INDIANA TRAFFIC SAFETY FACTS 2008

June 2008

ALCOHOL 2007

A collision produces three levels of data: collision, unit (vehicles), and individual. For this reason, readers should pay particular attention to the wording of statements about the data to avoid misinterpretations.

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic accidents. To help in the policy-making process, the Indiana University Center for Criminal Justice Research is collaborating with the Indiana Criminal Justice Institute to analyze 2007 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), formally the Vehicle Crash Reporting System (VCRS), maintained by the Indiana State Police. Research findings will be summarized in a series of Fact Sheets on various aspects of traffic collisions, including alcohol-related crashes, light and large trucks, dangerous driving, children, motorcycles, occupant protection, and drivers. An additional publication will provide information on county and municipality data and the final publication will be the annual Indiana Crash Fact Book. These publications serve as the analytical foundation of traffic safety program planning and design in Indiana.

Indiana collision data are obtained from Indiana Crash Reports, as completed by police officers. As of January 1, 2008, approximately 95 percent of all collisions are entered electronically through the ARIES. Trends in collisions incidence as reported in these publications could incorporate the effects of changes to data elements on the Crash Report, agency-specific enforcement policy changes, re-engineered roadways, driver safety education programs and other unspecified effects. If you have questions regarding trends or unexpected results, please contact the Indiana Criminal Justice Institute, Traffic Safety Division for more information.

INDIANA CRIMINAL JUSTICE INSTITUTE

CENTER FOR CRIMINAL JUSTICE RESEARCH

Introduction

Alcohol-impaired driving in the United States in 2006 generated crashes resulting in 13,470 fatalities, or 32 percent of all motor vehicle traffic fatalities.[1] Since 1994, alcohol-related motor vehicle crashes in the United States have accounted for approximately 40 percent of all traffic fatalities. Alcohol-related fatalities in Indiana have averaged about 35 percent of all fatalities between 1994 and 2006. In 2007, alcohol-related collisions in Indiana (9,942) produced 232 fatal crashes, killing 253 individuals. Therefore, less than three percent of all crashes generated 28.2 percent of Indiana's 898 traffic fatalities in 2007 (as of May 4, 2008). This fact sheet presents information on alcohol-related traffic collisions in Indiana. It examines Indiana's comparative status among other Great Lakes states, different dimensions of alcohol-related collisions, the general incidence of alcohol testing, and the blood alcohol concentration (BAC) test results reported in the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008. County data on alcohol related collisions and fatalities are also presented.

Indiana's regional and national status

Based on collision data from the Fatality Analysis Reporting System (FARS) from 1994 to 2006, shown in Table 1, Indiana typically had the lowest proportions of traffic fatalities that were alcohol-related within the National Highway Traffic Safety Administration's Region 5 (Indiana, Illinois, Michigan, Minnesota, Ohio, Wisconsin). During this 13-year period, Illinois and Wisconsin generally had the highest proportions of traffic fatalities that were alcohol-related. Since 2000, Indiana has had the smallest proportion of alcohol-related fatalities in Region 5. In addition, Indiana has consistently had a lower proportion of collisions that were alcohol-related than the United States as a whole. Indiana's average annual growth rate was lower than all but Michigan and the U.S.

Alcohol-related fatalities and injuries per vehicle mile traveled

In a February 2008 report, the United States rate of alcohol-related traffic fatalities in 2006 was 0.45 per 100 million vehicle miles traveled (MVMT).[2] This was unchanged from 2005. According to the report, Indiana's alcohol-related fatality rate of 0.35 per 100 MVMT

[1]National Highway Traffic Safety Administration (NHTSA), (2008). Alcohol-impaired driving, *Traffic Safety Facts, 2006 Data*. DOT HS 810 801 (updated March 2008). National Highway Traffic Safety Administration. National Center for Statistics and Analysis.

[2]Subramanian, R., (2008). Fatalities and fatality rates in alcohol-impaired crashes by state, 2005-2006, *Traffic Safety Facts, Research Note*. DOT HS 810 920. National Highway Traffic Safety Administration. National Center for Statistics and Analysis, February.

Table 1: Fatalities in alcohol-related crashes as a proportion of all traffic fatalities, U.S. and NHTSA Region 5, 1994-2006

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average Annual Change
United States	43%	42%	42%	40%	40%	40%	41%	41%	41%	40%	39%	40%	41%	0.3%
Indiana	36%	36%	36%	35%	41%	38%	34%	35%	33%	31%	32%	35%	36%	0.7%
Illinois	44%	44%	46%	43%	44%	44%	44%	44%	46%	44%	45%	44%	47%	1.0%
Michigan	43%	41%	42%	40%	40%	41%	38%	39%	39%	38%	37%	39%	41%	0.4%
Minnesota	39%	45%	38%	33%	44%	33%	41%	40%	39%	41%	34%	37%	37%	2.7%
Ohio	33%	36%	37%	37%	37%	37%	41%	44%	39%	37%	38%	39%	39%	0.8%
Wisconsin	44%	43%	43%	46%	43%	42%	44%	48%	45%	46%	45%	47%	50%	1.1%

Source: Data adapted from http://www-fars.nhtsa.dot.gov/Trends/TrendsAlcohol.aspx, accessed May 14, 2008.

Notes: National Highway Traffic Safety Administration (NHTSA) definition of alcohol-related crash: "A motor vehicle crash is considered to be alcohol-related if at least one driver or nonoccupant (such as a pedestrian or pedalcyclist) involved in the crash is determined to have had a blood alcohol concentration (BAC) of .01 gram per deciliter (g/dL) or higher. Thus, any fatality that occurs in an alcohol-related crash is considered an alcohol-related fatality. The term "alcohol-related" does not indicate that a crash or fatality was caused by the presence of alcohol." See p. 1, National Center for Statistics and Analysis, *Alcohol, Traffic Safety Facts, 2005 Data*, National Highway Traffic Safety Administration, DOT HS 810 616.

NHTSA's *Region 5* consists of Indiana, Illinois, Michigan, Minnesota, Ohio, and Wisconsin.

remained unchanged from 2005 to 2006. Table 2 reports total fatalities and injuries in Indiana from 2003 to 2007, in numbers and normalized rates per 100 MVMT.[3] Alcohol-related fatalities per 100 MVMT have dropped annually since 2005 (from 0.41 to 0.36), although the average annual change in the rate for the 2003 to 2007 period was 2.3 percent.

