

INDIANA 2010 TRAFFIC SAFETY FACTS

MOTORCYCLES, 2010

MAY 2011 • ISSUE 11-C02

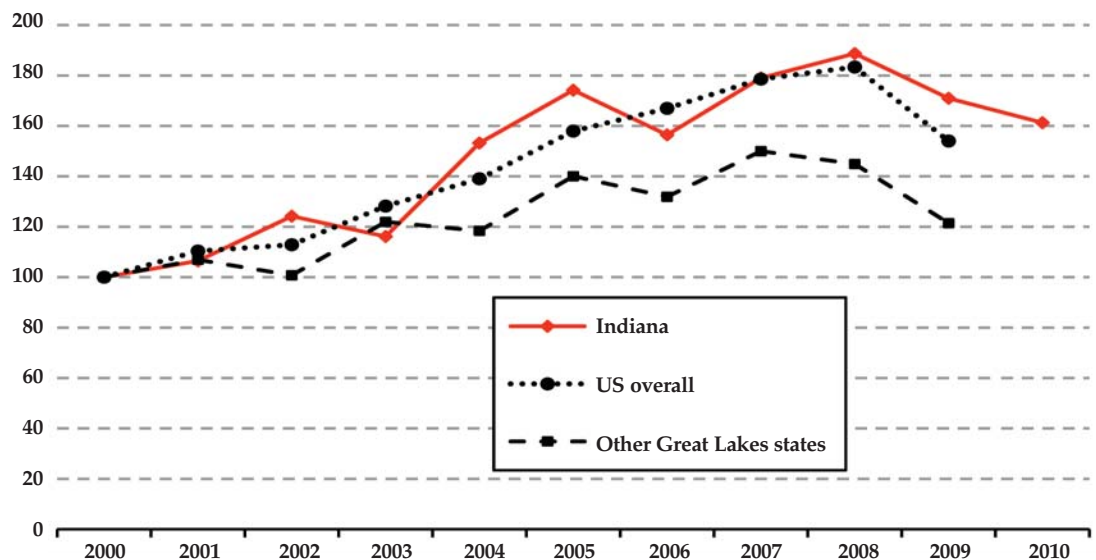
After a substantial decline in the number of Indiana motorcyclists killed in motor vehicle collisions between 2008 (130 fatalities) and 2009 (111 fatalities), the number of motorcycle riders killed in 2010 was 110 (Table 1). Those killed on motorcycles included 100 operators and 10 passengers. In addition, one pedalcyclist, one pedestrian, and two passenger vehicle occupants were killed in collisions involving motorcycles in 2010. While the number of motorcycle operators killed declined 6.5 percent from 2009 to 2010, the number of motorcycle passengers killed more than doubled from 4 to 10 (returning roughly to the counts of passenger fatalities 2006 to 2008). From 2006 through 2010, non-fatal injuries to motorcycle passengers have grown more than twice as fast (4.9 percent) as injuries to motorcycle operators (1.8 percent). Since 2000, motorcycle operators killed in Indiana collisions have trended upward, closely following the US trend and exceeding the trend within other Great Lakes states (Figure 1). Indiana motorcycle operator fatalities in 2010 increased 60 percent since 2000, though some of this increase is attributable to increased ridership.

Table 1. Persons involved in motorcycle collisions by person type and injury, 2006-2010

Injury status	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Motorcyclists	3,327	3,803	4,104	3,486	3,722	2.8%	6.8%
Operator	3,008	3,468	3,726	3,180	3,338	2.6%	5.0%
Fatal	97	113	118	107	100	0.8%	-6.5%
Injury	2,188	2,490	2,644	2,196	2,347	1.8%	6.9%
Not injured	723	865	964	877	891	5.4%	1.6%
Injured passenger	319	335	378	306	384	4.7%	25.5%
Fatal	11	9	12	4	10	-2.4%	150.0%
Injury	302	309	351	290	365	4.9%	25.9%
Not injured	6	17	15	12	9	10.7%	-25.0%
Other persons	1,535	1,766	1,912	1,648	1,802	4.1%	9.2%
Fatal	1	3	3	2	4	41.4%	100.0%
Injury	313	264	248	204	204	-10.3%	0.0%
Not injured	1,221	1,499	1,661	1,442	1,594	6.9%	10.5%
Total persons involved	4,862	5,569	6,016	5,134	5,524	3.2%	7.6%

Source: Indiana State Police

Figure 1. Motorcycle operators killed in fatal collisions, 2000-2010 (indexed to 2000)



Sources: Fatality Analysis Reporting System (2000-2009); Indiana State Police (2010)

Notes:

1) FARS data not yet available for 2010.

