

# 2010

## Michigan Traffic Crash Facts



**Michigan Department of State Police**



This material was developed through a project funded by the Michigan Office of Highway Safety Planning and the U.S. Department of Transportation. OHSP is committed to saving lives and reducing injuries on Michigan roads through leadership, innovation, facilitation, and program support in partnership with other public and private organizations.

# 2010 Michigan Traffic Crash Facts

A summary of traffic crashes on Michigan roadways in calendar year 2010

[www.michigantrafficcrashfacts.org](http://www.michigantrafficcrashfacts.org)

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In addition, we wish to acknowledge the people working in law enforcement and public safety agencies who are responsible for gathering crash data in the field. We rely on their accurate completion of crash reports--without their attention to detail we would be unable to create, maintain, and distribute meaningful crash information.



## FOREWORD

The number of total crashes and injury crashes in Michigan has steadily declined since 2000. However, in Michigan, fatal crashes were down substantially in 2009, but up by nearly 8 percent in 2010.

A report issued by UMTRI (Carol A. Flannagan, Andrew J. Leslie, Charles P. Compton, Helen K. Spradlin, & Caroline S. Lupini. 2010. *An Examination of the Michigan 2010 Motor Vehicle Traffic Crash Fatality Increase*. UMTRI-2011-31) contains an in-depth look at the patterns associated with Michigan's fatal crash increase in 2010.

The primary result of these analyses is that 2009 was unusually low in fatal crashes and 2010 represents a return to normal numbers.

Traffic records improvement projects have been ongoing since 2002 that strive to streamline the process of data collection and processing and thus improve the quality, timeliness and accuracy of data outputs.

New technologies, including electronic data collection, additional error checking, quality assurance, and improved crash location data, are continually emerging and improving. By utilizing these technologies as they become available, traffic records quality will continue to improve.

Please visit [www.michigantrafficcrashfacts.org](http://www.michigantrafficcrashfacts.org) for easy access to crash data from 1992-2010.



## EXECUTIVE SUMMARY

The 2010 traffic fatality count was 937, up 7.6 percent from the 2009 figure of 871. Compared with 2009, injuries were down 0.6 percent and total crashes were down 3.1 percent. These figures translated into a death rate of 0.96 per 100 million miles of travel, up 5.5 percent from 2009, but remaining below the ten-year average of 1.11 (2001-2010).

Exposure factors in 2010 showed increases in vehicle miles traveled and licensed drivers, and a decrease in vehicle registrations. Vehicle miles traveled were up 1.8 percent to 97.6 billion, the number of licensed drivers increased 0.04 percent to 7.1 million, and motor vehicle registrations were down 0.5 percent to 8.1 million.

Safety belt use in Michigan was observed at 95.2 percent. Alcohol-involved crashes continued to present a problem and contributed to 30.4 percent of all fatal crashes. Crashes involving alcohol made up 3.5 percent of all crashes, and while 18.6 percent of all crashes resulted in injury or death, 42.8 percent of alcohol-related crashes resulted in injury or death.

The information compiled in this report was gathered from the Michigan Traffic Crash Report Forms (UD-10) submitted by local police departments, sheriff's offices, and the Michigan Department of State Police. Other related information was obtained from the Departments of Transportation, State, and Community Health.

The University of Michigan Transportation Research Institute produced this publication with data on file at the Michigan Department of State Police Criminal Justice Information Center as of April 25, 2011. We acknowledge, with appreciation, all involved agencies for their assistance.







## MICHIGAN VEHICLE CODE Public Act 300 of 1949

Edited by the Office of Highway Safety Planning for discussion purposes.  
*Editorial remarks by OHSP appear in italic print.*

**MCL 257.622, Amended 2003** - The driver of a motor vehicle involved in an accident that injures or kills any person, or that damages property to an apparent extent totaling \$1,000.00 or more, shall immediately report that accident at the nearest or most convenient police station, or to the nearest or most convenient police officer. The officer receiving the report, or his or her commanding officer, shall immediately forward each report to the director of the Department of State Police on forms prescribed by the director of the Department of State Police (*State of Michigan Traffic Crash Report, also known as the UD-10*). The forms shall be completed in full by the investigating officer. The director of the Department of State Police shall analyze each report relative to the cause of the reported accident and shall prepare information compiled from reports filed under this section for public use. A copy of the report under this section . . . shall be retained for at least three years at the local police department, sheriff's department, or local state police post making the report. (*As the repository of the UD-10's submitted by all Michigan law enforcement agencies, the Department of State Police processes all UD-10's received at the Criminal Justice Information Center (CJIC). The CJIC retains an electronic copy of UD-10's for ten years plus the current processing year. Electronic databases containing information from UD-10's prior to this time period are purged.*)

**MCL 257.624, Amended 1980** - (1) A report required by this chapter shall not be available for use in a court action, but a report shall be for the purpose of furnishing statistical information regarding the number and cause of accidents.

(2) The Office of Highway Safety Planning (OHSP) may authorize scientific studies and research for the reduction of death, injury, and property losses. All information, records of interviews, written reports, statements, notes, memoranda, or other data collected pursuant to the scientific studies and research conducted by the state, or by other persons, agencies, or organizations authorized by OHSP shall be used solely for the purpose of medical or scientific research and shall not disclose the name or identity of a person unless the person authorizes, in writing, the use of his or her name or identity. If a subject of the research study is deceased, the executor or heir of the deceased person may authorize, in writing, the disclosure of the deceased's name or identity. The furnishing of information to OHSP or to a representative of an authorized study or research project shall not subject a person, hospital, sanitarium, rest home, nursing home, or other person or agency furnishing the information to any action for damages or other relief. The information, records, reports, statements, notes, memoranda, or other data shall not be admissible as evidence in a court or before any other tribunal, board, agency, or person. A person participating in an authorized study or research project shall not disclose, directly or indirectly, the information so obtained except in strict conformity with the research project.



## ABBREVIATIONS & ACRONYMS

- **ATV** **All-Terrain Vehicle**
- **BAC** **Bodily Alcohol Content.** (Formerly referred to as Blood Alcohol Content or Blood Alcohol Concentration.) Determination of percent by weight of ethyl alcohol in blood. Usually measured in grams per liter or grams per milliliter depending on the test used.
- **CDL** **Commercial Driver's License.** A CDL is required in the United States to operate any type of vehicle with a gross weight of 26,001 lb or over.
- **CJIC** **Criminal Justice Information Center.** A division of the Michigan Department of State Police formerly known as the Central Records Division.
- **CRD** **Child Restraint Device.** Also called child safety seat or child car seat.
- **DOB** **Date of Birth**
- **FHWA** **Federal Highway Administration.** A part of the United States Department of Transportation.
- **GDL** **Graduated Driver Licensing.** A system used to identify different tiers of drivers. See Michigan Public Act 387 effective April 1, 1997, phasing in teenage driving privileges.
- **HBD** **Had Been Drinking**
- **HNBD** **Had Not Been Drinking**
- **KABC** Injury severity scale for traffic crash-related injuries:
  - **K** - Fatal
  - **A** - Incapacitating
  - **B** - Nonincapacitating
  - **C** - PossibleSee Glossary for definitions.
- **MALI** **Michigan Accident Location Index**
- **MCLS** **Michigan Crash Location System**
- **MDCH** **Michigan Department of Community Health** (formerly Michigan Department of Public Health.)
- **MDOS** **Michigan Department of State**
- **MDOT** **Michigan Department of Transportation**
- **NHTSA** **National Highway Traffic Safety Administration.** A part of the United States Department of Transportation.
- **OHSP** **Office of Highway Safety Planning.** A division of the Michigan Department of State Police.
- **ORV** **Off-Road Vehicle**
- **OWI** **Operating While Intoxicated.** Refers to a person who is driving a vehicle while either under the influence of alcohol, a controlled substance, or both; OR has a BAC of .08 or greater.
- **PDO** **Property Damage Only.** Refers to a traffic crash lacking personal injuries.
- **UD-10** Form number ascribed to the **Michigan Traffic Crash Report** form; the official document used to report traffic crashes in Michigan.
- **UMTRI** **University of Michigan Transportation Research Institute**
- **USDOT** **United States Department of Transportation**
- **VMT** **Vehicle Miles Traveled.** The estimated total number of miles traveled annually by motor vehicles on Michigan trafficways.



## GLOSSARY

- **Access Control** - Indicates the degree that access to an adjoining roadway is controlled by public authority. If there is, No access control (unlimited access); Full access control (ramp entry & exit only); or Other (partial access control). NOTE: Access is controlled by roadway configuration, not traffic control devices such as, No Left Turn signs, etc.
- **Bicycle** - A device propelled by human power upon which a person may ride, having either two or three wheels in a tandem or tricycle arrangement, all of which are over 14 inches in diameter.
- **Bicyclist** - An operator or passenger riding a bicycle.
- **Bus (Also see School Bus)** - Any passenger-carrying vehicle designed to transport 18 or more passengers, including the driver.
- **Crash Date** - The date the crash occurred. If the date is unknown, and cannot be reasonably estimated, use the date the crash was discovered by the complainant or the date reported. A valid date is necessary to update records of each involved driver.
- **Crash Rate** - The number of crashes per 100 million vehicle miles traveled.
- **Crash Type** - A crash is typed by the first injury or damage-producing event, which may or may not be the most serious or significant event.
- **Death Rate** - Deaths per 100 million vehicle miles traveled.
- **Driver/Operator** - The person who is in actual physical control of a vehicle in transit.
- **Driver Condition** - Apparent condition of the driver which may have contributed to the crash. Appeared normal; had been drinking; illegal drug use; sick; fatigue; asleep; medication (prescription and over the counter medication); distracted (inside or outside of the unit); using cellular phone; unknown.
- **Drug-Involved Crash** - Drug use prior to the crash by a driver, pedestrian, or cyclist as reported by the police, the coroner, or other accepted authorities.
- **Engineer** - Engineer (railroad train)
- **Fatal Crash** - A fatality is counted when a person dies due to injuries from a traffic crash. Prior to 1979, deaths were counted if they occurred up to one year after the crash; in 1979 this time period was reduced to 90 days. In 1988 this was further reduced to 30 days.
- **Graduated Driver Licensing** - Michigan Public Act 387 effective April 1, 1997, phasing in teenage driving privileges.
- **Had Been Drinking (HBD) Crash** - Drinking prior to the crash by a driver, pedestrian, or cyclist as reported by the police, the coroner, or other accepted authorities. Beginning with year 2000 data, the information provided for alcohol contains data for alcohol-related crashes only. This figure DOES NOT include the combined number for alcohol and drug related crashes as has been reported in prior years.
- **Harmful Event** - A harmful event is an occurrence of injury or damage.

## GLOSSARY (continued)

- **Holiday** - Refers to the length of the Holiday weekend period, including the hours of 6:00 PM to midnight of the day preceding the Holiday. Please refer to the table below for the time period connected to Holidays falling on a given day of the week.

Holiday Day	Time Period		Number of Days
	From	To	
Sunday	6:00 PM FRI	- 23:59 PM MON	3 1/4
Monday	6:00 PM FRI	- 23:59 PM MON	3 1/4
Tuesday	6:00 PM FRI	- 23:59 PM TUE	4 1/4
Wednesday	6:00 PM TUE	- 23:59 PM WED	1 1/4
Thursday	6:00 PM WED	- 23:59 PM SUN	4 1/4
Friday	6:00 PM THU	- 23:59 PM SUN	3 1/4
Saturday	6:00 PM THU	- 23:59 PM SUN	3 1/4

- **Ignition Interlock** - An alcohol concentration measuring device that prevents a motor vehicle from being started at any time without first determining through a deep lung sample the operator's breath alcohol level. Michigan Vehicle Code, Sec. 257.625L (6).
- **Injury Codes**
  - K (Fatal)** - Any injury that results in death.
  - A (Incapacitating Injury)** - Any injury, other than a fatal injury, that prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.
  - B (Non-Incapacitating Injury)** - Any injury not incapacitating but evident to observers at the scene of the crash in which the injury occurred.
  - C (Possible Injury)** - Any injury reported or claimed that is not a fatal injury, incapacitating injury or non-incapacitating injury.
  - O (No injury)** - Person reported as not receiving bodily harm from the motor vehicle crash.
    - Note:** Uninjured passengers are not required to be recorded by the police with the exception of a fatality occurring within the crash at which point all involved parties must be listed.
- **Injury Crash** - Any crash involving an injury other than a fatal injury.
- **In Transport** - Denotes the state or condition of a vehicle that is in motion or within the portion of a way ordinarily used by similar vehicles. When applied to motor vehicles, "in transport" means in motion or on a roadway.
  - Inclusions: Motor vehicle in traffic on a highway; driverless motor vehicle in motion; motionless motor vehicle abandoned on a roadway; disabled motor vehicle on a roadway; and others.
  - A parked motor vehicle in roadway lanes used to travel during rush hours and parking during off-peak periods is in transport during periods when parking is forbidden.
- **Licensed Drivers** - All valid Michigan drivers on file, including suspended, revoked, and denied drivers (as long as their license has not expired).

## GLOSSARY (continued)

- **Location (Crash Location)** - Location of a crash is defined by:
  - The road name on which the crash occurred including prefix, road name, type, and suffix
  - The distance and direction of the point of impact from a cross road (located within the county of the crash)
  - The name of the cross road including prefix, road name, type, and suffix
- **Most Severe Outcome in Crash** - The most severe injury sustained by any person involved in the crash, or property damage only.
- **Most Severe Outcome in Vehicle** - The most severe injury sustained by any person in the vehicle, or property damage only.
- **Motorcyclist** - An operator or passenger riding a motored cycle.
- **Motor Vehicle** - "Motor vehicle" means every vehicle which is self-propelled and every vehicle which is propelled by electric power obtained from overhead trolley wires, but not operated upon rails.
  - **Standard motor vehicles** - Cars, pickups, vans, buses, trucks, motorcycles, etc.
  - **Emergency vehicles** - Police, fire, ambulance.
  - **Farm equipment** - Farm tractors, combines, etc.
  - **Off Road Vehicles (ORV)** - Snowmobiles, mopeds, all-terrain vehicles (ATV), dirt bikes, motorbikes, go-carts, garden tractors, motorized wheelchairs, Cushman scooters.
  - **Road maintenance equipment** - dump trucks, snowplows, road graders
  - **Construction equipment** - Rollers, front-end loaders, scrapers, mobile cranes, etc.
- **Motor Vehicle Crash** - A crash that involves a motor vehicle in transport on a public trafficway (in Michigan) and results in injury, death, or at least \$1,000 in property damage.
- **Noncollision** - A crash that does not involve a collision with another motor vehicle. Types of noncollision crashes include explosion or fire in vehicle, rollover, immersion, etc.
- **Occupant** - Any injured or killed person in or on a motor vehicle, *including* all drivers.
- **Passenger** - Any person in or on a motor vehicle, *excluding* the driver.
  - Note:** Uninjured passengers are not required to be recorded by the police with the exception of a fatality occurring within the crash at which point all involved parties must be listed.
- **Pedestrian** - Any person on foot; person on skis, skates or roller blades; rider of horse; horse and buggy (each occupant including the driver will be listed as a separate pedestrian unit); nonmotorized wheelchair.
- **Property Damage Only (PDO) Crash** - A crash that results in no fatalities or injuries, with a value of \$1,000 as a reporting threshold.

## GLOSSARY (continued)

- **School Bus** - Every motor vehicle, except station wagons, with a manufacturers' rated seating capacity of 18 or more passengers, including the driver, owned by a public, private, or governmental agency and operated for the transportation of children to or from school, or privately owned and operated for compensation for the transportation of children to or from school. School bus does not include buses operated by a municipally owned transportation system or by a common passenger carrier certificated by the state transportation department.
- **Traffic Unit** - Anything in transit on a public trafficway (i.e., motor vehicle, motorcycle, bicycle, pedestrian, snowmobile, farm equipment).
- **Trafficway** - Indicates whether or not a trafficway is not physically divided, or is divided with a median strip, with or without a traffic barrier, and whether it serves one-way or two-way traffic.
- **Transition Area** - Increase or decrease in the number of travel lanes.
- **Valid Drivers** - Excludes non-valid categories such as no license, out-of-state drivers with Michigan violations, deceased, and licenses expired three months prior to Department of State run date.
- **"Zero Tolerance"** - Law that began November 1, 1994, making it illegal for any person in Michigan under the age of 21 to consume alcohol in the presence of a law enforcement officer, or to have a BAC of 0.02 percent or more.

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**Quick Facts  
& Figures**



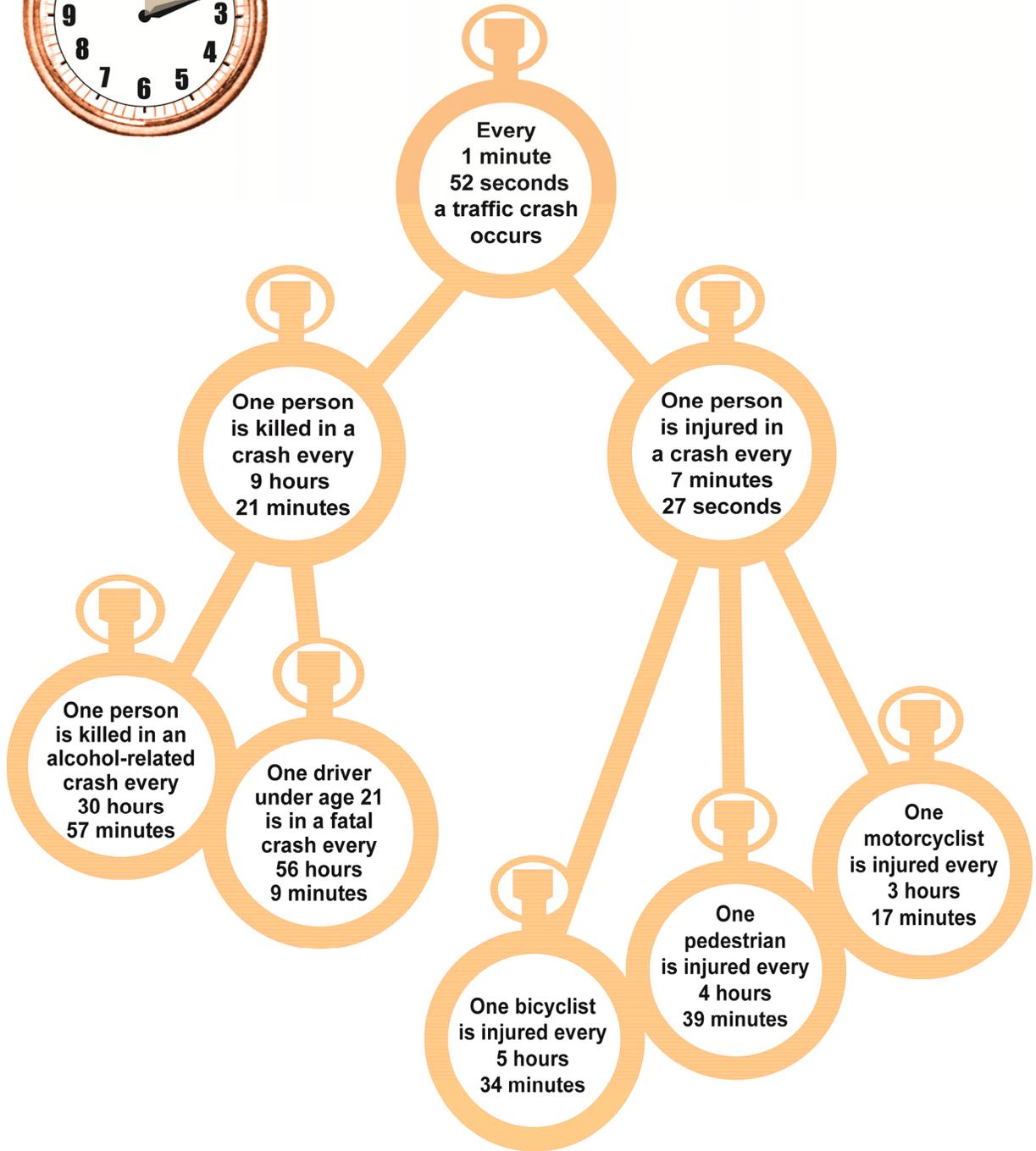
## 2010 QUICK FACTS

- ★ Some exposure factor comparisons between 2010 and 2009 show motor vehicle registrations decreased **0.5** percent, the number of licensed drivers on Michigan roads increased **0.04** percent, and vehicle mileage increased **1.8** percent.
- ★ The 2010 death rate of **0.96** deaths per 100 million miles of travel increased **5.5** percent from 2009, remaining below the ten-year average of **1.11** (2001-2010).
- ★ There were **937** persons killed and **70,501** persons injured in **282,075** reported motor vehicle traffic crashes in Michigan during 2010. Compared with the 2009 experience, the number of: deaths increased **7.6** percent, persons injured decreased **0.6** percent, and total reported crashes decreased **3.1** percent.
- ★ There were **282,075** reported crashes, of which **868** were fatal, **51,672** were personal injury, and **229,535** were property damage only crashes.
- ★ Of all fatal crashes, **28.0** percent occurred at intersections.
- ★ Of all fatal crashes, **30.4** percent involved at least one drinking operator, bicyclist, or pedestrian, **22.1** percent involved drinking but no drugs, **7.5** percent involved drugs but no drinking, and **8.3** percent involved both drinking and drugs.
- ★ Excessive speed was indicated as the hazardous action by **13.0** percent of the drivers involved in fatal crashes.
- ★ Of the **282,075** total crashes in 2010, **107,682 (38.2%)** involved one vehicle only. This is a decrease of **8.8** percent from last year's count of **118,018** single-vehicle crashes.
- ★ Of the **868** fatal crashes, **464 (53.5%)** involved one vehicle.
- ★ Of the **264** alcohol-related fatal crashes, **181 (68.6%)** involved one vehicle. This is a **1.6** percent decrease from last year's figure of **184** single vehicle, alcohol-related fatal crashes.
- ★ Of the **1,326** drivers involved in fatal crashes, **156 (11.8%)** were under 21 years of age and **265 (20.0%)** were under 25 years of age.
- ★ Of the **9,883,640** persons living in Michigan [1] one out of every **10,548** was killed in a traffic crash and one out of every **140** was injured.
- ★ For each person killed, **75.2** persons were injured.
- ★ According to figures provided by the Michigan Department of Community Health [2], accidental death for children in motor vehicle crashes routinely outpaces the next two most frequent causes: fire and drowning.
- ★ According to the Michigan Department of Community Health, approximately three out of five accidental deaths for teenagers and young adults (ages 15-24) are due to motor vehicle crashes.
- ★ The pedestrian death toll for Michigan stands at **131** persons, an increase of 10 deaths from 2009.
- ★ For each pedestrian killed, there were **14.4** pedestrians injured.

- ★ Of the pedestrians killed, **36.6** percent were killed while crossing streets not at intersections.
- ★ Of all pedestrians killed, **10.7** percent were under the age of 21 and **32.8** percent were 75 and older.
- ★ Children under the age of 16 accounted for **20.7** percent of the bicycle deaths.
- ★ Of the **482,388** drivers and injured passengers involved in crashes, **421,095** or **87.3** percent were *reported* to have been using occupant restraints. Restraint usage among fatal victims, where usage was known, was reported to be **59.4** percent in 2010.
- ★ Motor vehicle occupants age 75 to 110 had the highest reported restraint usage (**95.9%**) among all age groups. Children age 11 to 15 had the lowest reported restraint usage (**80.8%**).
- ★ The economic loss in Michigan traffic crashes amounted to **\$ (see note)**. If costs were spread across the state's population this would translate into a loss of \$ (see note) per state resident.

Note: Information on the cost of crashes will be available from the National Safety Council later this year.

# Michigan's Crash Watch 2010



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2010

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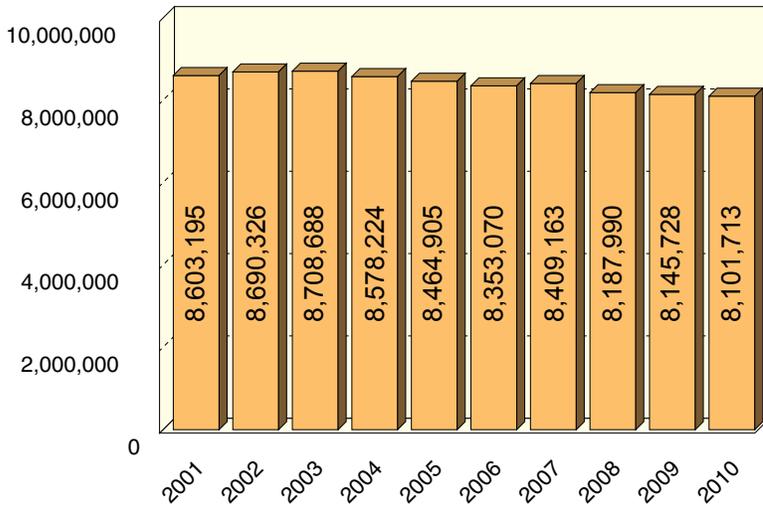
2010

**Historical  
Information**  
10-, 5-, and 1-year



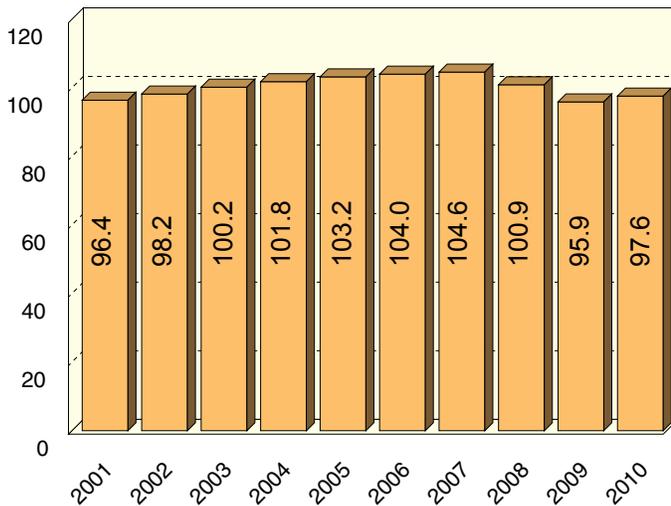
# 10 YEAR TRENDS

## VEHICLE REGISTRATIONS



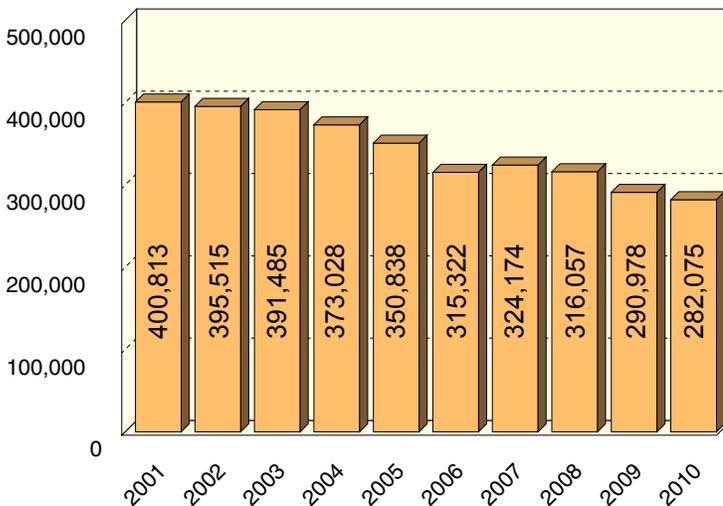
Vehicle registrations remained fairly consistent over the ten-year period, reaching a high in 2003.

## VEHICLE MILES TRAVELED



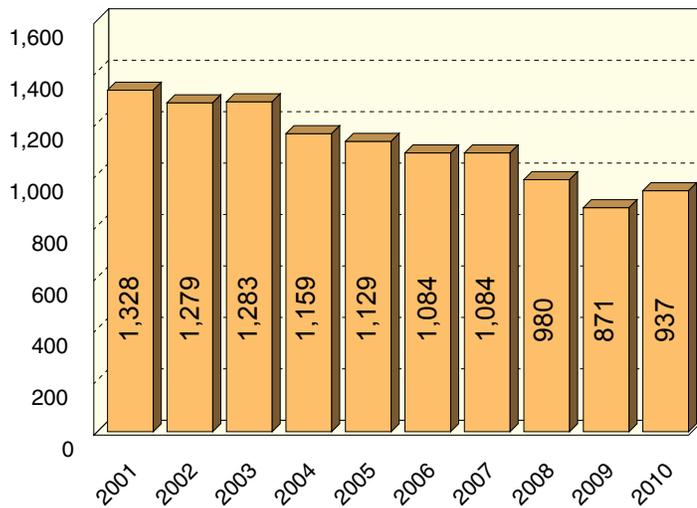
Vehicle miles traveled have been decreasing from a high of 104.6 billion miles in 2007, but they increased 1.8 percent in 2010.

## CRASHES



There were 282,075 total crashes statewide in 2010, a 29.6 percent decrease from 2001.

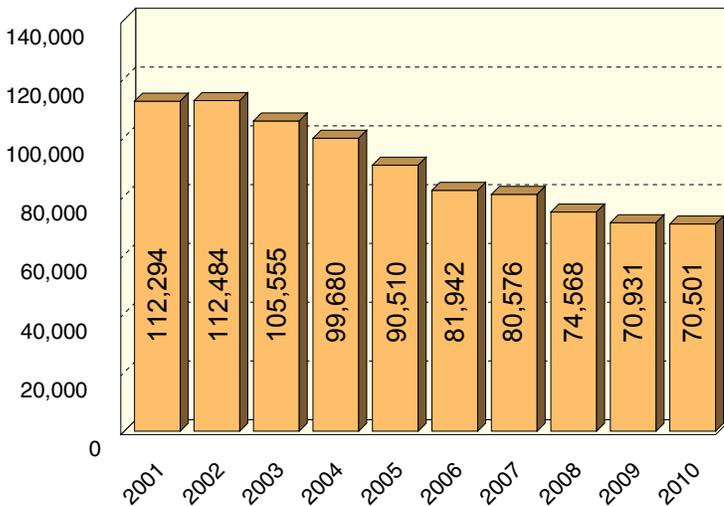
## DEATHS



## 10 YEAR TRENDS (continued)

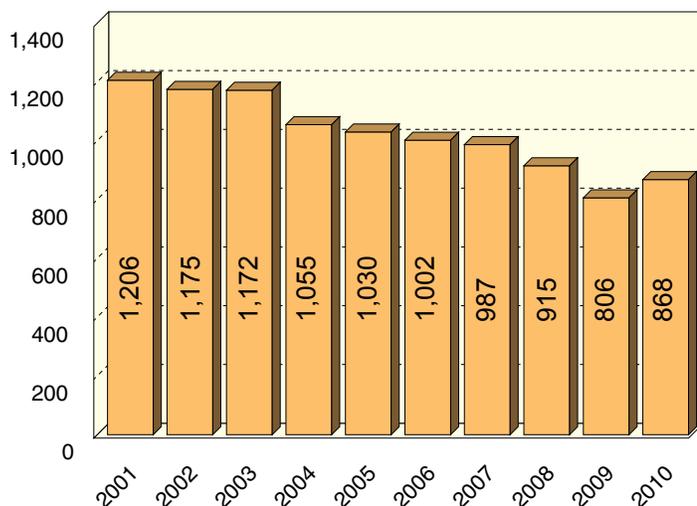
In 2010, 937 people died in motor vehicle crashes, a decrease of 29.4 percent from 2001.

## INJURIES



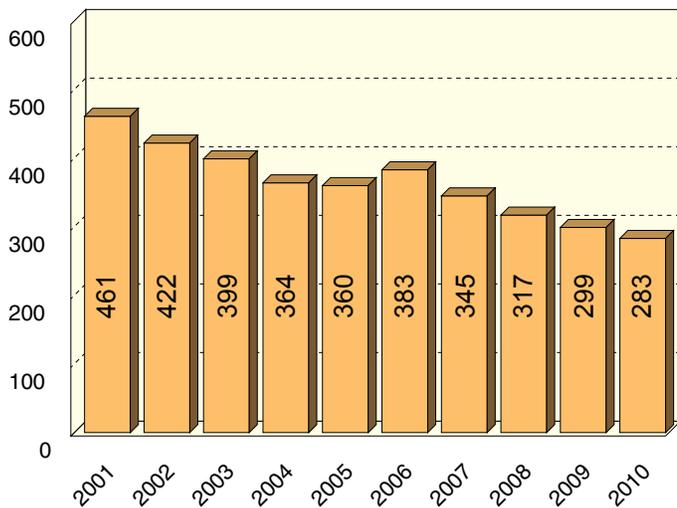
In 2010, 70,501 people received nonfatal injuries in motor vehicle crashes, down 37.2 percent from 112,294 in 2001.

## FATAL CRASHES



In 2010, there were 868 fatal crashes, down 28.0 percent from 1,206 in 2001.

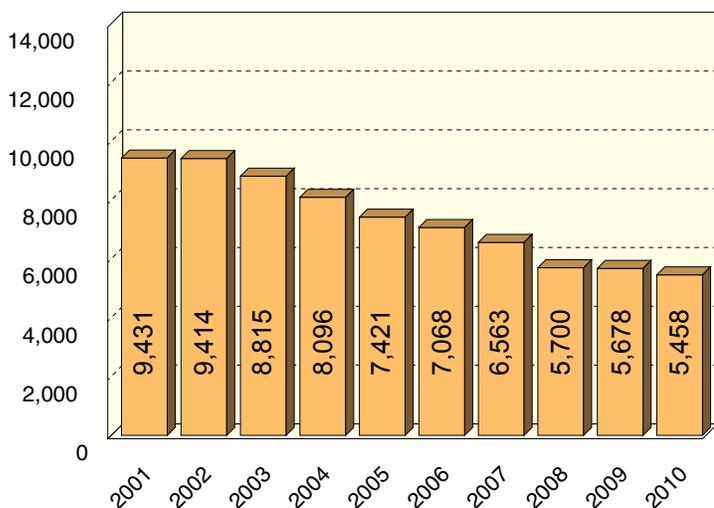
## HAD-BEEN-DRINKING FATALITIES



# 10 YEAR TRENDS

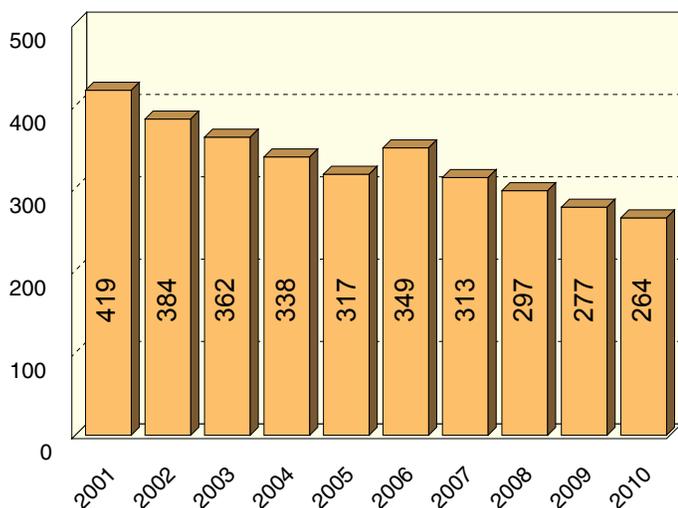
Deaths in alcohol-related crashes decreased 38.6 percent over the ten-year period.

## HAD-BEEN-DRINKING INJURIES



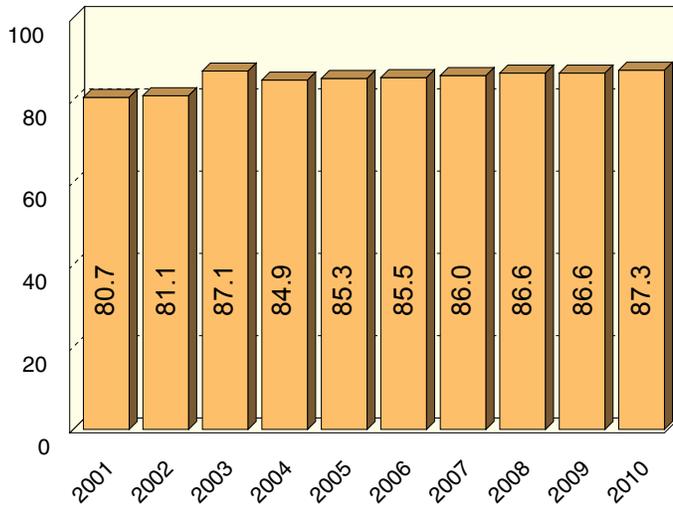
Mirroring the trend in deaths, had-been-drinking injuries have decreased over the last ten years. In 2010, there were 5,458 injuries in crashes where the operator had been drinking, down 42.1 percent from 2001.

## HAD-BEEN-DRINKING FATAL CRASHES



Alcohol involvement in fatal crashes has also decreased over the ten-year period. In 2010, there were 264 fatal crashes where the operator had been drinking, down 37.0 percent from 2001.

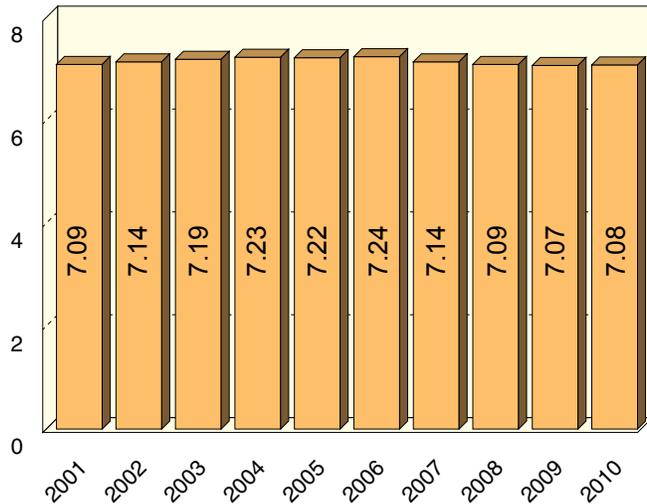
## RESTRAINT USAGE



## 10 YEAR TRENDS (continued)

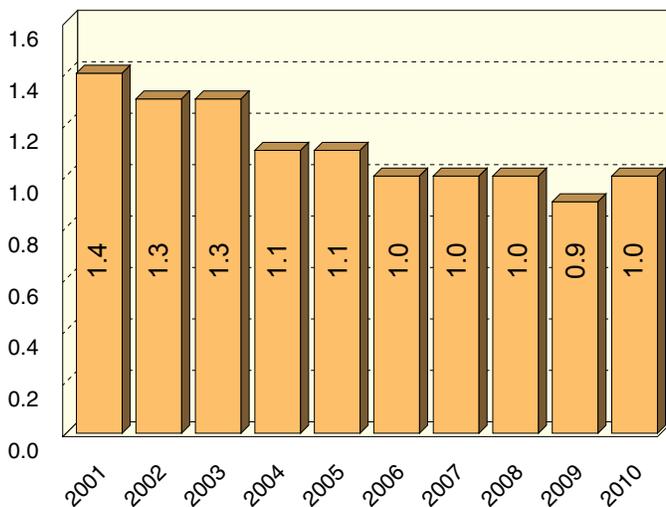
The percentage of motor vehicle occupants using restraints as reported by police in traffic crashes has increased 8.2 percent over the last ten years.

## DRIVERS IN MICHIGAN



There were 7,076,344 licensed drivers on Michigan roadways in 2010, a decrease of 0.2 percent from 2001.

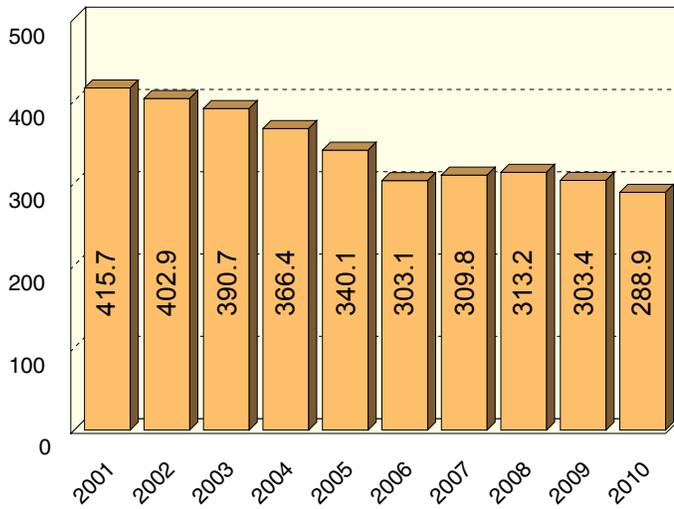
## MILEAGE DEATH RATE



The 1.0 death rate in 2010 is a 28.6 percent decrease from the ten-year high of 1.4 in 2001.

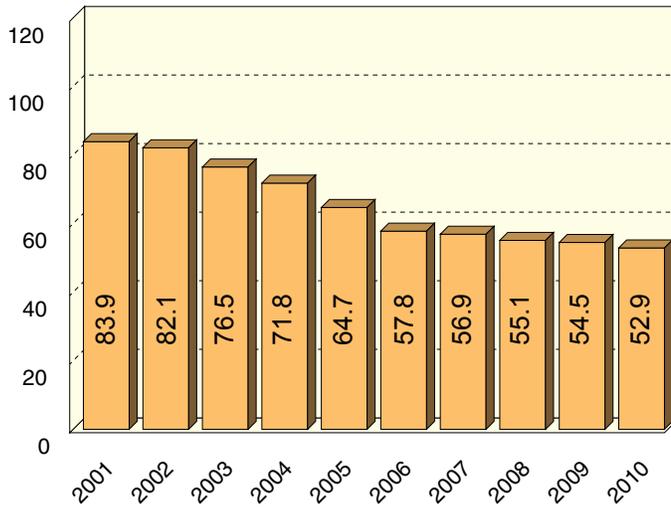
# 10 YEAR TRENDS

## TOTAL CRASH RATE



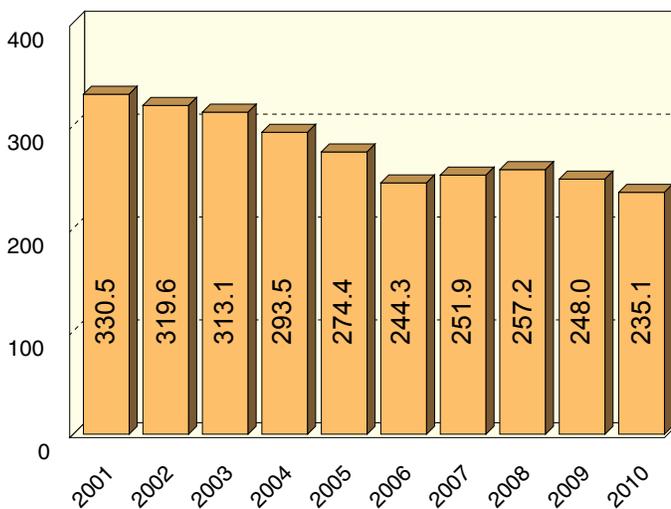
The ten-year total crash rate peaked in 2001 at 415.7 then decreased by 30.5 percent to 288.9 in 2010.

## PERSONAL INJURY CRASH RATE



The personal injury crash rate has been steadily decreasing since 2001. The 52.9 personal injury crash rate in 2010 is a 36.9 percent decrease from 2001.

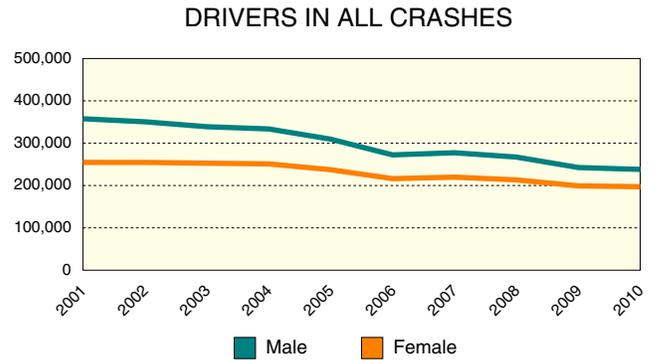
## PROPERTY DAMAGE CRASH RATE



The 235.1 property damage crash rate in 2010 is a 28.9 percent decrease from 2001.

