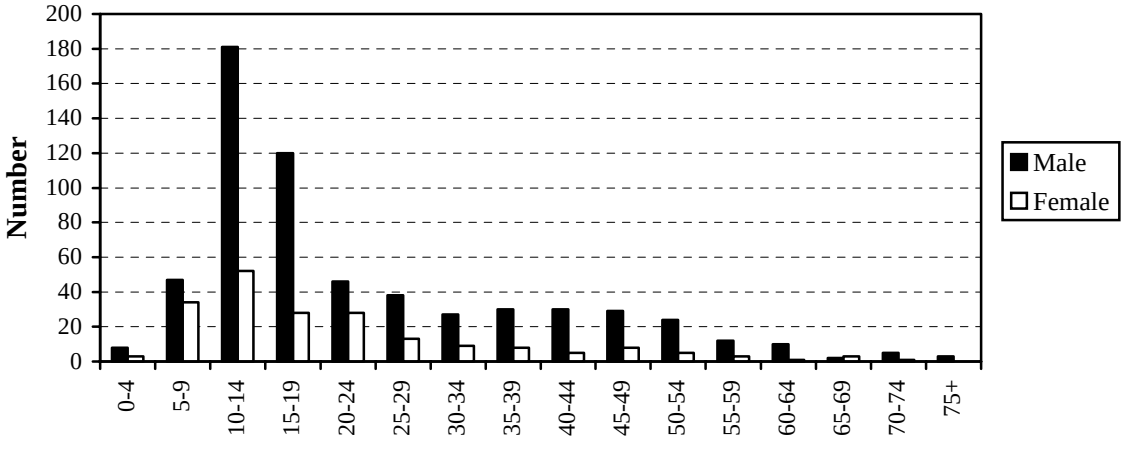


TABLE 7.05

BICYCLISTS KILLED OR INJURED BY AGE AND GENDER, 2002

	Killed			Injured											
				Severe			Moderate			Minor			Total		
Age Group	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
0 – 4	1	0	1	2	0	2	4	1	5	1	2	3	7	3	10
5 – 9	0	0	0	2	2	5	25	18	43	20	14	36	47	34	84
10 – 14	1	0	1	16	4	20	88	31	120	76	17	94	180	52	234
15 – 19	0	1	1	5	3	8	57	19	76	58	5	64	120	27	148
20 – 24	0	0	0	1	4	5	22	12	34	23	12	35	46	28	74
25 – 29	0	0	0	5	2	7	13	5	18	20	6	26	38	13	51
30 – 34	0	0	0	0	0	0	12	7	19	15	2	17	27	9	36
35 – 39	0	0	0	2	2	4	17	3	20	11	3	14	30	8	38
40 – 44	0	0	0	2	1	3	18	2	20	10	2	13	30	5	36
45 – 49	2	0	2	8	2	10	10	5	15	9	1	11	27	8	36
50 – 54	0	0	0	4	0	4	13	0	13	7	5	13	24	5	30
55 – 59	1	0	1	1	1	2	6	1	7	4	1	5	11	3	14
60 – 64	0	0	0	4	0	4	4	0	5	2	1	3	10	1	12
65 – 69	0	0	0	0	0	0	0	1	1	2	2	4	2	3	5
70 – 74	0	0	0	1	0	1	2	0	2	2	1	3	5	1	6
75 & Older	1	0	1	1	0	1	0	0	0	1	0	1	2	0	2
Not Stated	0	0	0	2	0	3	6	4	14	11	7	27	19	11	44
Total	6	1	7	56	21	79	297	109	412	272	81	369	625	211	860

* Where columns do not add across to total, gender was not stated on the accident report.

TABLE 7.06

PRIOR ACTION OF BICYCLISTS INVOLVED IN 2002 CRASHES

Prior Action	Bicyclists In Fatal Crashes	Bicyclists In Injury Crashes	Bicyclists In Property Damage Crashes	Bicyclists In All Crashes*
Riding Across Road	3	309	15	327
Riding Against Traffic	2	71	4	77
Riding With Traffic	1	96	7	104
Making Left Turn	1	9	1	11
Making Right Turn	0	3	1	4
Other/Unknown	0	367	28	395
Total	7	855	56	918

* The total number of bicyclist actions exceeds the number of bicycle crashes because some crashes involved more than one bicycle.