2) Other Great Lakes states include Illinois, Michigan, Minnesota, Ohio, and Wisconsin.

COLLISIONS

Although the number of motorcycle riders killed in Indiana remained stable from 2009 to 2010, the total number of collisions involving motorcycles increased nearly 5 percent (Table 2). From 2006 to 2010, there were slightly more multi-vehicle collisions each year (ranging from about 53 to 55 percent of all motorcycle collisions), and the average annual growth of multi-vehicle motorcycle collisions (3.4 percent) was about twice that of

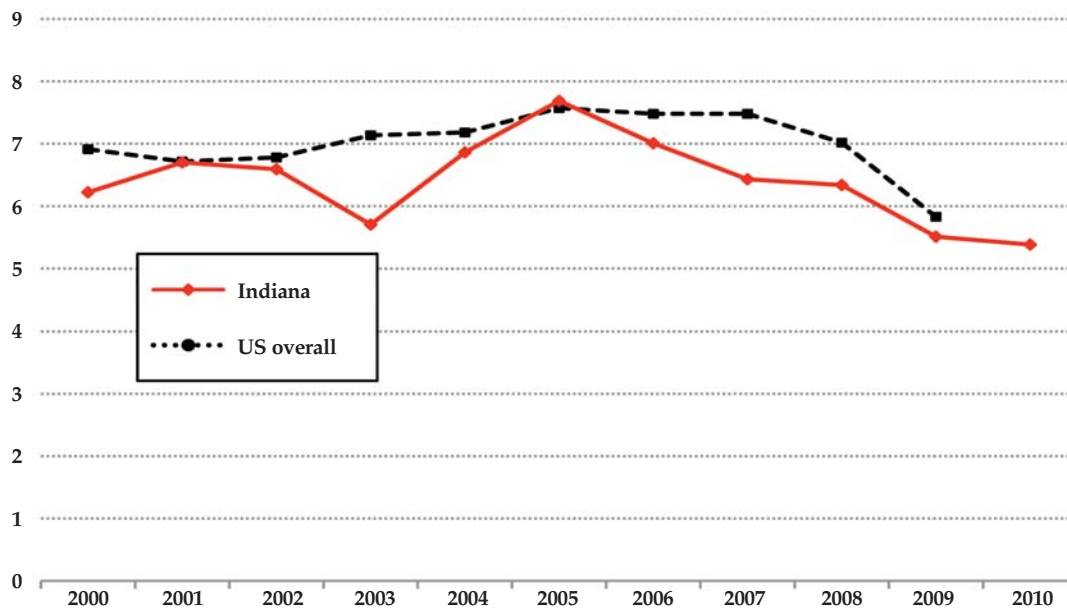
collisions involving a single motorcycle (1.6 percent). Multi-vehicle motorcycle collisions were slightly more likely to involve fatalities than single vehicle crashes. Based on the number of motorcycles involved in collisions per 10,000 registered motorcycles, the motorcycle involvement rate nationally declined from about 7 in 2000 to under 6 in 2009 (Figure 2). Indiana's collision rate per 10,000 registered motorcycles declined steadily since 2005 and generally tracked the US rate, reaching a ten-year low of about 5.4 in 2010.