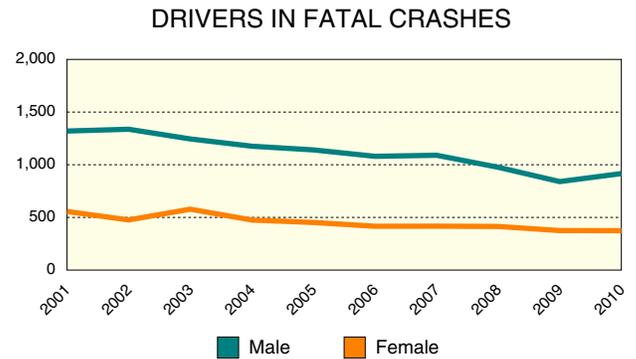
# 10 YEAR TRENDS (continued)

DRIVERS IN ALL CRASHES		
	Male	Female
2001	357,684	254,636
2002	350,528	254,561
2003	338,913	252,716
2004	333,606	251,077
2005	309,487	237,343
2006	272,328	216,196
2007	277,353	219,781
2008	267,186	213,223
2009	242,490	199,166
2010	238,048	197,183



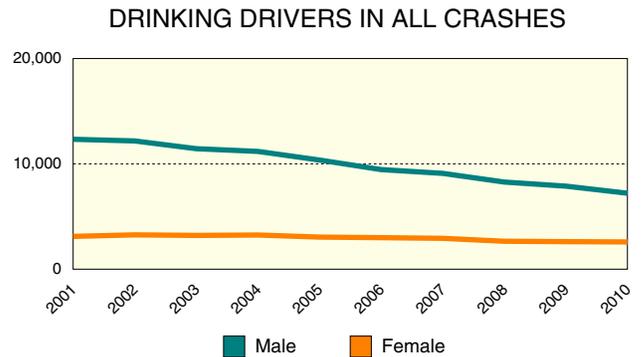
Male drivers accounted for 50.8 percent of all drivers in crashes during 2010, down from 52.0 percent in 2001.

DRIVERS IN FATAL CRASHES		
	Male	Female
2001	1,320	556
2002	1,337	476
2003	1,245	578
2004	1,176	475
2005	1,141	452
2006	1,080	416
2007	1,090	417
2008	976	414
2009	840	375
2010	916	374



Male drivers made up 69.1 percent of all drivers in fatal crashes in 2010. The 916 male driver count is down 30.6 percent from 2001.

DRINKING DRIVERS IN ALL CRASHES		
	Male	Female
2001	12,331	3,112
2002	12,173	3,257
2003	11,436	3,203
2004	11,179	3,242
2005	10,359	3,045
2006	9,454	2,991
2007	9,095	2,928
2008	8,270	2,650
2009	7,881	2,613
2010	7,209	2,584

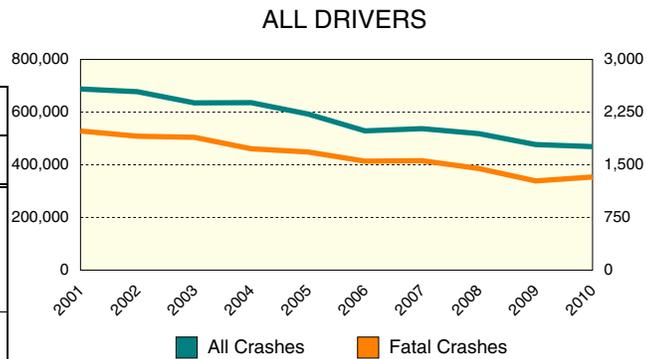


Male drivers have always accounted for the majority of drinking drivers in all crashes. In 2010, males represented 73.2 percent of all drinking drivers. The 7,209 male driver count is down 41.5 percent from 2001.

**Note:** 7.2 percent of all drivers (33,737), 2.7 percent of drivers (36) in fatal crashes, and 0.5 percent of all drinking drivers (50), were coded as unknown gender in 2010, and they are not counted in these tables.

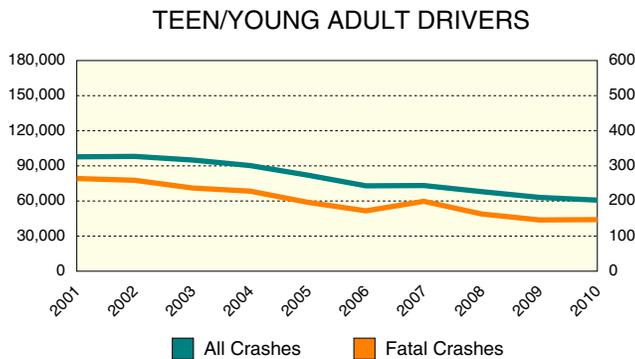
# 10 YEAR TRENDS

ALL DRIVERS		
	All Crashes	Fatal Crashes
2001	687,836	1,981
2002	677,527	1,907
2003	635,096	1,891
2004	635,913	1,728
2005	592,671	1,682
2006	528,763	1,551
2007	537,228	1,558
2008	518,240	1,447
2009	476,801	1,270
2010	468,968	1,326



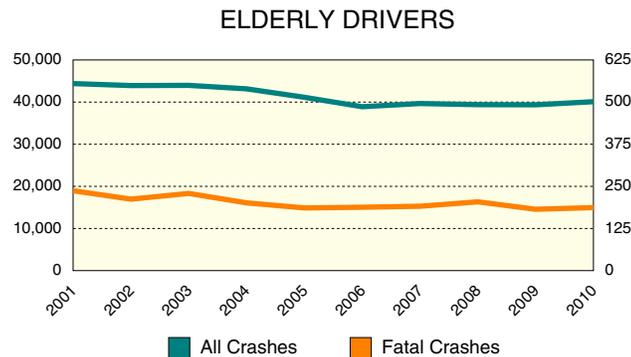
The number of drivers involved in all crashes decreased 31.8 percent over the ten-year period. The number of drivers involved in fatal crashes decreased 33.1 percent over the ten-year period.

TEEN/YOUNG ADULT DRIVERS		
	All Crashes	Fatal Crashes
2001	97,740	264
2002	98,095	259
2003	95,011	237
2004	90,247	228
2005	82,017	196
2006	72,957	172
2007	73,210	199
2008	67,982	163
2009	63,069	146
2010	60,721	147



Teen/young adult drivers (age 16-20) represented 7.4 percent of the licensed drivers in 2010. The number of teen/young adult drivers in all crashes has decreased by 37.9 percent since 2001. Their involvement in fatal crashes decreased 44.3 percent during the same time period.

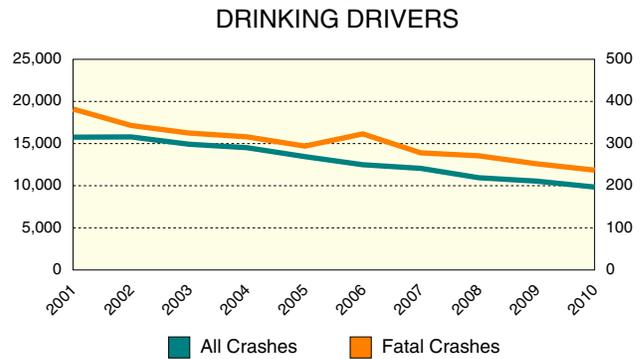
ELDERLY DRIVERS		
	All Crashes	Fatal Crashes
2001	44,393	237
2002	43,923	212
2003	43,967	229
2004	43,146	201
2005	41,140	186
2006	38,899	188
2007	39,656	191
2008	39,388	204
2009	39,357	182
2010	40,096	187



Elderly drivers (age 65-110) represent 16.8 percent of the licensed drivers in 2010. The number of drivers age 65 and older in all crashes has decreased 9.7 percent since 2001. Their involvement in fatal crashes decreased 21.1 percent during the same time period.

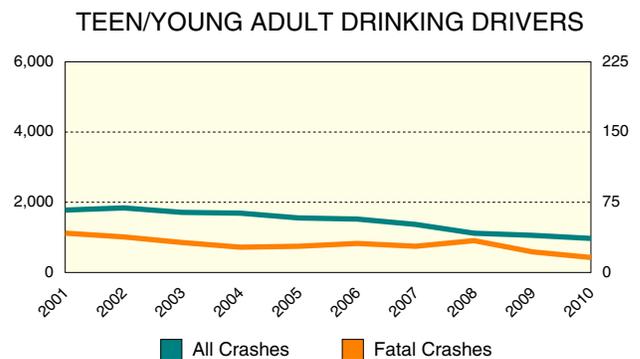
# 10 YEAR TRENDS (continued)

DRINKING DRIVERS		
	All Crashes	Fatal Crashes
2001	15,760	382
2002	15,791	343
2003	14,922	325
2004	14,513	316
2005	13,452	294
2006	12,489	323
2007	12,059	278
2008	10,948	271
2009	10,542	252
2010	9,843	237



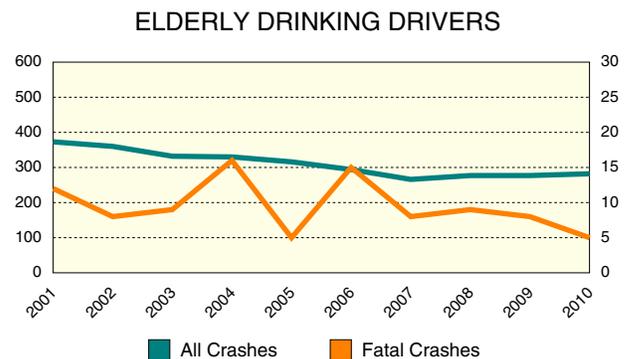
Drinking driver involvement in all crashes decreased by 37.5 percent from 2001. Drinking driver involvement in fatal crashes decreased by 38.0 percent from 2001.

TEEN/YOUNG ADULT DRINKING DRIVERS		
	All Crashes	Fatal Crashes
2001	1,777	42
2002	1,839	38
2003	1,712	32
2004	1,689	27
2005	1,553	28
2006	1,521	31
2007	1,368	28
2008	1,118	34
2009	1,058	22
2010	970	16



Following the trend for all drinking drivers, the number of teen/young adult drinking drivers (age 16-20) in all crashes decreased by 45.4 percent, and their involvement in fatal crashes decreased by 61.9 percent from 2001.

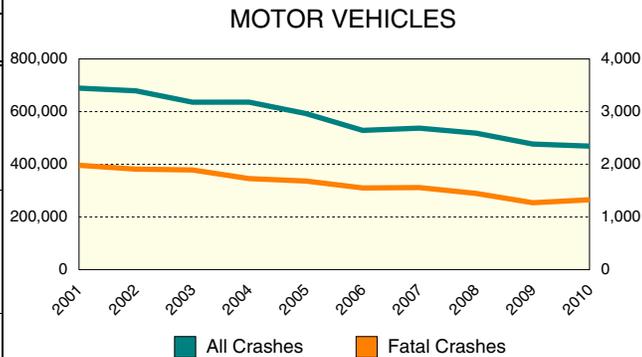
ELDERLY DRINKING DRIVERS		
	All Crashes	Fatal Crashes
2001	373	12
2002	360	8
2003	332	9
2004	330	16
2005	316	5
2006	294	15
2007	266	8
2008	277	9
2009	277	8
2010	282	5



The number of elderly drinking drivers (age 65-110) in all crashes has decreased by 24.4 percent from 2001.

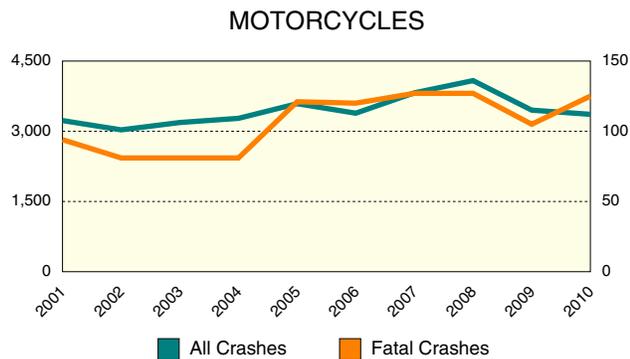
# 10 YEAR TRENDS

MOTOR VEHICLES		
	All Crashes	Fatal Crashes
2001	689,122	1,981
2002	678,990	1,908
2003	635,767	1,892
2004	635,913	1,728
2005	592,671	1,682
2006	528,763	1,551
2007	537,228	1,558
2008	518,240	1,447
2009	476,801	1,270
2010	468,968	1,326



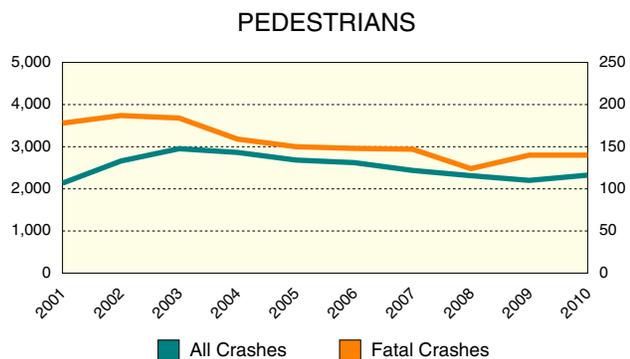
There were 1,326 motor vehicles involved in fatal crashes in 2010, down 33.1 percent from 2001. There has been a 31.9 percent decrease in all crashes.

MOTORCYCLES		
	All Crashes	Fatal Crashes
2001	3,228	94
2002	3,030	81
2003	3,187	81
2004	3,276	81
2005	3,589	121
2006	3,386	120
2007	3,821	127
2008	4,082	127
2009	3,451	105
2010	3,362	125



The number of motorcycles involved in fatal crashes has increased 33.0 percent in the ten-year period. There has been a 4.2 percent increase in all crashes.

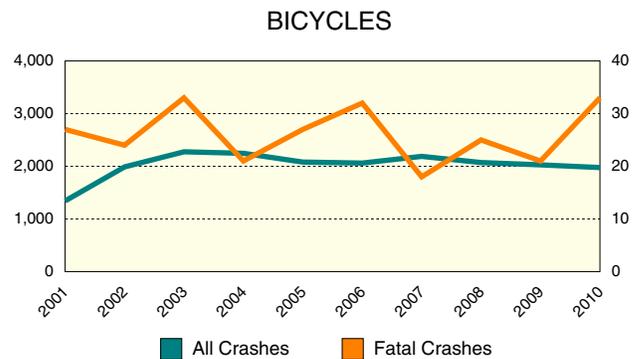
PEDESTRIANS		
	All Crashes	Fatal Crashes
2001	2,135	178
2002	2,660	187
2003	2,953	184
2004	2,864	159
2005	2,683	150
2006	2,622	148
2007	2,437	147
2008	2,312	124
2009	2,201	140
2010	2,325	140



There were 140 pedestrians involved in fatal crashes in 2010, down 21.3 percent from 2001. However, there was an 8.9 percent increase in pedestrians involved in all crashes.

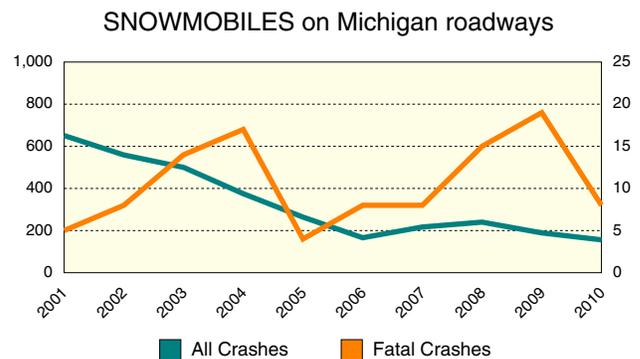
# 10 YEAR TRENDS (continued)

BICYCLES		
	All Crashes	Fatal Crashes
2001	1,342	27
2002	1,988	24
2003	2,275	33
2004	2,246	21
2005	2,080	27
2006	2,061	32
2007	2,188	18
2008	2,071	25
2009	2,027	21
2010	1,976	33



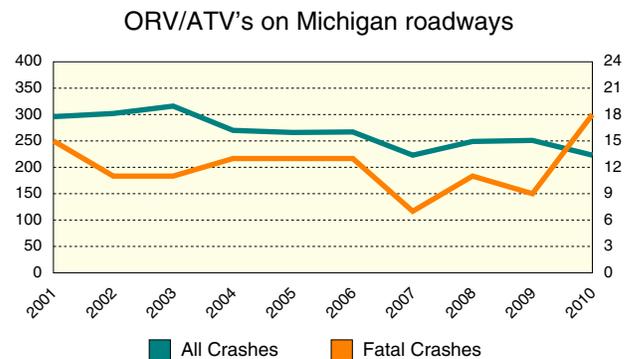
There were 33 bicycles involved in fatal crashes in 2010, up 22.2 percent from 2001. There was a 47.2 percent increase in all crashes.

SNOWMOBILES ON MICHIGAN ROADWAYS		
	All Crashes	Fatal Crashes
2001	651	5
2002	559	8
2003	500	14
2004	375	17
2005	264	4
2006	166	8
2007	217	8
2008	240	15
2009	189	19
2010	156	8



The 156 snowmobile crash count (in all crashes) is down 76.0 percent from 2001. A ten-year low of four snowmobiles involved in fatal crashes on Michigan public roadways was reported in 2005.

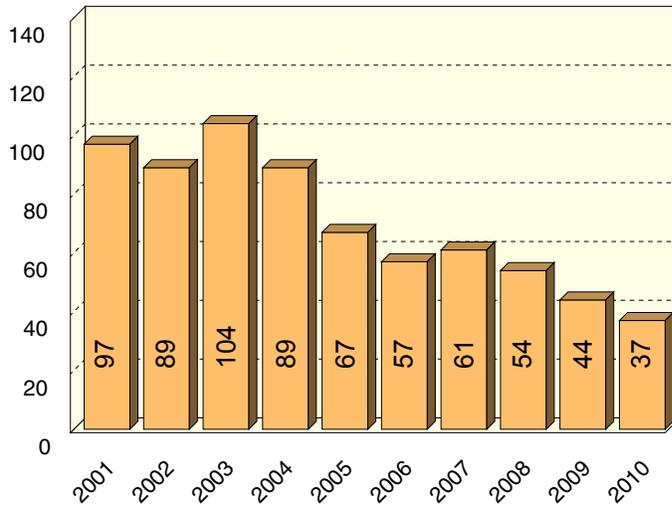
ORV/ATV's ON MICHIGAN ROADWAYS		
	All Crashes	Fatal Crashes
2001	296	15
2002	302	11
2003	316	11
2004	270	13
2005	266	13
2006	267	13
2007	223	7
2008	249	11
2009	251	9
2010	223	18



The number of ORV/ATV's involved in fatal crashes on Michigan public roadways has ranged between seven and 18 over the ten-year period. The number of ORV/ATV's involved in all crashes has decreased 24.7% over the ten-year period.

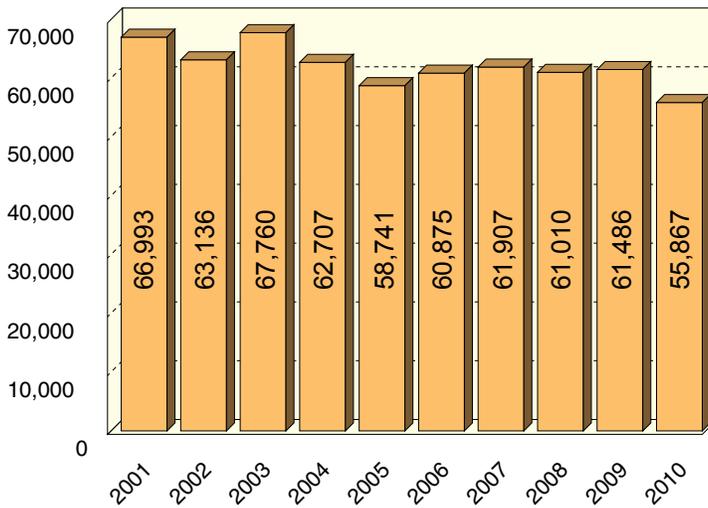
# 10 YEAR TRENDS

## VEHICLE-TRAIN CRASHES



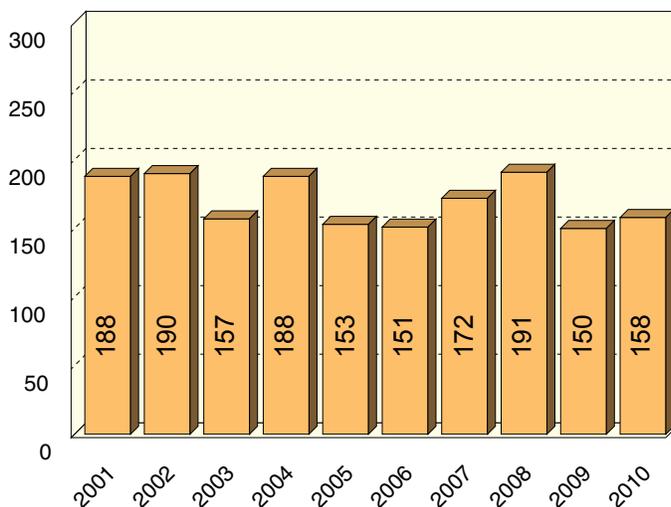
Thirty-seven vehicle-train crashes occurred in 2010, a decrease of 61.9 percent in the ten-year period.

## VEHICLE-DEER CRASHES



The number of vehicle-deer crashes has decreased 16.6 percent in the ten-year period.

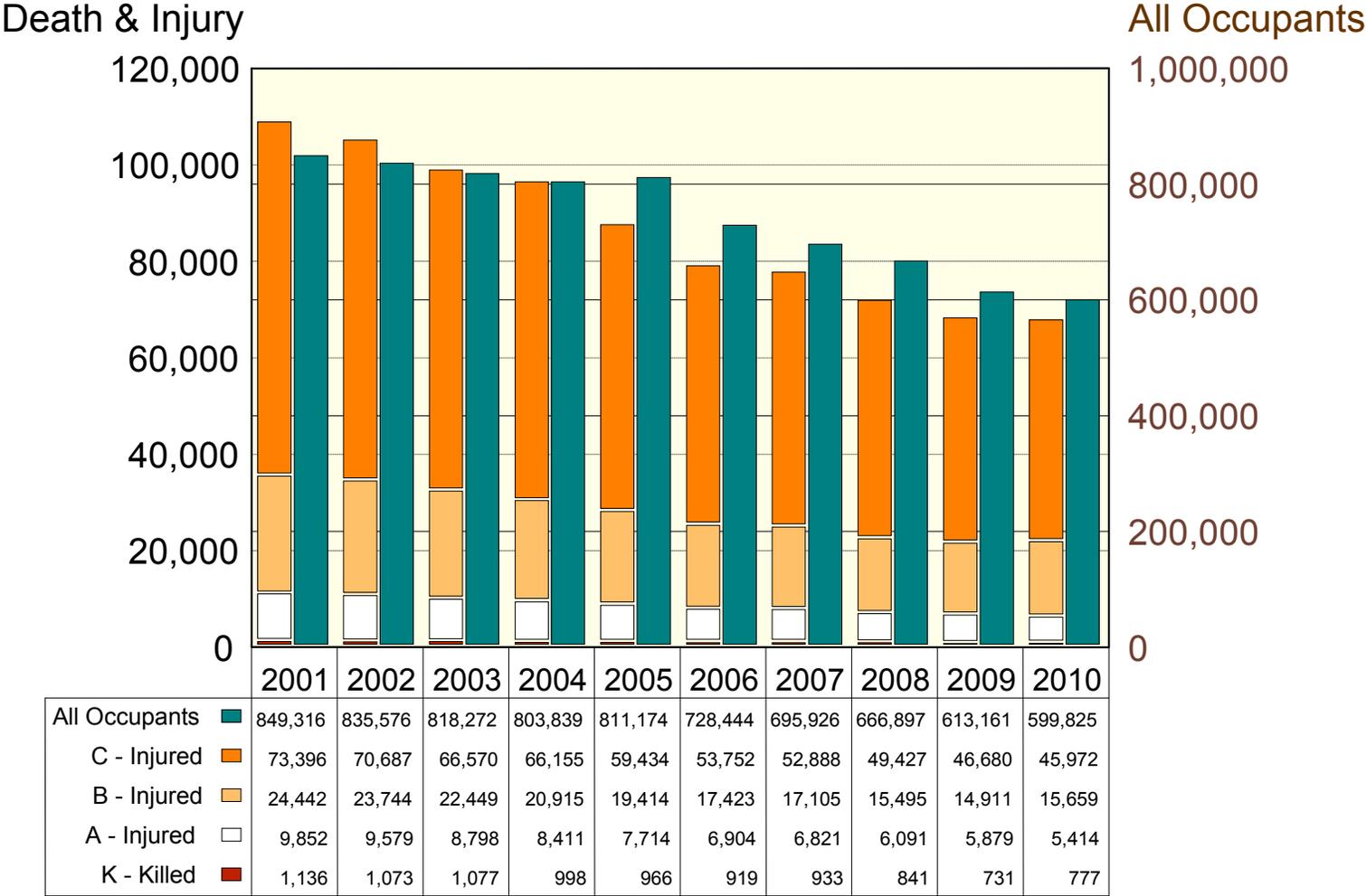
## FARM EQUIPMENT CRASHES



The 158 farm equipment crashes that occurred in 2010, were a decrease of 16.0 percent in the ten-year period.

# 10 YEAR TRENDS (continued)

## DEATH AND INJURY FOR CRASH-INVOLVED OCCUPANTS

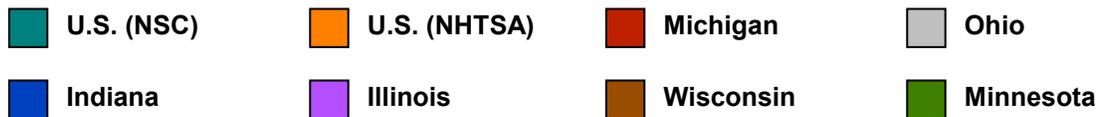
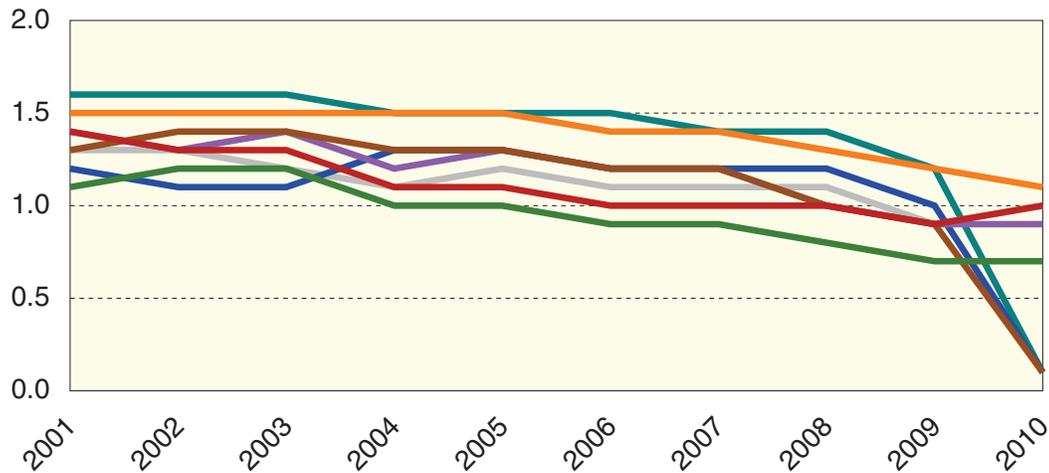


The proportion of death and injury to crash-involved occupants has decreased over the last ten years. The all-occupant figure is the number of occupants recorded by the police officers on the UD-10.



# 10 YEAR TRENDS

## MILEAGE DEATH RATES 2001 - 2010



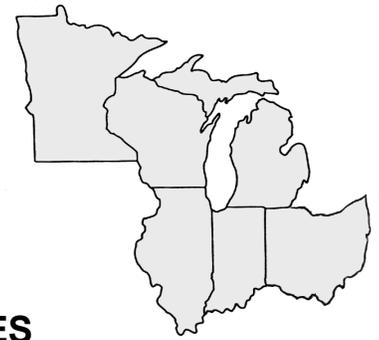
	U.S. (NSC*)	U.S. (NHTSA*)	Michigan	Ohio	Indiana	Illinois	Wisconsin	Minnesota
2001	1.6	1.5	1.4	1.3	1.2	1.4	1.3	1.1
2002	1.6	1.5	1.3	1.3	1.1	1.3	1.4	1.2
2003	1.6	1.5	1.3	1.2	1.1	1.4	1.4	1.2
2004	1.5	1.5	1.1	1.1	1.3	1.2	1.3	1.0
2005	1.5	1.5	1.1	1.2	1.3	1.3	1.3	1.0
2006	1.5	1.4	1.0	1.1	1.2	1.2	1.2	0.9
2007	1.4	1.4	1.0	1.1	1.2	1.2	1.2	0.9
2008	1.4	1.3	1.0	1.1	1.2	1.0	1.0	0.8
2009	1.2	1.2	0.9	0.9	1.0	0.9	0.9	0.7
2010	†	1.1	1.0	1.0	†	0.9	†	0.7

\* National Safety Council (NSC) reports traffic and nontraffic deaths within a year of the accident. National Highway Traffic Safety Administration (NHTSA) reports only traffic deaths that occur within 30 days of the accident.

† Data not yet available

U.S. data for this table and tables on the following page were provided by the National Safety Council [3], the National Highway Traffic Safety Administration [4], and the Federal Highway Administration [5]. State data for this table and tables on the following page were provided by Ohio [6], Indiana [7], Illinois [8], Wisconsin [9], and Minnesota [10].

# 10 YEAR TRENDS



## MICHIGAN AND SURROUNDING STATES COMPARISON OF FATALITIES AND VMT

Year	U.S. (NSC) Persons Killed	U.S. (NHTSA) Persons Killed	Michigan Persons Killed	Ohio Persons Killed	Indiana Persons Killed	Illinois Persons Killed	Wisconsin Persons Killed	Minnesota Persons Killed
2001	43,788	42,196	1,328	1,379	895	1,414	764	568
2002	45,380	43,005	1,279	1,417	792	1,420	805	657
2003	44,757	42,884	1,283	1,278	833	1,454	836	655
2004	44,933	42,836	1,159	1,285	947	1,355	784	567
2005	45,500	43,443	1,129	1,326	938	1,360	801	559
2006	44,700	42,642	1,084	1,239	899	1,254	712	494
2007	43,100	41,059	1,084	1,257	899	1,248	737	510
2008	39,800	37,261	980	1,191	815	1,043	587	455
2009	35,900	33,963	871	1,028	692	911	542	421
2010	†	32,788	937	1,081	754	927	562	411

† Data not yet available

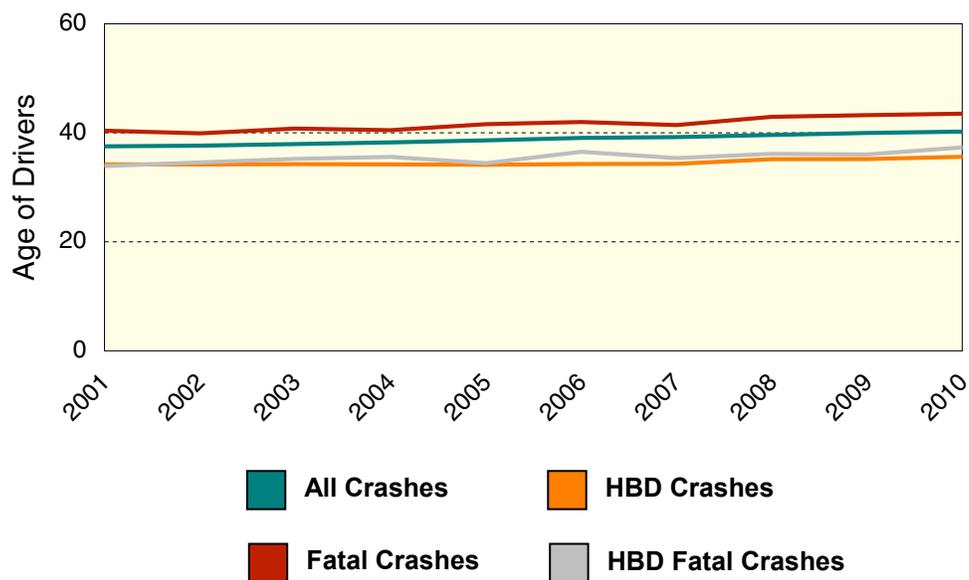
Year	U.S. (FHWA) VMT	Michigan VMT	Ohio VMT	Indiana VMT	Illinois VMT	Wisconsin VMT	Minnesota VMT
2001	2,796	96.4	107.0	74.1	103.1	57.3	53.2
2002	2,856	98.2	107.9	74.6	106.2	58.7	54.4
2003	2,890	100.2	109.9	74.4	106.5	59.6	55.4
2004	2,962	101.8	112.4	74.5	108.9	60.5	56.5
2005	2,990	103.2	111.5	74.3	107.9	60.0	56.5
2006	2,995	104.0	112.1	74.2	106.8	59.4	56.6
2007	2,996	104.6	111.1	74.1	107.4	59.5	57.4
2008	2,929	100.9	108.3	68.0	105.6	57.5	57.3
2009	2,935	95.9	110.8	68.8	105.7	58.2	56.9
2010	†	97.6	113.5	†	105.7	†	56.7

VMT described in billions of miles

† Data not yet available

# 10 YEAR TRENDS

## AVERAGE AGE OF DRIVERS IN CRASHES 2001 - 2010



Reflecting the demographic trend of increasing age in the general population, the average age of drivers involved in all crashes and fatal crashes has increased over the ten-year period. The average age of drivers in HBD crashes has remained flat.

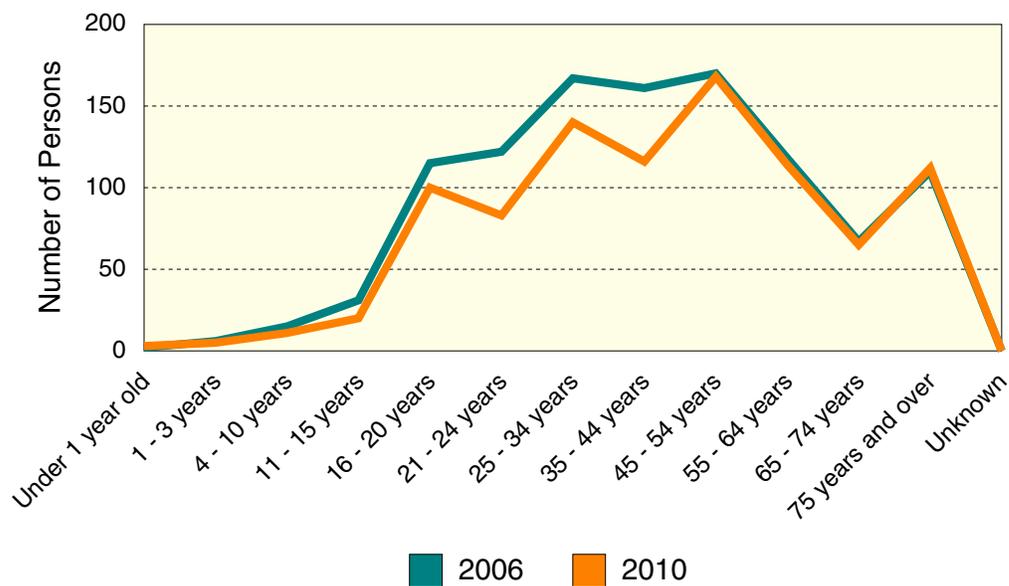
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# 5 YEAR TRENDS

## STATEWIDE TREND DATA FOR FATALITIES

TREND DATA FOR FATALITIES	2006	2007	2008	2009	2010
<b>Age of Persons Killed, Total</b>					
Under 1 year old	2	3	1	1	3
1 - 3 years	6	5	7	6	5
4 - 10 years	15	14	15	13	11
11 - 15 years	31	35	20	15	20
16 - 20 years	115	154	116	110	100
21 - 24 years	122	97	80	59	83
25 - 34 years	167	148	133	140	140
35 - 44 years	161	146	137	114	116
45 - 54 years	170	154	158	151	168
55 - 64 years	118	127	125	93	114
65 - 74 years	67	73	75	54	65
75 years and over	110	128	113	114	112
Unknown	0	0	0	1	0
Totals	1,084	1,084	980	871	937

Age of Persons Killed, Total



# 5

## YEAR TRENDS

## STATEWIDE TREND DATA FOR FATALITIES (continued)

TREND DATA FOR FATALITIES	2006	2007	2008	2009	2010
<b>Age of Drivers Involved in Fatal Crashes</b>					
13 years and under	4	2	1	0	3
14 years	1	1	0	1	2
15 years	7	7	3	4	4
16 years	16	28	19	15	15
17 years	35	34	28	26	27
18 years	39	52	45	33	38
19 years	39	39	38	43	35
20 years	43	46	33	29	32
21 - 24 years	155	156	126	92	109
25 - 34 years	270	273	236	223	216
35 - 44 years	257	263	246	203	213
45 - 54 years	264	220	245	223	232
55 - 64 years	176	192	162	138	175
65 - 69 years	38	38	45	54	54
70 - 74 years	43	42	48	20	37
75 - 79 years	42	50	46	45	27
80 - 84 years	39	37	36	39	32
85 - 89 years	17	17	19	18	28
90 years and over	9	7	10	6	9
Unknown	57	54	61	58	38
Totals	1,551	1,558	1,447	1,270	1,326

### Age of Drivers Involved in Single Vehicle Fatal Crashes

13 years and under	2	2	0	0	2
14 years	1	0	0	0	1
15 years	4	4	1	1	2
16 years	6	11	5	10	4
17 years	13	10	8	7	13
18 years	12	16	17	15	14
19 years	13	14	14	11	15
20 years	17	19	11	10	13
21 - 24 years	67	64	52	40	45
25 - 34 years	102	83	76	82	80
35 - 44 years	69	81	75	57	69
45 - 54 years	83	70	73	78	75
55 - 64 years	62	55	66	33	55
65 - 69 years	12	10	14	14	24
70 - 74 years	16	12	13	6	10
75 - 79 years	11	14	9	12	10
80 - 84 years	8	7	12	12	6
85 - 89 years	3	1	4	5	8
90 years and over	2	1	1	1	3
Unknown	19	16	20	15	15
Totals	522	490	471	409	464

# 5 YEAR TRENDS

## STATEWIDE TREND DATA FOR FATALITIES (continued)

TREND DATA FOR FATALITIES	2006	2007	2008	2009	2010
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### Age of Bicyclists Killed

Under 1 year old	0	0	0	0	0
1 - 3 years	0	0	0	0	0
4 - 10 years	2	0	0	0	3
11 - 15 years	2	4	2	3	3
16 - 20 years	2	0	2	2	2
21 - 24 years	1	1	2	1	1
25 - 34 years	0	2	5	1	2
35 - 44 years	4	1	1	2	3
45 - 54 years	8	7	7	3	9
55 - 64 years	4	1	5	1	2
65 - 74 years	4	1	1	4	3
75 years and over	1	0	0	2	1
Unknown	0	0	0	0	0
Totals	28	17	25	19	29

### Age of Pedestrians Killed

Under 1 year old	0	0	0	0	0
1 - 3 years	0	4	3	3	1
4 - 10 years	3	5	2	2	1
11 - 15 years	6	6	5	0	3
16 - 20 years	8	7	8	11	9
21 - 24 years	11	7	6	5	8
25 - 34 years	15	12	14	15	20
35 - 44 years	32	27	16	25	16
45 - 54 years	24	24	25	31	30
55 - 64 years	18	18	13	14	17
65 - 74 years	8	11	11	6	10
75 years and over	12	13	11	8	16
Unknown	0	0	0	1	0
Totals	137	134	114	121	131

# 5

## YEAR TRENDS

### FATAL CRASHES AND PERSONS KILLED FOR SELECT HOLIDAY PERIODS IN MICHIGAN

HOLIDAY PERIOD	Fatal Crashes	Persons Killed	SUMMARY 2010
<b>Memorial Day</b> 2010 (3) MON 2009 (3) MON 2008 (3) MON 2007 (3) MON 2006 (3) MON	14 [4] 10 [6] 11 [2] 11 [4] 16 [3]	15 [4] 11 [7] 11 [2] 13 [4] 19 [4]	<p>This table shows traffic death tolls in Michigan for the past five years for the major holiday periods as defined by the National Safety Council.</p> <p>Based on the <b>total 2010</b> experience, deaths averaged <b>2.57</b> per day. Alcohol-related deaths averaged <b>0.78</b> per day.</p> <p>Based on the <b>2010 holiday period</b> experience, deaths averaged <b>3.42</b> per day. Alcohol-related deaths averaged <b>1.42</b> per day.</p> 
<b>Fourth of July</b> 2010 (3) SUN 2009 (3) SAT 2008 (3) FRI 2007 (1) WED 2006 (4) TUE	8 [2] 1 [1] 14 [5] 4 [2] 14 [7]	8 [2] 1 [1] 14 [5] 4 [2] 15 [7]	
<b>Labor Day</b> 2010 (3) MON 2009 (3) MON 2008 (3) MON 2007 (3) MON 2006 (3) MON	17 [8] 15 [5] 12 [4] 15 [8] 7 [3]	21 [12] 16 [5] 12 [4] 16 [8] 7 [3]	
<b>Thanksgiving</b> 2010 (4) THU 2009 (4) THU 2008 (4) THU 2007 (4) THU 2006 (4) THU	9 [3] 10 [0] 9 [7] 11 [1] 20 [11]	10 [4] 11 [0] 13 [10] 11 [1] 23 [14]	
<b>Christmas</b> 2010 (3) SAT 2009 (3) FRI 2008 (4) THU 2007 (4) TUE 2006 (3) MON	6 [4] 3 [3] 11 [2] 11 [4] 2 [0]	6 [4] 3 [3] 14 [2] 11 [4] 2 [0]	
<b>New Years</b> 2010 (3) SAT 2009 (3) FRI 2008 (4) THU 2007 (4) TUE 2006 (3) MON	5 [1] 7 [4] 15 [6] 9 [4] 5 [4]	5 [1] 8 [4] 15 [6] 9 [4] 5 [4]	

Figures in parentheses in the 1<sup>st</sup> column show number of full days in each holiday period.

Fatal crashes and deaths are for these days plus six hours of the preceding day.

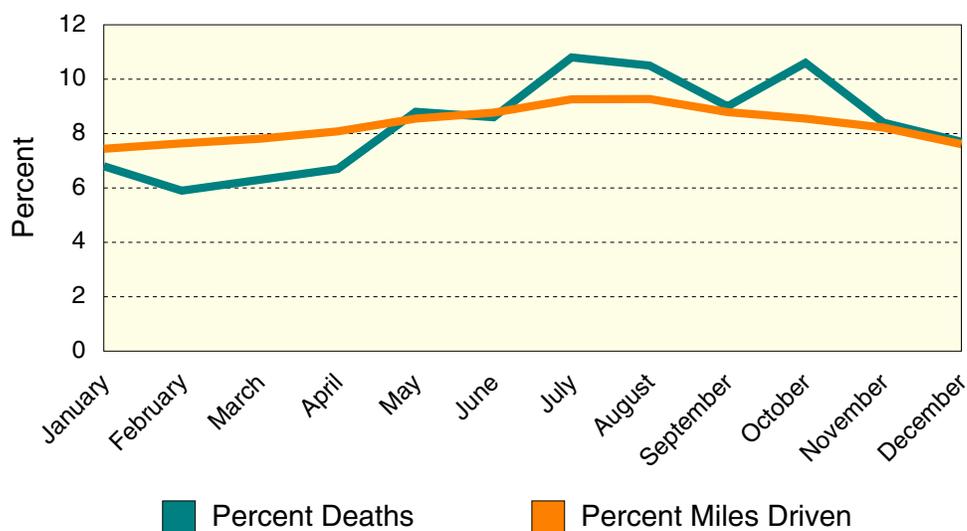
Figures in brackets in the 2<sup>nd</sup> and 3<sup>rd</sup> columns show the number of alcohol-related fatal crashes and deaths. Please view the [glossary](#) for an explanation of holiday periods

# 5 YEAR TRENDS

## MOTOR VEHICLE DEATHS AND MILEAGE BY MONTH

Month	TRAFFIC DEATHS					2010 PERCENTAGES	
	2006	2007	2008	2009	2010	Percent Deaths	Percent Miles Driven
January	79	69	73	71	64	6.8	7.44
February	67	70	57	48	55	5.9	7.64
March	72	81	63	62	59	6.3	7.81
April	82	67	66	52	63	6.7	8.08
May	82	92	88	66	82	8.8	8.55
June	101	96	85	88	81	8.6	8.77
July	82	104	101	91	101	10.8	9.26
August	115	117	100	81	98	10.5	9.27
September	90	111	92	96	84	9.0	8.79
October	128	88	84	91	99	10.6	8.55
November	105	98	106	61	79	8.4	8.22
December	81	91	65	64	72	7.7	7.61
Totals	1,084	1,084	980	871	937	100.0	100.00

2010 Percent Deaths & Percent Miles Driven



The chart above shows that the *percent deaths* were lower for the months of January through April and June than for the other months when compared to the *percent miles driven*.

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# 1 YEAR TRENDS

## STATEWIDE 2009 - 2010 SUMMARY TRENDS

- ★ Michigan experienced a **7.6** percent increase in traffic fatalities, a **0.6** percent decrease in injuries and a **3.1** percent decrease in crashes.
- ★ Deaths among vehicle occupants (drivers and passengers only) increased **2.3** percent.
- ★ Persons sustaining "A" level injuries (the most serious) decreased **8.2** percent.

