The Status Of Transportation Safety In Maine

Maine Transportation Safety Coalition
August 2004

Maine Transportation Safety Coalition

P.O. Box 818 • Augusta, Maine 04333-0818

Working Together To Promote Safe Transportation In Maine

Table of Contents

Introduction Letter 1

Committee Member Listing 2

Glossary of Terms 3

Executive Summary 4

1. Crash Trends 9
2. Young Drivers 14
3. Elderly Drivers 19
4. Seat Belt Use 21
5. Operating Under the Influence 23
   (Alcohol and Drugs)
6. Driver Behaviors: 25
   A. Aggressive Driving
   B. Inattention/Distraction
   C. Drowsy Driving
7. Lane Departure 31
8. Intersections 34
9. Motorcycles 37
10. ATVs and Snowmobiles 40
11. Bicyclists & Pedestrians 44

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Working Together To Promote Safe Transportation In Maine

Dear Transportation Safety Advocate:

On behalf of the Maine Transportation Safety Coalition (MTSC), I am pleased to provide you with the enclosed Report entitled The Status of Transportation Safety in Maine. The Report is a compendium of crash and other safety data that both qualitatively and quantitatively defines the major transportation safety issues facing our state today. It represents the first multi-agency effort ever undertaken to compile comprehensive Maine-specific transportation safety data and facts into one document.

This report was prepared by the Data Committee of the MTSC to identify focus areas for our organization and to assist our state leaders in making informed decisions on programs and activities affecting transportation safety in Maine. Our sincere thanks goes to the extraordinary efforts made by the following individuals of the MTSC Data Committee, who compiled the data, wrote and edited the Report, and contracted with the publisher:

- Carl Hallman, Maine Department of Public Safety, Bureau of Highway Safety and Chairman of the MTSC Data Committee
- Duane Brunell, Maine Department of Transportation, Bureau of Planning, Systems Management Division
- Dean Bailey, Maine Department of Human Services, Bureau of Health, Maine Injury Prevention Program.
- Robert Picone, Liberty Mutual Group (retired)

Special thanks also goes to the Maine Department of Public Safety, Bureau of Highway Safety, for providing the funding needed to publish this document.

The MTSC is a non-profit organization consisting of federal and state agencies, private organizations and individuals involved in transportation safety in Maine. Our Mission is "To promote safe transportation in Maine". We are committed to working collaboratively with our member agencies and others to improve safety for all Maine travelers.

If you have questions or would like additional copies of the Report, please feel free to contact any of the members of the MTSC Board of Directors identified in the left margin.

Sincerely,

Gerry Audibert, PE
Chairman

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Glossary of Terms

Estimated Economic Impact – Maine DOT uses Federal Highway Administration (FHWA) Motor Vehicle Crash Costs from Technical Advisory T7570.2 published on October 31, 1994: The costs below are ***Comprehensive Costs***, a method of measuring motor vehicle crash costs that includes the effects of injury on people's entire lives. The eleven components of the comprehensive cost are: Property Damage, Lost Earnings, Lost Household Production, Medical Costs, Emergency Services, Travel Delay, Vocational Rehabilitation, Workplace Costs, Administrative, Legal, and Pain and Lost Quality of Life. These cost indices have been updated by FHWA, but Maine DOT has not updated its costs, in order to maintain comparative analysis capabilities in looking at trends.

Crash injuries are classified **K, A, B, C or PDO** as defined below, based on the injury severity observed by the responding Police Agency. Costs are shown on a per injured person basis.

(K) FATAL INJURY OR FATALITY - any injury that results in death within 30 days of a crash. Estimated Economic Impact = $2,600,000

(A) INCAPACITATING INJURY - any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities the person would be capable of performing before the injury occurred. Estimated Economic Impact = $180,000

(B) NON-INCAPACITATING INJURY - any injury, other than fatal injury or an incapacitating injury, which is evident to observers at the scene of a crash in which the injury occurred. Estimated Economic Impact = $36,000.

(C) POSSIBLE INJURY - any injury reported or claimed which is not a fatal, incapacitating injury or non-incapacitating injury. Estimated Economic Impact = $19,000.

(PDO) PROPERTY DAMAGE ONLY - Damage is harm to property that reduces the monetary value of that property. Estimated Economic Impact = $2,000 per involved vehicle.

Additional Definitions

ADULT DRIVERS - Drivers, male and female between the ages of 25 and 64.

ELDERLY DRIVERS - Drivers, male and female from 65 years old and up.

HMVM - Hundred Million Vehicle Miles traveled

TEEN DRIVERS - Drivers, male and female between the ages of 15 and 19.

VMT - Vehicle miles traveled

YOUNG DRIVERS - Drivers, male and female between the ages of 15 and 24.

Executive Summary

Introduction

The Maine Transportation Safety Coalition (MTSC) is an independent, non-profit organization created in 1997. The mission of the MTSC is to promote safe transportation in Maine.

In carrying out its mission, the MTSC supports a variety of activities using education, engineering, enforcement and emergency services strategies. The MTSC includes representatives from the Federal Highway Administration (FWHA), the National Highway Traffic Safety Administration (NHTSA), various Departments of state government including the Department of Transportation (DOT); Department of Public Safety/Bureau of Highway Safety and Emergency Medical Services; Office of the Secretary of State/Bureau of Motor Vehicles; Department of Human Services/Bureau of Health; Department of Labor, the Maine Turnpike Authority, law enforcement agencies, insurance companies, private industries and concerned citizens.

This represents the first-ever multi-agency effort to gather transportation safety data, compile it into one reference book and identify the priority challenges Maine faces today. Data sources include the following:

- Federal Highway Administration
- Maine Department of Transportation
- Maine Department of Public Safety, Bureau of Highway Safety
- Maine Department of Human Services, Bureau of Health
  - Maine Injury Prevention Program
  - Office of Data, Research and Vital Statistics
- Maine Department of Inland Fisheries and Wildlife
- Maine Health Data Organization
- Maine Health Information Center, Crash Outcome Data and Evaluation System (CODES)
- National Highway Traffic Safety Administration
- Fatal Accident Reporting System
- National Center for Statistics and Analysis.

Data included in this publication is developed from reported crashes. The topics covered reflect many key safety issues in Maine. The participating agencies can also provide information on other important areas of transportation safety interest such as Moose/Large Animals, Work Zones and other specific subjects.

Summary

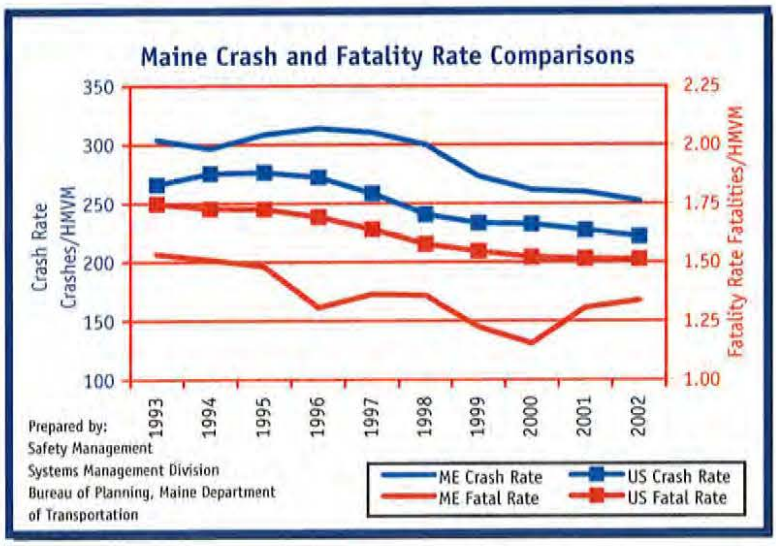
Maine is a rural state and our highways are the lifeblood of our economic and personal lives. The impact of road crashes in Maine is very significant. In 2002, there were about 37,000 crashes reported on Maine's public roads – that's 100 a day! Vehicle crashes on all Maine roads resulted in 216 fatalities and about 16,000 injuries and an estimated economic impact of $1.2 billion. The crash numbers are substantial but the personal impact felt by the family and friends of those involved, injured or killed is immeasurable and long lasting.

Highway fatalities have increased both in the state and nationwide during recent years. Following steady reductions during much of the 1990's, Maine's fatality rate increased for the second straight year in 2002 to 1.32 Fatalities/Hundred Million Vehicle Miles (HMVM), making it the worst year on record since the early 1990's. The national rate for 2002 was 1.50.

The number of annual crashes in Maine increased from a low in 1991 of 34,064 crashes through 1997 when the number of crashes peaked at 42,581. Crash frequency has decreased since then to about 37,000 in 2002. Maine's crash rate of 252 crashes/HMVM is slightly higher than the national rate of 222.

Motor vehicle crashes are the leading cause of injury death in Maine and the 9th leading cause of all deaths. During a typical year, over 1,100 people are hospitalized as a result of a motor vehicle related injury and an estimated 12,300 are treated in emergency rooms.

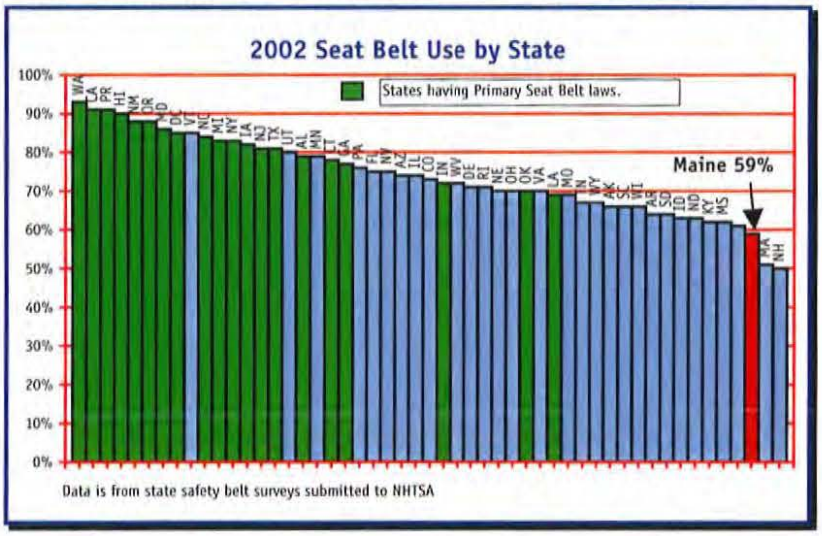
The Data Committee of the Maine Transportation Safety Coalition has compiled this reference book to help define the traffic safety issues that confront our state. Our hope is that this book will serve as a comprehensive source for information on traffic safety. The top four priority crash topics identified are:



Seat Belts/Passenger Restraints
Lane Departure Crashes
Younger and Older Drivers
Aggressive Driving

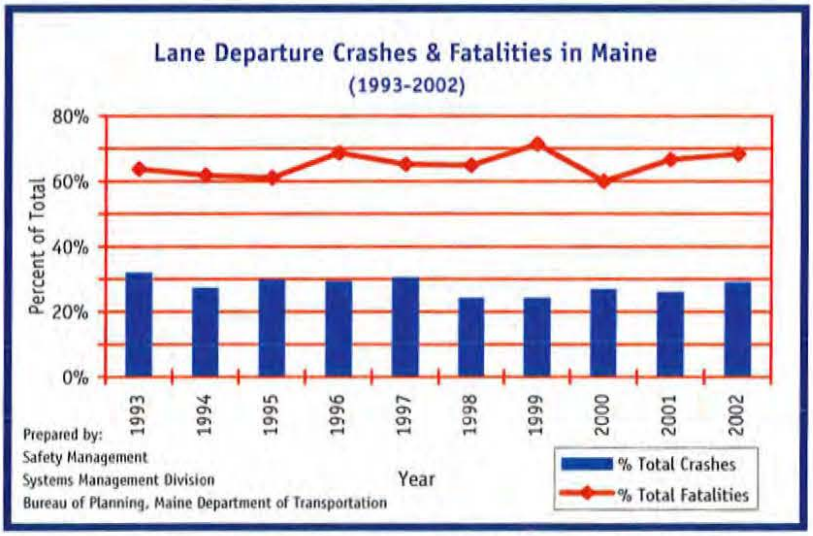
Seat Belts/Passenger Restraints

Maine has the 3rd lowest seat belt use rate in the nation. NHTSA's 2002 National Occupant Use Survey estimates that 79% of all adults use their seatbelts nationwide while a recent survey in Maine found that only 59% of adults used their seatbelts. This reflects little improvement in Maine since 1998. Research has found that lap/shoulder belts reduce the risk of fatal injury by 45%. Continued effort in education, effective legislation and effective enforcement is vital to Maine's transportation safety interests.



Lane Departure Crashes

Lane departure crashes include two crash types that result from at least one vehicle leaving its proper lane of travel – **Run Off Road** and **Head On crashes. Lane Departure crashes are the leading fatal crash type in Maine – accounting for nearly 70% of the state's crash fatalities. The two leading contributing factors to these crash types are illegal or unsafe speed and driver inattention.** These crashes tend to be more severe than others because of the speeds involved, and the likelihood to strike either stationary objects or other vehicles. There has been no significant reduction in either of these types of crashes or the resulting fatalities and injuries in recent years. Focus on engineering solutions, driver awareness and education and enforcement are necessary to reduce this trend.

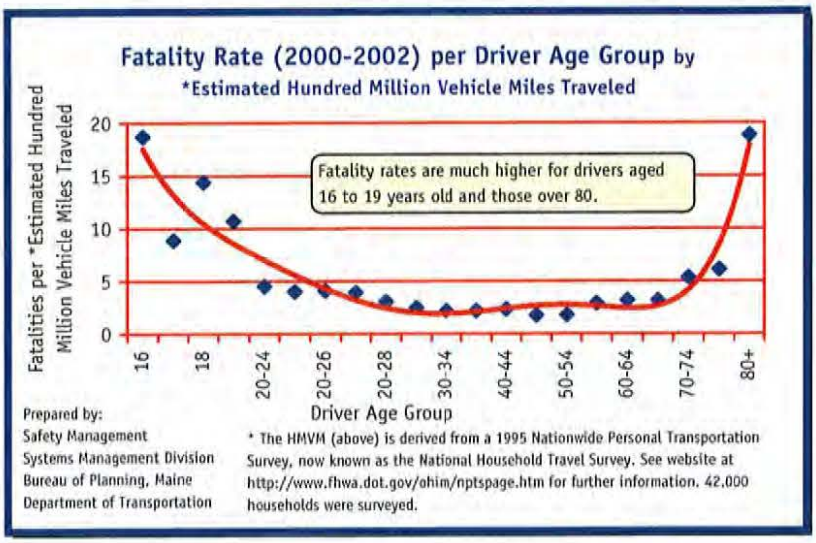


Lane Departure crashes account for about 28% of all crashes and roughly 70% of all fatalities. Fatalities have increased over the past 2 years.

Younger and Older Drivers

• Younger Drivers

Young drivers, ages 16 to 24, account for a disproportionate number of crashes, injuries and fatalities in Maine. While young drivers represent 13% of all Maine drivers, they represent nearly 30% of drivers involved in crashes. During an average year, one in every seven young drivers is involved in a motor vehicle crash. **For 16 and 17 year olds, one in four drivers will be involved in a crash each year. The injury rate for young drivers is 3 times higher than the injury rate for drivers over the age of 24.**



Leading contributing factors to teen fatal crashes are speed and driver inattention/ distraction. **Sixteen and seventeen year old drivers involved in crashes are 8 times more likely to be reported as driving at illegal or unsafe speed than drivers aged 25 to 98 (on a crashes-per-driver-population basis). Running off the road is the most prevalent crash type among teen drivers.** The total number of teens involved in fatal crashes over the last 5 years has not changed dramatically. The fatalities are linked to behaviors that can be positively impacted by education and enforcement. This points to the importance of developing good driving habits that can be carried throughout the years.

• Older Drivers

Maine has the third highest average resident age in the U.S. Over 100,000 licensed Maine drivers are 70 and older. The number of elderly drivers involved in crashes has risen over the past several years. As people age, they drive fewer miles but the risk of involvement in a motor vehicle crash increases dramatically. **The crash rate for a 78 year old is about twice that for a driver aged 65. Drivers in their early eighties have nearly triple the crash rate of drivers who are 65.** A variety of factors can affect older driver capabilities including vision, physical flexibility, reaction time, decision making, and medications. These factors can affect safe performance in key driving situations such as at intersections, turning, proper yielding, lane changing and actions that cause rear end crashes.

Older Drivers have a higher percentage of crashes than other drivers involving:

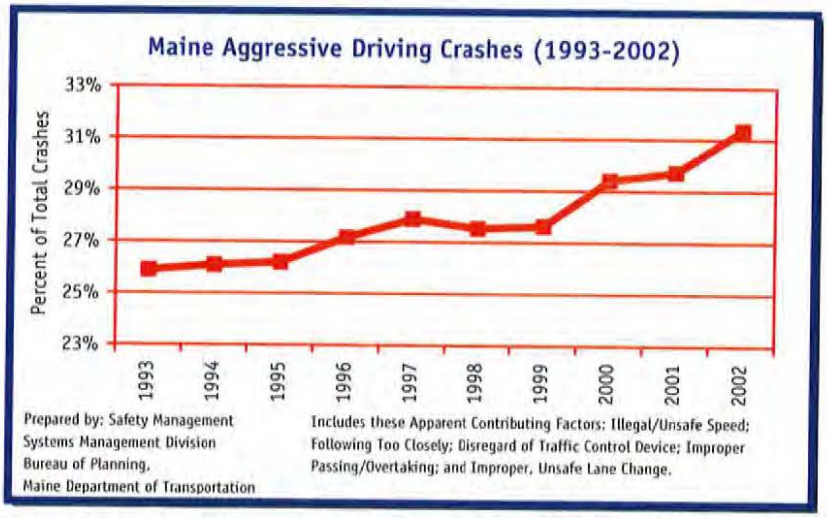
Contributing Factor/Pre-crash Action	Older Drivers (65 and Older)	Drivers Aged 25 through 64
A reported "Driver Contributing Factor" on a Police Crash Report	58%	47%
Intersection crashes	34%	23%
Not Paying Attention or Being Distracted	17%	14%
Failing to Yield the Right of Way	15%	6.5%
Disregard of Traffic Control Device	2.3%	1.1%
Making a Left Turn	14%	8%
Making a Right Turn	4%	2.9%
Backing	3.8%	2.8%
Changing Lanes	1.9%	1.2%

Aggressive Driving

Maine's overall crash trends are down, but those related to Aggressive Driving are steadily increasing. Better roads, improved comfort, handling and safety of newer vehicles, and other issues may be contributing to the growing phenomenon of unsafe speed and the resulting rise in injury and death. Aggressive driving occurs when a driver displays risky driving behavior, including:

- Illegal or Unsafe Speed
- Disregard of Traffic Control signs or signals
- Tailgating/Following Too Close
- Unsafe Passing
- Improper, Unsafe Lane Change.

