2010 ALASKA TRAFFIC CRASHES

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ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILTIES
Division of Program Development
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ABSTRACT

Crashes In General

Traffic crashes injured 5,250 and killed 56 Alaskans during 2010. There were, on average, 34 crashes per day and 1.4 crashes per hour. One person died on Alaska highways every 6.5 days.

There were 258 traffic crashes per 100 million vehicle miles traveled (per 100 million VMT) and 1.08 fatal crashes per 100 million VMT in 2010.

12,399 crash reports (3.7% less than the previous year) were processed by Department of Transportation staff for 2010. Of 12,399 reported traffic crashes, seventy percent (70.4%) involved only property damage (no person injuries). In twenty-six percent (26.1%) of crashes, the most serious injuries were non-incapacitating (minor). In three percent (3.1%) of crashes, the most serious injuries were coded as incapacitating (major). Fatalities were reported in less than one percent (0.4%) of all crashes.

Police agencies filed reports for eighty-one percent (81.4%) of crashes in this publication. Drivers reported nineteen percent (18.6%).

Impaired Driving Crashes and Speed

Alcohol and/or drugs were suspected in seven percent (6.5%) of all crashes (809 suspected impaired driving crashes) and suspected impaired drivers were involved in fifty-two percent (51.9%) of fatal crashes (27 alcohol and/or drug suspected fatal crashes). Speed contributed to fifteen percent (14.6%) of all crashes and forty-two percent (42.3%) of fatal crashes. Twenty-one percent (20.5%) of suspected impaired driver crashes and fifty-two percent (51.9%) of suspected impaired driver fatal crashes also involved unsafe or excessive speed.

Occupant and Vehicle Involvement

There were 32,951 persons involved in traffic crashes during 2010. Ninety-three percent (92.8%) were occupants of automobiles, trucks, or buses.

There were 38 fatalities in automobiles, trucks, or buses (24 drivers and 14 passengers). Over ninety-six percent (96.5%) of all auto, truck, or bus occupants in police reported crashes wore seatbelts or used child restraints.

There were 195 motorcycle riders involved in traffic crashes in 2010. Nine motorcycle riders sustained fatal injuries (9 operators and 0 passengers). Over forty-nine percent (49.2%) of all motorcycle occupants in police reported crashes wore helmets for head protection.

Snowmobile and all-terrain vehicles and occupants are coded without distinction as off-highway vehicles and off-highway vehicle occupants. There were 59 off-highway vehicle occupants involved in traffic crashes in 2010. Three off-road vehicle occupants sustained fatal injuries (3 drivers and 0 passengers).

There were 162 pedestrians and 216 bicyclists involved in crashes with motor vehicles in 2010. Five pedestrians died in traffic crashes and no bicycle fatalities were reported.

Statewide, 71.2% of traffic crashes involved multiple motor vehicles. Twenty-eight percent (28.8%) were single motor vehicle crashes, including single motor vehicle crashes with non-motorists. A little more than twelve percent (12.3%) of single vehicle and four percent (4.2%) of multiple vehicle crashes were suspected alcohol and/or drug related.

Location

More than three-quarters (79.9%) of all traffic crashes occurred on urban roadways. Fatal crashes were more equally distributed between urban and rural locations (53.8% rural, 44.2% urban, and one fatal crash on a roadway with no urban or rural designation).

Close to a half of all crashes (45.6%) occurred at intersections, and 17.3% of fatal crashes were intersection-related.

Fifty-nine percent (58.9%) of all traffic crashes and 23.1% of all fatal crashes occurred within the boundaries of the Municipality of Anchorage (MOA). The percentage of crashes in the MOA that resulted in fatalities (0.097%) was lower than statewide. Seventy-five percent (74.8%) of all motor vehicle crashes with pedestrians, 78.4% of all motor vehicle crashes with bicyclists, and 19.3% of all motor vehicle crashes with moose occurred in the MOA. Fifty-two percent (52.2%) of crashes where alcohol and/or drug related were suspected and 61.2% of all speed-related crashes were reported in the MOA as well.

Seventy-nine percent (78.9%) of statewide traffic crashes occurred in Alaska DOT's Central Region, 16.3% were reported from areas within the Northern Region, and there were 4.8% accidents from locations within the Southeast Region.

Data Collection

The percentage of reported crashes that resulted in injuries or fatalities was unchanged from the previous year.

Data collected between 2000 and 2010 suggests a stable trend in the severity of traffic crashes that are reported.

2010 SUMMARY STATISTICS

CRASHES	2010
TOTAL CRASHES	12,399
FATAL CRASHES	52
MAJOR INJURY CRASHES	390
MINOR INJURY CRASHES	3,232
PROPERTY DAMAGE ONLY (PDO) CRASHES	8,725
SINGLE VEHICLE CRASHES	3,567
MULTIPLE VEHICLE CRASHES	8,830
CRASHES WITH DISABLING OR >$501 VEHICLE DAMAGE	8002
HIT & RUN TOTAL CRASHES	788
HIT & RUN FATAL CRASHES	1
HIT & RUN MAJOR INJURY CRASHES	10
HIT & RUN MINOR INJURY CRASHES	151
ALCOHOL &/OR DRUG RELATED CRASHES	809
ALCOHOL &/OR DRUG RELATED FATAL CRASHES	27
ALCOHOL &/OR DRUG RELATED MAJOR INJURY CRASHES	79
ALCOHOL &/OR DRUG RELATED MINOR INJURY CRASHES	293
POLICE REPORTED CRASHES	10,098
DRIVER REPORTED CRASHES	2,301
URBAN CRASHES	9903
URBAN FATAL CRASHES	23
% URBAN CRASHES THAT ARE FATAL	0.23%
RURAL CRASHES	2,853
RURAL FATAL CRASHES	28
% RURAL CRASHES THAT ARE FATAL	0.98%
CRASHES WITH MOOSE	667
FATAL CRASHES WITH MOOSE	0
ACCIDENT RATES	
CRASHES PER 100 MILLION VMT	258
FATALITIES PER 100 MILLION VMT	1.08
% OF CRASHES ARE ALCOHOL &/OR DRUG RELATED	6.5%
% OF FATAL CRASHES ARE ALCOHOL &/OR DRUG RELATED	51.9%

VEHICLES	2010
TOTAL VEHICLES IN CRASHES	22,071
AUTOS, TRUCKS & BUSES	
TOTAL AUTO, TRUCK & BUS VEHICLES IN CRASHES	21,953
AUTO/TRUCK/BUS VEHICLES IN CRASHES WITH >$501 DAMAGE	16,234

AUTO/TRUCK/BUS VEHICLES IN CRASHES WITH DISABLING DAMAGE	5865
AUTO/TRUCK/BUS VEHICLES IN CRASHES WITH ALCOHOL &/OR DRUGS	596
VEHICLES (CONT)	**2010**
MOTORCYCLES	
TOTAL MOTORCYCLES IN CRASHES	181
MOTORCYCLES IN ALCOHOL &/OR DRUG RELATED CRASHES	20
OFF-ROAD VEHICLES (ATV'S & SNOWMACHINES)	
TOTAL OFF-ROAD VEHICLES IN CRASHES	49
OFF-ROAD VEHICLES IN ALCOHOL &/OR DRUG RELATED CRASHES	13
BICYCLES	
TOTAL BICYCLES IN CRASHES	214
BICYCLES IN ALCOHOL &/OR DRUG RELATED CRASHES	18
OCCUPANTS	
TOTAL PERSONS	32,774
FATALITIES	56
MAJOR INJURIES	463
MINOR INJURIES	4,787
TOTAL PERSONS IN ALCOHOL &/OR DRUG RELATED CRASHES	1,837
ALCOHOL &/OR DRUG RELATED FATALITIES	28
ALCOHOL &/OR DRUG RELATED MAJOR INJURIES	97
ALCOHOL &/OR DRUG RELATED MINOR INJURIES	436
AUTO, TRUCK & BUS OCCUPANTS	
TOTAL AUTO/TRUCK/BUS OCCUPANTS	31927
AUTO/TRUCK/BUS PASSENGER FATALITIES	15
AUTO/TRUCK/BUS DRIVER FATALITIES	24
AUTO/TRUCK/BUS OCCUPANTS IN ALCOHOL &/OR DRUG RELATED CRASHES	1,807
AUTO/TRUCK/BUS FATALITIES IN ALCOHOL &/OR DRUG RELATED CRASHES	22
AUTO/TRUCK/BUS PERCENT SEAT BELT USE (POLICE REPORT ONLY)	80.8%
AUTO/TRUCK/BUS PERCENT AIR BAG DEPLOYMENT (POLICE REPORT ONLY)	17.6%
AUTO/TRUCK/BUS PERCENT USING PROPER CHILD RESTRAINT (POLICE RPT)	96.4%
MOTORCYCLE OCCUPANTS	
MOTORCYCLE OCCUPANTS	195
MOTORCYCLE PASSENGER FATALITIES	0
MOTORCYCLE DRIVER FATALITIES	9
MOTORCYCLE OCCUPANTS IN ALCOHOL &/OR DRUG RELATED CRASHES	21
MOTORCYCLE FATALITIES IN ALCOHOL &/OR DRUG RELATED CRASHES	4
MOTORCYCLE PERCENT OCCUPANTS WEARING HELMETS (POLICE RPT ONLY)	47.7%
OFF-ROAD VEHICLE OCCUPANTS	
OFF-ROAD VEHICLE OCCUPANTS	59
OFF-ROAD VEHICLE PASSENGER FATALITES	0
OFF-ROAD VEHICLE DRIVER FATALITIES	3

OFF-ROAD VEHICLE OCCUPANTS IN ALCOHOL &/OR DRUG RELATED CRASHES	15
OFF-ROAD VEHICLE FATALITIES IN ALCOHOL &/OR DRUG RELATED CRASHES	2
OCCUPANTS (CONT)	**2010**
PEDESTRIANS	
TOTAL PEDESTRIANS	162
PEDESTRIAN FATALITES	5
PEDESTRIANS IN ALCOHOL &/OR DRUG RELATED CRASHES	52
PEDESTRIAN FATALITIES IN ALCOHOL &/OR DRUG RELATED CRASHES	4
BICYCLISTS	
TOTAL BICYCLISTS	216
BICYCLIST FATALITES	0
BICYCLISTS IN ALCOHOL &/OR DRUG RELATED CRASHES	12
BICYCLIST FATALITIES IN ALCOHOL &/OR DRUG RELATED CRASHES	0

PREFACE

Alaska motor vehicle crash records are stored in the Highway Analysis System (HAS) database. HAS integrates crash data with road network and other information. HAS is maintained on the State of Alaska Computer Network at the Juneau Data Center. The State of Alaska and the Federal Highway Administration of the U.S. Department of Transportation provide funding for this publication and for the continued development of HAS.

Crash data specific to a particular crash is confidential according to Alaska Statute 28.15.151(f). An Attorney General's opinion of 1988 provides for reporting of aggregate crash data to the public.

Motor vehicle crash information is first recorded on crash report forms by police or by involved drivers. Police agencies send copies of Form 12-200 to the Department of Administration, Division of Motor Vehicles (Driver Services). Drivers submit report Form 12-209 directly to the Division of Motor Vehicles (Driver Services). The Division of Motor Vehicles then forwards copies of all crash reports to the Division of Program Development, Transportation Information Group, Alaska Department of Transportation and Public Facilities (ADOT&PF). The HAS database only includes crash reports received by ADOT&PF from the Division of Motor Vehicles.

At ADOT&PF, a state record tracking number is assigned, crash information is carefully checked for code consistency and a mile point location is determined for routes in the HAS linear reference system. The coded crash record is then loaded to the HAS database for permanent storage and analysis. Crash data reporting staff, members of the Transportation Data Services Unit of the Division of Program Development, determine which crashes meet program criteria and ensure that crash records submitted to the Highway Analysis System are complete and accurate.

As soon as all crash information is stored in the HAS database for a calendar year, it is available for analysis by ADOT&PF traffic engineers and statistical staff, as well as other authorized users of the State data network. Yearly summaries, including the statistical tables in this publication, are prepared at that time.

TRAFFIC CRASH TERMINOLOGY

Traffic Crash Definition: A traffic crash is a motor vehicle crash that occurs on a trafficway. Motor vehicle crashes in parking lots or on other private property, or crashes where the only vehicle(s) involved are not customarily used for transport on roads, e.g., forklifts or airline baggage carts, are not considered traffic crashes. Also excluded are motor vehicle crashes directly resulting from a natural disaster and crashes caused by an explosion or discharge of a weapon. To maintain consistency with the Fatality Analysis Reporting System (FARS) definition, fatalities directly attributed to pre-existing medical conditions are not considered traffic fatalities. These types of crashes have been omitted from this publication.

Reporting Requirements: Alaska State law (AS 28.35.080) requires the reporting of any motor vehicle crash that results in the death or injury of one or more persons or that causes total property damage of $2,000 or more. Drivers involved in such crashes are required to report crash information to a police agency and submit Form 12-209 to the Department of Administration if police do not investigate. Whenever police investigate a motor vehicle crash, they are required to forward Form 12-200 to the Department of Administration, Division of Motor Vehicles. Drivers are not required to submit a report to the Division of Motor Vehicles if a police agency has investigated and assumed responsibility for reporting.

Alaska State law also requires that drivers or vehicle owners provide proof of motor vehicle liability insurance to the Department of Administration, Division of Motor Vehicles if they are involved in a motor vehicle crash on public property that involves injury, death, or total property damage exceeding $501 (AS28.22.021). Because of this, many drivers voluntarily file Form 12-209 for crashes with less than $2000 damage.

Crash Severity: Traffic crashes are categorized in this publication based on the most serious injury to motor vehicle occupants and any non-motorists that are involved (pedestrians and bicyclists struck by motor vehicles). Crashes that involve no injuries or deaths are designated property damage-only (PDO). A fatal crash has resulted in at least one death within thirty days of the crash. Crashes involving injuries are further subdivided into major and minor injury crashes. A major injury crash is one in which the most serious injury is incapacitating. The most serious injury in a minor injury crash is not incapacitating (typically pain, minor bleeding, a minor burn, a bruise, a contusion, or an abrasion).

Injury Severity: While crash severity reflects the most serious injury within a crash and counts crash incidents, occupant injury severity is evaluated for each person involved and counts persons. Minor, major, and fatal injury designations are based on the same criteria used for assigning crash severity. Occupant injury severity counts the number of persons receiving fatal, major, or minor injuries. Counts of persons not injured in crashes are accumulated under the no injuries category rather than a PDO designation. Vehicle injury severity, based on the most serious injury within a vehicle, is also calculated for some statistical tables in this publication. Numbers of vehicles in which no occupants received injuries are accumulated under a no injuries category. Numbers of vehicles in which fatalities occurred accumulate under the fatality category, while those in which the most serious injury was major or minor accumulate under the major injury or minor injury categories, respectively.

Classification of Vehicles: In the HAS database structure, pedestrians and non-motorized vehicles such as bicycles are stored as vehicle records. Motor vehicles traditionally used on public roadways as transport vehicles, excluding motorcycles, are called “autos, trucks, and buses” in this publication. This category includes vehicles such as passenger cars, pick-up trucks and other light trucks, large trucks, panel/van trucks, buses, motor homes, tractor-trailer combinations, and emergency vehicles. In “Auto/Truck/Bus” crashes, at least one vehicle involved in the crash must be an automobile, truck, or bus. Off-highway vehicles include snow machines and all-terrain vehicles combined.

Impaired Crashes: A crash is designated as potentially impaired (alcohol and/or drug related) if any driver or involved non-motorist is considered impaired by police. Passenger (non-driver) data is not considered. Criteria include police suspicion of alcohol or drug use, positive test results, and traffic citations. An alcohol test is positive if the blood alcohol concentration (BAC) or equivalent is nonzero. The term impairment is used in this publication to designate alcohol and/or drug use without respect the amount of alcohol and/or drugs indicated. In Alaska, intoxication is defined as having a BAC of 0.08% or more. In this publication, alcohol and/or drug related crashes do not necessarily involve drunk drivers and driver impairment does not refer to legal intoxication.

Speed-Related: A crash is designated speed related if any involved driver is issued a traffic ticket for speed (speed too fast for conditions) or is coded for in human circumstance as “unsafe speed.”

Holiday and Weekend Intervals: Holiday and weekend intervals comply with National Highway Traffic Safety Administration (NHTSA) guidelines. If a holiday occurs on either Saturday or Sunday, the holiday interval extends from 6:00 pm Friday to 5:59 am Monday. Intervals for holidays occurring on Monday or Tuesday extend from 6:00 pm Friday to either 5:59 am Tuesday or 5:59 am Wednesday. If the holiday falls on Wednesday, a 6:00 pm Tuesday to 5:59 am Thursday interval is used. If the holiday falls on Thursday, the holiday period runs from 6:00 pm Wednesday to 5:59 am Monday. The interval for a holiday occurring on Friday extends from 6:00 pm Thursday to 5:59 am Monday. For many holidays, the length of the holiday interval will vary from year to year. The weekend interval extends from 6:00 pm Friday to 5:59 am Monday (60 hours).

TRENDS IN ALASKA TRAFFIC CRASHES

Population estimates, numbers of licensed drivers and registered motor vehicles, and estimates of annual vehicle miles traveled (AVMT) by all motor vehicles in Alaska are given in Table 1. Annual Vehicle Miles Traveled (AVMT) is from estimates developed in the Federal Highway Administration's Highway Performance Monitoring System (HPMS). The data series for licensed drivers and motor vehicles are from the Division of Motor Vehicles, Alaska Department of Administration. Registered motor vehicle counts include snowmobiles and motorcycles. Drivers with instruction permits are counted as licensed drivers.

TABLE 1
Alaska Mid-year Population, Licensed Drivers, Vehicle Miles Traveled, Fatalities and Fatality Rate (2001 - 2010)

YEAR	MID-YEAR POPULATION	LICENSED DRIVERS	VEHICLE MILES TRAVELED (MILLIONS)	FATALITIES	FATALITY RATE*
2010	710,000	532,000	4,798	56	1.08
2009	699,000	524,000	4,932	64	1.30
2008	687,000	519,000	4,895	62	1.27
2007	680,000	512,000	5,153	82	1.59
2006	675,000	506,000	4,968	74	1.49
2005	667,000	504,000	5,035	73	1.45
2004	660,000	500,000	4,990	101	2.02
2003	649,000	500,000	4,942	98	1.98
2002	642,000	498,000	4,906	89	1.81
2001	633,000	490,000	4,812	89	1.85

*FATALITY RATE IS CALCULATED PER 100 MILLION ANNUAL VEHICLE MILES TRAVELED

Sources: 1) Alaska mid-year population estimates are from the Alaska Dept of Labor. 2) Licensed driver estimates are from the Division of Motor Vehicles. 3) Annual vehicle miles traveled (VMT) are from the DOT&PF Highway Performance Monitoring System (HPMS).

Table 2 and Figure 1 summarize Alaska traffic crash severity for the ten-year period between 2001 and 2010.

There were 491 (3.8%) less traffic crashes processed in 2010 than in 2009. The number of fatal crashes decreased by seven (11.9%). The number of major injury crashes increased by 1.6% while minor injury and property damage only (PDO) crashes decreased by 4.8% and 3.7% respectively in 2010 compared to 2009.

Police reported hit and run circumstances for 788 crashes in 2010 (6.4% of all reported crashes and 4.4% of injury plus fatal crashes). Hit and run circumstances were coded for one fatal crash.

Between 2001 and 2010, injury crashes ranged from 27.9% (2008) to 31.9% (2002) of all crashes reported annually, while PDO crashes ranged from 67.5% (2002) to 71.7% (2008).
In 2010, 29.2% of all crashes involved nonfatal injuries and 70.3% were classed as property damage only.

TABLE 2
Alaska Traffic Crashes by Crash Severity and Year (2000 - 2010)

YEAR	FATAL CRASHES	MAJOR INJURY CRASHES	MINOR INJURY CRASHES	PROPERTY DAMAGE ONLY CRASHES	TOTAL CRASHES
2010	52	390	3,232	8,725	12,399
2009	59	384	3,395	9,052	12,890
2008	56	328	2,910	8,331	11,625
2007	82	343	2,728	7,425	10,578
2006	74	361	2,984	8,309	11,728
2005	67	468	3,584	9,018	13,137
2004	96	473	3,732	10,317	14,618
2003	89	534	3,869	10,296	14,788
2002	78	545	3,702	8,996	13,321
2001	80	364	4,152	10,652	15,248

Source: DOT&PF Highway Analysis System (HAS).

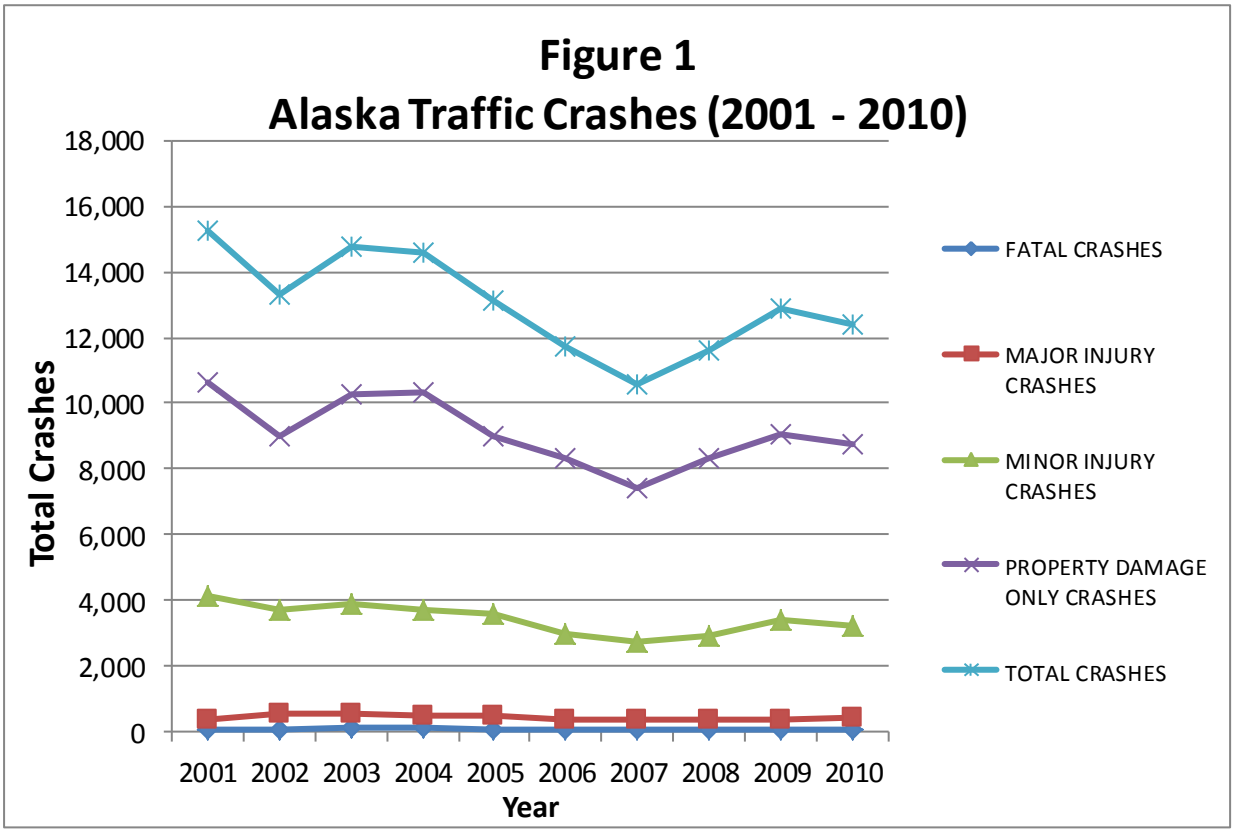


Table 3 summarizes numbers of persons injured or killed in Alaska traffic crashes between 2001 and 2010. Beginning with the 2002 reporting year, a dollar valuation is no longer assigned for the total cost of damages in each crash or to the cost of damage to individual vehicles. Limited data is available for the number of vehicles with estimated damage greater than $501, for number of vehicles with disabling versus functional damage, and for the number of crashes in which non-vehicular damage occurred.

TABLE 3
Persons Killed and Injured
In Alaska Traffic Crashes (2001 - 2010)

YEAR	FATALITIES	MAJOR INJURIES	MINOR INJURIES	FATALITIES & INJURIES
2010	56	463	4787	5306
2009	64	452	4878	5394
2008	63	391	4251	4705
2007	89	433	3956	4478
2006	77	437	4584	5098
2005	74	581	5395	6050
2004	100	584	5607	6291
2003	100	655	5854	6609
2002	89	664	5704	6457
2001	89	433	6104	6626

Source: DOT&PF Highway Analysis System (HAS). Fatalities may not equal those reported in the Fatality Analysis Reporting System (FARS) due to differences in reporting criteria.

Alaska traffic crash deaths in 2010 included five pedestrians, nine motorcyclists, four off-road vehicle occupants, and 39 occupants of automobiles, trucks or buses. Twenty-seven deaths occurred in alcohol and/or drug related traffic crashes during 2010.

Two accepted methods for making crash severity comparisons are based on calculations of the number of fatalities per million vehicle miles traveled (VMT) or the number of fatalities per million licensed drivers. Table 4 summarizes the United States annual VMT, licensed drivers, and fatalities for the last ten years, as provided by the Federal Highway Administration, Office of Highway Information Management. See Table 1 for corresponding Alaska data.

TABLE 4

US Vehicle Miles Traveled,
Licensed Drivers, Fatalities and Fatality Rate (2001 - 2010)

YEAR	LICENSED DRIVERS (THOUSANDS)	ANNUAL VEHICLE MILES TRAVELED (MILLIONS)	FATALITIES	FATALITY RATE*
2010	210,115	2,967,000	32885	1.11
2009	209,618	2,957,000	33883	1.15
2008	208,321	2,977,000	37423	1.26
2007	205,742	3,031,000	41259	1.36
2006	202,810	3,014,000	42708	1.42
2005	200,549	2,989,000	43510	1.46
2004	198,889	2,965,000	42836	1.44
2003	196,166	2,890,000	42884	1.48
2002	194,602	2,856,000	43005	1.51
2001	191,276	2,796,000	42196	1.51

* Fatality rate is calculated per 100 million VMT

Source: National Highway Traffic Safety Administration (NHTSA).

Figure 2 compares Alaska and U.S. annual fatalities per 100 million annual vehicle miles traveled for the last ten years. The national fatality rate decreased annually between 2000 and 2010, from 1.51 U.S. fatalities /100 million VMT in 2001 to 1.11 U.S. fatalities /100 million VMT in 2010. Alaska's rate also decreased, but mostly remained above the national rate. In 2001, Alaska's fatality was 1.85 fatalities per 100 million VMT. It decreased to 1.30 traffic fatalities per 100 million VMT in 2009 and 1.08 fatalities per 100million VMT in 2010, the lowest in the last ten years.

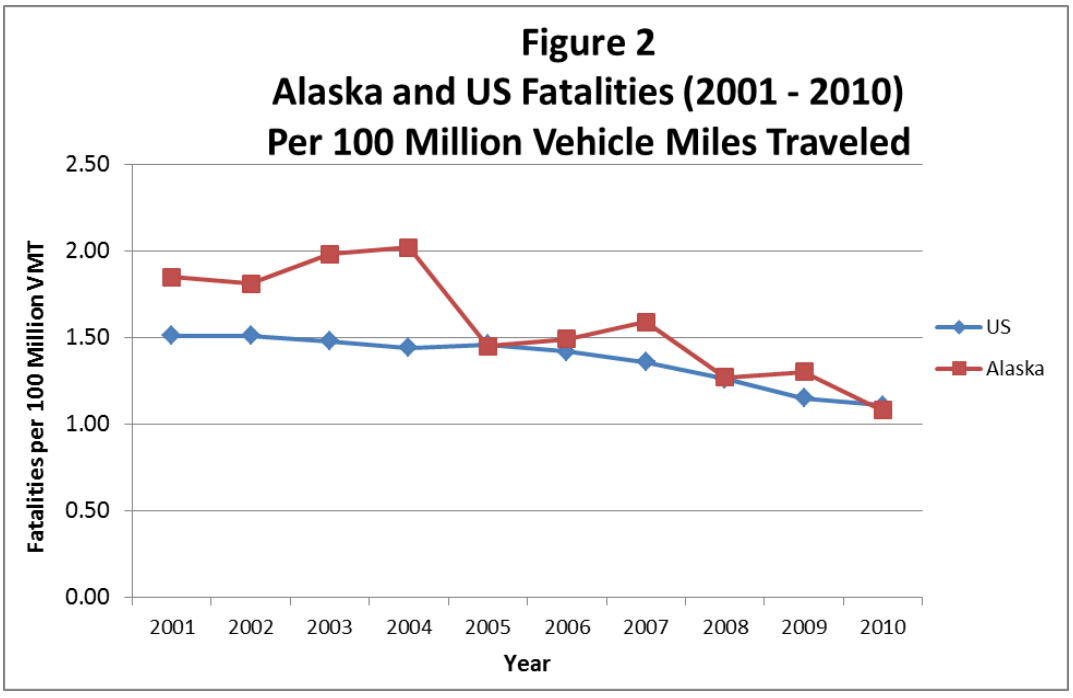
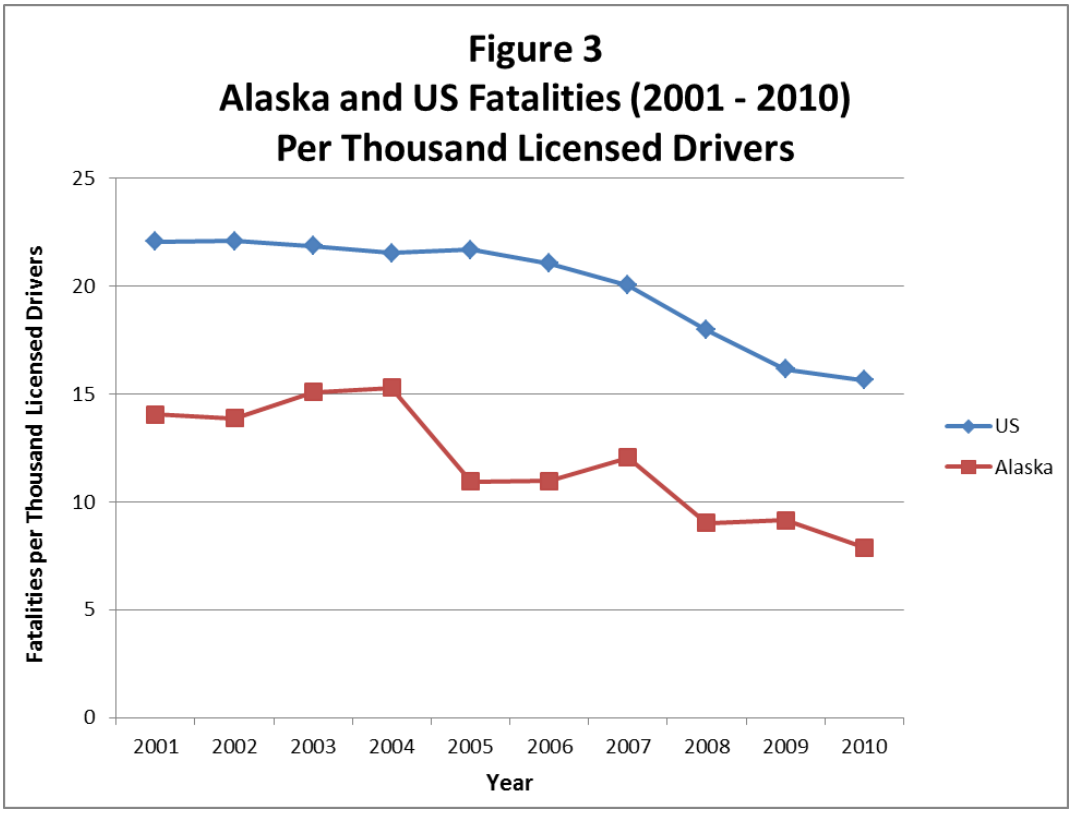


Figure 3 compares the U.S. and Alaska trends for fatalities per thousand licensed drivers. While Alaska traffic fatality rates based on traffic volumes (by VMT) are typically greater than the

corresponding national rate, Alaska traffic fatality rates based on population, number of licensed drivers, or number of registered vehicles tend to be less.