	2009	2010	% CHANGE
<b>NUMBER OF CRASHES</b>			
Fatal Crashes .....	806	868	7.7
Personal Injury Crashes .....	52,283	51,672	-1.2
Property Damage Crashes .....	237,889	229,535	-3.5
<b>Total</b>	<b>290,978</b>	<b>282,075</b>	<b>-3.1</b>
<b>ALCOHOL-INVOLVED CRASHES</b>			
Fatal Crashes .....	277	264	-4.7
Personal Injury Crashes .....	4,163	4,007	-3.7
Property Damage Crashes .....	6,225	5,715	-8.2
<b>Total</b>	<b>10,665</b>	<b>9,986</b>	<b>-6.4</b>
<b>FATAL CRASHES</b>			
Had Been Drinking (HBD) .....	277 (34.4%)	264 (30.4%)	-4.7
Had Not Been Drinking / Not Known If Drinking	529 (65.6%)	604 (69.6%)	14.2
<b>PERSONS IN CRASHES</b>			
Killed .....	871	937	7.6
Injured .....	70,931	70,501	-0.6
Not Injured .....	427,758	428,000	0.1
Unknown Injury .....	61,062	48,329	-20.9
<b>Total</b>	<b>560,622</b>	<b>547,767</b>	<b>-2.3</b>
<b>PERSONS IN ALCOHOL-INVOLVED CRASHES</b>			
Killed .....	299	283	-5.4
Injured .....	5,678	5,458	-3.9
Not Injured .....	11,821	11,139	-5.8
Unknown Injury .....	2,128	1,615	-24.1
<b>Total</b>	<b>19,926</b>	<b>18,495</b>	<b>-7.2</b>
<b>PERSONS INJURED BY GENDER</b>			
Male .....	32,072	32,132	0.2
Female .....	37,967	37,792	-0.5
Unknown Gender.....	892	577	-35.3
<b>Total</b>	<b>70,931</b>	<b>70,501</b>	<b>-0.6</b>
<b>PERSONS INJURED BY SEVERITY</b>			
"A" Injury .....	6,511	5,980	-8.2
"B" Injury .....	16,149	17,027	5.4
"C" Injury .....	48,271	47,494	-1.6
<b>Total</b>	<b>70,931</b>	<b>70,501</b>	<b>-0.6</b>

# 1

## YEAR TRENDS

### STATEWIDE 2009 - 2010 SUMMARY TRENDS (continued)

	2009	2010	% CHANGE
<b>PERSONS KILLED BY GENDER</b>			
Male .....	593	637	7.4
Female .....	278	300	7.9
<b>Total</b>	<b>871</b>	<b>937</b>	<b>7.6</b>
<b>PERSONS KILLED</b>			
Driver .....	425	444	4.5
Passenger .....	173	168	-2.9
Pedestrian .....	121	131	8.3
Bicyclist .....	19	29	52.6
Motorcyclist .....	103	125	21.4
Farm Equipment .....	1	1	0.0
Train Engineer .....	0	0	---
Snowmobile .....	14	9	-35.7
ORV/ATV .....	9	18	100.0
Other/Unknown .....	6	12	100.0
<b>Total</b>	<b>871</b>	<b>937</b>	<b>7.6</b>
<b>BELT RESTRAINT USE BY DRIVER</b>			
"Reported Restrained" - Killed .....	229	249	8.7
"Reported Not Restrained" - Killed .....	151	145	-4.0
"Reported Restrained" - Injured .....	43,223	43,340	0.3
"Reported Not Restrained" - Injured .....	1,979	1,794	-9.3
<b>BELT RESTRAINT USE BY INJURED PASSENGER</b>			
"Reported Restrained" - Killed .....	75	72	-4.0
"Reported Not Restrained" - Killed.....	59	75	27.1
"Reported Restrained" - Injured .....	14,060	13,795	-1.9
"Reported Not Restrained" - Injured .....	1,686	1,856	10.1
<b>DRIVER AGE 16-20 INVOLVED</b>			
Fatal Crashes .....	137	141	2.9
Personal Injury Crashes .....	12,702	12,342	-2.8
Property Damage Crashes .....	45,657	43,883	-3.9
<b>Total All Crashes</b>	<b>58,496</b>	<b>56,366</b>	<b>-3.6</b>
Persons Killed .....	154	159	3.2
Persons Injured .....	18,488	17,883	-3.3
<b>DRIVER AGE 65 &amp; OVER INVOLVED</b>			
Fatal Crashes .....	166	178	7.2
Personal Injury Crashes .....	7,992	8,133	1.8
Property Damage Crashes .....	29,316	29,649	1.1
<b>Total All Crashes</b>	<b>37,474</b>	<b>37,960</b>	<b>1.3</b>
Persons Killed .....	175	191	9.1
Persons Injured .....	11,477	11,760	2.5

# 1 YEAR TRENDS

## MORE MICHIGAN CRASH FACTS

CRASH FACTS	2009	2010	% Change
Licensed Drivers	7,073,619	7,076,344	0.0
Registered Vehicles in Michigan	8,145,728	8,101,713	-0.5
Michigan Population	9,969,727	9,883,640	-0.9
Drivers Involved in Crashes	476,801	468,968	-1.6
Vehicles Involved in Crashes	476,801	468,968	-1.6
Occupants Involved in Crashes	613,161	599,825	-2.2
Estimated MV Mileage Traveled (thousands)	95,910,140	97,638,657	1.8
Death Rate Per 100 Million Vehicle Miles	0.9	1.0	11.1
Fatal Crash Rate Per 100 Million Veh Miles	0.8	0.9	12.5



## 2010 COST OF CRASHES IN MICHIGAN

The cost estimate for Michigan crashes in 2010 is \$ (see note). This estimate is based on the National Safety Council's cost estimating procedures. Average comprehensive costs are based on the following figures:

Comprehensive Costs, 2010	
Death .....	\$
Incapacitating injury .....	\$
Nonincapacitating evident injury .....	\$
Possible injury .....	\$
No injury .....	\$

These cost estimates are not intended for comparisons to previous years. Deaths and injuries are calculated by number of persons. "No injury" is calculated per crash.

Note: Information on the cost of crashes will be available from the National Safety Council later this year.



## MOTOR VEHICLE TRAFFIC DEATHS IN MICHIGAN BY MONTH

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1959	76	69	91	126	126	124	148	128	155	125	144	161	1,473
1960	139	76	102	105	107	133	159	154	137	186	152	154	1,604
1961	105	99	113	138	133	114	141	166	128	139	148	143	1,567
1962	94	70	115	110	123	147	166	175	170	172	118	114	1,574
1963	107	95	124	142	148	173	188	177	163	179	196	195	1,887
1964	170	159	158	144	164	167	217	197	177	199	177	193	2,122
1965	153	113	135	143	156	181	211	220	193	214	172	245	2,136
1966	147	156	179	151	207	204	212	206	203	220	205	208	2,298
1967	130	105	141	162	187	140	210	189	223	230	216	204	2,137
1968	130	147	164	150	240	214	208	233	209	248	283	166	2,392
1969	137	158	173	169	239	236	218	254	230	236	219	218	2,487
1970	167	143	160	141	214	205	197	204	213	217	178	138	2,177
1971	137	124	155	144	187	212	222	227	155	209	202	178	2,152
1972	156	161	155	150	204	209	225	210	225	219	174	170	2,258
1973	187	156	173	140	180	230	225	201	204	209	171	137	2,213
1974	111	112	107	116	144	197	189	178	200	195	201	125	1,875
1975	120	97	112	93	149	169	195	203	190	162	161	160	1,811
1976	118	102	134	150	163	169	196	227	189	171	174	162	1,955
1977	126	87	122	143	184	179	223	194	164	189	181	158	1,950
1978	98	104	128	177	178	203	206	229	214	199	183	157	2,076
1979	102	103	129	152	146	155	190	171	174	187	171	169	1,849
1980	117	131	109	116	153	170	142	183	192	152	133	176	1,774
1981	99	100	108	116	116	155	159	171	149	155	113	148	1,589
1982	98	79	93	91	114	121	154	153	128	144	131	111	1,417
1983	113	94	83	91	91	127	121	117	131	153	115	95	1,331
1984	93	84	104	94	125	143	175	174	135	153	134	142	1,556
1985	108	91	77	133	137	167	146	136	131	135	161	147	1,569
1986	86	77	103	127	131	175	186	176	131	144	159	137	1,632
1987	91	104	99	106	138	165	151	176	149	164	161	128	1,632
1988	129	107	103	104	145	152	175	158	178	159	127	167	1,704
1989	138	102	94	96	123	156	156	177	155	146	123	164	1,630
1990	99	84	122	94	135	151	165	170	141	147	130	125	1,563
1991	103	79	115	106	129	145	130	141	125	129	104	119	1,425
1992	83	81	83	86	100	122	134	119	123	129	120	120	1,300
1993	123	91	89	72	127	103	149	140	131	146	134	109	1,414
1994	106	86	82	116	111	123	126	143	132	133	123	138	1,419
1995	122	90	109	111	118	141	127	159	157	134	136	133	1,537
1996	131	98	103	98	128	135	146	121	138	135	136	136	1,505
1997	102	106	85	80	128	140	166	130	128	134	125	122	1,446
1998	116	71	97	91	113	120	133	116	123	126	117	144	1,367
1999	76	84	92	98	125	116	128	160	128	129	130	120	1,386
2000	121	83	70	107	114	136	135	133	135	124	118	106	1,382
2001	79	99	102	83	106	113	143	131	143	120	109	100	1,328
2002	105	101	81	93	112	115	137	110	96	117	102	110	1,279
2003	97	80	88	100	84	96	132	127	111	122	130	116	1,283
2004	81	68	63	81	97	106	117	123	116	81	122	104	1,159
2005	73	77	68	77	105	95	130	96	102	112	110	84	1,129
2006	79	67	72	82	82	101	82	115	90	128	105	81	1,084
2007	69	70	81	67	92	96	104	117	111	88	98	91	1,084
2008	73	57	63	66	88	85	101	100	92	84	106	65	980
2009	71	48	62	52	66	88	91	81	96	91	61	64	871
2010	64	55	59	63	82	81	101	98	84	99	79	72	937

## MOTOR VEHICLE TRAFFIC CRASH AND RELATED DATA

Year	Deaths	Number of Persons Injured	Crashes	Estimated Mileage (Millions)	Motor Vehicle Registrations*	Death Rate Per 100 million miles of travel
1959	1,473	64,873	198,771	30,679.0	3,252,492	4.8
1960	1,604	91,026	209,724	31,842.4	3,352,234	5.0
1961	1,567	93,350	199,973	32,101.5	3,395,736	4.9
1962	1,574	108,143	233,078	34,498.0	3,498,758	4.6
1963	1,887	126,896	261,794	36,452.2	3,646,080	5.2
1964	2,122	144,623	284,444	38,617.6	3,860,791	5.5
1965	2,136	155,258	310,598	40,857.4	4,066,826	5.2
1966	2,298	156,694	302,880	43,940.1	4,133,199	5.2
1967	2,137	151,297	299,004	45,053.6	4,161,573	4.7
1968	2,392	160,413	305,495	48,047.4	4,327,885	5.0
1969	2,487	175,400	331,223	50,904.9	4,560,097	4.9
1970	2,177	161,719	313,715	53,148.1	4,683,919	4.1
1971	2,152	157,664	314,015	55,539.7	4,835,146	3.9
1972	2,258	178,929	359,745	57,817.1	5,160,985	3.9
1973	2,213	169,485	350,864	58,478.4	5,442,233	3.8
1974	1,875	141,132	324,763	55,748.7	5,652,406	3.4
1975	1,811	147,299	333,560	56,260.5	5,744,441	3.2
1976	1,955	162,894	365,600	61,638.0	5,861,908	3.2
1977	1,950	166,389	374,751	64,853.0	6,138,732	3.0
1978	2,076	169,202	389,193	67,380.0	6,436,365	3.1
1979	1,849	162,571	366,435	64,882.3	6,536,246	2.8
1980	1,774	144,972	314,594	61,190.1	6,570,735	2.9
1981	1,589	136,455	302,831	62,000.0	6,140,286	2.6
1982	1,417	130,061	294,971	61,321.0	6,400,942	2.3
1983	1,331	135,811	300,797	63,560.1	6,443,499	2.1
1984	1,556	150,740	335,193	65,727.0	6,509,192	2.4
1985	1,569	157,417	386,904	68,413.0	6,857,364	2.3
1986	1,632	158,032	400,694	70,622.0	6,952,263	2.3
1987	1,632	156,318	397,224	75,715.0	7,061,339	2.2
1988	1,704	155,713	410,437	77,700.0	7,196,609	2.2
1989	1,630	154,537	417,252	79,900.0	7,233,823	2.0
1990	1,563	145,179	387,180	81,200.0	7,300,853	1.9
1991	1,425	135,830	364,847	81,900.0	7,329,789	1.7
1992	1,300	118,727	344,942	84,000.0	7,411,192	1.5
1993	1,414	134,548	363,636	85,700.0	7,495,904	1.6
1994	1,419	142,200	398,050	85,600.0	7,669,022	1.7
1995	1,537	146,303	421,073	85,699.6	7,751,336	1.8
1996	1,505	142,553	435,477	87,700.0	8,106,972	1.7
1997	1,446	137,548	425,793	89,232.0	8,115,921	1.6
1998	1,367	131,578	403,766	91,616.0	8,227,016	1.5
1999	1,386	124,601	415,675	93,060.3	8,407,868	1.5
2000	1,382	121,826	424,852	94,915.1	8,569,124	1.5
2001	1,328	112,294	400,813	96,428.1	8,603,195	1.4
2002	1,279	112,484	395,515	98,173.2	8,690,326	1.3
2003	1,283	105,555	391,485	100,192.0	8,708,688	1.3
2004	1,159	99,680	373,028	101,820.2	8,578,224	1.1
2005	1,129	90,510	350,838	103,158.6	8,464,905	1.1
2006	1,084	81,942	315,322	104,041.7	8,353,070	1.0
2007	1,084	80,576	324,174	104,643.8	8,409,163	1.0
2008	980	74,568	316,057	100,916.7	8,187,990	1.0
2009	871	70,931	290,978	95,910.1	8,145,728	0.9
2010	937	70,501	282,075	97,638.7	8,101,713	1.0

\* Excludes trailers and trailer coaches, and includes mopeds

2010

2010

2010

2010

2010

2010

2010

2010

**Age**



## AGE and INJURY SEVERITY by PERSON TYPE

Age	Driver			Passenger			Motorcyclist			Bicyclist			Pedestrian		
	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured
0	34	0	1	179	3	176	0	0	0	96	0	62	99	0	71
1	13	0	0	192	0	189	0	0	0	0	0	0	8	0	6
2	2	0	1	182	3	178	0	0	0	1	0	1	15	1	12
3	1	0	0	209	1	207	0	0	0	2	0	2	19	0	18
4	0	0	0	231	0	231	0	0	0	3	0	3	17	1	12
5	1	0	0	236	3	233	0	0	0	6	0	4	19	0	16
6	2	0	0	226	0	226	4	0	3	14	1	10	26	0	22
7	1	0	1	259	1	258	2	0	1	25	0	24	24	0	21
8	4	0	1	258	2	256	0	0	0	22	1	17	28	0	24
9	7	0	2	267	0	266	3	0	2	19	1	15	23	0	20
10	16	1	4	316	0	315	8	0	8	35	0	29	25	0	23
11	11	0	7	264	2	260	3	0	3	50	0	42	30	0	26
12	14	0	3	291	1	290	2	0	2	68	1	57	46	0	41
13	37	1	18	327	1	325	1	0	1	69	0	62	45	0	38
14	117	0	32	385	3	381	1	0	0	58	0	44	54	2	47
15	625	2	87	547	4	543	4	0	4	84	2	72	78	1	70
16	8,115	3	876	721	6	713	11	0	11	66	0	50	61	0	53
17	11,347	9	1,219	709	9	700	21	0	17	61	1	50	72	0	64
18	13,833	15	1,557	709	12	697	36	2	25	56	0	43	64	2	54
19	14,069	16	1,740	623	6	616	64	0	54	63	1	53	56	3	49
20	13,357	10	1,530	506	3	503	89	3	66	47	0	40	57	4	45
21	12,089	17	1,478	466	6	460	78	1	63	52	0	44	55	3	47
22	11,165	9	1,384	410	7	402	96	2	74	52	0	43	38	1	34
23	10,328	13	1,265	312	3	309	93	3	65	32	1	24	34	2	32
24	9,555	17	1,137	304	2	301	88	7	62	25	0	22	48	2	41
25	9,188	10	1,113	288	4	284	63	1	47	30	0	28	35	3	25
26	8,613	11	1,050	250	4	245	76	4	53	26	0	23	33	3	29
27	8,269	14	968	250	3	246	66	3	48	27	0	23	31	2	24
28	8,018	12	962	202	1	201	68	1	52	28	0	24	33	0	24
29	8,120	9	956	195	0	195	66	3	51	21	0	18	34	3	24
30	7,785	10	870	206	6	200	63	1	52	16	0	14	35	3	27
31	7,655	10	838	186	1	185	63	0	51	20	1	16	28	3	22
32	7,242	6	784	169	1	168	48	3	35	22	0	18	23	2	18

Note: Driver age is calculated from birth date, and invalid data of birth entry errors result in age "0" drivers.

## AGE and INJURY SEVERITY by PERSON TYPE (continued)

Age	Driver			Passenger			Motorcyclist			Bicyclist			Pedestrian		
	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured
33	7,184	3	826	159	3	155	60	0	43	10	1	7	24	0	20
34	6,861	9	746	147	1	146	49	2	38	10	0	9	25	1	22
35	6,833	10	753	156	3	153	55	3	38	13	0	12	21	0	18
36	7,061	10	809	135	1	134	60	2	45	14	1	8	24	1	19
37	7,182	4	780	161	2	159	40	0	30	14	0	9	24	0	20
38	7,493	12	821	142	0	142	57	1	36	12	0	11	31	6	24
39	8,248	6	978	159	1	156	63	1	52	22	0	21	21	1	20
40	8,189	10	842	140	0	140	71	3	47	24	1	18	29	1	22
41	7,840	10	827	153	1	152	71	3	49	16	0	16	25	2	21
42	7,594	7	863	154	3	151	64	3	43	21	0	18	24	3	16
43	7,422	8	812	134	0	134	63	1	48	19	0	16	18	1	16
44	7,509	9	828	138	0	138	85	1	56	26	1	21	20	1	16
45	7,962	15	874	167	2	165	88	7	64	18	1	16	32	3	27
46	7,969	7	861	173	1	172	86	1	65	31	1	23	30	3	26
47	7,984	5	907	187	1	186	99	2	70	28	0	27	28	3	22
48	7,759	8	906	177	4	173	107	7	72	21	1	17	21	1	20
49	7,877	11	871	182	1	181	101	6	71	32	0	31	35	3	28
50	7,618	16	840	162	1	161	103	7	67	34	2	29	33	6	26
51	7,616	10	841	178	1	177	107	4	81	30	1	23	32	4	23
52	7,585	10	854	167	3	164	90	5	69	29	0	27	28	3	21
53	7,357	15	839	171	4	167	77	6	52	28	2	23	39	1	35
54	7,030	13	792	156	1	155	102	3	71	21	1	18	39	3	30
55	6,729	10	812	158	2	156	85	0	66	18	1	16	25	0	23
56	6,471	13	793	149	2	147	88	5	72	22	0	17	24	3	18
57	6,089	9	711	120	0	119	87	2	66	23	0	19	18	1	15
58	5,727	8	718	127	1	126	77	1	55	20	0	14	15	1	11
59	5,478	10	649	149	0	149	59	3	39	19	0	18	18	3	14
60	5,026	6	602	127	1	126	55	1	37	9	0	9	25	3	16
61	4,941	6	578	137	1	136	59	1	42	3	0	1	23	2	19
62	4,645	10	499	113	1	112	50	2	38	12	1	10	14	1	13
63	4,680	6	536	109	2	107	51	1	39	8	0	7	17	1	14
64	3,470	5	402	94	2	92	25	0	18	7	0	2	18	2	14
65	3,144	2	350	87	0	87	33	1	21	9	0	8	12	4	7

## AGE and INJURY SEVERITY by PERSON TYPE (continued)

Age	Driver			Passenger			Motorcyclist			Bicyclist			Pedestrian		
	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured
66	3,194	5	390	73	0	73	32	1	21	9	2	6	12	1	10
67	3,268	3	376	94	1	92	28	0	20	4	0	3	15	0	14
68	2,869	3	336	72	3	69	20	2	15	5	0	5	6	0	4
69	2,405	6	286	70	1	69	9	0	6	0	0	0	8	0	8
70	2,188	2	240	67	0	67	5	0	2	9	1	8	14	1	12
71	1,964	7	237	59	3	56	16	0	14	2	0	1	8	1	7
72	1,928	5	260	64	2	62	5	0	4	3	0	2	11	1	9
73	1,789	5	212	69	0	69	4	0	3	5	0	5	8	2	4
74	1,650	4	210	63	0	63	4	0	3	4	0	3	4	0	4
75	1,587	5	198	67	0	67	6	1	5	3	0	3	1	1	0
76	1,411	1	193	48	0	48	5	1	2	2	0	1	4	1	2
77	1,488	3	188	58	1	57	1	0	1	2	0	2	3	2	0
78	1,306	4	183	53	4	49	6	0	5	5	0	5	8	3	5
79	1,199	5	179	71	1	70	4	0	2	2	0	2	3	1	0
80	1,189	5	152	45	1	44	3	0	3	1	0	1	2	0	2
81	1,118	3	135	35	0	35	2	0	2	1	0	1	6	1	3
82	1,077	2	146	48	1	47	2	0	1	3	1	2	4	1	3
83	946	3	153	37	3	34	0	0	0	0	0	0	4	0	3
84	857	6	116	40	2	38	1	0	0	1	0	1	5	2	2
85	771	8	120	50	5	45	1	1	0	0	0	0	4	3	1
86	648	3	98	28	2	26	0	0	0	1	0	1	0	0	0
87	535	4	88	34	2	32	1	0	1	0	0	0	3	0	3
88	448	4	72	21	0	21	0	0	0	0	0	0	0	0	0
89	339	4	54	19	1	18	0	0	0	0	0	0	0	0	0
90	239	4	27	15	1	14	0	0	0	0	0	0	1	0	1
91	175	1	26	16	0	16	0	0	0	0	0	0	1	0	1
92	120	1	15	10	0	10	0	0	0	0	0	0	0	0	0
93	80	0	10	9	0	9	0	0	0	0	0	0	0	0	0
94	37	1	9	5	0	5	0	0	0	0	0	0	0	0	0
95	26	0	4	3	0	3	0	0	0	0	0	0	1	1	0
96	16	1	1	4	0	4	0	0	0	0	0	0	0	0	0
97	13	1	1	4	2	2	0	0	0	0	0	0	0	0	0
98	8	0	0	1	0	1	0	0	0	0	0	0	0	0	0

## AGE and INJURY SEVERITY by PERSON TYPE (continued)

Age	Driver			Passenger			Motorcyclist			Bicyclist			Pedestrian		
	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured	Total	Killed	Injured
99	26	0	0	4	0	4	0	0	0	0	0	0	0	0	0
100	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
102	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
107	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0
110	32	0	0	3	0	3	0	0	0	0	0	0	0	0	0
Unknown	39,810	0	91	345	0	331	102	0	4	96	0	24	92	0	50
2010 Totals	468,968*	597	49,810	17,453*	180	17,236	3,741*	125	2,664	1,978*	29	1,575	2,333*	131	1,883
	* Includes 37,590 drivers with unknown injury severity and 380,971 with no injury			* Includes 37 passengers with unknown injury severity and uninjured passengers not included in total			* Includes 78 motorcyclists with unknown injury severity and 874 with no injury			* Includes 75 bicyclists with unknown injury severity and 299 with no injury			* Includes 122 pedestrians with unknown injury severity and 197 with no injury		

## DRIVER AGE 16-20

DRIVER ACTION PRIOR TO CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Going straight ahead	33,977	56.0	124	84.4	7,875	59.6
Turning left	5,375	8.9	6	4.1	1,423	10.8
Turning right	1,770	2.9	0	0.0	250	1.9
Stopped on roadway	4,184	6.9	1	0.7	844	6.4
In prior crash	66	0.1	0	0.0	12	0.1
Changing lanes	1,778	2.9	0	0.0	215	1.6
Backing	1,267	2.1	1	0.7	59	0.4
Slowing/stopping on roadway	6,748	11.1	3	2.0	1,242	9.4
Slowing/stopping other	82	0.1	0	0.0	18	0.1
Starting up on roadway	1,530	2.5	1	0.7	370	2.8
Starting up other	29	0.0	0	0.0	8	0.1
Entering parking	49	0.1	0	0.0	5	0.0
Leaving parking	178	0.3	0	0.0	29	0.2
Entering roadway	1,068	1.8	0	0.0	227	1.7
Leaving roadway	108	0.2	1	0.7	41	0.3
Making U-turn	142	0.2	0	0.0	38	0.3
Overtaking or passing	511	0.8	6	4.1	96	0.7
Avoiding object	123	0.2	0	0.0	38	0.3
Avoiding animal	280	0.5	0	0.0	95	0.7
Avoiding pedestrian	16	0.0	2	1.4	4	0.0
Avoiding vehicle (front/back)	558	0.9	1	0.7	154	1.2
Avoiding vehicle (angle)	221	0.4	1	0.7	52	0.4
Driverless moving	11	0.0	0	0.0	1	0.0
Parked	141	0.2	0	0.0	16	0.1
Crossing at intersection	4	0.0	0	0.0	2	0.0
Crossing not at intersection	1	0.0	0	0.0	0	0.0
Getting on/off vehicle	1	0.0	0	0.0	0	0.0
In roadway with traffic	1	0.0	0	0.0	0	0.0
In roadway against traffic	2	0.0	0	0.0	0	0.0
Standing/lying in roadway	0	0.0	0	0.0	0	0.0
Pushing/working on vehicle	1	0.0	0	0.0	1	0.0
Other working in roadway	7	0.0	0	0.0	0	0.0
Playing in roadway	0	0.0	0	0.0	0	0.0
In roadway other reason	2	0.0	0	0.0	0	0.0
Not in roadway	3	0.0	0	0.0	1	0.0
Other	52	0.1	0	0.0	13	0.1
Unknown	435	0.7	0	0.0	94	0.7
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

## DRIVER AGE 16-20 (continued)

<b>MOST HARMFUL EVENT IN A NONCOLLISION</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Loss of control	352	0.6	0	0.0	91	0.7
Cross center/median	44	0.1	0	0.0	5	0.0
Ran off road left	110	0.2	0	0.0	18	0.1
Ran off road right	171	0.3	0	0.0	28	0.2
Re-enter road	6	0.0	0	0.0	3	0.0
Overturn	1,539	2.5	9	6.1	729	5.5
Separation of units	22	0.0	0	0.0	2	0.0
Fire/explosion	59	0.1	1	0.7	8	0.1
Immersion	10	0.0	0	0.0	2	0.0
Jackknife	13	0.0	0	0.0	3	0.0
Downhill runaway	5	0.0	0	0.0	0	0.0
Cargo loss/shift	36	0.1	0	0.0	6	0.0
Individual fell off	49	0.1	0	0.0	42	0.3
Other noncollision	115	0.2	0	0.0	24	0.2
<b>NONCOLLISION Subtotal</b>	<b>2,531</b>	<b>4.2</b>	<b>10</b>	<b>6.8</b>	<b>961</b>	<b>7.3</b>

<b>MOST HARMFUL EVENT IN A COLLISION WITH A NONFIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Pedestrian	171	0.3	13	8.8	144	1.1
Bicyclist (Pedalcycle)	126	0.2	6	4.1	99	0.7
Motor vehicle in transport	43,613	71.8	79	53.7	9,624	72.8
Parked motor vehicle	1,354	2.2	0	0.0	146	1.1
Railway train	3	0.0	0	0.0	3	0.0
Animal	3,841	6.3	0	0.0	79	0.6
Other nonfixed objects	310	0.5	0	0.0	33	0.2
<b>COLLISION NONFIXED Subtotal</b>	<b>49,418</b>	<b>81.4</b>	<b>98</b>	<b>66.7</b>	<b>10,128</b>	<b>76.6</b>

## DRIVER AGE 16-20 (continued)

MOST HARMFUL EVENT IN A COLLISION WITH A FIXED OBJECT	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Bridge/pier/abutment	59	0.1	0	0.0	12	0.1
Bridge parapet end	12	0.0	0	0.0	2	0.0
Bridge rail	37	0.1	0	0.0	8	0.1
Guardrail face	480	0.8	1	0.7	90	0.7
Guardrail end	83	0.1	0	0.0	18	0.1
Median barrier	646	1.1	1	0.7	191	1.4
Highway traffic sign post	446	0.7	0	0.0	19	0.1
Highway signal post	23	0.0	0	0.0	4	0.0
Luminaire/light support	90	0.1	0	0.0	19	0.1
Utility pole	587	1.0	4	2.7	179	1.4
Other pole	176	0.3	0	0.0	26	0.2
Culvert	119	0.2	0	0.0	38	0.3
Curb	270	0.4	0	0.0	39	0.3
Ditch	1,283	2.1	3	2.0	280	2.1
Embankment	240	0.4	0	0.0	81	0.6
Fence	201	0.3	1	0.7	28	0.2
Mailbox	375	0.6	0	0.0	29	0.2
Tree	2,139	3.5	24	16.3	726	5.5
Rail crossing signal	10	0.0	0	0.0	3	0.0
Building	112	0.2	2	1.4	41	0.3
Traffic island	8	0.0	0	0.0	1	0.0
Fire hydrant	94	0.2	1	0.7	14	0.1
Impact attenuator	7	0.0	0	0.0	5	0.0
Other fixed object	435	0.7	2	1.4	88	0.7
<b>COLLISION FIXED Subtotal</b>	<b>7,932</b>	<b>13.1</b>	<b>39</b>	<b>26.5</b>	<b>1,941</b>	<b>14.7</b>

Teen and young adult drivers have the highest incidence of collision with ditches and trees in all crashes when compared to the other two age groups (21-64 and 65 & over).

	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Unknown Event	840	1.4	0	0.0	193	1.5
<b>TOTAL MOST HARMFUL EVENT</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

## DRIVER AGE 16-20 (continued)

CRASH TYPE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Single Vehicle	13,902	22.9	59	40.1	2,931	22.2
Head On	854	1.4	19	12.9	360	2.7
Head On - Left Turn	2,144	3.5	10	6.8	868	6.6
Angle	12,953	21.3	38	25.9	3,487	26.4
Rear End	20,062	33.0	5	3.4	4,078	30.8
Rear End - Left Turn	1,159	1.9	2	1.4	314	2.4
Rear End - Right Turn	661	1.1	0	0.0	95	0.7
Sideswipe - Same Direction	5,411	8.9	4	2.7	468	3.5
Sideswipe - Opposite Direct	1,216	2.0	2	1.4	180	1.4
Other/Unknown	2,359	3.9	8	5.4	442	3.3
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

Teen and young adult drivers are involved in the largest proportion of single vehicle fatal crashes when compared to the other two age groups (21-64 and 65 & over).

RELATIONSHIP TO ROADWAY (LOCATION OF FIRST IMPACT IN CRASH)	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
On Road	51,429	84.7	103	70.1	10,798	81.7
Median	413	0.7	1	0.7	110	0.8
Shoulder	2,411	4.0	11	7.5	582	4.4
Outside of Shoulder/Curb	5,134	8.5	31	21.1	1,430	10.8
Gore	181	0.3	0	0.0	51	0.4
Other/Unknown	1,153	1.9	1	0.7	252	1.9
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

When compared to the other two age groups (21-64 and 65 & over) in all crashes, teen and young adult drivers have the highest incidence of crashes where the first impact is on the shoulder of the roadway or outside the shoulder/curb.

ROADWAY TYPE IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Interstate Routes	5,434	8.9	8	5.4	1,223	9.2
U.S. & Michigan Roads	16,815	27.7	35	23.8	3,697	28.0
County & City Roads	38,472	63.4	104	70.7	8,303	62.8
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

## DRIVER AGE 16-20 (continued)

TIME OF DAY IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Midnight - 02:59 AM	2,773	4.6	15	10.2	670	5.1
03:00 AM - 05:59 AM	1,187	2.0	8	5.4	307	2.3
06:00 AM - 08:59 AM	6,048	10.0	17	11.6	1,161	8.8
09:00 AM - 11:59 AM	5,980	9.8	10	6.8	1,315	9.9
Noon - 02:59 PM	11,474	18.9	19	12.9	2,479	18.7
03:00 PM - 05:59 PM	16,971	27.9	33	22.4	3,764	28.5
06:00 PM - 08:59 PM	9,746	16.1	22	15.0	2,130	16.1
09:00 PM - 11:59 PM	6,451	10.6	23	15.6	1,380	10.4
Unknown	91	0.1	0	0.0	17	0.1
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>

HAZARDOUS ACTION	All Crashes		Fatal Crashes		Injury Crashes		Hazardous Citation Issued	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury	Number	% of Issued
None	21,131	34.8	37	25.2	3,864	29.2	90	0.4
Speed too fast	6,754	11.1	31	21.1	1,636	12.4	2,691	12.6
Speed too slow	51	0.1	1	0.7	13	0.1	14	0.1
Failed to yield	7,465	12.3	12	8.2	2,027	15.3	4,803	22.5
Disregard traffic control	1,630	2.7	12	8.2	632	4.8	1,129	5.3
Drove wrong way	39	0.1	0	0.0	12	0.1	22	0.1
Drove left of center	308	0.5	7	4.8	96	0.7	131	0.6
Improper passing	334	0.6	3	2.0	37	0.3	151	0.7
Improper lane use	1,281	2.1	1	0.7	121	0.9	709	3.3
Improper turn	663	1.1	0	0.0	118	0.9	348	1.6
Improper/no signal	85	0.1	0	0.0	21	0.2	32	0.2
Improper backing	911	1.5	0	0.0	23	0.2	347	1.6
Unable to stop in assured clear distance	13,498	22.2	7	4.8	2,742	20.7	8,175	38.4
Reckless driving	409	0.7	3	2.0	186	1.4	202	0.9
Careless/negligent driving	2,488	4.1	13	8.8	849	6.4	1,499	7.0
Other	2,334	3.8	12	8.2	532	4.0	865	4.1
Unknown	1,340	2.2	8	5.4	314	2.4	104	0.5
<b>Total Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>	<b>21,312</b>	<b>100.0</b>

Compared to the other two age groups (21-64 and 65 & over), teen and young adult drivers have the highest incidence of crash involvement when their speed is too fast. In all crashes they are "unable to stop in assured clear distance" more often than older drivers.

## DRIVER AGE 16-20 (continued)

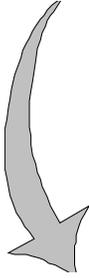
DAY OF WEEK IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Monday	8,961	14.8	19	12.9	1,949	14.7
Tuesday	9,403	15.5	18	12.2	1,912	14.5
Wednesday	9,267	15.3	28	19.0	1,956	14.8
Thursday	9,210	15.2	6	4.1	1,964	14.9
Friday	10,304	17.0	28	19.0	2,264	17.1
Saturday	7,531	12.4	19	12.9	1,765	13.3
Sunday	6,045	10.0	29	19.7	1,413	10.7
Total Drivers	60,721	100.0	147	100.0	13,223	100.0

DRIVER GENDER IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Male	32,620	53.7	96	65.3	6,836	51.7
Female	28,091	46.3	51	34.7	6,387	48.3
Unknown	10	0.0	0	0.0	0	0.0
Total Drivers	60,721	100.0	147	100.0	13,223	100.0

OCCUPANTS IN MOTOR VEHICLE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
1 occupant	41,640	68.6	72	49.0	8,170	61.8
2 occupants	12,968	21.4	36	24.5	3,250	24.6
3 occupants	3,791	6.2	22	15.0	1,067	8.1
4 occupants	1,501	2.5	12	8.2	506	3.8
5 occupants	414	0.7	3	2.0	145	1.1
6 + occupants	99	0.2	2	1.4	43	0.3
0 occupants	102	0.2	0	0.0	8	0.1
Unknown	206	0.3	0	0.0	34	0.3
Total Drivers	60,721	100.0	147	100.0	13,223	100.0

## DRIVER AGE 16-20 (continued)

VEHICLE TYPE CRASH INVOLVEMENT	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Passenger Car and Station Wagon	51,550	84.9	122	83.0	11,115	84.1
Van and Motorhome	1,566	2.6	4	2.7	376	2.8
Pickup	6,029	9.9	15	10.2	1,222	9.2
Small Truck (under 10,000 lbs.)	1,055	1.7	2	1.4	223	1.7
Motorcycle	192	0.3	4	2.7	152	1.1
Moped	53	0.1	0	0.0	41	0.3
Go Cart	4	0.0	0	0.0	3	0.0
Snowmobile	20	0.0	0	0.0	13	0.1
Off Road Vehicle	41	0.1	0	0.0	35	0.3
Other	88	0.1	0	0.0	20	0.2
Unknown	74	0.1	0	0.0	14	0.1
CDL Truck/Bus (breakdown below)	49	0.1	0	0.0	9	0.1
<b>Total Number of Drivers</b>	<b>60,721</b>	<b>100.0</b>	<b>147</b>	<b>100.0</b>	<b>13,223</b>	<b>100.0</b>



CDL Truck/Bus Sub-category Types	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Commercial Vehicle: Group A	13	26.5	0	0.0	0	0.0
Commercial Vehicle: Group B	11	22.4	0	0.0	3	33.3
Commercial Vehicle: Group C	1	2.0	0	0.0	0	0.0
Other Truck	18	36.7	0	0.0	4	44.4
Unknown Truck	6	12.2	0	0.0	2	22.2
<b>Total Number of Drivers</b>	<b>49</b>	<b>100.0</b>	<b>0</b>	<b>100.0</b>	<b>9</b>	<b>100.0</b>

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

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## DRIVER AGE 21-64

DRIVER ACTION PRIOR TO CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Going straight ahead	184,902	56.5	748	79.2	36,790	55.3
Turning left	20,140	6.2	40	4.2	5,203	7.8
Turning right	8,465	2.6	8	0.8	1,276	1.9
Stopped on roadway	40,339	12.3	34	3.6	9,448	14.2
In prior crash	344	0.1	1	0.1	104	0.2
Changing lanes	7,412	2.3	12	1.3	1,012	1.5
Backing	7,127	2.2	2	0.2	292	0.4
Slowing/stopping on roadway	32,713	10.0	14	1.5	6,713	10.1
Slowing/stopping other	440	0.1	1	0.1	90	0.1
Starting up on roadway	7,165	2.2	15	1.6	1,585	2.4
Starting up other	145	0.0	1	0.1	32	0.0
Entering parking	333	0.1	0	0.0	28	0.0
Leaving parking	772	0.2	0	0.0	130	0.2
Entering roadway	3,697	1.1	7	0.7	817	1.2
Leaving roadway	520	0.2	5	0.5	166	0.2
Making U-turn	529	0.2	2	0.2	121	0.2
Overtaking or passing	1,993	0.6	12	1.3	419	0.6
Avoiding object	474	0.1	0	0.0	121	0.2
Avoiding animal	828	0.3	3	0.3	209	0.3
Avoiding pedestrian	84	0.0	5	0.5	38	0.1
Avoiding vehicle (front/back)	2,812	0.9	15	1.6	742	1.1
Avoiding vehicle (angle)	1,269	0.4	7	0.7	337	0.5
Driverless moving	45	0.0	0	0.0	8	0.0
Parked	1,715	0.5	4	0.4	184	0.3
Crossing at intersection	11	0.0	0	0.0	1	0.0
Crossing not at intersection	5	0.0	0	0.0	3	0.0
Getting on/off vehicle	1	0.0	0	0.0	0	0.0
In roadway with traffic	10	0.0	0	0.0	4	0.0
In roadway against traffic	10	0.0	0	0.0	2	0.0
Standing/lying in roadway	2	0.0	0	0.0	0	0.0
Pushing/working on vehicle	2	0.0	0	0.0	1	0.0
Other working in roadway	29	0.0	0	0.0	6	0.0
Playing in roadway	1	0.0	0	0.0	1	0.0
In roadway other reason	6	0.0	0	0.0	1	0.0
Not in roadway	15	0.0	0	0.0	6	0.0
Other	274	0.1	2	0.2	79	0.1
Unknown	2,827	0.9	7	0.7	557	0.8
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

## DRIVER AGE 21-64 (continued)

<b>MOST HARMFUL EVENT IN A NONCOLLISION</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Loss of control	1,294	0.4	6	0.6	373	0.6
Cross center/median	234	0.1	2	0.2	61	0.1
Ran off road left	407	0.1	1	0.1	94	0.1
Ran off road right	712	0.2	0	0.0	155	0.2
Re-enter road	42	0.0	0	0.0	11	0.0
Overturn	4,234	1.3	56	5.9	2,220	3.3
Separation of units	157	0.0	0	0.0	26	0.0
Fire/explosion	305	0.1	6	0.6	39	0.1
Immersion	41	0.0	1	0.1	9	0.0
Jackknife	192	0.1	0	0.0	16	0.0
Downhill runaway	51	0.0	0	0.0	16	0.0
Cargo loss/shift	387	0.1	2	0.2	29	0.0
Individual fell off	288	0.1	13	1.4	248	0.4
Other noncollision	803	0.2	4	0.4	145	0.2
<b>NONCOLLISION Subtotal</b>	<b>9,147</b>	<b>2.8</b>	<b>91</b>	<b>9.6</b>	<b>3,442</b>	<b>5.2</b>

<b>MOST HARMFUL EVENT IN A COLLISION WITH A NONFIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Pedestrian	1,115	0.3	86	9.1	925	1.4
Pedalcycle (Bicyclist)	1,116	0.3	18	1.9	879	1.3
Motor vehicle in transport	225,607	68.9	559	59.2	51,601	77.6
Parked motor vehicle	6,140	1.9	8	0.8	597	0.9
Railway train	31	0.0	1	0.1	14	0.0
Animal	47,451	14.5	3	0.3	839	1.3
Other nonfixed objects	3,405	1.0	5	0.5	241	0.4
<b>COLLISION NONFIXED Subtotal</b>	<b>284,865</b>	<b>87.0</b>	<b>680</b>	<b>72.0</b>	<b>55,096</b>	<b>82.8</b>

## DRIVER AGE 21-64 (continued)

<b>MOST HARMFUL EVENT IN A COLLISION WITH A FIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Bridge/pier/abutment	334	0.1	2	0.2	84	0.1
Bridge parapet end	65	0.0	0	0.0	9	0.0
Bridge rail	263	0.1	0	0.0	69	0.1
Guardrail face	2,279	0.7	8	0.8	413	0.6
Guardrail end	368	0.1	2	0.2	85	0.1
Median barrier	3,010	0.9	1	0.1	820	1.2
Highway traffic sign post	1,686	0.5	8	0.8	131	0.2
Highway signal post	172	0.1	1	0.1	16	0.0
Luminaire/light support	353	0.1	1	0.1	88	0.1
Utility pole	1,959	0.6	7	0.7	611	0.9
Other pole	579	0.2	4	0.4	104	0.2
Culvert	352	0.1	0	0.0	140	0.2
Curb	945	0.3	3	0.3	147	0.2
Ditch	3,931	1.2	17	1.8	958	1.4
Embankment	863	0.3	5	0.5	254	0.4
Fence	606	0.2	3	0.3	76	0.1
Mailbox	1,060	0.3	1	0.1	50	0.1
Tree	5,836	1.8	96	10.2	1,934	2.9
Rail crossing signal	41	0.0	0	0.0	6	0.0
Building	369	0.1	3	0.3	145	0.2
Traffic island	31	0.0	1	0.1	3	0.0
Fire hydrant	320	0.1	0	0.0	57	0.1
Impact attenuator	34	0.0	1	0.1	13	0.0
Other fixed object	1,856	0.6	8	0.8	439	0.7
<b>COLLISION FIXED Subtotal</b>	<b>27,312</b>	<b>8.3</b>	<b>172</b>	<b>18.2</b>	<b>6,652</b>	<b>10.0</b>

	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Unknown Event	6,132	1.9	2	0.2	1,336	2.0
<b>TOTAL MOST HARMFUL EVENT</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

## DRIVER AGE 21-64 (continued)

CRASH TYPE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Single Vehicle	83,372	25.5	324	34.3	11,136	16.7
Head On	4,509	1.4	140	14.8	1,934	2.9
Head On - Left Turn	8,972	2.7	43	4.6	3,667	5.5
Angle	60,980	18.6	224	23.7	16,955	25.5
Rear End	103,930	31.7	81	8.6	23,883	35.9
Rear End - Left Turn	4,494	1.4	27	2.9	1,219	1.8
Rear End - Right Turn	4,466	1.4	2	0.2	644	1.0
Sideswipe - Same Direction	33,686	10.3	25	2.6	3,284	4.9
Sideswipe - Opposite Direct	7,295	2.2	29	3.1	1,114	1.7
Other/Unknown	15,752	4.8	50	5.3	2,690	4.0
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

For drivers age 21-64, 38.7 percent of injury crashes are rear-end crashes.