Table 2: Indiana fatalities and non-fatal injuries per 100 million vehicle miles traveled (MVMT) by injury status, 2003-2007

	2003	2004	2005	2006	2007	Average Annual Change
Fatalities						
Non-alcohol related	592	663	645	626	645	2.3%
Alcohol-related	241	284	293	273	253	1.7%
Percent alcohol related	28.9%	30.0%	31.2%	30.4%	28.2%	
Non-fatal injuries						
Non-alcohol related	51,882	55,059	52,623	49,327	47,482	-2.1%
Alcohol-related	6,553	6,593	6,627	5,869	4,986	-6.3%
Percent alcohol related	11.2%	10.7%	11.2%	10.6%	9.5%	
Fatalities per 100 MVMT						
Non-alcohol related	0.82	0.91	0.90	0.88	0.91	2.9%
Alcohol-related	0.33	0.39	0.41	0.38	0.36	2.3%
Non-fatal injuries per 100 MVMT						
Non-alcohol related	71.55	75.72	73.29	69.26	67.08	-1.5%
Alcohol-related	9.04	9.07	9.23	8.24	7.04	-5.8%
MVMT (per FHWA)	**72,511**	**72,713**	**71,799**	**71,215**	**70,788**	**-0.6%**

Source: Vehicle miles traveled from Tables VM-2 in Federal Highway Administration (FHWA), *Highway Statistics* (2003 through 2006). Available at http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.htm, accessed May 14, 2008.

Notes: Indiana collision data: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

The MVMT for 2007 is estimated by applying the 2003-06 average annual growth rate (-0.6%) to the 2006 FHWA figure.

***Non-fatal injuries* include *incapacitating*, *non-incapacitating*, and *possible* injuries.**

Alcohol-related collisions in Indiana

Based on variables in Indiana crash reports, this fact sheet uses an expanded definition of alcohol involvement. A collision is identified as *alcohol-related* if any one of the following conditions are met: (1) *Alcoholic beverages* is listed as the primary factor of the collision; (2) *Alcoholic beverages* is listed as a contributing circumstance; (3) any vehicle driver or non-motorist (pedestrian, pedacyclist) involved in the collision had a BAC test result greater than zero grams per deciliter (g/dL); (4) the collision report lists the apparent physical condition of any vehicle driver or non-motorist involved as *had been drinking*; or (5) a vehicle driver is issued an Operating While Intoxicated (OWI) citation.[4] Based on these parameters, Table 3 shows there were 232 fatal alcohol-related collisions in 2007 (28.9 percent of all fatal collisions). Alcohol-related fatal collisions from 2003 through 2007 grew at an average annual rate of 2.5 percent, while all other injury and non-injury alcohol-related collisions declined on average over that period.

[3]This comparison is based on Federal Highway Administration vehicle miles traveled reported in its annual *Highway Statistics*, 2003 to 2006.

[4]For various reasons, state crash data can underreport BAC results. As a result, the FARS database describing alcohol involvement uses imputation models to estimate missing BAC values. For purposes of this fact sheet, imputation models are not used for Indiana ARIES data. The expanded definition of alcohol-related crashes is used to classify collisions, and BAC levels are based on the test results reported in the 2003-2007 ARIES data.

Table 3: Indiana traffic collisions, by severity and alcohol involvement, 2003-2007

Collisions, by severity	2003	2004	2005	2006	2007	Average Annual Change
Alcohol-related	**14,115**	**13,435**	**13,684**	**11,851**	**9,942**	**-8.1%**
Fatal	215	260	262	249	232	2.5%
Incapacitating	629	595	560	582	532	-4.0%
Non-incapacitating	3,971	4,081	4,136	3,615	3,025	-6.2%
Property damage only	9,300	8,499	8,726	7,405	6,153	-9.5%
Not alcohol-related	**197,616**	**195,247**	**194,674**	**180,870**	**195,063**	**-0.2%**
Fatal	538	597	593	568	572	1.7%
Incapacitating	2,710	2,700	2,581	2,608	2,544	-1.5%
Non-incapacitating	33,670	35,927	34,484	32,044	31,318	-1.7%
Property damage only	160,698	156,023	157,016	145,650	160,629	0.2%
Percent alcohol-related	**6.7%**	**6.4%**	**6.6%**	**6.1%**	**4.8%**	**-7.2%**
Fatal	28.6%	30.3%	30.6%	30.5%	28.9%	0.3%
Incapacitating	18.8%	18.1%	17.8%	18.2%	17.3%	-2.1%
Non-incapacitating	10.5%	10.2%	10.7%	10.1%	8.8%	-4.2%
Property damage only	5.5%	5.2%	5.3%	4.8%	3.7%	-8.9%

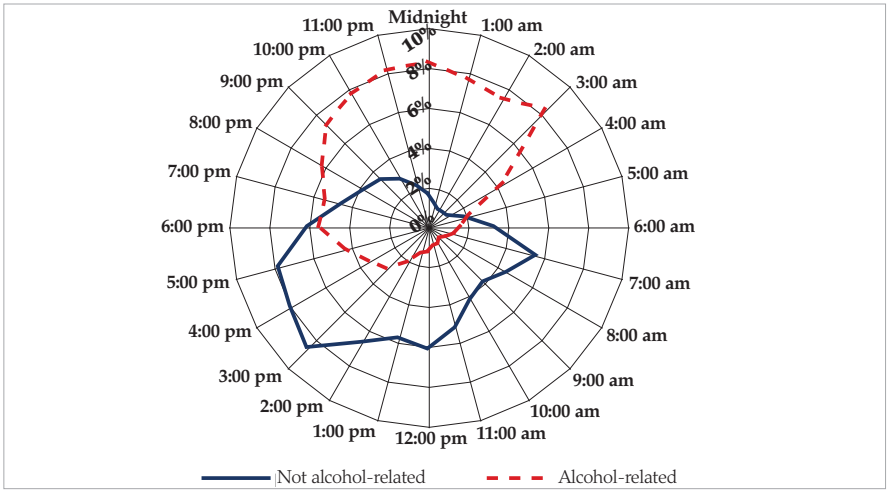
Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Notes: *Non-incapacitating* includes *non-incapacitating* and *possible* injuries.

See page 2 for alcohol-related definition

Data for 2003 through 2006 have been updated and may differ from the *2006 Crash Fact Book* or from the 2006 fact sheets.

Figure 1. Indiana collision distribution, by time of day and alcohol involvement, 2007



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Note: Percentages reflect proportion of total collisions (by type) occurring during the hour.