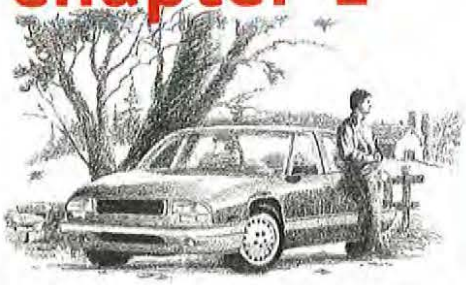
In 2002, there were 11,589 crashes related to Aggressive Driving, resulting in 75 fatalities (about 40% of all Maine fatalities) and 6,100 injuries. This compares to 1993, when there were 9,490 crashes resulting in 64 fatalities (about 35% of the total fatalities) and 5,100 injuries.



The number of crashes involving aggressive driving has continuously increased over the past decade... and now accounts for nearly 1/3 of all Maine crashes and 40% of all fatalities.

Speed is the leading factor accounting for 55% of the aggressive driving crashes. Eighty-five percent of aggressive driving**fatalities result from driving at excessive or unsafe speed.**

Chapter 1



Crash Trends

Maine's crash frequency has shown an improving trend but the number of fatalities has significantly increased in the past two years. There are several areas of crash concern and many will be covered in the chapters of this publication. Some of the overall Maine crash data findings include:

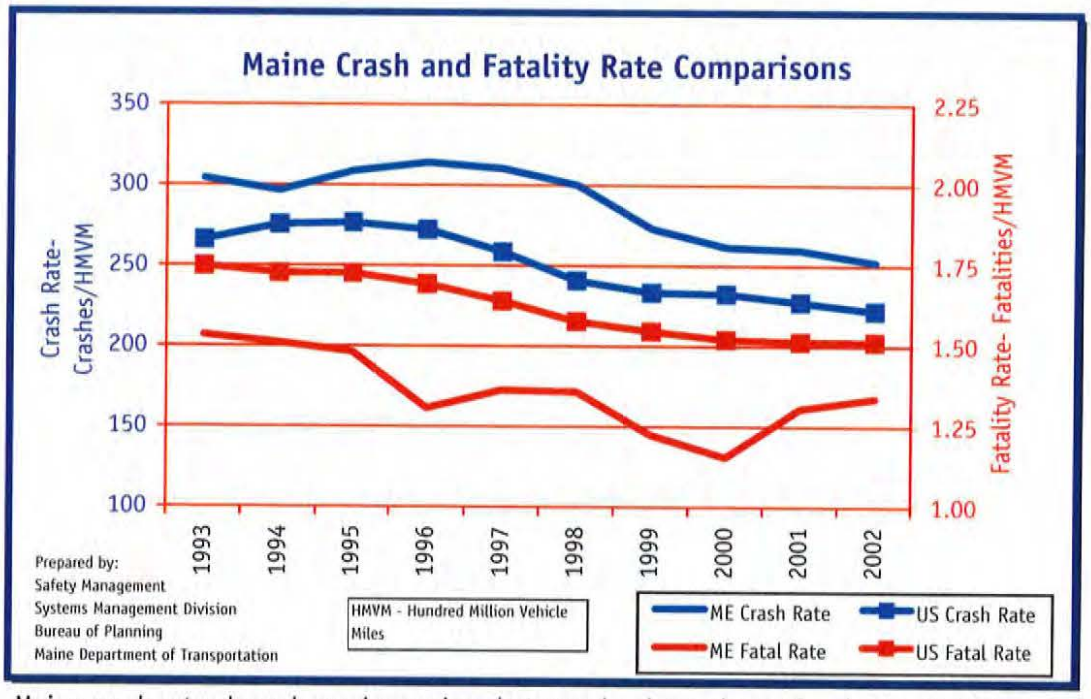
- Run Off the Road and Head On Crashes. (collectively referred to as Lane Departure crashes). These are Maine's leading fatal crash types.
- Seat Belt Use. Maine has the third lowest seat belt usage rate in the U.S. at 59%.
- Aggressive Driving, including Speed. Maine's crash frequency is increasing for collisions when aggressive tendencies are reported.
- Younger and Older Drivers. Younger and older drivers have a much higher crash and fatality rate than the overall driver population.
- Driver Inattention. This is the leading contributing factor in Maine crashes.
- Driving on Wet, Snowy or Icy Road Surfaces. More than one third of Maine crashes occur on wet, snowy or icy road surfaces.

Statewide

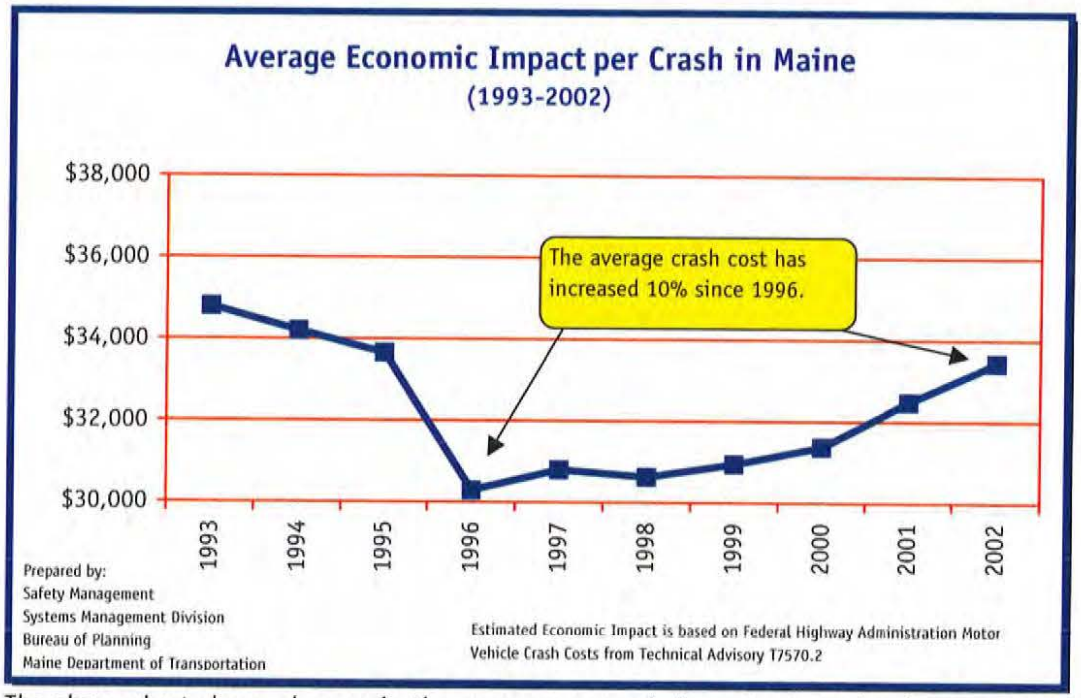
- The number of crashes in Maine has decreased from a high of 42,581 in 1997 to 36,943 in 2002. This trend occurred during a period when vehicle travel on Maine roads increased – total Estimated Vehicle Miles Traveled increased about 6% during that period. (Note: The law regarding reportable crashes changed in 1999 when the minimum property damage required for police reporting was increased from $500 to $1,000.)
- Fatalities increased during the last several years. In the last decade, Maine had its lowest number of fatalities (169) in 2000. The number of fatalities steadily increased since then to 216 in 2002, the highest number in the past 10 years.
- Injuries decreased to a ten-year low of 15,885 in 2002. In 1993 there were 16,884 injuries. The ten year peak was 17,640 in 1997.

Comparison with National Trends

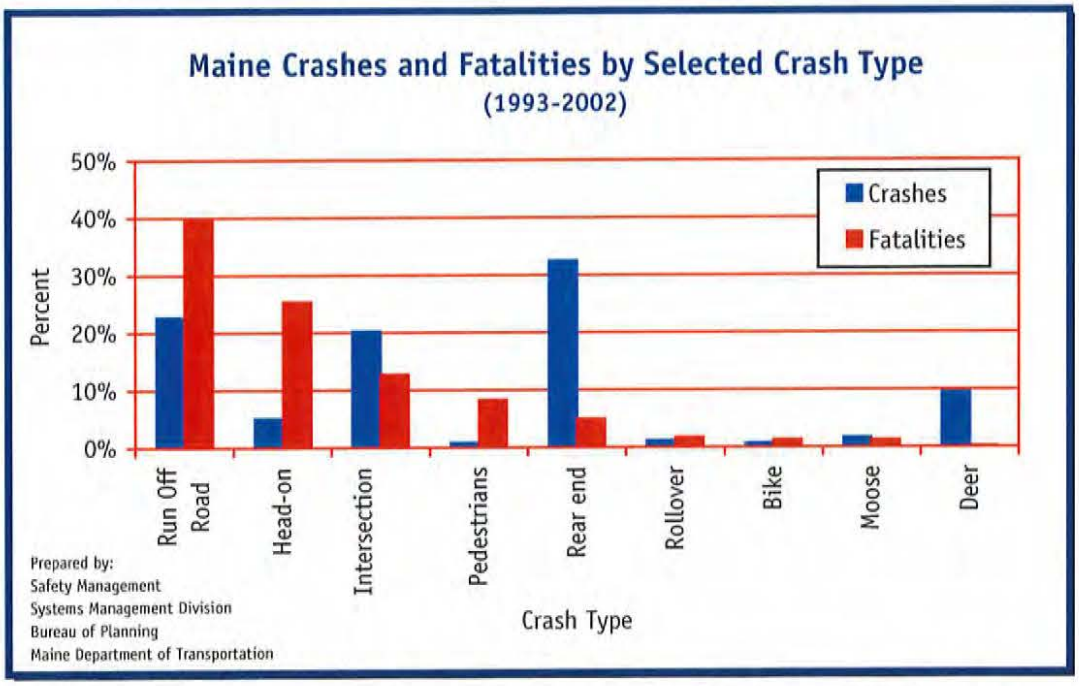
- Although Maine's fatality rate has been increasing over the last several years, it remains below national rates, but the gap is closing. National rates have been steadily decreasing during the last 10 years to a current rate of 1.51 fatalities/hundred million vehicle miles (HMVM). Maine fatality rates have been increasing since 2000, to a current rate of 1.34. Maine fatality rates have been as high as 1.53 fatalities/HMVM and as low as 1.15 during the past 10 years.
- Maine's crash rate of 252 crashes/HMVM is higher than the national rate of 222. National rates have been declining throughout the last 10 years. Maine's numbers have also been decreasing, with a 10 year high of 314 in 1996 and the current low of 252 in 2002.



Maine crash rates have been decreasing, but remain above the national rate. Maine's fatality rate is below the national average. It had been decreasing through 2000, but with the recent increase in crash fatalities, the fatality rates have increased during the last two years.

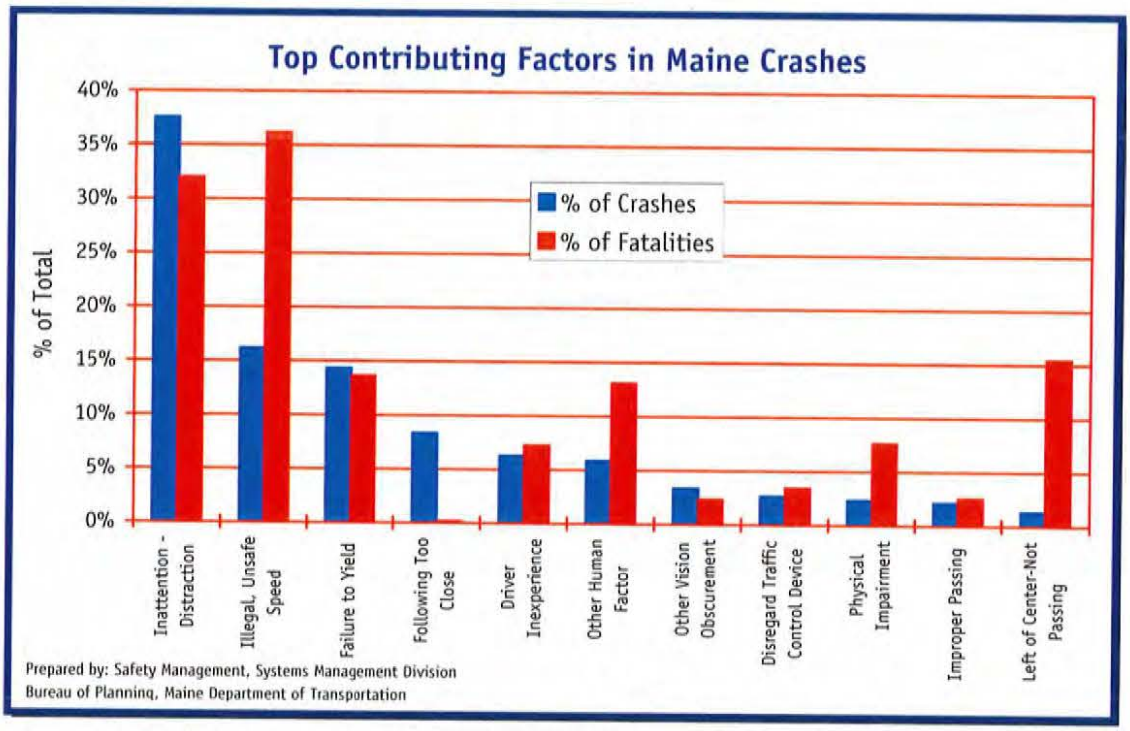


The above chart shows changes in the average economic impact per crash using constant estimated values for injuries and fatalities. The trend has been increasing since 1996 due to higher numbers of fatalities and injuries relative to the number of crashes.

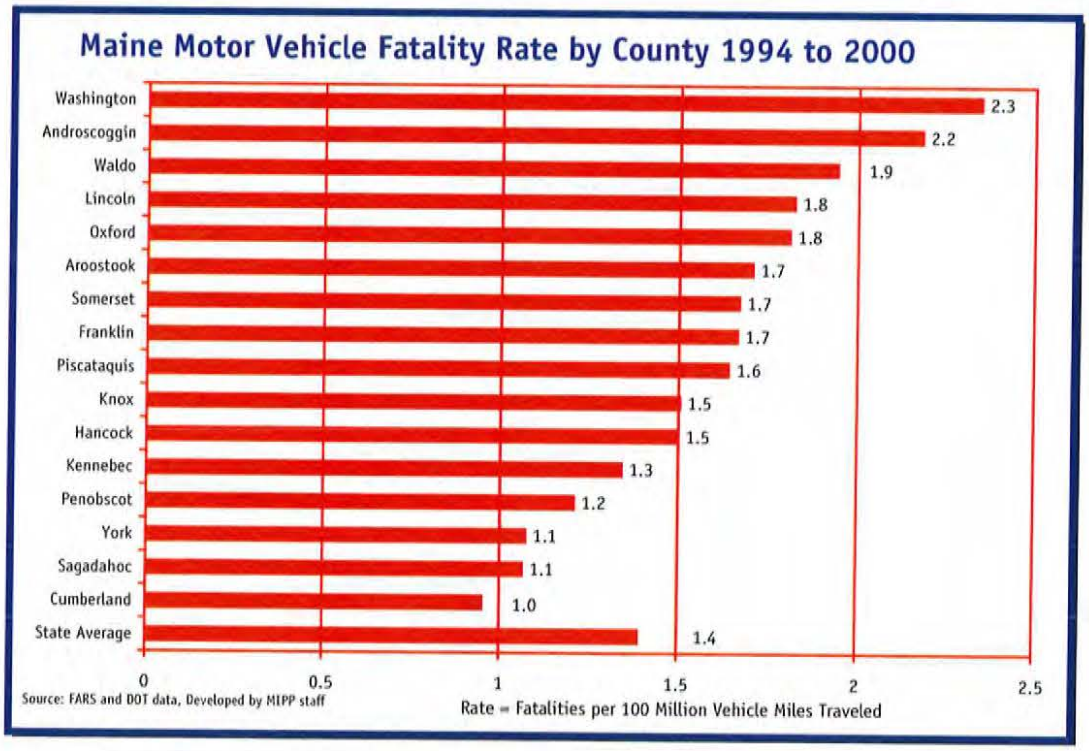


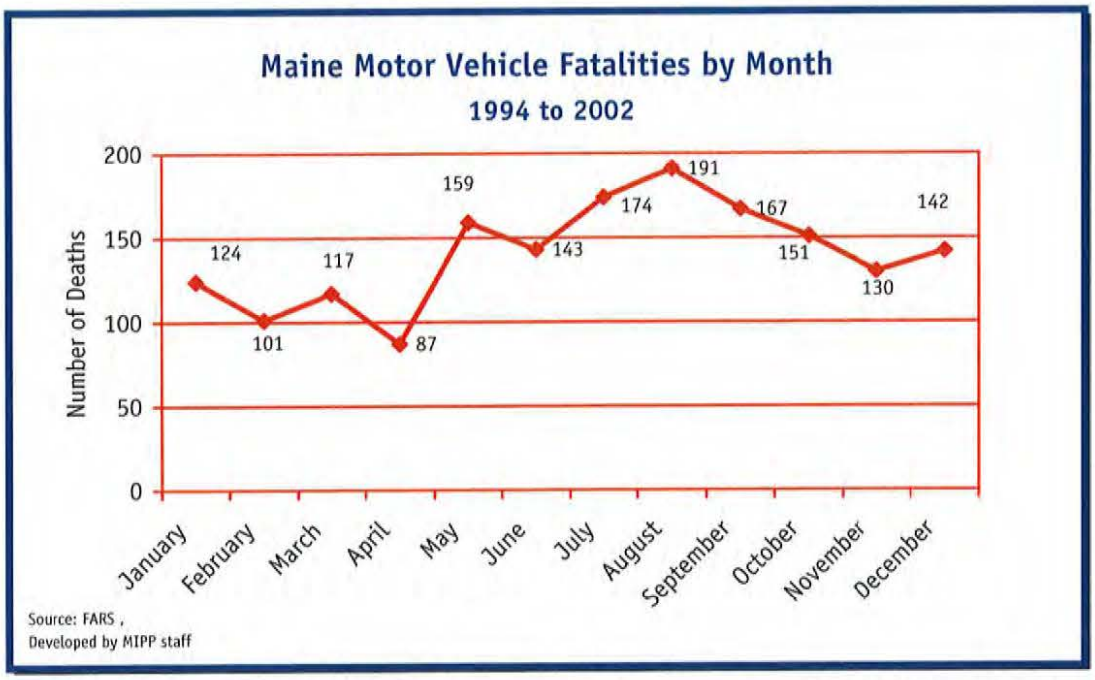
Crash types are shown in order of resulting fatalities. Run Off Road and Head On (Lane Departure crash types) are the most deadly. Rear End is the most frequent crash type.