RELATIONSHIP TO ROADWAY (LOCATION OF FIRST IMPACT IN CRASH)	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
On Road	294,555	90.0	725	76.7	58,246	87.6
Median	2,080	0.6	10	1.1	546	0.8
Shoulder	8,843	2.7	60	6.3	2,051	3.1
Outside of Shoulder/Curb	15,608	4.8	129	13.7	4,301	6.5
Gore	620	0.2	4	0.4	161	0.2
Other/Unknown	5,750	1.8	17	1.8	1,221	1.8
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

ROADWAY TYPE IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Interstate Routes	41,607	12.7	124	13.1	9,006	13.5
U.S. & Michigan Roads	100,720	30.8	323	34.2	20,718	31.1
County & City Roads	185,129	56.5	498	52.7	36,802	55.3
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

## DRIVER AGE 21-64 (continued)

TIME OF DAY IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Midnight - 02:59 AM	12,586	3.8	124	13.1	2,905	4.4
03:00 AM - 05:59 AM	11,418	3.5	58	6.1	1,807	2.7
06:00 AM - 08:59 AM	46,416	14.2	83	8.8	7,642	11.5
09:00 AM - 11:59 AM	41,580	12.7	119	12.6	8,644	13.0
Noon - 02:59 PM	58,573	17.9	131	13.9	13,178	19.8
03:00 PM - 05:59 PM	81,681	24.9	180	19.0	18,079	27.2
06:00 PM - 08:59 PM	49,195	15.0	133	14.1	9,336	14.0
09:00 PM - 11:59 PM	25,563	7.8	116	12.3	4,823	7.2
Unknown	444	0.1	1	0.1	112	0.2
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

For drivers age 21-64, the 3:00 PM - 5:59 PM time period has the highest number of crashes for all crash types.

HAZARDOUS ACTION	All Crashes		Fatal Crashes		Injury Crashes		Hazardous Citation Issued	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury	Number	% of Issued
None	187,412	57.2	424	44.9	34,051	51.2	466	0.7
Speed too fast	19,990	6.1	125	13.2	4,823	7.2	6,383	10.0
Speed too slow	256	0.1	0	0.0	58	0.1	46	0.1
Failed to yield	24,257	7.4	47	5.0	6,410	9.6	14,334	22.4
Disregard traffic control	5,834	1.8	36	3.8	2,217	3.3	3,584	5.6
Drove wrong way	191	0.1	3	0.3	66	0.1	82	0.1
Drove left of center	1,419	0.4	32	3.4	463	0.7	594	0.9
Improper passing	1,399	0.4	1	0.1	207	0.3	549	0.9
Improper lane use	5,734	1.8	5	0.5	667	1.0	2,619	4.1
Improper turn	2,736	0.8	1	0.1	410	0.6	1,214	1.9
Improper/no signal	448	0.1	1	0.1	69	0.1	92	0.1
Improper backing	5,198	1.6	1	0.1	123	0.2	1,655	2.6
Unable to stop in assured clear distance	42,716	13.0	26	2.8	8,952	13.5	23,405	36.6
Reckless driving	1,440	0.4	28	3.0	632	1.0	690	1.1
Careless/negligent driving	7,843	2.4	63	6.7	2,677	4.0	4,322	6.8
Other	11,782	3.6	59	6.2	2,705	4.1	3,563	5.6
Unknown	8,801	2.7	93	9.8	1,996	3.0	372	0.6
<b>Total Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>	<b>63,970</b>	<b>100.0</b>

## DRIVER AGE 21-64 (continued)

DAY OF WEEK IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Monday	50,943	15.6	115	12.2	9,997	15.0
Tuesday	52,960	16.2	123	13.0	10,446	15.7
Wednesday	52,110	15.9	160	16.9	10,458	15.7
Thursday	51,191	15.6	132	14.0	10,461	15.7
Friday	54,258	16.6	149	15.8	10,880	16.4
Saturday	36,800	11.2	128	13.5	8,030	12.1
Sunday	29,194	8.9	138	14.6	6,254	9.4
Total Drivers	327,456	100.0	945	100.0	66,526	100.0

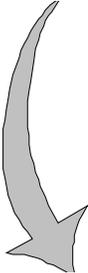
DRIVER GENDER IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Male	177,585	54.2	684	72.4	34,836	52.4
Female	149,707	45.7	261	27.6	31,669	47.6
Unknown	164	0.1	0	0.0	21	0.0
Total Drivers	327,456	100.0	945	100.0	66,526	100.0

OCCUPANTS IN MOTOR VEHICLE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
1 occupant	251,234	76.7	679	71.9	46,976	70.6
2 occupants	50,285	15.4	162	17.1	12,735	19.1
3 occupants	14,087	4.3	50	5.3	3,893	5.9
4 occupants	5,966	1.8	34	3.6	1,665	2.5
5 occupants	2,003	0.6	12	1.3	605	0.9
6 + occupants	1,443	0.4	5	0.5	390	0.6
0 occupants	1,169	0.4	2	0.2	78	0.1
Unknown	1,269	0.4	1	0.1	184	0.3
Total Drivers	327,456	100.0	945	100.0	66,526	100.0

## DRIVER AGE 21-64 (continued)

VEHICLE TYPE CRASH INVOLVEMENT	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Passenger Car and Station Wagon	242,156	74.0	515	54.5	48,860	73.4
Van and Motorhome	19,763	6.0	32	3.4	4,174	6.3
Pickup	42,938	13.1	155	16.4	7,432	11.2
Small Truck (under 10,000 lbs.)	8,079	2.5	10	1.1	1,577	2.4
Motorcycle	2,906	0.9	113	12.0	2,153	3.2
Moped	222	0.1	6	0.6	181	0.3
Go Cart	22	0.0	2	0.2	10	0.0
Snowmobile	114	0.0	8	0.8	80	0.1
Off Road Vehicle	128	0.0	15	1.6	107	0.2
Other	1,156	0.4	4	0.4	227	0.3
Unknown	432	0.1	0	0.0	68	0.1
CDL Truck/Bus (breakdown below)	9,540	2.9	85	9.0	1,657	2.5
<b>Total Number of Drivers</b>	<b>327,456</b>	<b>100.0</b>	<b>945</b>	<b>100.0</b>	<b>66,526</b>	<b>100.0</b>

Compared to the other two age groups (16-20 and 65 & over), a higher percentage of drivers age 21-64 were driving pickups and small trucks at the time of the crash.



CDL Truck/Bus Sub-category Types	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Commercial Vehicle: Group A	5,357	56.2	56	65.9	923	55.7
Commercial Vehicle: Group B	2,213	23.2	16	18.8	398	24.0
Commercial Vehicle: Group C	362	3.8	2	2.4	62	3.7
Other Truck	761	8.0	9	10.6	135	8.1
Unknown Truck	847	8.9	2	2.4	139	8.4
<b>Total Number of Drivers</b>	<b>9,540</b>	<b>100.0</b>	<b>85</b>	<b>100.0</b>	<b>1,657</b>	<b>100.0</b>

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

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## DRIVER AGE 65 & OVER

DRIVER ACTION PRIOR TO CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Going straight ahead	20,765	51.8	128	68.4	4,524	51.9
Turning left	4,083	10.2	25	13.4	1,183	13.6
Turning right	1,455	3.6	4	2.1	211	2.4
Stopped on roadway	4,256	10.6	4	2.1	1,054	12.1
In prior crash	30	0.1	0	0.0	10	0.1
Changing lanes	1,238	3.1	4	2.1	110	1.3
Backing	1,392	3.5	0	0.0	43	0.5
Slowing/stopping on roadway	3,213	8.0	3	1.6	773	8.9
Slowing/stopping other	52	0.1	0	0.0	7	0.1
Starting up on roadway	1,060	2.6	7	3.7	266	3.1
Starting up other	22	0.1	0	0.0	7	0.1
Entering parking	67	0.2	0	0.0	10	0.1
Leaving parking	192	0.5	2	1.1	27	0.3
Entering roadway	888	2.2	5	2.7	209	2.4
Leaving roadway	49	0.1	1	0.5	20	0.2
Making U-turn	147	0.4	2	1.1	34	0.4
Overtaking or passing	247	0.6	0	0.0	50	0.6
Avoiding object	32	0.1	0	0.0	7	0.1
Avoiding animal	49	0.1	0	0.0	11	0.1
Avoiding pedestrian	7	0.0	0	0.0	5	0.1
Avoiding vehicle (front/back)	206	0.5	1	0.5	54	0.6
Avoiding vehicle (angle)	89	0.2	0	0.0	22	0.3
Driverless moving	8	0.0	0	0.0	2	0.0
Parked	190	0.5	0	0.0	14	0.2
Crossing at intersection	6	0.0	1	0.5	3	0.0
Crossing not at intersection	2	0.0	0	0.0	0	0.0
Getting on/off vehicle	0	0.0	0	0.0	0	0.0
In roadway with traffic	0	0.0	0	0.0	0	0.0
In roadway against traffic	1	0.0	0	0.0	0	0.0
Standing/lying in roadway	0	0.0	0	0.0	0	0.0
Pushing/working on vehicle	0	0.0	0	0.0	0	0.0
Other working in roadway	3	0.0	0	0.0	1	0.0
Playing in roadway	0	0.0	0	0.0	0	0.0
In roadway other reason	1	0.0	0	0.0	0	0.0
Not in roadway	2	0.0	0	0.0	0	0.0
Other	28	0.1	0	0.0	6	0.1
Unknown	316	0.8	0	0.0	58	0.7
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

Compared to the other two age groups (16-20 and 21-64), elderly drivers are more likely to be involved in a fatal crash when making a left turn.

## DRIVER AGE 65 & OVER (continued)

<b>MOST HARMFUL EVENT IN A NONCOLLISION</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Loss of control	108	0.3	0	0.0	30	0.3
Cross center/median	34	0.1	0	0.0	6	0.1
Ran off road left	37	0.1	0	0.0	9	0.1
Ran off road right	84	0.2	0	0.0	13	0.1
Re-enter road	8	0.0	0	0.0	4	0.0
Overturn	326	0.8	15	8.0	180	2.1
Separation of units	14	0.0	0	0.0	2	0.0
Fire/explosion	26	0.1	1	0.5	5	0.1
Immersion	5	0.0	0	0.0	1	0.0
Jackknife	16	0.0	0	0.0	4	0.0
Downhill runaway	6	0.0	0	0.0	1	0.0
Cargo loss/shift	30	0.1	0	0.0	4	0.0
Individual fell off	23	0.1	1	0.5	20	0.2
Other noncollision	79	0.2	0	0.0	19	0.2
<b>NONCOLLISION Subtotal</b>	<b>796</b>	<b>2.0</b>	<b>17</b>	<b>9.1</b>	<b>298</b>	<b>3.4</b>

<b>MOST HARMFUL EVENT IN A COLLISION WITH A NONFIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Pedestrian	174	0.4	17	9.1	137	1.6
Pedalcycle (Bicyclist)	204	0.5	4	2.1	174	2.0
Motor vehicle in transport	29,586	73.8	118	63.1	7,089	81.3
Parked motor vehicle	1,082	2.7	3	1.6	100	1.1
Railway train	5	0.0	1	0.5	2	0.0
Animal	4,869	12.1	0	0.0	79	0.9
Other nonfixed objects	319	0.8	0	0.0	29	0.3
<b>COLLISION NONFIXED Subtotal</b>	<b>36,239</b>	<b>90.4</b>	<b>143</b>	<b>76.5</b>	<b>7,610</b>	<b>87.3</b>

Motor vehicle in transport was by far the most problematic event in collisions with a nonfixed object for all crash types and age groups; however, it was most problematic for drivers age 65 and over.

## DRIVER AGE 65 & OVER (continued)

<b>MOST HARMFUL EVENT IN A COLLISION WITH A FIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Bridge/pier/abutment	26	0.1	1	0.5	9	0.1
Bridge parapet end	7	0.0	0	0.0	1	0.0
Bridge rail	9	0.0	0	0.0	2	0.0
Guardrail face	166	0.4	0	0.0	30	0.3
Guardrail end	29	0.1	1	0.5	6	0.1
Median barrier	138	0.3	1	0.5	44	0.5
Highway traffic sign post	162	0.4	0	0.0	16	0.2
Highway signal post	19	0.0	0	0.0	3	0.0
Luminaire/light support	28	0.1	0	0.0	15	0.2
Utility pole	184	0.5	3	1.6	63	0.7
Other pole	55	0.1	0	0.0	8	0.1
Culvert	40	0.1	1	0.5	19	0.2
Curb	96	0.2	0	0.0	23	0.3
Ditch	325	0.8	2	1.1	106	1.2
Embankment	74	0.2	1	0.5	30	0.3
Fence	64	0.2	0	0.0	12	0.1
Mailbox	128	0.3	1	0.5	3	0.0
Tree	559	1.4	14	7.5	203	2.3
Rail crossing signal	4	0.0	0	0.0	0	0.0
Building	56	0.1	0	0.0	24	0.3
Traffic island	5	0.0	0	0.0	0	0.0
Fire hydrant	31	0.1	0	0.0	5	0.1
Impact attenuator	7	0.0	0	0.0	4	0.0
Other fixed object	182	0.5	2	1.1	47	0.5
<b>COLLISION FIXED Subtotal</b>	<b>2,394</b>	<b>6.0</b>	<b>27</b>	<b>14.4</b>	<b>673</b>	<b>7.7</b>

	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Total	Number	% of Total
Unknown Event	667	1.7	0	0.0	140	1.6
<b>TOTAL MOST HARMFUL EVENT</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

## DRIVER AGE 65 & OVER (continued)

CRASH TYPE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Single Vehicle	8,106	20.2	61	32.6	1,178	13.5
Head On	543	1.4	22	11.8	261	3.0
Head On - Left Turn	1,515	3.8	11	5.9	630	7.2
Angle	10,516	26.2	66	35.3	2,874	33.0
Rear End	10,433	26.0	11	5.9	2,613	30.0
Rear End - Left Turn	552	1.4	2	1.1	166	1.9
Rear End - Right Turn	446	1.1	0	0.0	76	0.9
Sideswipe - Same Direction	4,875	12.2	4	2.1	408	4.7
Sideswipe - Opposite Direct	986	2.5	3	1.6	147	1.7
Other/Unknown	2,124	5.3	7	3.7	368	4.2
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

Elderly drivers have the highest incidence of angle type crashes when compared to the other two age groups (16-20 and 21-64) in all crashes, fatal crashes, and injury crashes.

RELATIONSHIP TO ROADWAY (LOCATION OF FIRST IMPACT IN CRASH)	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
On Road	36,920	92.1	151	80.7	7,885	90.4
Median	150	0.4	4	2.1	39	0.4
Shoulder	856	2.1	6	3.2	187	2.1
Outside of Shoulder/Curb	1,410	3.5	24	12.8	444	5.1
Gore	59	0.1	0	0.0	15	0.2
Other/Unknown	701	1.7	2	1.1	151	1.7
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

ROADWAY TYPE IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Interstate Routes	3,128	7.8	13	7.0	719	8.2
U.S. & Michigan Roads	13,085	32.6	65	34.8	2,907	33.3
County & City Roads	23,883	59.6	109	58.3	5,095	58.4
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

## DRIVER AGE 65 & OVER (continued)

TIME OF DAY IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Midnight - 02:59 AM	422	1.1	2	1.1	69	0.8
03:00 AM - 05:59 AM	436	1.1	1	0.5	65	0.7
06:00 AM - 08:59 AM	3,162	7.9	12	6.4	606	6.9
09:00 AM - 11:59 AM	8,044	20.1	50	26.7	1,771	20.3
Noon - 02:59 PM	10,632	26.5	58	31.0	2,500	28.7
03:00 PM - 05:59 PM	10,178	25.4	30	16.0	2,459	28.2
06:00 PM - 08:59 PM	5,265	13.1	27	14.4	950	10.9
09:00 PM - 11:59 PM	1,894	4.7	7	3.7	287	3.3
Unknown	63	0.2	0	0.0	14	0.2
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>

For drivers age 65 and over, noon - 2:59 PM has the highest number of crashes for all crash types.

HAZARDOUS ACTION	All Crashes		Fatal Crashes		Injury Crashes		Hazardous Citation Issued	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury	Number	% of Issued
None	20,523	51.2	67	35.8	3,878	44.5	41	0.5
Speed too fast	1,253	3.1	8	4.3	327	3.7	288	3.4
Speed too slow	31	0.1	0	0.0	5	0.1	2	0.0
Failed to yield	6,153	15.3	37	19.8	1,679	19.3	3,354	39.8
Disregard traffic control	1,141	2.8	17	9.1	468	5.4	694	8.2
Drove wrong way	42	0.1	2	1.1	12	0.1	20	0.2
Drove left of center	239	0.6	9	4.8	87	1.0	92	1.1
Improper passing	214	0.5	0	0.0	29	0.3	69	0.8
Improper lane use	1,129	2.8	0	0.0	115	1.3	495	5.9
Improper turn	567	1.4	3	1.6	96	1.1	229	2.7
Improper/no signal	81	0.2	0	0.0	12	0.1	16	0.2
Improper backing	1,032	2.6	0	0.0	23	0.3	272	3.2
Unable to stop in assured clear distance	4,068	10.1	8	4.3	1,058	12.1	2,103	25.0
Reckless driving	34	0.1	2	1.1	14	0.2	10	0.1
Careless/negligent driving	801	2.0	8	4.3	284	3.3	352	4.2
Other	1,552	3.9	8	4.3	358	4.1	354	4.2
Unknown	1,236	3.1	18	9.6	276	3.2	30	0.4
<b>Total Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>	<b>8,421</b>	<b>100.0</b>

Compared to the other two age groups (16-20 and 21-64), elderly drivers have the highest incidence of failed to yield, disregard of traffic control, improper lane use, improper turn, and improper backing as a hazardous action in all crashes. In fatal crashes, elderly drivers have a significantly higher incidence of failed to yield as a hazardous action.

## DRIVER AGE 65 & OVER (continued)

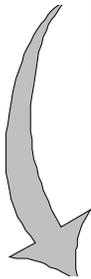
DAY OF WEEK IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Monday	6,100	15.2	33	17.6	1,278	14.7
Tuesday	6,492	16.2	28	15.0	1,385	15.9
Wednesday	6,441	16.1	33	17.6	1,465	16.8
Thursday	6,347	15.8	22	11.8	1,378	15.8
Friday	6,824	17.0	35	18.7	1,500	17.2
Saturday	4,450	11.1	17	9.1	966	11.1
Sunday	3,442	8.6	19	10.2	749	8.6
Total Drivers	40,096	100.0	187	100.0	8,721	100.0

DRIVER GENDER IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Male	23,089	57.6	127	67.9	4,854	55.7
Female	16,987	42.4	60	32.1	3,864	44.3
Unknown	20	0.0	0	0.0	3	0.0
Total Drivers	40,096	100.0	187	100.0	8,721	100.0

OCCUPANTS IN MOTOR VEHICLE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
1 occupant	30,322	75.6	135	72.2	6,277	72.0
2 occupants	8,144	20.3	41	21.9	2,058	23.6
3 occupants	904	2.3	9	4.8	235	2.7
4 occupants	338	0.8	2	1.1	94	1.1
5 occupants	73	0.2	0	0.0	22	0.3
6 + occupants	83	0.2	0	0.0	11	0.1
0 occupants	119	0.3	0	0.0	4	0.0
Unknown	113	0.3	0	0.0	20	0.2
Total Drivers	40,096	100.0	187	100.0	8,721	100.0

## DRIVER AGE 65 & OVER (continued)

VEHICLE TYPE CRASH INVOLVEMENT	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Passenger Car and Station Wagon	31,539	78.7	138	73.8	6,875	78.8
Van and Motorhome	2,609	6.5	6	3.2	564	6.5
Pickup	4,407	11.0	23	12.3	861	9.9
Small Truck (under 10,000 lbs.)	798	2.0	1	0.5	170	1.9
Motorcycle	184	0.5	8	4.3	133	1.5
Moped	25	0.1	3	1.6	19	0.2
Go Cart	1	0.0	0	0.0	0	0.0
Snowmobile	5	0.0	0	0.0	5	0.1
Off Road Vehicle	8	0.0	0	0.0	5	0.1
Other	98	0.2	4	2.1	21	0.2
Unknown	39	0.1	0	0.0	4	0.0
CDL Truck/Bus (breakdown below)	383	1.0	4	2.1	64	0.7
<b>Total Number of Drivers</b>	<b>40,096</b>	<b>100.0</b>	<b>187</b>	<b>100.0</b>	<b>8,721</b>	<b>100.0</b>



CDL Truck/Bus Sub-category Types	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Drivers	% of Total	Number	% of Fatal	Number	% of Injury
Commercial Vehicle: Group A	195	50.9	2	50.0	34	53.1
Commercial Vehicle: Group B	109	28.5	2	50.0	20	31.3
Commercial Vehicle: Group C	25	6.5	0	0.0	2	3.1
Other Truck	24	6.3	0	0.0	4	6.3
Unknown Truck	30	7.8	0	0.0	4	6.3
<b>Total Number of Drivers</b>	<b>383</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>64</b>	<b>100.0</b>

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

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**Alcohol/Drug**



## ROADWAY INJURY EXPERIENCE FOR PERSONS WHO HAD BEEN DRINKING AND/OR USING DRUGS

Alcohol and/or drug use affects the judgment and behavior of persons in addition to motor vehicle drivers. Consider the experience of impaired bicyclists, motorcyclists, ORV/ATV riders, pedestrians, and snowmobilers when looking at crash statistics.



### BICYCLIST

	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		Bicyclist in crash	Bicyclist drinking	Bicyclist in crash	Bicyclist drugged	Bicyclist in crash	Bicyclist drink & drug	Bicyclist in crash	Bicyclist drink &/or drug
Bicyclists In Crashes	1,978	85	68	5	3	9	5	99	76
Bicyclists Killed	29	8	6	3	1	1	0	12	7
Bicyclists Injured	1,575	67	55	2	2	7	4	76	61



### DRIVER

	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		Driver in crash	Driver drinking	Driver in crash	Driver drugged	Driver in crash	Driver drink & drug	Driver in crash	Driver drink &/or drug
Drivers In Crashes	468,968	13,129	8,929	1,676	1,005	1,442	906	16,247	10,840
Drivers Killed	597	137	126	43	36	50	41	230	203
Drivers Injured	49,810	3,491	2,699	535	370	453	332	4,479	3,401



### MOTORCYCLIST

	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		Motorcyclist in crash	Motorcyclist drinking	Motorcyclist in crash	Motorcyclist drugged	Motorcyclist in crash	Motorcyclist drink & drug	Motorcyclist in crash	Motorcyclist drink &/or drug
Motorcyclists In Crashes	3,741	284	240	16	12	33	25	333	277
Motorcyclists Killed	125	24	22	9	6	11	8	44	36
Motorcyclists Injured	2,664	221	194	7	6	20	16	248	216

## ROADWAY INJURY EXPERIENCE FOR PERSONS WHO HAD BEEN DRINKING AND/OR USING DRUGS (continued)



### ORV/ATV RIDER

	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		ORV/ATV Rider in crash	ORV/ATV Rider drinking	ORV/ATV Rider in crash	ORV/ATV Rider drugged	ORV/ATV Rider in crash	ORV/ATV Rider drink & drug	ORV/ATV Rider in crash	ORV/ATV Rider drink &/or drug
ORV/ATV Riders In Crashes	272	60	54	2	2	2	2	64	58
ORV/ATV Riders Killed	18	8	8	1	1	1	1	10	10
ORV/ATV Riders Injured	200	42	39	1	1	1	1	44	41



### PEDESTRIAN

	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		Pedestrian in crash	Pedestrian drinking	Pedestrian in crash	Pedestrian drugged	Pedestrian in crash	Pedestrian drink & drug	Pedestrian in crash	Pedestrian drink &/or drug
Pedestrians In Crashes	2,333	218	159	25	9	22	13	265	181
Pedestrians Killed	131	27	26	7	4	11	8	45	38
Pedestrians Injured	1,883	174	127	18	5	10	4	202	136



### SNOWMOBILER

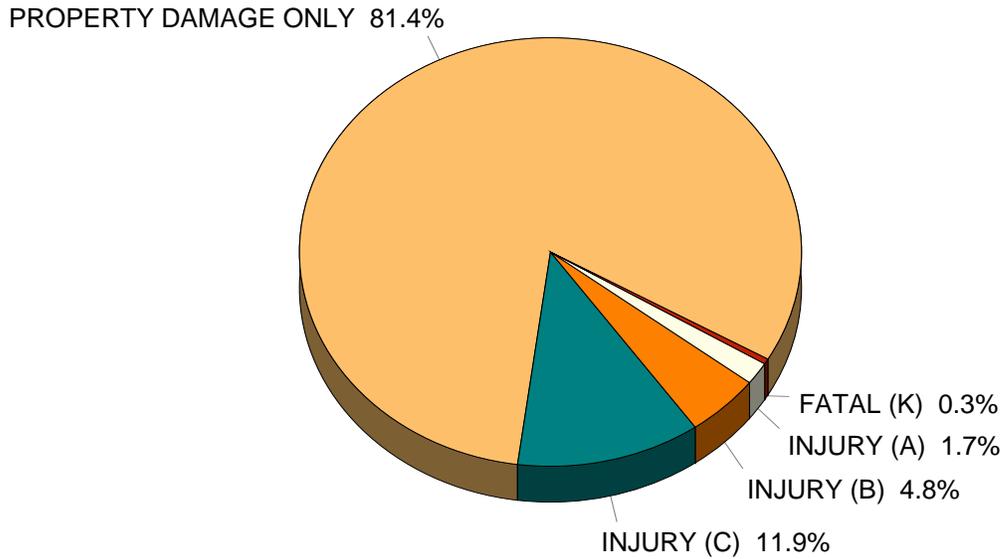
	Total	Crashes Involving Drinking, not drugs		Crashes Involving Drugs, not drinking		Crashes Involving Drinking & Drugs		Total Crashes Involving Drinking and/or Drugs	
		Snowmobiler in crash	Snowmobiler drinking	Snowmobiler in crash	Snowmobiler drugged	Snowmobiler in crash	Snowmobiler drink & drug	Snowmobiler in crash	Snowmobiler drink &/or drug
Snowmobilers In Crashes	177	36	33	0	0	1	1	37	34
Snowmobilers Killed	9	8	8	0	0	0	0	8	8
Snowmobilers Injured	102	19	18	0	0	1	1	20	19

## DRIVER DRINKING AND/OR USING DRUGS AND INJURY SEVERITY IN CRASH BY AGE

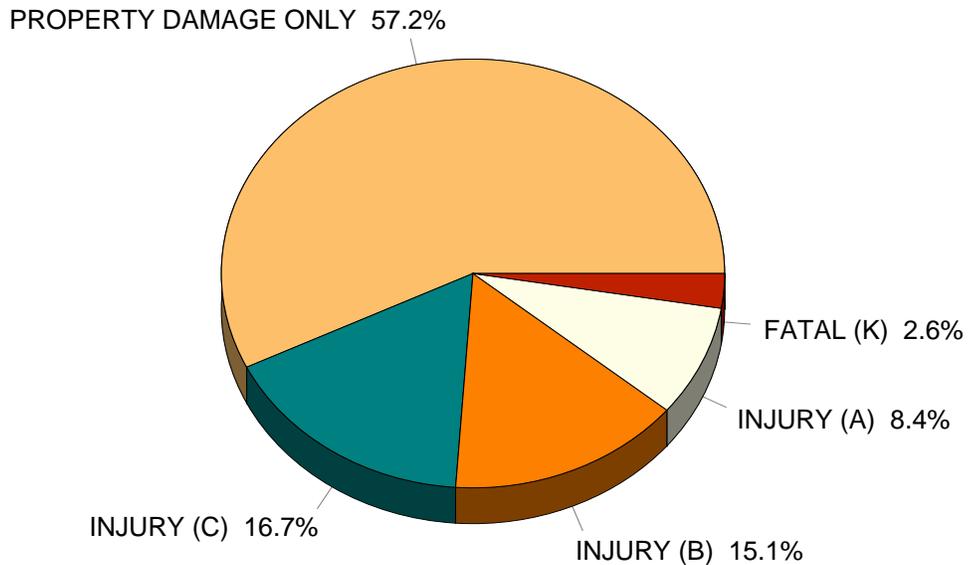
### MOST SEVERE OUTCOME IN CRASH

AGE OF DRIVER IN CRASH	All Crashes				Fatal				Injury			
	Drinking Only	Drug Only	Both	Total	Drinking Only	Drug Only	Both	Total	Drinking Only	Drug Only	Both	Total
13 years & under	0	0	0	0	0	0	0	0	0	0	0	0
14 years	2	0	0	2	0	0	0	0	0	0	0	0
15 years	7	3	2	12	0	2	0	2	4	1	0	5
16 years	25	13	10	48	0	0	0	0	13	6	3	22
17 years	76	22	14	112	0	4	1	5	23	8	5	36
18 years	198	34	34	266	2	4	0	6	84	23	16	123
19 years	264	28	23	315	4	3	4	11	107	10	6	123
20 years	296	35	30	361	3	3	2	8	103	13	16	132
21 - 24 years	1,672	149	123	1,944	23	8	10	41	682	76	63	821
25 - 34 years	2,252	242	222	2,716	46	10	18	74	869	101	89	1,059
35 - 44 years	1,609	206	190	2,005	39	9	12	60	651	92	89	832
45 - 54 years	1,521	179	174	1,874	37	13	10	60	590	78	68	736
55 - 64 years	683	79	53	815	16	5	4	25	259	35	14	308
65 - 69 years	130	7	11	148	0	0	1	1	51	3	6	60
70 - 74 years	61	6	5	72	0	1	0	1	31	3	1	35
75 - 79 years	41	1	1	43	1	0	0	1	16	0	0	16
80 - 84 years	17	0	4	21	2	0	0	2	6	0	0	6
85 - 89 years	9	0	1	10	0	0	0	0	5	0	0	5
90 years & over	0	0	2	2	0	0	1	1	0	0	0	0
Unknown	74	5	7	86	1	0	0	1	5	2	0	7
<b>Total</b>	<b>8,937</b>	<b>1,009</b>	<b>906</b>	<b>10,852</b>	<b>174</b>	<b>62</b>	<b>63</b>	<b>299</b>	<b>3,499</b>	<b>451</b>	<b>376</b>	<b>4,326</b>

## ALL CRASHES BY INJURY SEVERITY



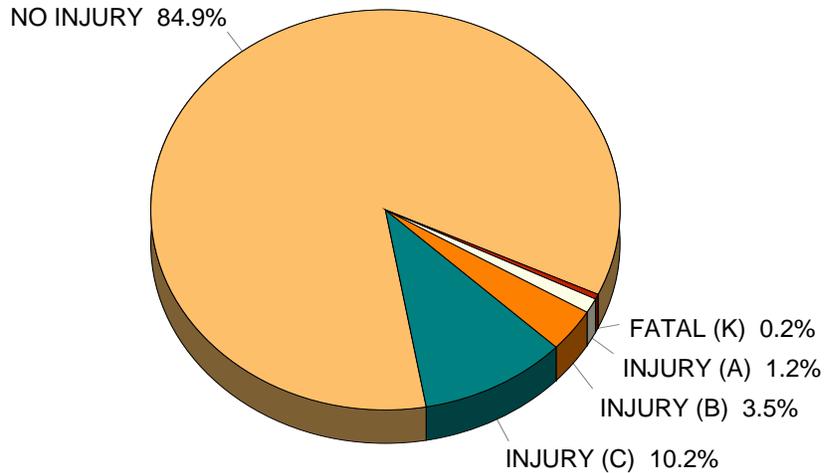
## HBD CRASHES BY INJURY SEVERITY



The problem of the drinking driver, pedestrian, and/or cyclist is seen by comparing the two charts on this page. All injury levels are greater, and a fatality in the crash is eight and half times more likely when one of the crash-involved operators is reported as had been drinking.

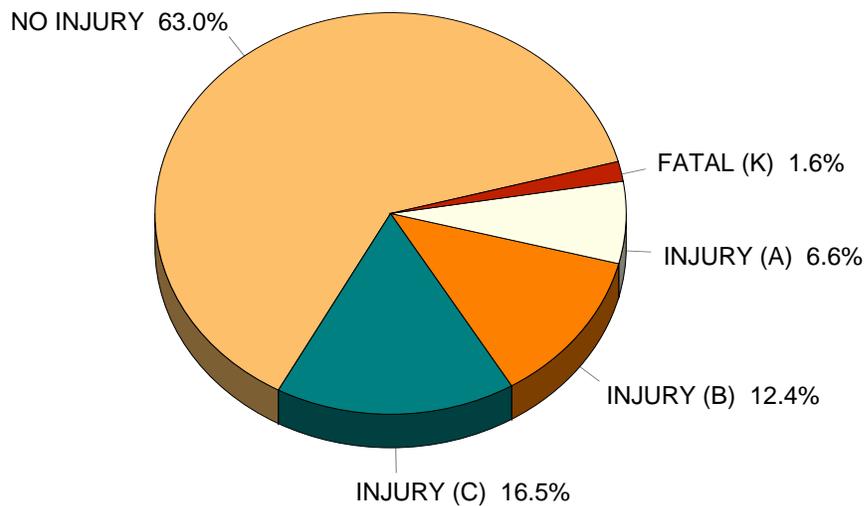
## DEATH & INJURY FOR CRASH INVOLVED OCCUPANTS

### Occupants in Crashes



The majority of occupants involved in crashes are not injured (84.9%). Two thirds of those who are injured receive only minor (C) injuries.

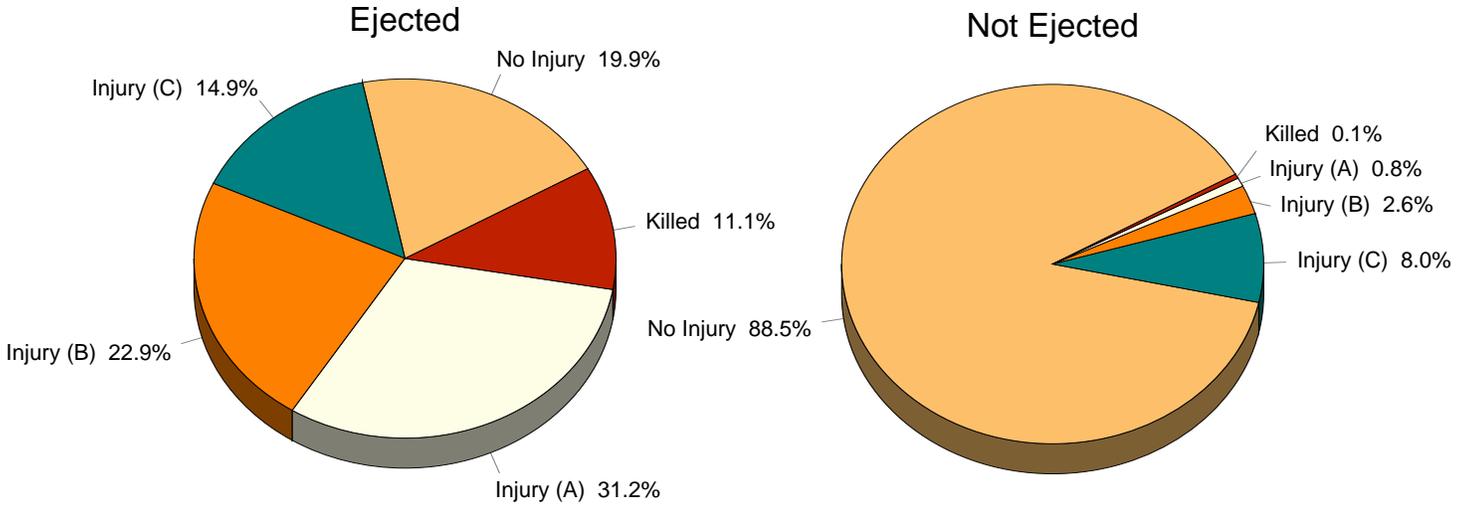
### Occupants in HBD Crashes



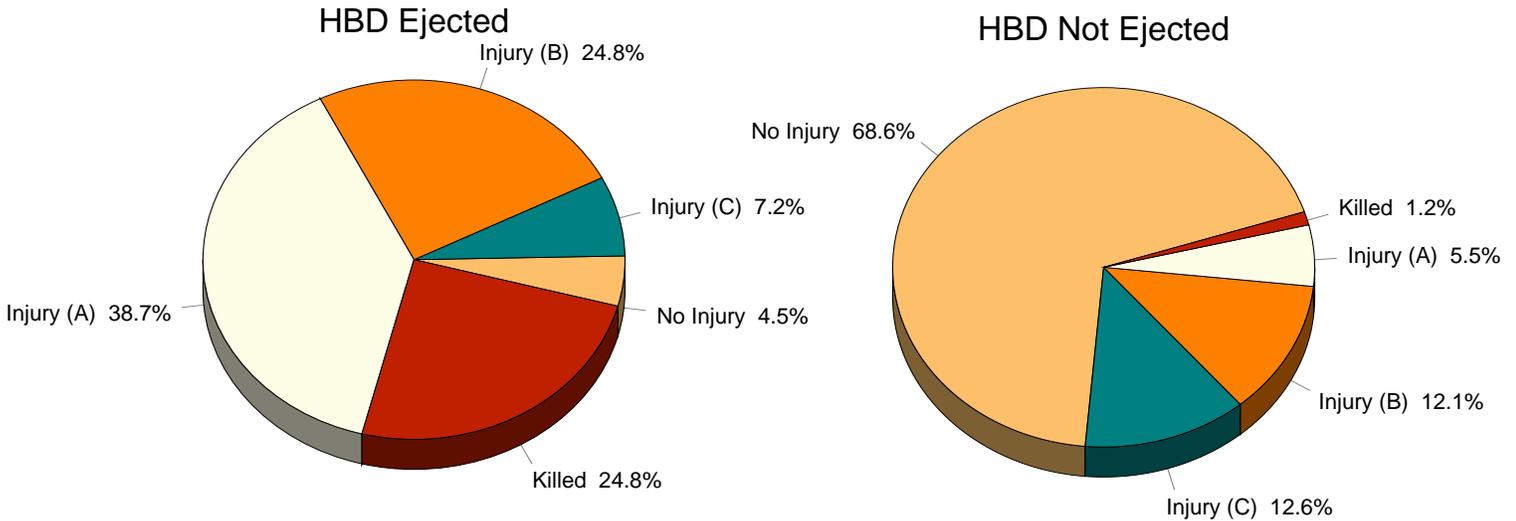
Crashes involving drinking tend to be more serious than nondrinking crashes. The percentage of occupant fatalities is eight times higher than in all crashes and the most serious injury level (A) is five and half times higher.

## **ALL DRIVERS and HBD DRIVERS INJURY SEVERITY - EJECTED vs. NOT EJECTED**

As can be seen in the two charts below, death and injury are much more likely when *drivers* are ejected from vehicles.

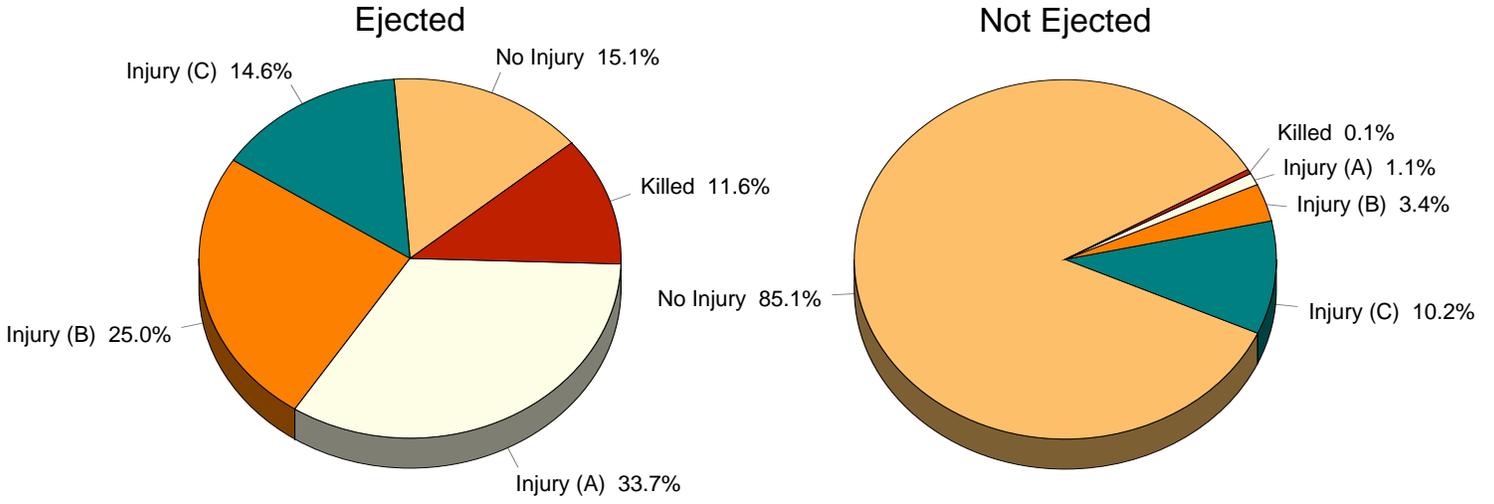


When compared to the charts above, the charts below demonstrate that the injury severity is much worse for drivers who had been drinking in both ejected and non-ejected events.

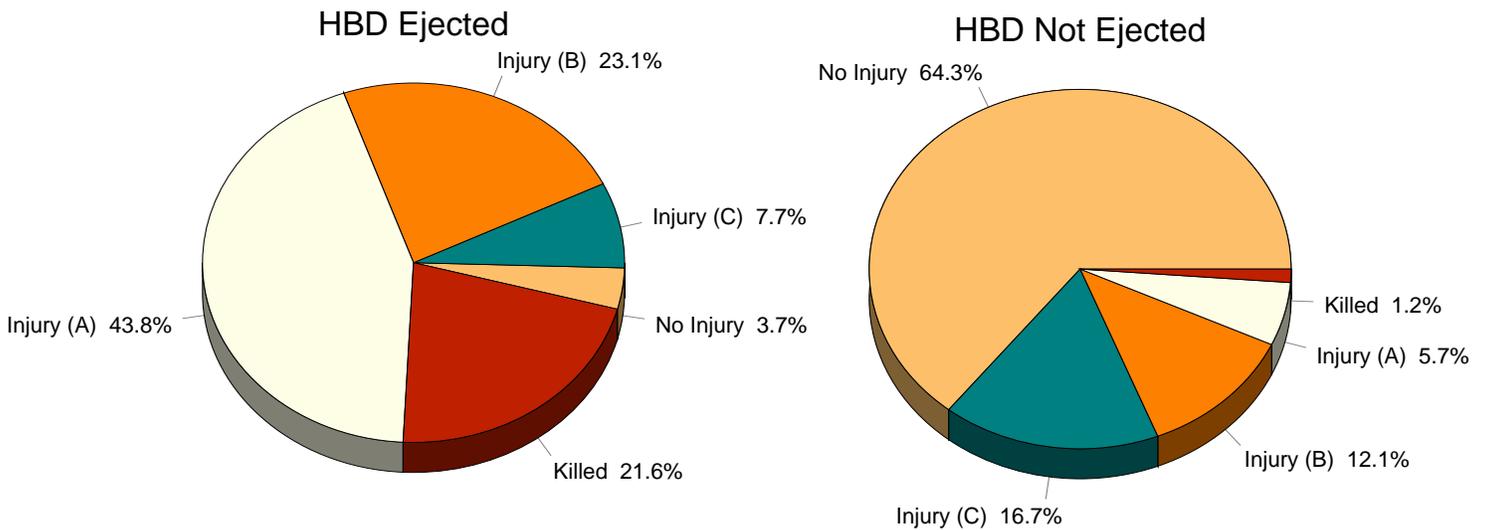


## ALL OCCUPANTS and OCCUPANTS of HBD CRASHES INJURY SEVERITY - EJECTED vs. NOT EJECTED

As can be seen in the two charts below, death and injury are much more likely when *occupants* are ejected from vehicles.