Table 4: Injuries to individuals in alcohol and non-alcohol-related collisions, by light condition, 2007

	Alcohol-related		Non-alohol-related	
Individual injuries by light condition	**Injuries and fatalities**	**Percent of total**	**Injuries and fatalities**	**Percent of total**
Dark (lighted)	1,580	30.2%	5,542	11.5%
Dark (not lighted)	2,038	38.9%	5,418	11.3%
Dawn/Dusk	218	4.2%	2,190	4.6%
Daylight	1,395	26.6%	34,918	72.6%
Unknown	8	0.2%	59	0.1%
Grand Total	5,239	100.0%	48,127	100.0%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Times, days, and months of alcohol-related crashes

Alcohol-related collisions occur in a different time pattern than non-alcohol related crashes. Figure 1 depicts the percentage of total crashes in 2007 occurring by hour of the day and by alcohol involvement. The upper half of the graph can be roughly considered the 'evening hours' from 6 pm to 6 am. As it shows, the largest hourly proportions of total alcohol-related collisions begin to climb after 6 pm, peaking during the 11 pm to 3 am period, and dropping sharply thereafter.

Based on the assessments of investigating officers as reported in the Indiana crash reports, alcohol-related injuries and fatalities occurred disproportionately in dark (unlit) conditions, as shown in Table 4. Altogether in 2007, nearly 70 percent of alcohol-related fatalities and injuries occurred when ambient light conditions were considered dark by the investigating officer. This is the mirror image of fatalities and injuries from non-alcohol related collisions, of which about 73 percent occurred during daylight in 2007.

During the week (Figure 2A), the percentage of total collisions classified as alcohol-related gradually increased through the course of the work week, then escalated sharply on Saturdays and Sundays. Over the course of 2007, the proportion of collisions considered alcohol-related peaked in April and July; the lowest proportions of alcohol-related crashes occurred November, December, and February (Figure 2B).

Figure 2: Percentage of collisions classified as alcohol-related, by day of week and month, 2007

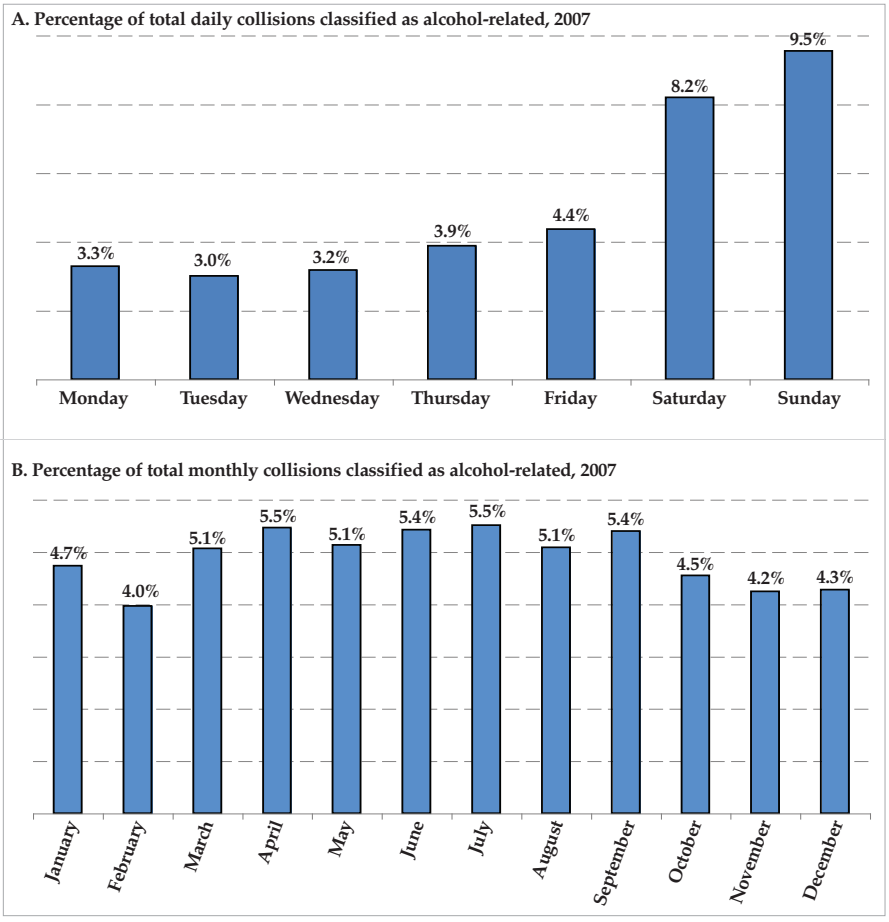


Table 5. Vehicles in traffic collisions, by alcohol involvement and most severe injury within the vehicle, 2003-2007

Vehicles	2003	2004	2005	2006	2007	Average Annual Change
Alcohol-related	**14,942**	**14,889**	**15,250**	**12,431**	**9,812**	**-9.4%**
Fatal	186	233	224	208	202	2.8%
Non-fatal injury	3,884	4,056	4,018	3,519	2,850	-7.0%
Property damage only	10,872	10,600	11,008	8,704	6,760	-10.5%
Not alcohol-related	**347,172**	**347,243**	**342,534**	**315,565**	**336,466**	**-0.6%**
Fatal	573	627	639	555	551	-0.6%
Non-fatal injury	43,833	46,376	44,240	40,645	38,119	-3.3%
Property damage only	302,766	300,240	297,655	274,365	297,796	-0.2%
Proportion alcohol-related	**4.1%**	**4.1%**	**4.3%**	**3.8%**	**2.8%**	**-8.3%**
Fatal	24.5%	27.1%	26.0%	27.3%	26.8%	2.4%
Non-fatal injury	8.1%	8.0%	8.3%	8.0%	7.0%	-3.7%
Property damage only	3.5%	3.4%	3.6%	3.1%	2.2%	-9.7%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Notes: *Non-fatal injury* includes *incapacitating, non-incapacitating* and *possible* injuries.

See page 2 for alcohol-related definition

Includes only vehicles where injury status of occupants was known. Excludes pedestrians and pedalcyclists.

Vehicles involved in alcohol-related collisions

In 2007, there were 346,278 motor vehicles involved in Indiana traffic collisions (Table 5). Among those, 9,812 vehicles were classified as alcohol-related (i.e., the driver of the vehicle had been drinking). In 2007, fatal injuries occurred in 202 motor vehicles with a driver who had been drinking; additionally, nine pedestrians and one pedalcyclist who had been drinking were killed (not shown in Table 5). During the 2003 through 2007 period, counts of vehicles involved in non-fatal crashes declined, on average. However, counts of alcohol-related vehicles with at least one fatality increased on average 2.8 percent annually.