TABLE 7.07

CONTRIBUTING FACTORS IN 2002 BICYCLE CRASHES

Contributing Factors	Attributed to Bicyclists		Attributed to Motor Vehicle Drivers	
	Number	Percent	Number	Percent
Human Factors				
Failure to Yield Right of Way	134	22.1%	203	32.6%
Driver Inattention/Distraction	109	18.0	191	30.7
Disregard Traffic Control Device	73	12.0	14	2.3
Improper/Unsafe Lane Use	57	9.4	10	1.6
Driver Inexperience	22	3.6	8	1.3
Vision Obscured	20	3.3	71	11.4
Failure to use Lights	19	3.1	0	0.0
Illegal or Unsafe Speed	16	2.6	19	3.1
Driving Left of Center	15	2.5	1	0.2
Improper Turn	12	2.0	16	2.6
Physical Impairment	9	1.5	8	1.3
Improper Park/Start/Stop	5	0.8	12	1.9
Impeding Traffic	5	0.8	1	0.2
Improper/No Signal	4	0.7	1	0.2
Following Too Closely	3	0.5	5	0.8
Improper Passing/Overtaking	2	0.3	6	1.0
Driver on Phone/CB Radio	1	0.2	3	0.5
Unsafe Backing	0	0.0	7	1.1
Other Human Factors	23	3.8	7	1.1
Vehicular Factors				
Defective Brakes	12	2.0	0	0.0
Skidding	1	0.2	4	0.6
Other Vehicular Factors	2	0.3	1	0.2
Miscellaneous Factors				
Weather Conditions	3	0.5	4	0.6
Other	60	9.9	30	4.8
Total	607	100.0%	622	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	278		380	
Total Number of Bicyclists/Drivers	918		913	

Zero, one, or two contributing factors may be attributed to a single driver or bicyclist. This may cause the sum of the factors cited to differ from the number of drivers or bicyclists. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding.

VIII: SCHOOL BUS CRASHES

As a general rule, school bus travel is very safe. The school bus is usually a large and heavy vehicle that provides good protection for its occupants. However, since buses can carry many passengers, serious crashes could potentially cause many injuries. Crashes included in this section are those in which at least one school bus was physically involved. Note that in some cases, a crash could be seen as involving a school bus, yet not be counted as a school bus crash. For example, one such case would be a crash in which a person gets off the bus, crosses a street, and is struck by another vehicle.

Number of crashes down significantly
There were 719 traffic crashes involving at least one school bus in Minnesota in 2002. This is a 16% decrease from the number of traffic crashes the previous year and 133 less than the past five-year average.

Five deaths in 2002
In 2002, there were three fatal school bus crashes resulting in five deaths. Four of the five fatalities were drivers and passengers of other vehicles that collided with school buses. The other fatality was a four-year-old bicyclist who was struck by the bus at an intersection (The child was not a student who had been on the bus).

Number of injuries goes down
In 2002, 299 people were injured in school bus crashes, representing nearly a 16% decrease from 2001. Of the 299 total injuries in 2002, 154 were occupants of a school bus, 140 were occupants of other motor vehicles, and 5 were pedestrians.

Morning and Afternoon Rush Hours
As would be expected, two out of three school bus crashes in 2002 (66%) occurred during the time periods of 6:00-9:00am and 3:00-6:00pm. In addition, two of the five fatalities and 76% of the injuries occurred during these two time periods. Not surprisingly, fewer crashes (7% of the total) occurred during the summer months of June, July, and August.

School Bus Stop Arm
Forty-six percent of school bus crashes occurred where there was no traffic control device and less than 2% of the crashes occurred when the school bus stop arm was deployed. Only three injuries occurred in crashes where the school bus stop arm was in use.

Contributing factors
Though there were 719 school bus crashes in 2002, a few involved more than one school bus. In all there were 730 school buses in crashes. For 49% of the school buses, police showed there was "no clear contributing factor." This compares favorably to the 37% of other motor vehicle drivers for whom there was "no clear contributing factor." For the school bus drivers, the two contributing factors mentioned most often were driver inattention or distraction (25%), and failure to yield the right of way (16%). The third most frequently cited contributing factor was improper turn (7%).