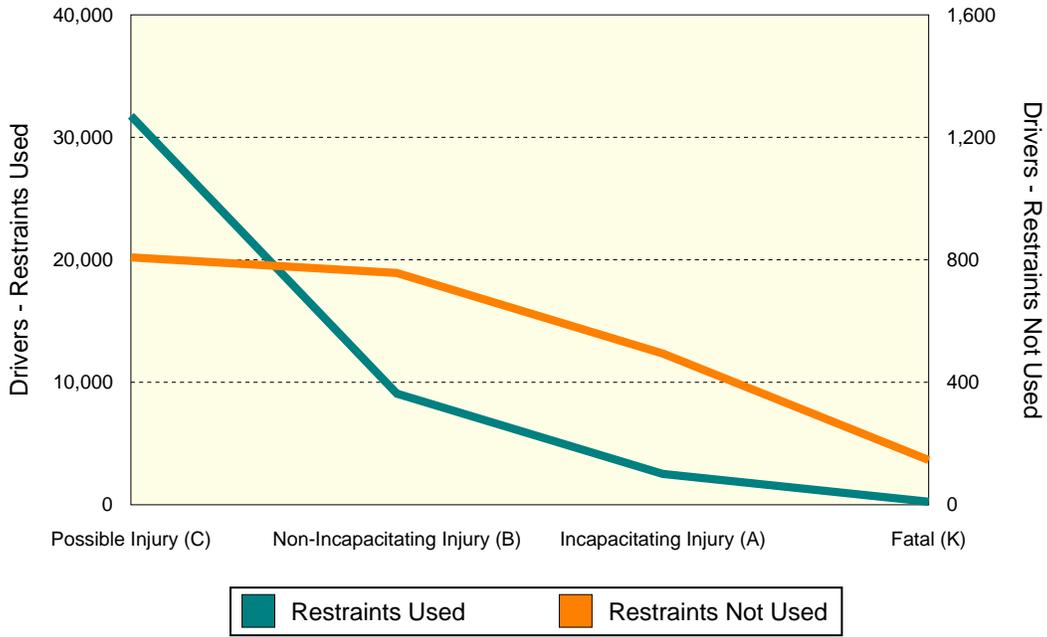


When compared to the charts above, the charts below demonstrate that the injury severity is much worse for occupants in a crash where drinking is reported in both ejected and non-ejected events.

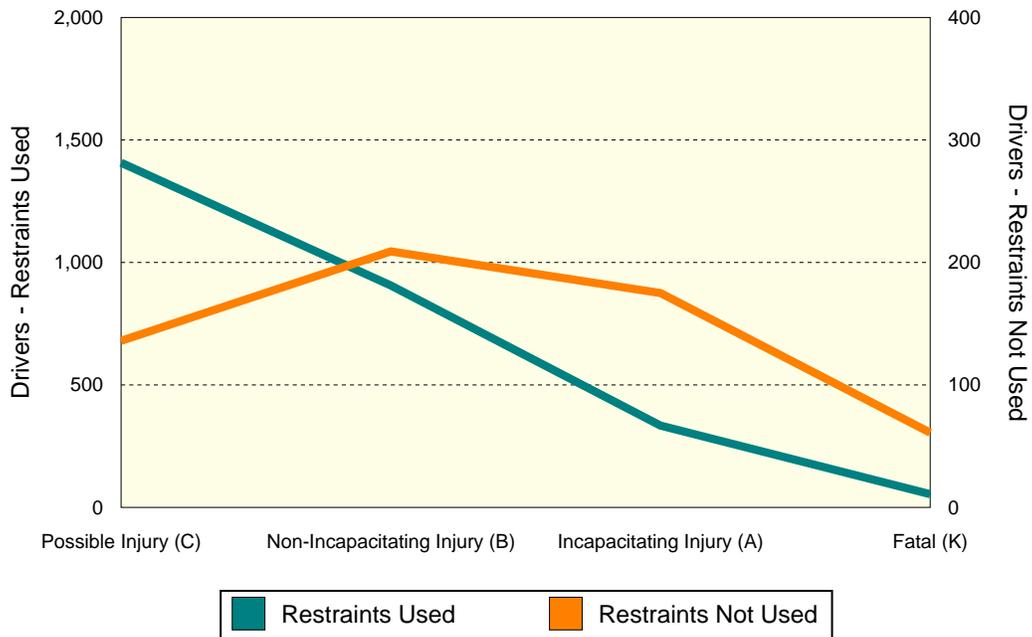


# INJURY SEVERITY & RESTRAINT USE FOR CRASH INVOLVED KABC DRIVERS

## ALL CRASHES

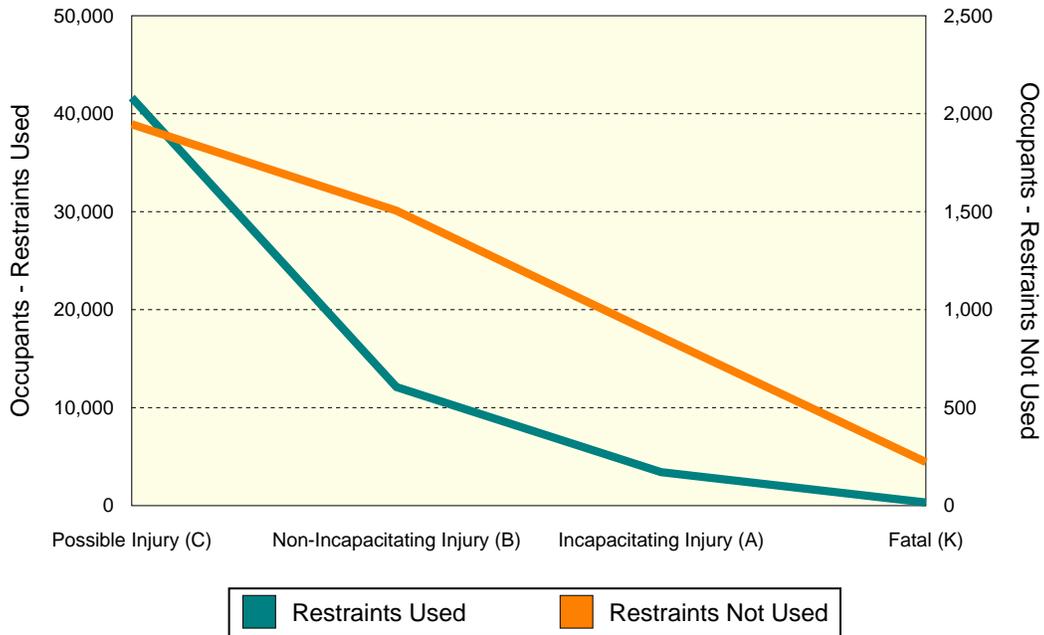


## HBD CRASHES

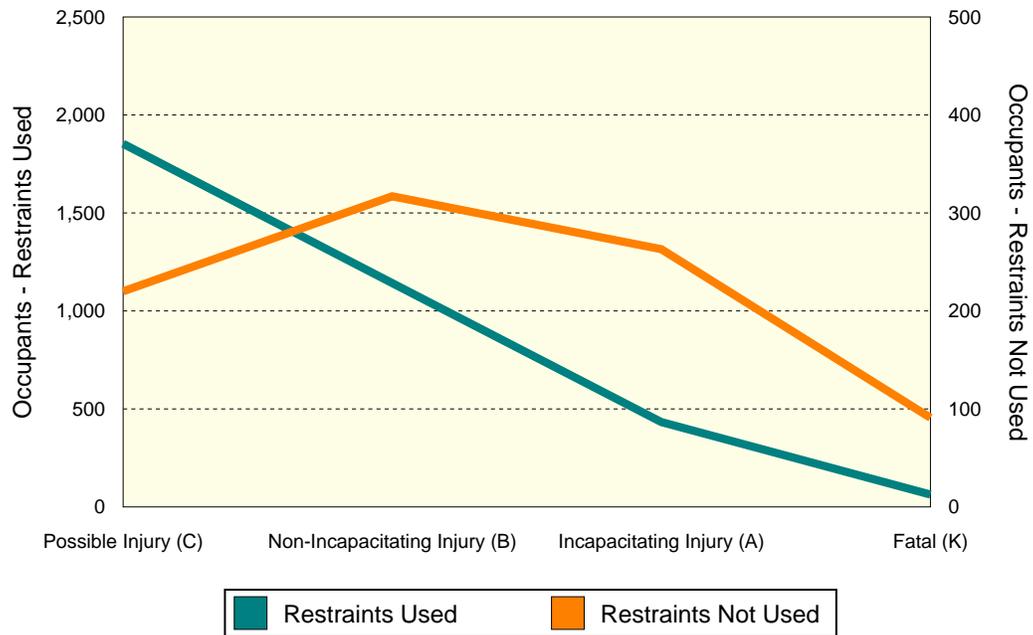


# INJURY SEVERITY & RESTRAINT USE FOR CRASH INVOLVED KABC OCCUPANTS

## ALL CRASHES



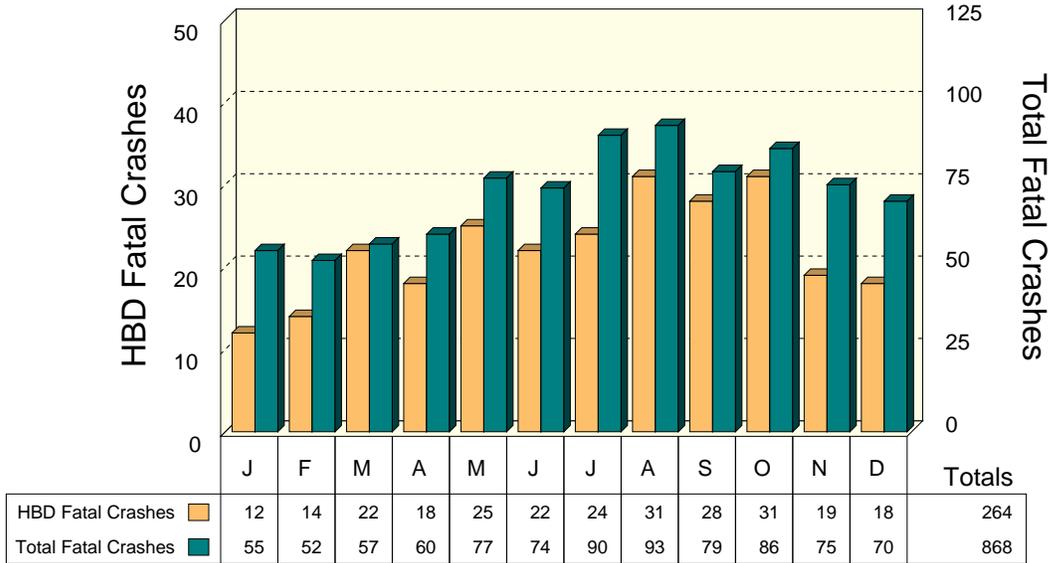
## HBD CRASHES



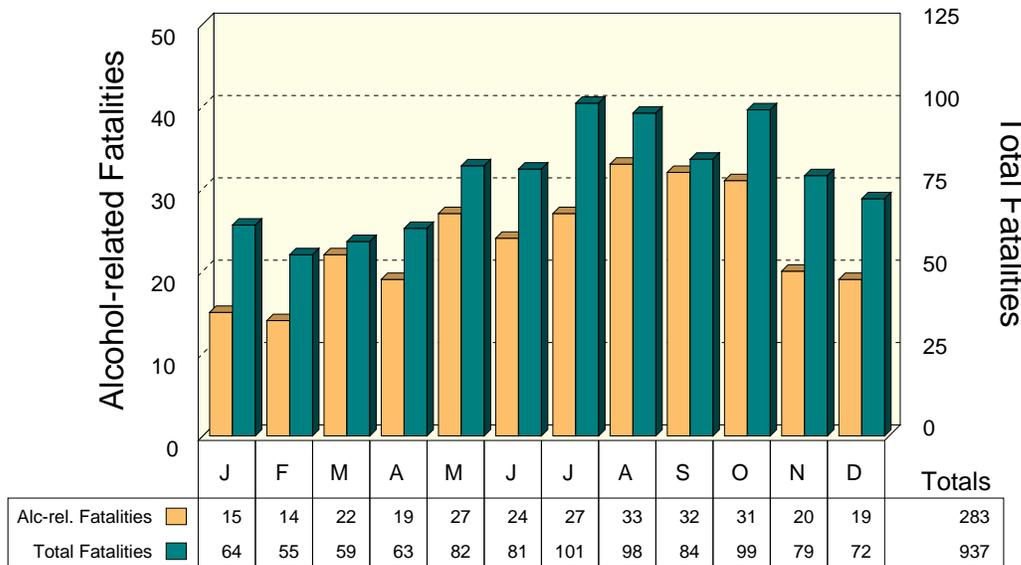
## ALCOHOL INVOLVEMENT IN FATAL CRASHES

Fatal crashes (total of non-HBD and HBD fatal crashes) were lowest in number during February. HBD fatal crashes were highest in number during the months of August and October. The number of total fatal crashes reached highest levels in July and August.

### HBD Fatal Crashes by Month

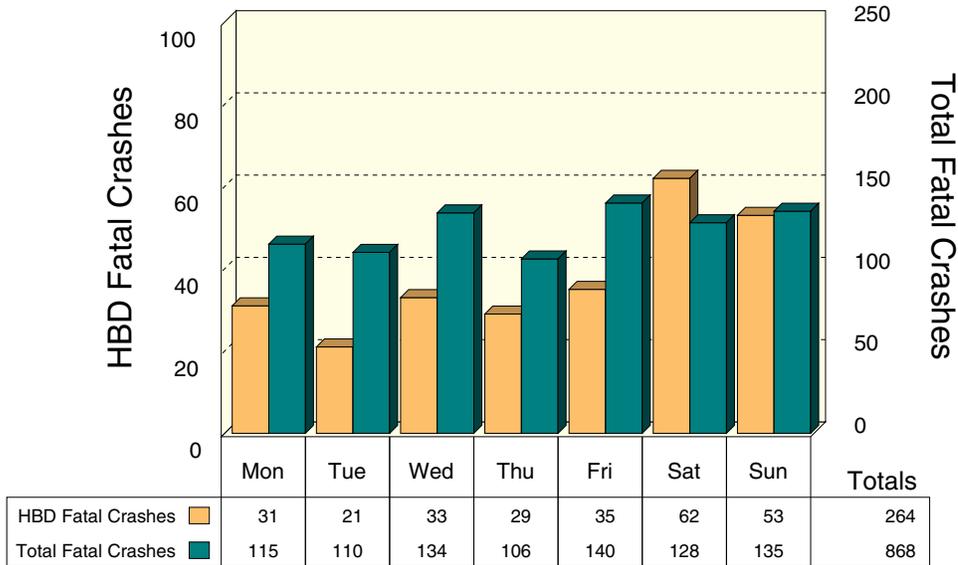


### Alcohol-related Fatalities by Month



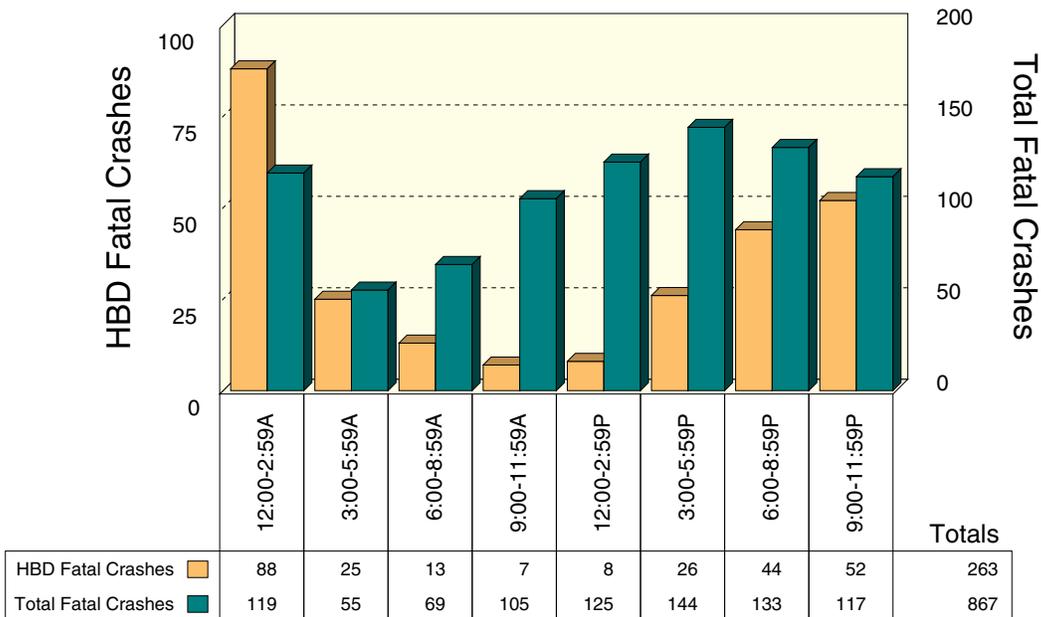
NOTE: An alcohol-related fatality is any person killed in an HBD crash.

## HBD Fatal Crashes by Day of Week



Friday and Sunday had the most fatal crashes while Saturday and Sunday had the highest proportions of drinking-related fatal crashes in 2010. 48.4 percent of the fatal crashes on Saturday involved drinking, while only 19.1 percent of the fatal crashes on Tuesday involved drinking.

## HBD Fatal Crashes by Time of Day



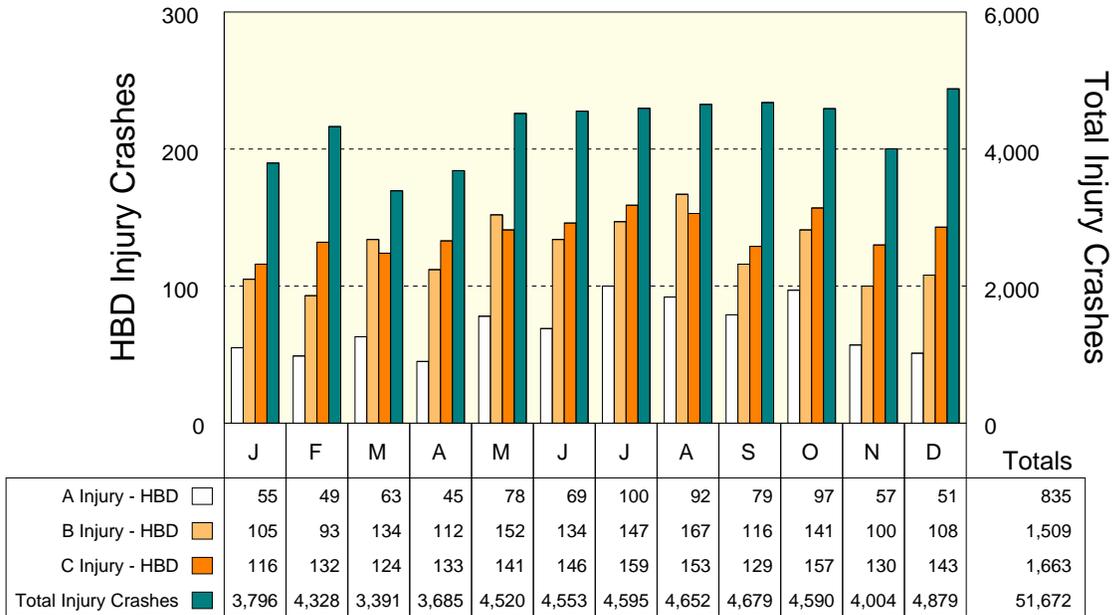
Not surprisingly, the midnight to 2:59 AM time period had the highest rate of drinking involvement (73.9%), while the early afternoon hours had the lowest (6.4%).

There was one HBD fatal crash where the time of day was unknown that does not appear in this table.

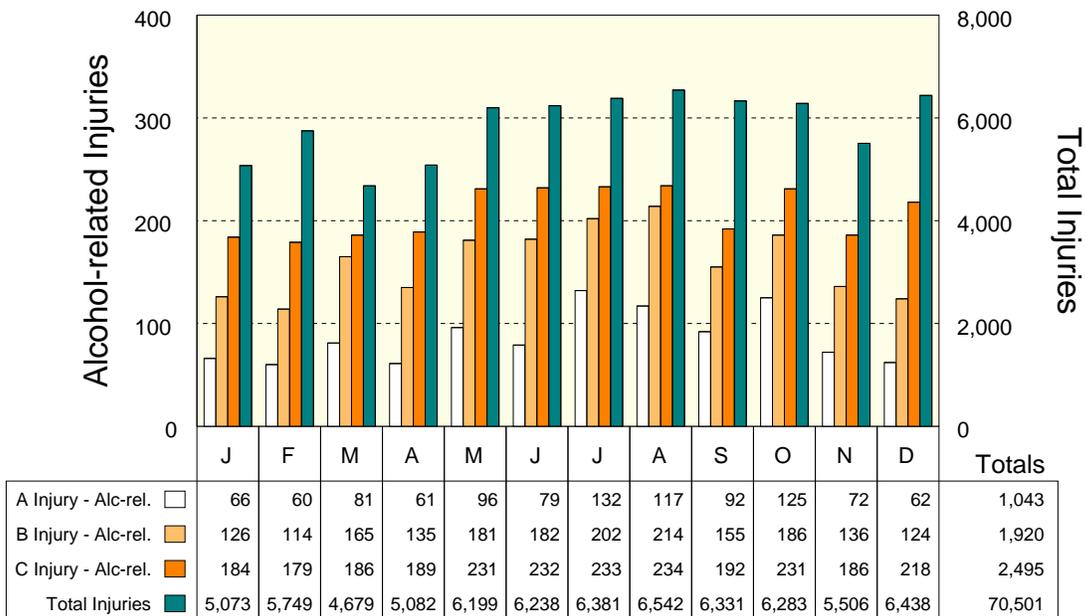
## ALCOHOL INVOLVEMENT IN INJURY CRASHES

Alcohol involvement in injury crashes is an important indicator of the alcohol impaired driving problem. In 2010, the highest number of HBD injury crashes occurred in August with 412. The highest proportion of HBD injury crashes occurred in March with 9.5 percent of the injury crashes in that month involving alcohol.

### HBD Injury Crashes by Month

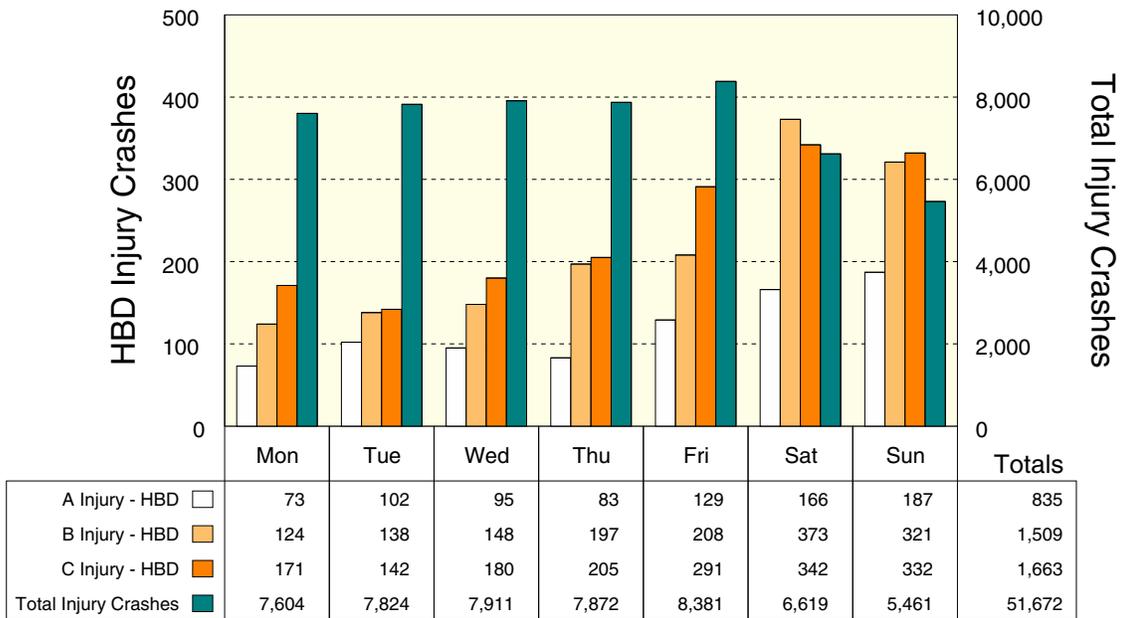


### Alcohol-related Injuries by Month



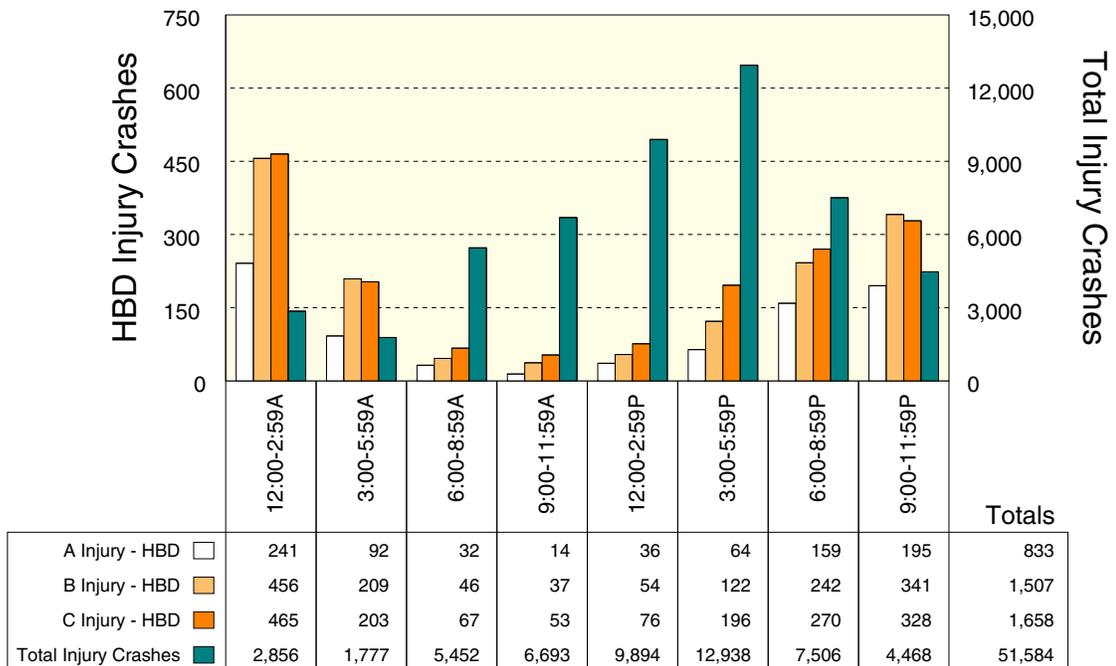
NOTE: An alcohol-related injury is any person injured in an HBD crash.

## HBD Injury Crashes by Day of Week



HBD injury crashes follow the same basic trends as total crashes through the work week, but the weekend sees a dramatic increase in the proportion of HBD injury crashes to total injury crashes.

## HBD Injury Crashes by Time of Day



Total injury crash frequencies peak in the hours between 3:00 PM and 5:59 PM, while HBD injury crash frequencies peak between midnight and 2:59 AM (a particularly hazardous travel period). These frequencies exclude 88 injury crashes (including nine HBD injury crashes) where time of day was unknown.



## MALE DRIVERS BY AGE & INJURY SEVERITY IN CRASH

### MOST SEVERE OUTCOME IN CRASH

AGE OF DRIVER IN CRASH	Male Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
13 years and under	95	0.0	3	0.3	6	12	9	65
14 years	75	0.0	0	0.0	4	10	11	50
15 years	335	0.1	4	0.4	20	40	30	241
16 years	4,359	1.8	10	1.1	76	260	573	3,440
17 years	6,016	2.5	16	1.7	108	355	756	4,781
18 years	7,625	3.2	28	3.1	141	438	1,052	5,966
19 years	7,546	3.2	22	2.4	162	431	1,015	5,916
20 years	7,074	3.0	20	2.2	131	419	919	5,585
21 - 24 years	22,554	9.5	72	7.9	485	1,295	2,960	17,742
25 - 34 years	41,670	17.5	157	17.1	797	2,133	5,292	33,291
35 - 44 years	40,176	16.9	154	16.8	761	1,875	5,095	32,291
45 - 54 years	42,692	17.9	169	18.4	815	1,997	5,339	34,372
55 - 64 years	30,493	12.8	132	14.4	584	1,513	3,895	24,369
65 - 69 years	8,749	3.7	38	4.1	165	442	1,125	6,979
70 - 74 years	5,530	2.3	27	2.9	87	289	740	4,387
75 - 79 years	3,930	1.7	17	1.9	80	212	573	3,048
80 - 84 years	2,887	1.2	20	2.2	62	164	413	2,228
85 - 89 years	1,537	0.6	18	2.0	46	111	234	1,128
90 years and over	456	0.2	7	0.8	11	28	72	338
Unknown	4,249	1.8	2	0.2	41	147	544	3,515
<b>Total</b>	<b>238,048</b>	<b>100.0</b>	<b>916</b>	<b>100.0</b>	<b>4,582</b>	<b>12,171</b>	<b>30,647</b>	<b>189,732</b>

NOTE: This table excludes 33,737 drivers of unknown gender.



## MALE DRINKING DRIVERS BY AGE & INJURY SEVERITY IN CRASH

AGE OF DRINKING DRIVER IN CRASH	MOST SEVERE OUTCOME IN CRASH							PDO
	Male Drivers		Fatal		Injury			
	Number	% of Total	Number	% of Fatal	A	B	C	
13 years and under	0	0.0	0	0.0	0	0	0	0
14 years	2	0.0	0	0.0	0	0	0	2
15 years	8	0.1	0	0.0	1	3	0	4
16 years	23	0.3	0	0.0	2	5	5	11
17 years	67	0.9	1	0.5	1	11	4	50
18 years	169	2.3	2	1.0	14	31	26	96
19 years	214	3.0	6	3.0	25	36	22	125
20 years	236	3.3	2	1.0	19	41	27	147
21 - 24 years	1,290	17.9	27	13.7	125	188	225	725
25 - 34 years	1,833	25.4	51	25.9	136	290	293	1,063
35 - 44 years	1,278	17.7	42	21.3	126	197	213	700
45 - 54 years	1,245	17.3	42	21.3	110	182	207	704
55 - 64 years	583	8.1	19	9.6	48	80	88	348
65 - 69 years	114	1.6	1	0.5	8	11	28	66
70 - 74 years	54	0.7	0	0.0	8	8	9	29
75 - 79 years	37	0.5	1	0.5	3	6	6	21
80 - 84 years	18	0.2	2	1.0	3	1	1	11
85 - 89 years	7	0.1	0	0.0	1	1	3	2
90 years and over	1	0.0	1	0.5	0	0	0	0
Unknown	30	0.4	0	0.0	1	0	0	29
<b>Total</b>	<b>7,209</b>	<b>100.0</b>	<b>197</b>	<b>100.0</b>	<b>631</b>	<b>1,091</b>	<b>1,157</b>	<b>4,133</b>

NOTE: This table excludes 50 unknown gender drinking drivers.



## FEMALE DRIVERS BY AGE & INJURY SEVERITY IN CRASH

### MOST SEVERE OUTCOME IN CRASH

AGE OF DRIVER IN CRASH	Female Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
13 years and under	44	0.0	0	0.0	6	4	9	25
14 years	41	0.0	2	0.5	4	6	5	24
15 years	289	0.1	0	0.0	7	20	48	214
16 years	3,755	1.9	5	1.3	64	219	596	2,871
17 years	5,330	2.7	11	2.9	85	306	777	4,151
18 years	6,207	3.1	10	2.7	88	346	993	4,770
19 years	6,521	3.3	13	3.5	104	361	1,072	4,971
20 years	6,278	3.2	12	3.2	93	324	959	4,890
21 - 24 years	20,567	10.4	37	9.9	334	1,008	3,175	16,013
25 - 34 years	37,231	18.9	59	15.8	507	1,778	5,775	29,112
35 - 44 years	35,146	17.8	59	15.8	523	1,560	5,324	27,680
45 - 54 years	34,024	17.3	63	16.8	456	1,498	4,999	27,008
55 - 64 years	22,739	11.5	43	11.5	315	921	3,496	17,964
65 - 69 years	6,127	3.1	16	4.3	84	289	947	4,791
70 - 74 years	3,984	2.0	10	2.7	63	209	605	3,097
75 - 79 years	3,059	1.6	10	2.7	66	159	482	2,342
80 - 84 years	2,298	1.2	12	3.2	41	151	352	1,742
85 - 89 years	1,202	0.6	10	2.7	23	94	222	853
90 years and over	317	0.2	2	0.5	5	24	48	238
Unknown	2,024	1.0	0	0.0	13	52	261	1,698
<b>Total</b>	<b>197,183</b>	<b>100.0</b>	<b>374</b>	<b>100.0</b>	<b>2,881</b>	<b>9,329</b>	<b>30,145</b>	<b>154,454</b>

NOTE: This table excludes 33,737 drivers of unknown gender.



## FEMALE DRINKING DRIVERS BY AGE & INJURY SEVERITY IN CRASH

AGE OF DRINKING DRIVER IN CRASH	MOST SEVERE OUTCOME IN CRASH							PDO
	Female Drivers		Fatal		Injury			
	Number	% of Total	Number	% of Fatal	A	B	C	
13 years and under	0	0.0	0	0.0	0	0	0	0
14 years	0	0.0	0	0.0	0	0	0	0
15 years	1	0.0	0	0.0	0	0	0	1
16 years	12	0.5	0	0.0	1	2	1	8
17 years	23	0.9	0	0.0	2	6	4	11
18 years	63	2.4	0	0.0	6	9	14	34
19 years	73	2.8	2	5.1	5	10	15	41
20 years	89	3.4	3	7.7	4	14	14	54
21 - 24 years	504	19.5	6	15.4	41	79	87	291
25 - 34 years	641	24.8	13	33.3	41	97	101	389
35 - 44 years	521	20.2	9	23.1	35	68	101	308
45 - 54 years	448	17.3	5	12.8	20	57	82	284
55 - 64 years	153	5.9	1	2.6	11	14	32	95
65 - 69 years	27	1.0	0	0.0	2	4	4	17
70 - 74 years	12	0.5	0	0.0	2	4	1	5
75 - 79 years	5	0.2	0	0.0	1	0	0	4
80 - 84 years	3	0.1	0	0.0	0	1	0	2
85 - 89 years	3	0.1	0	0.0	0	0	0	3
90 years and over	1	0.0	0	0.0	0	0	0	1
Unknown	5	0.2	0	0.0	0	0	0	5
<b>Total</b>	<b>2,584</b>	<b>100.0</b>	<b>39</b>	<b>100.0</b>	<b>171</b>	<b>365</b>	<b>456</b>	<b>1,553</b>

NOTE: This table excludes 50 unknown gender drinking drivers.





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**Deer**

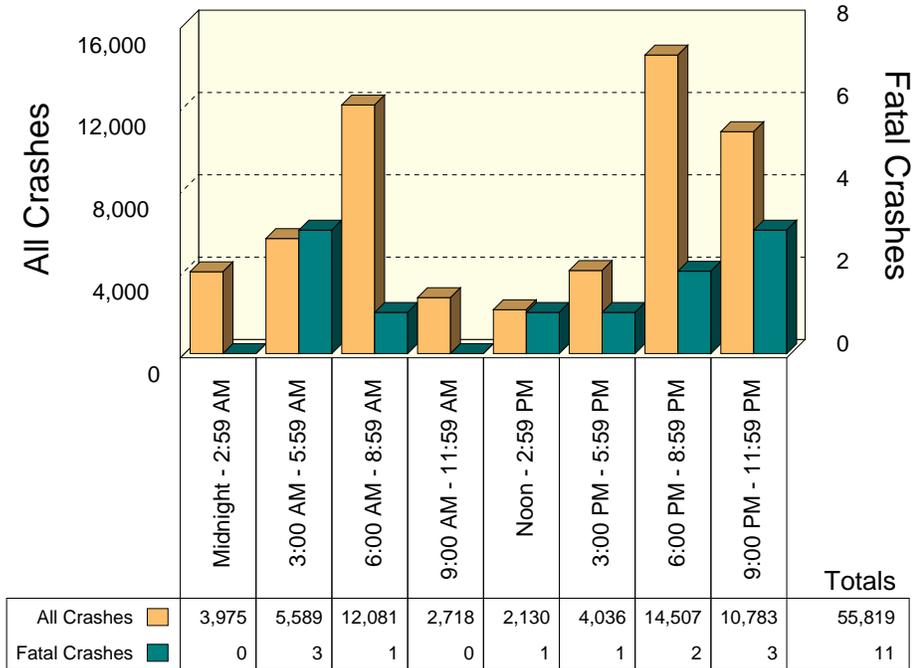




## LIGHT CONDITION AND TIME OF DAY IN MOTOR VEHICLE-DEER CRASHES

LIGHT CONDITION	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Daylight	11,861	21.2	2	18.2	41	159	200	11,459
Dawn	4,834	8.7	0	0.0	1	28	69	4,736
Dusk	2,564	4.6	1	9.1	7	14	32	2,510
Dark – Lighted	2,103	3.8	0	0.0	3	10	29	2,061
Dark – Unlighted	33,889	60.7	8	72.7	50	175	452	33,204
Other/Unknown	616	1.1	0	0.0	0	1	6	609
<b>Total</b>	<b>55,867</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>	<b>102</b>	<b>387</b>	<b>788</b>	<b>54,579</b>

### Time and Severity of Motor Vehicle - Deer Crashes

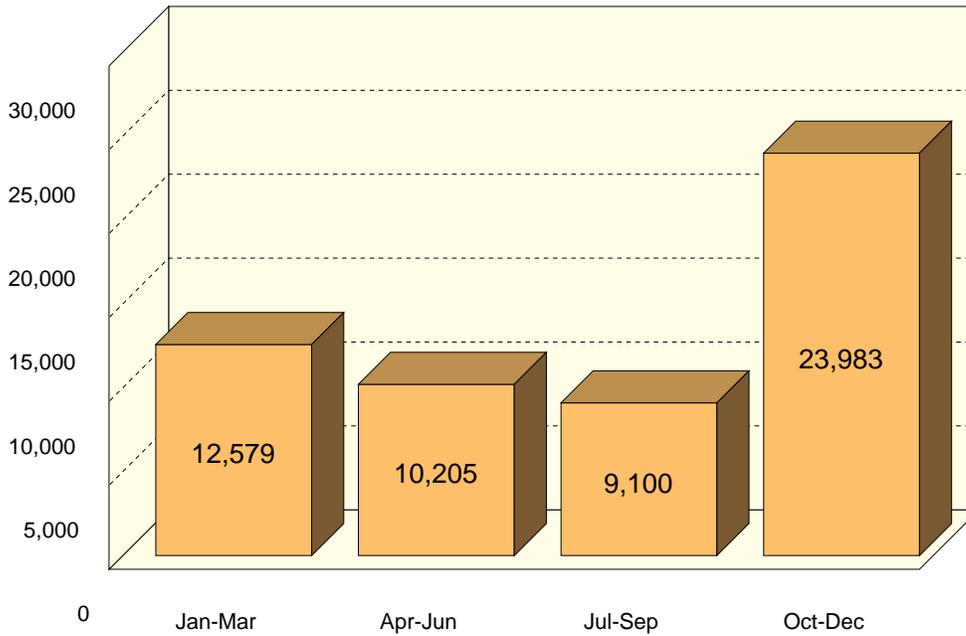


NOTE: Time and Severity chart excludes 48 crashes where time of day is unknown.

## MONTHLY AND SEASONAL RATES FOR MOTOR VEHICLE-DEER CRASHES

MONTH	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
January	5,100	9.1	0	0.0	6	14	41	5,039
February	3,867	6.9	1	9.1	2	8	29	3,827
March	3,612	6.5	0	0.0	3	19	34	3,556
April	2,756	4.9	0	0.0	8	21	48	2,679
May	3,463	6.2	1	9.1	12	41	72	3,337
June	3,986	7.1	0	0.0	17	58	74	3,837
July	2,815	5.0	4	36.4	14	47	60	2,690
August	2,305	4.1	1	9.1	7	44	46	2,207
September	3,980	7.1	0	0.0	11	20	61	3,888
October	8,411	15.1	2	18.2	11	58	138	8,202
November	9,558	17.1	2	18.2	7	42	133	9,374
December	6,014	10.8	0	0.0	4	15	52	5,943
<b>Total</b>	<b>55,867</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>	<b>102</b>	<b>387</b>	<b>788</b>	<b>54,579</b>

### Motor Vehicle - Deer Crashes



23,983 (42.9%) of reported motor vehicle-deer collisions occurred during the fourth quarter of the year.

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2010

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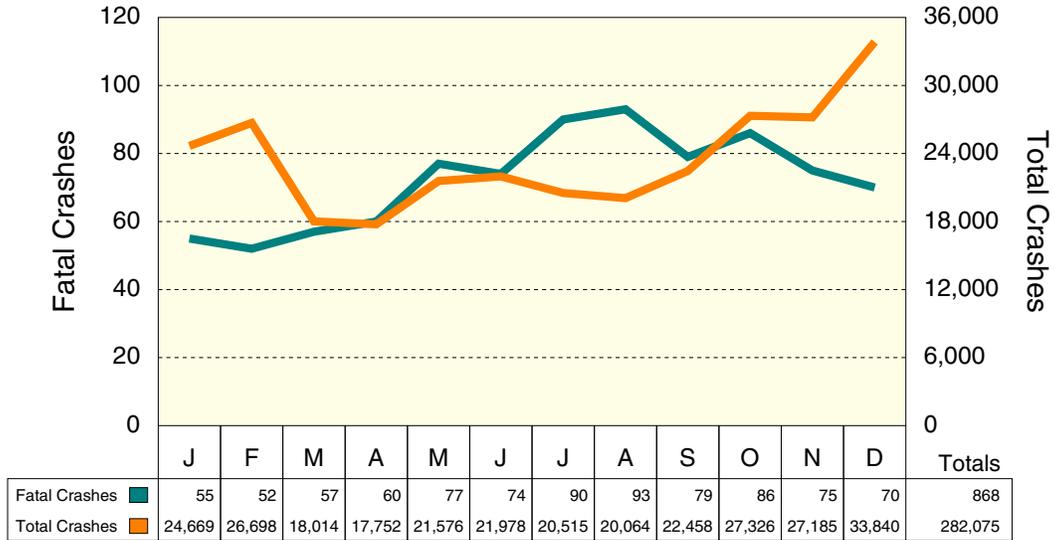
2010

**Crash**

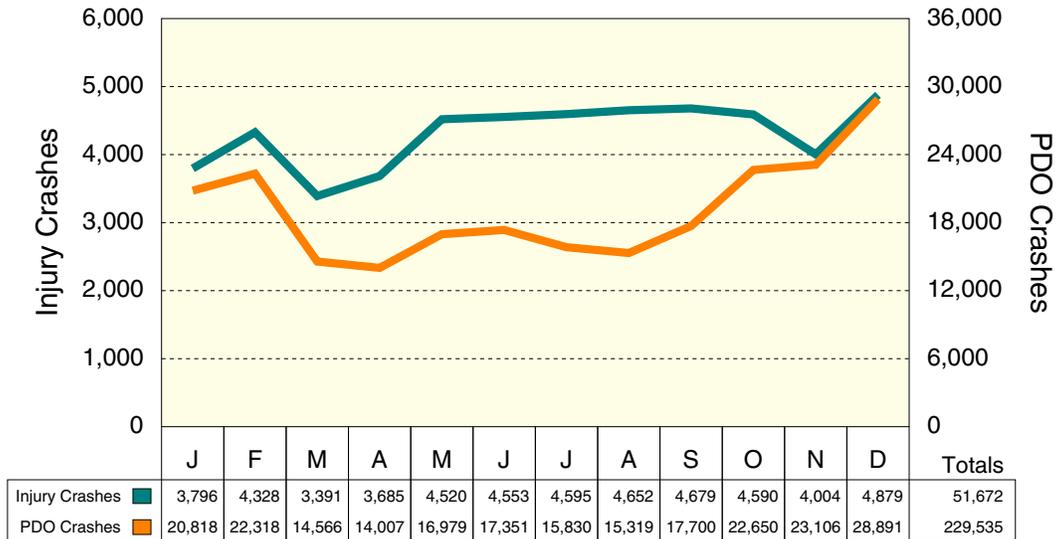


# ALL CRASHES INJURY SEVERITY BY MONTH

## Fatal and Total Crashes



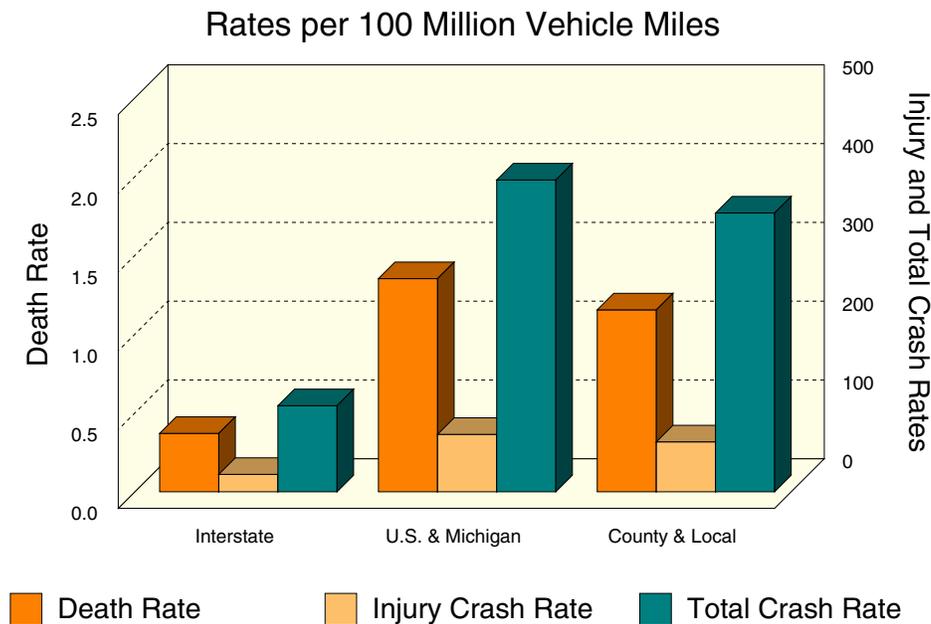
## Injury and PDO Crashes



## CRASH EXPERIENCE BY ROADWAY TYPE

The table below provides a breakdown of estimated vehicle mileage, crashes, deaths, death rates (deaths per 100 million vehicle miles), and crash rates (crashes per 100 million vehicle miles) for the major roadway types in Michigan. All rates are highest on U.S. & Michigan Roads, and lowest on interstate routes. 2010 estimated mileage figures were provided by the Michigan Department of Transportation [11].