The incidence of alcohol-related collisions producing injuries and fatalities varies by vehicle type. As shown in Table 6, the proportion of injured occupants in vehicles with a driver who had been drinking, as a share of total injuries, was consistently highest in pickup trucks, motorcycles, and SUVs. Large trucks had the lowest percentage of alcohol-related deaths and injuries. Alcohol-involvement increases proportionally when comparing non-fatal to fatal individual injury status, suggesting alcohol is associated with more serious injuries.

People killed and injured in alcohol-related crashes

Consistent with studies of alcohol use and injury severity, Indiana data suggest that alcohol-related collisions affect the incidence of serious injuries.[5] In 2007, there

[5]Macdonald, S. et al. (2006). "Variations of alcohol impairment in different types, cause and contexts of injuries: results of emergency room studies from 16 countries," *Accident Analysis & Prevention* 38(6): 1107-1112.

Table 6: Injuries in traffic collisions, by injury status, vehicle type, and alcohol involvement, 2003-2007

	2003		2004		2005		2006		2007	
	Total	Percent alcohol-related	Total	Percent alcohol-related	Total	Percent alcohol-related	Total	Percent alcohol-related	Total	Percent alcohol-related
Fatal injuries	**757**	**24.7%**	**861**	**26.1%**	**859**	**26.7%**	**796**	**27.8%**	**823**	**26.4%**
Passenger cars	423	22.5%	465	25.4%	410	24.9%	405	27.4%	374	25.9%
Pickup trucks	114	33.3%	117	33.3%	165	30.9%	118	31.4%	139	25.9%
Motorcycles + mopeds	77	35.1%	108	30.6%	112	32.1%	108	32.4%	122	34.4%
Sport utility vehicles	64	26.6%	78	29.5%	82	36.6%	90	30.0%	100	32.0%
Vans	50	14.0%	52	17.3%	54	16.7%	43	20.9%	57	17.5%
Large trucks	24	8.3%	29	0.0%	30	0.0%	27	3.7%	24	0.0%
Buses + large vehicles	5	20.0%	12	25.0%	6	16.7%	5	20.0%	7	0.0%
Non-fatal injuries	**55,357**	**8.1%**	**58,971**	**8.0%**	**56,706**	**8.3%**	**52,478**	**7.9%**	**49,574**	**6.9%**
Passenger cars	34,347	7.4%	35,796	7.5%	33,785	7.9%	31,460	7.3%	29,521	5.9%
Pickup trucks	7,272	12.7%	7,578	11.8%	7,257	12.2%	6,385	13.0%	5,970	12.3%
Motorcycles + mopeds	1,767	11.7%	2,257	12.8%	2,190	10.5%	2,405	11.5%	2,744	11.2%
Sport utility vehicles	5,785	8.5%	6,673	8.3%	7,070	8.3%	6,411	8.0%	6,640	7.4%
Vans	4,848	5.1%	5,277	4.8%	4,905	5.8%	4,612	4.4%	4,002	3.5%
Large trucks	993	2.5%	1,074	1.6%	1,029	2.0%	730	1.4%	362	2.5%
Buses + large vehicles	345	4.9%	316	1.6%	470	2.8%	475	1.3%	335	2.4%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Notes: Includes only individuals where vehicle type and injury status are known.
***Non-fatal injuries* include individuals classified with *incapacitating*, *non-incapacitating*, and *possible* injuries.**
***Alcohol-related* refers to unit (vehicle) status.**

were 14,909 individuals injured or killed in alcohol-related collisions in Indiana, about 4.5 percent of all injuries in the state (Table 7). Among alcohol-related collisions, there were 253 fatalities and 4,986 non-fatal injuries (*incapacitating* or *non-incapacitating*). Thus, alcohol was linked to 28.2 percent of all fatalities and nearly 18 percent of all incapacitating injuries. Further, the risk of serious injury increases with alcohol involvement. In collisions classified as alcohol-related, an individual died 1.7 percent of the time, compared to only 0.2 percent of the time in non-alcohol crashes. In other words, an individual in an Indiana collision was 8.3 times more likely to die when alcohol was involved than in non-alcohol crashes in 2007. Incapa-

Table 7. Injuries in traffic collisions, by alcohol involvement and injury status, 2003-2007

	2003		2004		2005		2006		2007		
Alcohol involvement and injury status	Persons	Percent total	Persons	Percent total	Persons	Percent total	Persons	Percent total	Persons	Percent total	Average Annual Change (persons)
Alcohol-related	**23,134**	**100.0%**	**22,109**	**100.0%**	**22,369**	**100.0%**	**18,526**	**100.0%**	**14,909**	**100.0%**	**-10.0%**
Fatal	241	1.0%	284	1.3%	293	1.3%	273	1.5%	253	1.7%	1.7%
Incapacitating	799	3.5%	720	3.3%	704	3.1%	719	3.9%	645	4.3%	-5.1%
Non-incapacitating	5,754	24.9%	5,873	26.6%	5,923	26.5%	5,150	27.8%	4,341	29.1%	-6.5%
Other injury status	16,340	70.6%	15,232	68.9%	15,449	69.1%	12,384	66.8%	9,670	64.9%	-11.8%
Non-alcohol related	**331,284**	**100.0%**	**328,418**	**100.0%**	**322,240**	**100.0%**	**297,368**	**100.0%**	**315,232**	**100.0%**	**-1.1%**
Fatal	592	0.2%	663	0.2%	645	0.2%	626	0.2%	645	0.2%	2.3%
Incapacitating	3,393	1.0%	3,241	1.0%	3,119	1.0%	3,088	1.0%	3,017	1.0%	-2.9%
Non-incapacitating	48,489	14.6%	51,818	15.8%	49,504	15.4%	46,239	15.5%	44,465	14.1%	-2.0%
Other injury status	278,810	84.2%	272,696	83.0%	268,972	83.5%	247,415	83.2%	267,105	84.7%	-0.9%
Percent alcohol-related by injury status											
Fatal	28.9%		30.0%		31.2%		30.4%		28.2%		
Incapacitating	19.1%		18.2%		18.4%		18.9%		17.6%		
Non-incapacitating	10.6%		10.2%		10.7%		10.0%		8.9%		
Other injury status	5.5%		5.3%		5.4%		4.8%		3.5%		
Alcohol risk factor											
Fatal	5.8		6.4		6.5		7.0		8.3		
Incapacitating	3.4		3.3		3.3		3.7		4.5		
Non-incapacitating	1.7		1.7		1.7		1.8		2.1		
Other injury status	0.8		0.8		0.8		0.8		0.8		