Fatality rates are much higher for drivers aged 16 to 19 years old and those over 75.

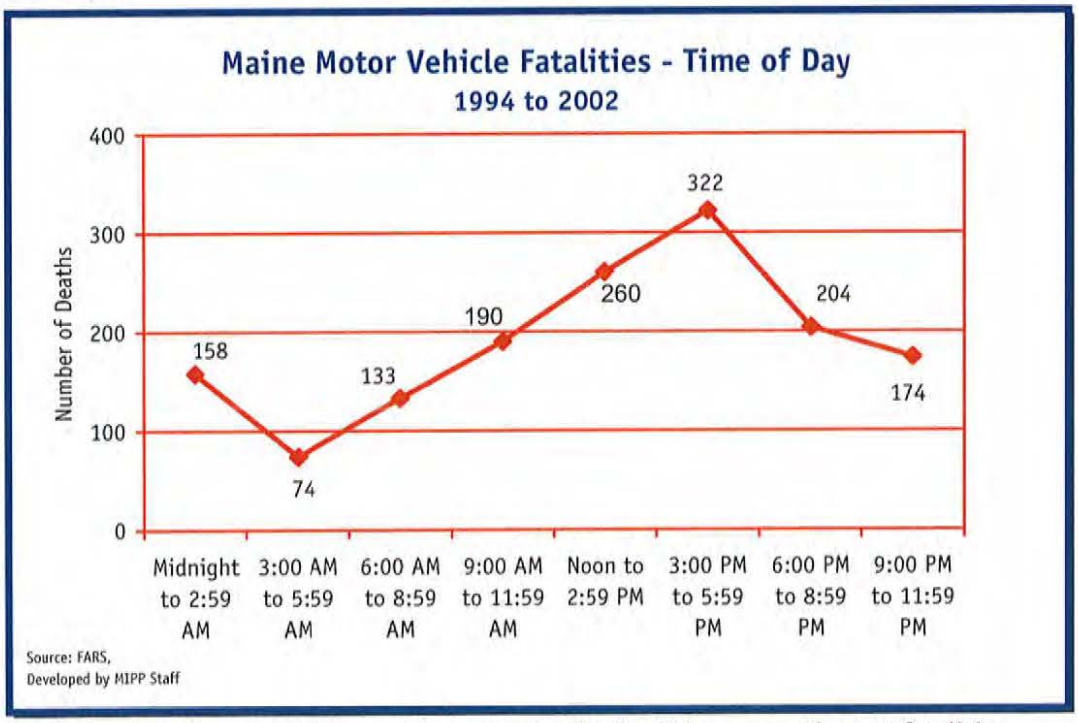


Inattention/Distraction is the most frequent contributing factor, Illegal/Unsafe Speed leads to the most fatalities.





Peak fatality months are July through September, when Maine experiences increased vacation traffic.



The hours from Noon to 6 PM are when most traffic fatalities occur. The 158 fatalities occurring from Midnight to 3 AM occur during hours when traffic volume is very light, so the fatality rate is very high during this time period.

Chapter 2

Young Drivers

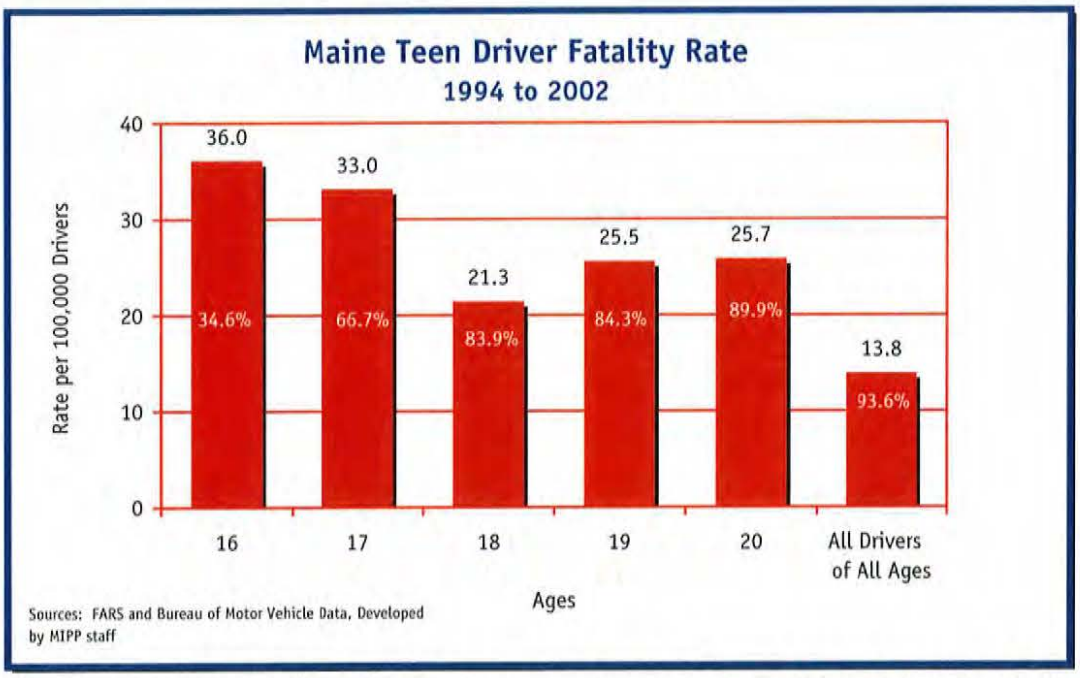
Young drivers, ages 16 to 24, account for a disproportionate number of crashes, injuries and fatalities in Maine. While young drivers represent 13% of all Maine drivers, they account for nearly 30% of drivers involved in crashes. During an average year, 1 in every 7 young drivers is involved in a motor vehicle crash. The injury rate for young drivers is 3 times higher than the injury rate for drivers over the age of 24. As can be seen from the charts, there is a direct link between the age of the driver and the risk of a crash or injury. The Maine Legislature passed a bill that established a 3-step graduated licensing system for new drivers under 21 years of age in 2003 to address the safety of young drivers.

Statewide

- Drivers, age 16 to 19, represent only 5% of licensed drivers, but 20% of those treated at hospitals for injuries from motor vehicle crashes.
- Sixteen-year-old drivers are 8 times more likely to be injured in a motor vehicle crash than drivers 25 years and older. Seventeen-year-old drivers are 5 times more likely to be injured.
- Eighty percent of crashes involving 16 and 17 year old drivers result from behavioral factors, such as speeding.
- In 2001, the average medical charges (excluding physician and long-term care costs) for a hospital stay that resulted from a motor vehicle crash were $33,607 for injured young drivers, costing Maine insurers over $28 million.
- Motor vehicle crashes are the leading cause of death for young people in Maine. In 2001, the fatality rate for motor vehicle occupants aged 16 to 24 was 15.37 per 100,000 population vs. 13.29 for the United States.
- Twenty percent of young driver fatalities are alcohol-related. That percentage is the same for drivers aged 16 through 20, who are underaged.
- Teen fatality rates (on a fatalities per estimated total miles traveled basis) are high during the hours of midnight to 3 AM.

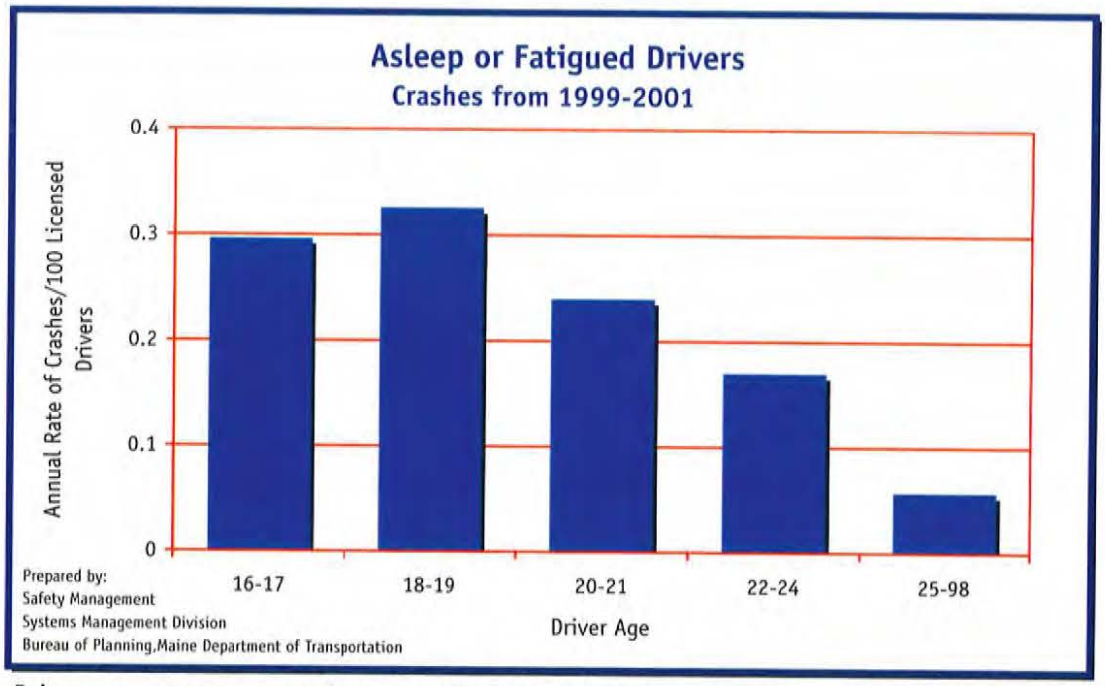
Nationwide

- In 2001, 8,134 15 to 20 year old drivers were involved in fatal crashes.
- Motor vehicle crashes are the leading cause of death for young people in the United States. In 2001, the fatality rate for motor vehicle occupants aged 16 to 24 was 13.29 per 100,000 population.
- In 2001, 25% of young drivers who were killed in crashes were intoxicated.

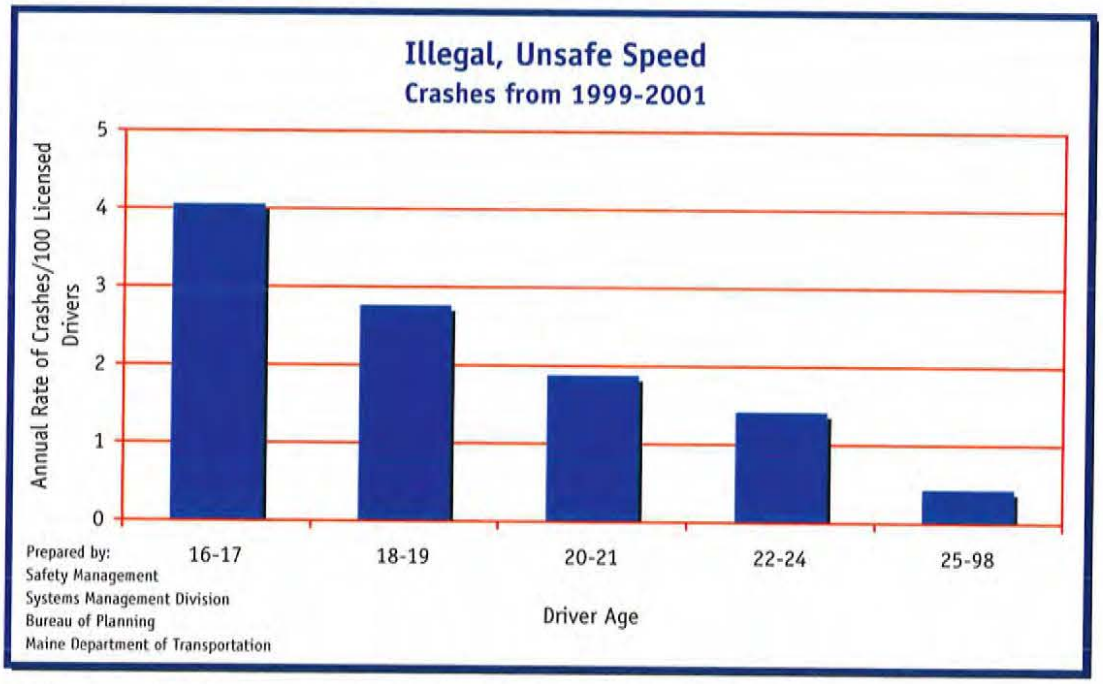


The black numbers are the rate of fatalities per 100,000 licensed drivers for each age (excludes permit holders and unlicensed drivers). The white numbers are the percentage of licensed drivers for each age. Licensed drivers age 16 to 20 are twice as likely to die from a fatal crash when compared to drivers of all ages.

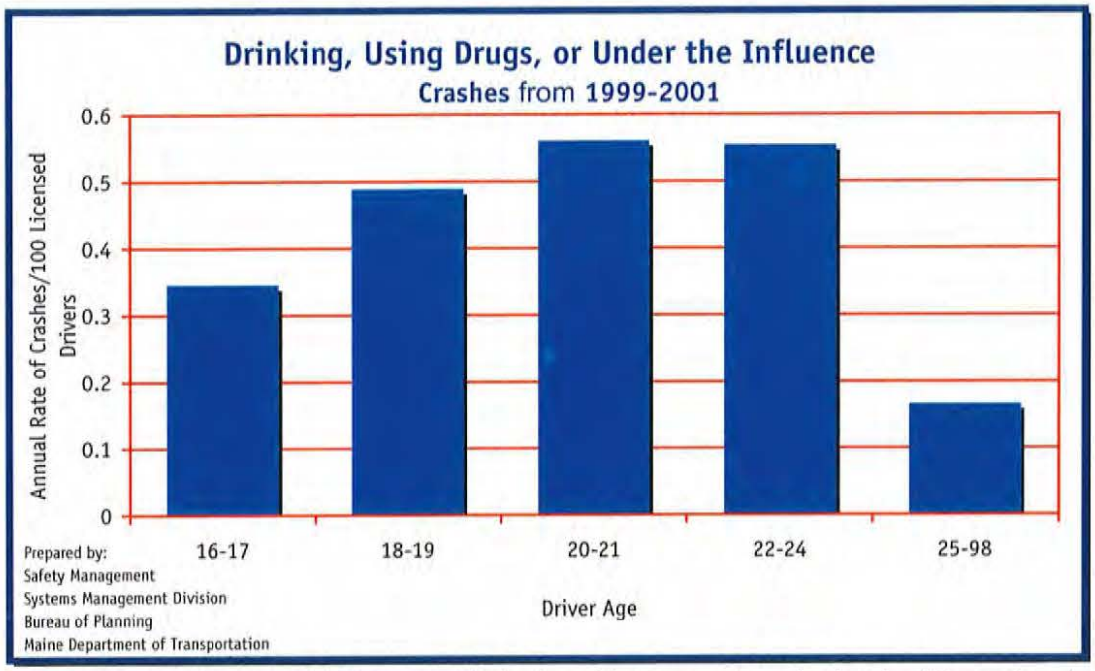
Fatality rates are much higher for drivers aged 16 to 19 years old and those over 75.



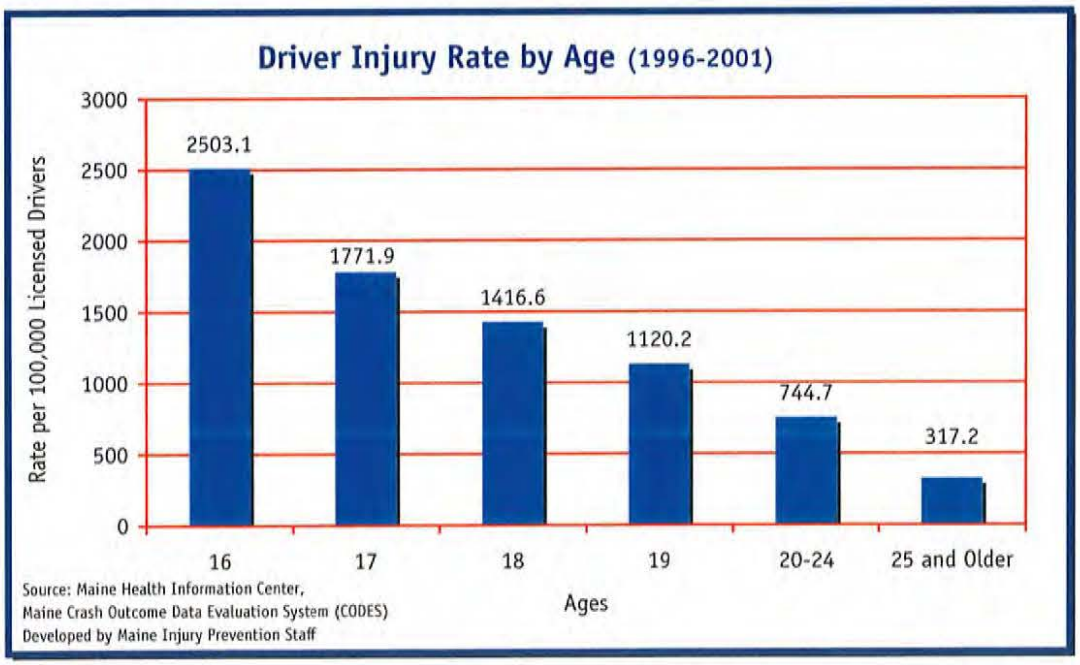
Drivers age 16 to 24 are 4 times more likely than drivers over 25 to experience a motor vehicle crash due to falling asleep or being fatigued.