CRASH EVENTS

Event type, or type of crash, describes the events of the traffic crash. Law enforcement personnel indicate a first crash event for the entire crash and a possible second crash event for each vehicle, following procedures described in the State of Alaska Police Crash Report Manual. Drivers are asked only to describe a first crash event for traffic crashes that they report.

No attempt is made to assign a most harmful event in a sequence of crash events. The first crash event is not always the crash event responsible for the most serious injuries to vehicle occupants or for the most damage to vehicles.

The first crash event is used to classify the crash type referenced in this publication. For a single vehicle, this may be a crash with an animal, pedestrian, or fixed object such as a light pole or ditch, or it may be a non-crash event such as an overturn. For multiple vehicle crashes, the first event is typically a crash with another motor vehicle. Crashes between motor vehicles in transport (motor vehicles in the process of transporting people or goods on a public roadway) are classified as rear end, head on, angle, or sideswipe. Crashes between vehicles in transport and parked vehicles (vehicles parked outside of the travel lanes of public roadways) are classified as crashes with parked vehicles.

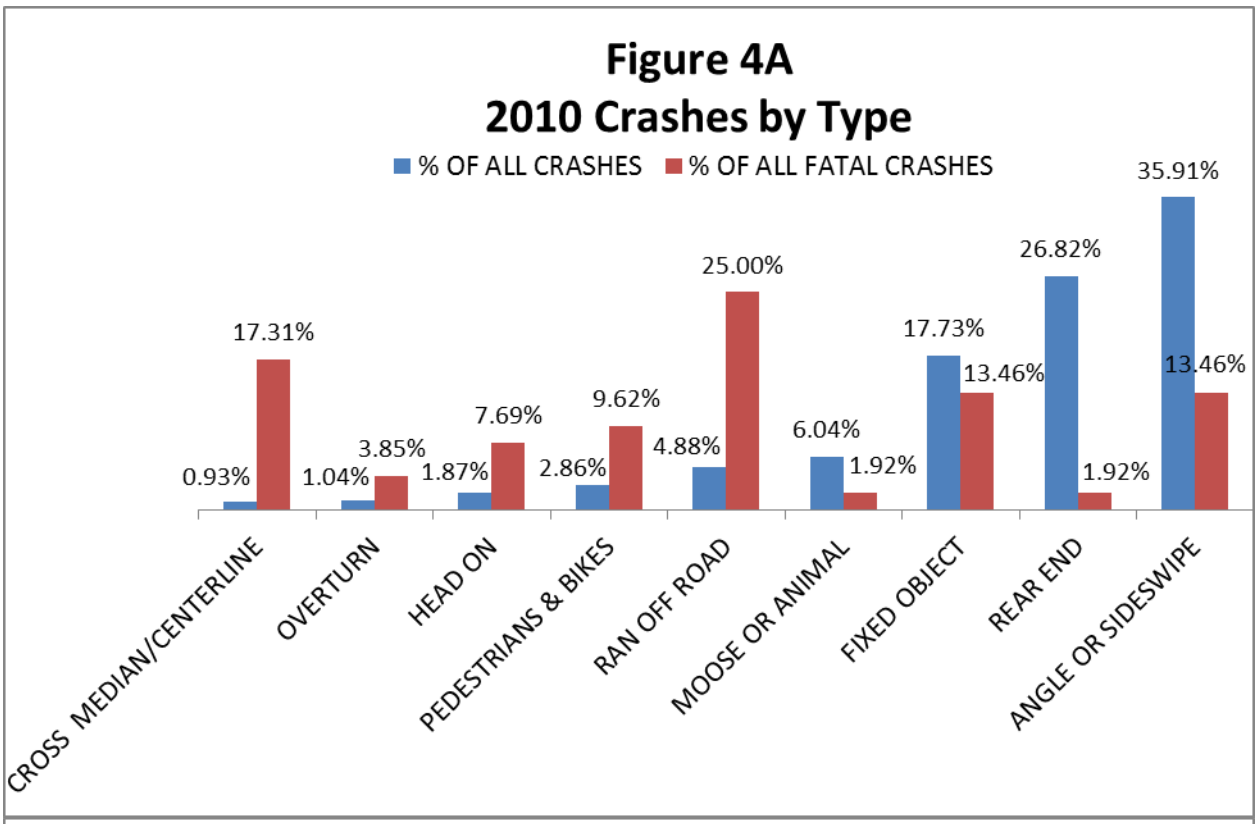
Figure 4A compares first crash event types for all crashes with those for crashes that resulted in fatalities. Figure 4B presents first crash event data for alcohol and/or drug-related crashes. Sideswipe crash data is combined with motor vehicle angle crash events for this figure. Event types that were very infrequently coded and events coded as “other” are not shown

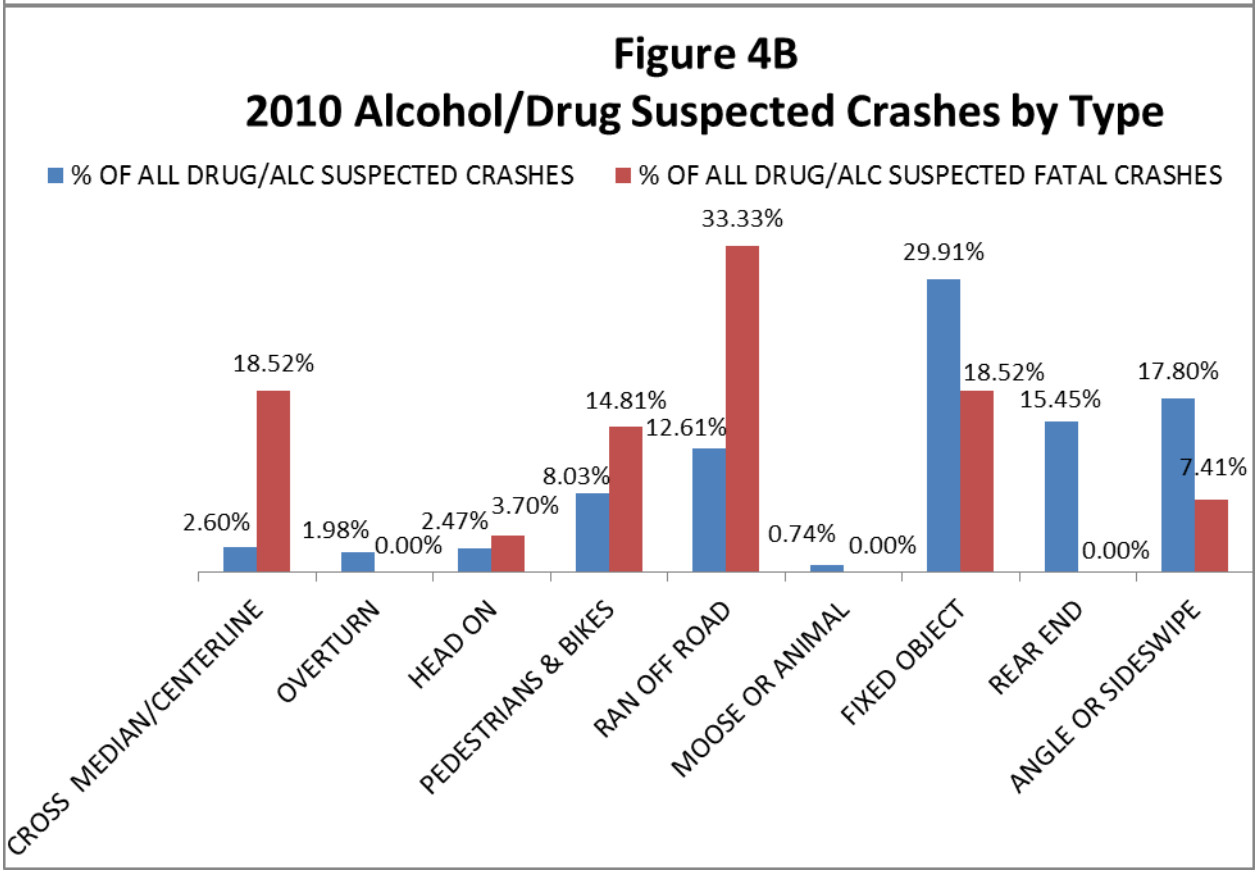
All Crashes

Crashes between motor vehicles (head-on, rear-end, angle, and sideswipes combined) occurred as first harmful events in sixty-five percent of all crashes in 2010 (64% in 2009) and in twenty-three percent (23.1%) of fatal crashes (a decrease from 29% of fatal crashes in 2009). Thirty-three percent of all Alaska traffic crashes in 2010 involved motor vehicle (MV) angle crashes, a crash type associated typically with turning movements, passing, and failure to yield situations. Twenty-seven percent of all first crash events were MV rear end crashes, a crash type typical of situations involving unsafe speed and driver inattention at intersections or in slowing traffic. Less than 2% of all crashes involved head-on first event crashes. Crashes with fixed objects were coded as the crash type for 18% of all traffic crashes in 2010.

Fatal Crashes

Fatal crashes included a higher percentage of run off road crashes, head-on crashes with other motor vehicles, and crashes with pedestrians than traffic crashes overall. Crashes with other motor vehicles comprised 23% of fatal crash types (8% head-on, 13% angle, and 2% rear-end crashes coded as first crash events). Thirteen percent of fatal crashes involved crashes with fixed objects. In 10% of fatal crashes, crashes with pedestrians and bicyclists were coded as first crash events.



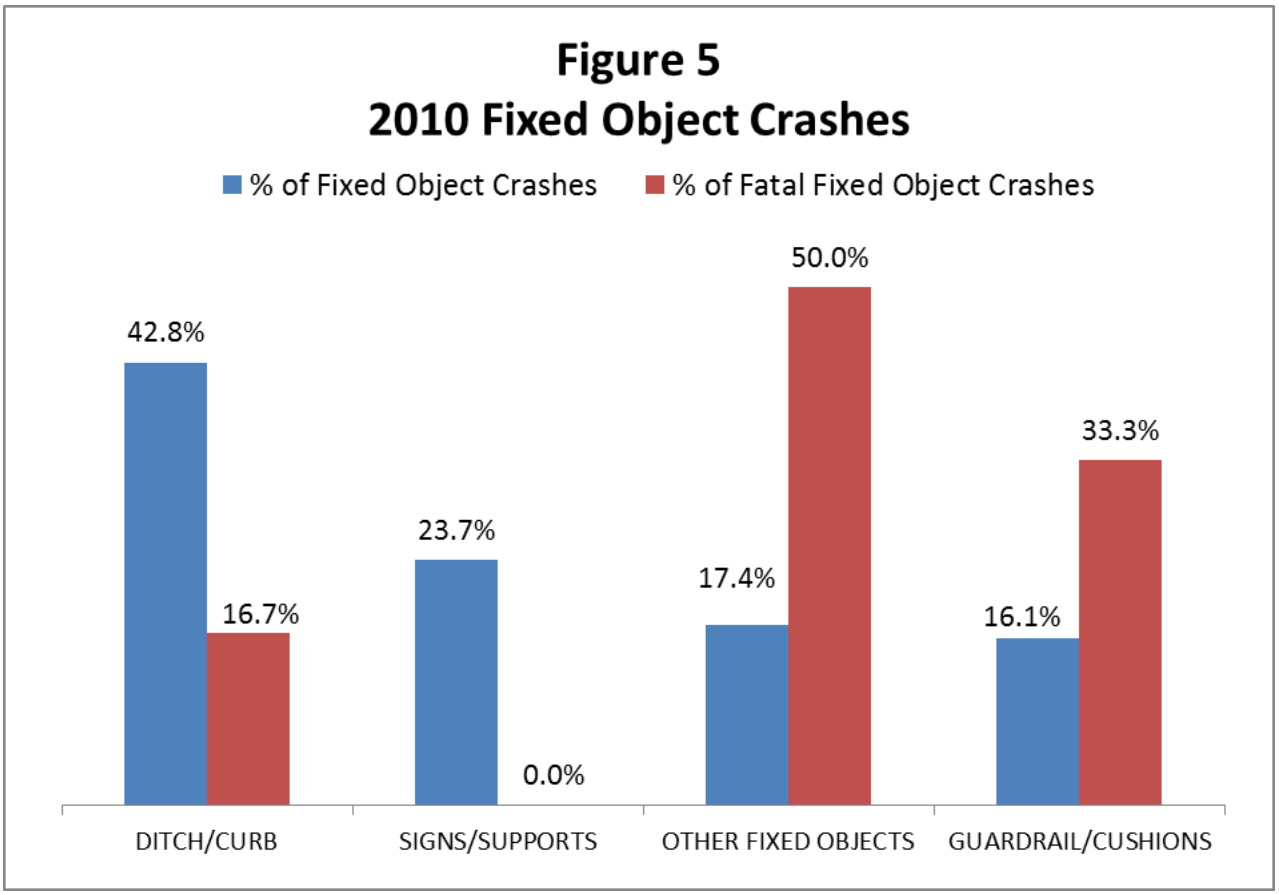


Impaired Crashes

Impaired crashes were less likely to involve crashes with another motor vehicle than other crash types. Crashes between motor vehicles accounted for 36% of first event coding for all crashes when alcohol and/or drugs were involved and 11% of first event coding for fatal crashes when alcohol and/or drugs was involved (from 65% and 23% respectively of crash event coding in all crashes and in all fatal crashes). Thirty percent of all impaired crashes and almost 19% of fatal alcohol-related crashes had first event coding indicating crashes with fixed objects (18% in all crashes and 14% in all fatal crashes). Impaired crashes were also more likely to involve run-off-road and pedestrians and bicycle crashes.

Crashes with Fixed Objects

Fourteen percent of all crashes as well as 12% of fatal crashes occurred when vehicles first struck fixed objects. Most often, fixed object crashes were coded for crashes with ditches, signs and guardrail faces. In some of these crashes, secondary events such as vehicle overturns or crashes with trees and culverts may have been more harmful to vehicle occupants. Figure 5 summarizes the kinds of objects struck in fixed object crashes.



Ditch/Curb incudes embankments,walls and snow berms. Bridge rails, overpasses and median barriers are grouped with guardrail/cushions. Signs and utlity posts are included with signs/supports.

Multiple Motor Vehicle Crashes

Multiple motor vehicles were involved in 71% of traffic crashes in 2010. Most multiple vehicle crashes occurred on urban roadways. The first crash event was usually (87% of the time) a crash with another motor vehicle not including parked vehicles, though 9.9% of crashes involving multiple motor vehicles had a crash with another motor vehicles coded as a secondary crash event. Four percent (4.2%) of multiple vehicle crashes may involve alcohol, drugs, or both.

Single Motor Vehicle Crashes

Twenty-nine percent (28.8%) of all traffic crashes in 2010 were single vehicle crashes. Just less than ten percent (9.7%) of single motor vehicle crashes were with non-motorists. Most single vehicle crashes with pedestrians and bicyclists occurred in urban settings (88.5%).
Crashes with fixed objects, crashes with moose or other animals, run-off-road crashes and crashes with non-motorists (in that order) predominated as first crash events in single vehicle crashes. Twelve percent (12.3%) of single vehicle crashes with suspected impairment.

Fatal Vehicle Crashes

Forty-two percent (42.3%) of fatal crashes involved multiple motor vehicles. Fifty-eight percent (57.7%) of fatal crashes involved single motor vehicles. Ten percent of fatal crashes (9.6%) were single vehicle crashes with pedestrians.

Impaired Crashes

Forty-six percent (45.9%) of crashes with suspected impairment involved multiple vehicles. Sixty-three percent of fatal impaired crashes (63.3%) involved single vehicles. Fifteen percent of fatal impaired crashes (14.8%) were single vehicle crashes with pedestrians and bicyclists.

Vehicle Overturns

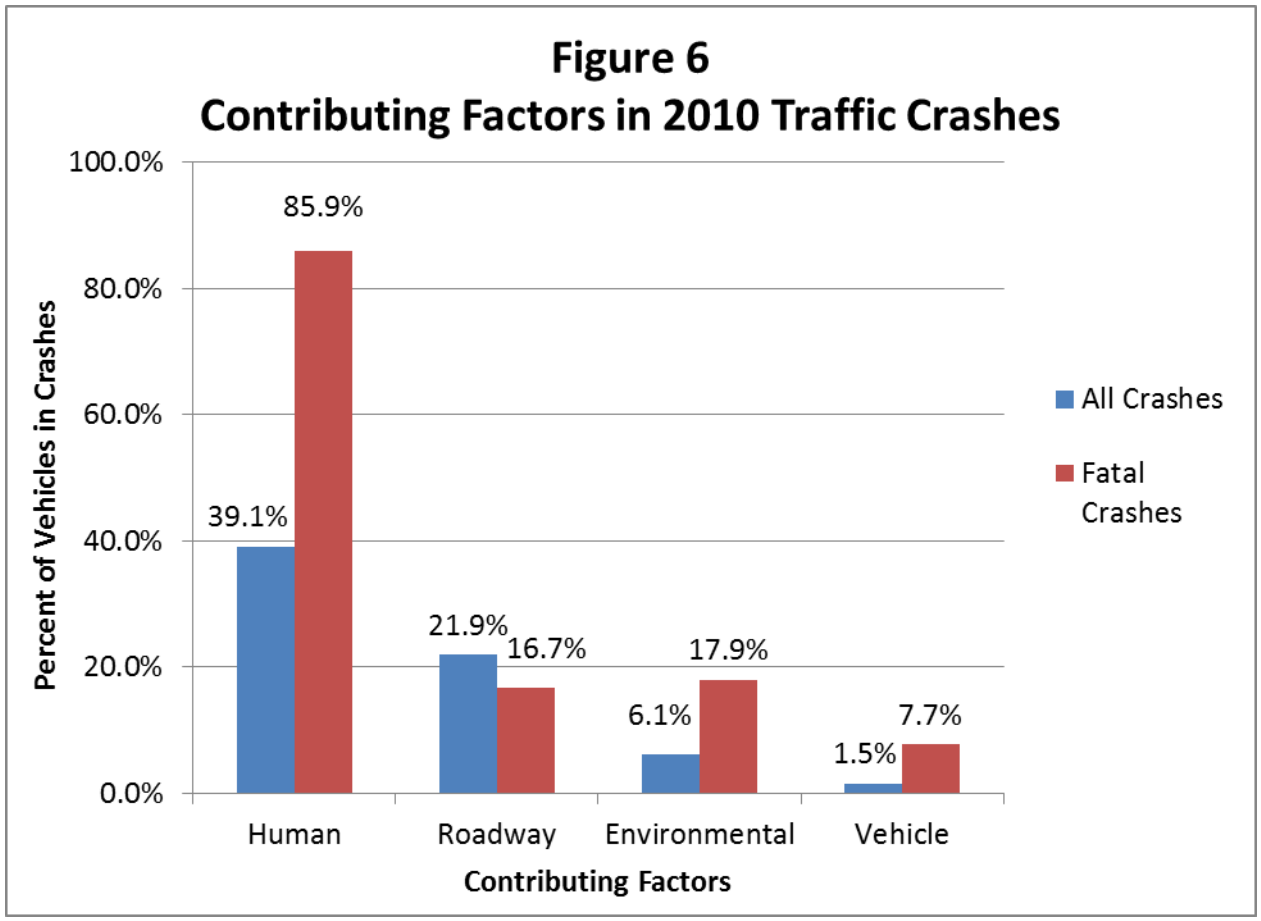
Only sixteen percent (16.29%) of crashes were coded for secondary crash events.
Vehicle overturns were coded more often as secondary crash events on vehicle records than as first crash events. There were 129 crashes with first event overturn coding and 461 crashes were coded for overturns as second events. Approximately 600 vehicles overturned during traffic crashes in 2010 (about 2.9% of vehicles).

FACTORS CONTRIBUTING TO ALASKA TRAFFIC CRASHES

Given the opportunity to select up to two factors for each driver, police coded at least one human circumstance for 41% of drivers (excluding coding for "no improper driving, missing and unknown"). Twenty-two percent (21.9%) of vehicles were coded for roadway circumstances such as debris in roadway, pavement faults, and missing, obscured, or inoperative traffic control. Six percent were coded for environmental circumstances, including weather conditions, glare, and obstructed (or limited) view. One percent (1.5%) of vehicles were reported as having vehicle defects that contributed to the crash. All of these contributing factors are shown in Figure 6.

Specific vehicle circumstances cited most frequently were tire failure or inadequate tires (30.4% of vehicle defects coded). Weather (67.3%) dominated environmental circumstances and road surface condition (71.7%) dominated roadway circumstances coding.

Figures 7 and 8 show the major human factors that contributed to all crashes (Figure 7) and to fatal crashes (Figure 8) in 2010. Because some drivers were coded for two human factors, the number of occurrences does not correspond to the number of driver (vehicle) records.



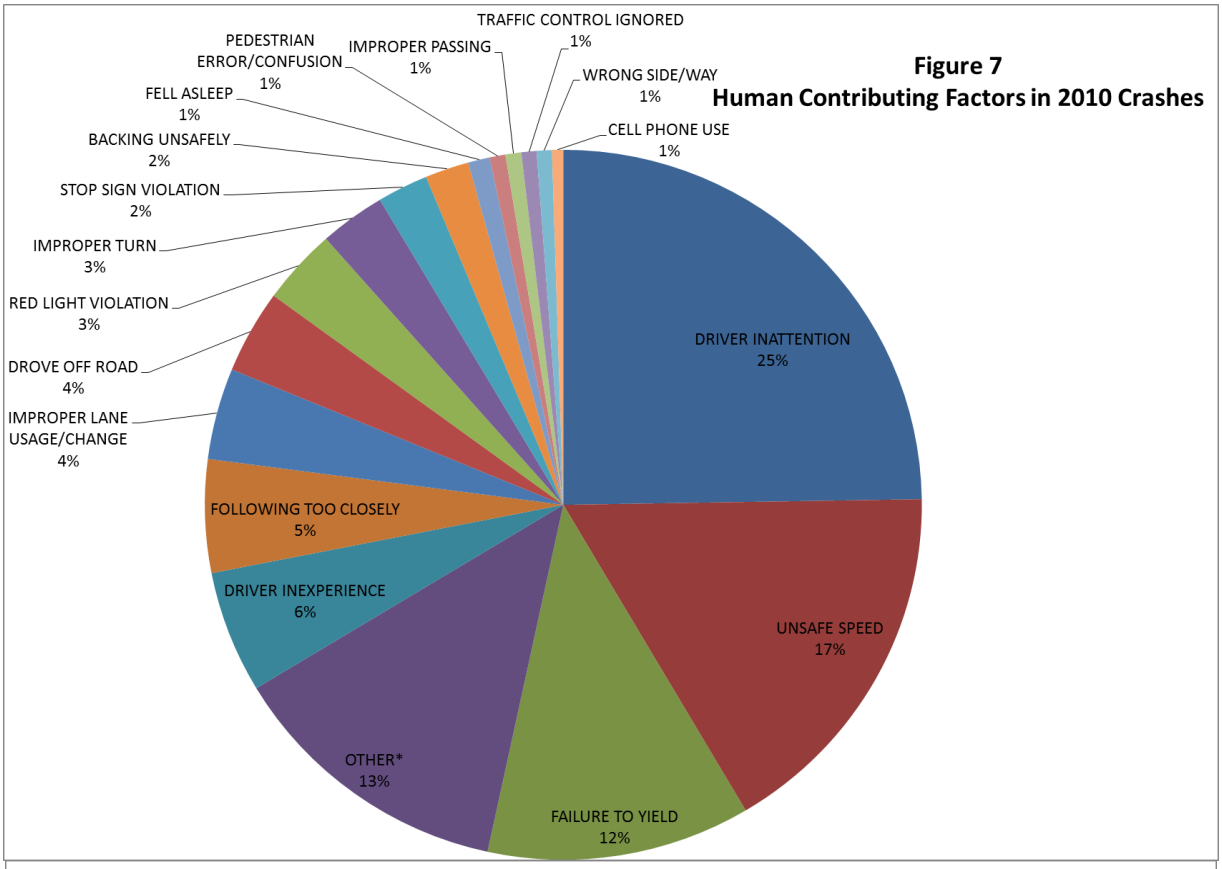


Figure 7
Human Contributing Factors in 2010 Crashes

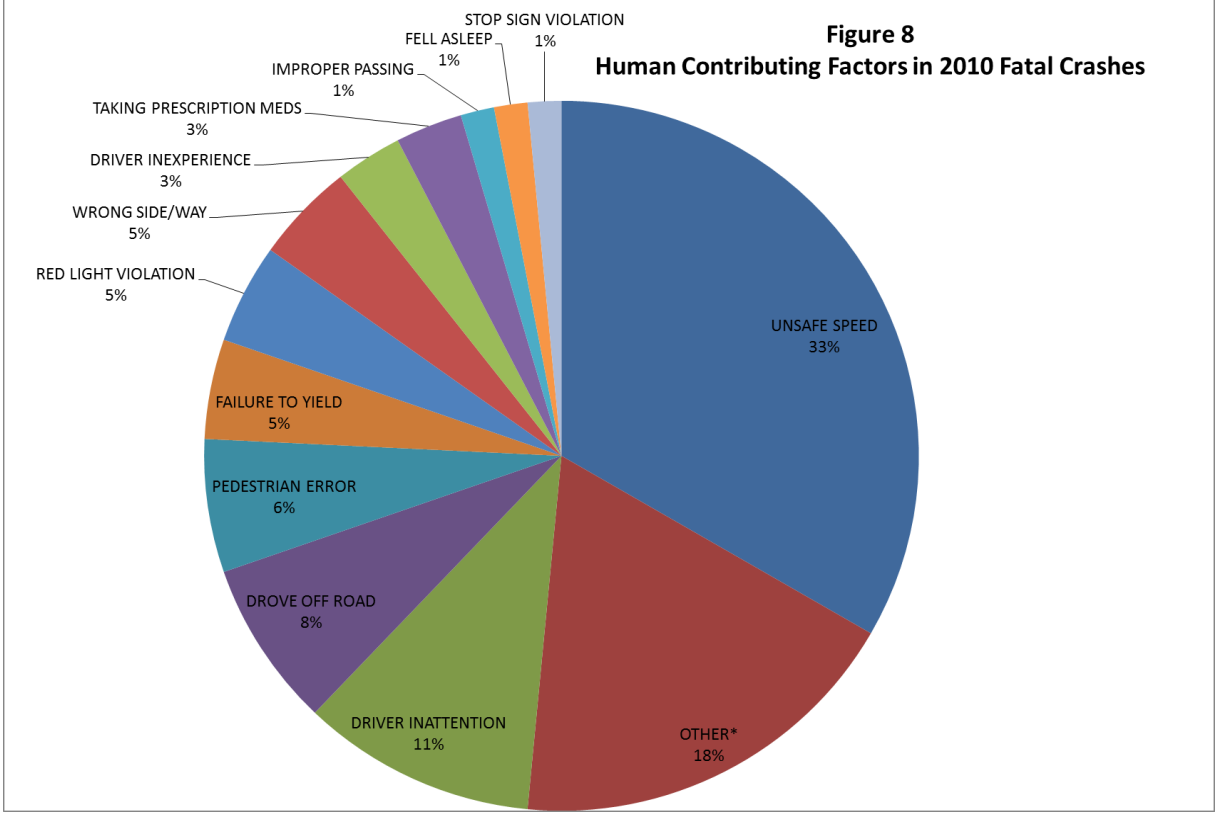


Figure 8
Human Contributing Factors in 2010 Fatal Crashes

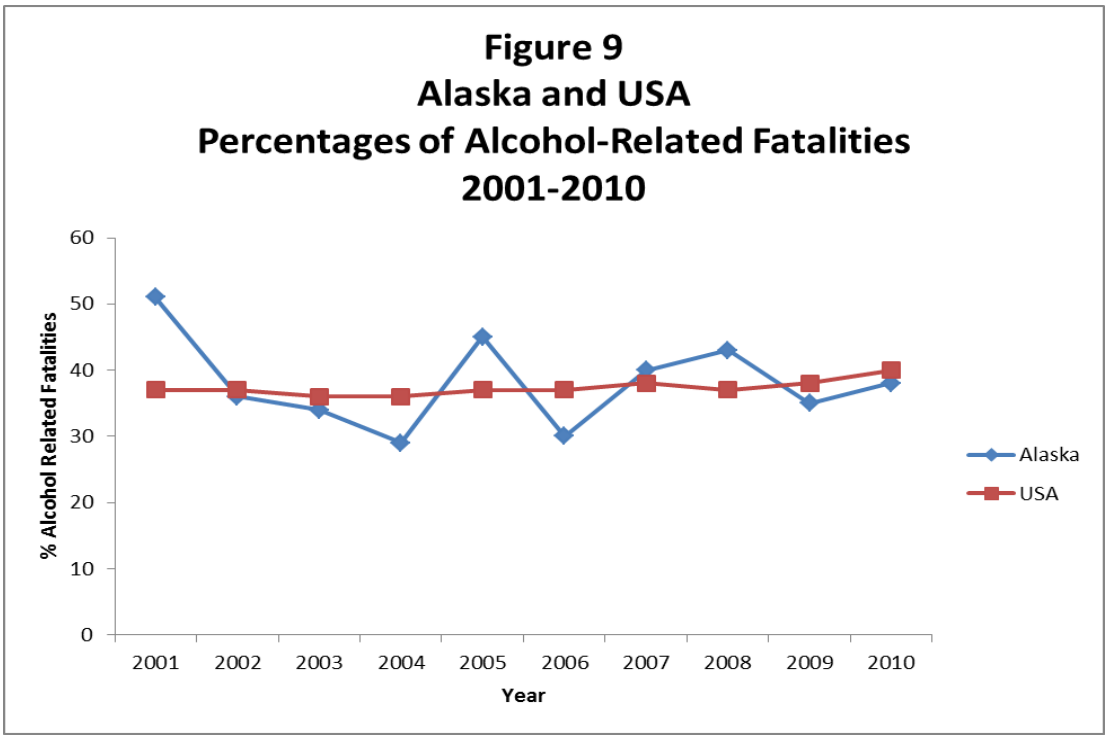
Driver inattention was the most frequently reported human contributing factor on all 2010 crash reports, followed by unsafe speed and failure to yield. Unsafe speed and driver inattention were the most frequently recorded human contributing factors on fatal crash reports during 2010.