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Notes: *Other injury status* includes individuals classified as *not reported*, multiple codes entered, *refused*, *unknown*, or blank.
***Non-incapacitating* includes *non-incapacitating* and *possible* injuries.**
***Alcohol risk factor* = ratio of the percent of alcohol-related injury status to the percent of non-alcohol related injury status.**

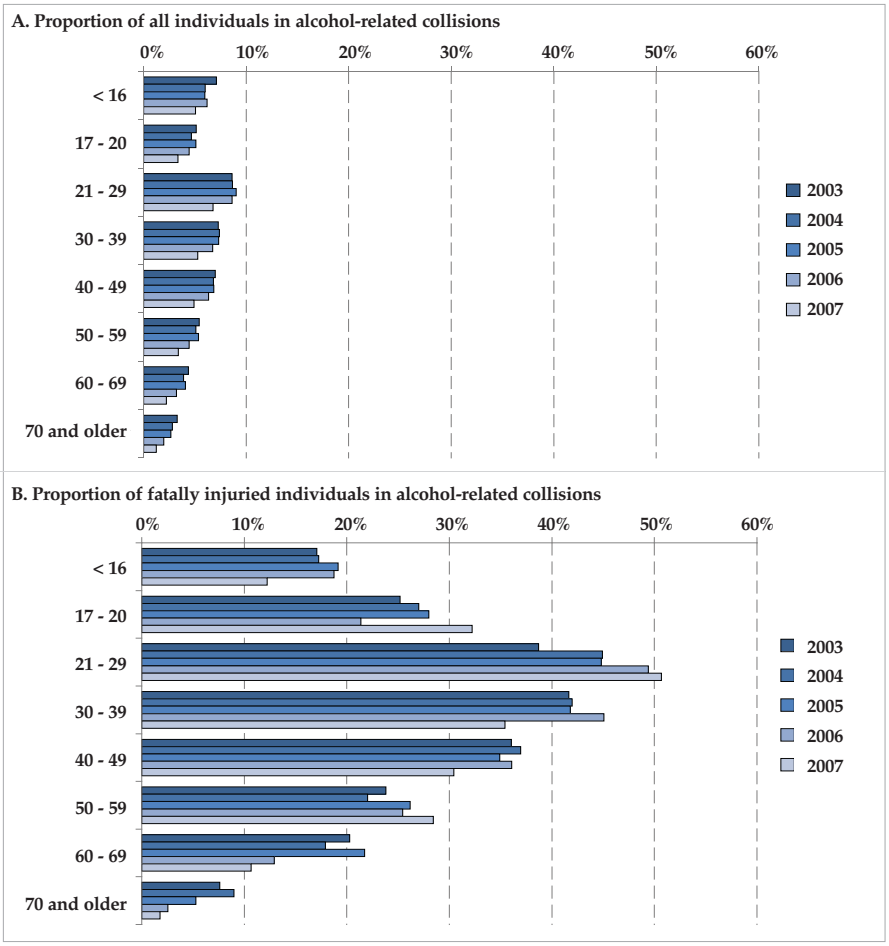
Table 8. Fatalities in traffic collisions, by alcohol involvement and person type, 2003-2007

Alcohol involvement and person type	2003		2004		2005		2006		2007		Average annual change (persons)
	Persons	Percent	Persons	Percent	Persons	Percent	Persons	Percent	Persons	Percent	
Alcohol-related	**241**	**28.9%**	**284**	**30.0%**	**293**	**31.2%**	**273**	**30.4%**	**253**	**28.2%**	**1.7%**
Drivers	152	18.2%	195	20.6%	200	21.3%	192	21.4%	183	20.4%	5.5%
Injured occupants	71	8.5%	61	6.4%	77	8.2%	57	6.3%	54	6.0%	-4.8%
Non-motorists	18	2.2%	28	3.0%	16	1.7%	24	2.7%	16	1.8%	7.3%
Non-alcohol related	**592**	**71.1%**	**663**	**70.0%**	**645**	**68.8%**	**626**	**69.6%**	**645**	**71.8%**	**2.3%**
Drivers	402	48.3%	449	47.4%	461	49.1%	417	46.4%	443	49.3%	2.8%
Injured occupants	141	16.9%	157	16.6%	123	13.1%	139	15.5%	145	16.1%	1.8%
Non-motorists	49	5.9%	57	6.0%	61	6.5%	70	7.8%	57	6.3%	4.9%
Grand Total	**833**	**100.0%**	**947**	**100.0%**	**938**	**100.0%**	**899**	**100.0%**	**898**	**100.0%**	**2.1%**

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Note: Includes all persons in collisions classified as alcohol-related; some might have been in non-alcohol related vehicles.

Figure 3. Individuals involved in alcohol-related collisions, as a proportion of all collision types, by injury status and age group, 2003-2007



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

citating injuries were 4.5 times more likely. The alcohol risk factors for fatal and incapacitating injuries have generally increased from 2003 to 2007.

As shown in Table 8, from 2003 to 2007 approximately 20 percent of all fatalities were vehicle drivers in alcohol-related collisions. The proportion of annual traffic fatalities accounted for by drivers involved in alcohol-related crashes has increased annually at a rate of 5.5 percent, about twice the rate of growth of drivers killed in non-alcohol-related collisions (2.3 percent). The proportion of all Indiana traffic fatalities accounted for by injured occupants in alcohol-related collisions has declined over the four-year period by 4.8 percent annually.

From 2003 to 2007, several Indiana age groups exhibited comparatively high rates of involvement in alcohol-related collisions (Figure 3). Typically, 21-29 year old individuals had the highest proportions of alcohol-related collisions, regardless of collision severity (Figure 3A).

Table 9. Vehicle occupants and non-motorists in collisions, by injury status, drug involvement, and alcohol involvement, 2007

		Drug and alcohol involvement of vehicle or non-motorist			
Injury status	Total persons involved	No drugs or alcohol	Alcohol only	Drugs only	Drugs and alcohol
All individuals	**330,141**	**318,539**	**9,928**	**796**	**878**
Fatal	898	602	145	69	82
Incapacitating	3,662	3,057	452	78	75
Non-incapacitating	48,806	45,451	2,755	276	324
Other injury status	276,775	269,429	6,576	373	397
Likelihood of injury status					
Fatality	0.3%	0.2%	1.5%	8.7%	9.3%
Non-fatal injury	99.7%	99.8%	98.5%	91.3%	90.7%
Risk factors (compared to no drugs or alcohol)					
Fatal			7.7	45.9	49.4
Injury			1.0	0.9	0.9

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Notes: *Other status* includes individuals classified as *not reported*, multiple codes entered, *refused, unknown*, or blank.