TABLE 8.01

SCHOOL BUS CRASH SUMMARY, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Crashes	894	821	898	1,041	961	782	782	890	852	719
Fatal Crashes	3	2	2	6	4	3	5	2	4	3
Persons Killed	3	2	2	8	7	3	5	2	4	5
Injury Crashes	212	210	216	241	211	197	172	203	182	144
Persons Injured	432	401	457	472	408	371	328	388	355	299
Property Damage Crashes	679	609	680	794	746	582	605	685	666	572
School Buses Involved	909	884	906	1,050	979	790	789	903	857	731

TABLE 8.02

2002 SCHOOL BUS CRASHES BY TIME OF DAY

Time of Day	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Midnight - 2:59 AM	0	2	1	3	0	3
3:00 - 5:59 AM	0	0	4	4	0	0
6:00 - 8:59 AM	0	49	210	259	0	129
9:00 - 11:59 AM	0	16	72	88	0	26
Noon - 2:59 PM	1	19	93	113	3	29
3:00 - 5:59 PM	2	52	162	216	2	97
6:00 - 8:59 PM	0	4	13	17	0	13
9:00 - 11:59 PM	0	0	5	5	0	0
Unknown	0	2	12	14	0	2
Total	3	144	572	719	5	299

TABLE 8.03

2002 SCHOOL BUS CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	0	13	87	100	0	23
February	0	24	70	94	0	40
March	0	13	75	88	0	23
April	0	11	62	73	0	60
May	0	22	54	76	0	48
June	0	5	20	25	0	6
July	0	4	9	13	0	9
August	0	2	8	10	0	4
September	0	13	58	71	0	15
October	1	15	45	61	1	24
November	0	7	53	60	0	10
December	2	15	31	48	4	37
Total	3	144	572	719	5	299

TABLE 8.04

AGE AND GENDER OF PERSONS INJURED IN 2002 SCHOOL BUS CRASHES

Age Group	Total*	In Bus	Pedestrian	In Other Vehicle	Male	Female
0 – 4	7	4	0	3	5	2
5 - 9	16	13	0	3	7	8
10 - 14	28	20	1	7	14	12
15 - 19	34	16	1	17	18	16
20 - 24	30	6	0	24	14	16
25 - 29	20	1	0	19	7	13
30 - 34	13	5	0	8	6	7
35 - 39	19	6	0	13	11	8
40 - 44	10	4	0	6	5	5
45 - 54	22	4	0	18	8	14
55 - 64	13	4	1	8	6	7
65 & Older	16	7	2	7	7	9
Unknown	71	64	0	7	3	11
Total	299	154	5	140	111	128

* There were sixty cases where the gender of the person was not stated.

TABLE 8.05

PERSONS KILLED OR INJURED IN 2002 SCHOOL BUS CRASHES BY POPULATION OF AREA

Population of City or Township	Killed	Injured			
		Severe	Moderate	Minor	Total
100,000 and Over	1	6	28	57	91
50,000 - 99,999	0	1	10	27	38
25,000 - 49,999	0	0	0	7	7
10,000 - 24,999	0	5	9	61	75
5,000 - 9,999	3	0	1	11	12
2,500 - 4,999	0	0	2	3	5
1,000 - 2,499	0	0	1	5	6
Under 1,000	1	5	18	42	65
Total	5	17	69	213	299

TABLE 8.06

2002 SCHOOL BUS CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	2	127	475	604	4	270
Parked Motor Vehicle	0	5	60	65	0	9
Bicycle	1	2	0	3	1	2
Pedestrian	0	5	0	5	0	5
Deer or Other Animal	0	0	8	8	0	0
Fixed Object	0	2	22	24	0	4
Non-collision:						
Overturn	0	1	1	2	0	2
Other/Unknown	0	2	5	7	0	7
Total	3	144	572	719	5	299

TABLE 8.07

2002 SCHOOL BUS CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Not Applicable	0	62	272	334	0	118
Traffic Signal	0	38	100	138	0	67
Stop Sign--All Approaches	0	7	23	30	0	8
Other Stop Sign	3	30	101	134	5	94
Yield Sign	0	3	10	13	0	3
School Zone Sign	0	0	3	3	0	0
School Bus Stop Arm	0	3	7	10	0	3
No Passing Zone	0	0	2	2	0	0
Railroad Crossing Device	0	0	11	11	0	0
Other	0	1	12	13	0	6
Unknown	0	0	31	31	0	0
Total	3	144	572	719	5	299