STATEWIDE	Estimated Mileage (Billions)	All Crashes	Injury Crashes	Deaths	Total Crash Rate	Injury Crash Rate	Death Rate
Interstate Routes	29.4	32,139	6,501	109	109.3	22.1	0.4
U.S. & Michigan Roads	20.4	80,758	14,874	276	395.9	72.9	1.4
County & City Roads	47.8	169,178	30,297	552	353.9	63.4	1.2
Total	97.6	282,075	51,672	937	289.0	52.9	0.96



## CRASH TYPE

CRASH TYPE	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Single Vehicle	107,682	38.2	464	53.5	2,203	5,534	8,108	91,373
Head On	3,510	1.2	88	10.1	266	417	626	2,113
Head On - Left Turn	6,314	2.2	31	3.6	260	757	1,504	3,762
Angle	45,126	16.0	154	17.7	1,037	2,968	7,594	33,373
Rear End	66,694	23.6	48	5.5	538	2,128	11,332	52,648
Rear End - Left Turn	3,111	1.1	11	1.3	42	166	600	2,292
Rear End - Right Turn	2,854	1.0	1	0.1	13	48	348	2,444
Sideswipe - Same Direction	25,878	9.2	15	1.7	138	489	1,537	23,699
Sideswipe - Opposite Direct	5,917	2.1	16	1.8	63	202	463	5,173
Other/Unknown	14,989	5.3	40	4.6	237	695	1,359	12,658
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

Single Vehicle, Head On, and Angle crash types produce the highest number of fatal crashes (81.3%). Single Vehicle crashes include rollovers, which are particularly deadly crash types. Rear End-Turning crashes produce the lowest number of fatal crashes (1.4%).

## RELATIONSHIP TO ROADWAY

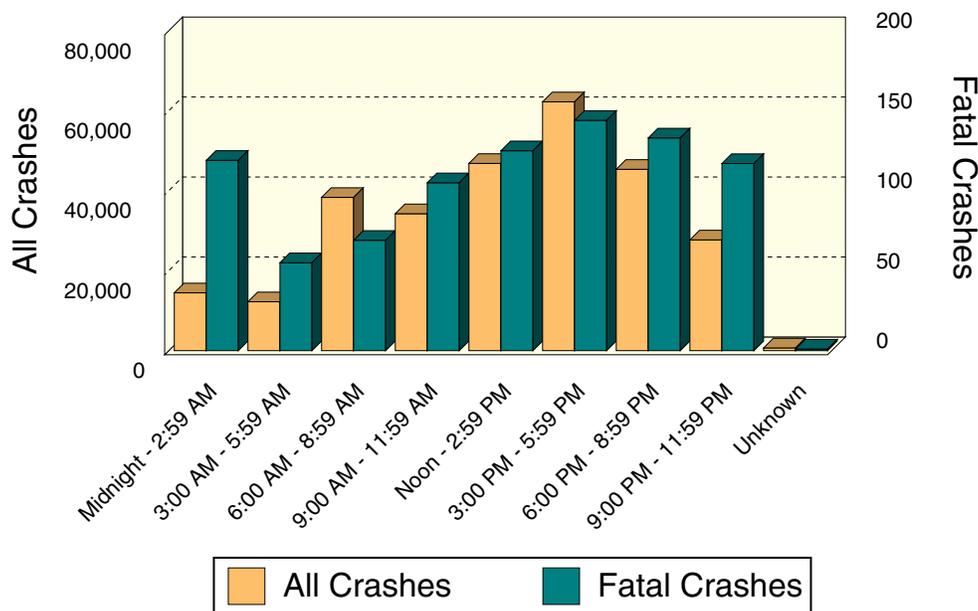
LOCATION OF FIRST IMPACT	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
On Road	237,434	84.2	572	65.9	3,292	9,817	27,587	196,166
Median	2,432	0.9	14	1.6	60	188	383	1,787
Shoulder	12,057	4.3	70	8.1	350	841	1,491	9,305
Outside of Shoulder/Curb	22,847	8.1	188	21.7	913	2,126	3,109	16,511
Gore	836	0.3	4	0.5	27	67	117	621
Other/Unknown	6,469	2.3	20	2.3	155	365	784	5,145
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

Crashes that happen outside of the normal driving lanes are overrepresented in the fatal count. Only 8.1 percent of crashes occur outside the shoulder of the road, but these crashes account for 21.7 percent of the fatal crashes.

## TIME AND SEVERITY

TIME OF DAY	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Midnight - 2:59 AM	14,463	5.1	119	13.7	449	983	1,424	11,488
3:00 AM - 5:59 AM	12,233	4.3	55	6.3	221	592	964	10,401
6:00 AM - 8:59 AM	38,329	13.6	69	7.9	471	1,251	3,730	32,808
9:00 AM - 11:59 AM	34,252	12.1	105	12.1	530	1,648	4,515	27,454
Noon - 2:59 PM	46,827	16.6	125	14.4	841	2,303	6,750	36,808
3:00 PM - 5:59 PM	62,232	22.1	144	16.6	957	3,194	8,787	49,150
6:00 PM - 8:59 PM	45,355	16.1	133	15.3	732	2,078	4,696	37,716
9:00 PM - 11:59 PM	27,701	9.8	117	13.5	589	1,331	2,548	23,116
Unknown	683	0.2	1	0.1	7	24	57	594
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

Time and Severity

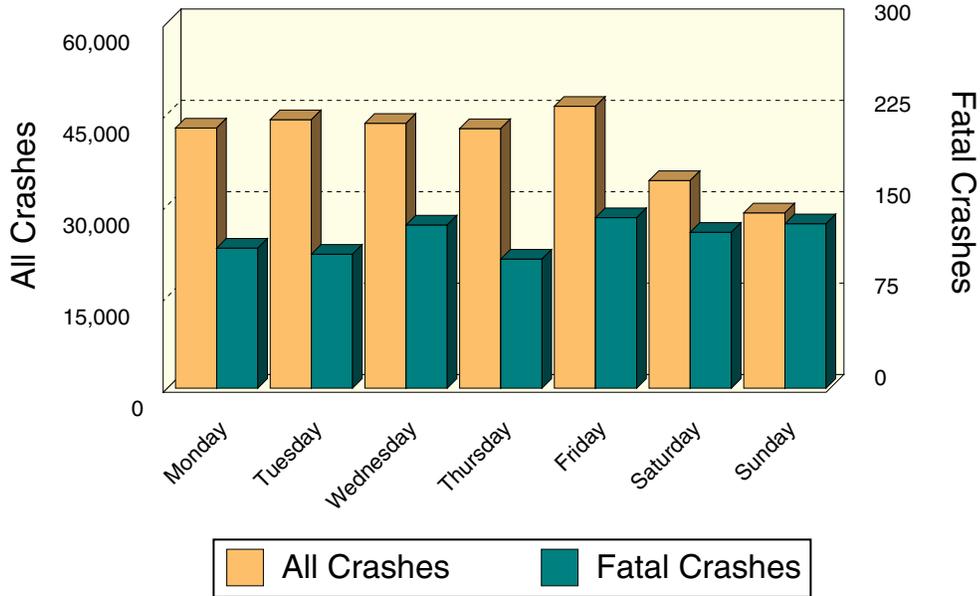


Crash frequencies peak in the late afternoon, then drop off steadily until 6:00 AM (the morning rush hour). Fatal crash frequencies rise with the frequency of other crashes, but continue at a high rate well into the early morning hours. There are proportionally more fatal crashes during the midnight to 2:59 AM time period.

## DAY OF WEEK

DAY OF WEEK	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Monday	42,715	15.1	115	13.2	621	1,810	5,173	34,996
Tuesday	44,086	15.6	110	12.7	695	1,926	5,203	36,152
Wednesday	43,489	15.4	134	15.4	671	1,937	5,303	35,444
Thursday	42,624	15.1	106	12.2	641	1,998	5,233	34,646
Friday	46,283	16.4	140	16.1	790	2,191	5,400	37,762
Saturday	34,094	12.1	128	14.7	704	1,924	3,991	27,347
Sunday	28,784	10.2	135	15.6	675	1,618	3,168	23,188
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

**Day of Week and Severity**

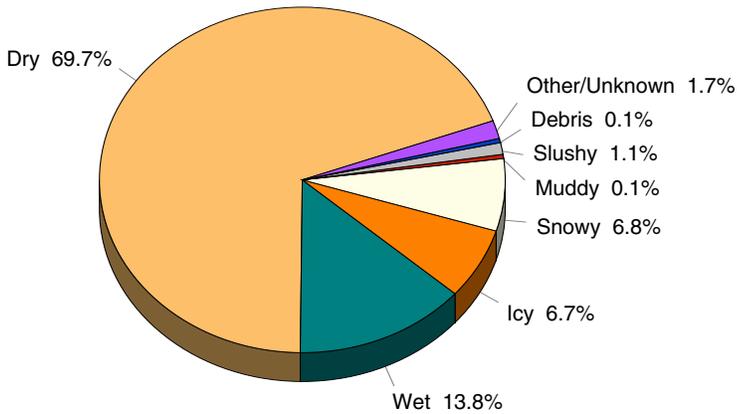


Crash frequencies were higher Monday through Friday than on the weekend. Friday (16.1%) and Sunday (15.6%) had the highest number of fatal crashes.

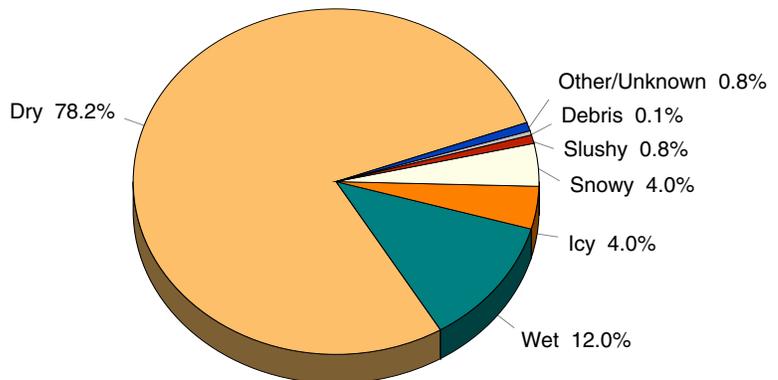
# ROAD CONDITION

ROAD SURFACE CONDITION	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Dry	196,480	69.7	679	78.2	3,724	10,078	23,729	158,270
Wet	39,029	13.8	104	12.0	555	1,763	5,190	31,417
Icy	19,031	6.7	35	4.0	223	659	2,049	16,065
Snowy	19,121	6.8	35	4.0	181	564	1,754	16,587
Muddy	352	0.1	0	0.0	10	32	53	257
Slushy	3,037	1.1	7	0.8	40	126	381	2,483
Debris	228	0.1	1	0.1	12	26	29	160
Other/Unknown	4,797	1.7	7	0.8	52	156	286	4,296
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

**All Crashes**



**Fatal Crashes**

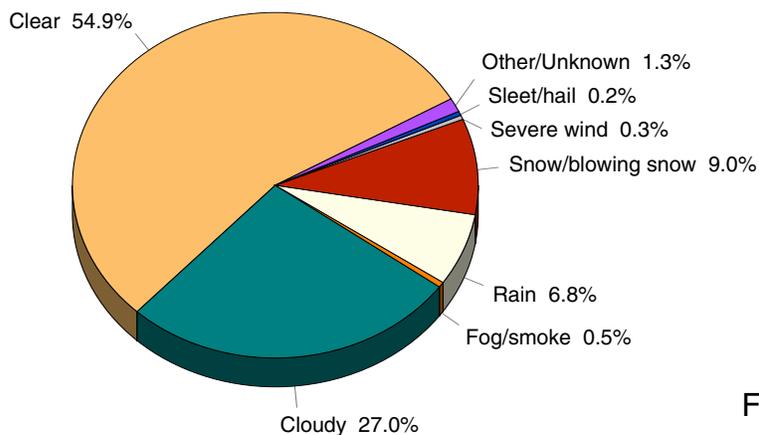


Most crashes (69.7%) and most fatal crashes (78.2%) occur on dry roads.

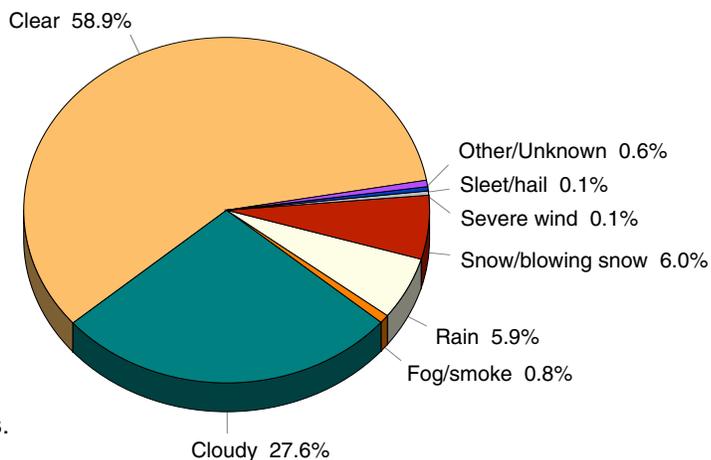
## WEATHER CONDITION

WEATHER CONDITION	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Clear	154,875	54.9	511	58.9	2,967	7,901	18,545	124,951
Cloudy	76,021	27.0	240	27.6	1,184	3,478	9,122	61,997
Fog/Smoke	1,501	0.5	7	0.8	31	61	110	1,292
Rain	19,187	6.8	51	5.9	293	924	2,708	15,211
Snow/Blowing Snow	25,354	9.0	52	6.0	275	893	2,696	21,438
Severe Wind	858	0.3	1	0.1	10	46	73	728
Sleet/Hail	475	0.2	1	0.1	12	21	46	395
Other/Unknown	3,804	1.3	5	0.6	25	80	171	3,523
<b>Total</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>

All Crashes



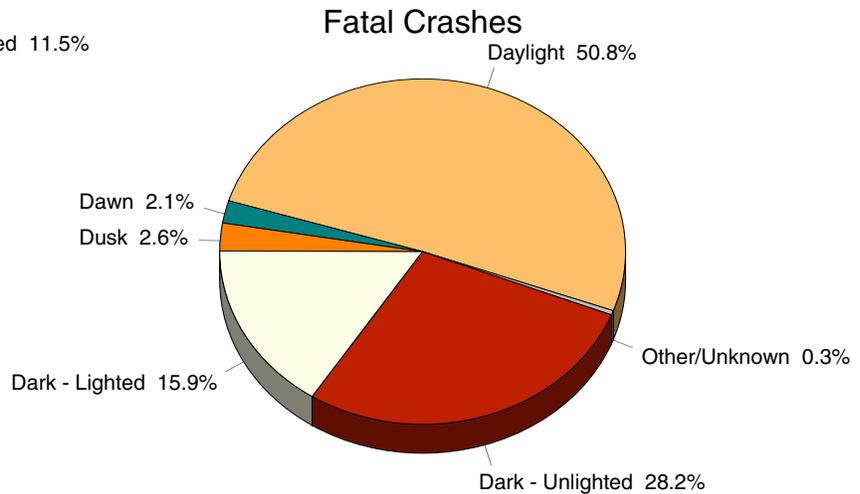
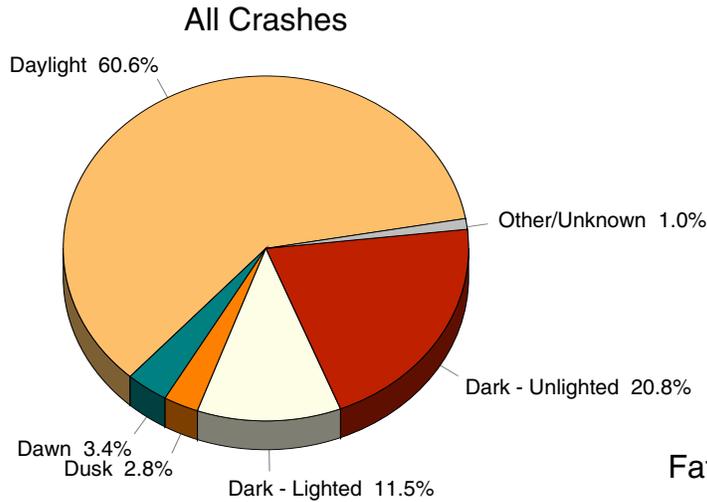
Fatal Crashes



Most crashes occur in clear weather conditions.

## LIGHT CONDITION

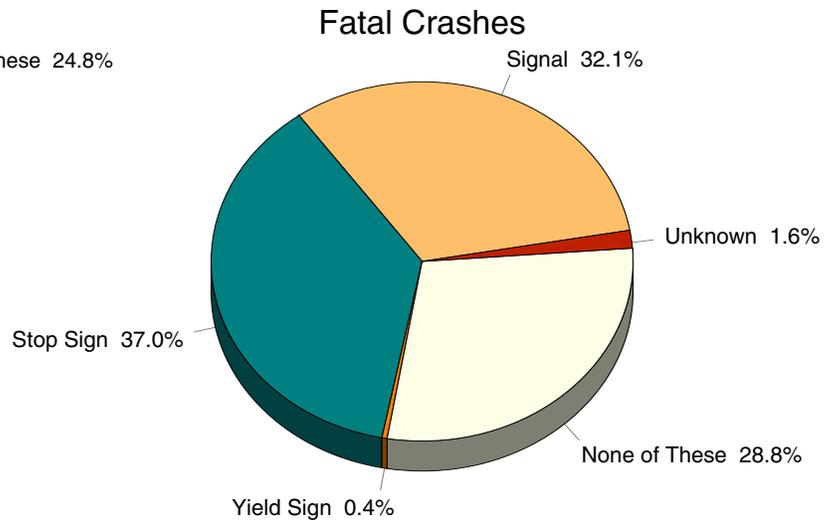
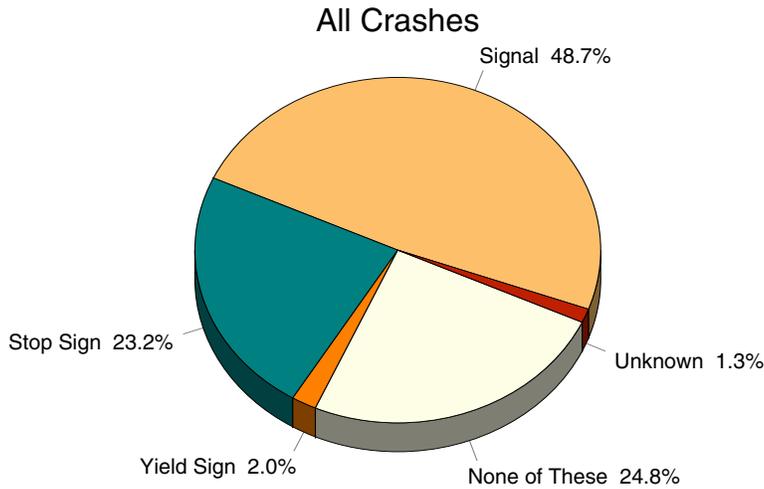
LIGHT CONDITION	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Daylight	170,809	60.6	441	50.8	2,966	8,903	23,866	134,633
Dawn	9,589	3.4	18	2.1	86	245	685	8,555
Dusk	7,850	2.8	23	2.6	120	323	767	6,617
Dark – Lighted	32,359	11.5	138	15.9	726	1,863	4,451	25,181
Dark – Unlighted	58,543	20.8	245	28.2	886	2,019	3,558	51,835
Other/Unknown	2,925	1.0	3	0.3	13	51	144	2,714
<b>Totals</b>	<b>282,075</b>	<b>100.0</b>	<b>868</b>	<b>100.0</b>	<b>4,797</b>	<b>13,404</b>	<b>33,471</b>	<b>229,535</b>



The majority (60.6%) of all crashes happen during daylight hours. Darkened conditions create the greatest hazard, as they are overrepresented in fatal crashes. Almost half again as many fatal crashes occur in areas without street lights, as in dark, but lighted areas.

## INTERSECTION CRASHES BY TRAFFIC CONTROL TYPE

TRAFFIC CONTROL TYPE	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Total	Number	% of Fatal	A	B	C	
Signal	40,254	48.7	78	32.1	661	2,225	7,195	30,095
Stop Sign	19,132	23.2	90	37.0	534	1,394	3,217	13,897
Yield Sign	1,657	2.0	1	0.4	22	95	241	1,298
None of These	20,466	24.8	70	28.8	395	1,173	2,969	15,859
Unknown	1,093	1.3	4	1.6	23	47	178	841
<b>Total</b>	<b>82,602</b>	<b>100.0</b>	<b>243</b>	<b>100.0</b>	<b>1,635</b>	<b>4,934</b>	<b>13,800</b>	<b>61,990</b>



Intersections with stop signs are overrepresented in fatal crashes. Driver perception, awareness, and adherence to traffic control signing are all key factors in crashes at intersections.

## CONSTRUCTION ZONE CRASHES

CONSTRUCTION ZONE TYPE	All Crashes		Fatal Crashes		Injury Crashes			PDO Crashes
	Number	% of Subtotal	Number	% of Subtotal	A	B	C	
<b>Construction/Maintenance</b>		Indicates roadway construction, maintenance or repair. The building, maintenance or repair of the road itself and roadway-related features (e.g., overhead signs, signals).						
<b>Activity - On Road</b>								
Lane Closed	2,460	47.7	5	23.8	35	99	332	1,989
Lane Open	765	14.8	3	14.3	9	32	99	622
Unknown Lane Closure	33	0.6	0	0.0	0	3	7	23
<b>Activity - Off Road</b>								
Lane Closed	282	5.5	3	14.3	5	13	49	212
Lane Open	339	6.6	2	9.5	10	21	43	263
Unknown Lane Closure	9	0.2	0	0.0	0	0	0	9
<b>Activity - None</b>								
Lane Closed	696	13.5	5	23.8	11	26	121	533
Lane Open	455	8.8	2	9.5	6	32	52	363
Unknown Lane Closure	12	0.2	0	0.0	1	0	2	9
<b>Activity - Unknown</b>								
Lane Closed	40	0.8	0	0.0	3	2	8	27
Lane Open	11	0.2	0	0.0	0	0	0	11
Unknown Lane Closure	59	1.1	1	4.8	1	2	5	50
Subtotal	5,161	100.0	21	100.0	81	230	718	4,111

<b>Utility</b>		Indicates work on facilities other than the roadway such as telephone, electrical, cable television, water, or sewer.						
<b>Activity - On Road</b>								
Lane Closed	57	11.6	0	0.0	1	3	8	45
Lane Open	168	34.1	0	0.0	0	9	10	149
Unknown Lane Closure	0	0.0	0	0.0	0	0	0	0
<b>Activity - Off Road</b>								
Lane Closed	14	2.8	0	0.0	0	1	3	10
Lane Open	33	6.7	0	0.0	1	1	3	28
Unknown Lane Closure	1	0.2	0	0.0	0	0	0	1
<b>Activity - None</b>								
Lane Closed	11	2.2	0	0.0	0	1	1	9
Lane Open	208	42.2	1	100.0	0	12	14	181
Unknown Lane Closure	0	0.0	0	0.0	0	0	0	0
<b>Activity - Unknown</b>								
Lane Closed	0	0.0	0	0.0	0	0	0	0
Lane Open	0	0.0	0	0.0	0	0	0	0
Unknown Lane Closure	1	0.2	0	0.0	0	0	0	1
Subtotal	493	100.0	1	100.0	2	27	39	424

<b>Unknown Type / Unknown Lane Closure / Activity None</b>							
Subtotal	12,379		8		312	549	1,483

<b>Total</b>	18,033		30		395	806	2,240
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Most fatal crashes in construction/maintenance zones occur when the lanes are closed, regardless of activity on road.

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**Vehicle/  
Driver**





## VEHICLE TYPE CRASH INVOLVEMENT



### MOST SEVERE OUTCOME IN CRASH

### MOST SEVERE OUTCOME IN VEHICLE

Vehicle Type	Motor Vehicles		Fatal Crash		Injury Crash	PDO Crash	Fatality in Veh		Injury	No Injury
	Number of Vehicles	% of Total	Number	% of Total			Number	% of Total		
Passenger Car and Station Wagon	350,120	74.7	795	60.0	69,517	279,808	453	62.9	43,871	305,796
Van and Motorhome	25,905	5.5	43	3.2	5,390	20,472	23	3.2	3,015	22,867
Pickup	57,404	12.2	200	15.1	9,956	47,248	68	9.4	5,170	52,166
Small Truck (under 10,000 lbs.)	10,771	2.3	13	1.0	2,090	8,668	3	0.4	1,170	9,598
Motorcycle	3,362	0.7	125	9.4	2,455	782	119	16.5	2,417	826
Moped	339	0.1	9	0.7	267	63	9	1.3	262	68
Go Cart	33	0.0	3	0.2	15	15	3	0.4	12	18
Snowmobile	156	0.0	8	0.6	105	43	8	1.1	97	51
Off-Road Vehicle	223	0.0	18	1.4	182	23	18	2.5	170	35
Other	1,780	0.4	9	0.7	310	1,461	7	1.0	157	1,616
Unknown	8,146	1.7	10	0.8	730	7,406	0	0.0	41	8,105
CDL Truck/Bus (breakdown below)	10,729	2.3	93	7.0	1,829	8,807	9	1.3	504	10,216
<b>Total Number of Vehicles</b>	<b>468,968</b>	<b>100.0</b>	<b>1,326</b>	<b>100.0</b>	<b>92,846</b>	<b>374,796</b>	<b>720</b>	<b>100.0</b>	<b>56,886</b>	<b>411,362</b>

Special Note: School bus is not recorded on the UD-10 and cannot be broken out of CDL Truck/Bus.

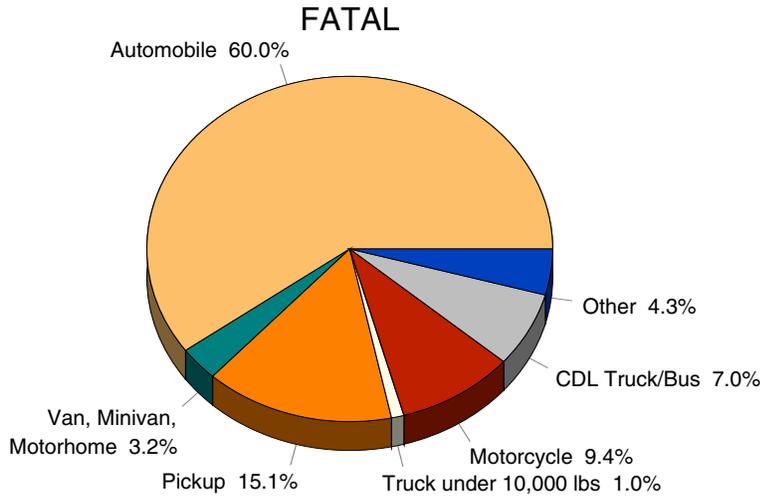
CDL Truck/Bus Sub-category Type	Motor Vehicles		Fatal Crash		Injury Crash	PDO Crash	Fatality in Veh		Injury	No Injury
	Number of Vehicles	% of Total	Number	% of Total			Number	% of Total		
Commercial Vehicle: Group A	5,691	53.0	60	64.5	988	4,643	6	66.7	235	5,450
Commercial Vehicle: Group B	2,407	22.4	18	19.4	437	1,952	2	22.2	157	2,248
Commercial Vehicle: Group C	393	3.7	2	2.2	65	326	1	11.1	32	360
Other Truck	846	7.9	10	10.8	150	686	0	0.0	42	804
Unknown Truck	1,392	13.0	3	3.2	189	1,200	0	0.0	38	1,354
<b>Total Number of Vehicles</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>8,807</b>	<b>9</b>	<b>100.0</b>	<b>504</b>	<b>10,216</b>

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

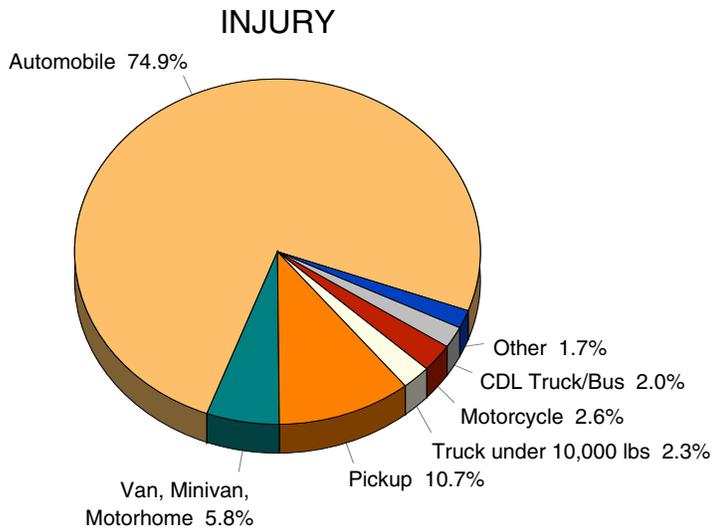
Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

## VEHICLE TYPES IN CRASHES BY CRASH SEVERITY

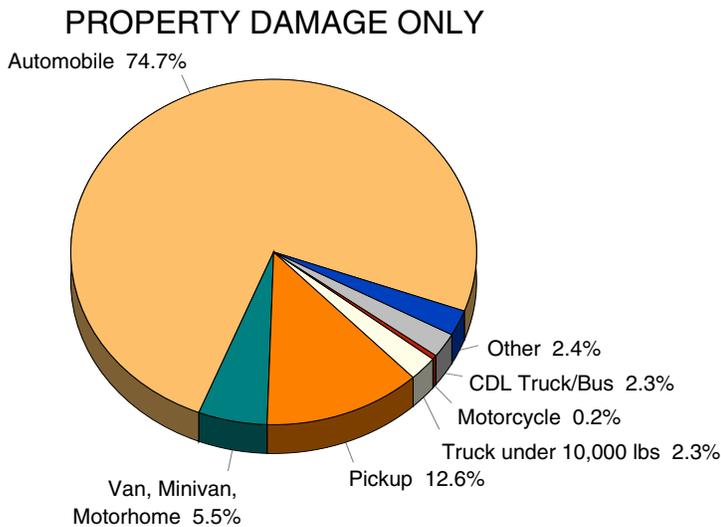


The top chart shows that 75 percent of vehicles involved in fatal crashes are automobiles or pickups. Van/minivan/motorhome has a fatal crash involvement of 3.2 percent. Motorcycles have a fatal crash involvement of 9.4 percent.



Special Note:  
"Other" consists of moped, go-cart, snowmobile, off-road vehicle, other, and unknown.

As with fatal crashes, injury and property damage only (PDO) crashes are represented primarily by cars and pickups.



## ACTION PRIOR TO CRASH

### MOST SEVERE OUTCOME IN CRASH

DRIVER ACTION	Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Going straight ahead	250,314	53.4	1,023	5,012	13,277	32,547	198,455
Turning left	30,779	6.6	71	713	2,213	5,072	22,710
Turning right	12,461	2.7	12	123	482	1,258	10,586
Stopped on roadway	49,482	10.6	41	467	1,831	9,208	37,935
In prior crash	501	0.1	1	10	32	98	360
Changing lanes	11,515	2.5	16	107	358	975	10,059
Backing	10,924	2.3	3	33	87	302	10,499
Slowing/stopping on roadway	43,561	9.3	20	292	1,420	7,162	34,667
Slowing/stopping other	593	0.1	1	6	29	86	471
Starting up on roadway	9,968	2.1	24	139	473	1,644	7,688
Starting up other	214	0.0	1	6	11	36	160
Entering parking	490	0.1	0	5	15	28	442
Leaving parking	1,261	0.3	2	15	51	141	1,052
Entering roadway	5,986	1.3	12	108	343	846	4,677
Leaving roadway	752	0.2	7	48	81	106	510
Making U-turn	920	0.2	5	29	57	123	706
Overtaking or passing	3,102	0.7	18	96	186	328	2,474
Avoiding object	735	0.2	0	27	57	100	551
Avoiding animal	1,170	0.2	3	52	113	152	850
Avoiding pedestrian	112	0.0	8	9	18	23	54
Avoiding vehicle (front/back)	3,627	0.8	17	112	261	585	2,652
Avoiding vehicle (angle)	1,598	0.3	8	40	118	256	1,176
Driverless moving	201	0.0	2	6	10	10	173
Parked	16,891	3.6	18	164	432	757	15,520
Crossing at intersection	23	0.0	1	0	2	5	15
Crossing not at intersection	21	0.0	0	0	2	2	17
Getting on/off vehicle	5	0.0	0	0	1	0	4
In roadway with traffic	17	0.0	0	0	3	1	13
In roadway against traffic	21	0.0	0	1	1	0	19
Standing or lying in roadway	4	0.0	0	0	0	0	4
Pushing/working on vehicle	5	0.0	0	0	2	0	3
Other working in roadway	46	0.0	0	1	0	6	39
Playing in roadway	2	0.0	0	0	1	0	1
In roadway other reason	15	0.0	0	0	0	1	14
Not in roadway	28	0.0	0	1	4	3	20
Other	392	0.1	2	10	38	54	288
Unknown	11,232	2.4	10	117	331	842	9,932
<b>Total</b>	<b>468,968</b>	<b>100.0</b>	<b>1,326</b>	<b>7,749</b>	<b>22,340</b>	<b>62,757</b>	<b>374,796</b>

## ACTION PRIOR TO CRASH (continued)

### MOTORCYCLIST – INJURY SEVERITY

MOTORCYCLIST ACTION	Motorcycles		Motorcyclists*		Fatality	Injury			No Injury
	Number of Motorcycles	% of Total	Number of Motorcyclists	% of Total		A	B	C	
Going straight ahead	2,170	64.5	2,420	64.7	108	458	785	547	496
Turning left	157	4.7	170	4.5	1	27	59	42	37
Turning right	119	3.5	130	3.5	0	13	46	31	40
Stopped on roadway	169	5.0	191	5.1	1	11	24	50	104
In prior crash	1	0.0	1	0.0	0	0	0	0	0
Changing lanes	49	1.5	60	1.6	5	14	20	10	10
Backing	4	0.1	4	0.1	0	0	0	0	3
Slowing/stopping on roadway	210	6.2	231	6.2	1	26	82	54	65
Slowing/stopping other	4	0.1	4	0.1	0	1	1	1	1
Starting up on roadway	47	1.4	53	1.4	1	4	13	14	21
Starting up other	4	0.1	4	0.1	0	0	2	0	2
Entering parking	1	0.0	1	0.0	0	0	0	0	1
Leaving parking	3	0.1	3	0.1	0	0	0	1	2
Entering roadway	21	0.6	22	0.6	0	2	9	5	6
Leaving roadway	8	0.2	9	0.2	0	2	3	2	2
Making U-turn	5	0.1	5	0.1	0	2	1	1	1
Overtaking or passing	69	2.1	81	2.2	6	17	26	15	16
Avoiding object	14	0.4	16	0.4	0	3	6	3	4
Avoiding animal	32	1.0	32	0.9	0	6	11	11	4
Avoiding pedestrian	1	0.0	1	0.0	0	0	0	0	1
Avoiding vehicle (front/back)	108	3.2	120	3.2	1	26	42	29	22
Avoiding vehicle (angle)	52	1.5	61	1.6	1	4	30	16	10
Driverless moving	1	0.0	1	0.0	0	0	0	0	1
Parked	43	1.3	44	1.2	0	1	1	4	9
Crossing at intersection	0	0.0	0	0.0	0	0	0	0	0
Crossing not at intersection	0	0.0	0	0.0	0	0	0	0	0
Getting on/off vehicle	0	0.0	0	0.0	0	0	0	0	0
In roadway with traffic	3	0.1	3	0.1	0	0	1	0	2
In roadway against traffic	0	0.0	0	0.0	0	0	0	0	0
Standing or lying in roadway	0	0.0	0	0.0	0	0	0	0	0
Pushing/working on vehicle	0	0.0	0	0.0	0	0	0	0	0
Other working in roadway	2	0.1	2	0.1	0	1	0	0	1
Playing in roadway	0	0.0	0	0.0	0	0	0	0	0
In roadway other reason	0	0.0	0	0.0	0	0	0	0	0
Not in roadway	0	0.0	0	0.0	0	0	0	0	0
Other	9	0.3	10	0.3	0	3	5	1	1
Unknown	56	1.7	62	1.7	0	8	17	14	12
<b>Total</b>	<b>3,362</b>	<b>100.0</b>	<b>3,741</b>	<b>100.0</b>	<b>125</b>	<b>629</b>	<b>1,184</b>	<b>851</b>	<b>874</b>

\* This table includes 78 motorcyclists (drivers and passengers) with unknown injury severity

## ACTION PRIOR TO CRASH (continued)

### BICYCLIST - INJURY SEVERITY

BICYCLIST ACTION	Bicycles		Bicyclists*		Fatality	Injury			No Injury
	Number of Bicycles	% of Total	Number of Bicyclists	% of Total		A	B	C	
Going straight ahead	1,161	58.8	1,163	58.8	20	81	376	458	185
Turning left	40	2.0	40	2.0	0	5	19	12	4
Turning right	19	1.0	19	1.0	0	3	9	3	2
Stopped on roadway	11	0.6	11	0.6	0	2	0	8	1
In prior crash	0	0.0	0	0.0	0	0	0	0	0
Changing lanes	22	1.1	22	1.1	0	2	11	5	4
Backing	0	0.0	0	0.0	0	0	0	0	0
Slowing/stopping on roadway	5	0.3	5	0.3	0	1	2	1	1
Slowing/stopping other	2	0.1	2	0.1	0	0	0	0	2
Starting up on roadway	10	0.5	10	0.5	0	2	2	3	3
Starting up other	3	0.2	3	0.2	0	1	2	0	0
Entering parking	0	0.0	0	0.0	0	0	0	0	0
Leaving parking	3	0.2	3	0.2	0	0	2	1	0
Entering roadway	118	6.0	118	6.0	2	12	39	48	14
Leaving roadway	1	0.1	1	0.1	0	0	0	1	0
Making U-turn	4	0.2	4	0.2	0	2	2	0	0
Overtaking or passing	5	0.3	5	0.3	0	0	1	3	1
Avoiding object	2	0.1	2	0.1	0	2	0	0	0
Avoiding animal	0	0.0	0	0.0	0	0	0	0	0
Avoiding pedestrian	0	0.0	0	0.0	0	0	0	0	0
Avoiding vehicle (front/back)	6	0.3	6	0.3	0	0	2	3	0
Avoiding vehicle (angle)	4	0.2	4	0.2	0	1	0	2	1
Driverless moving	1	0.1	1	0.1	0	0	0	1	0
Parked	1	0.1	1	0.1	0	0	0	1	0
Crossing at intersection	332	16.8	332	16.8	2	22	113	131	53
Crossing not at intersection	76	3.8	76	3.8	0	7	34	26	6
Getting on/off vehicle	0	0.0	0	0.0	0	0	0	0	0
In roadway with traffic	38	1.9	38	1.9	3	10	8	14	3
In roadway against traffic	27	1.4	27	1.4	1	3	10	9	4
Standing or lying in roadway	1	0.1	1	0.1	0	0	0	0	1
Pushing/working on vehicle	0	0.0	0	0.0	0	0	0	0	0
Other working in roadway	0	0.0	0	0.0	0	0	0	0	0
Playing in roadway	3	0.2	3	0.2	0	0	1	1	1
In roadway other reason	10	0.5	10	0.5	0	0	4	5	0
Not in roadway	21	1.1	21	1.1	1	1	10	6	3
Other	19	1.0	19	1.0	0	1	7	6	4
Unknown	31	1.6	31	1.6	0	5	4	6	6
<b>Total</b>	<b>1,976</b>	<b>100.0</b>	<b>1,978</b>	<b>100.0</b>	<b>29</b>	<b>163</b>	<b>658</b>	<b>754</b>	<b>299</b>

\* Includes 75 bicyclists with unknown injury severity

## ACTION PRIOR TO CRASH (continued)

### PEDESTRIAN - INJURY SEVERITY

PEDESTRIAN ACTION	Pedestrians*		Fatality	Injury			No Injury
	Number of Pedestrians	% of Total		A	B	C	
Going straight ahead	105	4.5	2	12	20	38	21
Turning left	9	0.4	0	0	3	3	3
Turning right	2	0.1	0	1	0	1	0
Stopped on roadway	9	0.4	0	1	4	2	1
In prior crash	2	0.1	0	0	0	2	0
Changing lanes	0	0.0	0	0	0	0	0
Backing	0	0.0	0	0	0	0	0
Slowing/stopping on roadway	0	0.0	0	0	0	0	0
Slowing/stopping other	0	0.0	0	0	0	0	0
Starting up on roadway	3	0.1	0	0	2	1	0
Starting up other	0	0.0	0	0	0	0	0
Entering parking	2	0.1	0	0	1	1	0
Leaving parking	0	0.0	0	0	0	0	0
Entering roadway	16	0.7	0	1	7	6	1
Leaving roadway	1	0.0	0	0	0	1	0
Making U-turn	0	0.0	0	0	0	0	0
Overtaking or passing	1	0.0	0	0	0	0	0
Avoiding object	1	0.0	0	0	0	0	1
Avoiding animal	1	0.0	0	0	0	0	0
Avoiding pedestrian	0	0.0	0	0	0	0	0
Avoiding vehicle (front/back)	5	0.2	0	0	3	1	1
Avoiding vehicle (angle)	1	0.0	0	0	0	1	0
Driverless moving	0	0.0	0	0	0	0	0
Parked	1	0.0	0	1	0	0	0
Crossing at intersection	663	28.4	13	87	208	272	56
Crossing not at intersection	594	25.5	48	122	198	168	31
Getting on/off vehicle	26	1.1	1	4	12	7	0
In roadway with traffic	217	9.3	19	43	53	68	27
In roadway against traffic	29	1.2	3	8	5	9	1
Standing or lying in roadway	103	4.4	14	19	37	24	6
Pushing/working on vehicle	26	1.1	1	12	4	9	0
Other working in roadway	31	1.3	2	6	12	9	2
Playing in roadway	44	1.9	0	7	20	12	2
In roadway other reason	148	6.3	10	31	44	44	12
Not in roadway	113	4.8	3	22	32	38	9
Other	96	4.1	1	15	29	33	11
Unknown	84	3.6	14	12	15	20	12
<b>Total</b>	<b>2,333</b>	<b>100.0</b>	<b>131</b>	<b>404</b>	<b>709</b>	<b>770</b>	<b>197</b>

\* Includes 122 pedestrians with unknown injury severity

## MOST HARMFUL EVENT

### MOST SEVERE OUTCOME IN CRASH

NONCOLLISION	Motor Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Loss of control	1,914	0.4	7	60	176	277	1,394
Cross center/median	384	0.1	2	10	33	45	294
Ran off road left	604	0.1	1	13	41	70	479
Ran off road right	1,028	0.2	0	23	64	114	827
Re-enter road	64	0.0	0	1	6	13	44
Overturn	6,215	1.3	81	490	1,203	1,471	2,970
Separation of units	209	0.0	0	5	3	25	176
Fire/explosion	399	0.1	8	5	16	31	339
Immersion	61	0.0	1	2	3	8	47
Jackknife	234	0.0	0	2	4	19	209
Downhill runaway	70	0.0	0	1	3	14	52
Cargo loss/shift	544	0.1	2	6	4	31	501
Individual fell off	383	0.1	16	103	151	72	41
Other noncollision	1,160	0.2	4	24	81	105	946
<b>NONCOLLISION Subtotal</b>	<b>13,269</b>	<b>2.8</b>	<b>122</b>	<b>745</b>	<b>1,788</b>	<b>2,295</b>	<b>8,319</b>

### MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH NONFIXED OBJECT	Motor Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Pedestrian	1,869	0.4	132	345	583	614	195
Bicycle / Pedalcycle	1,720	0.4	29	147	576	646	322
Motor vehicle in transport	328,265	70.0	777	4,878	15,259	51,299	256,052
Parked motor vehicle	13,462	2.9	12	94	272	581	12,503
Railway train	49	0.0	2	8	4	7	28
Animal	56,237	12.0	3	61	292	645	55,236
Other nonfixed objects	4,175	0.9	6	34	104	180	3,851
<b>COLLISION NONFIXED Subtotal</b>	<b>405,777</b>	<b>86.5</b>	<b>961</b>	<b>5,567</b>	<b>17,090</b>	<b>53,972</b>	<b>328,187</b>

## MOST HARMFUL EVENT (continued)

### MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH FIXED OBJECT	Motor Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Bridge/pier/abutment	422	0.1	3	8	27	70	314
Bridge parapet end	130	0.0	0	1	3	12	114
Bridge rail	315	0.1	0	5	22	55	233
Guardrail face	2,955	0.6	9	46	135	355	2,410
Guardrail end	502	0.1	3	8	34	67	390
Median barrier	3,824	0.8	3	50	258	751	2,762
Highway traffic sign post	2,425	0.5	8	10	53	107	2,247
Highway signal post	223	0.0	1	2	10	12	198
Luminaire/light support	525	0.1	1	21	34	67	402
Utility pole	2,931	0.6	14	101	300	467	2,049
Other pole	876	0.2	4	16	46	80	730
Culvert	519	0.1	1	29	64	105	320
Curb	1,354	0.3	3	19	74	122	1,136
Ditch	5,620	1.2	22	178	455	721	4,244
Embankment	1,209	0.3	6	47	140	181	835
Fence	979	0.2	5	8	33	79	854
Mailbox	1,822	0.4	2	6	25	53	1,736
Tree	8,774	1.9	136	520	987	1,389	5,742
Rail crossing signal	67	0.0	0	3	5	2	57
Building	634	0.1	5	41	74	104	410
Traffic island	46	0.0	1	1	0	3	41
Fire hydrant	484	0.1	1	8	26	45	404
Impact attenuator	50	0.0	1	1	7	14	27
Other fixed object	2,627	0.6	12	95	214	277	2,029
<b>COLLISION FIXED Subtotal</b>	<b>39,313</b>	<b>8.4</b>	<b>241</b>	<b>1,224</b>	<b>3,026</b>	<b>5,138</b>	<b>29,684</b>

### MOST SEVERE OUTCOME IN CRASH

	Motor Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Unknown Event	10,609	2.3	2	213	436	1,352	8,606
<b>TOTAL MOST HARMFUL EVENT</b>	<b>468,968</b>	<b>100.0</b>	<b>1,326</b>	<b>7,749</b>	<b>22,340</b>	<b>62,757</b>	<b>374,796</b>

## VEHICLE DEFECTS IN CRASH INVOLVEMENT

### MOST SEVERE OUTCOME IN CRASH

VEHICLE DEFECTS	Motor Vehicles		Fatal Crash	Injury Crash			PDO Crash
	Number of Vehicles	% of Total		A	B	C	
Brakes	812	0.2	4	27	39	149	593
Lights/reflectors	123	0.0	0	4	5	19	95
Steering	137	0.0	0	10	15	19	93
Tires/wheels	492	0.1	5	5	51	64	367
Windows	23	0.0	0	0	1	3	19
Other	652	0.1	1	10	30	76	535
None or Unknown	466,729	99.5	1,316	7,693	22,199	62,427	373,094
<b>TOTAL</b>	<b>468,968</b>	<b>100.0</b>	<b>1,326</b>	<b>7,749</b>	<b>22,340</b>	<b>62,757</b>	<b>374,796</b>

## DRIVER HAZARDOUS ACTION

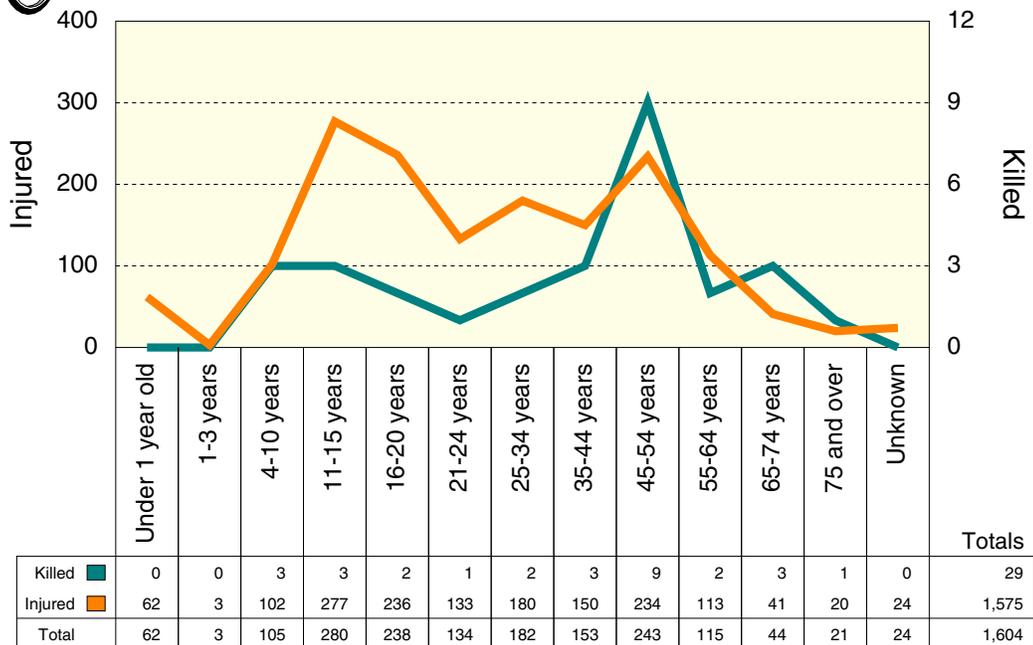
### MOST SEVERE OUTCOME IN CRASH

HAZARDOUS ACTION	All Drivers		Fatal Crash	Injury Crash			PDO Crash
	Number of Drivers	% of Total		A	B	C	
None	241,006	51.4	538	3,238	9,745	29,874	197,611
Speed too fast	28,773	6.1	172	758	2,053	4,112	21,678
Speed too slow	365	0.1	1	4	18	58	284
Failed to yield	39,143	8.3	99	875	2,765	6,751	28,653
Disregard traffic control	9,377	2.0	66	356	958	2,190	5,807
Drove wrong way	317	0.1	5	18	28	51	215
Drove left of center	2,197	0.5	48	139	215	310	1,485
Improper passing	2,233	0.5	4	29	84	190	1,926
Improper lane use	9,095	1.9	6	57	261	645	8,126
Improper turn	4,284	0.9	4	43	174	430	3,633
Improper/no signal	635	0.1	1	3	30	70	531
Improper backing	7,784	1.7	1	10	41	136	7,596
Unable to stop in assured clear distance	62,564	13.3	41	495	2,025	10,640	49,363
Reckless driving	2,300	0.5	33	231	309	355	1,372
Careless/negligent driving	12,195	2.6	87	590	1,360	2,003	8,155
Other	16,732	3.6	82	447	1,161	2,105	12,937
Unknown	29,968	6.4	138	456	1,113	2,837	25,424
<b>TOTAL</b>	<b>468,968</b>	<b>100.0</b>	<b>1,326</b>	<b>7,749</b>	<b>22,340</b>	<b>62,757</b>	<b>374,796</b>



## MICHIGAN BICYCLE CRASHES

### 2010 Bicycle Crash Information



In 2010, there were 1,076 bicycles involved in motor vehicles crashes, with 29 bicyclists killed and 1,575 injured.

More bicyclists within the 45-54 years of age group died than any other age group, with nine killed (31.0%).

### BICYCLE HELMET USE AND INJURY SEVERITY

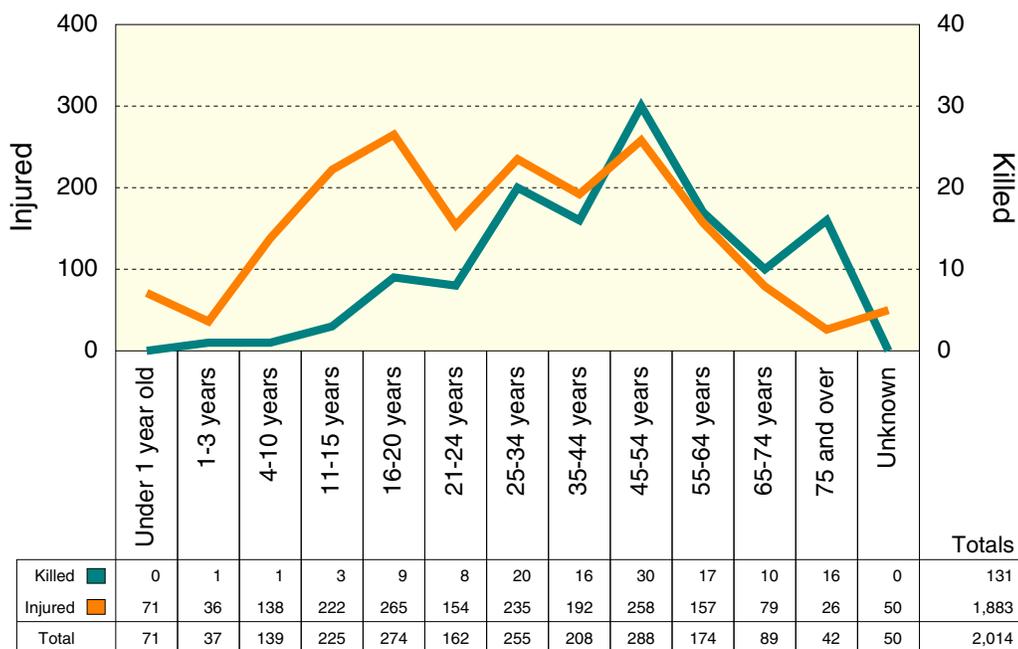
HELMET USE	Fatality	Injury			No Injury
		A	B	C	
Worn	1	18	92	88	28
Not Worn	19	74	321	317	97
Unknown	9	71	245	349	174
Total	29	163	658	754	299

The National Center for Statistics and Analysis of the National Highway Traffic Safety Administration cites a study by the Centers for Disease Control [12]: "Bicycle helmets are 85 to 88 percent effective in mitigating head and brain injuries in all types of bicycle accidents, making the use of helmets the **single most effective countermeasure** available to reduce head injuries and fatalities resulting from bicycle crashes."



## MICHIGAN PEDESTRIAN CRASHES

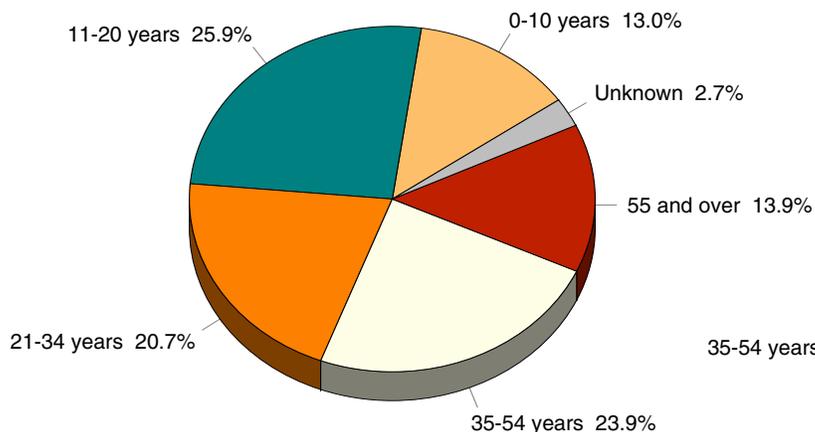
### 2010 Pedestrian Crash Information



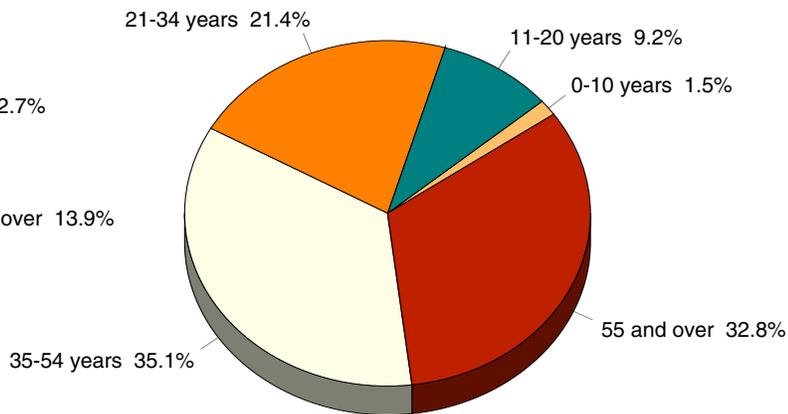
In 2010, there were 2,333 pedestrians involved in motor vehicles crashes, with 131 pedestrians killed and 1,883 injured.

More pedestrians within the 45-54 years of age group died than any other age group, with 30 killed (22.9%).

Pedestrians Injured



Pedestrians Killed





## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS

### Most Harmful Event

NONCOLLISION	SNOWMOBILES		MOST SEVERE OUTCOME IN CRASH				
	Number of Snowmobiles	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Loss of control	2	1.3	0	1	0	1	0
Cross center/median	0	0.0	0	0	0	0	0
Ran off road left	1	0.6	0	1	0	0	0
Ran off road right	1	0.6	0	0	1	0	0
Re-enter road	1	0.6	0	0	1	0	0
Overturn	14	9.0	0	2	4	7	1
Separation of units	0	0.0	0	0	0	0	0
Fire/explosion	2	1.3	0	0	0	0	2
Immersion	0	0.0	0	0	0	0	0
Jackknife	0	0.0	0	0	0	0	0
Downhill runaway	0	0.0	0	0	0	0	0
Cargo loss/shift	0	0.0	0	0	0	0	0
Individual fell off	14	9.0	0	6	4	4	0
Other noncollision	2	1.3	0	0	0	0	2
<b>NONCOLLISION Subtotal</b>	<b>37</b>	<b>23.7</b>	<b>0</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>5</b>

HAD A COLLISION WITH NONFIXED OBJECT	SNOWMOBILES		MOST SEVERE OUTCOME IN CRASH				
	Number of Snowmobiles	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Pedestrian	1	0.6	0	1	0	0	0
Bicycle / pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	48	30.8	1	16	8	4	19
Parked motor vehicle	8	5.1	0	0	2	1	5
Railway train	0	0.0	0	0	0	0	0
Animal	2	1.3	0	0	0	1	1
Other nonfixed objects	5	3.2	0	1	2	1	1
<b>COLLISION NONFIXED Subtotal</b>	<b>64</b>	<b>41.0</b>	<b>1</b>	<b>18</b>	<b>12</b>	<b>7</b>	<b>26</b>



## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS (continued)

### Most Harmful Event (continued)

HAD A COLLISION WITH FIXED OBJECT	SNOWMOBILES		MOST SEVERE OUTCOME IN CRASH				
	Number of Snowmobiles	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Bridge/pier/abutment	0	0.0	0	0	0	0	0
Bridge parapet end	0	0.0	0	0	0	0	0
Bridge rail	0	0.0	0	0	0	0	0
Guardrail face	0	0.0	0	0	0	0	0
Guardrail end	0	0.0	0	0	0	0	0
Median barrier	0	0.0	0	0	0	0	0
Highway traffic sign post	2	1.3	0	1	0	0	1
Highway signal post	0	0.0	0	0	0	0	0
Luminaire/light support	0	0.0	0	0	0	0	0
Utility pole	0	0.0	0	0	0	0	0
Other pole	1	0.6	1	0	0	0	0
Culvert	0	0.0	0	0	0	0	0
Curb	0	0.0	0	0	0	0	0
Ditch	3	1.9	1	0	1	1	0
Embankment	3	1.9	0	2	0	1	0
Fence	1	0.6	0	0	0	1	0
Mailbox	1	0.6	0	0	0	1	0
Tree	31	19.9	4	8	9	3	7
Rail crossing signal	0	0.0	0	0	0	0	0
Building	0	0.0	0	0	0	0	0
Traffic island	0	0.0	0	0	0	0	0
Fire hydrant	0	0.0	0	0	0	0	0
Impact attenuator	0	0.0	0	0	0	0	0
Other fixed object	9	5.8	1	1	1	4	2
<b>COLLISION FIXED Subtotal</b>	<b>51</b>	<b>32.7</b>	<b>7</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>10</b>
Unknown Event	4	2.6	0	0	0	2	2
<b>TOTAL MOST HARMFUL EVENT</b>	<b>156</b>	<b>100.0</b>	<b>8</b>	<b>40</b>	<b>33</b>	<b>32</b>	<b>43</b>

NOTE: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.

A total of 156 snowmobiles were reported in crashes on Michigan public roadways during 2010. Eight of those snowmobiles were involved in eight fatal crashes with seven of their operators and two of their passengers killed. Alcohol was involved in seven of the fatal crashes.



## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS

### Most Harmful Event

NONCOLLISION	ORV/ATV		MOST SEVERE OUTCOME IN CRASH				
	Number of ORV/ATVs	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Loss of control	7	3.1	1	3	3	0	0
Cross center/median	0	0.0	0	0	0	0	0
Ran off road left	0	0.0	0	0	0	0	0
Ran off road right	3	1.3	0	0	2	1	0
Re-enter road	0	0.0	0	0	0	0	0
Overturn	52	23.3	1	20	16	11	4
Separation of units	1	0.4	0	0	0	0	1
Fire/explosion	1	0.4	0	0	1	0	0
Immersion	0	0.0	0	0	0	0	0
Jackknife	0	0.0	0	0	0	0	0
Downhill runaway	0	0.0	0	0	0	0	0
Cargo loss/shift	0	0.0	0	0	0	0	0
Individual fell off	31	13.9	0	14	11	4	2
Other noncollision	2	0.9	0	1	1	0	0
<b>NONCOLLISION Subtotal</b>	<b>97</b>	<b>43.5</b>	<b>2</b>	<b>38</b>	<b>34</b>	<b>16</b>	<b>7</b>

HAD A COLLISION WITH NONFIXED OBJECT	ORV/ATV		MOST SEVERE OUTCOME IN CRASH				
	Number of ORV/ATVs	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Pedestrian	0	0.0	0	0	0	0	0
Bicycle / pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	59	26.5	8	15	15	8	13
Parked motor vehicle	4	1.8	0	1	2	0	1
Railway train	0	0.0	0	0	0	0	0
Animal	2	0.9	0	0	1	1	0
Other nonfixed objects	4	1.8	0	2	0	2	0
<b>COLLISION NONFIXED Subtotal</b>	<b>69</b>	<b>30.9</b>	<b>8</b>	<b>18</b>	<b>18</b>	<b>11</b>	<b>14</b>



## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS (continued)

### Most Harmful Event (continued)

HAD A COLLISION WITH FIXED OBJECT	ORV/ATV		MOST SEVERE OUTCOME IN CRASH				
	Number of ORV/ATVs	% of Total	Fatal Crash	Injury Crash			PDO Crash
				A	B	C	
Bridge/pier/abutment	0	0.0	0	0	0	0	0
Bridge parapet end	0	0.0	0	0	0	0	0
Bridge rail	0	0.0	0	0	0	0	0
Guardrail face	2	0.9	0	1	0	1	0
Guardrail end	0	0.0	0	0	0	0	0
Median barrier	0	0.0	0	0	0	0	0
Highway traffic sign post	1	0.4	0	0	1	0	0
Highway signal post	0	0.0	0	0	0	0	0
Luminaire/light support	0	0.0	0	0	0	0	0
Utility pole	1	0.4	0	0	1	0	0
Other pole	0	0.0	0	0	0	0	0
Culvert	0	0.0	0	0	0	0	0
Curb	0	0.0	0	0	0	0	0
Ditch	5	2.2	0	2	2	1	0
Embankment	2	0.9	0	1	0	1	0
Fence	2	0.9	1	0	0	1	0
Mailbox	1	0.4	0	0	1	0	0
Tree	33	14.8	6	11	7	7	2
Rail crossing signal	0	0.0	0	0	0	0	0
Building	0	0.0	0	0	0	0	0
Traffic island	0	0.0	0	0	0	0	0
Fire hydrant	1	0.4	0	0	1	0	0
Impact attenuator	0	0.0	0	0	0	0	0
Other fixed object	6	2.7	1	3	2	0	0
<b>COLLISION FIXED Subtotal</b>	<b>54</b>	<b>24.2</b>	<b>8</b>	<b>18</b>	<b>15</b>	<b>11</b>	<b>2</b>
Unknown Event	3	1.3	0	1	2	0	0
<b>TOTAL MOST HARMFUL EVENT</b>	<b>223</b>	<b>100.0</b>	<b>18</b>	<b>75</b>	<b>69</b>	<b>38</b>	<b>23</b>

NOTE: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.

A total of 223 off-road/all-terrain vehicles were reported in crashes on Michigan public roadways during 2010. Twenty-one of those ORV/ATVs were involved in sixteen fatal crashes with seventeen ORV/ATV operators and one ORV/ATV passenger killed. Alcohol was involved in eight of the fatal crashes, and one of those fatal crashes also involved drugs. One fatal crash involved drugs only.



## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS

SNOWMOBILES MOST SEVERE OUTCOME IN CRASH

Driver Hazardous Action	SNOWMOBILES		Fatal Crash	MOST SEVERE OUTCOME IN CRASH			PDO Crash
	Number of Snowmobiles	% of Total		A	B	C	
None	35	22.4	0	5	8	10	12
Speed too fast	55	35.3	7	17	11	16	4
Speed too slow	2	1.3	0	1	0	0	1
Failed to yield	20	12.8	1	6	3	0	10
Disregard traffic control	1	0.6	0	0	1	0	0
Drove wrong way	2	1.3	0	1	0	0	1
Drove left of center	2	1.3	0	1	0	0	1
Improper passing	1	0.6	0	0	0	0	1
Improper lane use	1	0.6	0	1	0	0	0
Improper turn	0	0.0	0	0	0	0	0
Improper/no signal	0	0.0	0	0	0	0	0
Improper backing	0	0.0	0	0	0	0	0
Unable to stop in assured clear distance	8	5.1	0	1	2	2	3
Reckless driving	2	1.3	0	0	1	1	0
Careless/negligent driving	11	7.1	0	2	2	2	5
Other	10	6.4	0	4	5	0	1
Unknown	6	3.8	0	1	0	1	4
<b>TOTAL</b>	<b>156</b>	<b>100.0</b>	<b>8</b>	<b>40</b>	<b>33</b>	<b>32</b>	<b>43</b>



## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS

ORV/ATV MOST SEVERE OUTCOME IN CRASH

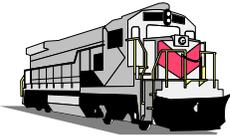
Driver Hazardous Action	ORV/ATV		Fatal Crash	MOST SEVERE OUTCOME IN CRASH			PDO Crash
	Number of ORV/ATVs	% of Total		A	B	C	
None	32	14.3	0	6	14	8	4
Speed too fast	71	31.8	5	25	21	14	6
Speed too slow	0	0.0	0	0	0	0	0
Failed to yield	13	5.8	1	4	3	1	4
Disregard traffic control	4	1.8	2	0	0	1	1
Drove wrong way	0	0.0	0	0	0	0	0
Drove left of center	0	0.0	0	0	0	0	0
Improper passing	0	0.0	0	0	0	0	0
Improper lane use	1	0.4	0	1	0	0	0
Improper turn	1	0.4	0	0	0	0	1
Improper/no signal	1	0.4	0	0	0	0	1
Improper backing	0	0.0	0	0	0	0	0
Unable to stop in assured clear distance	7	3.1	0	4	1	1	1
Reckless driving	9	4.0	1	4	3	1	0
Careless/negligent driving	36	16.1	6	15	10	4	1
Other	30	13.5	0	9	10	7	4
Unknown	18	8.1	3	7	7	1	0
<b>TOTAL</b>	<b>223</b>	<b>100.0</b>	<b>18</b>	<b>75</b>	<b>69</b>	<b>38</b>	<b>23</b>

NOTE: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.



## MICHIGAN FARM EQUIPMENT CRASHES

A total of 158 crashes involving farm equipment were reported on Michigan roadways during 2010. Of those crashes, one was fatal with the operator of the farm equipment killed.



## MICHIGAN VEHICLE-TRAIN CRASHES

A total of 37 crashes involving trains were reported in Michigan during 2010. Of those crashes, three were fatal with three people killed, two drivers and one passenger.

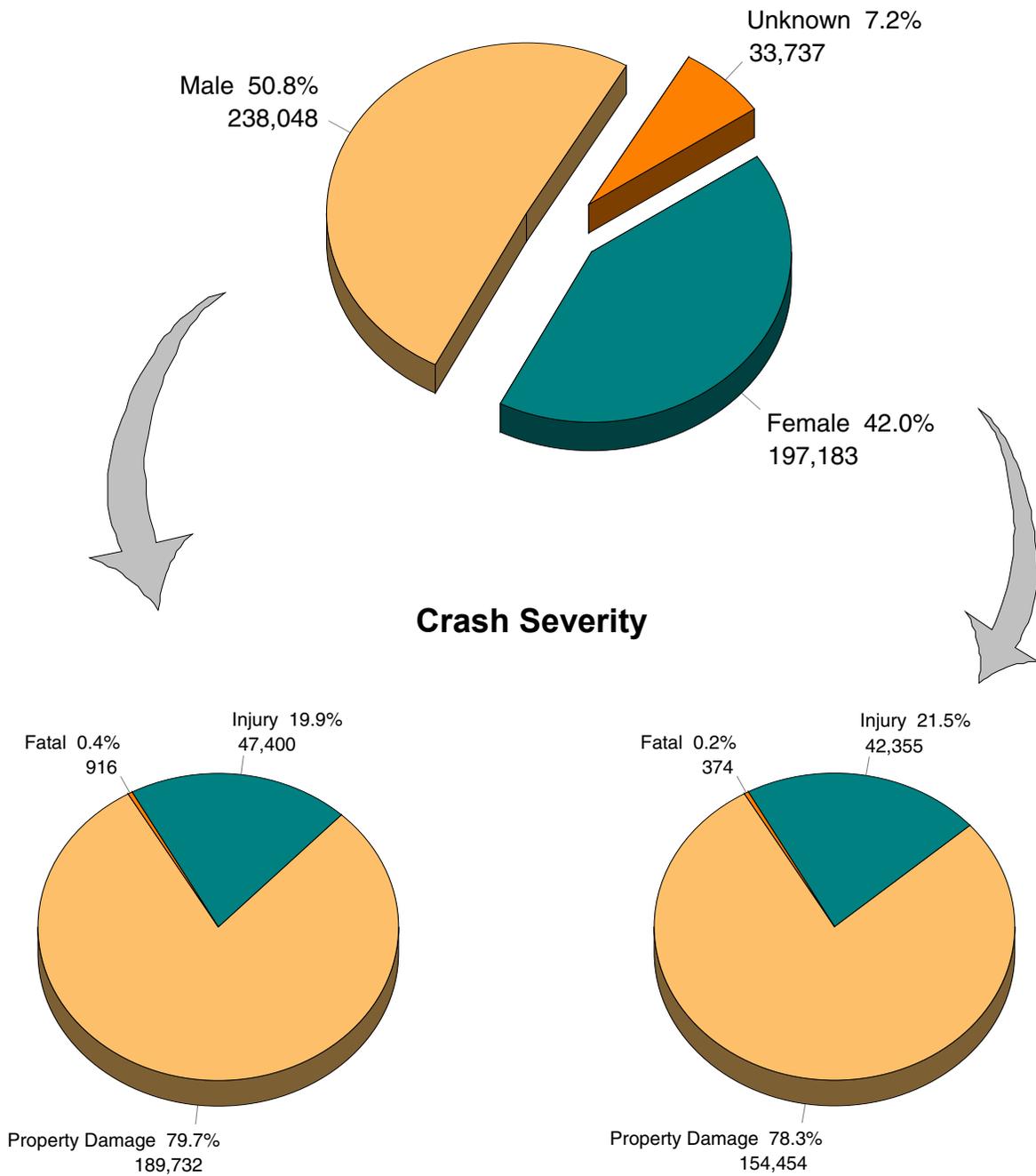


## MICHIGAN MOTORCYCLE CRASHES

MOTORCYCLE DATA	2009	2010	% Change
Motorcycle Registrations	266,713	266,772	0.02
Motorcycles in Crashes	3,451	3,362	-2.58
Motorcyclist Deaths	103	125	21.36
Motorcyclists Injured	2,725	2,664	-2.24
Death Rate based on 10,000 motorcycle registrations	3.86	4.69	21.50
Estimated Mileage based on 3,000 miles per motorcycle	800,139,000	800,316,000	0.02
Death Rate based on deaths per 100 million vehicle miles traveled	12.87	15.62	21.37

Motorcycles were involved in 1.2 percent of all traffic crashes in Michigan in 2010. Injuries were proportionately more severe to motorcyclists than to persons in motor vehicles. The 2010 death rate for motorcyclists was 15.62 per 100 million vehicle miles traveled compared to the overall 0.96 mileage death rate per 100 million vehicle miles traveled.

## DRIVER GENDER INFORMATION - ALL CRASHES



A higher proportion of crashes involved male drivers than female drivers. When examining the severity of crashes involving drivers of each gender, fatal crashes are more prevalent among male drivers than female drivers (0.4% vs. 0.2%).

## PERSON AGE - DEMOGRAPHICS AND CRASH INVOLVEMENTS

Age	Licensed Drivers	Michigan Population	Drivers in All Crashes	Drivers in Fatal Crashes	Occupants Killed	Occupants Injured	Bicyclist All Crashes	Bicyclist Fatal Crashes	Pedestrian All Crashes	Pedestrian Fatal Crashes
0-15	52,789	2,051,404	885	9	28	4,490	552	7	556	6
16	84,446	144,663	8,115	15	9	1,589	66	0	61	1
17	98,320	148,001	11,347	27	18	1,919	61	1	72	1
18	98,410	151,859	13,833	38	27	2,254	56	0	64	2
19	115,002	152,958	14,069	35	22	2,356	63	2	56	3
20	125,289	149,350	13,357	32	13	2,033	47	0	57	4
21-24	473,864	519,722	43,137	109	74	6,736	161	1	175	10
25-29	547,116	589,583	42,208	123	68	6,220	132	0	166	12
30-34	538,990	574,566	36,727	93	50	4,918	78	3	135	9
35-39	554,511	612,493	36,817	112	49	4,885	75	1	121	8
40-44	619,423	665,481	38,554	101	48	4,887	106	2	116	8
45-49	677,835	744,581	39,551	103	55	5,296	130	3	146	13
50-54	706,344	765,452	37,206	129	74	4,990	142	6	171	17
55-59	645,628	683,186	30,494	101	55	4,380	102	1	100	8
60-64	552,567	568,811	22,762	74	40	3,190	39	1	97	9
65-69	397,795	418,625	14,880	54	24	2,128	27	3	53	6
70-74	286,134	306,084	9,519	37	28	1,476	23	1	45	6
75-79	216,470	244,085	6,991	27	24	1,232	14	0	19	8
80-84	165,369	200,855	5,187	32	26	900	6	1	21	4
85-100+	120,042	191,881	3,519	37	45	744	2	0	10	4
Unknown	---	---	39,810	38	0	422	96	0	92	2
<b>Total</b>	<b>7,076,344</b>	<b>9,883,640</b>	<b>468,968</b>	<b>1,326</b>	<b>777</b>	<b>67,045</b>	<b>1,978</b>	<b>33</b>	<b>2,333</b>	<b>141</b>

## CRASH RATE PER LICENSED DRIVER BY AGE OF DRIVER IN ALL CRASHES

Age	Licensed Drivers	Drivers in all crashes*	Rate
0-15	52,789	885	0.017
16	84,446	8,115	0.096
17	98,320	11,347	0.115
18	98,410	13,833	0.141
19	115,002	14,069	0.122
20	125,289	13,357	0.107
21-24	473,864	43,137	0.091
25-29	547,116	42,208	0.077
30-34	538,990	36,727	0.068
35-39	554,511	36,817	0.066
40-44	619,423	38,554	0.062
45-49	677,835	39,551	0.058
50-54	706,344	37,206	0.053
55-59	645,628	30,494	0.047
60-64	552,567	22,762	0.041
65-69	397,795	14,880	0.037
70-74	286,134	9,519	0.033
75-79	216,470	6,991	0.032
80-84	165,369	5,187	0.031
85-89	89,582	2,741	0.031
90-94	26,707	651	0.024
95-99	3,596	89	0.025
100+	157	38	0.242
Total	7,076,344	429,158	

Note: Data entry errors resulted in an over-representation of age "100+" drivers.

\* Excludes 39,810 drivers with unknown age

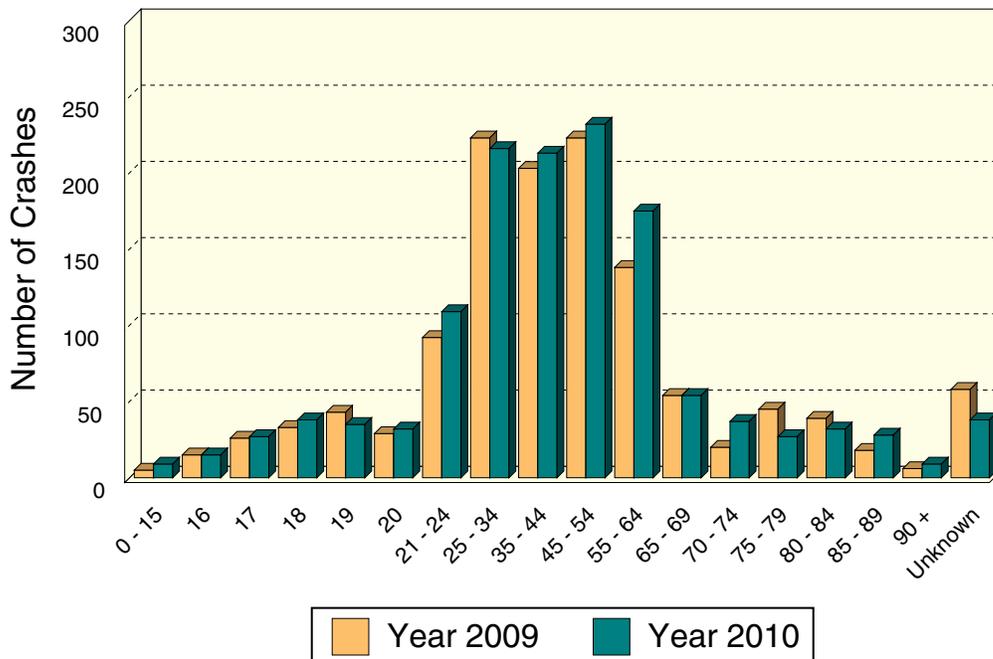
Licensed drivers age 18 have the highest crash rate (total crashes in age group divided by total number of licensed drivers in age group). The lower crash rates of the older groups (per licensed driver) may reflect reduced driving and exposure to the risk of a crash.

## DRIVER AGE

AGE OF DRIVERS IN FATAL CRASHES	2009	2010	% Change	% 2010 Fatal Crash Involvement	Percent Active Driving Population*
15 years and under	5	9	80.0	0.7	0.7
16 years	15	15	0.0	1.1	1.2
17 years	26	27	3.8	2.0	1.4
18 years	33	38	15.2	2.9	1.4
19 years	43	35	-18.6	2.6	1.6
20 years	29	32	10.3	2.4	1.8
21 - 24 years	92	109	18.5	8.2	6.7
25 - 34 years	223	216	-3.1	16.3	15.3
35 - 44 years	203	213	4.9	16.1	16.6
45 - 54 years	223	232	4.0	17.5	19.6
55 - 64 years	138	175	26.8	13.2	16.9
65 - 69 years	54	54	0.0	4.1	5.6
70 - 74 years	20	37	85.0	2.8	4.0
75 - 79 years	45	27	-40.0	2.0	3.1
80 - 84 years	39	32	-17.9	2.4	2.3
85 - 89 years	18	28	55.6	2.1	1.3
90 years and over	6	9	50.0	0.7	0.4
Unknown	58	38	-34.5	2.9	---
<b>Total</b>	<b>1,270</b>	<b>1,326</b>	<b>4.4</b>	<b>100.0</b>	<b>100.0</b>

\* Figures courtesy of the Michigan Department of State [13]

### Driver Age in Fatal Crashes



## DRIVER CONDITION

### MOST SEVERE OUTCOME IN CRASH

POSSIBLE CONDITIONS OF DRIVER*	Conditions Coded by Police	Fatal Crash	Injury Crash			PDO Crash
		Number	A	B	C	
Appeared Normal	385,794	676	5,585	17,912	53,814	307,807
Had Been Drinking	9,533	135	781	1,456	1,566	5,595
Illegal Drug Use	837	10	72	102	168	485
Sick	1,076	6	77	153	329	511
Fatigue	950	2	30	94	213	611
Asleep	1,063	4	58	149	213	639
Medication	925	8	50	114	214	539
Driver Distracted	3,927	21	86	346	870	2,604
Using Cellular Phone	884	4	24	79	160	617
Unknown	26,675	413	651	996	2,564	22,051

\* Drivers may have more than one condition including "Appeared Normal."

These are driver conditions that, in the opinion of the investigating officer, were involved in the crash. While some conditions may be evident, others (such as distraction) will only be known if the driver admits to the condition, thus leading to possible underreporting.

## DRIVER INJURY SEVERITY BY RESTRAINT, ALCOHOL, AND DRUG USE

	Drivers		Fatality		Injury			No Injury	Unknown
	Number	% of Total	Number	% of Total	A	B	C		
<b>All Drivers</b>									
Restraint Used	410,451	87.5	373	62.5	3,085	10,084	32,534	363,069	1,306
Restraint Not Used	5,632	1.2	159	26.6	524	784	712	3,304	149
Unknown	52,885	11.3	65	10.9	323	627	1,137	14,598	36,135
<b>Total</b>	<b>468,968</b>	<b>100.0</b>	<b>597</b>	<b>100.0</b>	<b>3,932</b>	<b>11,495</b>	<b>34,383</b>	<b>380,971</b>	<b>37,590</b>
<b>Drinking Only Drivers</b>									
Restraint Used	6,589	73.7	56	44.4	282	721	798	4,704	28
Restraint Not Used	755	8.4	54	42.9	148	197	103	251	2
Unknown	1,593	17.8	16	12.7	92	181	181	1,068	55
<b>Total</b>	<b>8,937</b>	<b>100.0</b>	<b>126</b>	<b>100.0</b>	<b>522</b>	<b>1,099</b>	<b>1,082</b>	<b>6,023</b>	<b>85</b>
<b>Drugged Only Drivers</b>									
Restraint Used	785	77.8	24	64.9	47	75	145	491	3
Restraint Not Used	95	9.4	10	27.0	18	19	16	32	0
Unknown	129	12.8	3	8.1	13	16	23	71	3
<b>Total</b>	<b>1,009</b>	<b>100.0</b>	<b>37</b>	<b>100.0</b>	<b>78</b>	<b>110</b>	<b>184</b>	<b>594</b>	<b>6</b>
<b>Drinking and Drugged Drivers</b>									
Restraint Used	628	69.3	19	46.3	41	67	98	401	2
Restraint Not Used	116	12.8	15	36.6	31	23	9	38	0
Unknown	162	17.9	7	17.1	16	22	25	90	2
<b>Total</b>	<b>906</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>88</b>	<b>112</b>	<b>132</b>	<b>529</b>	<b>4</b>

NOTE: 'Restraint Used' includes shoulder belt only, lap belt only, both lap and shoulder belts, restraint failed, and helmet worn.

## RED-LIGHT-RUNNING CRASHES

INTERSECTION CRASH TYPE	MOST SEVERE OUTCOME IN CRASH					PDO Crash
	Crashes	Fatal Crash	Injury Crash			
			A	B	C	
Related to intersection	82,602	243	1,635	4,934	13,800	61,990
In intersection	38,047	159	1,043	3,019	7,316	26,510
With traffic control signal	18,140	58	461	1,486	3,724	12,411
With hazardous action	<b>4,982</b>	25	188	568	1,287	2,914

“Related to intersection” captures crashes that were related to or within 150 feet of an intersection.

“In intersection” captures crashes within all types of intersections.

“With traffic control signal” captures crashes within the intersection and with a traffic control signal present.

“With hazardous action” captures crashes within the intersection, with a traffic control signal, and with a hazardous action cited as “disregard of traffic control.” Information pertaining to red-light-running in the following tables is derived from this subset of **4,982** crashes.

## RED-LIGHT-RUNNING MOST SEVERE OUTCOME IN CRASH

MOST SEVERE OUTCOME IN CRASH

SPEED LIMIT*	Crashes	Fatal Crashes	Injury Crashes			PDO Crashes
			A	B	C	
5 miles per hour	4	0	0	0	1	3
10 miles per hour	0	0	0	0	0	0
15 miles per hour	0	0	0	0	0	0
20 miles per hour	0	0	0	0	0	0
25 miles per hour	535	2	17	36	118	362
30 miles per hour	660	5	10	53	170	422
35 miles per hour	1,302	2	41	140	325	794
40 miles per hour	711	3	21	88	216	383
45 miles per hour	1,166	7	64	161	286	648
50 miles per hour	274	3	17	38	82	134
55 miles per hour	288	3	17	51	79	138
60 miles per hour	1	0	0	0	0	1
65 miles per hour	0	0	0	0	0	0
70 miles per hour	2	0	0	0	0	2
75 miles per hour	0	0	0	0	0	0
Unknown	39	0	1	1	10	27
<b>Total</b>	<b>4,982</b>	<b>25</b>	<b>188</b>	<b>568</b>	<b>1,287</b>	<b>2,914</b>

\*Posted speed limit as entered by officer on the UD-10 form.

MOST SEVERE OUTCOME IN CRASH

CRASH TYPE	Crashes	Fatal Crashes	Injury Crashes			PDO Crashes
			A	B	C	
Single Vehicle	69	0	9	17	22	21
Head on	35	0	1	3	8	23
Head on left turn	394	2	17	62	114	199
Angle	4,222	22	153	458	1,083	2,506
Rear end	24	0	1	1	10	12
Rear end left turn	4	0	0	1	0	3
Rear end right turn	3	0	0	1	0	2
Sideswipe same direction	59	0	0	1	7	51
Sideswipe opposite direction	35	0	2	3	5	25
Other/ Unknown	137	1	5	21	38	72
<b>Total</b>	<b>4,982</b>	<b>25</b>	<b>188</b>	<b>568</b>	<b>1,287</b>	<b>2,914</b>

## RED-LIGHT-RUNNING MOST SEVERE OUTCOME IN CRASH (continued)

SPECIAL CIRCUMSTANCES*	MOST SEVERE OUTCOME IN CRASH					
	Crashes	Fatal Crashes	Injury Crashes			PDO Crashes
			A	B	C	
School Bus Involved/Associated	11	0	1	3	3	4
Drinking Involved	160	6	23	20	38	73
Drug Use Involved	29	1	7	4	7	10
Pedestrian Involved	24	0	5	7	9	3
Bicyclist Involved	54	0	8	11	20	15
Snowmobile Involved	0	0	0	0	0	0
Motorcycle Involved	27	3	5	6	5	8
Train Involved	0	0	0	0	0	0
Truck/Bus Involved	139	4	12	15	31	77
Emergency Vehicle Involved	32	1	2	6	10	13
Driver Hazardous Citation	3,253	6	122	430	927	1,768

\*Crashes may involve more than one special circumstance.

POSSIBLE CONDITIONS OF PERSONS IN CRASH*	MOST SEVERE OUTCOME IN CRASH					
	Conditions Coded by Police	Fatal Crashes	Injury Crashes			PDO Crashes
			A	B	C	
Appeared Normal	4,121	13	136	480	1,095	2,397
Had Been Drinking	135	3	19	16	36	61
Illegal Drug Use	11	0	2	2	2	5
Sick	12	0	1	2	6	3
Fatigue	18	0	0	1	8	9
Asleep	3	0	0	0	2	1
Medication	11	0	0	3	4	4
Driver Distracted	141	0	7	16	38	80
Using Cellular Phone	42	0	1	7	14	20
Unknown	315	8	15	34	64	194

\*Drivers, pedestrians, bicyclists, and train engineers may have more than one condition, including "Appeared Normal."