***Non-incapacitating* includes *non-incapacitating* and *possible* injuries.**

***Risk factor* = ratio of the likelihood of alcohol- or drug-related injury status to the percent of non-alcohol and non-drug related injury status. Due to rounding , ratios will be different if calculated from this table.**

A collision is identified as *drug-related* if any vehicle driver or non-motorist (pedestrian, pedalcyclist) involved in the collision has a positive drug test result or appears to have been on drugs or medication, if either illegal drugs or prescription drugs were listed as contributing or primary factors in the collision, or if an Operating While Intoxicated (OWI) citation is issued to a driver.

Considering all alcohol-related collisions, most age groups have exhibited declines in alcohol-related collisions, as a proportion of all collisions, from 2003 to 2007. However, proportional increases in alcohol-related fatal collisions occurred in the 16-20, 21-29, and 50-59 year old groups (Figure 3B). Generally, the proportion of individuals in alcohol-related collisions aged 60 and older declined from 2003 to 2007.

Drugs and alcohol-related crashes

Although this fact sheet focuses on alcohol-related traffic safety, drivers can be impaired by alcohol, drugs, or a combination of both. To illustrate, among the 227 individual fatalities included within alcohol-related units in 2007, at least 82 were linked to drugs and alcohol.[6] Therefore, some attention is directed here to the possible impact of drugs in Indiana collisions. Based on Indiana collision data, a collision can be identified as *drug-related* if any one of the following conditions are met: (1) *Illegal drugs* or *prescription drugs* is listed as the primary factor of the collision; (2) *Illegal drugs* or *prescription drugs* is listed as a contributing circumstance in the collision; (3) any vehicle driver or non-motorist (pedestrian, pedacyclist) involved in the collision has a positive drug test result; (4) the collision report lists the apparent physical condition of any vehicle driver or non-motorist involved as *Drugs/Medication* or (5) a vehicle driver is issued an Operating While Intoxicated (OWI) citation *and* the driver has a positive drug test result.

As shown in Table 9, the risks of fatal outcomes for vehicle occupants differ based on the combinations of alcohol and drug involvement. Individuals in motor vehicles or non-motorists with no drug or alcohol involvement died at a rate of 0.2 percent in 2007. Individuals in vehicles or non-motorists who had been drinking but were not on drugs died at a rate of 1.5 percent, while individuals in drug-related and drug and alcohol-related units died at a rates of 8.7 and 9.3 percent, respectively. These findings imply that drug involvement increases by a factor of more than 45 the likelihood of fatal outcomes for a vehicle's occupants and non-motorists. It should be emphasized here that these comparisons are only suggestive of the potential impact of drugs on crash lethality, and more research is needed before developing any firm conclusions about drugs and drug-alcohol interactions in Indiana crashes.

Blood alcohol concentration (BAC) reports

In 2006, the U.S. proportion of fatalities in crashes reporting a BAC of 0.08 g/dL or more was 32 percent. The 2006 FARS estimate for Indiana was 28 percent.[7] In 2007, Indiana traffic collisions killed 626 drivers in Indiana (a 2.8 percent increase

[6]When examining all alcohol-related *collisions*, there were 253 total fatalities in 2007. Of these, 227 fatalities were in *units* (vehicles) classified as alcohol-related, leaving 26 fatalities in non-alcohol related units involved in alcohol-related collisions.

[7]National Highway Traffic Safety Administration, (2008). Alcohol-impaired driving, *Traffic Safety Facts, 2006 Data,* DOT HS 810 801 (updated March 2008). National Highway Traffic Safety Administration. National Center for Statistics and Analysis. Because FARS substitutes imputed values for missing BAC results to estimate state alcohol involvement, direct comparisons cannot be made between FARS counts of Indiana driver BAC results with the counts in the ARIES data.

Table 10: Driver fatalities by gender, age, and blood alcohol concentration (BAC) results, 2007

Drivers	Total fatalities	Blood alcohol concentration, in grams/deciliter (g/dL)						Percent of total fatalities	
		0.00	>0.00 < 0.08	0.08 < 0.15	0.15 < 0.60	> = 0.60	Not reported	> 0.00 g/dL	> = 0.08 g/dL
Female	**126**	**58**	**3**	**2**	**11**	**0**	**52**	**12.7%**	**10.3%**
15 and under	1	0	0	0	0	0	1	0.0%	0.0%
16 - 20	14	6	1	1	2	0	4	28.6%	21.4%
21 - 29	24	5	2	1	8	0	8	45.8%	37.5%
30 - 39	20	12	0	0	0	0	8	0.0%	0.0%
40 - 49	24	16	0	0	0	0	8	0.0%	0.0%
50 - 59	12	6	0	0	0	0	6	0.0%	0.0%
60 - 69	10	5	0	0	1	0	4	10.0%	10.0%
70 and older	21	8	0	0	0	0	13	0.0%	0.0%
Male	**500**	**171**	**14**	**27**	**95**	**1**	**192**	**27.4%**	**24.6%**
15 and under	4	1	0	0	0	0	3	0.0%	0.0%
16 - 20	54	16	2	5	7	0	24	25.9%	22.2%
21 - 29	84	21	2	7	28	1	25	45.2%	42.9%
30 - 39	82	28	2	5	24	0	23	37.8%	35.4%
40 - 49	99	34	6	6	19	0	34	31.3%	25.3%
50 - 59	72	27	1	3	15	0	26	26.4%	25.0%
60 - 69	52	26	1	1	2	0	22	7.7%	5.8%
70 and older	53	18	0	0	0	0	35	0.0%	0.0%
Grand Total	**626**	**229**	**17**	**29**	**106**	**1**	**244**	**24.4%**	**21.7%**

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Note: Includes all persons in collisions classified as alcohol-related; some might have been in non-alcohol related vehicles.

from the 609 drivers killed in 2006). Table 10 shows that in 2007 approximately 22 percent of all drivers killed were legally intoxicated (defined as a BAC equal to or greater than 0.08 grams per deciliter, g/dL). Regardless of age group, male drivers were more likely than females to be involved in alcohol-related crashes and were more likely to be legally intoxicated. The highest risk of driver alcohol involvement was among males and females between 21 and 29 years of age. Male drivers killed in the 21-29 year old age group were legally intoxicated about 43 percent of the time. Males aged 30-39 years had only slightly lower proportions classified as legally intoxicated (35.4 percent).