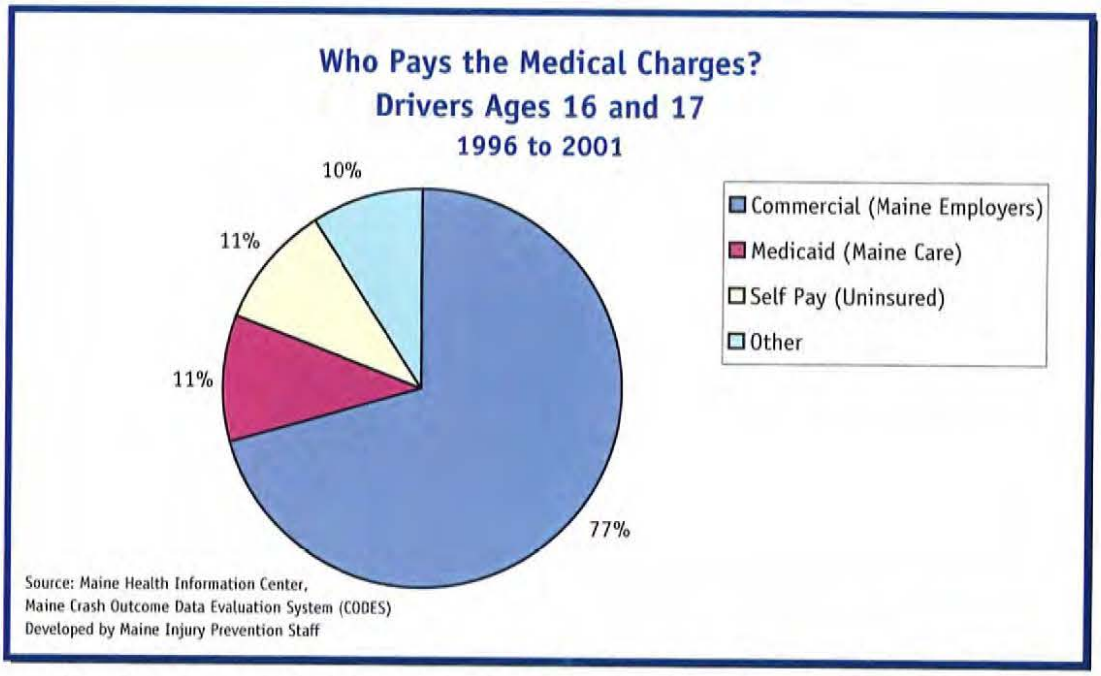
Drivers age 16 to 24 are 5 times more likely than drivers over 25 to be in a crash where excessive speed is a contributing factor.



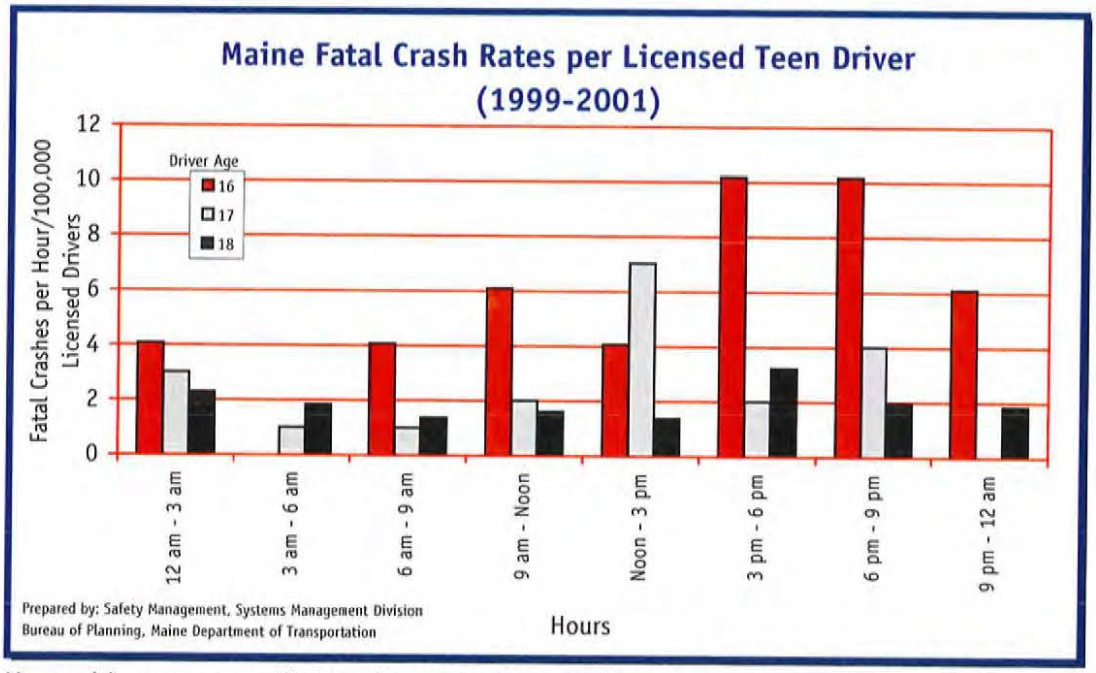
Drivers age 16 to 24 are 3 times more likely than drivers over 25 to be involved in crashes due to drinking or using drugs.



The Maine CODES project links police crash reports with EMS, hospital inpatient and death certificate data to conduct in-depth analysis of motor vehicle crashes. Using 6 years of linked data the project found that 16-19 year olds represented 5 percent of licensed drivers but 20 percent of the drivers treated at hospitals for injuries resulting from motor vehicle crashes. Eighty percent of the motor vehicle crash injuries for 16 or 17 year old Maine drivers result from behavioral factors.



For Maine drivers age 16 and 17, the average inpatient hospital charge was $33,607; the average hospital emergency department charge was $631. Injured passengers riding with Maine drivers age 16 and 17, added an additional 35 percent to the hospital costs from their crashes.



Young drivers are more likely to be involved in a fatal crash in the late afternoon and evening.

Chapter 3

Elderly Drivers

Maine's elderly population, and thus its elderly driving population, is growing steadily. They tend to drive fewer miles than other age groups, but were involved in 23% of all Maine fatalities in 2002.

Statewide

- Elderly drivers are classified in this document as drivers over the age of 65. Elderly drivers drive progressively fewer miles per year as they age (See table). However, Maine crash data indicates older drivers are more prone to crashes (See charts). Some older drivers may have poor eyesight, longer reaction time, or other physical impediments. Elderly people may sustain more serious injury in crashes due to physical frailty.

- The number of elderly drivers involved in fatal crashes has remained fairly constant between 1994 and 2002. Elderly drivers (over age 65) represent 16% of all drivers involved in fatal crashes but account for 23% of all fatalities. Compared to other age groups, a larger number of elderly people are killed in car crashes.

- Elderly drivers are more prone to be involved in certain crash types, such as Intersection Crashes, Not Paying Attention or Being Distracted, Failing to Yield the Right of Way, Disregarding Traffic Control Device and Making a Left Turn.

Comparison with National Trends

- National trends indicate the number of elderly people driving continues to increase. They account for 13% of all fatalities. In 2001, most fatal crashes involving older drivers occurred during daylight hours (82%), on weekdays (71%), and involved other vehicles (73%).

There is a significant crash rate increase for older drivers.

Nationwide Estimated Annual Vehicle Miles* by Age Group

Driver Age Group	Estimated Annual Mileage Driven
16-19	6,652
20-24	10,397
25-29	13,598
30-34	15,452
35-39	14,509
40-44	13,677
45-49	13,640
50-54	12,434
55-59	10,126
60-64	9,671
65-69	8,437
70-74	6,783
75-79	5,021
80+	2,581

Average estimated annual mileage is highest for those of working age. Mileage decreases significantly for those aged 65 and older.

* Above information is from a 1995 *Nationwide Personal Transportation Survey*, now known as the National Household Travel Survey. See website at http://www.fhwa.dot.gov/ohim/nptspage.htm for further information. 42,000 households were surveyed.

Prepared by: Safety Management, Systems Management Division, Bureau of Planning, Maine Department of Transportation

Chapter 4

Seat Belt Use

Maine's seat belt usage is the third lowest in the nation. The rate of 59% is relatively unchanged since 1998, while the national seat belt usage rate has gone up to 79%. A 2003 study done by the Preusser Research Group estimated that 12,000 lives would have been saved if all states had a primary seat belt law during 1995 to 2002.

Statewide

- There are two ways to capture seat belt use data:

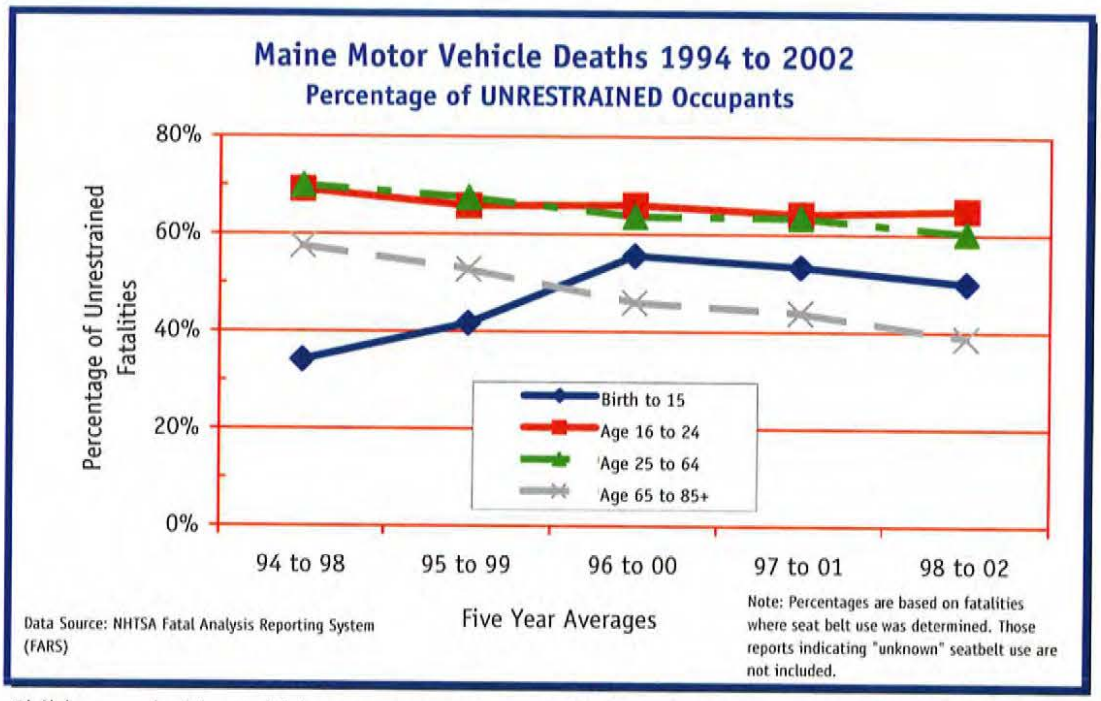
  1.) Record seat belt use from police crash reports. These reports are not considered reliable because some people would indicate "yes" when asked by police if they were wearing a seat belt prior to the crash. Police crash reports involving fatalities are somewhat more reliable. As the charts indicate, usage rate is about 60%. This comes from the FARS (Fatal Analysis Reporting System), which is Maine data from police fatal crash reports.

  2.) Capture seat belt use data through observational surveys. The Bureau of Highway Safety conducted a survey in 2002. The results of the study reveal a 59% usage rate. The Bureau of Highway Safety did another study in 1997, which also revealed a 59% usage rate. The study revealed pickup truck drivers had the lowest usage rates of 39.7% compared to 62% of sedan operators.

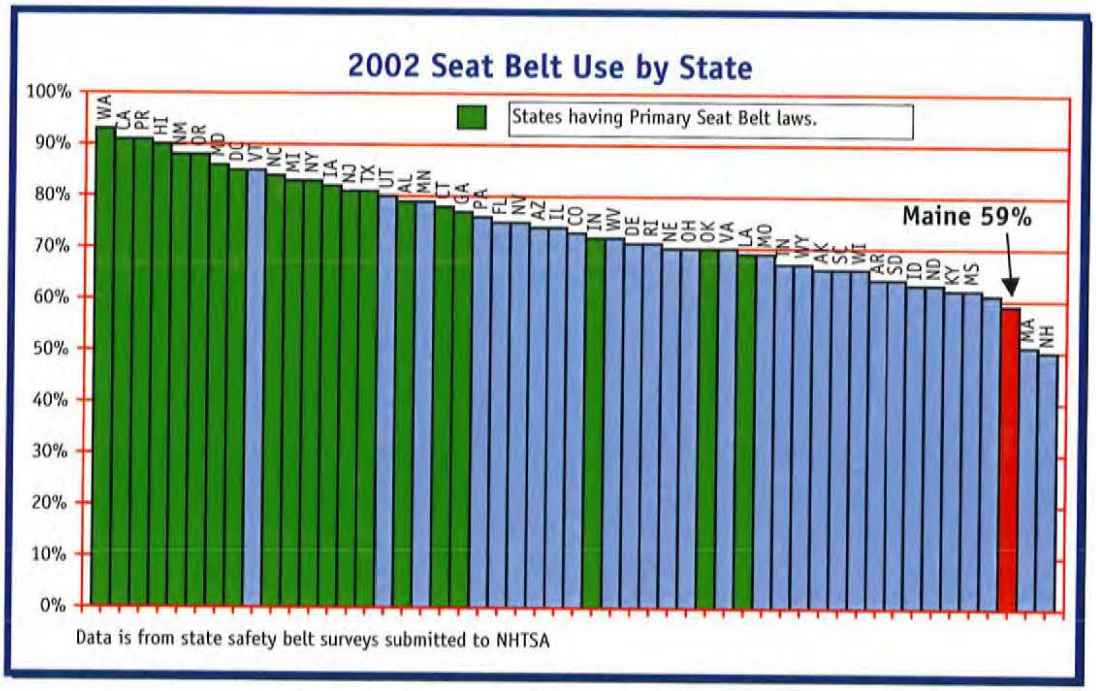
- Maine has a secondary Seat Belt Law that requires all occupants to use passenger restraints. The secondary law requires law enforcement to issue a summons to drivers (over 18 years of age) for seatbelt violations only when the traffic stop is initiated for other reasons. Drivers under 18 years old can be stopped and summonsed for seat belt violations only.

Comparison with National Trends

- The national average of seat belt usage is 79%. States that have primary seat belt laws have an average usage rate of 83%. States that have secondary laws have an average usage rate of 75%. Pickup trucks have the lowest seat belt usage rates among passenger vehicle types at 69%. Occupants of sport utility vehicles have the highest usage rate 83%. From 1975 to 2002 NHTSA estimated 147,246 lives were saved by seat belts.



Children and older vehicle occupants are more likely to use seat belts, based on fatal crash reports.



Maine has the third lowest seat belt use rate in the nation, with 59% of the adults using their seat belts.

Chapter 5

Operating Under the Influence (Alcohol and Drugs)

Clearly times have changed regarding how society feels about drinking and driving in Maine. The decrease in alcohol-related fatalities reflects this changing attitude. More people are driving more miles but fewer people are involved in crashes where drinking and driving was reported.

Statewide

Over the past several years, the number of alcohol-related fatalities in the state of Maine has decreased considerably. The percentage of alcohol-related fatalities to all crash fatalities prior to 1987 was over 50%. Since that time, the percentage of alcohol-related fatalities has been lower each year. The Fatal Analysis Reporting System established by the National Highway Traffic Safety Administration (NHTSA) indicates that any positive blood alcohol level is considered an alcohol related fatality. This includes the driver and pedestrian only. Passengers with positive blood alcohol levels are not counted. Since 1997 the percentage of alcohol-related fatalities has been less than 30% of all fatalities. In 2002 there were 42 alcohol related fatalities, 19% of all fatalities.

The number of arrests for operating under the influence of liquor (OUI) has fluctuated between 9,000 to 11,000 a year since 1991. Federal OUI grant programs have been made available to law enforcement agencies on a yearly basis over the past several years, due to Maine's OUI Laws. These programs are enforcement driven, to arrest violators for operating under the influence of alcohol.

Comparison with National Trends

A national study conducted by NHTSA in 2002 estimates alcohol-related fatalities are 41% of the total fatalities. This percentage rose slightly from 2001. Alcohol-related crash fatalities predominantly

- Occurred at night and on weekends;
- Involved drivers between the ages of 21-24;
- Were the highest for motorcycle operators.

More than 1/3 of all pedestrian fatalities were alcohol related. NHTSA stated that about 1.4 million people were arrested for operating under the influence of alcohol/drugs in 2001. The arrest rate is one out of 137 licensed drivers. In 2002, 35% of all traffic fatalities occurred in crashes where at least one driver or non-occupant had a BAC of 0.08% or greater.

Maine Motor Vehicle Crash Data and Alcohol Involvement From 1976-2003

Year	Total Crashes	Total Fatal Crashes	Total Fatalities	Alcohol-Related Fatalities
1976	30,147	201	227	136 **(59.9%)**
1977	32,183	200	218	131 **(60.1%)**
1978	32,719	212	245	147 **(60%)**
1979	29,577	203	239	140 **(58.6%)**
1980	27,910	234	261	157 **(60.2%)**
1981	26,698	186	211	127 **(60.2%)**
1982	30,522	151	166	84 **(50.6%)**
1983	31,375	198	224	127 **(56.7%)**
1984	34,544	211	232	125 **(53.9%)**
1985	36,799	189	206	110 **(53.4%)**
1986	40,378	190	214	108 **(50.5%)**
1987	43,201	212	232	114 **(49.1%)**
1988	40,764	231	256	89 **(34.8%)**
1989	43,498	175	190	61 **(32.1%)**
1990	37,468	196	213	81 **(38%)**
1991	35,046	181	205	73 **(35.6%)**
1992	35,548	189	214	85 **(39.7%)**
1993	37,819	168	185	74 **(40%)**
1994	37,561	167	189	65 **(34.4%)**
1995	38,512	171	188	51 **(27.1%)**
1996	39,760	156	169	55 **(32.5%)**
1997	42,510	172	192	63 **(32.8%)**
1998	40,877	176	192	50 **(26%)**
1999	39,024	168	181	51 **(28.2%)**
2000	37,251	159	169	46 **(27.2%)**
2001	37,580	170	192	49 **(25.5%)**
2002	36,979	186	216	42 **(19.4%)**

Prepared by Bureau of Highway Safety, 4/14/2003
Source: FARS Data and Maine Department of Transportation

Chapter 6 Driver Behaviors

Driver behaviors are often a leading factor in crash causation. About 85% of Maine crashes noted at least one unsafe behavior. Police crash reports can identify 22 unsafe behaviors. This chapter covers the leading Maine crash driver behaviors: Aggressive Driving (includes 5 contributing factors - with speed being the chief concern); Driver Inattention and Distraction; and Drowsy Driver.