IMPAIRED DRIVING

Alcohol and/or drug test results, traffic citations, and police suspicion of alcohol and /or drug use are considered when categorizing crashes and injuries in this publication as being impaired. Crashes can be designated impaired based on police suspicion without confirming alcohol or drug tests or based on alcohol or drug related traffic citations (such as driving while intoxicated or open container) without confirming alcohol or drug test results. Alcohol or drug tests are considered positive if non zero (0.001% blood alcohol would be considered a positive test) and crashes can be designated impaired if test results are the only data available. A crash can be designated impaired if an involved non-motorist (pedestrian/bicyclist) is impaired when involved motor vehicle drivers are not. Passenger involvement is not taken into consideration.

Statistics specifically for drunk driving crashes (those meeting the statutory 0.08% driver blood alcohol criteria) are not provided in this publication.

Figure 9 shows Alaska alcohol-related fatality percentages (percentage of fatalities that occurred in alcohol-related crashes) compared to national percentages for the years 2001 to 2010. In 2010, 809 traffic crashes were determined to be alcohol-related (6.5% of all crashes). Twenty-seven fatal crashes involved alcohol use (52% of all fatal crashes). Twenty-eight people died in alcohol related crashes (50% of all traffic fatalities).



The twenty-eight persons that died in alcohol and/or drug related traffic crashes in 2010 included eighteen occupants of automobiles and trucks (11 drivers, 5 passengers), four pedestrians, two off-road vehicle occupants, and four motorcyclists. Ten driver fatalities in automobiles and trucks

were impaired. Four passenger fatalities were in auto/truck/bus vehicles operated by impaired drivers, and five were in vehicles struck by impaired drivers.

Two off-road vehicle operator (with zero off-road vehicle passenger) fatalities and four motorcyclist fatalities were impaired. Four impaired pedestrians were struck by motor vehicles whose drivers had not used alcohol and/or drugs. (in 2010, there were no occurrences of pedestrian fatalities occurring where both the vehicle drivers and the pedestrians were impaired). No impaired bicyclist was killed in a traffic crash during 2010. Zero child under age 16 and one senior age 65 died in impaired crashes. Alcohol and/or drugs were not involved in the motor vehicle crash with an animal that resulted in a human death in 2010.

Figure 10 shows the types of vehicles people occupied when they were fatally injured in traffic crashes during 2010. Data is presented for all vehicles involved in fatal impaired crashes.

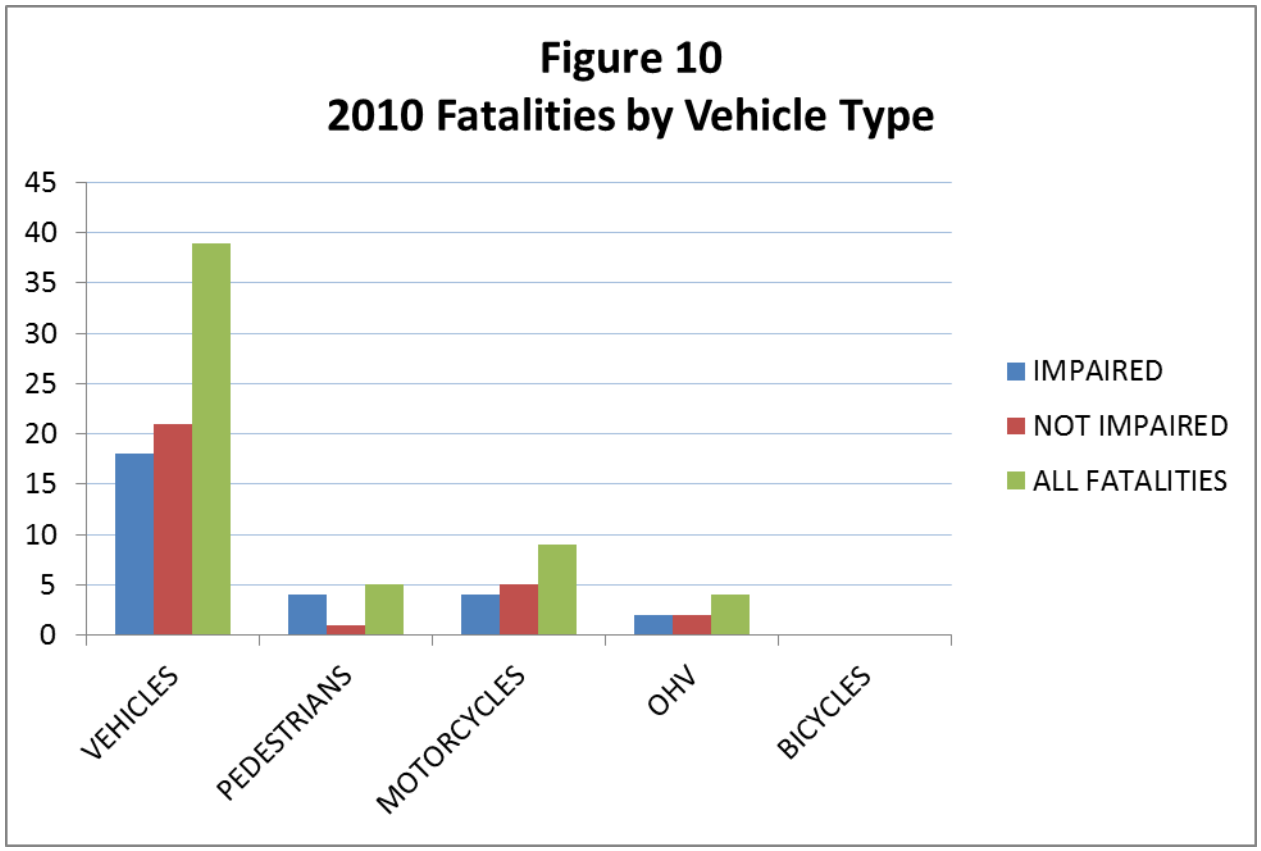


Table 5 summarizes traffic crashes over six holiday periods during 2010, showing the number of crashes as well as the number of persons injured or killed in all crashes during each holiday and in impaired crashes during each holiday.

TABLE 5
2010 Holiday Crashes and Injuries

	CRASHES					
HOLIDAYS 2010	**CRASH TYPE**	**ALL CRASHES**	**IMPAIRED CRASHES**	**INJURY TYPE**	**ALL INJURIES**	**IMPAIRED INJURIES**
NEW YEAR	FATAL	0	0	FATALITIES	0	0
6PM WED, DEC 31	MAJOR INJURY	1	0	MAJOR INJURIES	1	0
THROUGH	MINOR INJURY	25	7	MINOR INJURIES	47	10
5:59AM MON, JAN 5	PROP DAMAGE	84	5			
108 HOURS	TOTAL CRASHES	110	12	Crashes/hour	1.0	
MEMORIAL DAY	FATAL	1	1	FATALITIES	1	1
6PM FRI, MAY 28	MAJOR INJURY	1	0	MAJOR INJURIES	4	2
THROUGH	MINOR INJURY	34	3	MINOR INJURIES	57	4
5:59AM TUE, JUNE 1	PROP DAMAGE	74	5			
84 HOURS	TOTAL CRASHES	110	9	Crashes/hour	1.3	
4TH OF JULY	FATAL	2	1	FATALITIES	2	1
6PM FRI, JULY 3	MAJOR INJURY	5	1	MAJOR INJURIES	5	1
THROUGH	MINOR INJURY	18	5	MINOR INJURIES	32	7
5:59AM MON, JUL 6	PROP DAMAGE	44	4			
60 HOURS	TOTAL CRASHES	69	11	Crashes/hour	0.8	
LABOR DAY	FATAL	1	0	FATALITIES	1	0
6PM FRI, SEPT 3	MAJOR INJURY	4	2	MAJOR INJURIES	8	2
THROUGH	MINOR INJURY	15	2	MINOR INJURIES	24	2
5:59AM TUE, SEPT 7	PROP DAMAGE	54	5			
84 HOURS	TOTAL CRASHES	74	9	Crashes/hour	0.9	
THANKSGIVING	FATAL	0	0	FATALITIES	0	0
6PM WED, NOV 25	MAJOR INJURY	2	0	MAJOR INJURIES	3	0
THROUGH	MINOR INJURY	37	1	MINOR INJURIES	56	6
5:59AM MON, NOV 30	PROP DAMAGE	110	6			
108 HOURS	TOTAL CRASHES	149	9	Crashes/hour	1.4	
CHRISTMAS	FATAL	1	1	FATALITIES	1	1
6PM THURS, DEC 23	MAJOR INJURY	7	2	MAJOR INJURIES	8	2
THROUGH	MINOR INJURY	35	2	MINOR INJURIES	59	3
5:59AM MON, DEC 27	PROP DAMAGE	120	9			
84 HOURS	TOTAL CRASHES	163	14	Crashes/hour	1.9	
HOLIDAY TOTALS	**ALL CRASHES**	**1350**	**126**	**INJURIES & FATALITIES**	**309**	**42**

Nearly ten percent (9.5%) of holiday crashes were alcohol and/or drug related in 2010, slightly more than the previous two years (7.4% in 2009; 9.3% in 2008). Fourteen percent (13.6%) of injuries and fatalities occurring during holiday periods were impaired in 2010 (8.4% in 2009; 16.7% in 2008).

Three of the five holiday traffic fatalities in 2010 were alcohol and/or drug related.The percentage of injuries due to impaired driving events was greatest during the Independence Day weekend (23.1% of Independence Day injuries plus fatalities), and least during the Christmas holiday (8.8%). The percentage of holiday crashes that were impaired was greatest during the Independence Day holiday (15.9%) and least over the Thanksgiving holiday (6.0 %).

Figure 11 shows the percentage of crashes that were impaired during each holiday in 2010. An hourly rate (for all traffic crashes during that holiday interval) has been provided to facilitate comparisons between holidays. The lengths of the New Years, Independence Day, and Christmas holiday intervals vary each year, but the lengths of the Memorial Day, Labor Day, and Thanksgiving holiday intervals do not change. Timing and publicity surrounding police impaired driving enforcement during specific holidays likely also affected impaired crash statistics.

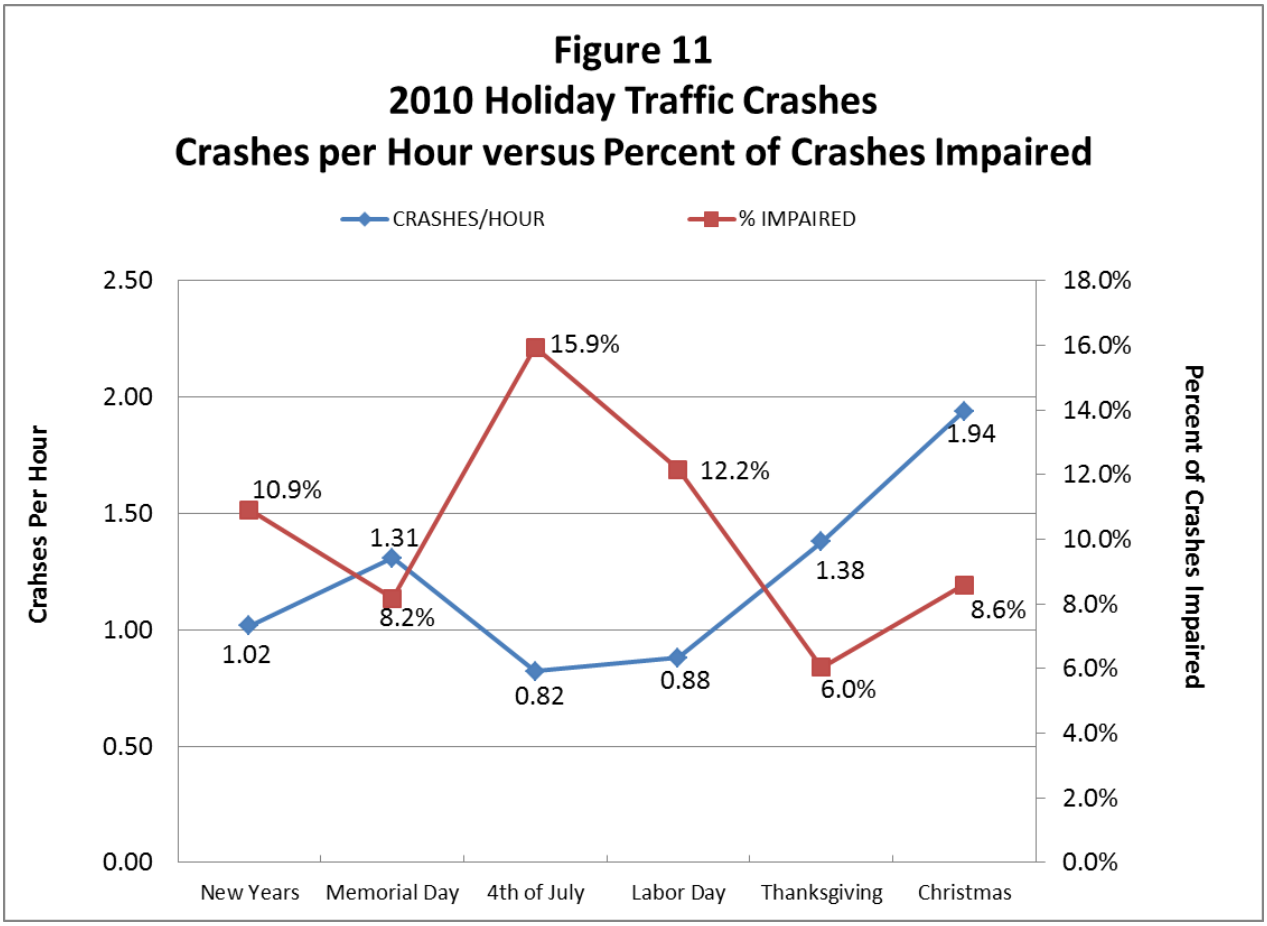
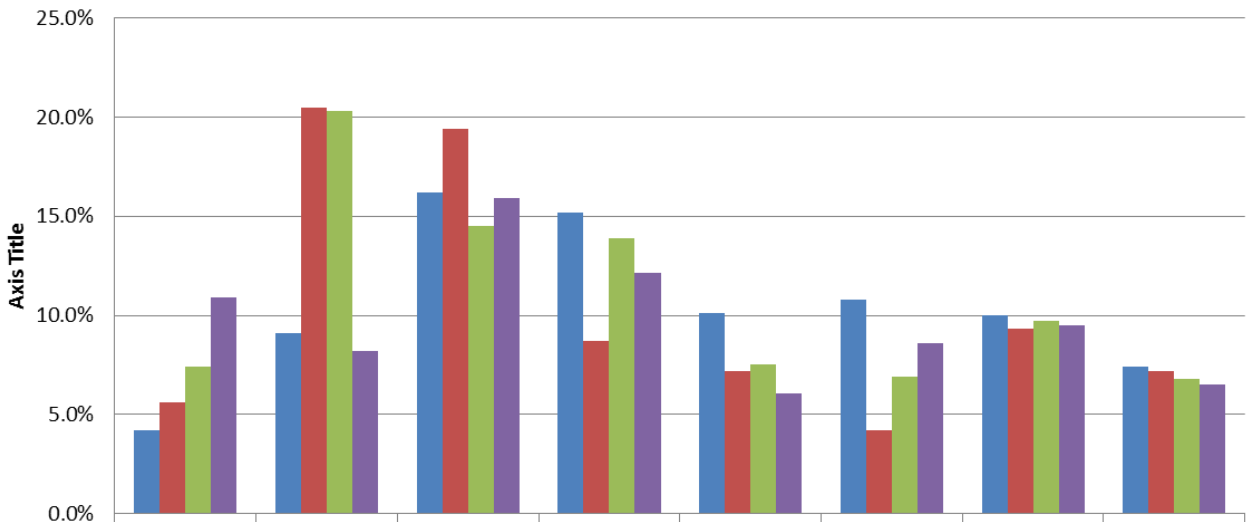


Figure 12 compares impaired holiday crashes between 2007 and 2010. Table 6 provides the average hourly crash rate (all crashes, crashes/hour) and number of hours in the holiday for each year. Impaired crashes, on average, occurred more frequently during summer holidays between 2007 and 2010 than winter holidays. The average number of crashes per hour for all holidays

combined (each year) was consistent with the average number of crashes per hour throughout that year.

Figure 12
2007 to 2010 Holiday Crashes
Percent Impaired



	New Years	Memorial Day	4th of July	Labor Day	Thanksgiving	Christmas	All Holidays	Annual average
2007	4.2%	9.1%	16.2%	15.2%	10.1%	10.8%	10.0%	7.4%
2008	5.6%	20.5%	19.4%	8.7%	7.2%	4.2%	9.3%	7.2%
2009	7.4%	20.3%	14.5%	13.9%	7.5%	6.9%	9.7%	6.8%
2010	10.9%	8.2%	15.9%	12.2%	6.0%	8.6%	9.5%	6.5%

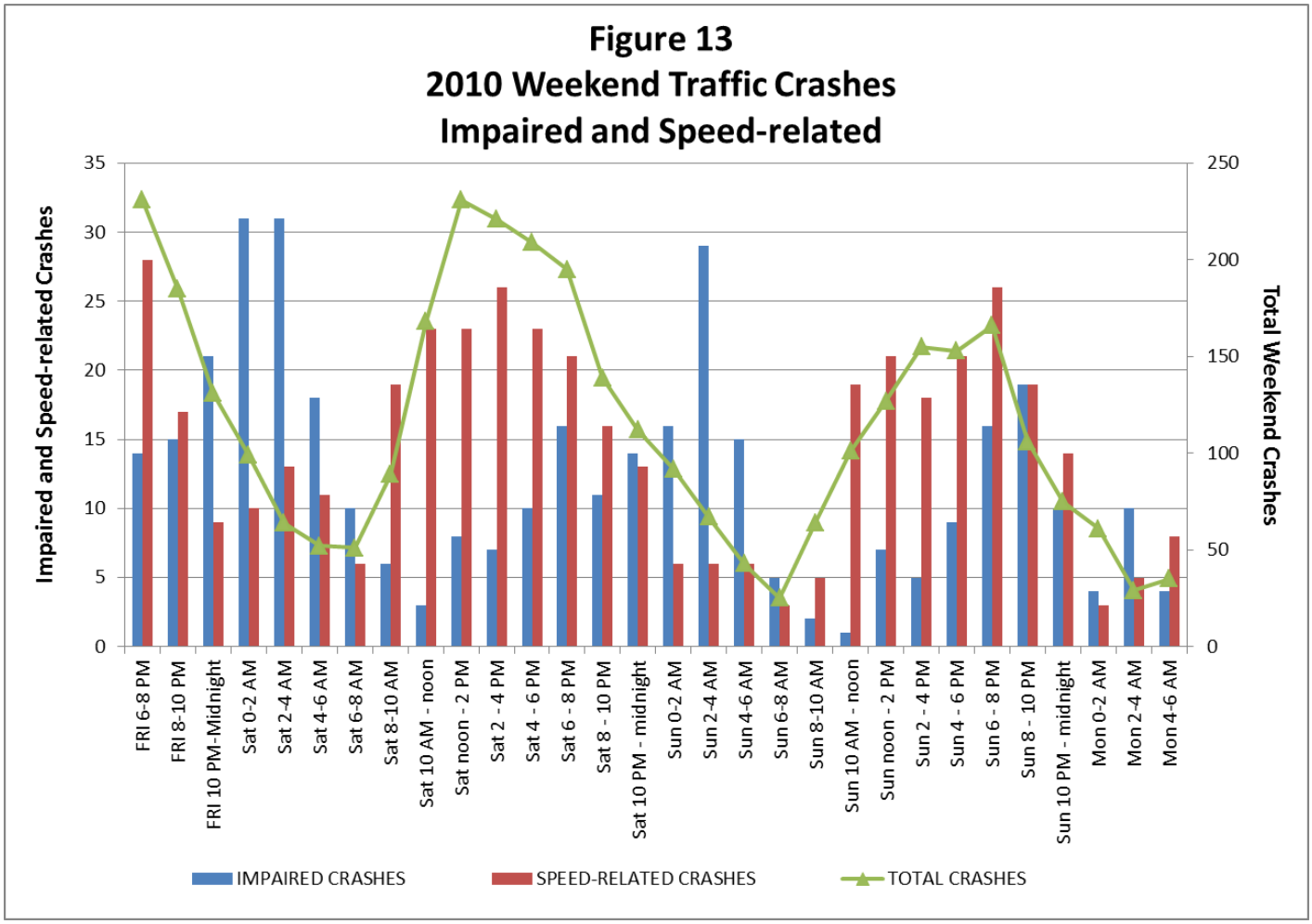
Table 6
2007 - 2010 Holiday Intervals
Average Crashes per Hour and Hours in the Holiday

HOLIDAY	2007		2008		2009		2010	
	CRASHES/ HR	HOURS	CRASHES/ HR	HOURS	CRASHES/ HR	HOURS	CRASHES /HR	HOURS
NEW YEAR	1.7	84	0.8	108	2.5	108	1.0	108
MEMORIAL DAY	0.5	84	0.9	84	0.7	84	1.3	84
4TH OF JULY	1	36	0.9	84	1	60	0.8	84
LABOR DAY	1.3	84	1.1	84	0.9	84	0.9	84
THANKSGIVING	1.5	108	1.8	108	1.9	108	1.4	108
CHRISTMAS	1	108	1.3	108	0.9	84	1.9	84
ALL HOLIDAYS	1.2	504	1.2	576	1.4	528	1.2	552
ANNUAL	1.2		1.3		1.5		1.4	

The weekend is defined as the hours between 6 p.m. Friday evening and 6 a.m. Monday morning. Nearly one in two, or forty-six percent (46.5%), of all impaired crashes occurred on weekends in

2010. This is compared to 53.5% during the rest of the week. Averaged over the year, an impaired crash occurred every 8 hours during weekends, but only every thirteen hours the remainder of the week. During weekends, the proportion of overall crashes that are impaired increased to 10.7% (from 4.9% throughout the rest of the week).

Figure 13 plots numbers of weekend impaired and speed-related crashes, by time of day. Numbers of impaired crashes peaked between ten in the evening and four the following morning. Peaks of speed-related crashes occurred between noon and six in the evening. Relative numbers of impaired crashes and speed-related crashes decreased on Sunday.

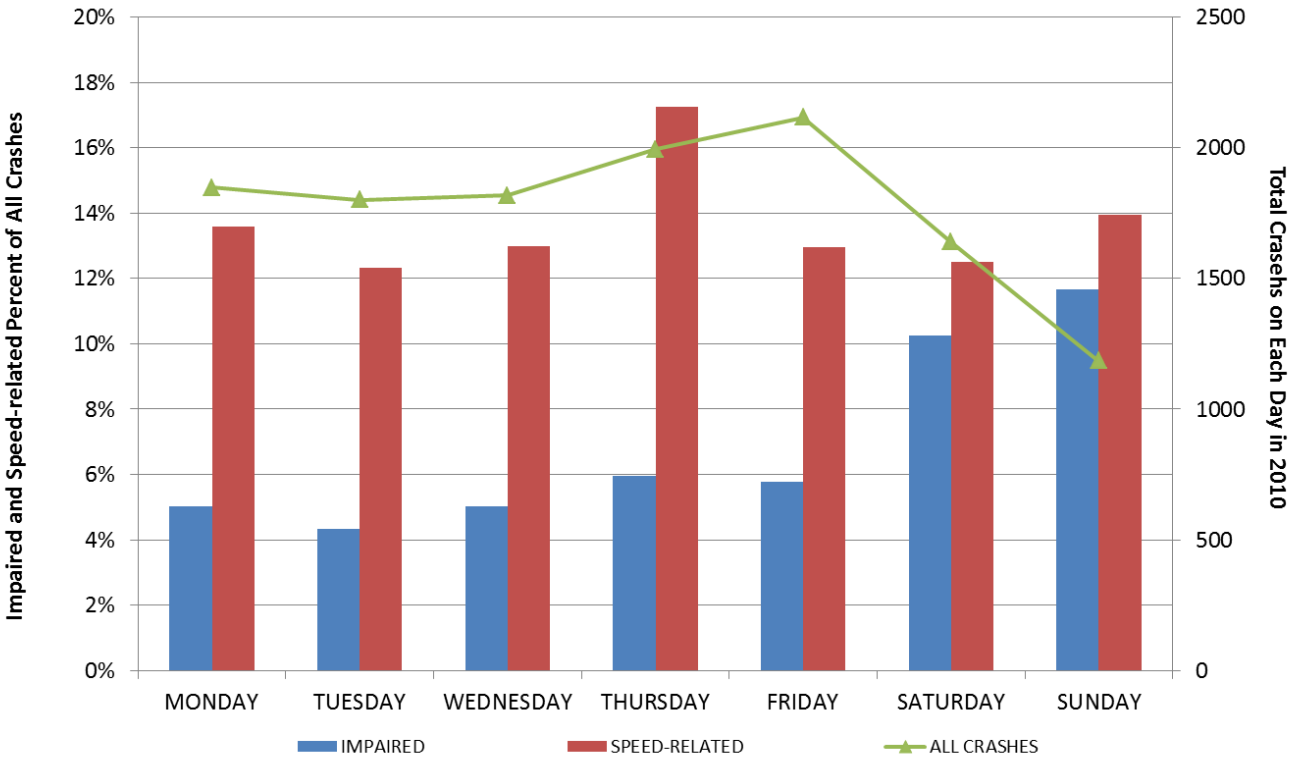


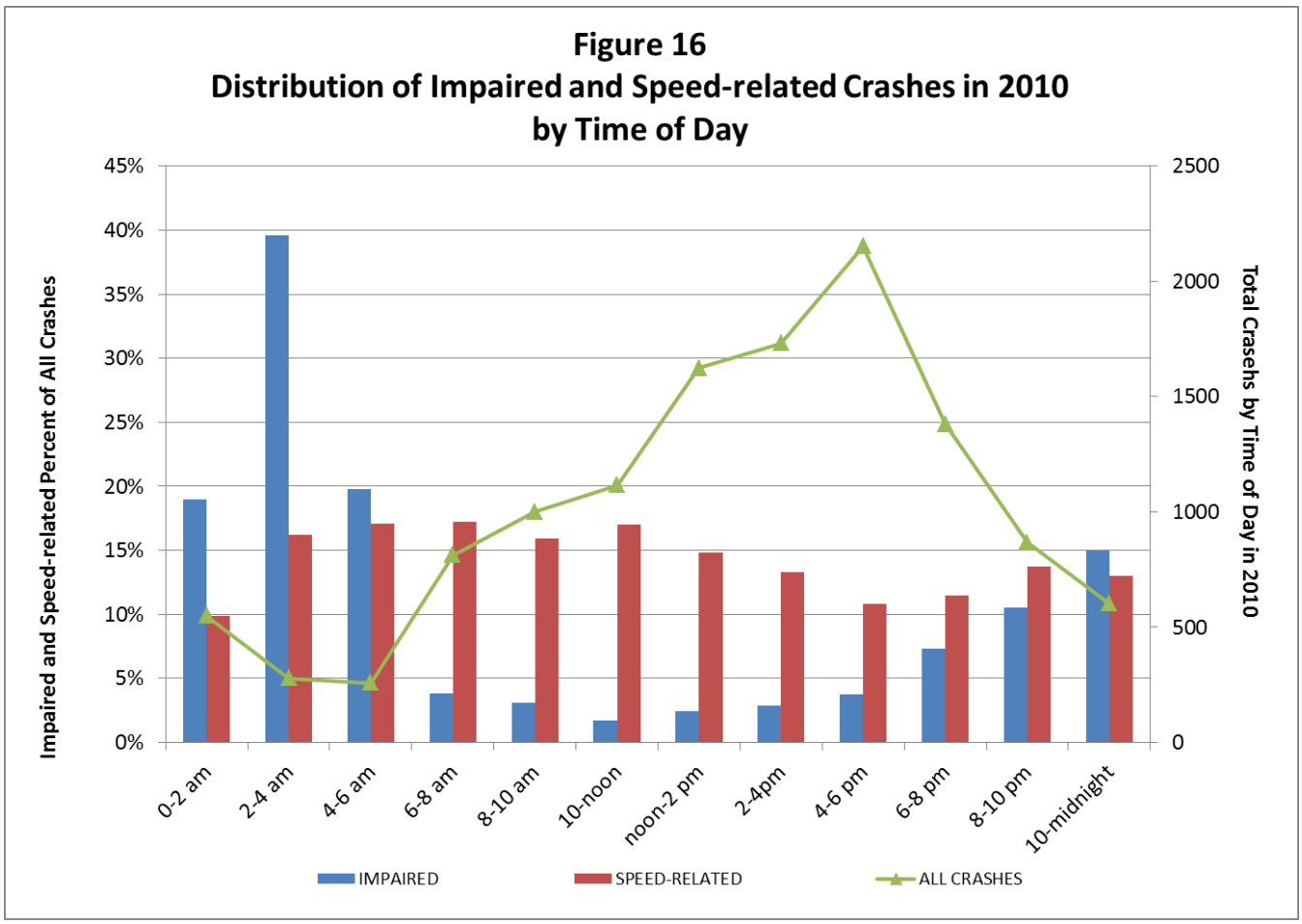
Speed contributed to 1697 traffic crashes (13.7% of all crashes) and to 443 weekend crashes (13% of weekend crashes). Twenty-two fatal crashes (42.3% of all fatal crashes) and twelve fatal weekend crashes (54.5% of weekend fatal crashes) involved speed in 2010. It is interesting to note how closely total crashes track with speeding even though speeding is listed as a factor in only a fraction of the crash reports. This may indicate the conditions that encourage speeding are more likely to lead to crashes, or that speeding is a factor in many more crashes than is indicated on the crash reports.