## HEAVY TRUCK/BUS INVOLVED CRASHES

These crashes involve a heavy truck/bus - defined as having a Gross Vehicle Weight Rating (GVWR) over 10,000 lbs.

Heavy truck/bus crashes differ from other vehicle crashes in a number of ways, many reflecting the size and use of these vehicles. **When compared to the overall crash picture, heavy truck/bus crashes involve:**

- More turning, backing, and changing lanes as the Truck/Bus Driver Action Prior
- More collisions with bridge/pier/abutments, parked motor vehicles, jackknife, cargo loss/shift, and other non-collisions as the Most Harmful Event
- Fewer collisions with ditches, trees, and animals
- Fewer single-vehicle crashes but more sideswipes
- Fewer drivers indicated to be speeding, failing to yield, reckless driving, disregarding traffic control, and unable to stop in assured clear distance, but more drivers indicated to be making backing, lane use, and turning errors
- Fewer crashes outside of the shoulder/curb
- More crashes between the hours of 6:00 AM and 2:59 PM, and fewer crashes between 3:00 PM and 5:59 AM
- More weekday crashes, and a significant drop in weekend crashes

## HEAVY TRUCK/BUS INVOLVED CRASHES

HEAVY TRUCK/BUS DRIVER ACTION PRIOR TO CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Going straight ahead	5,313	49.5	68	73.1	991	54.2
Turning left	857	8.0	0	0.0	123	6.7
Turning right	801	7.5	2	2.2	52	2.8
Stopped on roadway	849	7.9	6	6.5	167	9.1
In prior crash	11	0.1	0	0.0	1	0.1
Changing lanes	417	3.9	0	0.0	55	3.0
Backing	533	5.0	0	0.0	30	1.6
Slowing/stopping on roadway	715	6.7	2	2.2	173	9.5
Slowing/stopping other	20	0.2	1	1.1	4	0.2
Starting up on roadway	233	2.2	1	1.1	54	3.0
Starting up other	7	0.1	0	0.0	3	0.2
Entering parking	24	0.2	0	0.0	3	0.2
Leaving parking	20	0.2	0	0.0	2	0.1
Entering roadway	82	0.8	0	0.0	17	0.9
Leaving roadway	17	0.2	0	0.0	3	0.2
Making U-turn	24	0.2	0	0.0	5	0.3
Overtaking or passing	67	0.6	0	0.0	10	0.5
Avoiding object	9	0.1	0	0.0	1	0.1
Avoiding animal	9	0.1	1	1.1	2	0.1
Avoiding pedestrian	6	0.1	3	3.2	2	0.1
Avoiding vehicle (front/back)	111	1.0	3	3.2	33	1.8
Avoiding vehicle (angle)	42	0.4	0	0.0	9	0.5
Driverless moving	7	0.1	0	0.0	0	0.0
Parked	246	2.3	5	5.4	56	3.1
Crossing at intersection	0	0.0	0	0.0	0	0.0
Crossing not at intersection	0	0.0	0	0.0	0	0.0
Getting on/off vehicle	0	0.0	0	0.0	0	0.0
In roadway with traffic	0	0.0	0	0.0	0	0.0
In roadway against traffic	1	0.0	0	0.0	0	0.0
Standing/lying in roadway	0	0.0	0	0.0	0	0.0
Pushing/working on vehicle	0	0.0	0	0.0	0	0.0
Other working in roadway	0	0.0	0	0.0	0	0.0
Playing in roadway	0	0.0	0	0.0	0	0.0
In roadway other reason	0	0.0	0	0.0	0	0.0
Not in roadway	2	0.0	0	0.0	0	0.0
Other	21	0.2	0	0.0	3	0.2
Unknown	285	2.7	1	1.1	30	1.6
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

<b>MOST HARMFUL EVENT IN A NONCOLLISION</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Loss of control	18	0.2	0	0.0	6	0.3
Cross center/median	12	0.1	0	0.0	2	0.1
Ran off road left	9	0.1	0	0.0	0	0.0
Ran off road right	24	0.2	0	0.0	4	0.2
Re-enter road	2	0.0	0	0.0	0	0.0
Overturn	132	1.2	1	1.1	56	3.1
Separation of units	12	0.1	0	0.0	1	0.1
Fire/explosion	30	0.3	1	1.1	2	0.1
Immersion	2	0.0	0	0.0	1	0.1
Jackknife	85	0.8	0	0.0	5	0.3
Downhill runaway	2	0.0	0	0.0	1	0.1
Cargo loss/shift	94	0.9	2	2.2	3	0.2
Individual fell off	3	0.0	1	1.1	1	0.1
Other noncollision	120	1.1	0	0.0	9	0.5
<b>NONCOLLISION Subtotal</b>	<b>545</b>	<b>5.1</b>	<b>5</b>	<b>5.4</b>	<b>91</b>	<b>5.0</b>

<b>MOST HARMFUL EVENT IN A COLLISION WITH A NONFIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Pedestrian	35	0.3	11	11.8	22	1.2
Bicyclist	23	0.2	1	1.1	20	1.1
Motor vehicle in transport	7,908	73.7	67	72.0	1,524	83.3
Parked motor vehicle	419	3.9	0	0.0	13	0.7
Railway train	3	0.0	0	0.0	2	0.1
Animal	453	4.2	0	0.0	5	0.3
Other nonfixed objects	141	1.3	1	1.1	5	0.3
<b>COLLISION NONFIXED Subtotal</b>	<b>8,982</b>	<b>83.7</b>	<b>80</b>	<b>86.0</b>	<b>1,591</b>	<b>87.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

<b>MOST HARMFUL EVENT IN A COLLISION WITH A FIXED OBJECT</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Bridge/pier/abutment	62	0.6	1	1.1	12	0.7
Bridge parapet end	2	0.0	0	0.0	1	0.1
Bridge rail	16	0.1	0	0.0	2	0.1
Guardrail face	54	0.5	2	2.2	6	0.3
Guardrail end	10	0.1	0	0.0	0	0.0
Median barrier	49	0.5	0	0.0	16	0.9
Highway traffic sign post	54	0.5	0	0.0	2	0.1
Highway signal post	15	0.1	0	0.0	0	0.0
Luminaire/light support	25	0.2	0	0.0	2	0.1
Utility pole	97	0.9	0	0.0	6	0.3
Other pole	23	0.2	1	1.1	0	0.0
Culvert	3	0.0	0	0.0	0	0.0
Curb	6	0.1	0	0.0	1	0.1
Ditch	92	0.9	1	1.1	19	1.0
Embankment	22	0.2	1	1.1	7	0.4
Fence	14	0.1	0	0.0	0	0.0
Mailbox	13	0.1	0	0.0	0	0.0
Tree	77	0.7	1	1.1	12	0.7
Rail crossing signal	11	0.1	0	0.0	0	0.0
Building	5	0.0	0	0.0	2	0.1
Traffic island	0	0.0	0	0.0	0	0.0
Fire hydrant	17	0.2	0	0.0	0	0.0
Impact attenuator	0	0.0	0	0.0	0	0.0
Other fixed object	126	1.2	1	1.1	4	0.2
<b>COLLISION FIXED Subtotal</b>	<b>793</b>	<b>7.4</b>	<b>8</b>	<b>8.6</b>	<b>92</b>	<b>5.0</b>

	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Unknown Event	409	3.8	0	0.0	55	3.0
<b>TOTAL MOST HARMFUL EVENT</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

CRASH TYPE	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Single Vehicle	1,563	14.6	16	17.2	177	9.7
Head On	146	1.4	14	15.1	53	2.9
Head On - Left Turn	98	0.9	1	1.1	40	2.2
Angle	1,620	15.1	27	29.0	428	23.4
Rear End	2,367	22.1	12	12.9	600	32.8
Rear End - Left Turn	106	1.0	3	3.2	22	1.2
Rear End - Right Turn	84	0.8	0	0.0	10	0.5
Sideswipe - Same Direction	3,066	28.6	2	2.2	309	16.9
Sideswipe - Opposite Direct	507	4.7	5	5.4	55	3.0
Other/Unknown	1,172	10.9	13	14.0	135	7.4
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

HAZARDOUS ACTION OF HEAVY TRUCK/BUS	Truck/Bus Crashes		Fatal Crashes		Injury Crashes		Hazardous Citation Issued	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury	Number of Heavy Trucks	% of Issued
None	5,636	52.5	68	73.1	1,034	56.5	19	1.2
Speed too fast	361	3.4	1	1.1	87	4.8	118	7.6
Speed too slow	1	0.0	0	0.0	0	0.0	0	0.0
Failed to yield	528	4.9	0	0.0	128	7.0	241	15.5
Disregard traffic control	98	0.9	3	3.2	35	1.9	56	3.6
Drove wrong way	7	0.1	0	0.0	3	0.2	3	0.2
Drove left of center	56	0.5	1	1.1	5	0.3	12	0.8
Improper passing	53	0.5	0	0.0	5	0.3	12	0.8
Improper lane use	462	4.3	0	0.0	37	2.0	151	9.7
Improper turn	360	3.4	0	0.0	23	1.3	115	7.4
Improper/no signal	22	0.2	0	0.0	4	0.2	3	0.2
Improper backing	423	3.9	0	0.0	17	0.9	122	7.8
Unable to stop in assured clear distance	845	7.9	1	1.1	213	11.6	374	24.0
Reckless driving	4	0.0	0	0.0	0	0.0	0	0.0
Careless/negligent driving	239	2.2	5	5.4	65	3.6	122	7.8
Other	828	7.7	6	6.5	66	3.6	203	13.0
Unknown	806	7.5	8	8.6	107	5.9	6	0.4
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>	<b>1,557</b>	<b>100.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

<b>RELATIONSHIP TO ROADWAY</b> (LOCATION OF FIRST IMPACT IN CRASH)	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
On Road	9,667	90.1	84	90.3	1,651	90.3
Median	75	0.7	1	1.1	19	1.0
Shoulder	339	3.2	4	4.3	56	3.1
Outside of Shoulder/Curb	378	3.5	3	3.2	58	3.2
Gore	21	0.2	1	1.1	4	0.2
Other/Unknown	249	2.3	0	0.0	41	2.2
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

<b>TIME OF DAY IN CRASH</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Midnight - 02:59 AM	336	3.1	13	14.0	64	3.5
03:00 AM - 05:59 AM	463	4.3	4	4.3	91	5.0
06:00 AM - 08:59 AM	1,921	17.9	14	15.1	319	17.4
09:00 AM - 11:59 AM	2,274	21.2	20	21.5	365	20.0
Noon - 02:59 PM	2,453	22.9	20	21.5	386	21.1
03:00 PM - 05:59 PM	2,079	19.4	13	14.0	365	20.0
06:00 PM - 08:59 PM	743	6.9	5	5.4	154	8.4
09:00 PM - 11:59 PM	440	4.1	4	4.3	80	4.4
Unknown	20	0.2	0	0.0	5	0.3
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

<b>ROADWAY TYPE IN CRASH</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Interstate Routes	2,872	26.8	24	25.8	558	30.5
U.S. & Michigan Roads	3,209	29.9	38	40.9	577	31.5
County & City Roads	4,648	43.3	31	33.3	694	37.9
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

DAY OF WEEK IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Monday	1,954	18.2	17	18.3	334	18.3
Tuesday	2,076	19.3	19	20.4	350	19.1
Wednesday	2,086	19.4	23	24.7	377	20.6
Thursday	1,975	18.4	11	11.8	328	17.9
Friday	1,761	16.4	9	9.7	275	15.0
Saturday	523	4.9	5	5.4	108	5.9
Sunday	354	3.3	9	9.7	57	3.1
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

DRIVER GENDER IN CRASH	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Male	8,940	83.3	86	92.5	1,541	84.3
Female	1,113	10.4	3	3.2	198	10.8
Unknown	676	6.3	4	4.3	90	4.9
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

NUMBER OF OCCUPANTS in Heavy Truck/Bus	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
1 occupant	8,376	78.1	78	83.9	1,359	74.3
2 occupants	730	6.8	5	5.4	152	8.3
3 occupants	151	1.4	1	1.1	37	2.0
4 occupants	95	0.9	0	0.0	21	1.1
5 occupants	71	0.7	1	1.1	15	0.8
6 + occupants	613	5.7	3	3.2	148	8.1
0 occupants	200	1.9	4	4.3	46	2.5
Unknown	493	4.6	1	1.1	51	2.8
<b>Total</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

<b>VEHICLE TYPES Involved in Crash with Heavy Truck/Bus</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Vehicles	% of Subtotal	Number of Vehicles	% of Fatal	Number of Vehicles	% of Injury
Passenger Car and Station Wagon	7,062	77.0	56	59.6	1,454	75.6
Van and Motorhome	590	6.4	9	9.6	124	6.4
Pickup	1,072	11.7	8	8.5	222	11.5
Small Truck (under 10,000 lbs.)	186	2.0	0	0.0	38	2.0
Motorcycle	35	0.4	7	7.4	17	0.9
Moped	5	0.1	1	1.1	3	0.2
Go Cart	1	0.0	0	0.0	0	0.0
Snowmobile	5	0.1	0	0.0	3	0.2
Off Road Vehicle	0	0.0	0	0.0	0	0.0
Other	46	0.5	1	1.1	5	0.3
Unknown	172	1.9	12	12.8	57	3.0
<b>Subtotal</b>	<b>9,174</b>	<b>100.0</b>	<b>94</b>	<b>100.0</b>	<b>1,923</b>	<b>100.0</b>

<b>HEAVY TRUCK/BUS VEHICLE TYPES</b>	All Crashes		Fatal Crashes		Injury Crashes	
	Number of Heavy Trucks	% of Subtotal	Number of Heavy Trucks	% of Fatal	Number of Heavy Trucks	% of Injury
Commercial Vehicle: Group A	5,691	53.0	60	64.5	988	54.0
Commercial Vehicle: Group B	2,407	22.4	18	19.4	437	23.9
Commercial Vehicle: Group C	393	3.7	2	2.2	65	3.6
Other Truck	846	7.9	10	10.8	150	8.2
Unknown Truck	1,392	13.0	3	3.2	189	10.3
<b>Subtotal</b>	<b>10,729</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>1,829</b>	<b>100.0</b>

<b>Total Vehicle Types in Heavy Truck/Bus Crashes</b>	<b>19,903</b>		<b>187</b>		<b>3,752</b>	
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Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

## HEAVY TRUCK/BUS INVOLVED CRASHES (continued)

Hazardous Citation Issued	Heavy Truck/Bus Involved Crash						Passenger Vehicle Only Involved Crash			
	Single Vehicle Crash		Multi-Vehicle Crash				Single Vehicle Crash		Multi-Vehicle Crash	
	Number of Trucks/Buses	% of citation	Number of Trucks/Buses	% of citation	Number of Passenger Vehicles	% of citation	Number of Passenger Vehicles	% of citation	Number of Passenger Vehicles	% of citation
None	6	2.2	13	1.0	9	0.5	82	0.6	499	0.6
Speed too fast	83	31.1	35	2.7	267	13.9	5,821	45.6	3,179	4.1
Speed too slow	0	0.0	0	0.0	2	0.1	23	0.2	37	0.0
Failed to yield	3	1.1	238	18.4	422	22.0	450	3.5	21,430	27.6
Disregard traffic control	2	0.7	54	4.2	105	5.5	128	1.0	5,131	6.6
Drove wrong way	1	0.4	2	0.2	4	0.2	12	0.1	107	0.1
Drove left of center	1	0.4	11	0.9	26	1.4	92	0.7	690	0.9
Improper passing	0	0.0	12	0.9	59	3.1	23	0.2	680	0.9
Improper lane use	7	2.6	144	11.2	152	7.9	126	1.0	3,399	4.4
Improper turn	18	6.7	97	7.5	39	2.0	58	0.5	1,588	2.0
Improper/no signal	0	0.0	3	0.2	4	0.2	9	0.1	124	0.2
Improper backing	6	2.2	116	9.0	16	0.8	63	0.5	2,075	2.7
Unable to stop in assured clear distance	9	3.4	365	28.3	534	27.8	528	4.1	32,273	41.5
Reckless driving	0	0.0	0	0.0	13	0.7	502	3.9	391	0.5
Careless/Negligent driving	71	26.6	51	4.0	163	8.5	3,192	25.0	2,717	3.5
Other	58	21.7	145	11.2	85	4.4	1,469	11.5	3,048	3.9
Unknown	2	0.7	4	0.3	18	0.9	191	1.5	306	0.4
<b>Total Cited Vehicles</b>	<b>267</b>	<b>100.0</b>	<b>1,290</b>	<b>100.0</b>	<b>1,918</b>	<b>100.0</b>	<b>12,769</b>	<b>100.0</b>	<b>77,674</b>	<b>100.0</b>
Percent of Total Vehicles		16.3		14.2		21.3		11.8		23.3
Vehicles with No Citation Issued	1,374	83.7	7,798	85.8	7,083	78.7	95,586	88.2	255,091	76.7
<b>Total Vehicles Involved</b>	<b>1,641</b>	<b>100.0</b>	<b>9,088</b>	<b>100.0</b>	<b>9,001</b>	<b>100.0</b>	<b>108,355</b>	<b>100.0</b>	<b>332,765</b>	<b>100.0</b>

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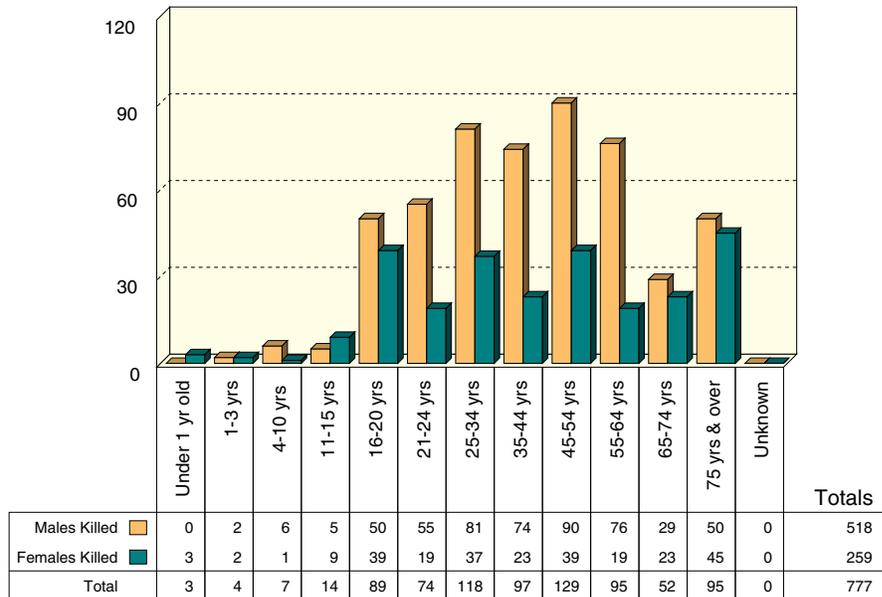
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**Occupant/  
Person**



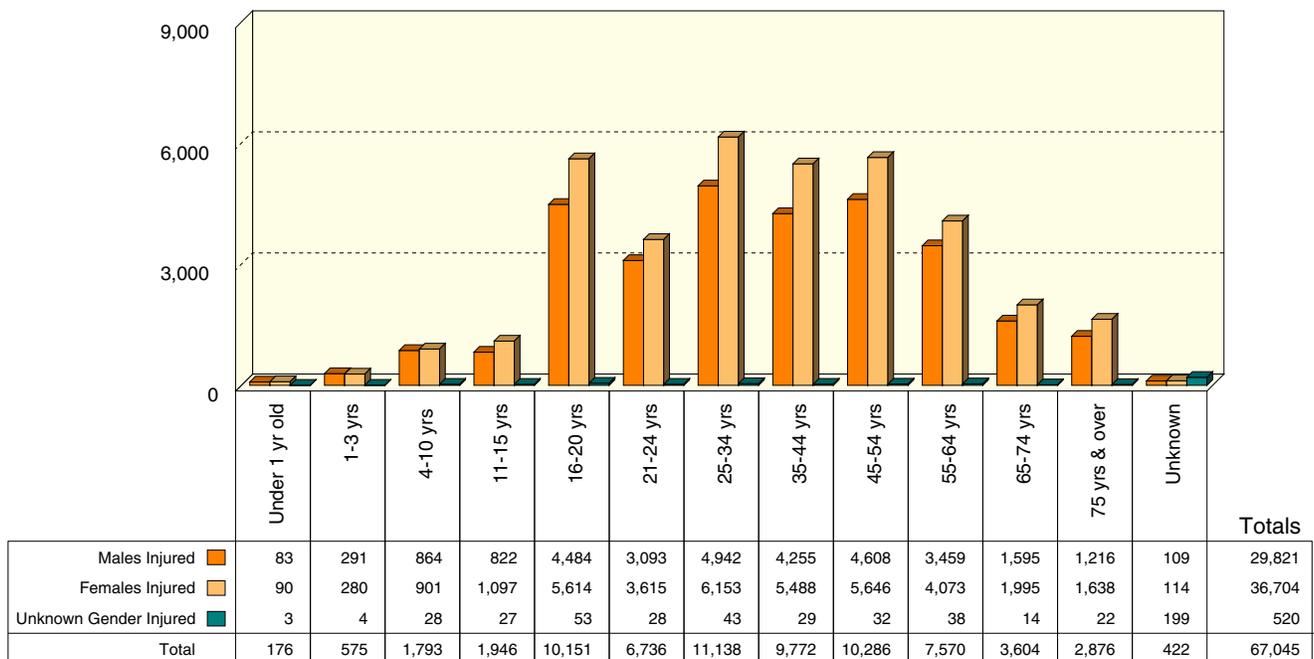
## AGE AND GENDER OF OCCUPANTS KILLED OR INJURED IN MOTOR VEHICLE CRASHES

### Occupants Killed



The majority (66.7%) of occupants killed in traffic crashes in 2010 were male.

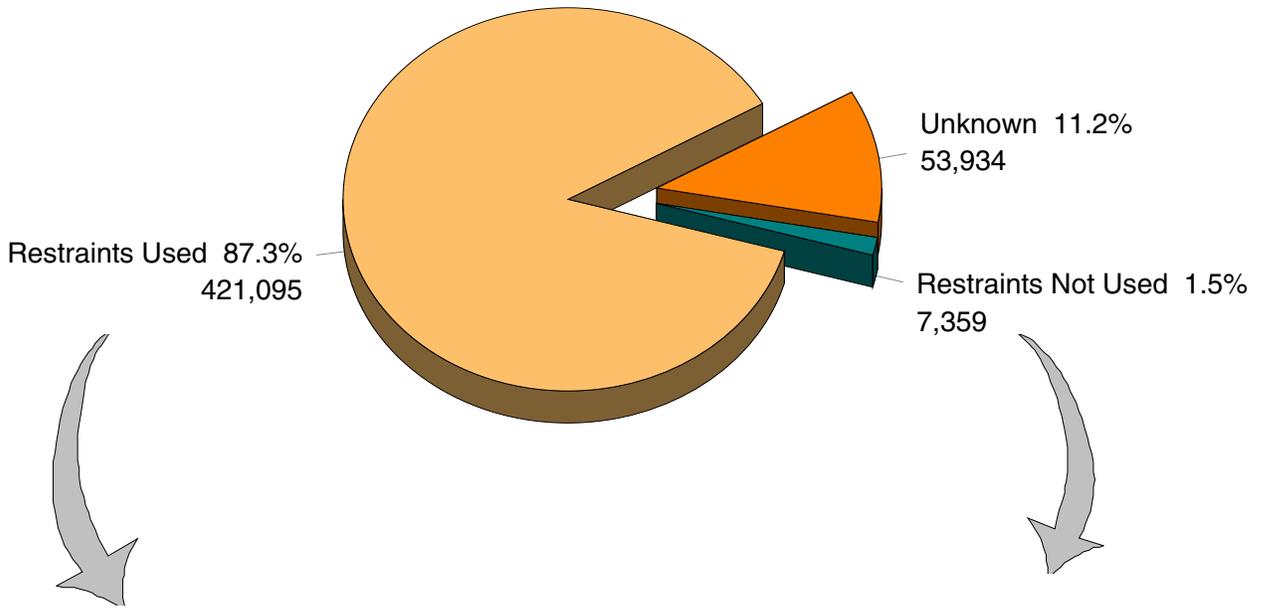
### Occupants Injured



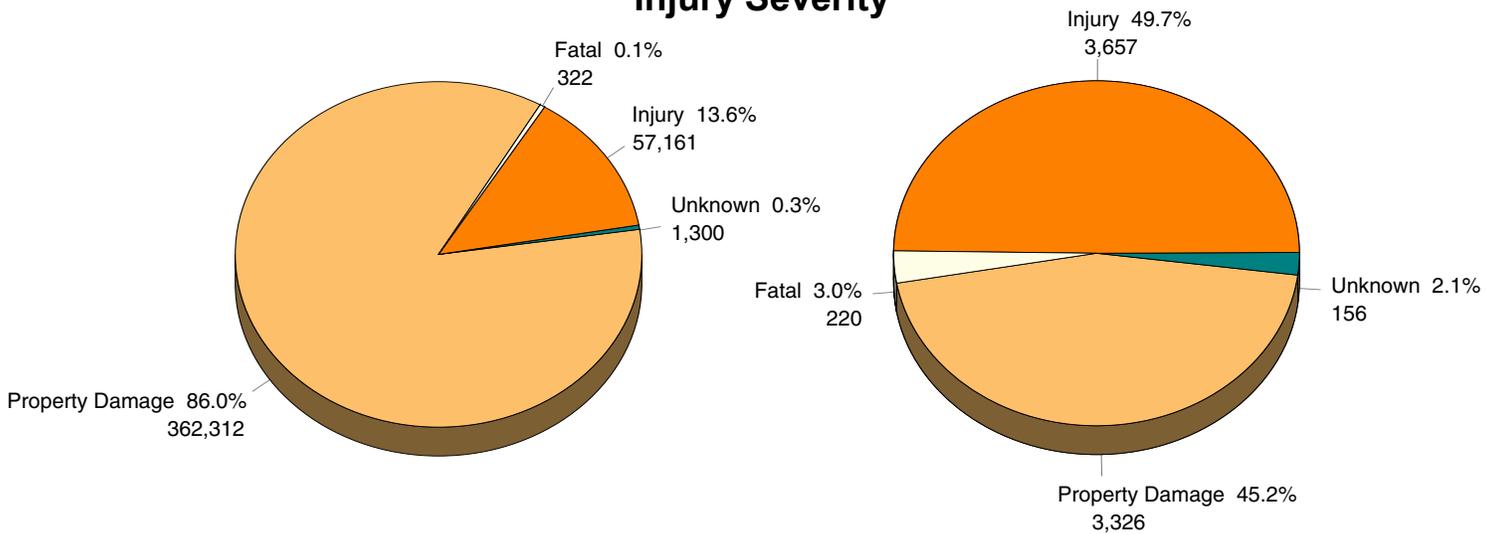
The majority (54.7%) of occupants injured in traffic crashes in 2010 were female.

Note: An occupant is any injured or killed person in or on a motor vehicle, *including* all drivers.

## REPORTED OCCUPANT RESTRAINT USAGE FOR ALL DRIVERS AND INJURED PASSENGERS

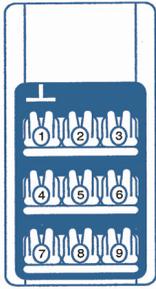


### Injury Severity



Of the 482,388 drivers and injured passengers involved in crashes, 421,095 (87.3%) were REPORTED to be using occupant restraints.

Occupants in crashes were thirty times more likely to be killed if they were not wearing their restraints.



## MOTOR VEHICLE OCCUPANTS & INJURY SEVERITY BY SEATING POSITION AND KNOWN BELT USAGE

Seating Position	Belts Used*		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Left Front	404,007	96.5	248	2,507	9,050	31,684	360,518
Center Front	636	0.2	1	14	50	201	370
Right Front	10,079	2.4	55	652	2,074	6,711	587
Left Rear	901	0.2	4	53	179	665	0
Center Rear	225	0.1	1	13	54	157	0
Right Rear	1,036	0.2	4	69	257	706	0
Left Rear Third Seat	282	0.1	0	14	72	196	0
Center Rear Third Seat	105	0.0	1	5	21	78	0
Right Rear Third Seat	354	0.1	0	19	63	272	0
Unknown	939	0.2	1	21	40	118	759
<b>Total</b>	<b>418,564†</b>	<b>100.0</b>	<b>315</b>	<b>3,367</b>	<b>11,860</b>	<b>40,788</b>	<b>362,234</b>

\* A lap belt, shoulder belt or a combination of lap and shoulder belts used. Children who were coded as using or not using a child restraint device appear in separate tables on the next two pages.

† This total does not include 1,291 occupants with unknown injury severity.

Seating Position	Belts Not Used*		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Left Front	4,776	68.0	143	455	669	668	2,841
Center Front	67	1.0	1	12	17	20	17
Right Front	608	8.7	43	137	206	189	33
Left Rear	288	4.1	9	59	101	119	0
Center Rear	106	1.5	3	20	33	50	0
Right Rear	293	4.2	12	46	92	143	0
Left Rear Third Seat	87	1.2	0	14	26	47	0
Center Rear Third Seat	38	0.5	0	7	11	20	0
Right Rear Third Seat	100	1.4	1	12	37	50	0
Unknown	662	9.4	6	25	63	198	370
<b>Total</b>	<b>7,025†</b>	<b>100.0</b>	<b>218</b>	<b>787</b>	<b>1,255</b>	<b>1,504</b>	<b>3,261</b>

\* No belts available or no belts used. Children who were coded as using or not using a child restraint device appear in separate tables on the next two pages.

† This total does not include 149 occupants with unknown injury severity.

*Michigan law requires that all persons must wear a safety belt  
when riding in the front seat of a motor vehicle.*

## REPORTED RESTRAINT USE - CHILDREN

**On July 1, 2008, Michigan law was amended** (<http://legislature.mi.gov/doc.aspx?mcl-257-710e>)

**To:**

*Any child **under four years of age** must be in an approved Child Safety Seat (CSS)/Child Restraint Device (CRD), and riding in the rear seat.*  
and

*All children **less than 8 years of age AND who are less than 4'9" in height,** must be properly restrained in a child restraint system.*  
and

*All children **ages 8 through 15** must wear a properly adjusted and fastened safety belt when riding in either the front or back seat of a vehicle.*

Note 1: These tables exclude drivers.

Restraint Usage	Children Age 0		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	33	18.4	0	1	8	24
No Belts Used	4	2.2	0	0	2	2
Child Restraint Used	126	70.4	2	1	21	102
Child Restraint Not Used	4	2.2	1	0	1	2
Restraint Failed	0	0.0	0	0	0	0
Unknown	12	6.7	0	0	5	7
<b>Total</b>	<b>179</b>	<b>100.0</b>	<b>3</b>	<b>2</b>	<b>37</b>	<b>137</b>

Restraint Usage	Children Age 1		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	17	9.0	0	0	3	14
No Belts Used	0	0.0	0	0	0	0
Child Restraint Used	152	80.4	0	11	29	112
Child Restraint Not Used	11	5.8	0	3	3	5
Restraint Failed	1	0.5	0	0	1	0
Unknown	8	4.2	0	0	1	7
<b>Total</b>	<b>189</b>	<b>100.0</b>	<b>0</b>	<b>14</b>	<b>37</b>	<b>138</b>

## REPORTED RESTRAINT USE – CHILDREN (continued)

Restraint Usage	Children Age 2		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	14	7.7	0	0	1	13
No Belts Used	3	1.7	0	0	1	2
Child Restraint Used	147	81.2	2	4	34	107
Child Restraint Not Used	13	7.2	1	0	5	7
Restraint Failed	0	0.0	0	0	0	0
Unknown	4	2.2	0	0	1	3
<b>Total</b>	<b>181</b>	<b>100.0</b>	<b>3</b>	<b>4</b>	<b>42</b>	<b>132</b>

Restraint Usage	Children Age 3		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	28	13.5	0	2	10	16
No Belts Used	3	1.4	0	1	1	1
Child Restraint Used	157	75.8	1	9	41	106
Child Restraint Not Used	14	6.8	0	2	4	8
Restraint Failed	1	0.5	0	1	0	0
Unknown	4	1.9	0	0	0	4
<b>Total</b>	<b>207</b>	<b>100.0</b>	<b>1</b>	<b>15</b>	<b>56</b>	<b>135</b>

Restraint Usage	Children Age 4-7		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	355	37.5	2	16	81	256
No Belts Used	62	6.5	0	11	17	34
Child Restraint Used	446	47.1	0	14	93	339
Child Restraint Not Used	47	5.0	0	6	22	19
Restraint Failed	2	0.2	1	1	0	0
Unknown	35	3.7	0	2	11	22
<b>Total</b>	<b>947</b>	<b>100.0</b>	<b>3</b>	<b>50</b>	<b>224</b>	<b>670</b>

Restraint Usage	Children Age 8-15		Fatal	Injury		
	Number	% Total		A	B	C
Belts Used	2,112	80.7	5	117	510	1,480
No Belts Used	275	10.5	5	37	89	144
Child Restraint Used	65	2.5	1	1	6	57
Child Restraint Not Used	8	0.3	0	1	3	4
Restraint Failed	3	0.1	0	0	2	1
Unknown	154	5.9	1	16	31	106
<b>Total</b>	<b>2,617</b>	<b>100.0</b>	<b>12</b>	<b>172</b>	<b>641</b>	<b>1,792</b>

Note 2: Safety equipment usage is often self-reported and may not reflect actual usage.

Note 3: Information about uninjured passengers does not have to be reported by the officer on the crash report, thus these tables relate the experience of only those children with injuries in crashes

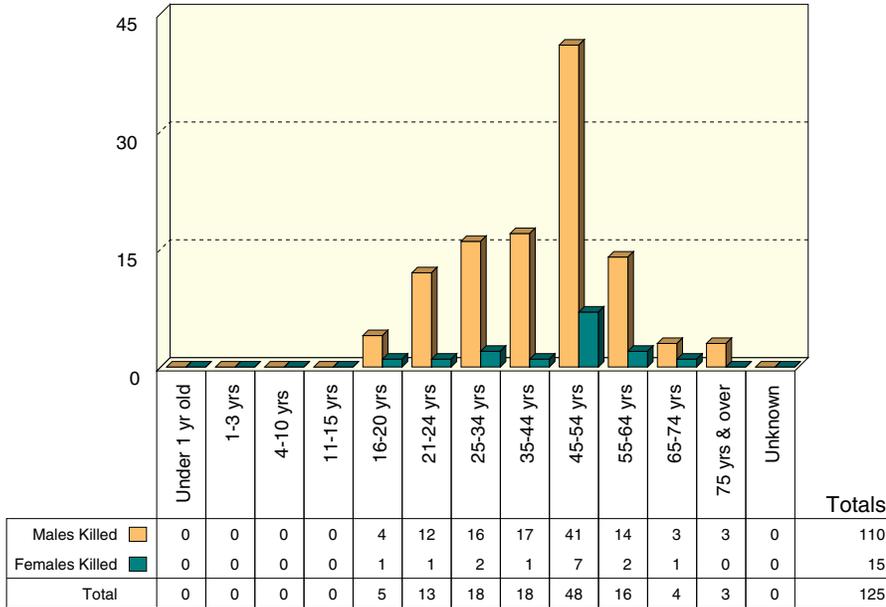
## MOTOR VEHICLE OCCUPANT INJURY SEVERITY BY KNOWN AIRBAG DEPLOYMENT

Motor Vehicle Occupant Airbag Deployment	OCCUPANT – INJURY SEVERITY						
	Occupants*		Fatal	Injury			No Injury
	Number	% Total		A	B	C	
Deployed	41,720	8.6	293	2,079	5,632	11,465	21,680
Not deployed	373,353	76.8	186	1,553	5,793	26,103	332,316
Not equipped	43,514	8.9	270	1,526	3,587	6,648	18,157
Unknown	27,832	5.7	28	256	647	1,756	8,818
<b>Total</b>	<b>486,419</b>	<b>100.0</b>	<b>777</b>	<b>5,414</b>	<b>15,659</b>	<b>45,972</b>	<b>380,971</b>

\* Includes 37,626 occupants (drivers and passengers) with unknown injury severity.

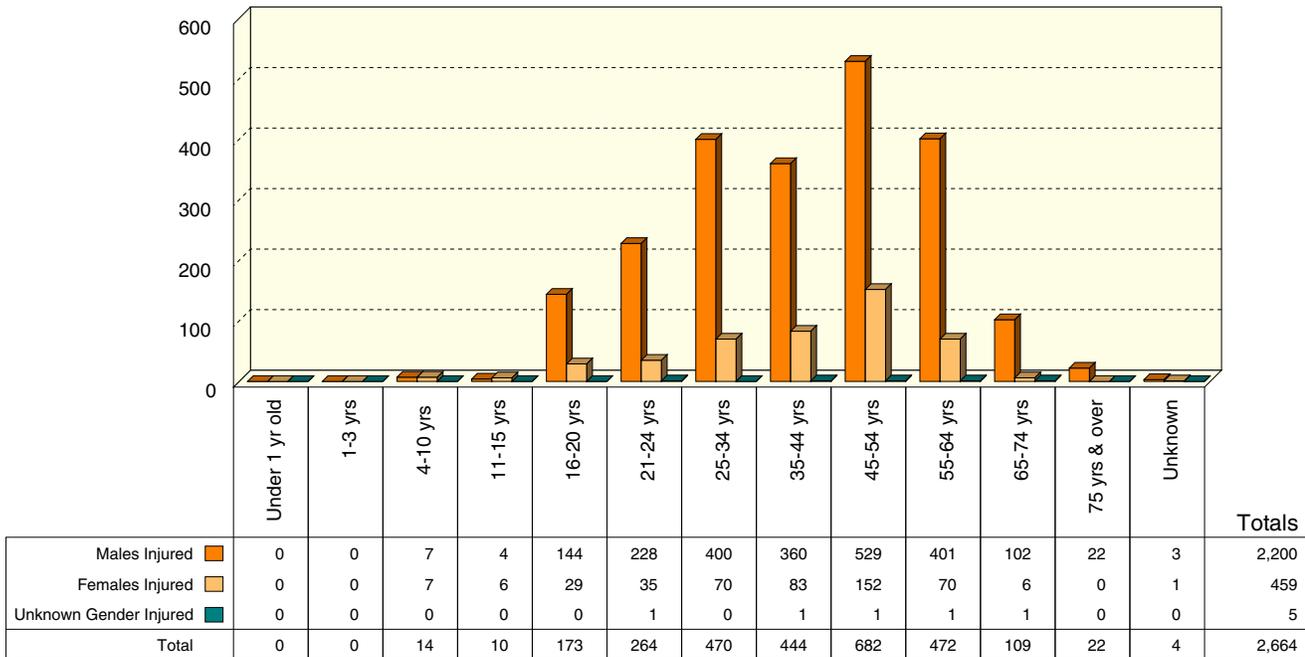
## AGE AND GENDER OF MOTORCYCLISTS KILLED OR INJURED IN MOTOR VEHICLE CRASHES

### Motorcyclists Killed



88 percent of the motorcyclists killed in traffic crashes in 2010 were male. In comparison, 68 percent of all persons killed in crashes were male. Most motorcyclists killed were in the 45-54 year age group.

### Motorcyclists Injured



82.6 percent of the motorcyclists injured in traffic crashes in 2010 were male. In comparison, 45.6 percent of all persons injured in crashes were male. Most motorcyclists injured were in the 45-54 year age group.

## MOTORCYCLE HELMET USE AND INJURY SEVERITY

Helmet Worn Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	0	0	0	0
4 - 10 years	0	3	7	1	3
11 - 15 years	0	2	2	3	1
16 - 20 years	5	37	70	38	32
21 - 24 years	11	44	114	73	64
25 - 34 years	15	88	183	126	107
35 - 44 years	16	96	167	113	137
45 - 54 years	43	157	242	200	191
55 - 64 years	16	98	197	138	127
65 - 74 years	4	24	39	39	38
75 years and over	3	7	8	7	7
Unknown	0	0	0	2	6
<b>Subtotal</b>	<b>113</b>	<b>556</b>	<b>1,029</b>	<b>740</b>	<b>713</b>



### Helmet Worn

Drivers killed 105  
Passengers killed 8

Helmet Not Worn Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	0	0	0	0
4 - 10 years	0	0	0	2	0
11 - 15 years	0	0	0	0	0
16 - 20 years	0	2	3	1	0
21 - 24 years	0	0	4	4	0
25 - 34 years	0	3	6	0	2
35 - 44 years	2	7	6	3	3
45 - 54 years	2	6	7	2	3
55 - 64 years	0	2	1	1	2
65 - 74 years	0	0	0	0	1
75 years and over	0	0	0	0	0
Unknown	0	0	0	0	0
<b>Subtotal</b>	<b>4</b>	<b>20</b>	<b>27</b>	<b>13</b>	<b>11</b>



### Helmet Not Worn

Drivers killed 3  
Passengers killed 1

Helmet Use Unknown Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	0	0	0	0
4 - 10 years	0	0	0	1	0
11 - 15 years	0	0	0	3	0
16 - 20 years	0	2	12	8	11
21 - 24 years	2	6	9	10	12
25 - 34 years	3	13	24	27	25
35 - 44 years	0	9	30	13	24
45 - 54 years	3	14	32	22	33
55 - 64 years	0	8	17	10	19
65 - 74 years	0	1	3	3	4
75 years and over	0	0	0	0	0
Unknown	0	0	1	1	22
<b>Subtotal</b>	<b>8</b>	<b>53</b>	<b>128</b>	<b>98</b>	<b>150</b>



### Helmet Use Unknown

Drivers killed 8  
Passengers killed 0

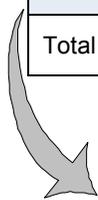
<b>Total</b>	<b>125</b>	<b>629</b>	<b>1,184</b>	<b>851</b>	<b>874</b>
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Michigan Vehicle Code Public Act 300 of 1949, Section 257.658 requires that all motorcycle riders wear a helmet. As a result, according to studies by UMTRI [14], approximately 99 percent of the motorcyclists in Michigan wear helmets when riding. The fact that most fatalities (where helmet use is known) are wearing their helmets does not indicate that helmets are not an effective safety device.

## OCCUPANT INJURY OUTCOME BY VEHICLE TYPE



VEHICLE TYPE	Killed	A Injured	B Injured	C Injured	Total KABC	% of All Crash Involved KABC Occupants
Passenger Car and Station Wagon	497	3,643	11,348	36,693	52,181	76.9
Van (Minivan) and Motorhome	23	224	795	2,773	3,815	5.6
Pickup	73	579	1,563	3,825	6,040	8.9
Small Truck (under 10,000 lbs.)	3	87	313	1,025	1,428	2.1
Motorcycle	125	629	1,184	851	2,789	4.1
Moped	9	53	134	84	280	0.4
Go Cart	3	6	3	7	19	0.0
Snowmobile	9	34	30	38	111	0.2
Off Road Vehicle	18	73	82	45	218	0.3
Other	7	30	50	103	190	0.3
Unknown	0	5	11	37	53	0.1
CDL Truck/Bus (breakdown below)	10	51	146	491	698	1.0
<b>Total Number of Occupants</b>	<b>777</b>	<b>5,414</b>	<b>15,659</b>	<b>45,972</b>	<b>67,822</b>	<b>100.0</b>



CDL Truck/Bus Sub-category Type	Killed	A Injured	B Injured	C Injured	Total KABC	% of All Crash Involved KABC Occupants
Commercial Vehicle: Group A	7	24	63	189	283	40.5
Commercial Vehicle: Group B	2	13	53	190	258	37.0
Commercial Vehicle: Group C	1	4	6	40	51	7.3
Other Truck	0	7	21	24	52	7.4
Unknown Truck	0	3	3	48	54	7.7
<b>Total Number of Occupants</b>	<b>10</b>	<b>51</b>	<b>146</b>	<b>491</b>	<b>698</b>	<b>100.0</b>

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

**NOTES:**

- 1) School bus is not recorded on the UD-10 and cannot be broken out of CDL Truck/Bus.
- 2) These crashes involve a motor vehicle in transport on a public trafficway (in Michigan) and result in injury, death, or at least \$1,000 in property damage.

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**References**



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- [10] Minnesota Department of Public Safety, Office of Traffic Safety, 444 Cedar Street, Suite 150, St. Paul, MN 55101-5150.
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- [13] Michigan Department of State, Office of Policy and Planning, Research Section, Lansing, MI 48918.
- [14] Streff, Fredrick M., Eby, David W., Molnar, Lisa J., Joksch, Hans C., Wallace, Richard R. Direct Observation of Safety Belt Use and Motorcycle Helmet Use in Michigan: Fall 1993. UMTRI-93-44, University of Michigan Transportation Research Institute, Ann Arbor, MI 48109-2150, November 1993.

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