Section A: Aggressive Driving

While overall crash trends are down, those related to aggressive driving are steadily increasing. Better roads, improved comfort, handling and other vehicle safety features may contribute to the growing phenomenon of unsafe speed and other aggressive driving practices that result in crash injury and death.

Aggressive driving occurs when a driver displays risky behavior. For the purpose of this report, aggressive driving is deemed to have occurred when one or more of the following Driver Contributing Factors are identified in Police Crash Reports:

- Disregard of Traffic Control Device
- Following Too Close
- Illegal or Unsafe Speed
- Improper Passing
- Improper, Unsafe Lane Change.

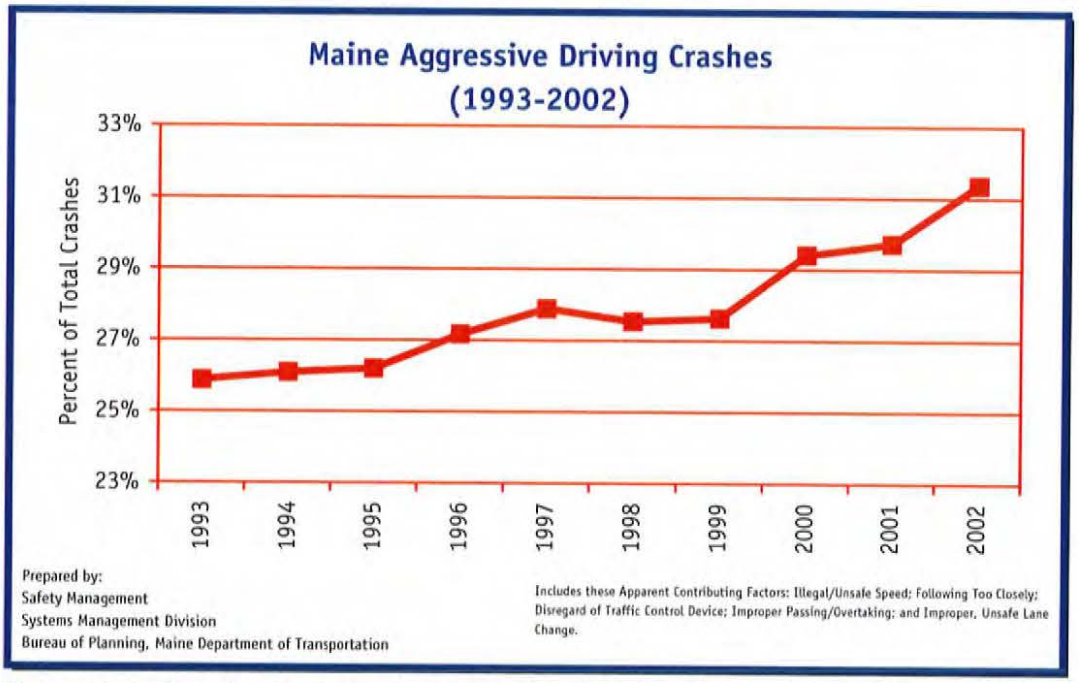
Other potential factors that were not considered include Failure to Yield the Right of Way; Driving Left of Center - not passing; and Hit and Run, as these factors may or may not reflect an aggressive driving style. For example, this latter group could also be the result of Driver Inattention.

Crash Data

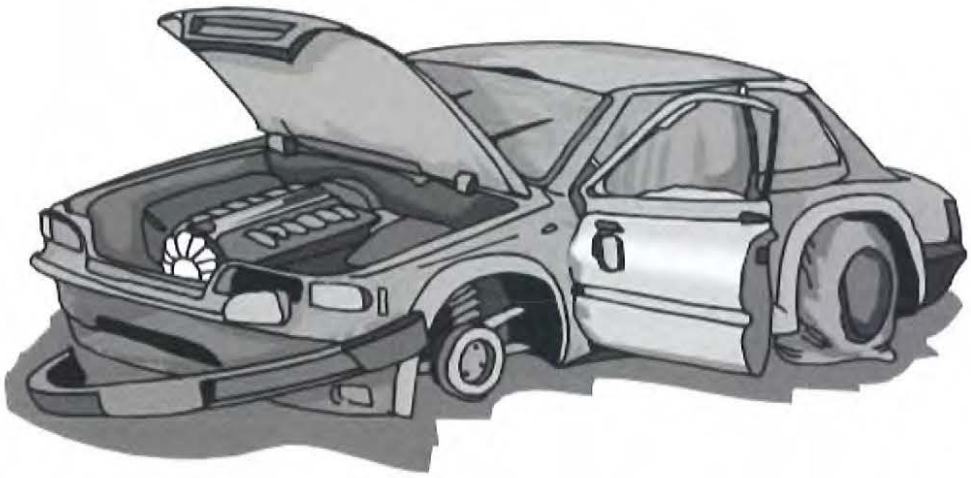
- In 2002, there were 11,589 crashes related to Aggressive Driving (31% of all crashes), resulting in 75 fatalities (40% of all fatalities) and 6,100 injuries.

  This compares to 1993, when there were 9,490 crashes (26% of all crashes) resulting in 64 fatalities (35% of total fatalities) and 5,100 injuries.

- **Speed** is the leading Aggressive Driving concern, resulting in 55% of all Aggressive Driving crashes and 85% of Aggressive Driving fatalities.



The number of crashes involving aggressive driving has continuously increased over the past decade, and now accounts for nearly 1/3 of all Maine crashes and 40% of all fatalities.



Driver Behaviors

Section B: Driver Inattention and Distraction

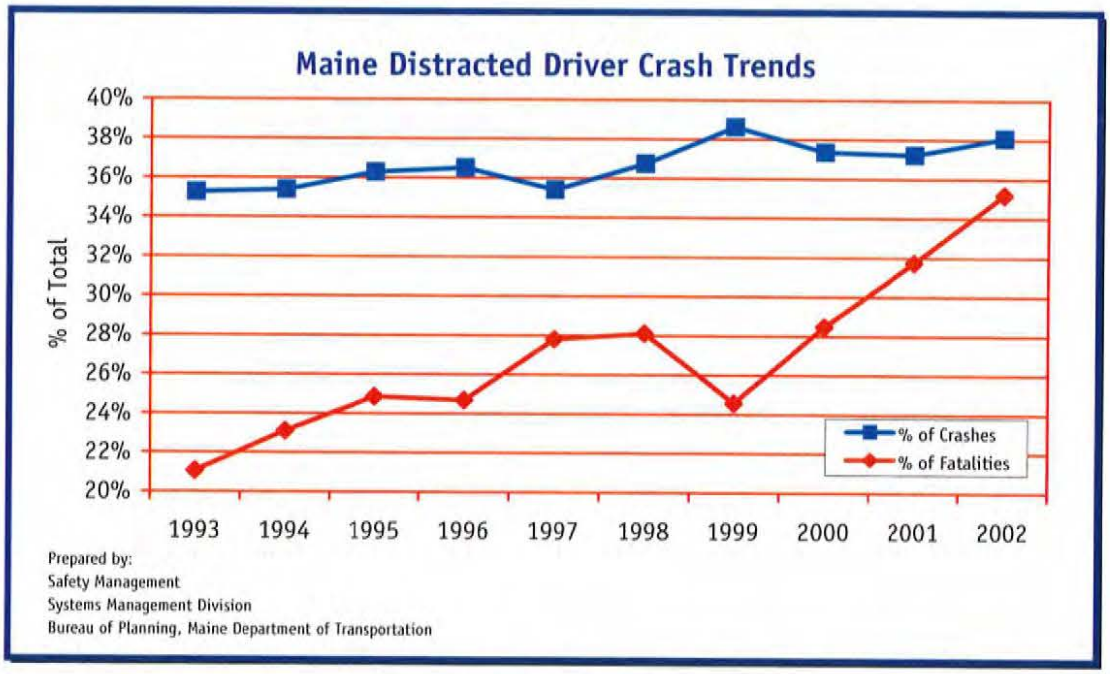
Driver inattention and distraction is a growing crash concern. Vehicle comforts and conveniences can sometimes draw a driver's attention away from the road. Drivers also find themselves multi-tasking – such as driving while eating, talking on the cell phone and interacting with passengers. Driving is a full time task demanding full concentration in order to remain on course, identify dangerous situations and for quick, safe decision making.

Distractions can be either those that take the driver's visual attention away from the road or mental, when the focus is on something other than the driving. Visual distractions include operating vehicle controls, changing CD's, looking for items, eating and drinking. Mental distractions occur when the driver is focused on non-driving subjects or is stressed or emotional. Distractions can be a combination of mental and visual demands such as conversations with passengers or cell phone use. Whatever the form, distraction or inattention can lead to dangerous crash producing situations.

Crash Data

Driving while Distracted or Inattentive is the number one contributing factor identified in Maine police crash reports.

- 14,000 crashes resulted from driver inattention or distraction in 2002, resulting in 69 fatalities and over 7,000 injuries.
- The number of crashes has increased from 12,929 crashes in 1993 to 14,069 in 2002. The percentage to total crashes is also rising, from 35.3% in 1993 to 38.1% in 2002.
- Driver inattention fatalities have risen sharply, from 39 in 1993 to 69 in 2002. The increase in percentage of total crash fatalities is from 21.1% in 1993 to 35.2% in 2002.



Crashes related to driver distraction/inattention have increased slightly in the past 10 years, from 35 to 38% of the total, but resulting fatalities have increased significantly, from 21% to 35%.

Section C: Drowsy Driver

Drowsy driving appears to be increasing in Maine. Surveys conducted have indicated that more people are falling asleep while driving. A person that falls asleep on the roadway is just as dangerous as a drunk driver.

Statewide

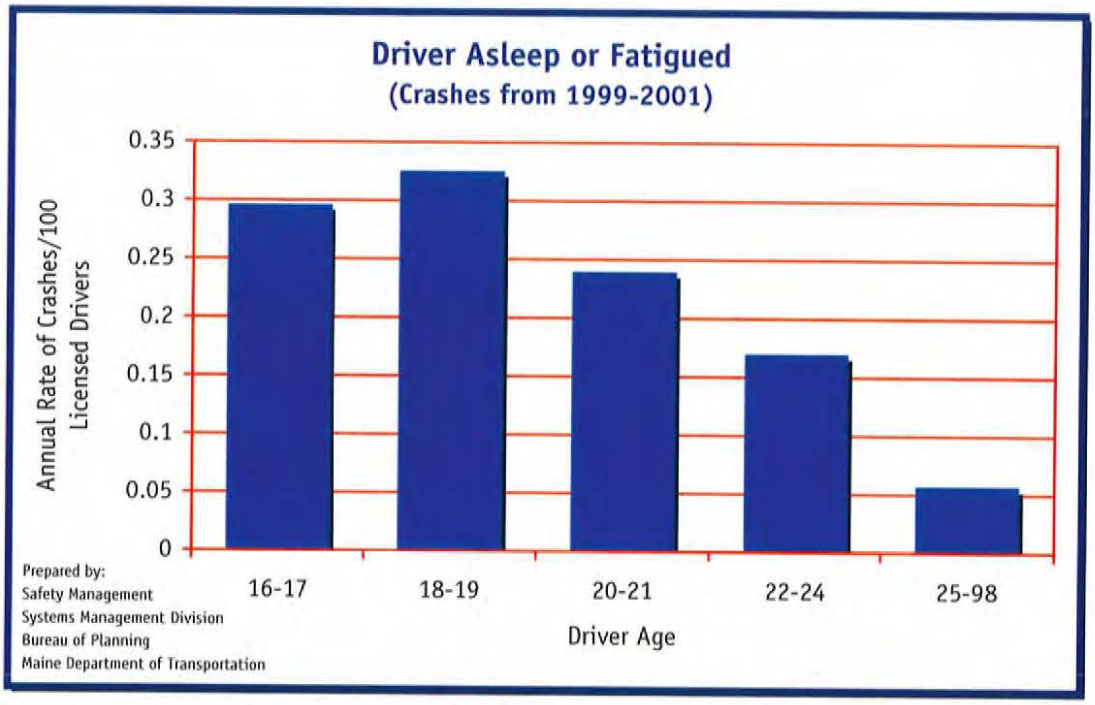
- Capturing statistical information on Drowsy Driving is somewhat limited since crashes involving running off the road that cause little damage often go unreported. The Police Crash Reporting System does capture the categories of Asleep and Fatigued as apparent physical conditions, but police may use inattention and distraction as a contributing factor, while, in fact, the driver was asleep. The Fatal Analysis Reporting System data from Maine indicates that drowsy driving is a contributing factor in some fatal crashes in Maine.
- Over the past 10 years, an annual average of 700 Asleep/Fatigued-related crashes have been reported resulting in 11 fatalities and 500 injuries.
- Younger drivers are 5 times more likely to be in an Asleep/Fatigued-related crash than the rest of the driving population.

Comparison with National Trends

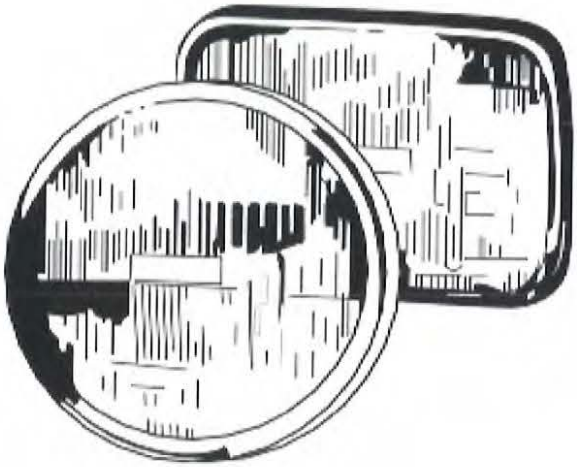
- NHTSA conservatively estimates that 100,000 crashes are the direct result of sleep deprivation each year. These crashes cause over 1,500 deaths and 71,000 injuries.

- A national survey done by NHTSA on driver fatigue noted that 37% of the drivers polled indicated they had fallen asleep at the wheel at least once in their driving career. Some factors about the drowsy driver are: average of only 6 hours of sleep, driving an average of 2.9 hours, driving on the interstate where speed limits are 55 mph and above, and nearly half fell asleep between the hours of 9 PM and 6 AM.

- The National Sleep Foundation has additional information on Drowsy Driving at their website www.sleepfoundation.org.



Younger drivers are 5 times more likely to be in a crash when they were Asleep or Fatigued.



Chapter 7

Lane Departure

Lane departure consists of two crash types that are the result of at least one vehicle leaving its proper lane of travel — Run Off Road and Head On crashes. These are Maine's top two fatal crash types. The two leading contributing factors to these crash types are illegal or unsafe speed and driver inattention. Lane Departure crashes account for nearly 70% of Maine's crash fatalities.

These crashes tend to be more severe because of the speed involved, and vehicles striking a fixed object or an oncoming vehicle. There has been no significant reduction in either of these types of crashes and their resulting fatalities and injuries in recent years.

Run Off Road

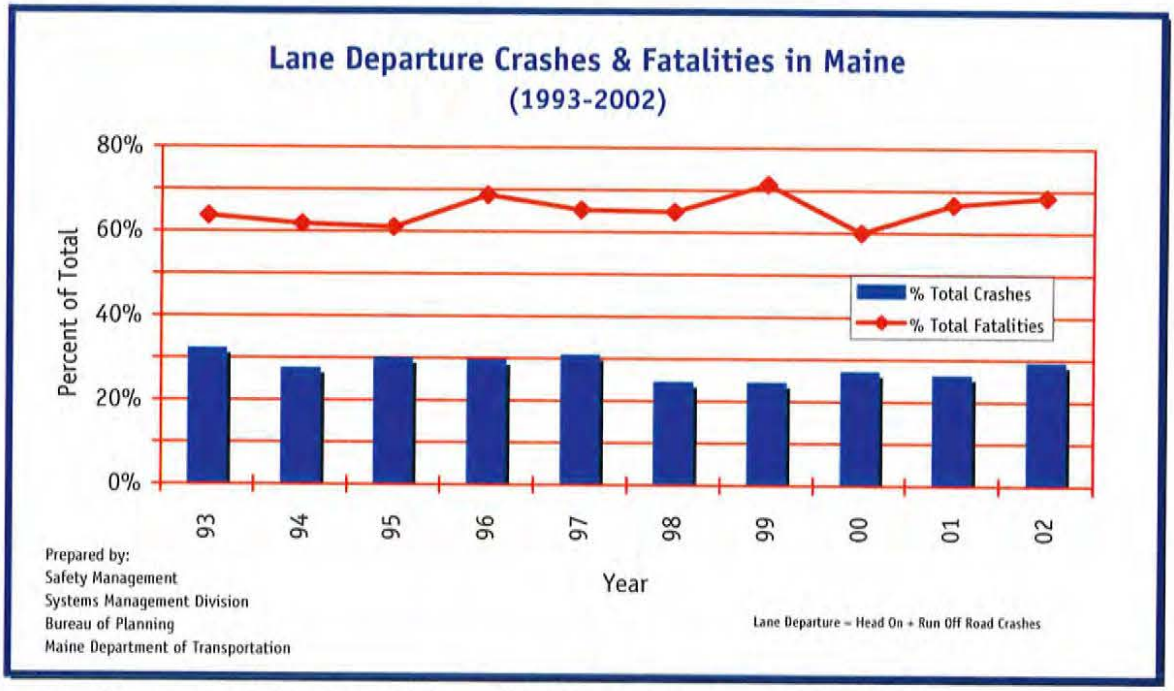
- Maine's leading fatal crash type. There were 94 fatalities in 2002 (more than 40% of the total)
- The second leading crash type in 2002, with nearly 9,700 run off the road crashes resulting in nearly 5,000 injuries.
- This crash type usually occurs when a single vehicle strikes a fixed object such as ledge, ditch, tree, or utility pole.
- The percentage of Run Off Road crashes to the state's total crashes is increasing, though the percentage of Run Off Road fatalities to the state's total is relatively unchanged.