Speeding appears to be the inverse of impairment, with peaks in winter or in the afternoon (Figures 14, 15, and 16). Drivers were least likely to be coded for the human factor “unsafe speed” when involved in crashes between April and October. Police may have a general tendency to cite more drivers for “basic speed” (unsafe speed for conditions or too fast for conditions) after responding to winter crashes on slick road surfaces than after responding to summer crashes.

Figure 14
Distribution of Impaired and Speed-related Crashes in 2010 by Month of Year

Figure 15
Distribution of Impaired and Speed-related Crashes in 2010 by Day of Year





Twenty percent (20.0%) of impaired crashes also involved unsafe or excessive speed. Fourteen fatal crashes were coded for both impairment and speed involvement (26.9% of all fatal crashes in 2010).

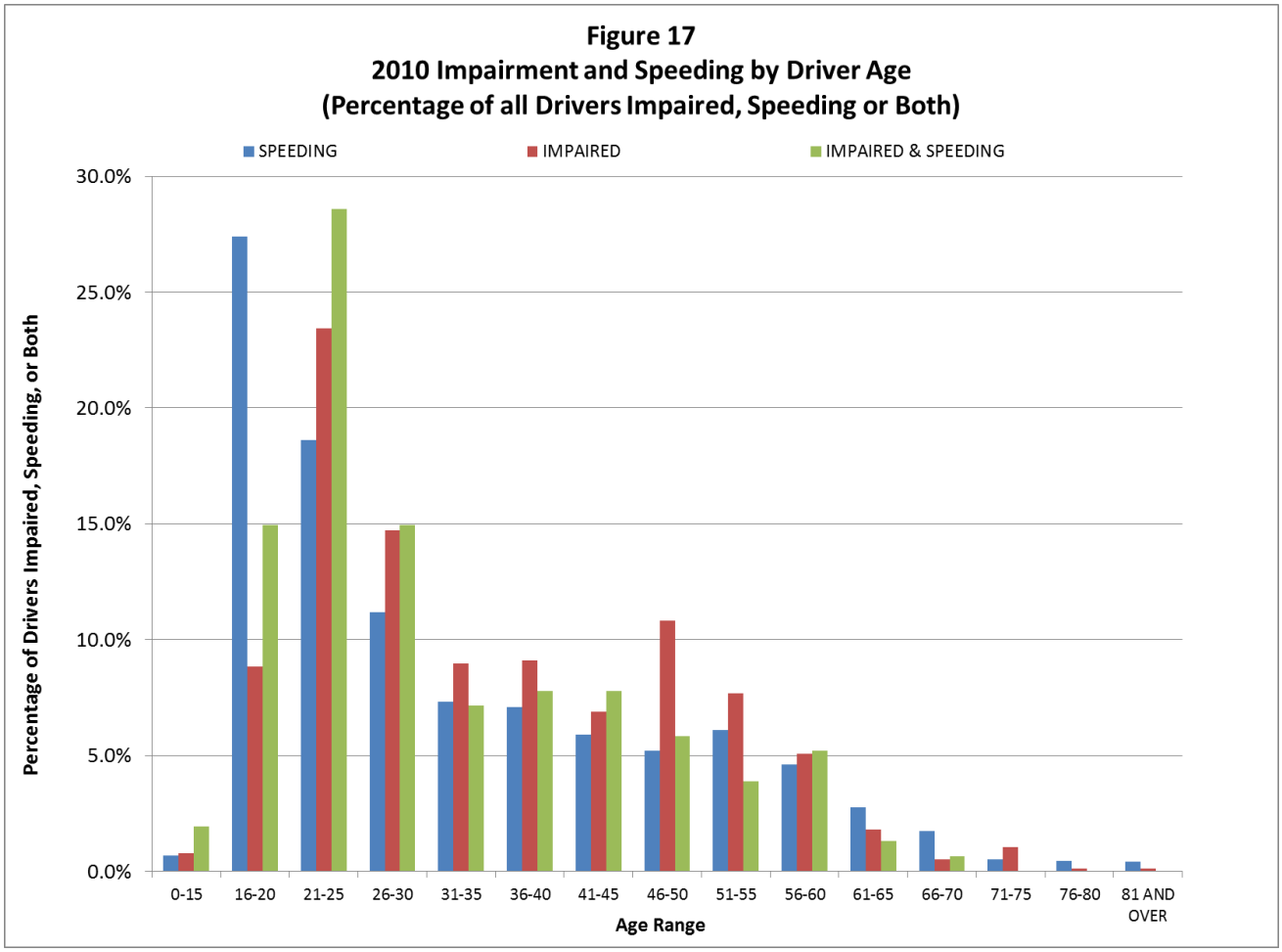
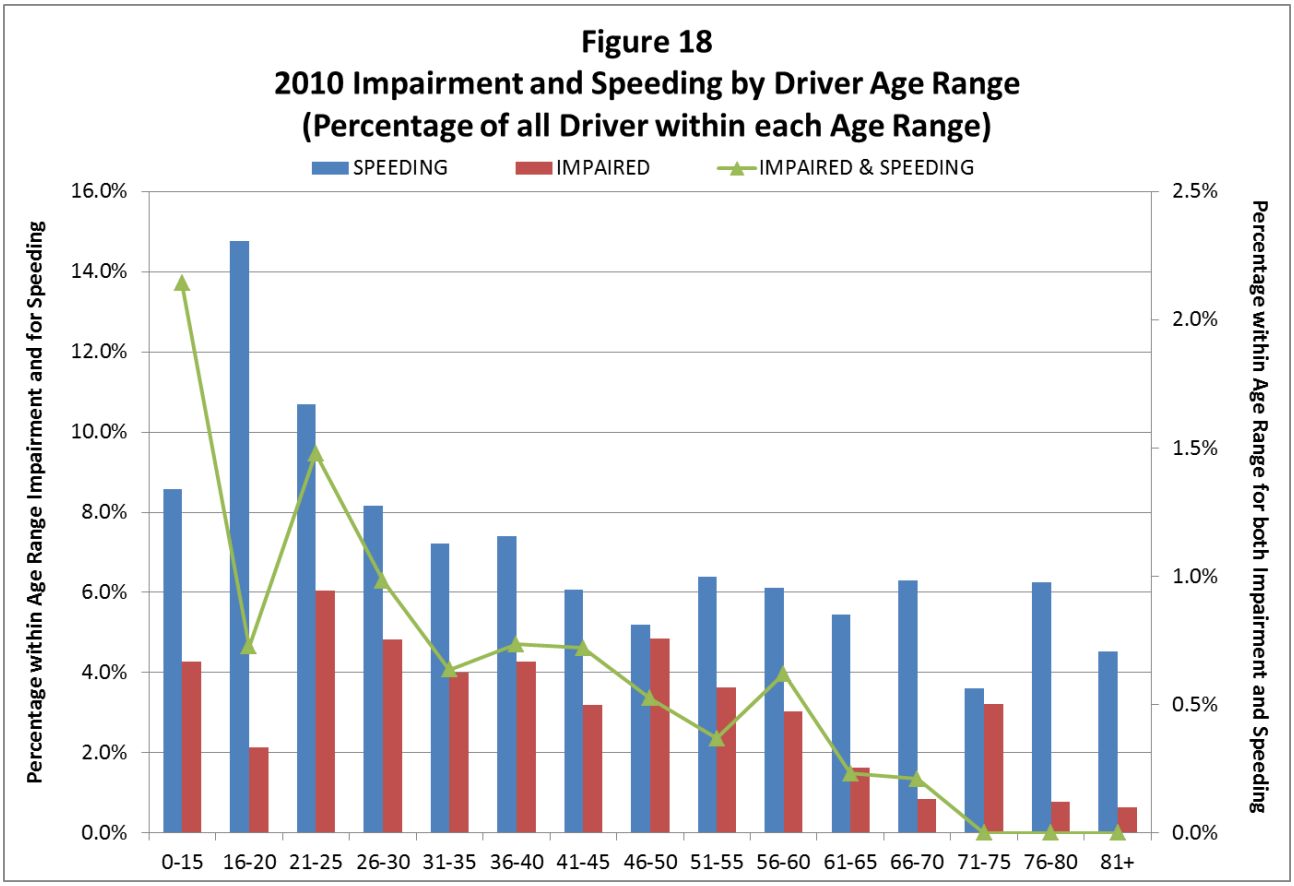


Figure 17 presents data for all automobile, truck and bus drivers involved in traffic crashes that were impaired, speeding or both during 2010 (percent of all drivers impaired, speeding or both). A third of impaired drivers and 47% of speeding drivers were under 26 years of age. Forty-four percent of drivers that were both impaired and speeding at the time of the crash were between 16 and 25 years of age. Drivers between 16 and 25 comprised about 23% of all automobile, truck, and bus drivers involved in traffic crashes in 2010 and 3.1% of drivers with valid Alaska licenses (including instruction permits).

Figure 18 shows impairment and speed involvement within driver age groups. Nearly 15% (14.8%) of drivers between the ages of 16 and 20 were speeding when involved in traffic crashes and 2.1% were impaired. Speeding was less frequent among drivers aged 21 to 25 (10.7%) but impairment was more frequent (6.0%).



There were 21,994 drivers (of all vehicle types, including non-motorists) involved in traffic crashes during 2010 (both police and driver reported). Police coded 735 drivers as suspected of alcohol use or a combination of alcohol and drug use and reported alcohol test results for 368 drivers. There were 317 drivers that tested for blood alcohol concentrations (BAC) at or exceeding 0.08% (legal intoxication by Alaska statute). Fifty -one drivers tested positive for alcohol use but below 0.08% BAC. Negative tests (0.0% BAC) were reported for 60 drivers. Police suspicion of (illegal) drug use or both drug use and alcohol was coded for 159 drivers.

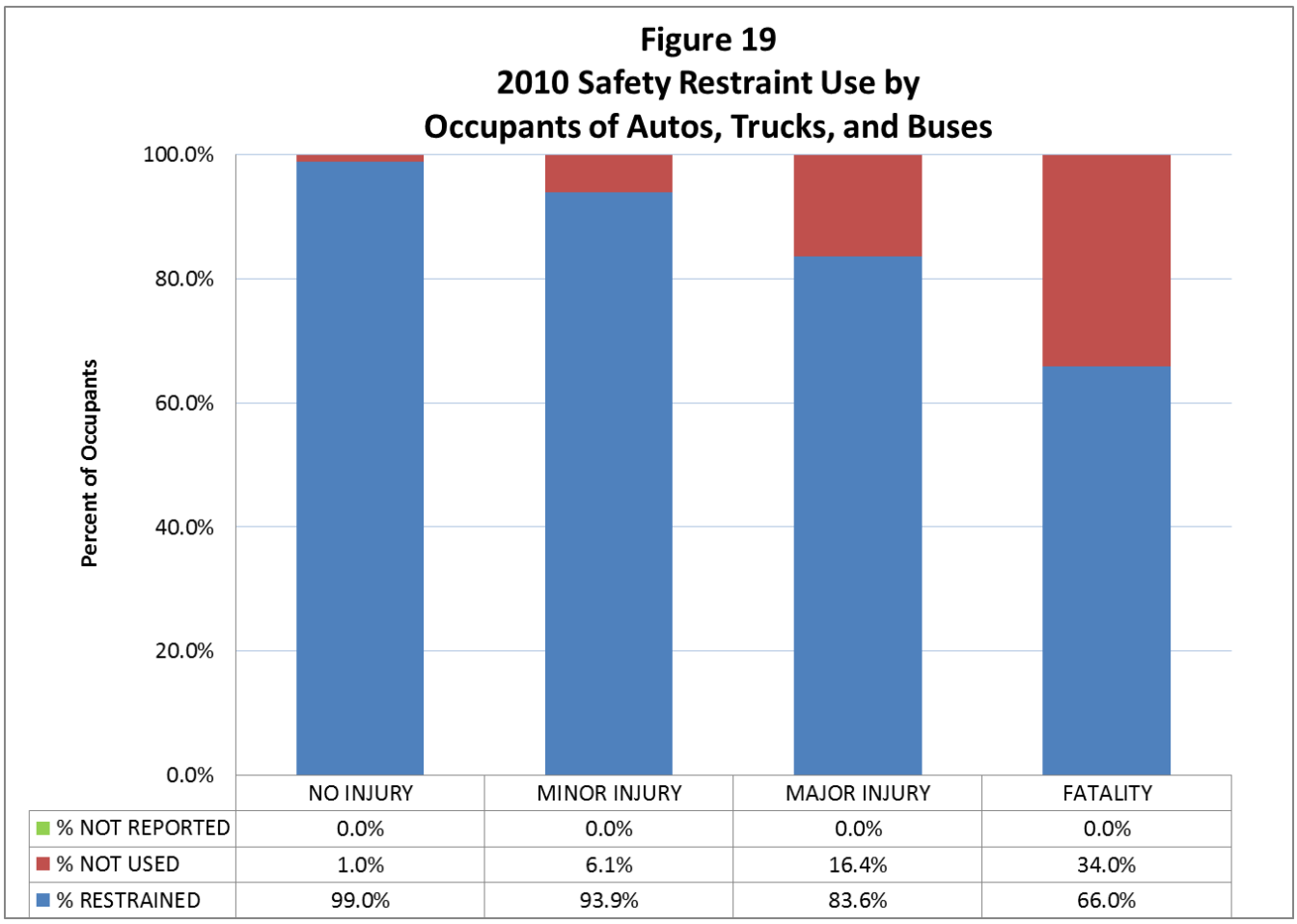
SAFETY EQUIPMENT AND OCCUPANT EJECTION

Seatbelt use, airbag deployment, and occupant ejection information is not collected on the driver report form. Discussions that follow are restricted to police reported data unless otherwise indicated.

Seatbelt Use

Over ninety-six percent (96.5%) of all automobile, truck, and bus occupants - where restraint use was reported - were restrained by combination lap and shoulder restraint systems or by properly installed and used child safety seats. Of vehicle occupants, 2.2% used lap belts or shoulder harness only, had no restraints installed or improperly fitted child seats. Nearly 2% were reported by police to have failed to wear any safety restraint. For only 6 crash occupants in automobiles, trucks, and buses did police failed to report seatbelt use.

Of crashes were restraint use was reported, ninety-nine percent (99.0%) of automobile, truck and bus occupants that were not injured, or who only received only superficial injuries, properly used seatbelts at the time of the crash. Seatbelts were not used as often by occupants that received major or fatal injuries—for crashes where seatbelt use was reported, sixty-six percent (66.0%) of fatalities, and almost eighty-four percent (83.6%) of occupants with major injuries, wore seatbelts at the time of the crash. Figure 19 includes the small percentage of crashes that did not have seat belt use recorded.



Eighty-one percent (80.8%) of infants and toddlers (through age 3) were riding in rear seat positions when crashes occurred. There were no fatalities in this age group in 2010. There were three major injuries occurring in this age group. All three were sitting in the back seat. Over ninety-one percent (91.4%) of infants and toddlers were reported by police to be properly restrained in child safety seats. Police did not fail to report child restraint use for children in this age group. State law requires that all children under four years of age be restrained in child safety seats.

Sixty-five percent of children between 4 and 10 years of age occupied rear seat positions. There was one fatality in this age group which occurred in the right rear seat. This child was secured only with a shoulder and lap belt but the responding officer noted it was an improper child restraint. There were eleven major injuries to children 4 to 10 in 2010. Of the ten who were passengers in a car, seven were noted as being in rear seat positions, one was noted as “other”, and two were noted as “unknown”. One eight year old was listed as the driver. Thirty-nine percent (38.6%) of children in this age group used child restraints. Nearly sixty percent (59.4) used lap/shoulder combinations, lap belts alone, or shoulder straps alone. Fifty five percent (54.9%) used lap/shoulder combination restraints. Police did not fail to report child restraint use for children in this age group. .

Thirty-nine percent (39.4%) of children in crashes between the ages 11 and 15 occupied rear seat positions. There were four fatalities in this age group. One was a driver where seatbelt use was

not reported. One was a passenger in the right rear seat using a lap and shoulder restraint. One was a passenger in the right front seat also using a lap and shoulder restraint. Two sat in the right rear seats using lap and shoulder restraints. Eighty-eight percent (87.8%) of children between 11 and 15 used lap/shoulder combination belts and an additional 5% used lap belts alone or shoulder straps alone. Twelve children, or just over 1% in this age group, were coded as being restrained in a properly installed child safety seat. Police did not fail to report child restraint use for children in this age group. .

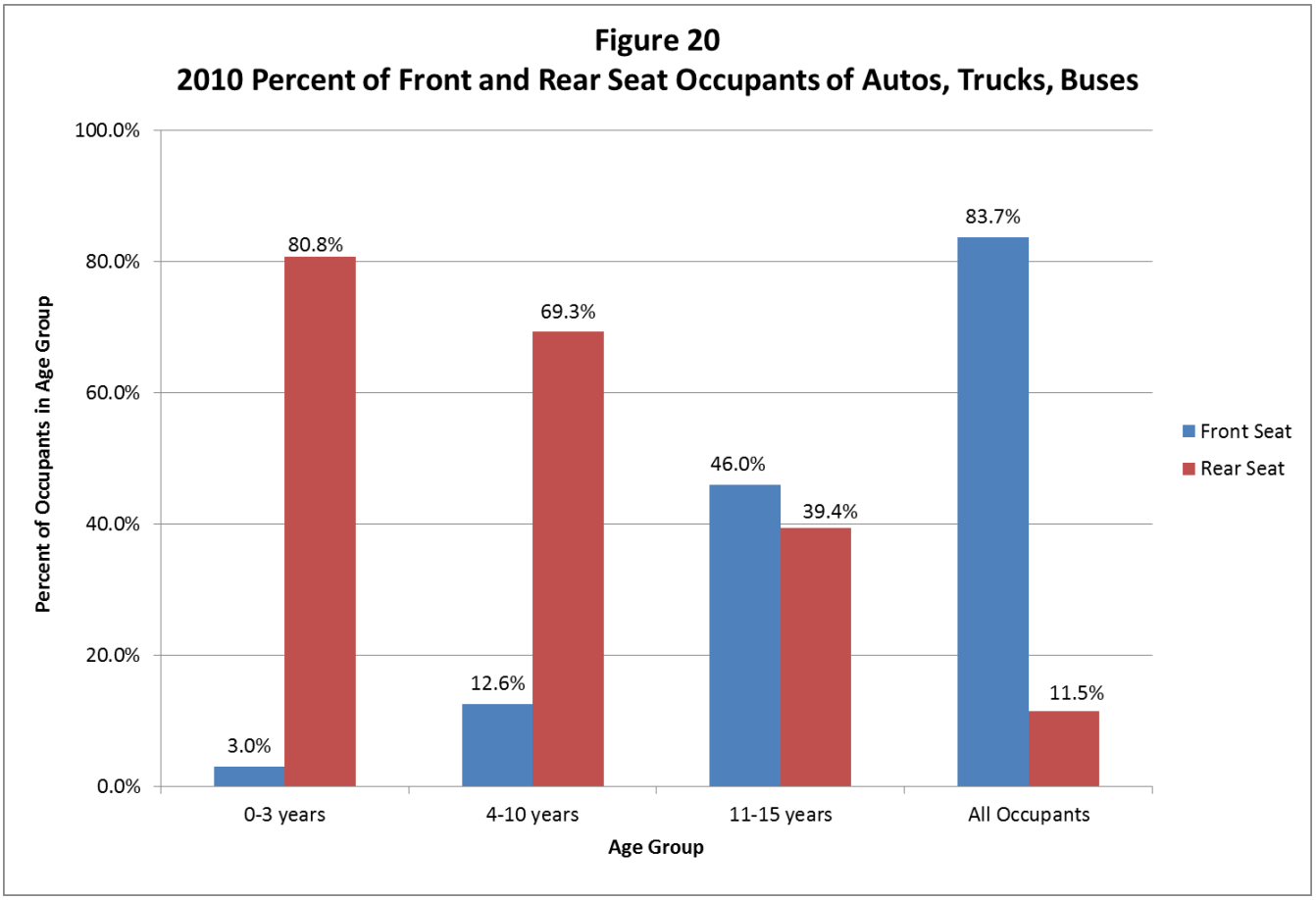
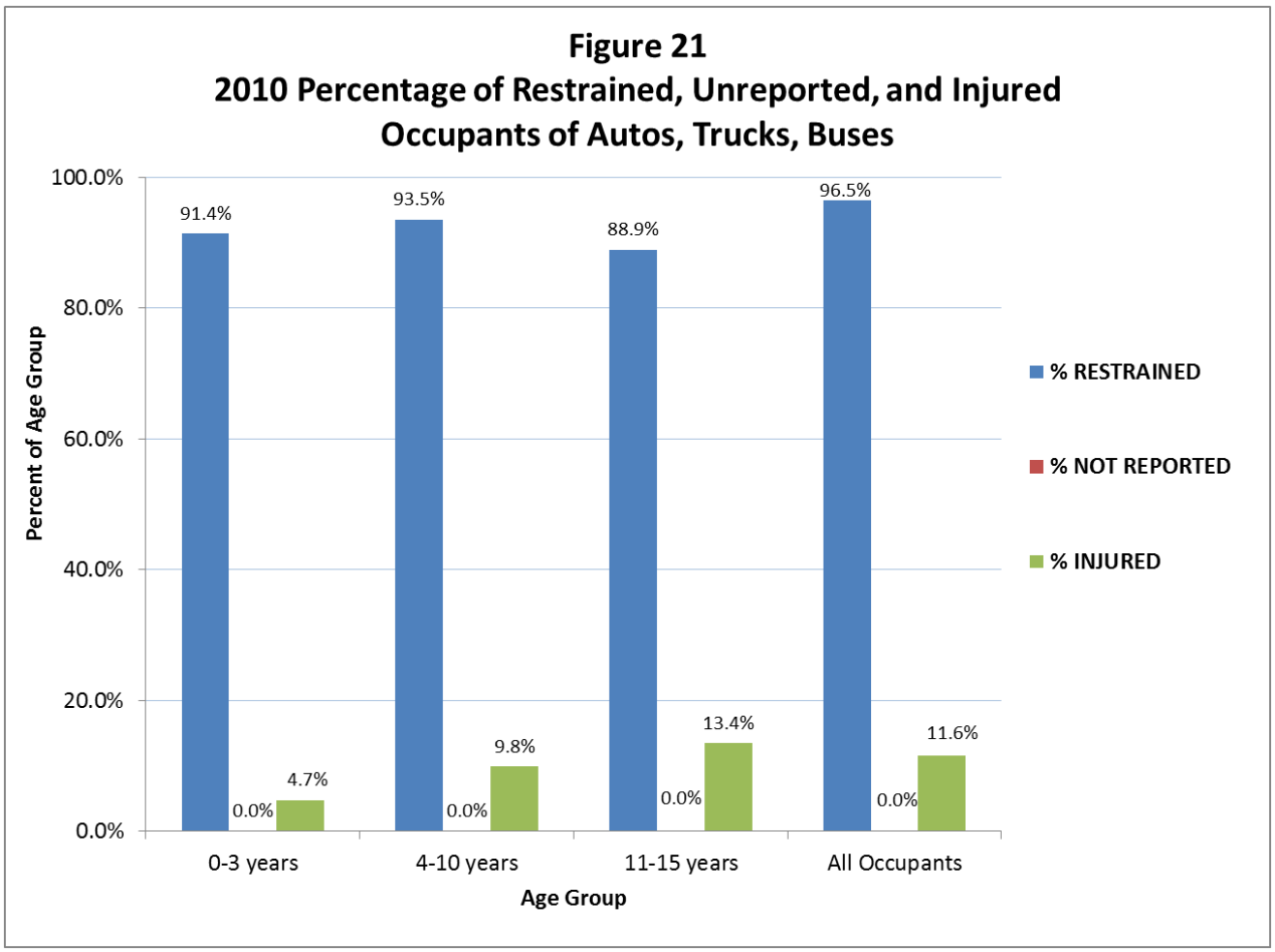


Figure 20 shows percentage of children riding in front and rear seat positions in automobiles, trucks, and buses that were involved in police reported crashes. Seat position data for all occupants (children and adults, all ages combined) is also presented.

Figure 21 summarizes percent restraint use (shoulder and lap combination or child seat), police non-reporting, and percent injury (non-fatal+fatal injuries) for children and all occupants.



Airbag Deployment and Seat Position

Police reported that airbags were available and deployed for seven percent (7.1%) of all auto, truck, and bus occupants. Airbags were available but did not deploy or were turned off for a third (33.6%) of auto, truck, and bus crash occupants. Nearly sixty percent (59.4%) of the time in 2010, police did not report airbag data for auto, truck, and bus occupants.

The number of vehicles involved in crashes that were equipped with airbags and the number of persons seated in positions protected by airbags are not available. Side bag protection for rear seat occupants is not provided in most vehicles manufactured prior to 2009 and rear seat occupants are not protected by front deployed airbags.

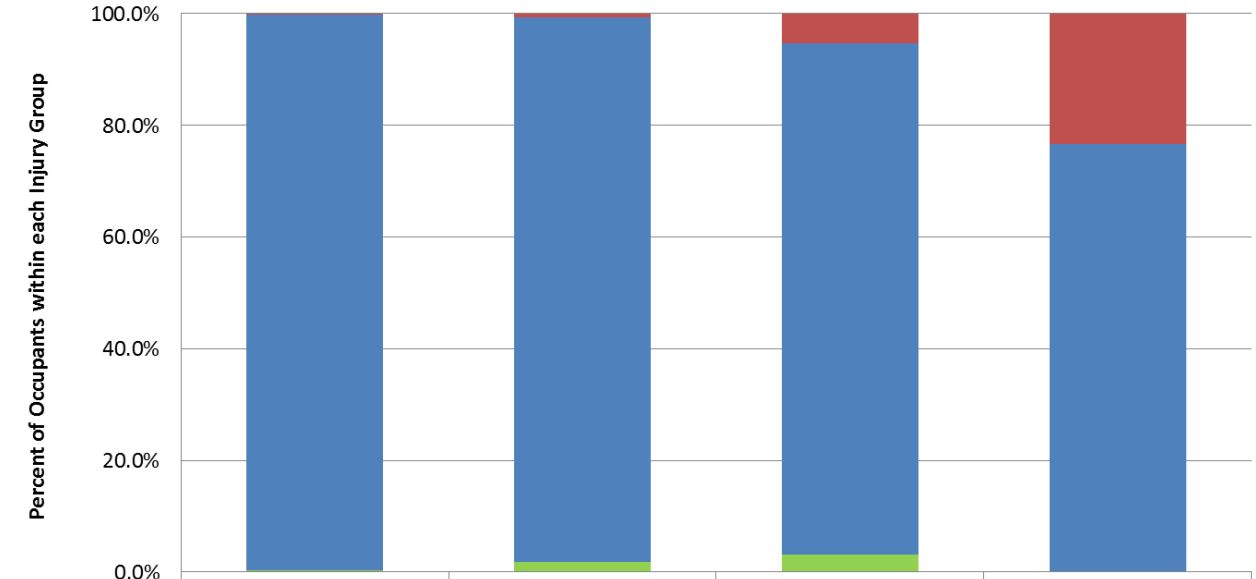
Eighty-four percent (83.7%) of auto, truck, and bus occupants occupied front seat positions and twelve percent (11.5%) sat in rear seat positions. The proportions of front and rear seat occupants with minor, major or fatal injuries were similar. Ninety-nine percent (98.6%) of front seat auto, truck, and bus occupants used some form of safety restraint, while ninety-eight percent (97.9%) of rear seat occupants buckled up. Airbags deployed for eight percent (8.2%) of front seat occupants and only for one percent (0.8%) of those riding in rear seat positions.

Occupant Ejection

Less than 1% (0.3%) of all automobile, truck, or bus occupants were ejected during crash events, but among those receiving fatal injuries, A quarter (23.4%) were ejected from their vehicles. Nine of 47 auto, truck, and bus fatalities were fully ejected and two were partially ejected.

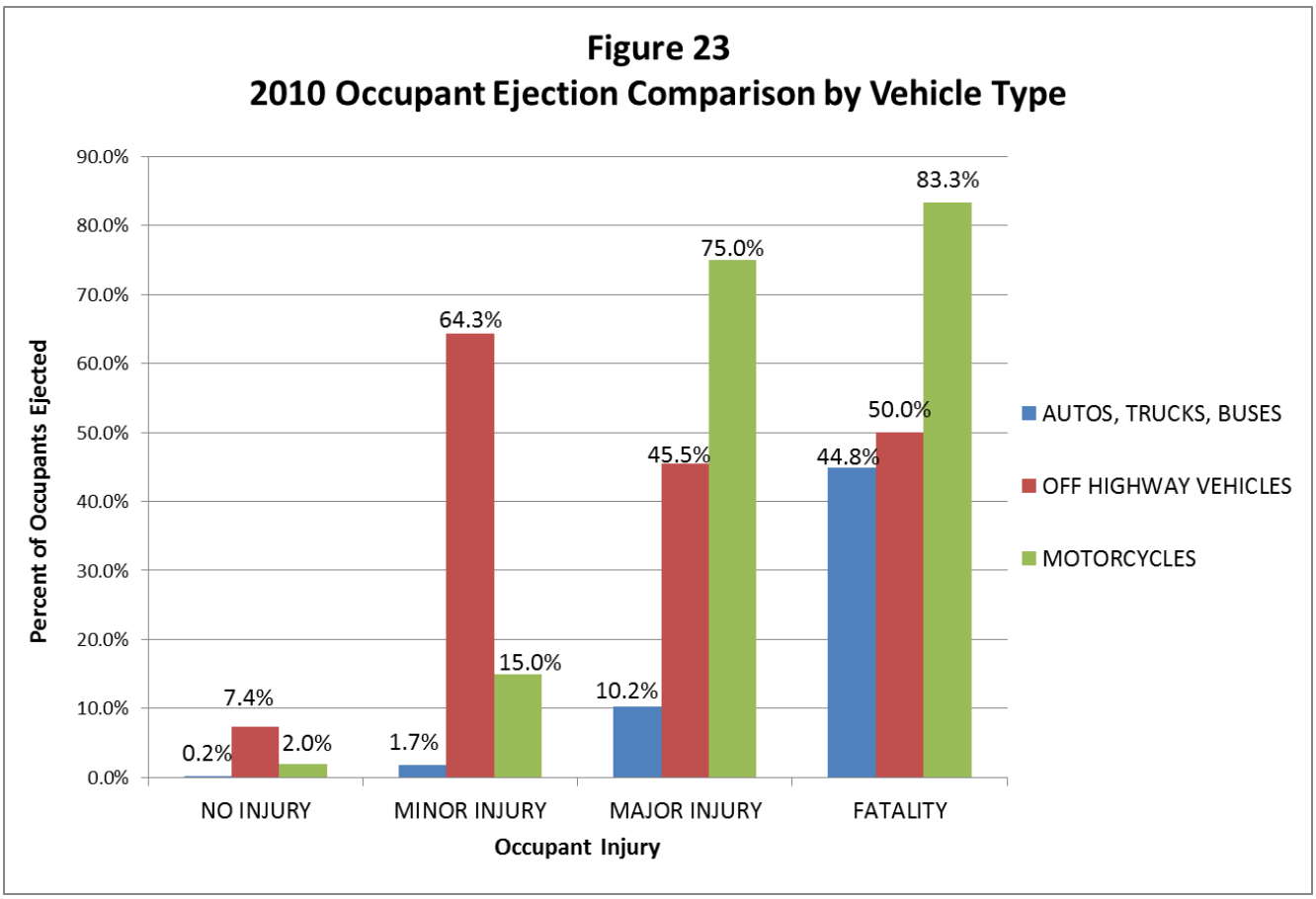
Figure 22 shows the relationship between occupant ejection and injury to automobile, truck, and bus occupants. Partial and full ejection data is combined for the "percent ejected" category. Eighty-two percent (82.4%) of persons uninjured after being ejected from automobiles, trucks or buses had worn safety restraints at the time of the crash. In contrast, nine percent (9.1%) of fatalities wore safety restraints prior to being ejected from their vehicles – meaning nearly all fatalities involving ejection also involved not wearing safety restraints.