TABLE 8.08

CONTRIBUTING FACTORS IN 2002 SCHOOL BUS CRASHES

Contributing Factors	Attributed to School Bus Drivers Number	Attributed to School Bus Drivers Percent	Attributed to Drivers of Other Vehicles Number	Attributed to Drivers of Other Vehicles Percent
Human Factors				
Driver Inattention /Distraction	102	25.0%	154	26.0%
Failure to Yield Right of Way	66	16.2	59	9.9
Improper Turn	30	7.4	9	1.5
Following Too Closely	25	6.1	52	8.8
Improper/Unsafe Lane Use	24	5.9	28	4.7
Illegal/Unsafe Speed	21	5.1	55	9.3
Unsafe Backing	20	4.9	6	1.0
Vision Obscured	16	3.9	19	3.2
Driver Inexperience	11	2.7	24	4.0
Improper Park/Start/Stop	10	2.5	11	1.9
Improper Passing/Overtaking	7	1.7	19	3.2
Disregard Traffic Control Device	5	1.2	29	4.9
Driving Left of Center	2	0.5	9	1.5
Impeding Traffic	0	0.0	1	0.2
Improper or No Signal	0	0.0	1	0.2
Physical Impairment	0	0.0	5	0.8
Failure to Use Lights	0	0.0	1	0.2
Other Human Factors	3	0.7	7	1.2
Vehicular Factors				
Skidding	14	3.4	39	6.6
Defective Brakes	4	1.0	3	0.5
Other Vehicular Factors	1	0.2	1	0.2
Miscellaneous Factors				
Weather Conditions	26	6.4	46	7.8
Other	21	5.1	15	2.5
Total	408	100%	593	100%
Vehicles for Which There Was "No Clear Contributing Factor"	358		281	
Total Number of Drivers	731		758	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. Bicyclists and pedestrians are included as other drivers in this table.

IX: MOTOR VEHICLE/TRAIN CRASHES

Each crash reported in this section involves a motor vehicle and a train. Train collisions with pedestrians or bicyclists are not counted as traffic crashes for the purpose of this publication.

Statewide, about one-half of one percent of all motor vehicle crashes result in a fatality. In 2002, 8% of all motor-vehicle/train crashes in Minnesota resulted in a fatality. That is thirteen times the rate for all crashes. Motor vehicle/train crashes may be few in numbers, but they are more likely to be serious. Thus, these types of crashes are a cause for concern.

Number of train crashes increases
Over the years, the number of motor-vehicle/train crashes in Minnesota has been declining. The calendar year 2002 was an exception. Seventy-seven crashes were reported in 2002, a 10% increase from the previous year.

Number of injuries and fatalities increases
In 2002, 37 people were injured in motor-vehicle/train crashes compared to 28 people the previous year. The number of fatalities also increased: nine people were killed in 2002 compared to six in 2001.

August and September had the most crashes
In 2002, motor vehicle/train crashes were most numerous in the months of August and September. Twenty-six percent of the crashes occurred in those two months. Nine of them were injury crashes, resulting in 9 persons being injured.

Railroad crossing stop sign sites dangerous
Fourteen of the 77 motor-vehicle/train crashes, including 5 of the 27 injury crashes, occurred at a railroad crossing stop sign site. An additional 8 crashes (including 5 injury crashes), occurred at a crossing signed by a railroad crossbuck. Combined, those two types of traffic control devices were present at 29% of the crashes and accounted for 24% of the injuries.

Most crashes occurred in rural areas
Motor vehicle crashes involving a train are a predominantly rural phenomenon, defined as an area with less than 5,000 population. In 2002, 53% of the total crashes, 65% of the injuries, and 89% of the fatalities occurred in rural areas.

Contributing Factors
For the motor vehicles involved in train crashes, driver inattention or distraction, failure to yield right of way, and disregard for traffic control device were the three contributing factors cited most often by officers at the scene. These three accounted for 67% of all contributing factors cited.

TABLE 9.01

MOTOR VEHICLE / TRAIN CRASH SUMMARY, 1993 - 2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Crashes	128	144	132	124	107	108	84	79	70	77
Fatal Crashes	11	14	15	8	6	9	8	3	5	6
Persons Killed	15	17	16	8	6	11	10	4	6	9
Injury Crashes	45	51	30	45	36	47	32	32	22	27
Persons Injured	63	75	34	50	46	64	50	43	28	37
Property Damage Crashes	72	79	87	71	65	52	44	44	43	44