Head On

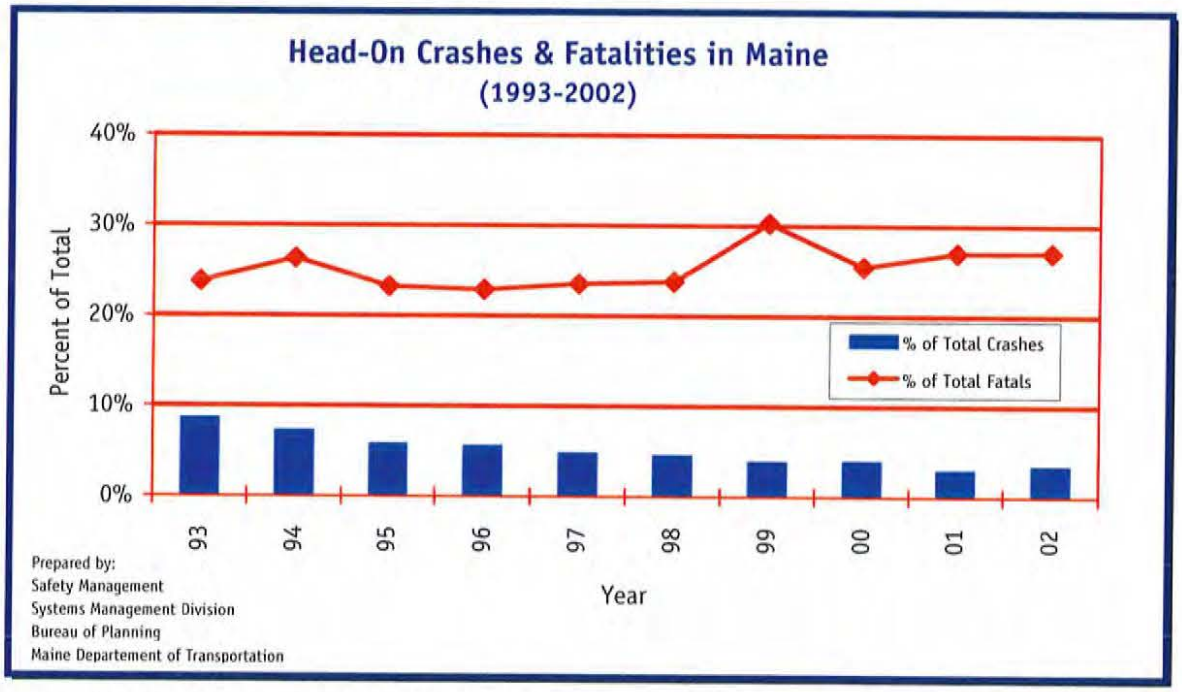
- With 1,259 crashes in 2002, this crash type has a relatively low frequency.
- Relative severity of a head on crash is high. There were 53 Head On crash fatalities in 2002. For all Maine crashes, there is an average of one fatality for every 200 crashes. This compares to Head On crashes, where there is an average of one fatality for every 25 crashes - a rate that is 8 times higher than the statewide fatality to crash ratio. The forces resulting from colliding vehicles traveling in opposite directions are severe.
- The number of head on crashes has been decreasing, but the percentage of Head On crash fatalities to all crash types has increased.

National Trends

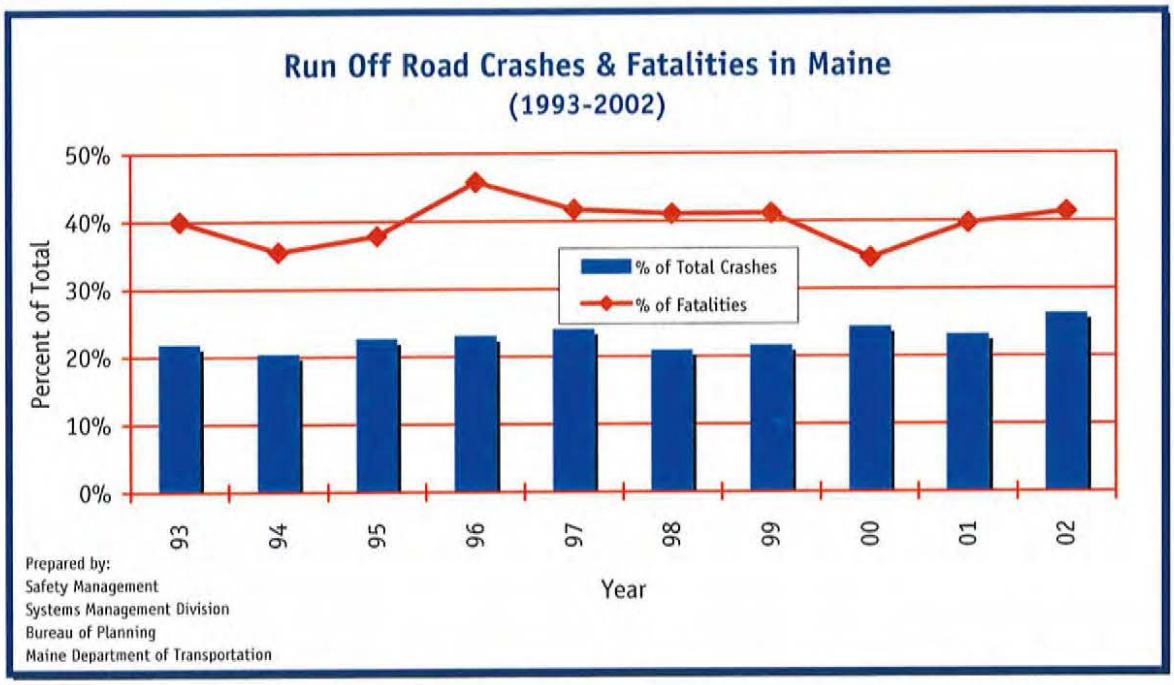
Fatalities from single vehicle Run Off Road crashes account for 39% of the total and Head On crashes for 14%. Total Lane Departure fatalities account for 53% of the national total.



Lane Departure crashes account for about 28% of all crashes and roughly 70% of all fatalites. Fatalities have increased over the past 2 years.



Head On crashes account for only 5% of the crashes, but are responsible for roughly 25% of the fatalities. Although the number of crashes has declined, the percentage of fatalities has gone up.



Run Off Road crashes account for about 20% of all crashes, yet are responsible for 40% of the fatalities.

Chapter 8

Intersections

Disregarding traffic signals is an increasing crash cause in Maine. Why do so many crashes occur at intersections, especially those that are signalized?

- Lots of activity. Signalized intersections are heavily traveled locations with slowing, stopping, and turning vehicles. The traffic scene constantly changes.
- Intersection layout and signal timing vary.
- Some drivers make mistakes - others take chances.
- Drivers looking for landmarks or signs lose sight of changes in traffic movement and traffic signals.
- Unsafe behaviors lead to taking chances such as: trying to make up time when running late; being aggressive or upset; or under the influence of alcohol or drugs.

General

- There were over 10,000 crashes at Maine intersections in 2002, resulting in 37 fatalities and 5,300 injuries.
- The annual number of overall intersection crashes has been decreasing, but the resulting number of fatalities has been relatively unchanged.
- The percent of intersection crashes to total crashes has been unchanged for most of the past 10 years, with reductions occurring in the last two years.

Signalized Intersections

In Maine, there are about 600 traffic signal controlled intersections.

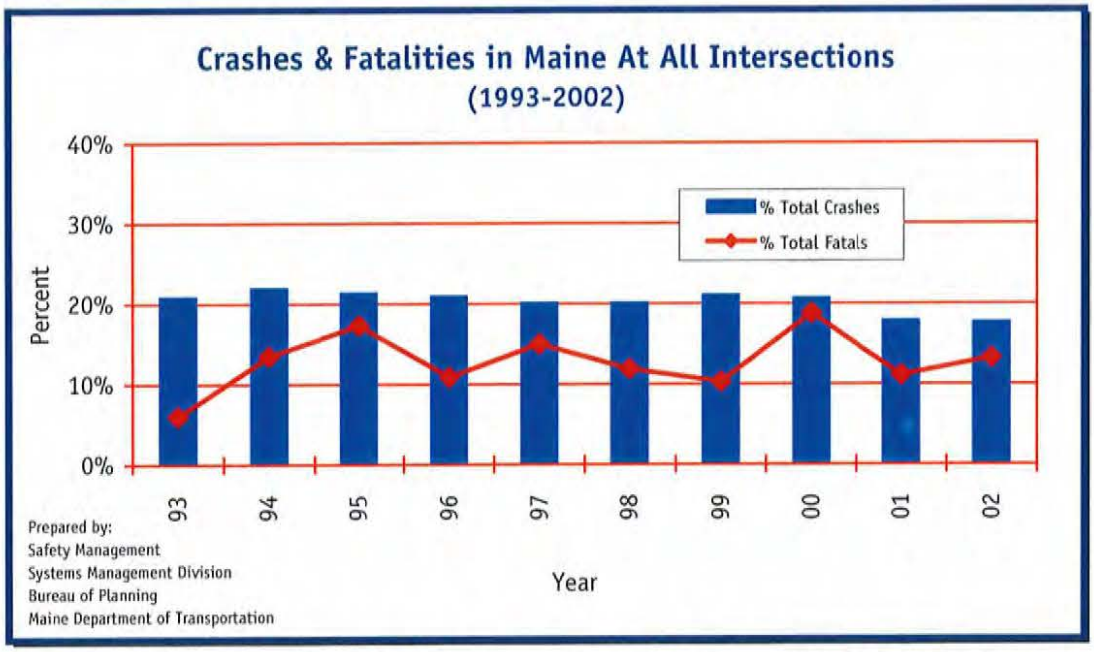
- There were 3,000 crashes at these locations resulting in 4 fatalities and 3,500 injuries in 2002.
- Red light running crashes have increased from 12% of all crashes occurring at traffic lights to 16% over the past four years.

There are two common driver errors at Maine traffic lights:

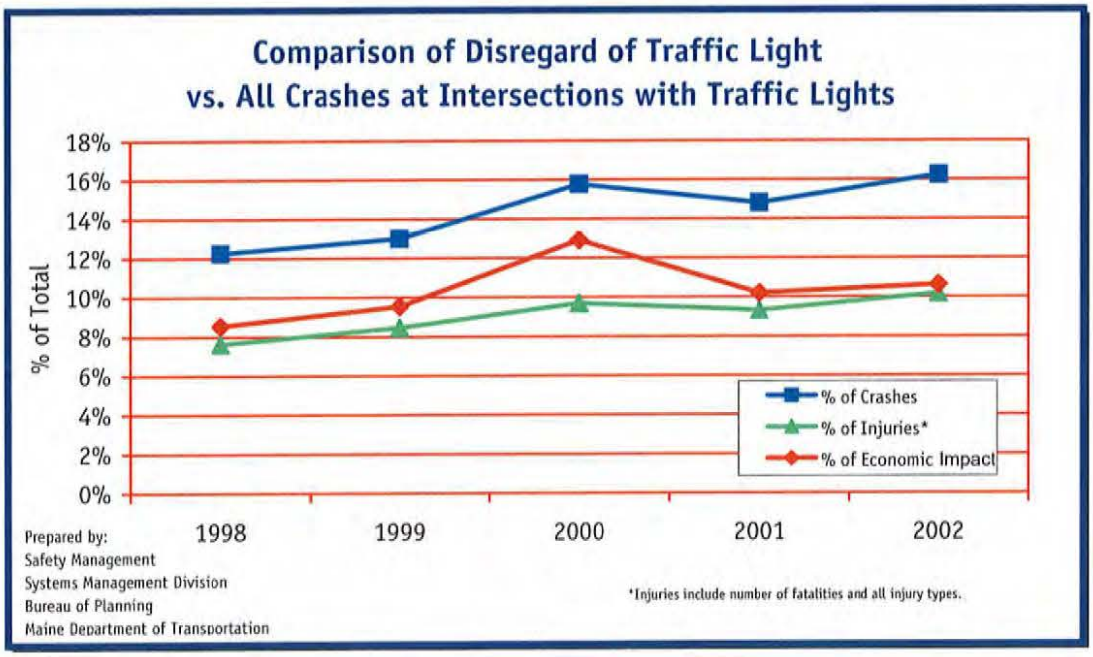
1. Drivers disregarding traffic signals caused over 1,500 crashes with an estimated economic impact of over $50 million from 2000 through 2002.
2. Another 2,400 crashes occurred during the last three years because drivers failed to yield the right of way.

National Trends

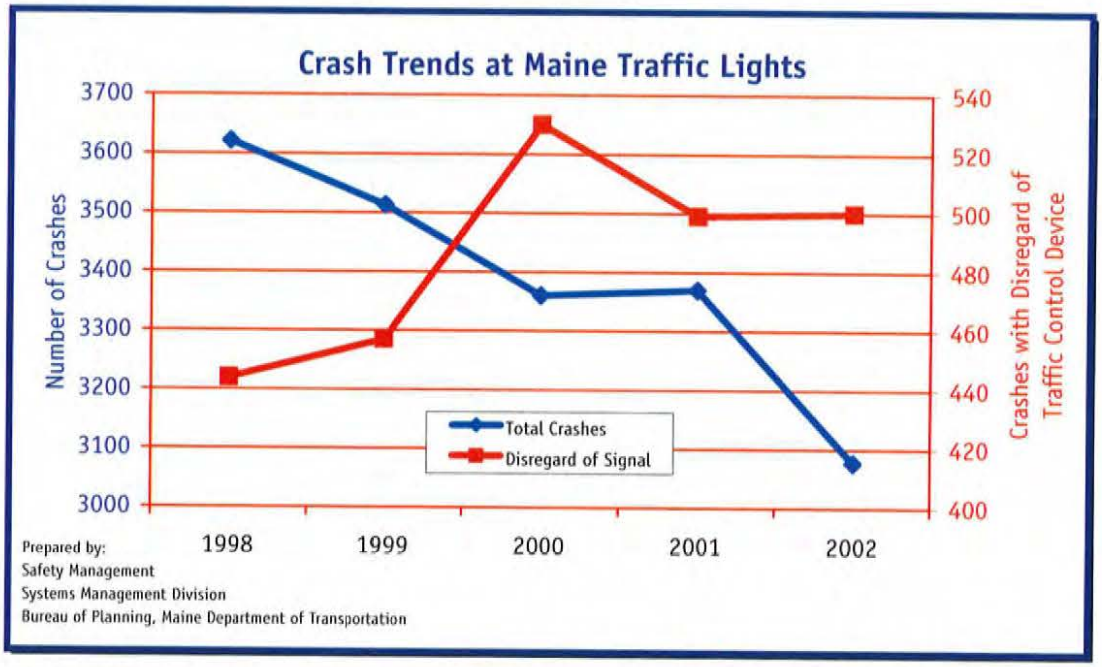
- In 2002, there were more than 1.8 million intersection crashes.
- In 2001, there were about 8,500 intersection related deaths.
- In 2002, there were 219,000 red light running crashes resulting in 1,000 deaths and 181,000 injuries.
- Forty-two percent of all pedestrian injuries and twenty-one percent of pedestrian fatal injuries occurred at intersections.



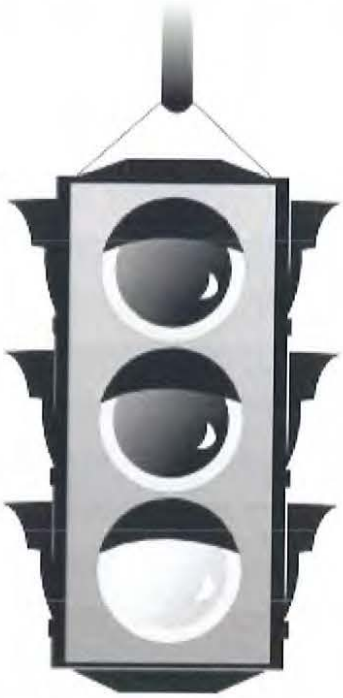
Intersection crashes account for about 20% of all crashes and roughly 12% of the fatalities.



From 1998 to 2002, disregard of traffic control device crashes increased by 31% and resulting injuries increased by 30% (as a percent of total signalized intersection crashes).



While overall crashes at intersections with traffic lights have decreased by 13% during the past five years, crashes where there was Disregard of Traffic Control Device are up by 13%.