Figure 22
2010 Occupant Ejection from Autos, Trucks, and Buses



	NO INJURY	MINOR INJURY	MAJOR INJURY	FATALITY
EJECTED	0.1%	0.7%	5.3%	23.4%
NOT EJECTED	99.6%	97.5%	91.5%	76.6%
NOT REPORTED	0.3%	1.8%	3.1%	0.0%

With no seat restraints to keep them in position, riders of motorcycles and off-road vehicles were ejected from their seats and vehicles more frequently than occupants of other road vehicle types. Figure 23 compares the percent of occupants ejected and occupant injury severity for motorcycle occupants, off-highway vehicle occupants (including all-terrain vehicles and snowmobiles), and automobile, truck, and bus occupants.



Helmet Use by Motorcyclists and Off-Road Vehicle Riders

Riders of open vehicle types such as motorcycles, snow machines, and all-terrain vehicles, have only helmet (head protection) available to them. State law does not currently require operators of such vehicles to wear head protection while operating on public roadways.
Just over fifty percent (50.3%) of all motorcyclists involved in police reported crashes wore motorcycle helmets. Three out of nine motorcycle riders (33.3%) that received fatal injuries used head protection.

Riders of off-road vehicles, including snow machines and all-terrain vehicles, were less inclined to wear helmets. Only sixteen percent (16.3%) of all off-road vehicles riders involved in traffic crashes during 2010 reportedly wore helmets. Only one of the three fatalities in this group used head protection.

TEMPORAL DISTRIBUTIONS

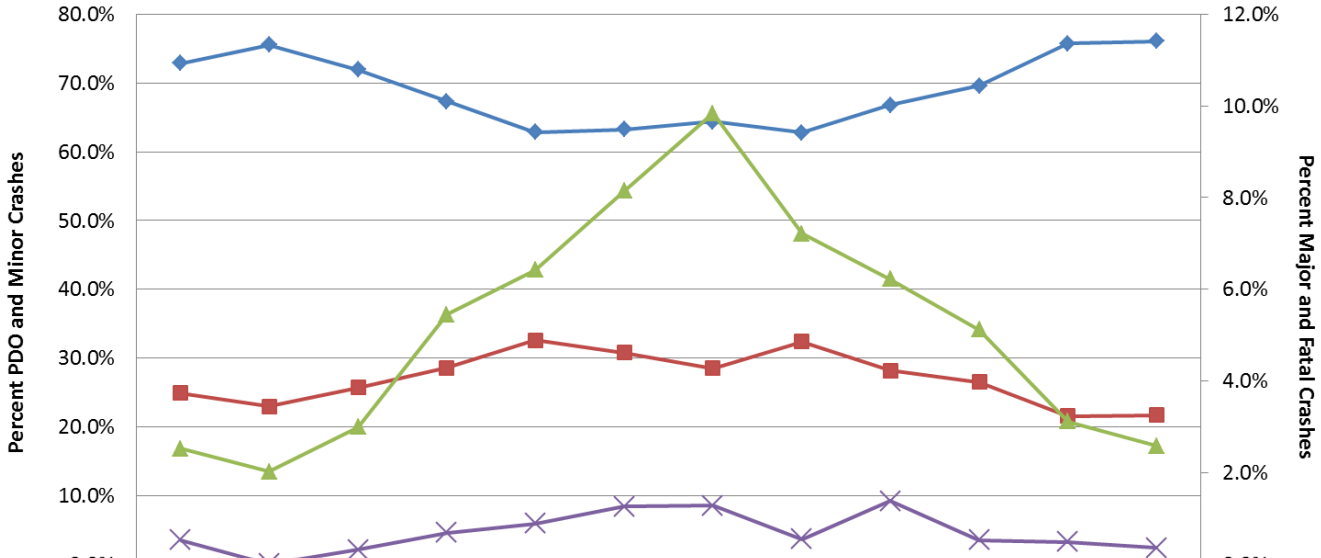
On average, there were 1033 traffic crashes per month and 34.0 traffic crashes per day in 2010. Thirty-two percent of all crashes (32.4%) happened between midnight and 11:59 a.m. and sixty-seven percent (67.4%) happened between noon and 11:59 p.m. (Time of day was not reported for 0.2% of crashes).

Month of Year

From January to December 2010, the percentage of monthly crashes that caused only property damage ranged from 62.8% (May) to 76.1% (December). The percentage of all crashes that involved minor injuries ranged from 21.5% (November) to 32.5% (May). Major injury crashes ranged from 2.0% (February) to 9.8% (July) of all reported crashes each month. The percentage of crashes that involved fatalities ranged monthly from 0% (no fatal crashes in February of 2010) to 1.4% (September).

During spring and late summer of 2010, the percentage of crashes that involved injuries or fatalities increased while the percentage of crashes that caused only property damage fell proportionally. Numbers of major injury and fatal crashes are often higher during summer months, possibly due to higher daily traffic volumes, higher speeds with lower levels of driver caution, and longer hours of daylight. When drivers reduce speed and are more cautious due to adverse driving conditions during the winter months, crashes that do occur are often less severe.

Figure 24
2010 Crash Severity by Month

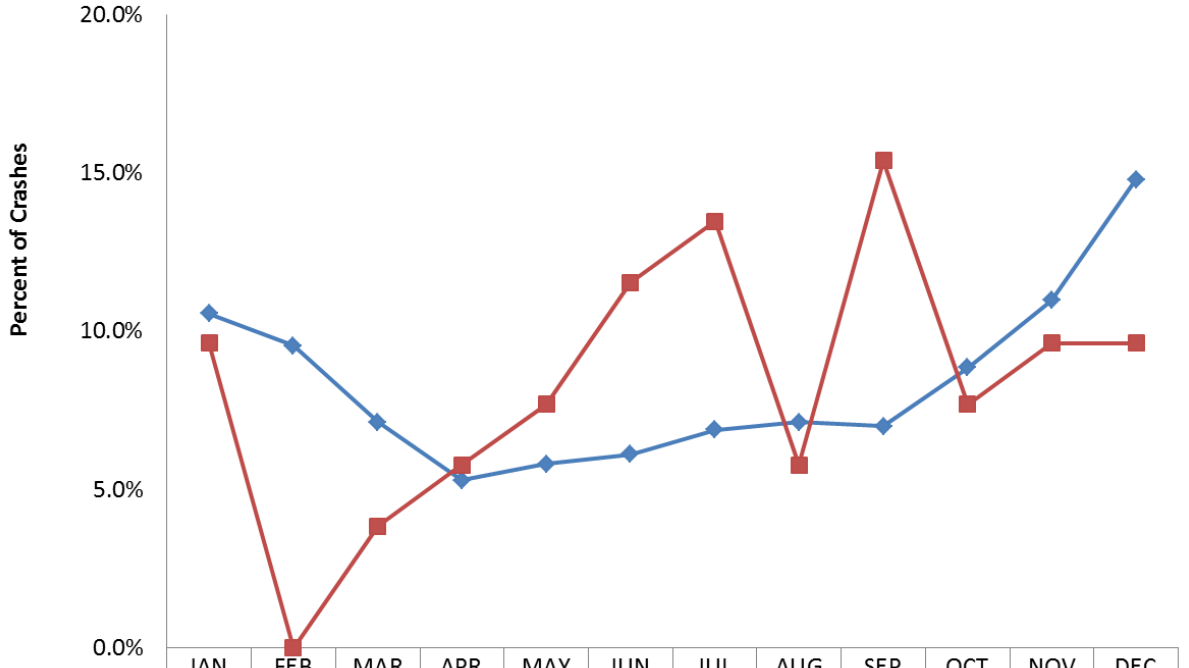


	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PDO	72.9%	75.5%	71.9%	67.3%	62.9%	63.3%	64.4%	62.8%	66.8%	69.6%	75.7%	76.1%
MINOR	24.9%	22.9%	25.7%	28.5%	32.5%	30.8%	28.5%	32.4%	28.1%	26.5%	21.5%	21.7%
MAJOR	2.5%	2.0%	3.0%	5.4%	6.4%	8.1%	9.8%	7.2%	6.2%	5.1%	3.1%	2.6%
FATAL	0.5%	0.0%	0.3%	0.7%	0.9%	1.3%	1.3%	0.5%	1.4%	0.5%	0.5%	0.4%

During 2010, fatal crashes were most frequent in June, July, and September, though fatal crash frequencies in May were also high (Figure 25). Crash frequency (all severity categories

combined) was highest in the month of December (14.8% of all crashes during the year; nearly three times the frequency in April). April was the safest month to drive on Alaska roadways in 2010; 5.3% of all crashes occurred in April. February was the least lethal month, with no fatal crashes occurring.

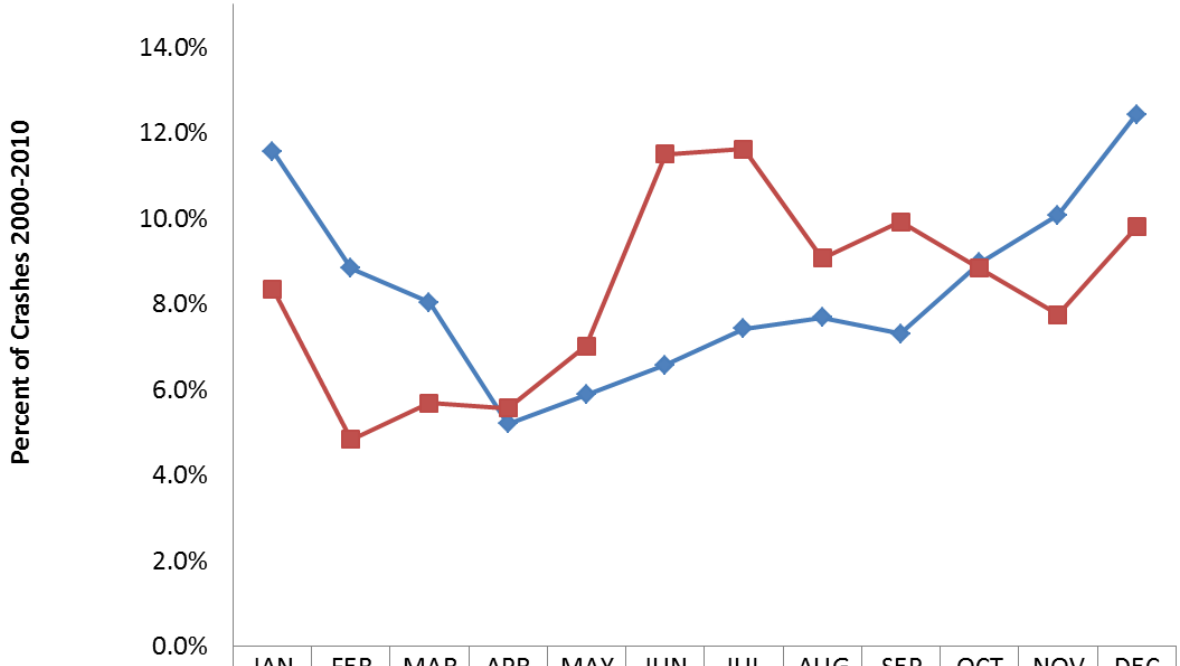
Figure 25
Month of Year Crash Distribution
2010 Traffic Crashes and Fatal Crashes



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% OF ALL CRASHES	10.6%	9.5%	7.1%	5.3%	5.8%	6.1%	6.9%	7.1%	7.0%	8.8%	11.0%	14.8%
% OF FATAL	9.6%	0.0%	3.8%	5.8%	7.7%	11.5%	13.5%	5.8%	15.4%	7.7%	9.6%	9.6%

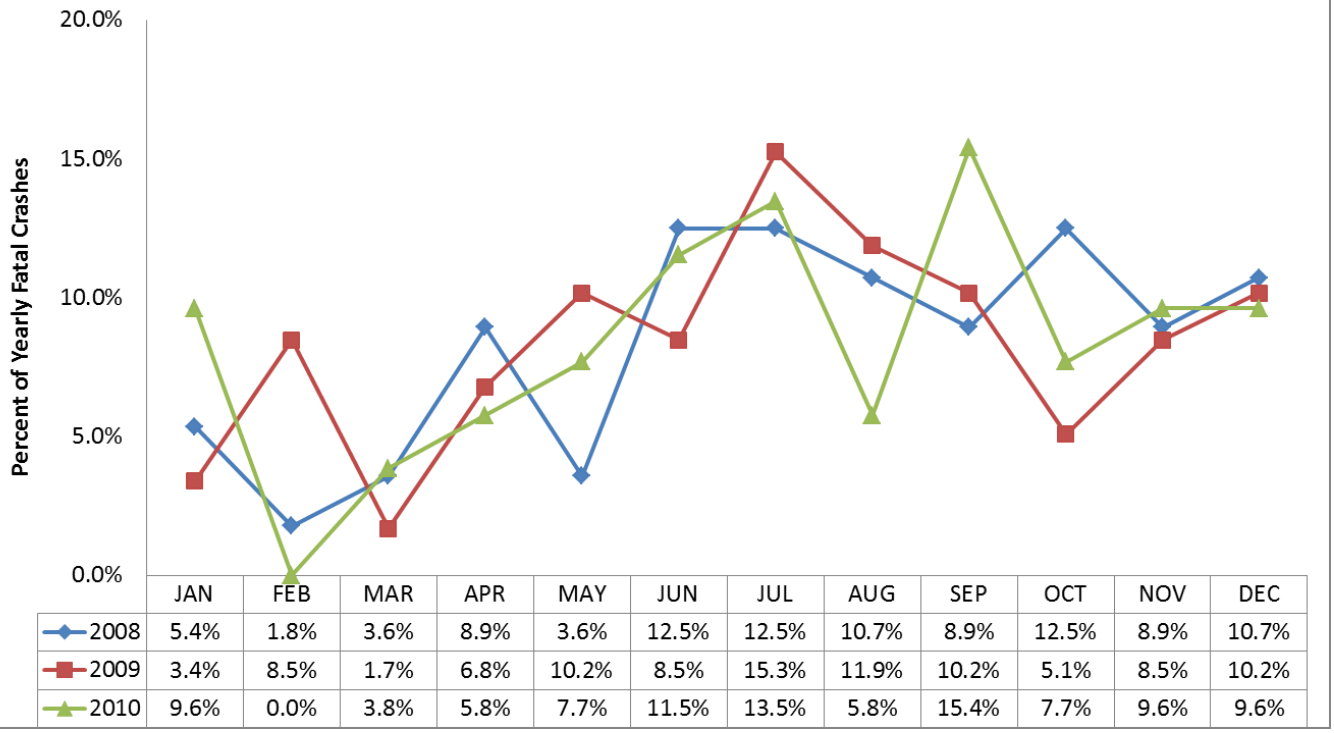
Figure 26 plots crash distribution by month for all crashes and for fatal crashes that occurred between 2000 to 2010 (11 year aggregate data). Figure 27 compares monthly fatal crash distributions for the last three years.

Figure 26
Month of Year Crash Distribution
2000-2010 Aggregate Data



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
% OF ALL CRASHES	11.6%	8.8%	8.0%	5.2%	5.9%	6.6%	7.4%	7.7%	7.3%	9.0%	10.1%	12.4%
% OF FATAL CRASHES	8.4%	4.8%	5.7%	5.6%	7.0%	11.5%	11.6%	9.1%	9.9%	8.8%	7.7%	9.8%

Figure 27
Fatal Crashes 2008-2010
Percent Distribution by Month of Year



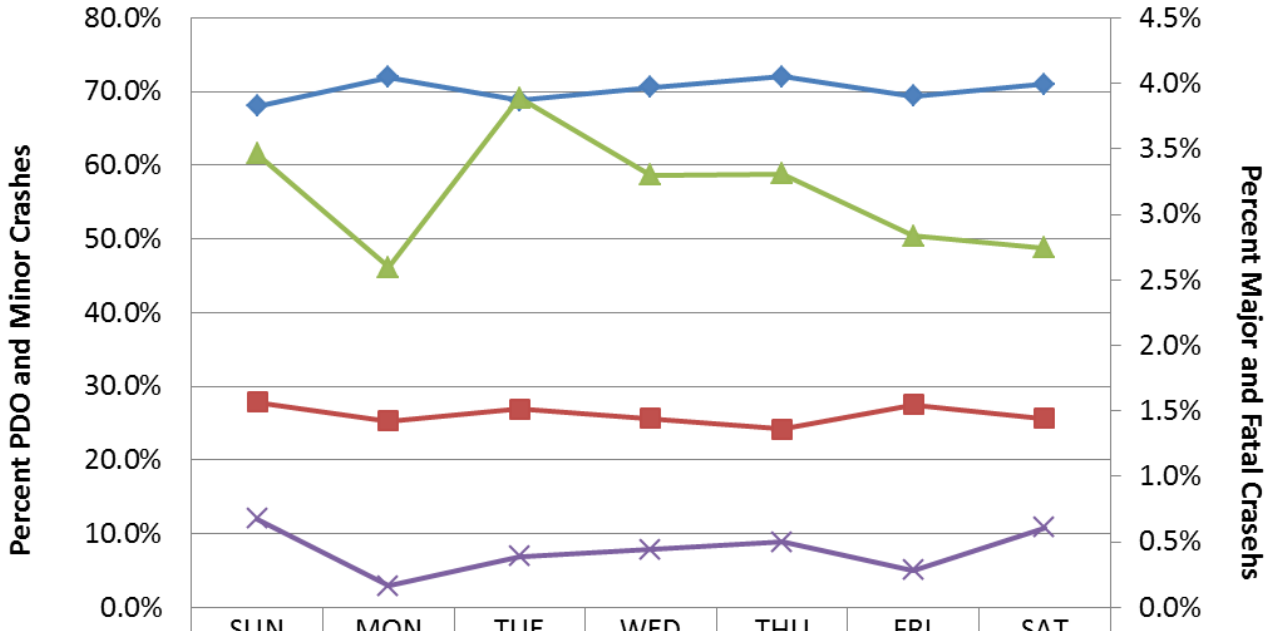
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2008	5.4%	1.8%	3.6%	8.9%	3.6%	12.5%	12.5%	10.7%	8.9%	12.5%	8.9%	10.7%
2009	3.4%	8.5%	1.7%	6.8%	10.2%	8.5%	15.3%	11.9%	10.2%	5.1%	8.5%	10.2%
2010	9.6%	0.0%	3.8%	5.8%	7.7%	11.5%	13.5%	5.8%	15.4%	7.7%	9.6%	9.6%

Day of Week

Property damage only crashes ranged from a low of 68.0% of daily crashes on Sunday, during the weekend, to a high of 72.0% of daily crashes on Thursday, during the workweek. The percentage of crashes that involved minor injuries ranged from a low of 24.2% on Thursday to a high of 27.9% on Sunday. The percentage of crashes that caused major injuries ranged from 2.6% (Mondays) to 3.9% (Tuesdays) of daily crashes. Fatal crashes ranged from 0.2% to 0.7% of all daily crashes and occurred with the highest frequency on Sunday.

During 2010, the proportion of traffic crashes that involved fatalities increased on weekends while there was no clear trend within the proportion of crashes involving only major and minor injuries, and property damage. (Figure 28). The number of traffic crashes that happen daily between Monday and Friday is usually higher than the number that occur on either Saturday or Sunday, possibly due to heavier urban traffic volumes as people commute to work. Though there are fewer crashes during weekends, the crashes that do occur on Saturday or Sunday may be more likely to result in a fatality. However, this conclusion has not been evaluated statistically.

Figure 28
2010 Crash Severity by Day of Week



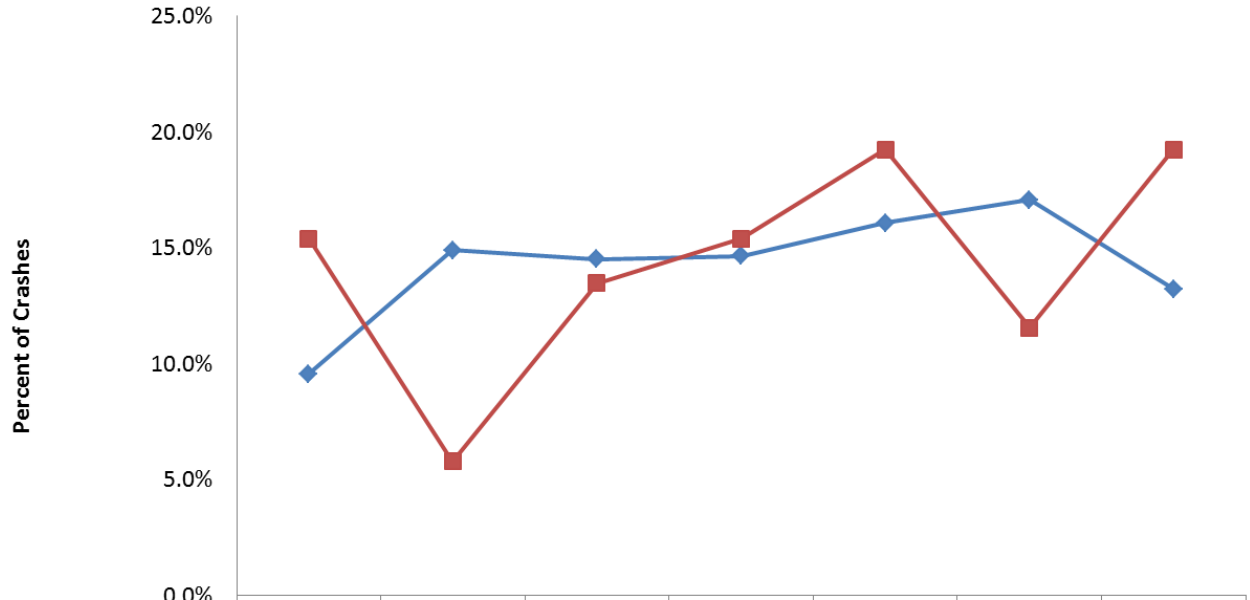
	SUN	MON	TUE	WED	THU	FRI	SAT
PDO	68.0%	71.9%	68.8%	70.6%	72.0%	69.4%	71.0%
MINOR	27.9%	25.3%	26.9%	25.6%	24.2%	27.5%	25.6%
MAJOR	3.5%	2.6%	3.9%	3.3%	3.3%	2.8%	2.7%
FATAL	0.68%	0.16%	0.39%	0.44%	0.50%	0.28%	0.61%

Figure 29 shows crash distribution by day of week during 2010, using standard 24-hour days ending at midnight. Figure 30 presents the corresponding distributions for the 11-year data aggregate.

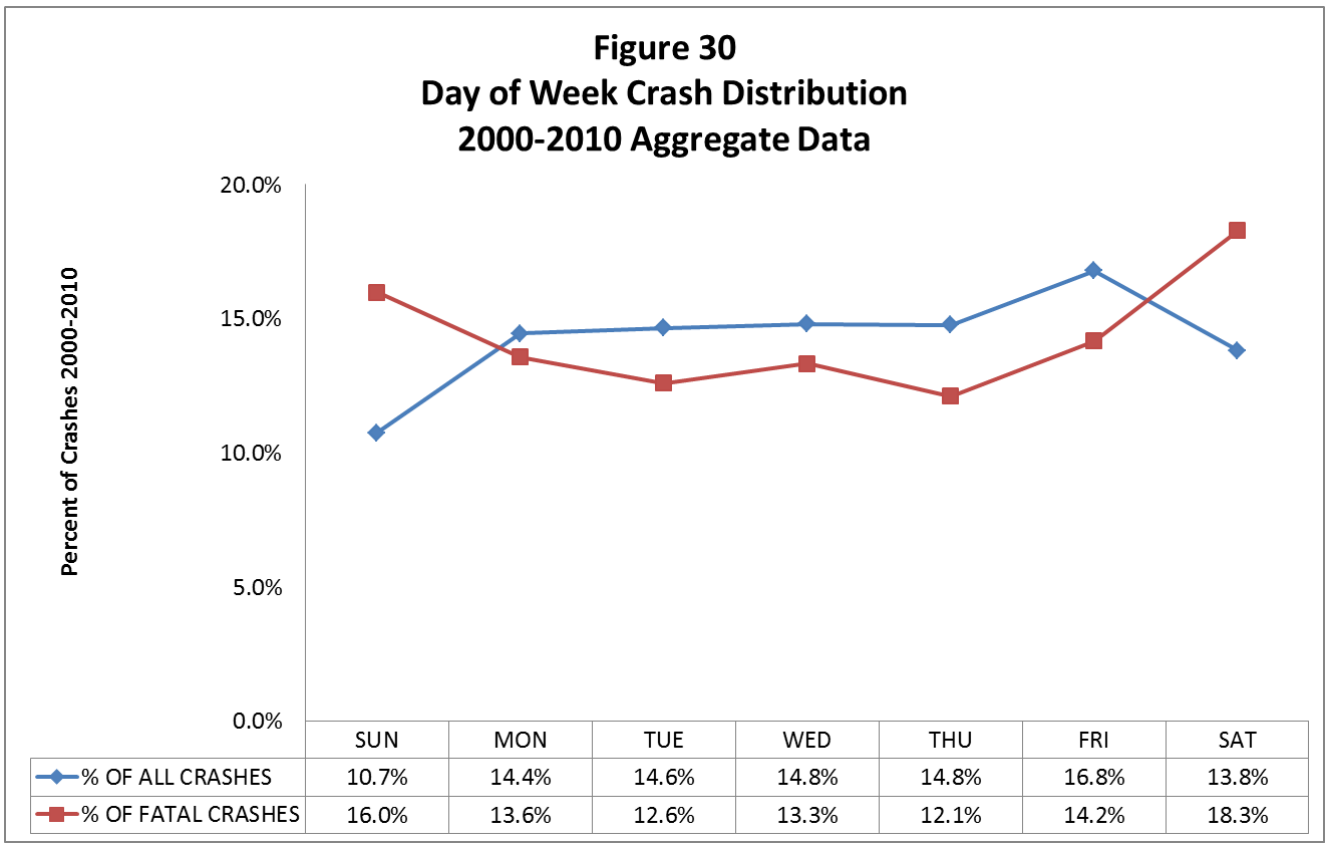
In 2010, more crashes occurred on Friday than on any other day of the week (2117 crashes, or 17.1% of all crashes). The number of crashes that occurred on Sunday was lower than on any other day of the week (1184, or 9.5% of all crashes).

The percentage of fatal crashes that occurred on Saturday and Sunday combined (34.6%) in 2010 increased from the previous year (from 30.5% in 2009) while the percentage of all traffic crashes that occurred on Saturday and Sunday decreased slightly to 22.8% from 23.6% in 2009. The percentage of fatal crashes that occurred on Monday decreased almost by two thirds (15.3% in 2009 to 5.8% in 2010). The the percentage of all crashes did not differ much from the previous year.