TABLE 9.02

2002 MOTOR VEHICLE / TRAIN CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total	Killed	Injured
January	0	5	3	8	0	7
February	3	0	1	4	4	0
March	0	4	4	8	0	4
April	0	0	5	5	0	0
May	0	1	2	3	0	5
June	1	1	2	4	1	1
July	1	2	1	4	3	4
August	0	4	6	10	0	4
September	1	5	4	10	1	5
October	0	1	4	5	0	1
November	0	2	6	8	0	4
December	0	2	6	8	0	2
Total	6	27	44	77	9	37

TABLE 9.03

2002 MOTOR VEHICLE / TRAIN CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	8	3	0	1	0	0	2	2
3:00 - 5:59 AM	3	1	0	0	0	1	1	0
6:00 - 8:59 AM	3	0	1	1	0	1	0	0
9:00 - 11:59 AM	14	1	1	0	3	1	5	3
Noon - 2:59 PM	23	3	3	4	4	5	2	2
3:00 - 5:59 PM	12	0	3	1	1	1	4	2
6:00 - 8:59 PM	9	1	0	1	3	3	1	0
9:00 - 11:59 PM	5	0	2	0	1	1	0	1
Unknown	0	0	0	0	0	0	0	0
Total	77	9	10	8	12	13	15	10

TABLE 9.04

2002 MOTOR VEHICLE / TRAIN CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
RR Crossing Stop Sign	1	5	8	14	1	9
RR Crossbuck	0	5	3	8	0	6
RR Flashing Lights	0	6	2	8	0	9
RR Overhead Flashers Plus Gate	1	0	2	3	1	0
RR Overhead Flashers	0	3	2	5	0	3
RR Crossing Gate	3	0	4	7	5	1
Stop Sign	0	2	4	6	0	3
Other Device	1	2	3	6	2	2
Unknown	0	1	7	8	0	1
Not Applicable	0	3	9	12	0	3
Total	6	27	44	77	9	37

TABLE 9.05

AGE OF PERSONS KILLED OR INJURED IN 2002 MOTOR VEHICLE / TRAIN CRASHES

		Injured			
Age Group	Killed	Severe	Moderate	Minor	Total
0-4	0	0	0	0	0
5-9	0	0	0	0	0
10-14	1	0	0	0	0
15-19	2	2	6	2	10
20-24	2	0	2	1	3
25-29	0	0	3	0	3
30-34	0	0	1	2	3
35-39	1	1	1	2	4
40-44	0	0	2	1	3
45-49	0	0	0	2	2
50-54	1	0	3	0	3
55-59	0	0	2	0	2
60-69	1	1	1	0	2
70-79	0	1	0	0	1
80 & Older	1	0	0	0	0
Not Stated	0	0	0	1	1
Total	9	5	21	11	37

TABLE 9.06

2002 MOTOR VEHICLE / TRAIN CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
100,000 and Over	0	0	6	6	0	0
50,000 - 99,999	0	3	5	8	0	4
25,000 - 49,999	0	1	6	7	0	1
10,000 - 24,999	0	4	4	8	0	6
5,000 - 9,999	1	2	4	7	1	2
2,500 - 4,999	1	1	1	3	1	1
1,000 - 2,499	0	0	2	2	0	0
Under 1,000	4	16	16	36	7	23
Total	6	27	44	77	9	37

TABLE 9.07

CONTRIBUTING FACTORS IN 2002 MOTOR VEHICLE / TRAIN CRASHES

Contributing Factor	Number	Percent
Human Factors		
Driver Inattention / Distraction	30	28.0%
Failure to Yield Right of Way	26	24.3
Disregard for Traffic Control Device	16	15.0
Physical Impairment	6	5.6
Illegal or Unsafe Speed	5	4.7
Improper Park/Start/Stop	3	2.8
Vision Obscured	2	1.9
Impeding Traffic	2	1.9
Improper/Unsafe Lane Usage	1	0.9
Improper/No Signal	1	0.9
Driver on Cell Phone/CB	1	0.9
Vehicular Factors		
Skidding	2	1.9
Defective Brakes	2	1.9
Oversize/Overweight Vehicle	1	0.9
Other Vehicular Factor	1	0.9
Miscellaneous Factors		
Weather Conditions	1	0.9
Other	7	6.5
Total	107	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	9	
Number of Drivers	87	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. No contributing factors are cited for train operators.

DEFINITIONS

Accident -- See motor vehicle crash.

Alcohol Concentration -- The level of alcohol in a person's body as measured by blood, breath, or urine.

Alcohol-Related Fatal Crash -- A crash that results in one or more deaths and in which the investigating officer suspected alcohol involvement or in which the results of an alcohol concentration test were positive for any driver, pedestrian, or bicyclist involved in the crash.