Chapter 9

Motorcycles

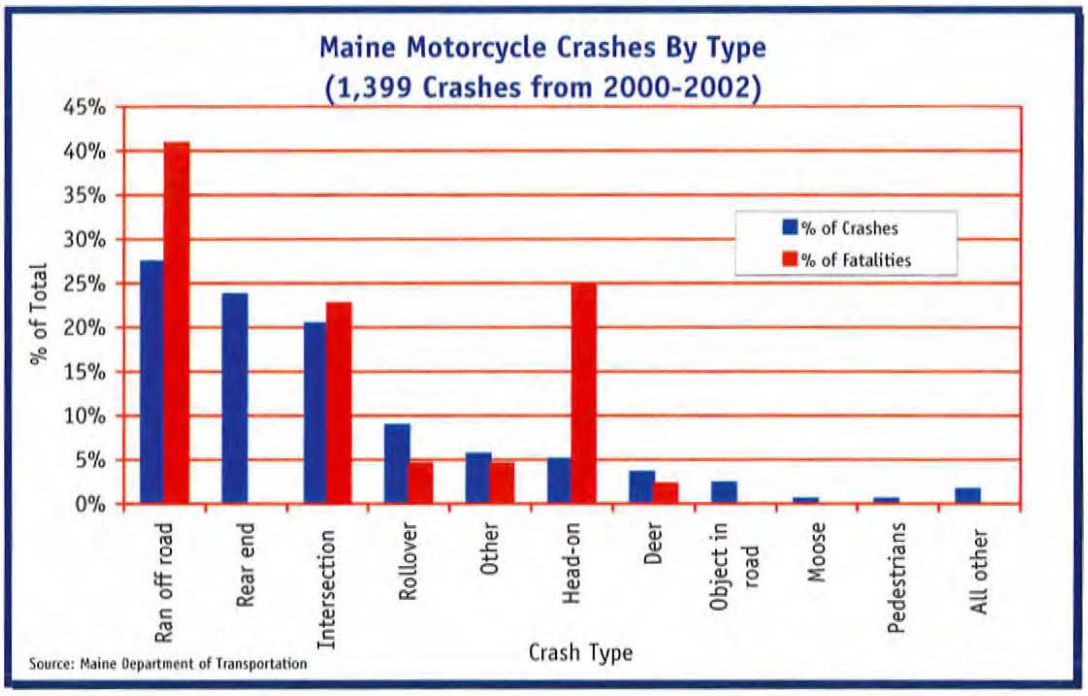
Motorcycle riding in Maine is a seasonal activity. The number of fatalities over the years has remained constant. The lack of helmet use in fatal crashes is high. Males account for the majority of fatal crashes. Alcohol use in fatal motorcycle crashes nationally is a concern. Over a 9-year span, 35% of Maine motorcycle drivers involved in fatal crashes used alcohol. Though below the national average, this rate is nearly double that of other Maine drivers involved in fatal crashes.

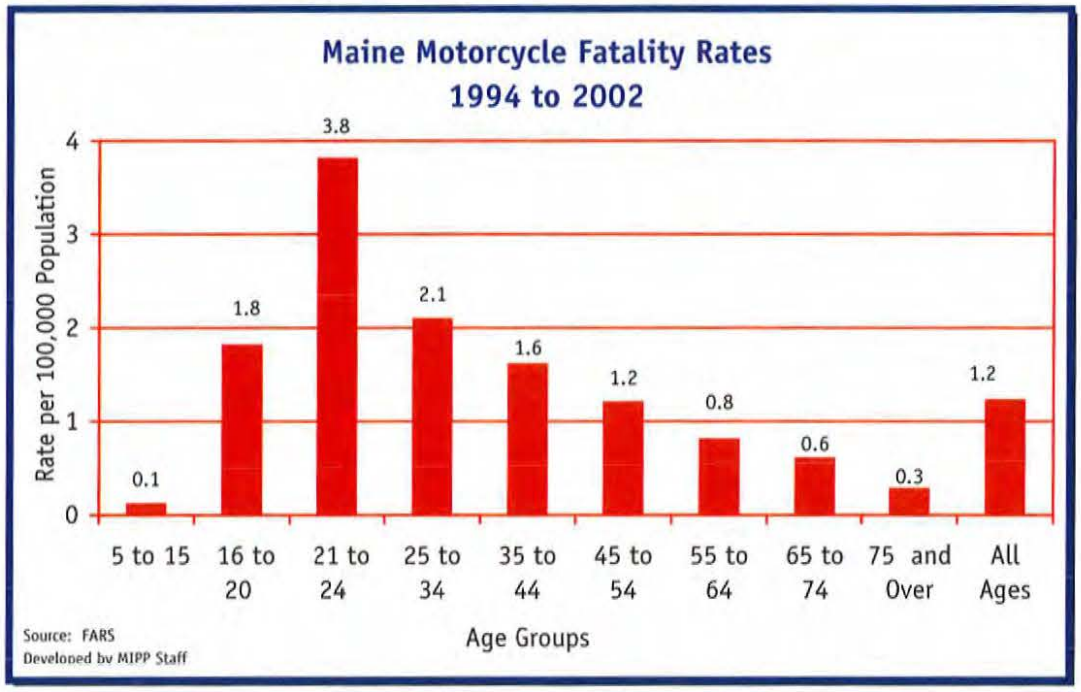
Statewide

- From 1994 to 2002, males accounted for 89% of all motorcycle fatalities. The ages from 21 to 24 have the highest rate of deaths per population (3.81/100,000). The second highest group is ages 25 to 34 with a rate of 2.09. The number of Maine motorcycle fatalities during the past 3 years were 13 in 2002, 14 in 2001, and 18 in 2000. The 18 fatalities in 2000 was the highest number in 9 years (7 fatalities in 1997 was the lowest). There were 131 people killed on motorcycles over the 9-year span. Of these, 94 people were not wearing helmets. Maine's helmet law was repealed in 1977. A 2002 CSI Research Center survey conducted for the state of Maine found that 35.6% of motorcycle riders wore helmets. Helmets are required for drivers in the following circumstances: operating on a permit, for one year following successful completion of a driving test, and any person under 15 riding as a motorcycle passenger.
- The most predominate types of crashes are: run off road, rear-end, head on, and intersection related.
- The number of fatalities has remained stable over the last few years, however the number of crashes and injuries has gone up.
- Maine motorcyclists have a higher percentage of Read End Crashes (24%) when compared to national rates (12%).

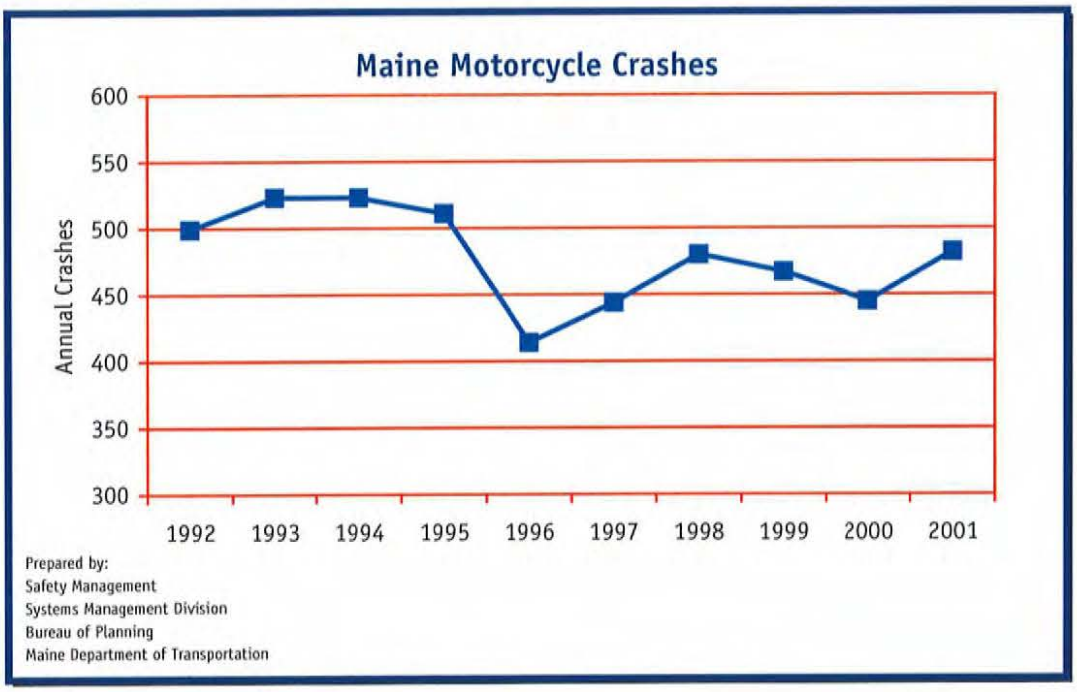
Comparison of National Trends

- A 2001 NHTSA study reveals that there was a 10% increase in motorcycle fatalities in one year, from 2,897 to 3,181. National statistics indicate a 50% helmet use rate. NHTSA also states that helmet use reduces brain injury by 67% and fatalities by 29%.
- NHTSA 's 2001 study indicates that motorcycle drivers had the highest amounts of alcohol concentration rates among all vehicle operators. Forty-one percent of all motorcycle fatalities involved operators who were intoxicated.





Males accounted for 89% of all motorcycle deaths during this period.


Maine Motorcycle Crashes
Annual Crashes
600
550
500
450
400
350
300
1992
1993
1994
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Prepared by:
Safety Management
Systems Management Division
Bureau of Planning
Maine Department of Transportation

Chapter 10

ATVs and Snowmobiles

Snowmobile and All Terrain Vehicle (ATV) use has increased in Maine in the last decade. Recreational motor vehicle use is important to Maine's economy and way of life. Although the number of ATV trails is much more limited than for snowmobiles, recent attention to the issue by the Governor's ATV Task Force will likely result in increased recreational opportunities.

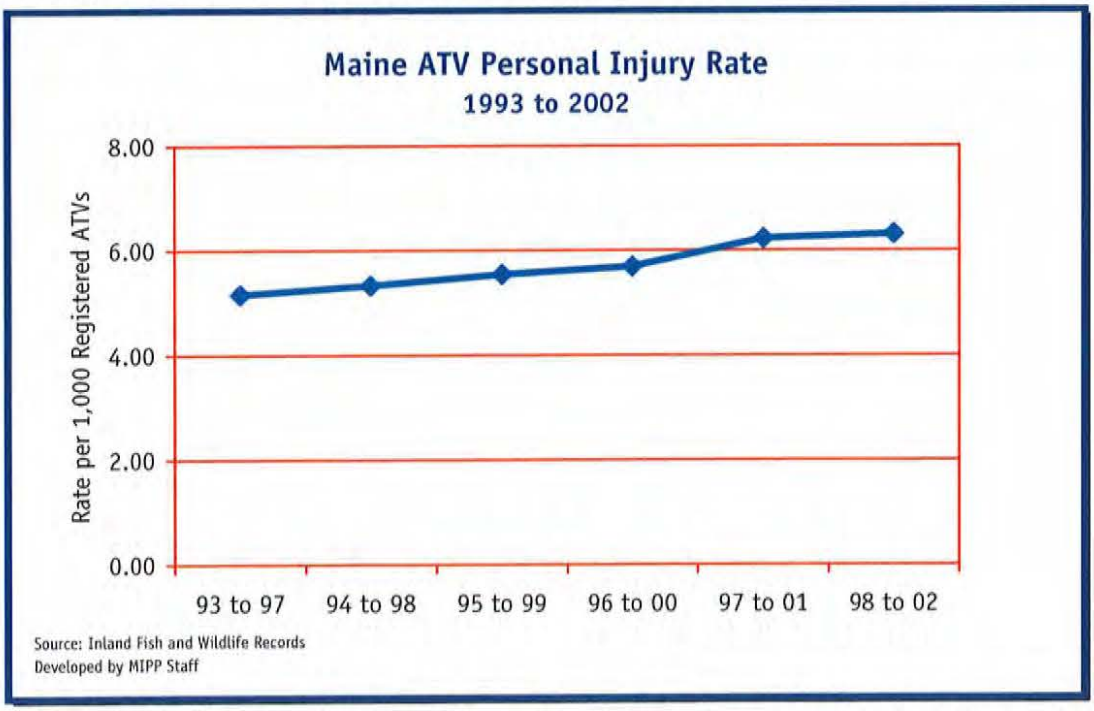
Snowmobiles

- There are over 13,000 miles of maintained snowmobile trails in Maine.
- During the last ten years, 91 people have died in snowmobile crashes and 2,252 were injured. Over 68% of all crashes resulted in some kind of injury.
- Snowmobile registrations have increased by 44.7% during the last ten years. The number of crashes has increased by 86.5%.
- The three most commonly cited reasons for snowmobile crashes during the last ten seasons were Unsafe Speed, Operator Inattention, and Operator Inexperience.
- Alcohol-related crashes account for 5%-7% of all snowmobile crashes. The rate of alcohol-related crashes has more than doubled in the last five seasons.
- Young operators, age 16 to 24, are most at risk of a snowmobile crash and subsequent hospitalization.

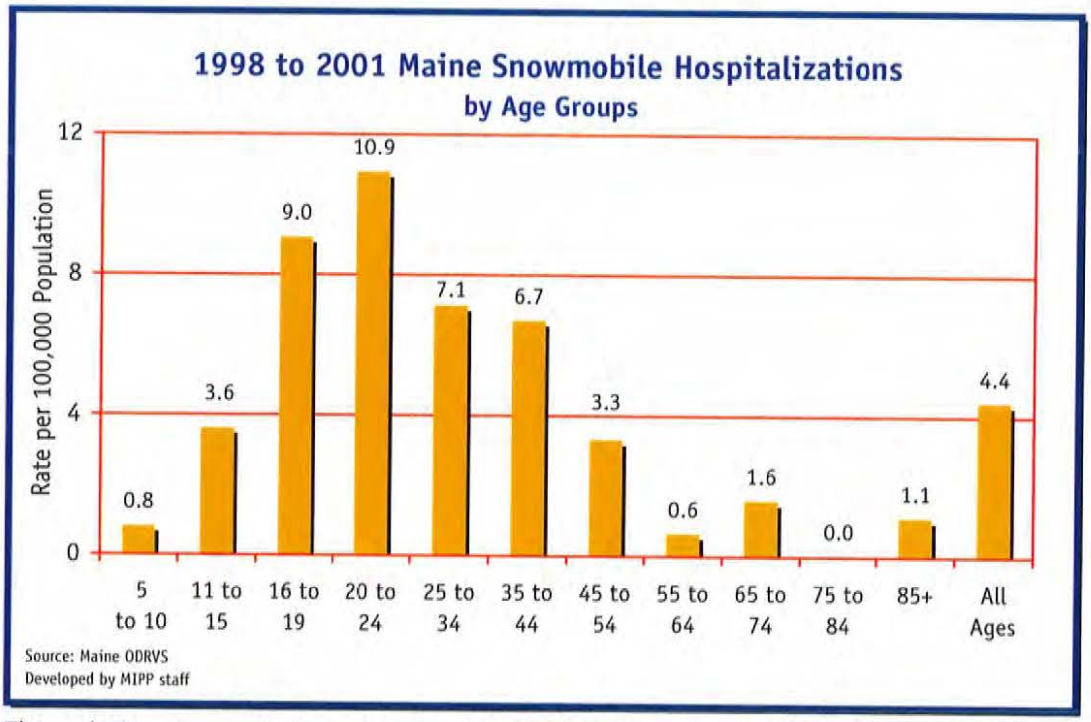
All Terrain Vehicles (ATVs)

- ATV registrations have increased by 137% in the last ten years, but crashes have more than tripled with an increase of 233%.
- In the past 10 years, 1,994 persons have been injured and 32 have died in ATV crashes in Maine.
- Of the 2,005 ATV operators involved in crashes, 951 (47.4%) were age 20 or younger.
- Alcohol-related crashes accounted for 11.5% of all crashes, and the rate of these crashes has increased by 43% in the last ten years.
- Only 37% of crash victims were wearing a helmet at the time of a collision, while 50% were not wearing helmets and 13% were documented as unknown helmet status.
- Since 1997, only 146 ATV operators involved in a crash reported they had ATV safety training; 1,102 had no safety training.
- Nearly half the ATV crashes since 1997 resulted primarily from four causes: driving too fast for conditions (22.7 percent); inattention (12.2 percent); fell or thrown off (11.7 percent), and operating on a public way (4.3 percent).

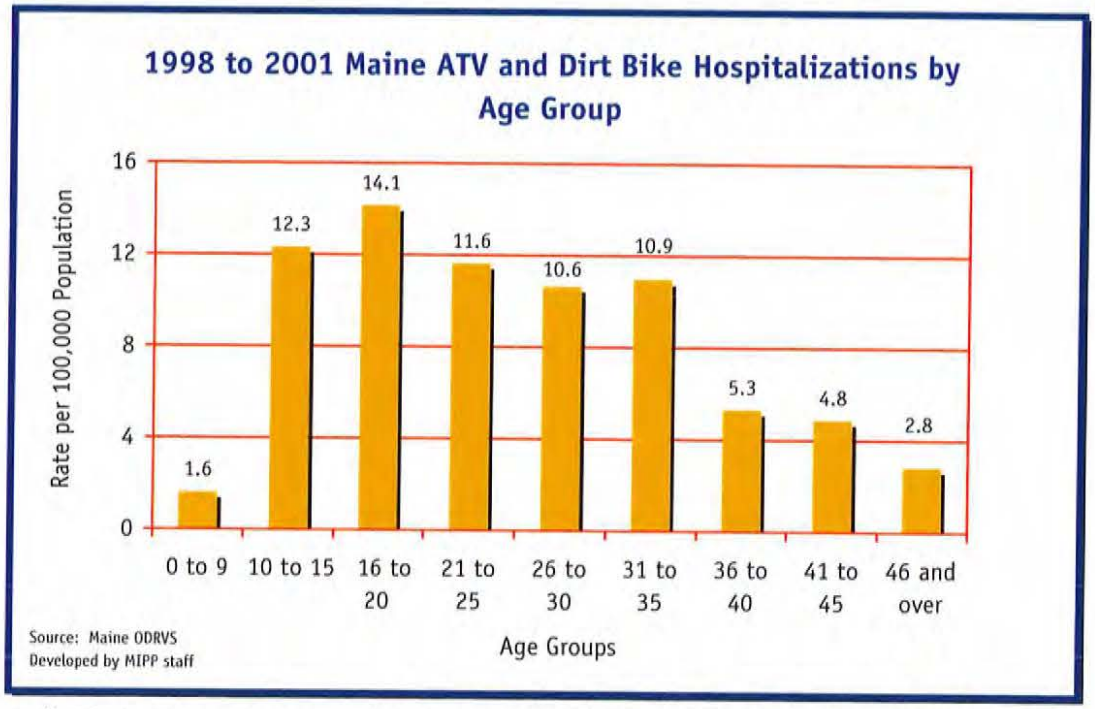
Although there has been a general rise in snowmobile crashes that result in injury, the number of injured depends largely on the annual snow cover. During the winter of 2001-02, there was very limited snow cover. Males account for 83.6% of all snowmobile crashes.