Figure 29
Day of Week Crash Distribution
2010 Traffic Crashes and Fatal Crashes



	SUN	MON	TUE	WED	THU	FRI	SAT
% OF ALL CRASHES	9.5%	14.9%	14.5%	14.7%	16.1%	17.1%	13.2%
% OF ALL FATAL CRASHES	15.4%	5.8%	13.5%	15.4%	19.2%	11.5%	19.2%

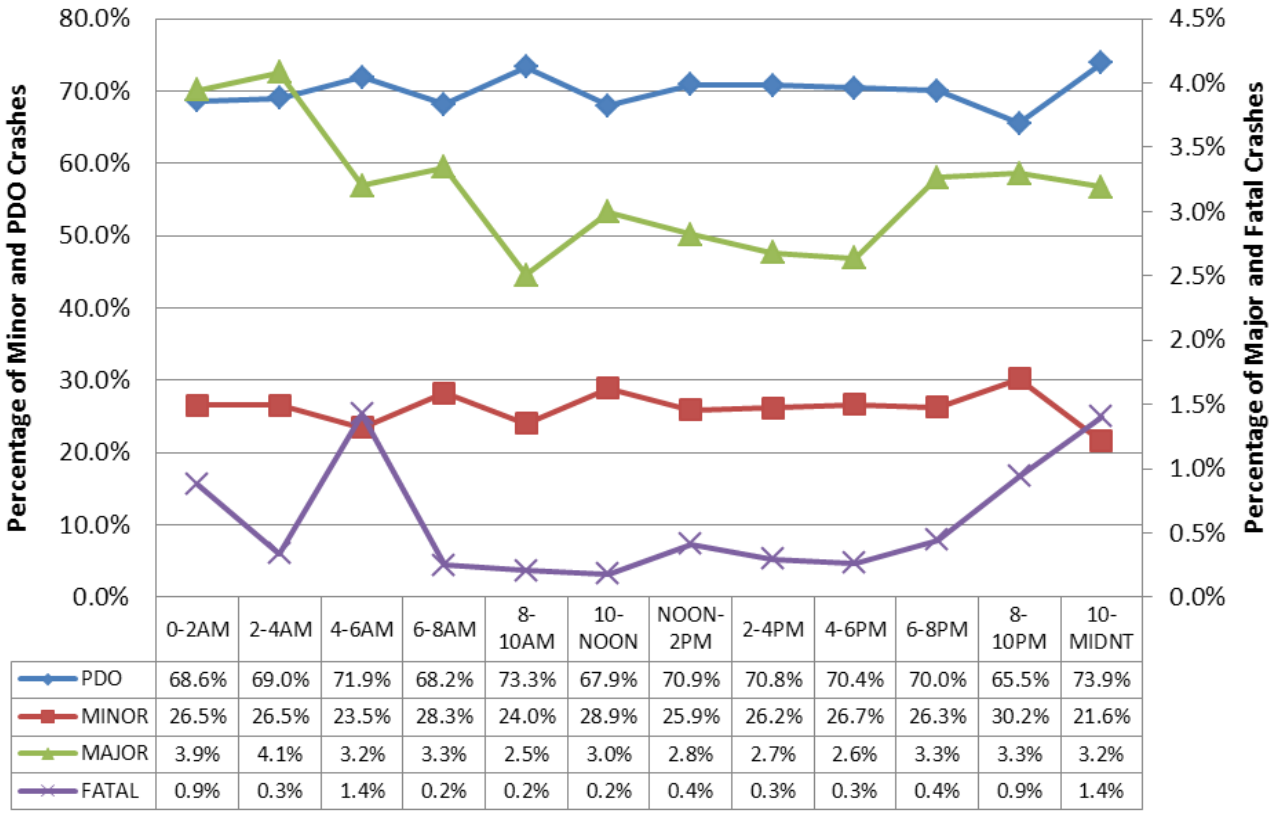


	SUN	MON	TUE	WED	THU	FRI	SAT
% OF ALL CRASHES	10.7%	14.4%	14.6%	14.8%	14.8%	16.8%	13.8%
% OF FATAL CRASHES	16.0%	13.6%	12.6%	13.3%	12.1%	14.2%	18.3%

Time of Day

The percentage of property damage only crashes ranged from 75.6% between midnight and 2am, to 66.6% between 10pm and midnight. The percent that involved minor injuries ranged from 20.2% to 28.3% (lowest between midnight and 2am; highest between 10pm and midnight). The percent that involved major injuries ranged from 1.4% to 4.6% (lowest between 10am and noon; highest between 8pm and 10pm). The percent of crashes that involved fatalities was greatest between midnight and 2am. Time of day was not reported for about 0.3% of crashes (data not included in Figure 31).

Figure 31
2009 Crash Severity by Time of Day

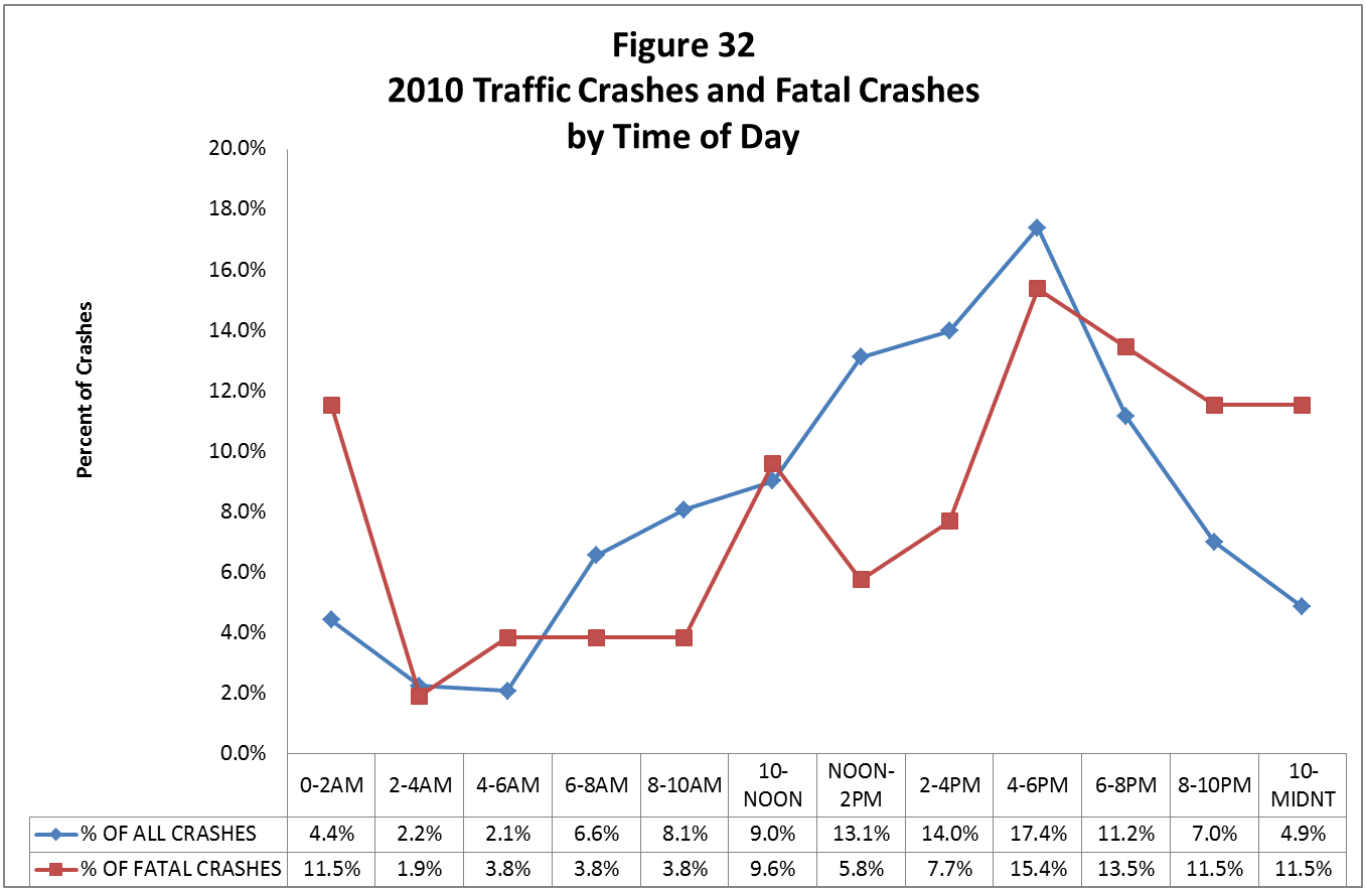


	0-2AM	2-4AM	4-6AM	6-8AM	8-10AM	10-NOON	NOON-2PM	2-4PM	4-6PM	6-8PM	8-10PM	10-MIDNT
PDO	68.6%	69.0%	71.9%	68.2%	73.3%	67.9%	70.9%	70.8%	70.4%	70.0%	65.5%	73.9%
MINOR	26.5%	26.5%	23.5%	28.3%	24.0%	28.9%	25.9%	26.2%	26.7%	26.3%	30.2%	21.6%
MAJOR	3.9%	4.1%	3.2%	3.3%	2.5%	3.0%	2.8%	2.7%	2.6%	3.3%	3.3%	3.2%
FATAL	0.9%	0.3%	1.4%	0.2%	0.2%	0.2%	0.4%	0.3%	0.3%	0.4%	0.9%	1.4%

Traffic crashes (all severity classes combined) followed the expected hourly distribution in 2010, rising from lowest numbers of crashes between 4am and 6am, reaching a maximum during the afternoon rush hour, then falling steadily from midnight to 6am. Figure 32 plots crash distribution for all crashes and fatal crashes by time of day for the current year and Figure 33 presents the corresponding distribution for 2000-2010 crashes combined.

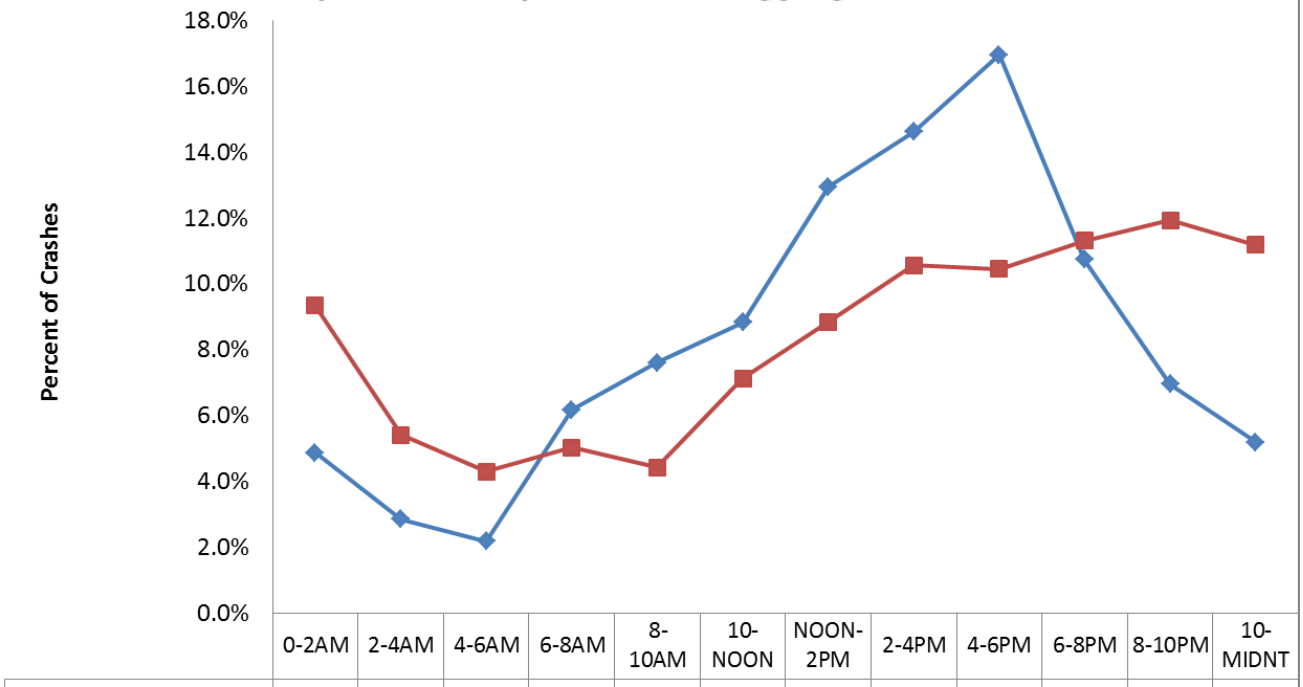
Typically, numbers of fatal crashes increase after 2 or 4 in the afternoon (beginning with the afternoon commute) and remain high throughout the evening and early morning hours. Drivers are least likely to become involved in fatal crashes in the hours from 2 morning on through the morning commute to 10am. In 2010, the frequency of fatal crashes was greatest between 4 in the afternoon and 6pm (15.4% of all fatal crashes) and 6pm to 8pm (13.5%).

Figure 32
2010 Traffic Crashes and Fatal Crashes by Time of Day



	0-2AM	2-4AM	4-6AM	6-8AM	8-10AM	10-NOON	NOON-2PM	2-4PM	4-6PM	6-8PM	8-10PM	10-MIDNT
% OF ALL CRASHES	4.4%	2.2%	2.1%	6.6%	8.1%	9.0%	13.1%	14.0%	17.4%	11.2%	7.0%	4.9%
% OF FATAL CRASHES	11.5%	1.9%	3.8%	3.8%	3.8%	9.6%	5.8%	7.7%	15.4%	13.5%	11.5%	11.5%

Figure 33
Traffic Crash and Fatal Crash Distribution
By Time of Day, 2000-2010 Aggregate Data



	0-2AM	2-4AM	4-6AM	6-8AM	8-10AM	10-NOON	NOON-2PM	2-4PM	4-6PM	6-8PM	8-10PM	10-MIDNT
% OF ALL CRASHES	4.9%	2.9%	2.2%	6.2%	7.6%	8.8%	12.9%	14.6%	17.0%	10.8%	7.0%	5.2%
% OF FATAL CRASHES	9.3%	5.4%	4.3%	5.0%	4.4%	7.1%	8.9%	10.6%	10.5%	11.3%	11.9%	11.2%

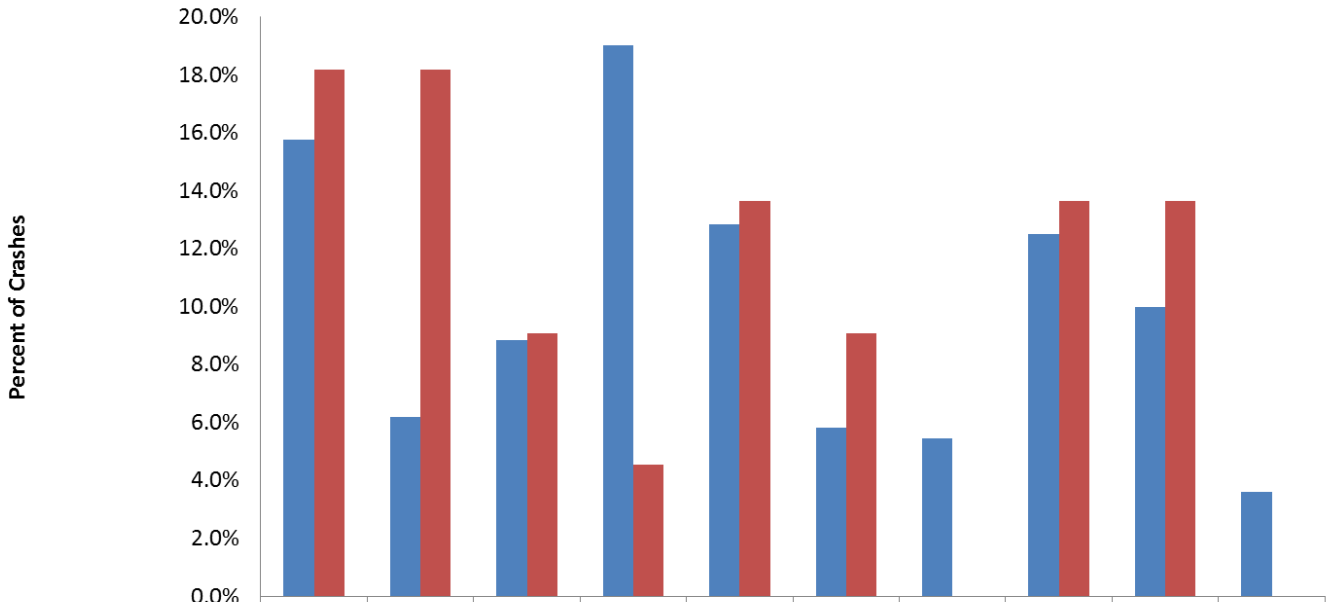
Weekends

Figure 34 summarizes 2010 crash activity during the 60 hour NHSTA weekend interval, from 6 pm Friday evening to 6 am Monday morning.

Twenty-eight percent (28.0%) of all Alaska traffic crashes and 42.3% of fatal crashes occurred on weekends during 2010. The percentage of annual crashes that occurred on weekends in 2010 was similar to 2009 and nearly 45% higher than 2008 (40.7% in 2009, 29.1% in 2008).

Weekend crashes in 2010 were most frequent on Friday nights between 6pm and midnight, and Saturday afternoons between noon and 6 pm. Overall crash frequency was also high Saturday evenings and Sunday afternoons. Fatal crashes were most likely on Friday evenings and very early Saturday morning, following Friday evening activities. (There were eight fatal crashes between 6pm Friday night and 6am Saturday morning).

Figure 34
2010 Weekend Traffic Crashes and Fatal Crashes
by 60 Hour NHSTA Weekend Intervals



	FRI 6PM-MIDNT	SAT 0-6AM	SAT 6AM-NOON	SAT NOON-6PM	SAT 6PM-MIDNT	SUN 0-6AM	SUN 6AM-NOON	SUN NOON-6PM	SUN 6PM-MIDNT	MON 0-6AM
% OF ALL CRASHES	15.8%	6.2%	8.9%	19.0%	12.8%	5.8%	5.5%	12.5%	10.0%	3.6%
% OF FATAL CRASHES	18.2%	18.2%	9.1%	4.5%	13.6%	9.1%	0.0%	13.6%	13.6%	0.0%

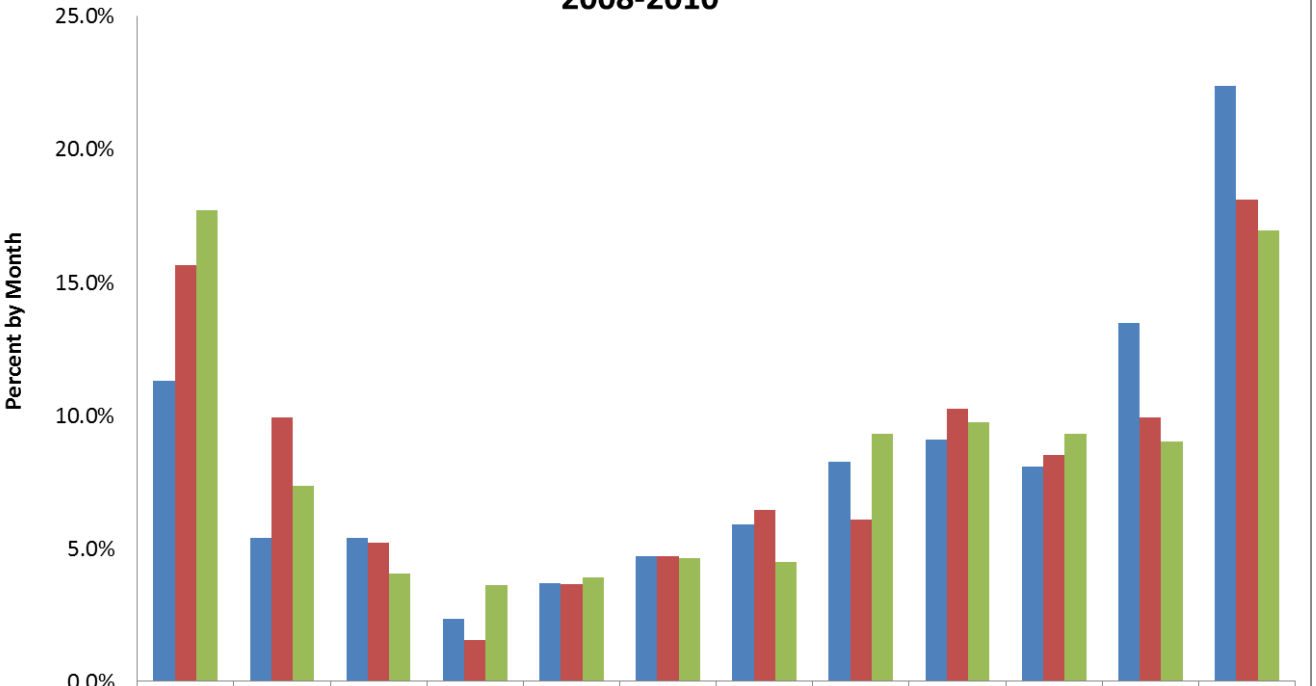
CRASHES WITH MOOSE

There were 667 motor vehicle crashes with moose on Alaska roadways in 2010 (5.4% of all traffic crashes, based on the crash event type).

While overall crash rates and fatal crash rates probably reflect road conditions, traffic volumes, and driver error, crashes with moose may be more dependent on environmental conditions (snowfall patterns in Southcentral Alaska and hours of daylight) and are often the consequence of animal foraging behavior and visibility.

In 2010, moose collisions occurred more frequently in January (17.7%) than other months of the year. The month of April had the lowest frequency of encounters (3.6% of all moose crashes). On average, there were 78 moose crashes per month between September and February and 33 moose crashes per month between March and August in 2010. Figure 35 compares monthly distribution of moose collisions between 2008 and 2010.

Figure 35
Moose Crashes by Month of Year
2008-2010



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2008	11.3%	5.4%	5.4%	2.4%	3.7%	4.7%	5.9%	8.2%	9.1%	8.1%	13.5%	22.4%
2009	15.7%	9.9%	5.2%	1.6%	3.7%	4.7%	6.4%	6.1%	10.3%	8.5%	9.9%	18.1%
2010	17.7%	7.3%	4.0%	3.6%	3.9%	4.6%	4.5%	9.3%	9.7%	9.3%	9.0%	16.9%

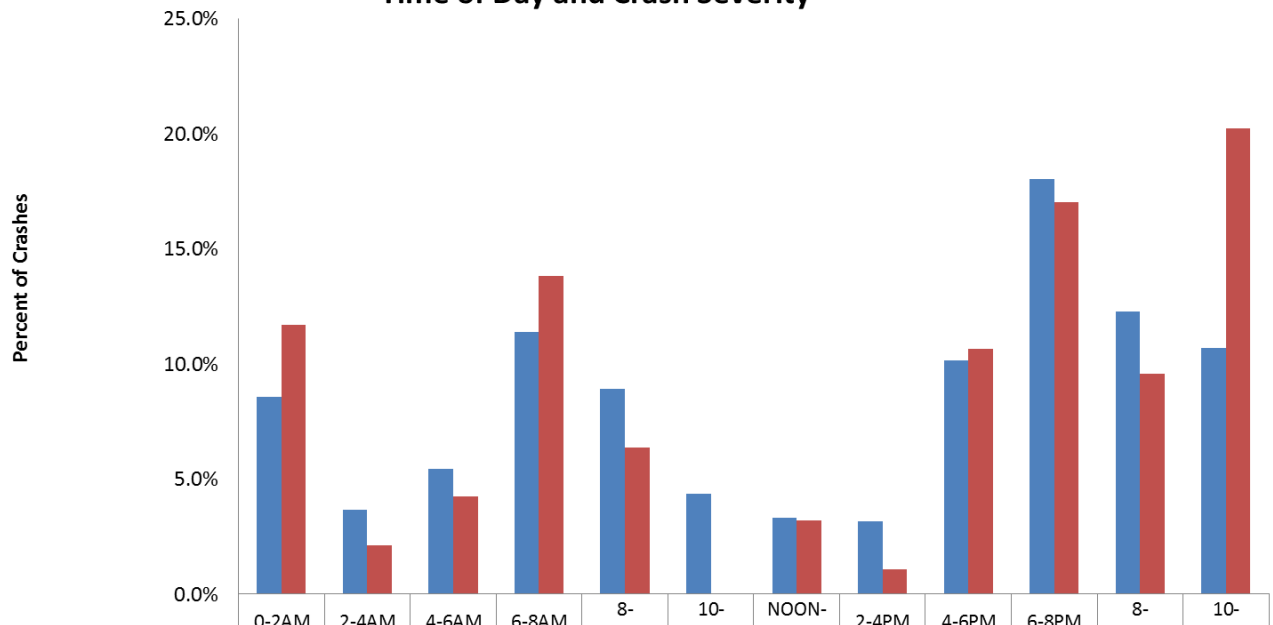
Forty-two (41.8%) percent of crashes with moose occurred during the six hours between 6 in the evening and midnight. Moose encounters on Alaska roadways were least likely during the midday (only 9.9% occurred in the six hours between 10 in the morning and 4 in the afternoon). The distribution of moose collisions by time-of-day in 2010 was similar to that in 2008 and 2009.

Motor vehicle collisions with moose usually result in fewer injuries to vehicle occupants than other

traffic collisions. Eighty-six percent (85.9%) of moose collisions in 2010 caused only property damage, 13.3% resulted in only minor injuries to vehicle occupants, and less than 1% caused major injuries (0.7%). There were no fatalities associated with moose collisions in 2010.

Figure 36 shows the percent of non-injury (PDO) and injury crashes (minor, major, and fatal combined) with moose by time-of day. Both non-injury and injury crashes were most frequent in the evening. On average, at any hour of the day fourteen percent (14.1%) of moose collisions caused person injuries in 2010. That percentage increased to eighteen percent (18.3%) between midnight and 2 in the morning, possibly due to reduced light conditions and less time for drivers to take evasive action.

Figure 36
2010 Moose Crashes
Time of Day and Crash Severity



	0-2AM	2-4AM	4-6AM	6-8AM	8-10AM	10-NOON	NOON-2PM	2-4PM	4-6PM	6-8PM	8-10PM	10-MIDNT
% OF PDO CRASHES	8.6%	3.7%	5.4%	11.4%	8.9%	4.4%	3.3%	3.2%	10.2%	18.0%	12.3%	10.7%
% OF FATAL & INJURY CRASHES	11.7%	2.1%	4.3%	13.8%	6.4%	0.0%	3.2%	1.1%	10.6%	17.0%	9.6%	20.2%

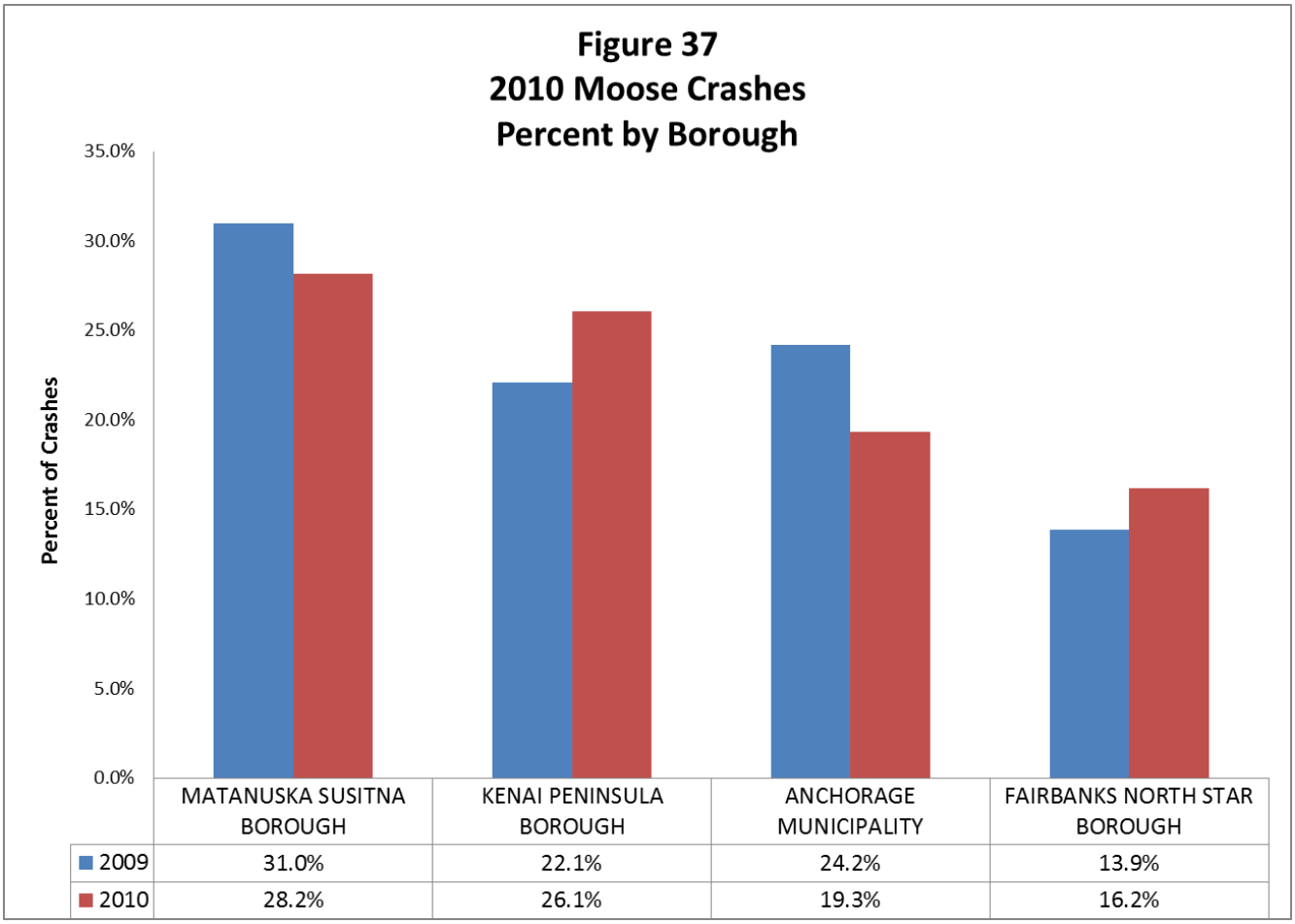
Most moose collisions occurred at night from 6pm to 6am ((87.0%) where darkness or in reduced light conditions, such as twilight or street lamps, would predominate. No adverse weather conditions were coded for eighty percent (79.8%) of moose collisions; most occurred in clear or cloudy weather without precipitation or blowing debris.

Nearly seventy percent (69.7%) of all moose collisions happened on rural roadways and thirty percent (30.3%) occurred at urban locations. Almost a third of rural and a third of urban moose collisions occurred on interstate highways. Thirty-nine percent (39.3%) of all moose collisions statewide occurred on the Sterling, Seward, Glenn, Parks, Richardson, Alaska, or Tok Cut-Off highways.

Seventy-four percent (73.6%) of statewide moose collisions occurred in three large Southcentral boroughs. Moose collisions within the boundaries of the Municipality of Anchorage decreased from 24.2% of statewide in 2009 to 19.3% in 2010. Kenai Peninsula moose crashes increased

slightly, from 22.1% in 2009 to 26.1% in 2010. Moose collisions in the Matanuska-Susitna Borough also decreased slightly , from 31% in 2009 to 28.2% in 2010. Sixteen percent (16.2%) of all moose collisions occurred in the Fairbanks Northstar Borough (up from 13.9% of statewide in 2009).

Figure 37
2010 Moose Crashes
Percent by Borough



	MATANUSKA SUSITNA BOROUGH	KENAI PENINSULA BOROUGH	ANCHORAGE MUNICIPALITY	FAIRBANKS NORTH STAR BOROUGH
2009	31.0%	22.1%	24.2%	13.9%
2010	28.2%	26.1%	19.3%	16.2%

GEOGRAPHIC DISTRIBUTION OF TRAFFIC CRASHES

Figures 38 through 46 illustrate property damage and injury crash trends for the years 2000 through 2010. Figures 38 through 45 chart the percent of crashes that involved injuries (nonfatal and fatal combined), the percent of crashes that involved only property damage, and the total number of crashes for Alaska's eight most populous boroughs. Figure 46 summarizes for all other areas (less populous boroughs and unorganized areas). Statewide data was presented in Figure 1.