Indiana counties: alcohol-related crashes, alcohol testing, and BAC results

Indiana counties exhibit considerable variation in total and alcohol-related fatalities, rates of alcohol testing, and reported BAC results (Table 11). In 2007, alcohol-related fatalities averaged 27.5 percent of total fatalities across counties. On average at the county level in 2007, 54 percent of fatally injured individuals were tested for alcohol use, with considerable variation from county to county. The proportions of counties with fatalities testing 0.08 g/dL or greater ranged from 0 to 100 percent, with a county mean of 16.8 percent.

Table 11: Alcohol-related fatalities, alcohol testing, and BAC results (g/dL), by county, 2007

Jurisdiction	Total fatalities	Fatalities in alcohol-related collisions			Percent fatalities tested	Percent of total fatalities >0.00 g/dL	Percent of total fatalities >=0.08 g/dL
		Number	Percent of total fatalities	Rank by percent total			
INDIANA	**898**	**253**	**28.2%**	**--**	**55.2%**	**19.0%**	**16.7%**
Adams	3	0	0.0%	32	33.3%	0.0%	0.0%
Allen	21	5	23.8%	20	85.7%	23.8%	19.0%
Bartholomew	19	7	36.8%	10	84.2%	31.6%	21.1%
Benton	4	2	50.0%	5	50.0%	0.0%	0.0%
Blackford	2	1	50.0%	5	50.0%	50.0%	50.0%
Boone	12	4	33.3%	11	33.3%	16.7%	16.7%
Brown	4	1	25.0%	19	75.0%	25.0%	25.0%
Carroll	0	0	--	32	--	--	--
Cass	7	1	14.3%	28	71.4%	14.3%	14.3%
Clark	7	2	28.6%	16	100.0%	28.6%	28.6%
Clay	8	0	0.0%	32	12.5%	0.0%	0.0%
Clinton	5	0	0.0%	32	80.0%	0.0%	0.0%
Crawford	5	2	40.0%	7	80.0%	40.0%	40.0%
Daviess	7	2	28.6%	16	42.9%	28.6%	28.6%
De Kalb	5	1	20.0%	23	60.0%	20.0%	20.0%
Dearborn	10	4	40.0%	7	50.0%	20.0%	10.0%
Decatur	6	4	66.7%	3	83.3%	66.7%	66.7%
Delaware	27	5	18.5%	24	48.1%	11.1%	11.1%
Dubois	8	3	37.5%	9	50.0%	25.0%	0.0%
Elkhart	47	10	21.3%	22	74.5%	17.0%	17.0%
Fayette	2	2	100.0%	1	100.0%	100.0%	100.0%
Floyd	10	5	50.0%	5	100.0%	50.0%	30.0%
Fountain	4	3	75.0%	2	0.0%	0.0%	0.0%
Franklin	9	3	33.3%	11	77.8%	22.2%	22.2%
Fulton	2	0	0.0%	32	50.0%	0.0%	0.0%
Gibson	9	1	11.1%	30	66.7%	11.1%	0.0%
Grant	14	3	21.4%	21	71.4%	14.3%	14.3%
Greene	15	3	20.0%	23	80.0%	20.0%	20.0%
Hamilton	22	4	18.2%	25	40.9%	4.5%	4.5%
Hancock	13	2	15.4%	27	30.8%	7.7%	7.7%
Harrison	9	3	33.3%	11	33.3%	22.2%	22.2%
Hendricks	17	5	29.4%	15	70.6%	23.5%	23.5%
Henry	10	0	0.0%	32	70.0%	0.0%	0.0%
Howard	11	3	27.3%	17	90.9%	27.3%	9.1%
Huntington	4	1	25.0%	19	25.0%	25.0%	25.0%
Jackson	6	2	33.3%	11	100.0%	33.3%	0.0%
Jasper	8	1	12.5%	29	75.0%	12.5%	12.5%
Jay	2	0	0.0%	32	0.0%	0.0%	0.0%
Jefferson	8	0	0.0%	32	37.5%	0.0%	0.0%
Jennings	5	3	60.0%	4	80.0%	40.0%	40.0%
Johnson	15	5	33.3%	11	60.0%	26.7%	26.7%
Knox	8	4	50.0%	5	62.5%	50.0%	50.0%
Kosciusko	10	3	30.0%	14	50.0%	20.0%	10.0%
La Porte	26	10	38.5%	8	46.2%	23.1%	23.1%
Lagrange	2	1	50.0%	5	0.0%	0.0%	0.0%
Lake	53	24	45.3%	6	52.8%	30.2%	26.4%

(continued on the next page)

(continued from the previous page)

Table 11: Alcohol-related fatalities, alcohol testing, and BAC results (g/dL), by county, 2007

Jurisdiction	Total fatalities	Fatalities in alcohol-related collisions			Percent fatalities tested	Percent of total fatalities >0.00 g/dL	Percent of total fatalities >=0.08 g/dL
		Number	Percent of total fatalities	Rank by percent total			
Lawrence	11	2	18.2%	25	27.3%	18.2%	18.2%
Madison	18	6	33.3%	11	66.7%	16.7%	11.1%
Marion	79	21	26.6%	18	34.2%	11.4%	7.6%
Marshall	6	1	16.7%	26	33.3%	16.7%	16.7%
Martin	3	0	0.0%	32	0.0%	0.0%	0.0%
Miami	10	4	40.0%	7	70.0%	20.0%	20.0%
Monroe	4	0	0.0%	32	50.0%	0.0%	0.0%
Montgomery	4	2	50.0%	5	25.0%	0.0%	0.0%
Morgan	10	2	20.0%	23	50.0%	10.0%	10.0%
Newton	5	1	20.0%	23	40.0%	20.0%	20.0%
Noble	2	0	0.0%	32	100.0%	0.0%	0.0%
Ohio	2	0	0.0%	32	50.0%	0.0%	0.0%
Orange	2	0	0.0%	32	50.0%	0.0%	0.0%
Owen	4	1	25.0%	19	25.0%	0.0%	0.0%
Parke	1	1	100.0%	1	0.0%	0.0%	0.0%
Perry	2	0	0.0%	32	100.0%	0.0%	0.0%
Pike	3	0	0.0%	32	66.7%	0.0%	0.0%
Porter	24	4	16.7%	26	66.7%	4.2%	4.2%
Posey	3	0	0.0%	32	33.3%	0.0%	0.0%
Pulaski	4	2	50.0%	5	50.0%	25.0%	25.0%
Putnam	10	1	10.0%	31	20.0%	0.0%	0.0%
Randolph	6	1	16.7%	26	33.3%	16.7%	16.7%
Ripley	7	2	28.6%	16	28.6%	14.3%	14.3%
Rush	3	2	66.7%	3	66.7%	33.3%	33.3%
Scott	6	2	33.3%	11	50.0%	33.3%	33.3%
Shelby	10	3	30.0%	14	40.0%	10.0%	10.0%
Spencer	4	1	25.0%	19	75.0%	25.0%	25.0%
St Joseph	15	5	33.3%	11	60.0%	26.7%	26.7%
Starke	8	3	37.5%	9	87.5%	37.5%	37.5%
Steuben	8	0	0.0%	32	50.0%	0.0%	0.0%
Sullivan	5	1	20.0%	23	20.0%	20.0%	20.0%
Switzerland	1	0	0.0%	32	0.0%	0.0%	0.0%
Tippecanoe	22	7	31.8%	12	54.5%	22.7%	22.7%
Tipton	3	0	0.0%	32	66.7%	0.0%	0.0%
Union	3	1	33.3%	11	66.7%	33.3%	33.3%
Vanderburgh	16	5	31.3%	13	31.3%	12.5%	12.5%
Vermillion	5	1	20.0%	23	20.0%	0.0%	0.0%
Vigo	14	7	50.0%	5	57.1%	42.9%	42.9%
Wabash	2	1	50.0%	5	100.0%	50.0%	50.0%
Warren	6	2	33.3%	11	83.3%	33.3%	33.3%
Warrick	4	1	25.0%	19	75.0%	25.0%	25.0%
Washington	9	3	33.3%	11	77.8%	33.3%	33.3%
Wayne	6	2	33.3%	11	50.0%	33.3%	33.3%
Wells	12	6	50.0%	5	25.0%	25.0%	16.7%
White	5	1	20.0%	23	80.0%	20.0%	20.0%
Whitley	10	3	30.0%	14	50.0%	20.0%	20.0%
Mean	**9.8**	**2.8**	**27.5%**	**--**	**54.3%**	**18.6%**	**16.8%**