Alcohol-Related Fatality -- A death resulting from an alcohol-related crash.

Alcohol-Related Injury Crash -- A non-fatal crash in which one or more persons are injured and in which the investigating officer suspected alcohol involvement for any driver, pedestrian, or bicyclist involved in the crash. (Since only the officer's perception is used in this definition, alcohol-related injury crashes and injuries are probably underestimated.)

Alcohol-Related Injury -- A non-fatal injury resulting from an alcohol-related crash.

Alcohol-Related Property Damage Crash -- A crash in which no one is killed or injured and the investigating officer suspected alcohol involvement for any driver, pedestrian, or bicyclist involved in the crash.

Bicycle Crash -- A motor vehicle crash involving one or more bicycles.

Child Safety Seats -- Safety devices designed to fit in motor vehicles that keep children securely in place. The seats are required by law for children under four years of age.

Crash -- See motor vehicle crash.

Driver -- The occupant of a motor vehicle who is in actual physical control of the vehicle in transit or, for an out-of-control vehicle, the occupant who was in control before control was lost.

Economic Loss -- An approximation of the costs associated with crashes, based upon current National Safety Council estimates of the loss to society for each fatality, injury, and property damage crash.

Fatal Crash -- A motor vehicle crash on a public traffic-way in which at least one person dies unintentionally as a result of the crash. The death must occur within 30 days of the crash.

First Harmful Event -- The first event during a crash that caused injury or property damage.

Injury Severity

Fatal Injury -- An injury that results in an unintentional death within 30 days of the crash.

Severe or Incapacitating Injury -- An injury (other than fatal) that prevents the injured person from walking, driving or normally continuing the activities he or she was capable of performing before the injury occurred. Includes severe lacerations, broken or distorted limbs, skull fracture, crushed chest, internal injuries, unconsciousness, etc. Hospitalization is usually required.

Moderate/Non-Incapacitating injury -- An injury (other than fatal or severe) that is evident to the officer at the scene of the crash. Includes abrasions, minor lacerations, bleeding, etc. May require medical treatment, but hospitalization is usually not required.

Minor or Possible Injury -- An injury (other than fatal, severe, or moderate) that is reported by a person involved in the crash. Includes complaint of physical pain when no cause is evident, momentary unconsciousness, limping, nausea, hysteria, etc.

Motorcycle -- A two-wheeled or three-wheeled motor vehicle having one or more riding saddles and having an engine of more than 50 cc. If it has a 50 cc or smaller engine, it is classified as a motorized bicycle or motorscooter/motorbike.

Motorcycle Crash -- A motor vehicle crash involving one or more motorcycles.

Motor Vehicle -- A self-propelled vehicle, including attached trailers and semitrailers designed for use with such vehicles.

Motor Vehicle Crash -- A crash that involves a motor vehicle in transport on a public traffic-way in Minnesota and results in injury, death, or at least $1,000.00 in property damage.

Occupant -- Any person who is in or on a vehicle, including the driver, passenger, and persons riding on the outside of the vehicle.

Occupant Restraints -- Protective devices used in motor vehicles to keep the driver and passengers in their seats and prevent them from being ejected from the motor vehicle in a crash. Restraint devices include lap belts, lap/shoulder harness combinations, air bags, and child safety seats.

Passenger -- Any occupant of a motor vehicle other than the driver.

Pedestrian -- Any person not in or on a motor vehicle or other vehicle (e.g., a bicycle).

Pedestrian Crash -- A motor vehicle crash involving one or more pedestrians.

Restraint Usage -- An occupant's use of available vehicle restraints including lap belt, lap/shoulder combination harness, or child safety seats.

Rural -- Having a population of under 5,000.

School Bus Crash -- A crash involving one or more school buses. The school bus must collide with another vehicle, or pedestrian, or object, for the crash to be classified as a school bus crash.

Trafficway -- Any land way open to the public as a matter of right or custom for moving persons or property from one place to another.

Train/Motor Vehicle Crash -- A motor vehicle crash involving a motor vehicle in transport and a railway train. Presently, the only crashes classified as train crashes are those in which the first harmful event is collision with a train.

Truck Crash -- A motor vehicle crash involving one or more vehicles of the following types: (1) 2-axle, 6-tire single unit truck or stepvan, (2) 3-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type. Pickup trucks and vans are not counted as trucks.

Urban -- Having a population of 5,000 or more.