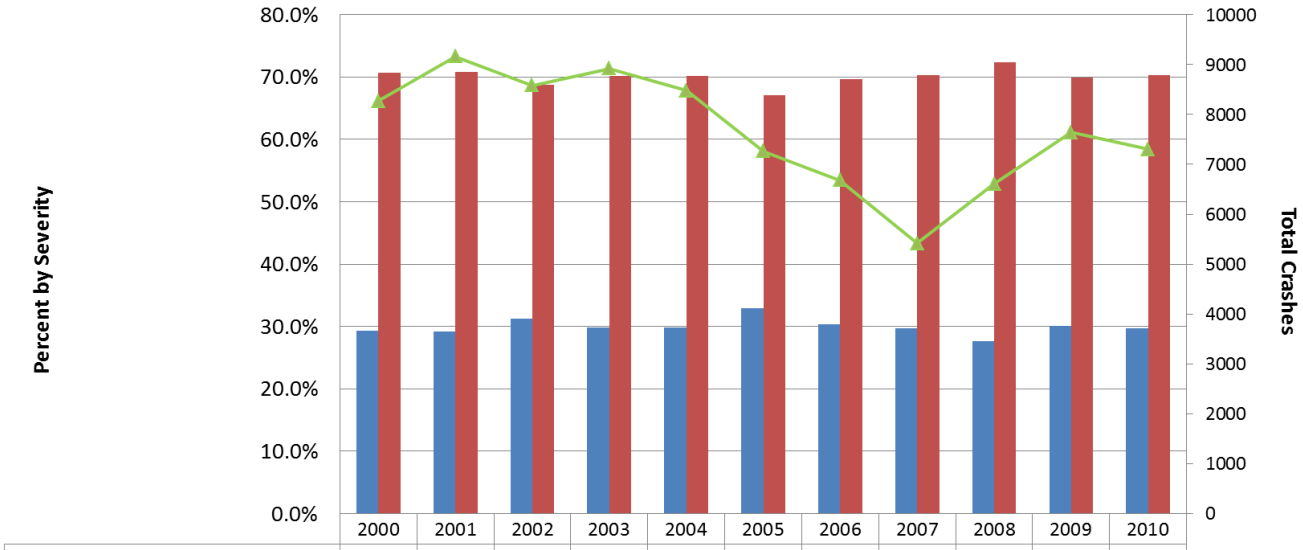
Most boroughs reported fewer traffic crashes in 2010 than in 2009 with only the Fairbanks North Star Borough with more crashes. Crash severity increased in four boroughs and decreased in four as well as sparsely populated areas..

Reduced crash reporting may have influenced severity statistics over the past few years. When law enforcement agencies report fewer property damage only crashes, the overall severity of crashes increases because those are the predominant crash type they are reporting. This may have happened for 2009 data which is not consistent with previous trend of slightly decreasing severity of reported traffic crashes. 2010 seems to continue this larger trend of reduced crash severity. Figure 47 shows a simple linear trend for crash severity (annual percent injury plus fatal crashes) in the most populous boroughs.

By 2010, about thirteen percent (12.5%) of the State's population lived within the Matanuska-Susitna Borough boundaries. Nearly fourteen percent (13.6%) of alcohol related crashes, twenty-eight percent (28.2%) of moose collisions, and twenty-three percent (23.1%) of fatal crashes occurred there in 2010. The percentage of traffic crashes that resulted in fatalities increased from the previous year (0.819% in 2010, 0.659% in 2009) and remained higher than statewide.

The Municipality of Anchorage, with forty-one percent (41.1%) of the State's population in 2010, reported fifty–nine percent (58.9%) of all traffic crashes and twenty-three percent (23.1%) of all fatal crashes that occurred statewide during 2010. Seventy-five percent (74.8%) of motor vehicle crashes with pedestrians and 74.1% of crashes with bicyclists occurred within Anchorage boundaries. Fifty-two percent (52.2%) of Alaska's alcohol-related crashes and nineteen percent (19.3%) of crashes with moose occurred there. The percentage of traffic crashes that resulted in fatalities was lower than the statewide percentage (0.419% statewide; 0.164% in the Municipality of Anchorage).

Figure 38
Anchorage Municipality Traffic Crashes
by Crash Severity 2000-2010

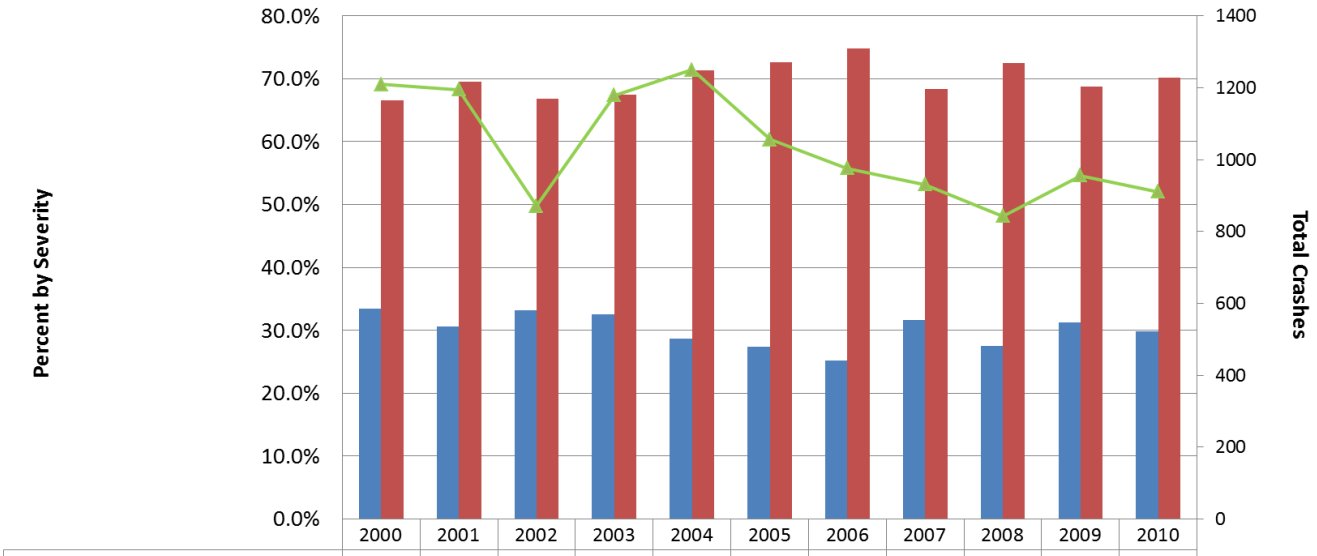


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	29.3%	29.2%	31.2%	29.8%	29.8%	32.9%	30.3%	29.7%	27.7%	30.1%	29.8%
% OF PDO CRASHES	70.7%	70.8%	68.8%	70.2%	70.2%	67.1%	69.7%	70.3%	72.3%	69.9%	70.2%
TOTAL CRASHES	8267	9159	8579	8917	8476	7257	6682	5417	6609	7640	7300

Figure 39
Fairbanks North Star Borough Traffic Crashes
by Crash Severity 2000-2010

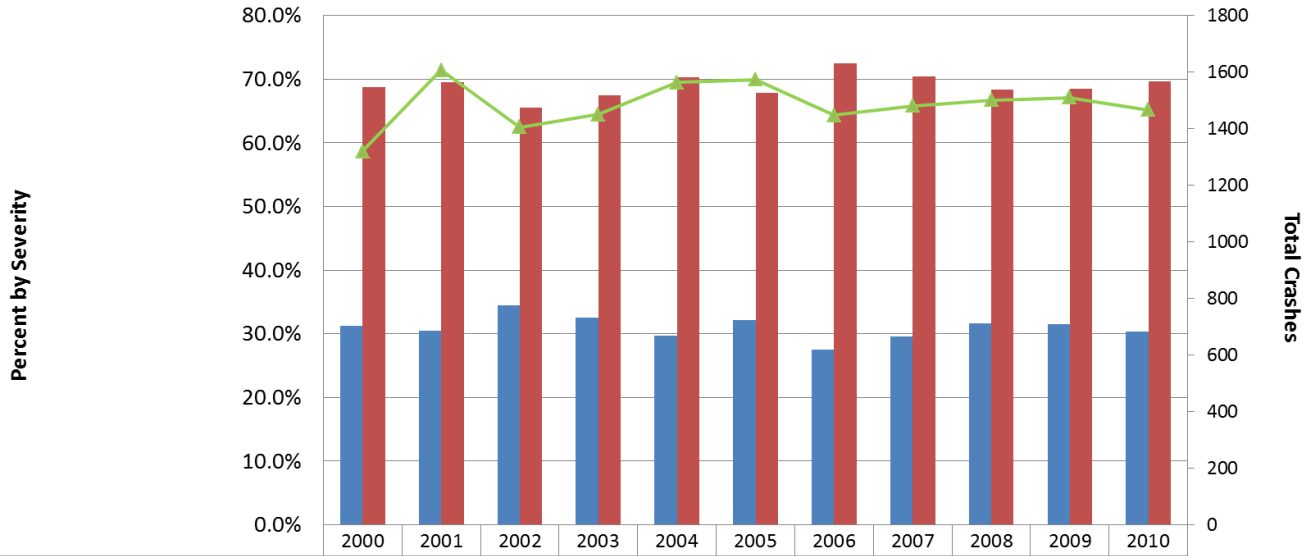
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	26.8%	29.5%	32.3%	27.1%	25.3%	25.3%	25.2%	26.5%	25.2%	23.9%	25.7%
% OF PDO CRASHES	73.2%	70.5%	67.7%	72.9%	74.7%	74.7%	74.8%	73.5%	74.8%	76.1%	74.3%
TOTAL CRASHES	1727	1669	1353	1832	1992	1837	1307	1485	1495	1513	1602

Figure 40
Kenai Peninsula Borough Traffic Crashes
by Crash Severity 2000-2010



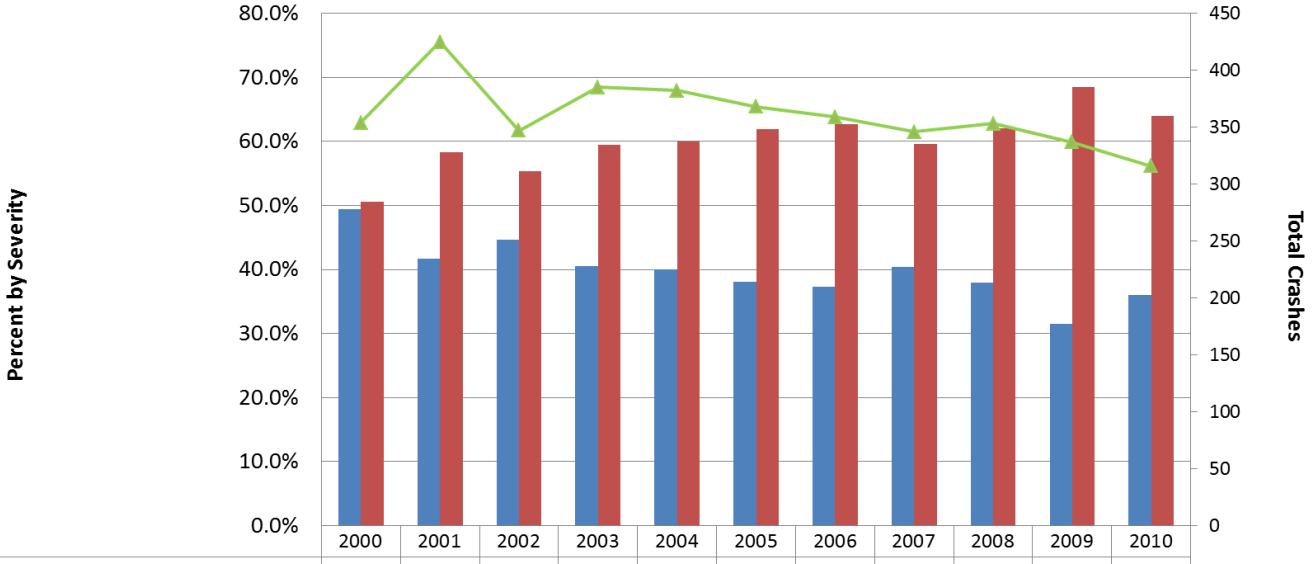
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	33.4%	30.5%	33.2%	32.6%	28.7%	27.4%	25.2%	31.7%	27.5%	31.3%	29.8%
% OF PDO CRASHES	66.6%	69.5%	66.8%	67.4%	71.3%	72.6%	74.8%	68.3%	72.5%	68.7%	70.2%
TOTAL CRASHES	1209	1195	871	1179	1250	1056	976	931	843	956	910

Figure 41
Matanuska Susitna BoroughTraffic Crashes
by Crash Severity 2000-2010



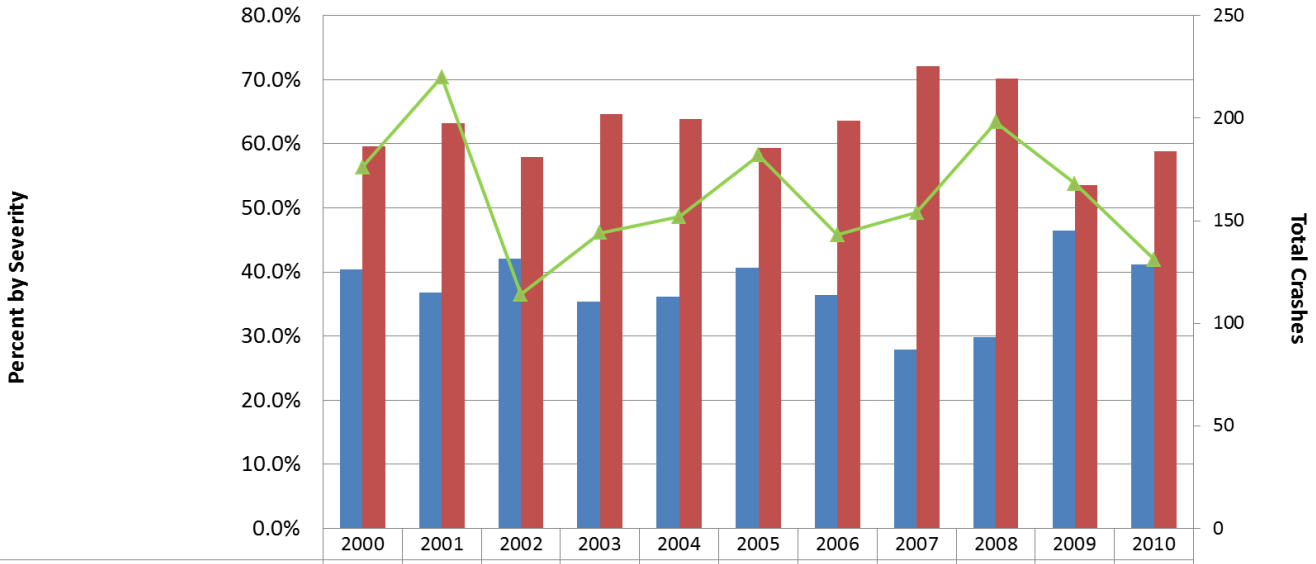
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	31.2%	30.4%	34.4%	32.6%	29.7%	32.1%	27.5%	29.6%	31.6%	31.5%	30.4%
% OF PDO CRASHES	68.8%	69.6%	65.6%	67.4%	70.3%	67.9%	72.5%	70.4%	68.4%	68.5%	69.6%
TOTAL CRASHES	1320	1607	1406	1450	1564	1574	1448	1481	1501	1510	1466

Figure 42
Juneau City and Borough Traffic Crashes
by Crash Severity 2000-2010



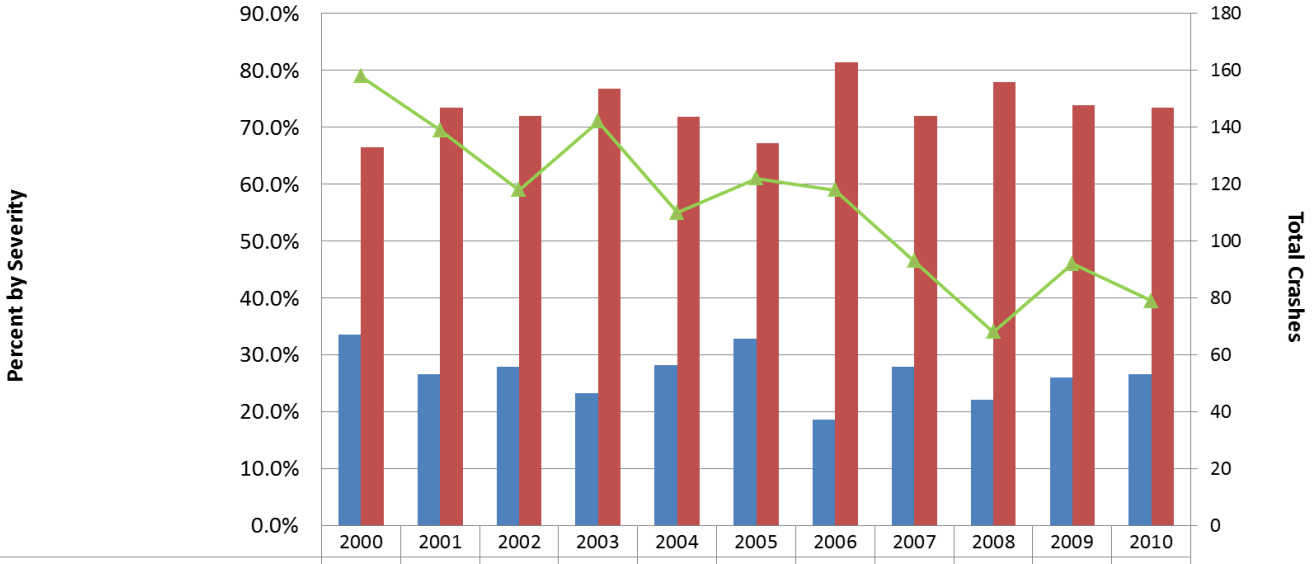
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	49.4%	41.6%	44.7%	40.5%	40.1%	38.0%	37.3%	40.5%	38.0%	31.5%	36.1%
% OF PDO CRASHES	50.6%	58.4%	55.3%	59.5%	59.9%	62.0%	62.7%	59.5%	62.0%	68.5%	63.9%
TOTAL CRASHES	354	425	347	385	382	368	359	346	353	337	316

Figure 43
Ketchikan Gateway Borough Traffic Crashes
by Crash Severity 2000-2010



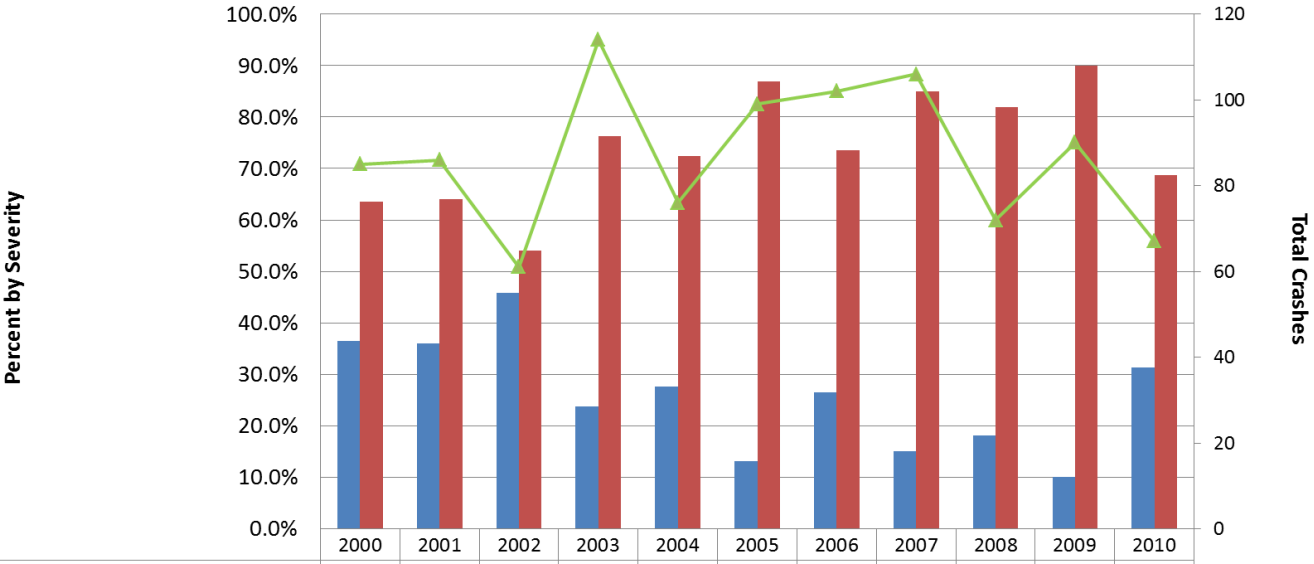
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	40.3%	36.8%	42.1%	35.4%	36.2%	40.7%	36.4%	27.9%	29.8%	46.4%	41.2%
% OF PDO CRASHES	59.7%	63.2%	57.9%	64.6%	63.8%	59.3%	63.6%	72.1%	70.2%	53.6%	58.8%
TOTAL CRASHES	176	220	114	144	152	182	143	154	198	168	131

Figure 44
Kodiak Island BoroughTraffic Crashes
by Crash Severity 2000-2010



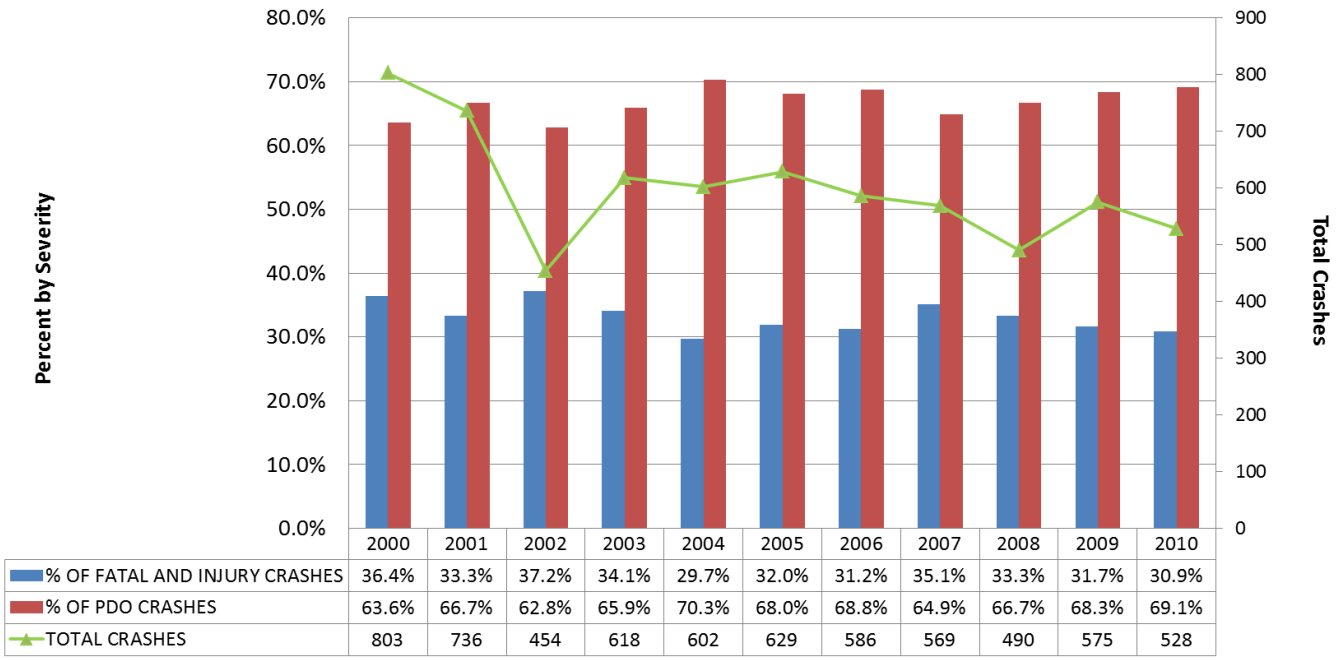
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	33.5%	26.6%	28.0%	23.2%	28.2%	32.8%	18.6%	28.0%	22.1%	26.1%	26.6%
% OF PDO CRASHES	66.5%	73.4%	72.0%	76.8%	71.8%	67.2%	81.4%	72.0%	77.9%	73.9%	73.4%
TOTAL CRASHES	158	139	118	142	110	122	118	93	68	92	79

Figure 45
Sitka City and Borough Traffic Crashes
by Crash Severity 2000-2010



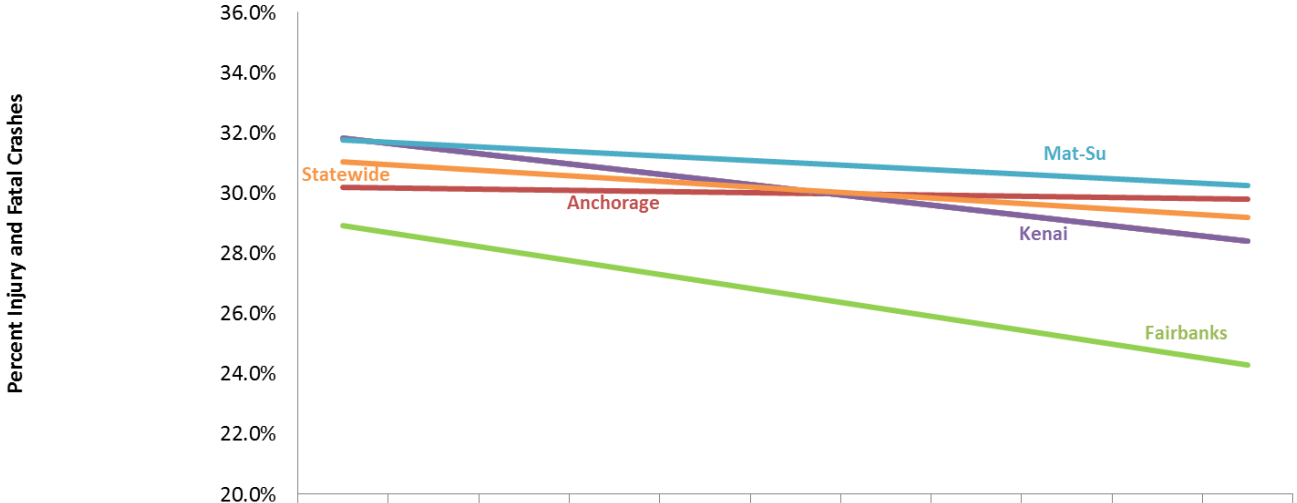
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	36.5%	36.0%	45.9%	23.7%	27.6%	13.1%	26.5%	15.1%	18.1%	10.0%	31.3%
% OF PDO CRASHES	63.5%	64.0%	54.1%	76.3%	72.4%	86.9%	73.5%	84.9%	81.9%	90.0%	68.7%
TOTAL CRASHES	85	86	61	114	76	99	102	106	72	90	67

Figure 46
Sparsely Populated Areas Traffic Crashes by Crash Severity 2000-2010



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
% OF FATAL AND INJURY CRASHES	36.4%	33.3%	37.2%	34.1%	29.7%	32.0%	31.2%	35.1%	33.3%	31.7%	30.9%
% OF PDO CRASHES	63.6%	66.7%	62.8%	65.9%	70.3%	68.0%	68.8%	64.9%	66.7%	68.3%	69.1%
TOTAL CRASHES	803	736	454	618	602	629	586	569	490	575	528

Figure 47
Crash Severity Trendlines by Borough 2000-2010



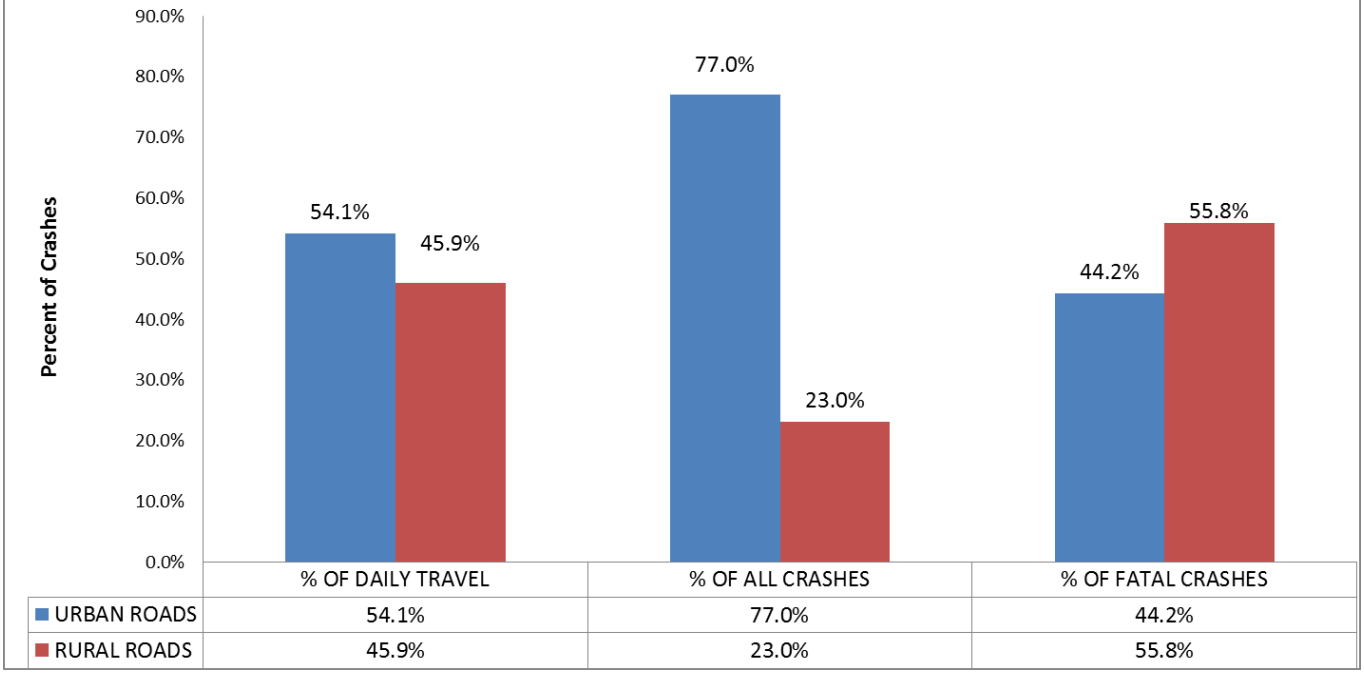
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Anchorage Municipality	29.3%	29.2%	31.2%	29.8%	29.8%	32.9%	30.3%	29.7%	27.7%	30.1%	29.8%
Fairbanks North Star Borough	26.8%	29.5%	32.3%	27.1%	25.3%	25.3%	25.2%	26.5%	25.2%	23.9%	25.7%
Kenai Peninsula Borough	33.4%	30.5%	33.2%	32.6%	28.7%	27.4%	25.2%	31.7%	27.5%	31.3%	29.8%
Matanuska Susitna Borough	31.2%	30.4%	34.4%	32.6%	29.7%	32.1%	27.5%	29.6%	31.6%	31.5%	30.4%
Statewide severe accidents	30.7%	30.1%	32.5%	30.4%	29.4%	31.4%	29.2%	29.8%	28.4%	29.8%	29.6%

ROAD TYPE & LOCATION

Urban/Rural

Although traffic volumes on rural and urban roadways were similar, over three quarters of the traffic crashes that were reported in 2010 occurred on urban roadways (Figure 48). The percent urban/rural distribution for all 2010 crashes is consistent with Alaska crash data collected since 2000. Between 2000 and 2010, the percent of fatal crashes on rural roadways annually exceeded the percentage at urban locations except for 2002. During 2002, fifty-six percent of fatal crashes occurred on urban roadways and forty-four percent occurred on rural roadways.