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of May 4, 2008.

Summary

During the 1994 to 2006 period in Indiana, about 35 percent of traffic fatalities were linked to alcohol. Compared to its neighboring Great Lakes states, Indiana has had lower proportions of alcohol-related fatalities. Based on Indiana collision data for 2007, about 28 percent of Indiana fatalities were alcohol-related. On the basis of alcohol-related fatalities per 100 MVMT, Indiana has remained relatively stable from 2003 to 2007 (averaging 0.37 per year), but alcohol-related non-fatal injuries per 100 MVMT declined (since 2005, from 9.2 to 7.0). Pickups, SUVs, and motorcycles were over-represented in alcohol-related collisions, and were more likely to produce fatal and non-fatal injuries considered to be alcohol related. Two demographic groups were at highest risk in the gender/age comparison—males between the ages of 21 and 29 and those between 30 and 39. More than two-thirds of alcohol-related injuries and fatalities in 2007 occurred when ambient light conditions were rated as dark, and alcohol-related collisions typically peak in the hours from 11 pm to 3 am.

Indiana collision data suggest Indiana counties test, on average, more than one-half of their fatalities for evidence of alcohol. Considering all 626 fatal injuries among Indiana drivers in 2007, about one-fourth of them were reported as having positive BAC results (i.e., greater than 0.00 g/dL), and about 22 percent were legally intoxicated (0.08 g/dL or higher). Preliminary findings also suggest the possibility that drugs (alone and in conjunction with alcohol) can increase the lethality of traffic collisions.

Male drivers killed in the 21-29 year old age group were legally intoxicated about 43 percent of the time.

2008 INDIANA TRAFFIC SAFETY FACTS

This publication was prepared on behalf of the Indiana Criminal Justice Institute by the Indiana University Center for Criminal Justice Research (CCJR). Please direct any questions concerning data in this document to ICJI at 317-232-1233.

This publication is one of a series of Fact Sheets that, along with the annual Indiana Crash Fact Book, form the analytical foundation of traffic safety program planning and design in the state of Indiana. Funding for these publications is provided by the Indiana Criminal Justice Institute and the National Highway Traffic Safety Administration.

An electronic copy of this document can be accessed via the CCJR website (www.criminaljustice.iupui.edu), the ICJI traffic safety website (www.in.gov/cji/traffic/), or you may contact the Center for Criminal Justice Research at 317-261-3000.

The Indiana Criminal Justice Institute (ICJI)

Guided by a Board of Trustees representing all components of Indiana's criminal and juvenile justice systems, the Indiana Criminal Justice Institute serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. ICJI develops long-range strategies for the effective administration of Indiana's criminal and juvenile justice systems and administers federal and state funds to carry out these strategies.

The Governor's Council on Impaired & Dangerous Driving

The Governor's Council on Impaired & Dangerous Driving, a division of the Indiana Criminal Justice Institute, serves as the public opinion catalyst and the implementing body for statewide action to reduce death and injury on Indiana roadways. The Council provides grant funding, training, coordination and ongoing support to state and local traffic safety advocates.

Indiana University Public Policy Institute

The Indiana University (IU) Public Policy Institute is a collaborative, multidisciplinary research institute within the Indiana University School of Public and Environmental Affairs (SPEA), Indianapolis. The Institute serves as an umbrella organization for research centers affiliated with SPEA, including the Center for Urban Policy and the Environment, the Center for Health Policy, and the Center for Criminal Justice Research. The Institute also supports the Office of International Community Development and the Indiana Advisory Commission on Intergovernmental Relations (IACIR).

The Center for Criminal Justice Research (CCJR)

The Center for Criminal Justice Research, one of three applied research centers currently affiliated with the Indiana University Public Policy Institute, works with public safety agencies and social services organizations to provide impartial applied research on criminal justice and public safety issues. CCJR provides analysis, evaluation, and assistance to criminal justice agencies; and community information and education on public safety questions. CCJR research topics include traffic safety, crime prevention, criminal justice systems, drugs and alcohol, policing, violence and victimization, and youth.

The National Highway Traffic Safety Administration (NHTSA)

NHTSA provides leadership to the motor vehicle and highway safety community through the development of innovative approaches to reducing motor vehicle crashes and injuries. The mission of NHTSA is to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

Author: Sam Nunn

CENTER FOR
CRIMINAL JUSTICE RESEARCH

ADDRESS SERVICE REQUESTED

334 North Senate Avenue, Suite 300
Indianapolis, IN 46204-1708
www.urbancenter.iupui.edu

SCHOOL OF PUBLIC AND
ENVIRONMENTAL AFFAIRS
INDIANA UNIVERSITY
IUPUI

08-C09