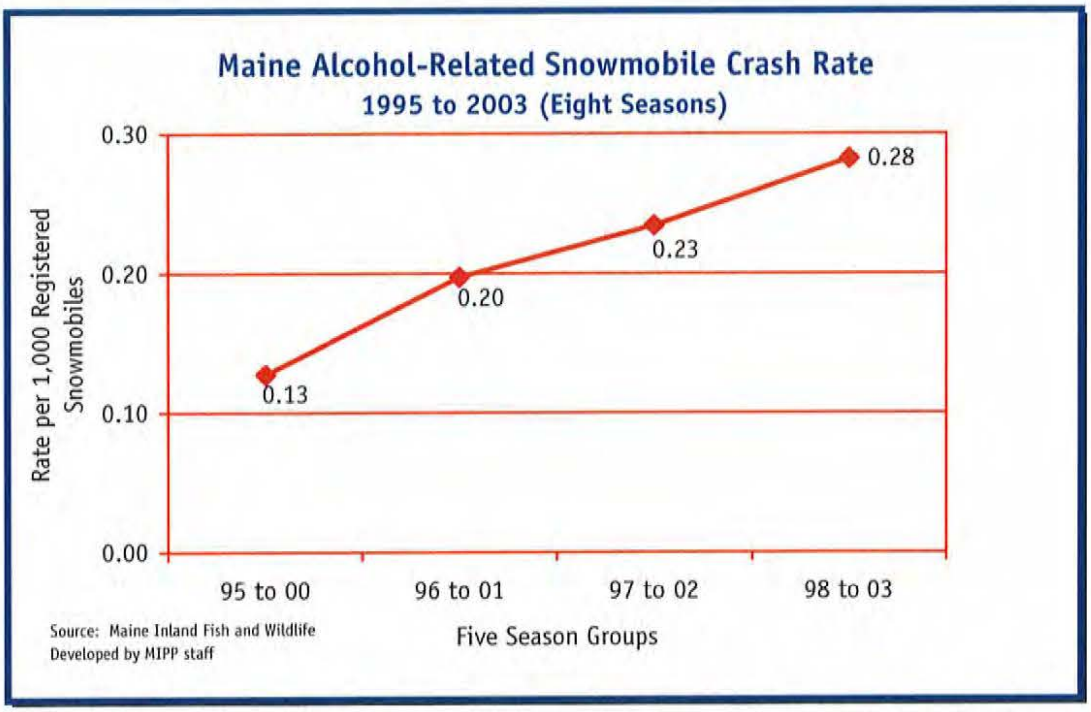
The number of registered ATVs in Maine has increased 136% over the past 10 years, while the number of injuries has increased 234%, resulting in an injury rate increase of 22%.



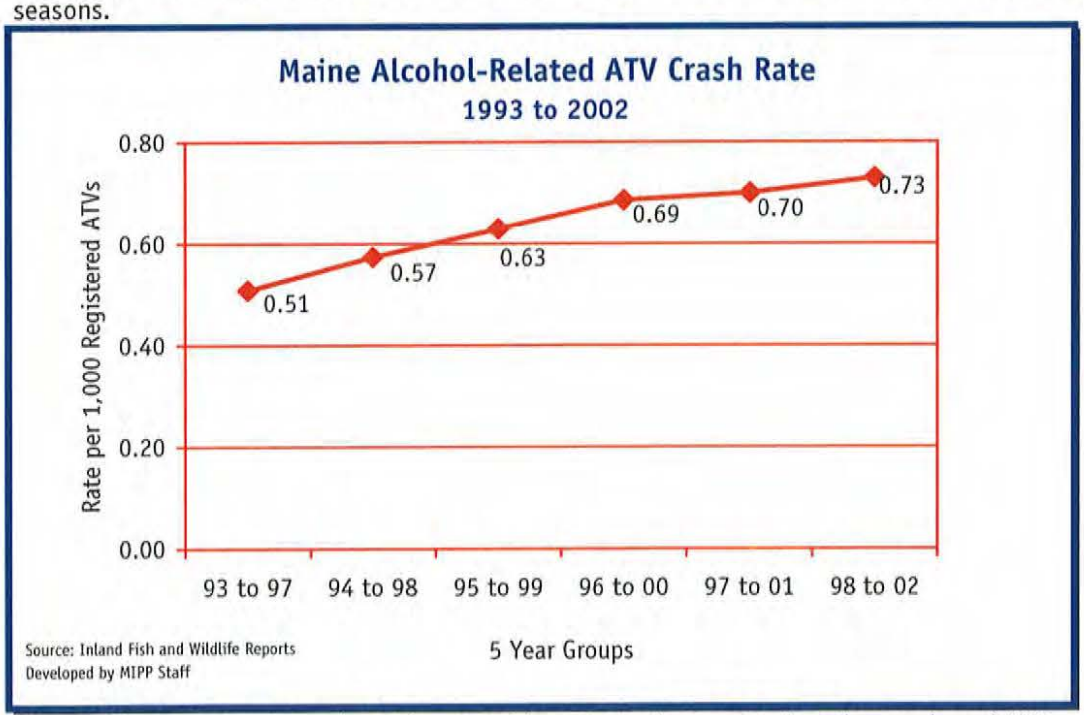
The majority of individuals hospitalized for snowmobile crashes are between the ages of 16 and 44.



Individuals age 10 to 35 account for over 80% of all ATV and dirt bike crash hospitalizations. There has been an 87% increase in ATV and dirt bike related hospitalizations in four years. Males account for 88.1% of all ATV and dirt bike related hospitalizations.



Alcohol-related crashes represent 5% of all crashes and 7% of all injuries. The alcohol-related rate of crashes per registered snowmobile has more than doubled in the last eight seasons.



The crash rate per registered ATV increased by 43.4% since 1993, but the number of ATV alcohol related crashes has increased 134%.

Chapter 11

Bicycles and Pedestrians

Bicycles

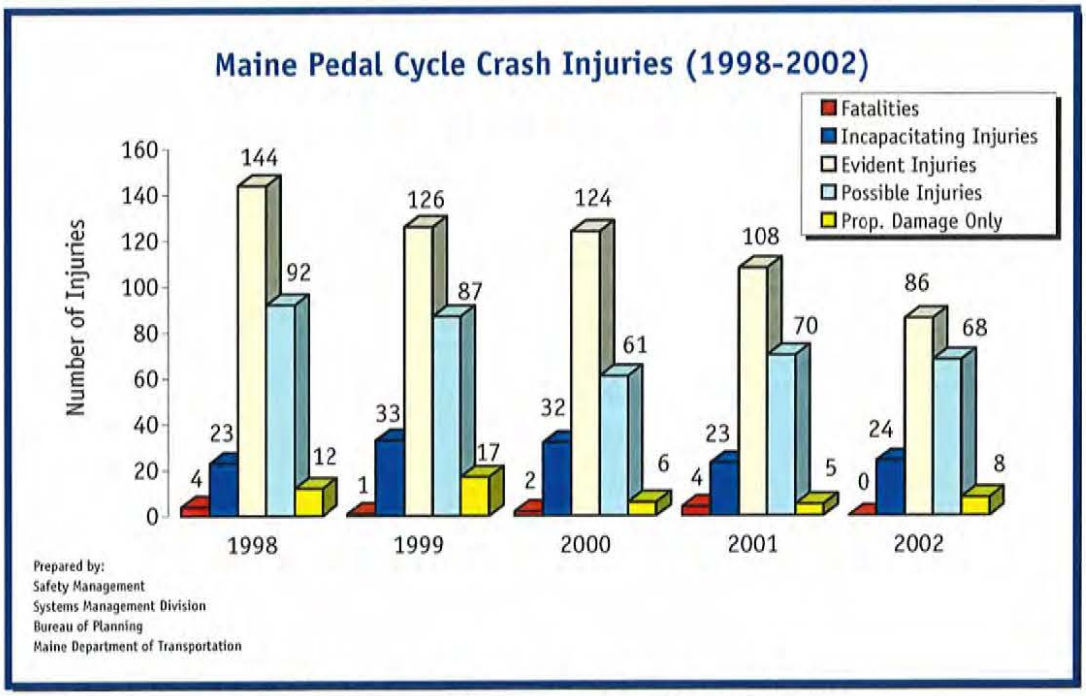
Traffic safety professionals commonly refer to bicycles as pedal cycles to distinguish these vehicles from motorized two wheeled vehicles. From 1997 to 2001, the number of pedal cycle crashes reported to Maine police declined substantially. In 1999 the Bicycle Safety Education Act was passed. This law mandated helmet use by children under age 16, and the development of a bicycle safety program. Since 1999, the Maine Department of Transportation's School Bicycle Education Program has been delivered to over 75,000 school children in Maine. In addition, the development of dedicated bicycle lanes and trails may be having an impact.

Statewide

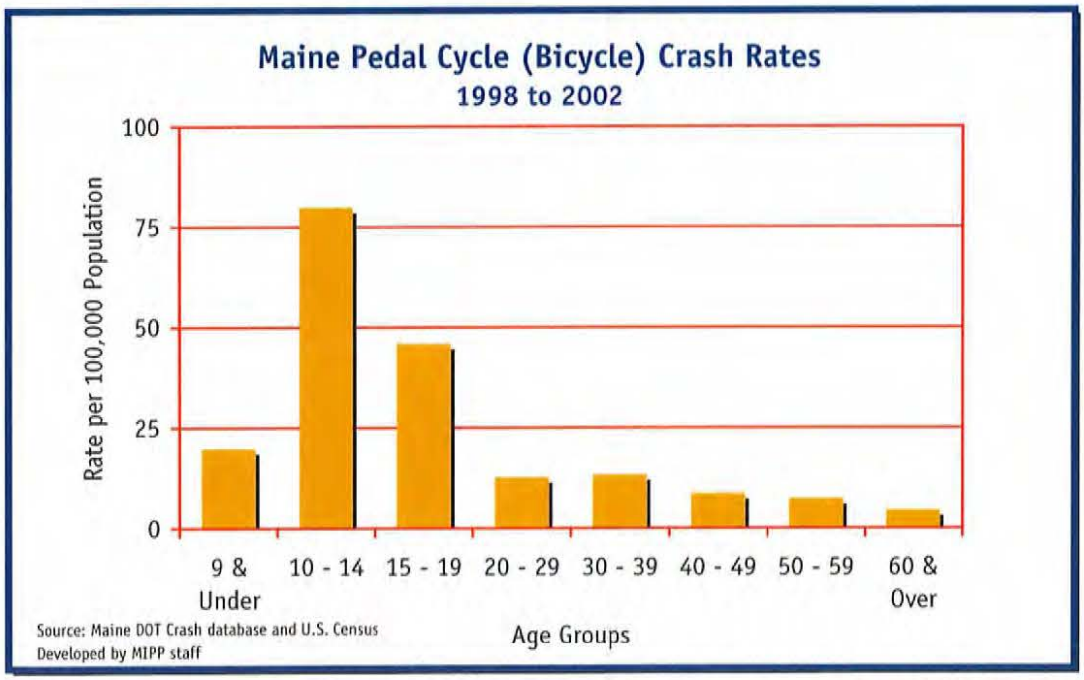
- In the past five years, there were 1,035 pedal cycle crashes (0.5% of total crashes) resulting in 11 fatalities (1.2% of total crash fatalities).
- In five years, the number of pedal cycle crashes has declined by 50%.
- Youth under age 19 were the most commonly involved in pedal cycle crashes, accounting for 63.6% of all crash victims.
- Average medical charges for inpatient hospitalization from a pedal cycle crash were $19,531 in 1996. Medicaid was the payer for 44% of all medical charges for these hospital stays.

National Trends

- In 2001, pedal cyclists accounted for 2% of all traffic fatalities or 728 deaths.
- The majority of pedal cyclists killed or injured are males. The rate for males is eight times higher than females for pedal cycle deaths and 4 times higher for pedal cycle injuries.
- Youth under age 19 accounted for 50.9% of pedal cycle crash victims nationwide as compared to 63.6% in Maine.



The majority of pedal cycle crashes - 96% - result in some type of injury.



Youth under the age of 19 account for 61% of all pedal cycle crash victims. Sixty percent of all bicyclists hospitalized or dying were between the ages 5 and 14.

Bicycles and Pedestrians

Pedestrians

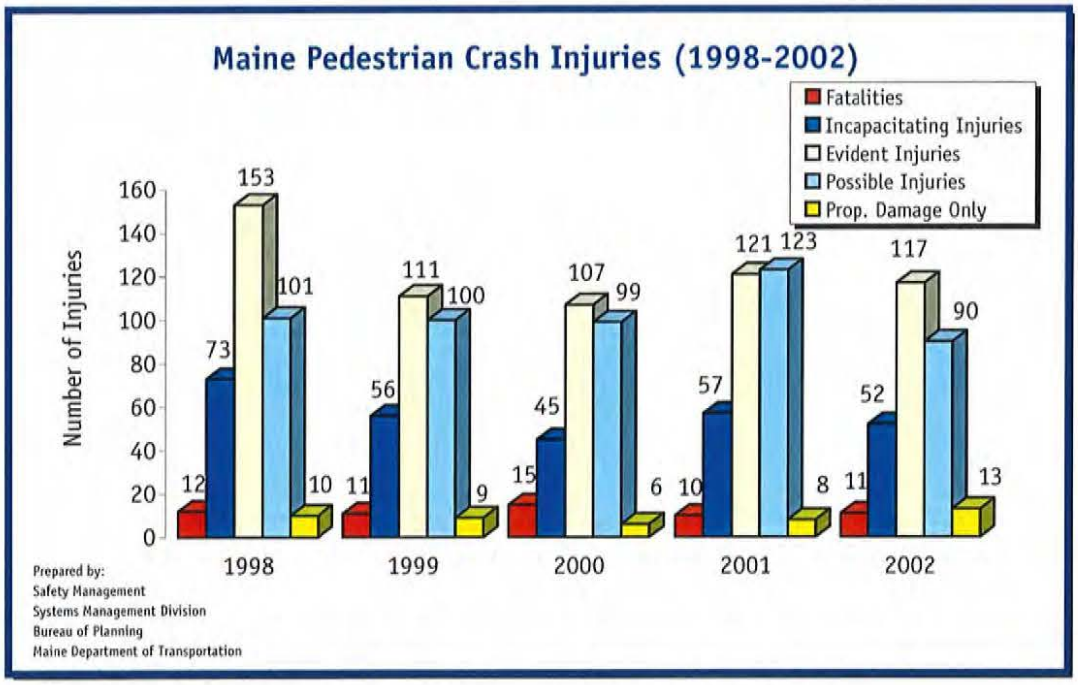
The number of pedestrians involved in crashes showed little change from 1998 to 2002. Pedestrian involved crashes are slightly higher than pedal cycle involved crashes, but the number of pedestrian deaths is over five times greater. While fatal pedal cycle crashes account for less than 1% of all pedal cycle crashes, pedestrian fatal crashes account for over 4% of total crashes involving pedestrians.

Statewide

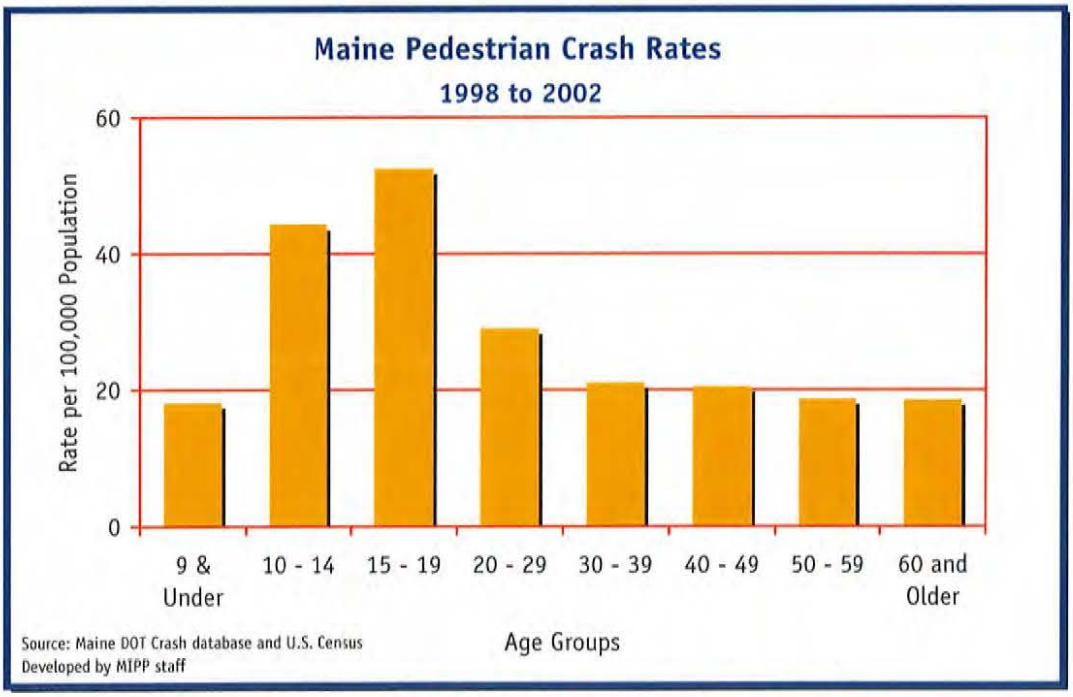
- From 1998-2002, there were 1,425 Pedestrian crashes (1% of total crashes), resulting in 61 deaths (6.7% of total fatalities) and 1,460 injuries (1.8% of total injuries).
- Sixty-one pedestrians died in Maine from 1998 to 2002, with a high of 15 deaths in 2000 and a low of 11 in 1999 and 2001.
- Over 97% of all pedestrians involved in crashes sustained some kind of injury.
- Youth under age 19 were most commonly involved in pedestrian crashes. They account for 38% of the total. The second largest age group, with 25% of the total, was individuals age 30 to 50. Individuals over age 60 accounted for 14% of the injured pedestrians.
- The most common cause of pedestrian involved crashes was pedestrian violations, followed by driver inattention.
- From 1994 to 2002, of all pedestrian fatalities age 21 and older, 27% had a blood alcohol content greater than 0.08%.

National Trends

- In 2002, 4,808 pedestrians died nationwide, accounting for 11.2% of all fatal traffic crashes.
- Over 71,000 pedestrians were injured during 2002 in the United States.
- More than two-thirds (68 percent) of the 2002 pedestrian fatalities were males, a rate 2.31 per 100,000 people.
- Youth under age 20 represented 16% of the pedestrian deaths, while the elderly over age 65 accounted for 22%.



The majority of pedestrian crashes - 97% - result in some type of injury.



Youth under the age of 19 account for 37% of all pedestrian crash victims.