Figure 48
2010 Traffice Volume, Traffic Crashes, and Fatal Crashes
Percentage of Urban and Rural Locations

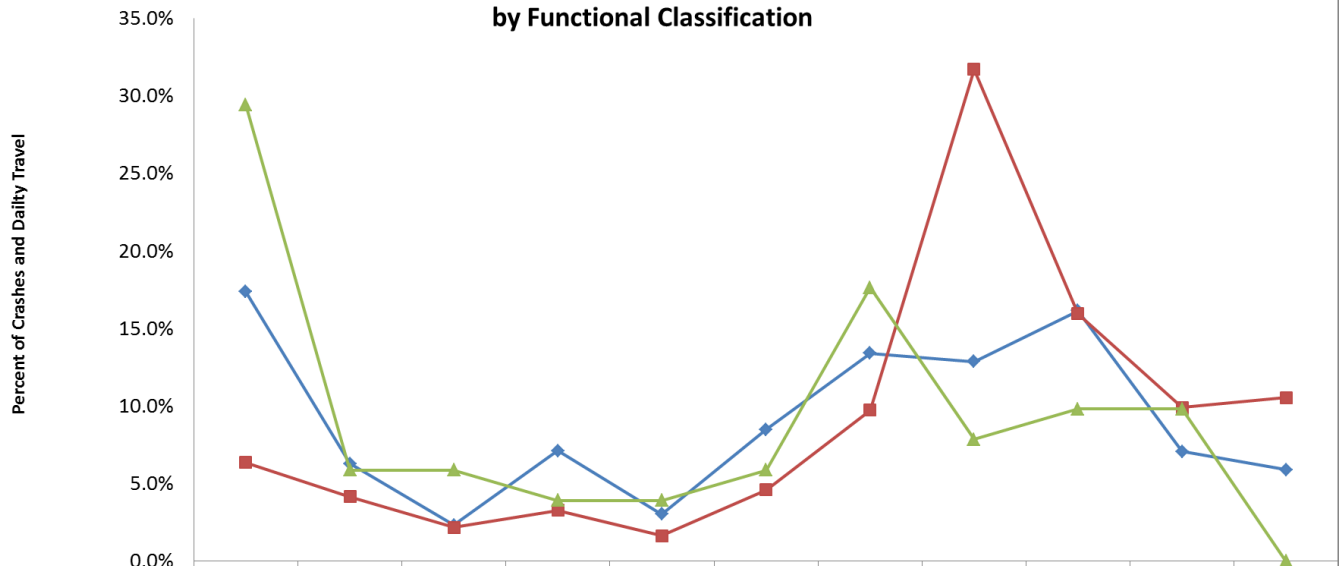


	% OF DAILY TRAVEL	% OF ALL CRASHES	% OF FATAL CRASHES
URBAN ROADS	54.1%	77.0%	44.2%
RURAL ROADS	45.9%	23.0%	55.8%

Functional Class and Rural/Urban

Figure 49 shows percent distributions of crashes and traffic volumes by road functional class at urban and rural crash locations.

Figure 49
2010 Crash and Traffic Distribution
by Functional Classification



	RURAL INTERSTATE	RURAL OTHER PRINCIPAL ARTERIAL	RURAL MINOR ARTERIAL	RURAL MAJOR COLLECTOR	RURAL MINOR COLLECTOR	RURAL LOCAL ROAD	URBAN INTERSTATE	URBAN OTHER PRINCIPAL ARTERIAL	URBAN MINOR ARTERIAL	URBAN COLLECTOR	URBAN LOCAL ROAD
% OF DAILY TRAVEL	17.4%	6.3%	2.3%	7.1%	3.0%	8.5%	13.4%	12.9%	16.2%	7.1%	5.9%
% OF ALL CRASHES	6.4%	4.2%	2.2%	3.3%	1.6%	4.6%	9.7%	31.7%	16.0%	9.9%	10.5%
% OF FATAL CRASHES	29.4%	5.9%	5.9%	3.9%	3.9%	5.9%	17.6%	7.8%	9.8%	9.8%	0.0%

Traffic volumes were highest on rural instate highways (17.4% of average annual daily traffic in 2010), followed by urban minor arterials (16.2%), and urban interstate roadways (13.4%). Twenty-nine percent (29.4%) of fatal crashes occurred on rural interstates, 17.6% on urban insterstates, and less than 10% on all other functional classifications.

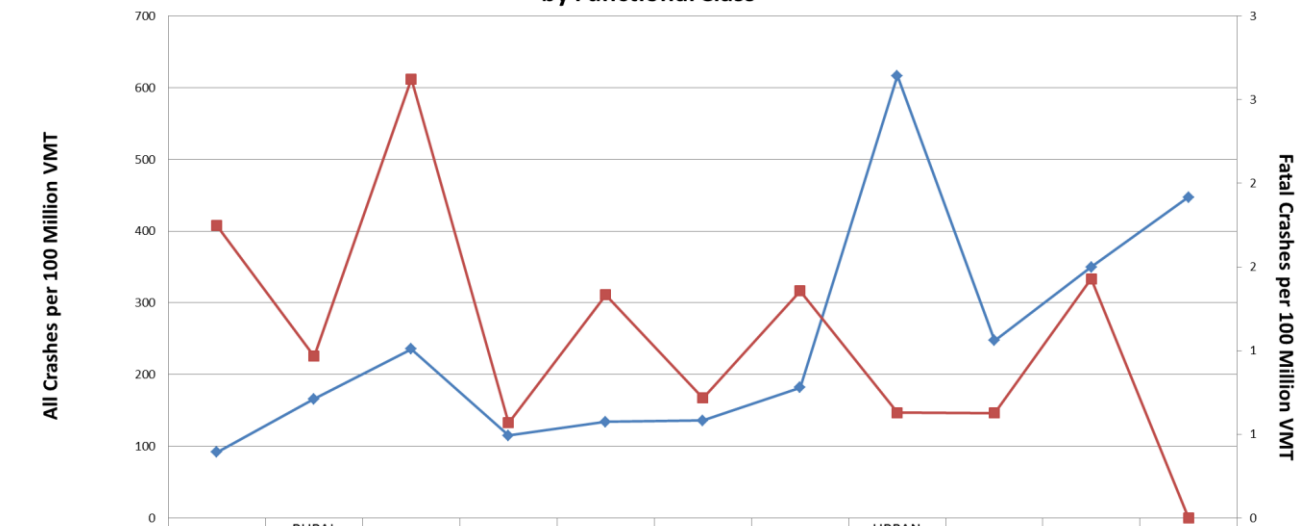
Accident Rates

Statewide, there were 258 traffic crashes for every 100 million vehicle miles traveled during 2010. The crash rate at rural locations was 124 crashes per 100 million VMT and at urban locations, 351 crashes per 100 million VMT. There were 1.1 fatal crashes per 100 million VMT statewide, with 1.3 fatal crashes per 100 million VMT on rural roads and 0.84 on urban roads. Figure 50 presents crash rates and fatal crash rates by road functional class at urban and rural crash locations during 2010.

For many functional classes, crash rates on rural roads were less than half the rates on urban roads in 2010. The highest overall crash rates occurred on urban other principal arterials, urban local roads, and urban minor arterials.

The highest fatal crash rates were calculated for rural minor arterials while the lowest fatal crash rates were calculated for urban local roads. Fatal crash rates for rural minor arterials were greater than rates for urban minor arterials.

Figure 50
2010 All Crash and Fatal Crash Rates by Functional Class

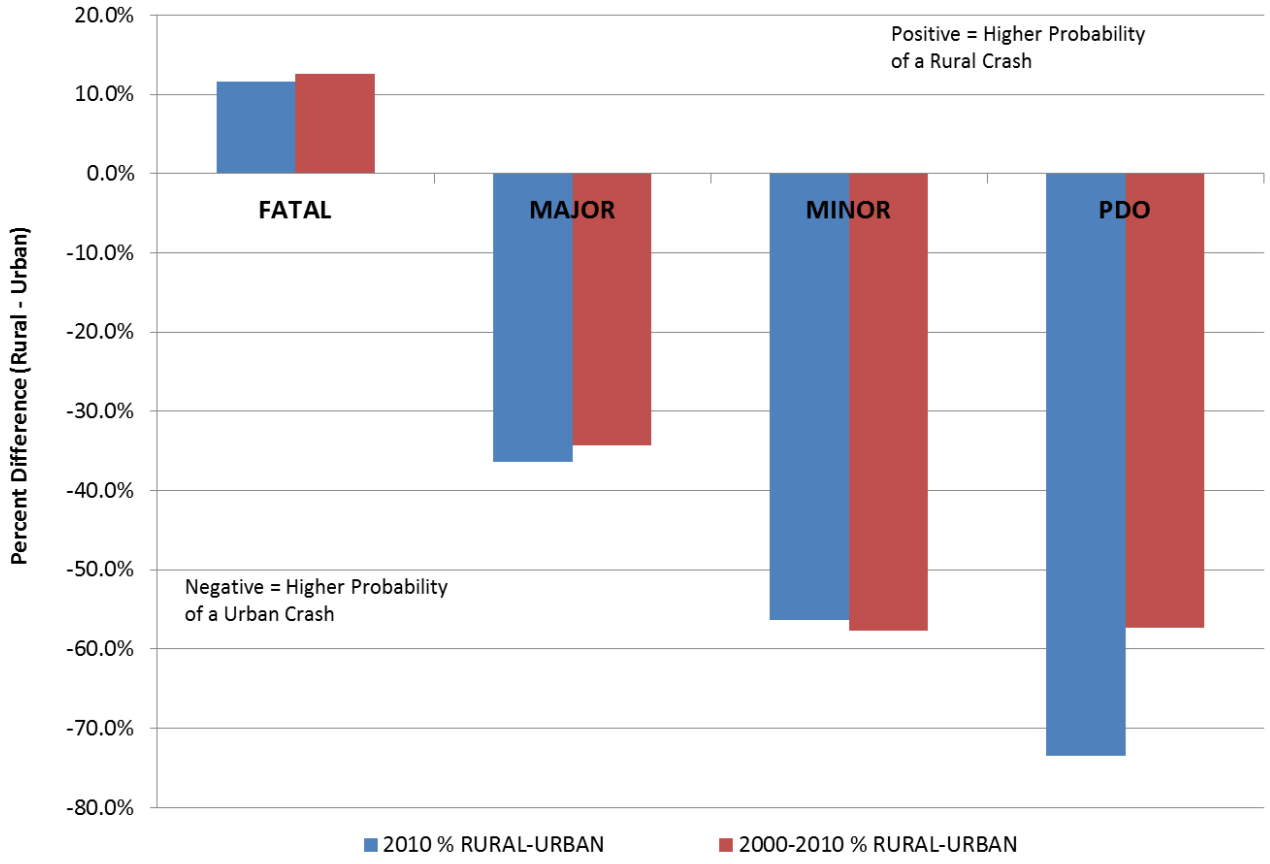


	RURAL INTERSTATE	RURAL OTHER PRINCIPAL ARTERIAL	RURAL MINOR ARTERIAL	RURAL MAJOR COLLECTOR	RURAL MINOR COLLECTOR	RURAL LOCAL ROAD	URBAN INTERSTATE	URBAN OTHER PRINCIPAL ARTERIAL	URBAN MINOR ARTERIAL	URBAN COLLECTOR	URBAN LOCAL ROAD
ALL CRASH RATE	91.5	165.7	235.3	114.8	134.0	135.8	181.6	616.7	247.2	349.9	447.4
FATAL CRASH RATE	1.7	1.0	2.6	0.6	1.3	0.7	1.4	0.6	0.6	1.4	0.0

Although motorists were less likely to be involved in crashes on rural roadways, they were more likely to be killed if a crash occurred at a rural location. The proportion of crashes that involved minor and serious person injuries was higher on urban than rural roadways, on average, for all road functional classes.

In 2010 the difference between the percents of crashes that were fatal in rural and urban areas was 11.5%. The number of fatal crashes is considered a statistically small sample size. For the same comparison of rural to urban in 2010, the difference in the percent of crashes that caused major injuries was 36.4% higher with urban areas now higher. If combining minor and major injury crashes, and fatal injury crashes, the difference in percents is 53.2%, with urban areas again higher. For property damage crashes, the difference in percents is 73.5% with urban areas having the higher percentage. This is a much larger difference between urban and rural crashes' respective share of overall crashes. This might indicate that proportionally fewer property-damage-only crashes are being reported in rural areas. The percent difference between rural and urban crash severity for 2010 displayed in Figure 51 is otherwise consistent with annual and aggregate crash data since 2000.

Figure 51
2010 Crash Severity - Percent Difference between Rural and Urban Locations

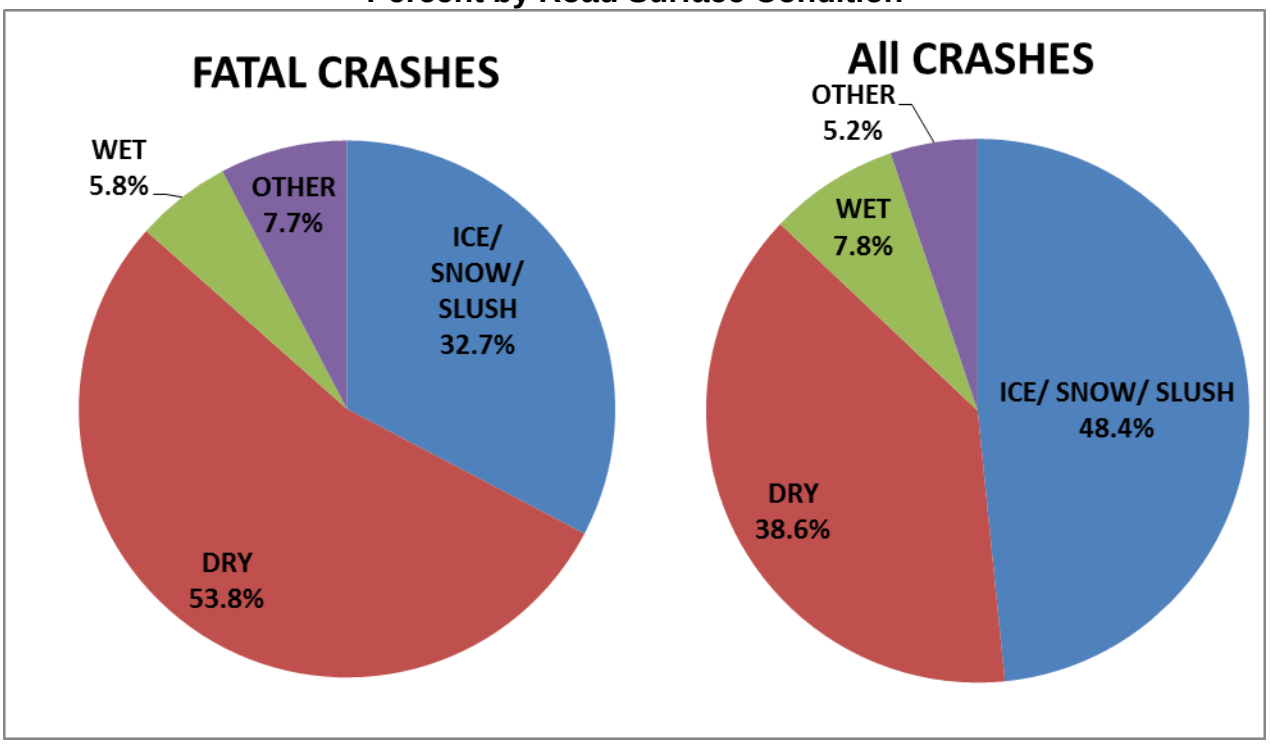


ROADWAY ATTRIBUTES

Roadway Surface

Forty-eight percent (48.4%) of crashes during the year occurred on Ice, slush, or snow. Nearly thirty-nine percent (38.6%) occurred on dry pavement. Wet pavement conditions were coded for another 7.8% of crashes. Four percent of crash locations had loose gravel or standing water on the road surface. Figure 52 graphically contrasts surface conditions for all crashes versus fatal crashes.

Figure 52
2010 All Crashes and Fatal Crashes
Percent by Road Surface Condition



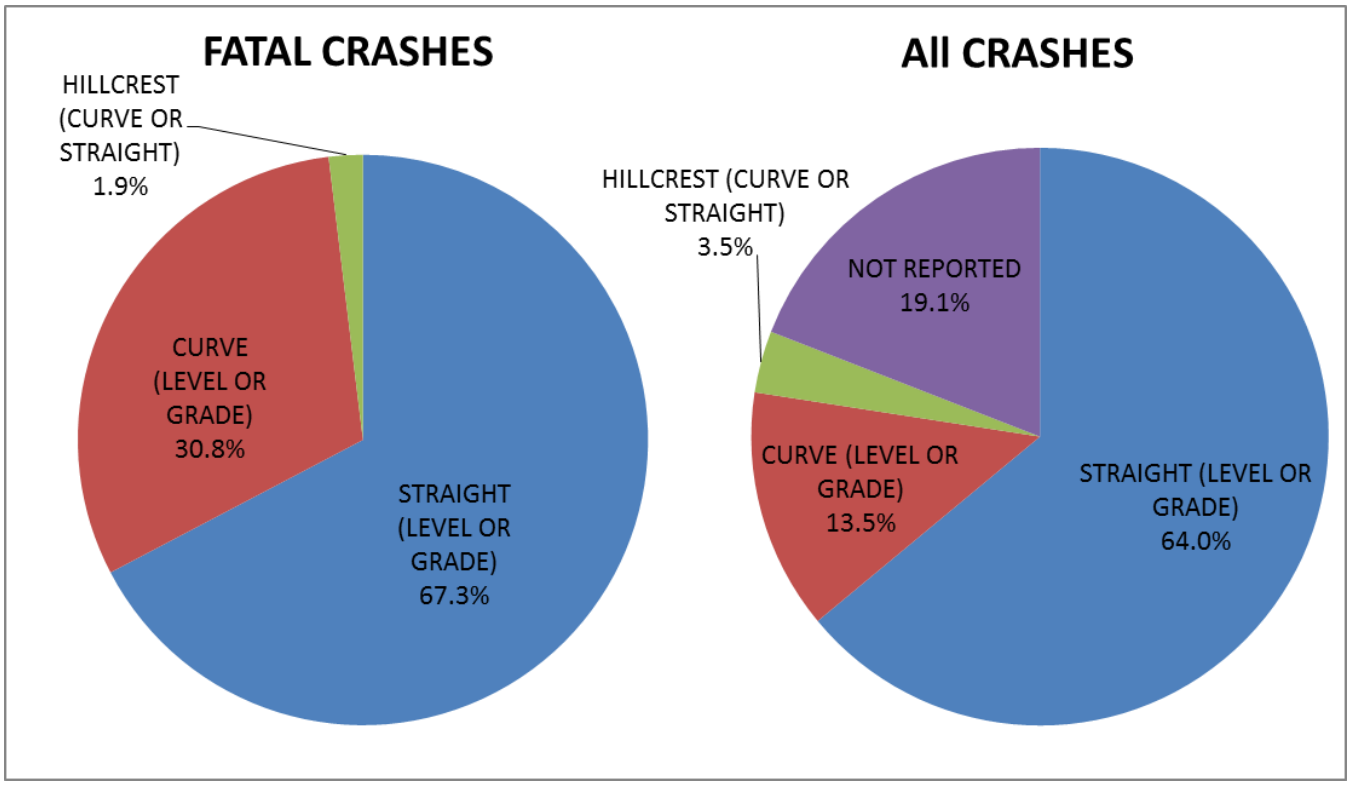
Compared with surface conditions at locations of property damage only crashes, a higher proportion of minor injury, major injury, and fatal crashes occurred on dry pavement (45.1% of minor injuries, 56.6% of major injuries, and 53.8% of fatal). In contrast, a lower percentage occurred on ice or snow covered roadways (42.0% of minor injuries, 30.3% of major injuries, and 32.7% of fatal crashes). The proportion of major injury and fatal crashes that occurred on wet pavement was similar to the proportion for property damage only and minor injury crashes.

Roadway Geometry

Most crashes (64.0% of property damage only, injury, and fatal crashes combined) occurred on straight stretches of roadway, either level or at grade. Fourteen percent (13.5%) of all crashes occurred on curves (either level or at grade) and another 3.5% occurred at hillcrests of either straight or curved roadways (Figure 53).

Fatal crashes also occurred most frequently on straight stretches of roadway (67.3%). Higher proportions of fatal crashes occurred on curves than crashes overall (30.8% of fatal crashes compared to 13.5% of all crashes).

Figure 53
2010 Fatal and All Crashes Crashes
Percent by Roadway Geometry



Roadway Segment Accident Rates

Statewide crash rates for 2010 and 2009 are provided in Table 9. Road categories in this table are based on the functional class of the roadway, presence of medians (divided or undivided), and opposing traffic (1 or 2 way traffic). The crash rate was calculated as the number of crashes per 1 million vehicle miles traveled at crash locations.

TABLE 9
2009 - 2010 Statewide Segment Crash Rates
by Road Category

CATEGORY	ROAD TYPE	CRASH RATE	
		2009	2010
A	UNDIVIDED URBAN & RURAL INTERSTATE	1.001	0.911
B	DIVIDED RURAL INTERSTATE	0.948	0.677
C	DIVIDED URBAN INTERSTATE/OTHER FREEWAY & EXPRESSWAY	1.080	0.978
D	DIVIDED OR UNDIVIDED RURAL ARTERIAL - PRINCIPAL OR MINOR	1.080	1.166
E	DIVIDED OR UNDIVIDED RURAL COLLECTOR/LOCAL MAJOR OR MINOR	1.089	1.139
F	UNDIVIDED URBAN ARTERIAL/PRINCIPAL OR MINOR/TWO-WAY TRAFFIC	1.991	1.995
G	UNDIVIDED URBAN ARTERIAL/PRINCIPAL OR MINOR/ONE-WAY TRAFFIC	3.021	2.7
H	DIVIDED URBAN ARTERIAL/PRINCIPAL OR MINOR	1.344	1.298
J	DIVIDED OR UNDIVIDED URBAN COLLECTOR & LOCAL ROADS	2.244	2.27

Intersection Crash Rates

A little over half of all traffic crashes in 2010 occurred at intersections and 36% occurred at locations where no traffic could enter the roadway (not at junction). Three percent (2.7%) of crashes were not coded for road junction information.

Table 10 summarizes statewide intersection crash rates for 2009 and 2010. Intersections are grouped by number of conflicts and traffic control type. The analysis in Table 10 is based on "named intersections" (a group of intersections identified as statistically significant and tracked for safety analysis by Alaska DOT&PF Traffic Safety Engineers).

TABLE 10
2009 -2010 Statewide Crash Rates at Intersections
by Number of Conflicts

NUMBER OF CONFLICTS	TRAFFIC SIGNAL			TWO-WAY STOP			FOUR-WAY STOP		
	COLLISION RATE		NUMBER OF SITES	COLLISION RATE		NUMBER OF SITES	COLLISION RATE		NUMBER OF SITES
	2009	2010		2009	2010		2009	2010	
1	N/A	N/A	N/A	0.076	0.077	1/1	N/A	N/A	N/A
2	N/A	N/A	N/A	0.522	0.432	5/4	N/A	N/A	N/A
3	1.360	1.327	29/30	0.591	0.278	4/3	N/A	N/A	N/A
5	0.820	1.299	4/5	0.702	0.139	2/1	N/A	N/A	N/A
6	0.876	0.843	82/72	0.503	0.512	292/315	0.418	0.267	1/1
8	1.277	1.237	74/73	0.692	0.781	10/8	N/A	N/A	N/A
11	0.506	0.848	1/1	N/A	N/A	N/A	N/A	N/A	N/A
12	2.012	1.858	1/1	N/A	N/A	N/A	N/A	N/A	N/A
20	1.749	1.673	274/274	0.652	0.522	68/52	0.723	0.993	3/5

Most intersection crashes occurred either at “T” or 4-way intersections of public roads (44.5%, combined). Thirteen percent (14.9%) of all crashes occurred at or were related to traffic flow at “T” intersections. Thirty percent (29.6%) occurred at or were related to traffic flow at 4-way intersections. Five percent (4.7%) of crashes occurred at a junction with driveways (including private residences, businesses and public facilities) and 1.9% occurred at an intersection with on ramps or off ramps.

Fatal crashes were less likely to occur at an intersection. Only 26.9% of fatal crashes occurred at “T”, 4-way intersections, driveways, or on or off ramps. Over seventy-one percent (71.2%) of fatal crashes were not intersection related.

National Highway System Crashes

The National Highway System (NHS) is a Federal-aid system mandated by Congressional legislation. Each state, in coordination with the Federal Highway Administration, has developed a statewide NHS list that incorporates highways of various functional classifications.

Table 11 provides a summary of calendar year 2010 crash data for selected Alaskan NHS routes. Data is provided for the Sterling, Seward, Glenn, Parks, Richardson, Alaska and Tok Cutoff Highways. Thirty-five percent (34.6%) of all fatal crashes, 32.2% of all moose crashes, and 11.1% of all impaired crashes occurred on the seven selected NHS highways. Crashes on these roadways comprised 14.0% of all crashes statewide.

TABLE 11
2010 NHS Route Crash Summary

NHS ROUTE	FATAL CRASHES	MOOSE CRASHES	IMPAIRED CRASHES	TOTAL CRASHES	TOTAL MILES
ALASKA HIGHWAY	2	11	2	37	198
GLENN HIGHWAY	1	52	22	540	180
PARKS HIGHWAY	9	54	27	420	324
SEWARD HIGHWAY	5	17	21	429	125
STERLING HIGHWAY	1	75	17	292	138
TOK CUTOFF HIGHWAY	0	6	1	18	122

CRASH DATA SOURCE

Summary

Eighty-one percent (81.4%) of the traffic crashes (10,092 of 12,399 crash reports) processed into the HAS crash database for 2010 were submitted on the police report form 12-200; nineteen percent (18.6%, 2,301 reports) were submitted by drivers using report form 12-209. The total number of crash reports processed decreased by 3.7% from the previous year.

Police reported crashes increased about four percent (from 75% in 2008, to 78% in 2009, to 81% in 2010) while driver reported crashes decreased proportionately (from 24.8% in 2008, to 21.7% in 2009, to 18.6% in 2010). Property damage only crash reporting by police increased by about 1%, minor injury crash reporting decreased by a little over 1%, and major injury crash reporting by police did not change from the previous year.

Statutory Reporting Requirements

Alaska State law (AS 28.35.080) requires the reporting of any motor vehicle crash that results in the death or injury of one or more persons or that causes total property damage of $2,000 or more. Drivers involved in such crashes are required to report crash information to a police agency. If the police agency with jurisdiction declines to investigate, drivers must submit crash information to the Department of Administration, Division of Motor Vehicles (using driver report form 12-209). When police investigate a motor vehicle crash, they assume responsibility to report crash information to the Division of Motor Vehicles, using police report form 12-200. Drivers are not required to submit a report to the Division of Motor Vehicles if a police agency has investigated and assumed responsibility for reporting it.

Alaska State law also requires that drivers or vehicle owners provide proof of motor vehicle liability insurance to the Department of Administration, Division of Motor Vehicles if they are involved in a motor vehicle crash on public property that involves injury, death, or total property damage exceeding $501 (AS28.22.021). Because of this, many drivers voluntarily file the driver report form 12-209 for crashes with less than $2000 damage.

Police Reporting Policies

Some legally reportable Alaska motor vehicle crashes (injury crashes and those with total damage equal to $2000 or more) escape investigation by local police officers or State Troopers and probably also go unreported by drivers. Law enforcement agencies may not perform a formal crash investigation when there are no apparent injuries, the crash does not involve collision with wildlife, and all vehicles can be driven away from the crash scene. Each local police agency establishes its own policy for investigating traffic crashes, with some departments having a floor of $5,000 or more before they will do an on-scene investigation. If police decline to investigate, some drivers may not understand their obligation to report, or may choose not to report the crash to the Division of Motor Vehicles.

Crash Severity

The 12-200 crash report form implemented on January 1, 2002 collects damage information for each involved vehicle using two data elements: vehicle damage type (disabling or functional), and

vehicle damage estimate (greater or less than $501). Non-vehicular damage (presence or absence of other property damage) is collected only from police reported crashes. A dollar estimate for vehicle damage is not assigned and the cost of all damage in a crash is not estimated or stored.

For this publication, (crash) damage severity has been derived from vehicle damage reporting. Damage severity over $501 was assigned if any vehicle involved in the crash had a vehicle damage estimate greater than $501. Damage severity under $501 was assigned if no vehicle was coded for damage over $501.

Seventy-three percent (73.1%) of all crashes involved over $501 damage to at least one involved vehicle. Drivers reported 19% of all crashes with more than $501 vehicular damage and 19% of all crashes with less than $501 damage to vehicles. Police reported 82% and 81%, respectively.

Seventy-four percent (73.9%) of property damage only (PDO; non-injury) crashes had damage to vehicles exceeding $501 in 201 and 26% were coded for vehicular damage of less than $501.

Crash Data Requests

This and prior years crash reports can be found at:
http://www.dot.alaska.gov/stwdplng/transdata/crash.shtml

Other requests for crash data can be directed to the Statewide Crash Data Manager, Bonnie Walters at (907) 465-6996 or bonnie.walters@alaska.gov.