Table 2. Collisions involving motorcycles by collision severity and vehicles involved, 2006-2010

Collision severity	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
All collisions	3,098	3,556	3,822	3,276	3,429	2.6%	4.7%
Fatal	104	117	125	111	110	1.4%	-0.9%
Incapacitating	440	525	462	438	493	2.9%	12.6%
Non-incapacitating	1,713	1,969	2,184	1,786	1,917	2.9%	7.3%
Property damage	841	945	1,051	941	909	2.0%	-3.4%
Single vehicle	1,463	1,644	1,794	1,493	1,557	1.6%	4.3%
Fatal	42	51	53	48	49	3.9%	2.1%
Incapacitating	243	286	240	228	258	1.5%	13.2%
Non-incapacitating	932	1,040	1,183	934	978	1.2%	4.7%
Property damage	246	267	318	283	272	2.5%	-3.9%
Multi-vehicle	1,635	1,912	2,028	1,783	1,872	3.4%	5.0%
Fatal	62	66	72	63	61	-0.4%	-3.2%
Incapacitating	197	239	222	210	235	4.5%	11.9%
Non-incapacitating	781	929	1,001	852	939	4.7%	10.2%
Property damage	595	678	733	658	637	1.7%	-3.2%
Percent fatal collisions							
Single vehicle	2.9%	3.1%	3.0%	3.2%	3.1%		
Multi-vehicle	3.8%	3.5%	3.6%	3.5%	3.3%		

Source: Indiana State Police

Figure 2. Motorcycles involved in fatal collisions per 10,000 motorcycle registrations, 2000-2010



Sources: Fatality Analysis Reporting System (2000-2009); Indiana State Police (2010); Indiana Bureau of Motor Vehicles

Note:
FARS data not yet available for 2010.

DEMOGRAPHICS: GENDER AND AGE

Although males were the majority of motorcycle riders in Indiana collisions (about 84 percent from 2006 to 2010), there were still significant numbers of female operators and passengers involved in motorcycle crashes (Table 3). From 2006 to 2010, females injured in motorcycle collisions increased annually 4.6 percent, with a 20.5 percent increase in females injured from 2009 to 2010. The number of female motorcycle

operators involved in collisions increased an average of 4.8 percent each year from 2006 to 2010. In addition, fatality rates varied both by gender and operator versus passenger status: male motorcycle operators and female motorcycle passengers typically had the highest fatality rates, while female motorcycle operators or male motorcycle passengers typically had the lowest fatality rates. In addition, male operators ranged from 1.5 to 3.2 times more likely to have had a positive blood alcohol content (BAC) result than females during the 2006 to 2010 period (Table 3).

Table 3. Injury status of collision-involved motorcycle and moped riders by gender, 2006-2010

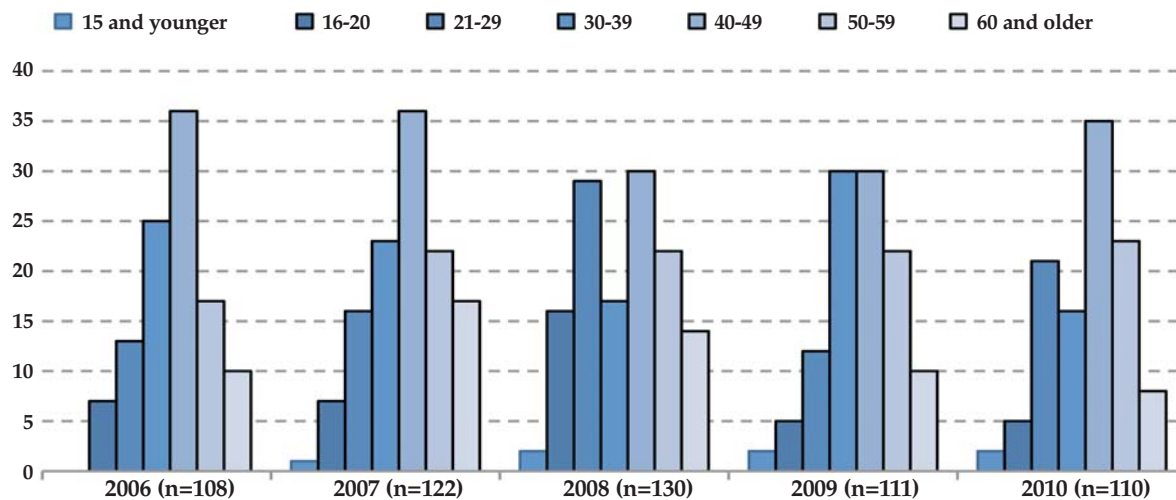
All riders	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Male	2,807	3,247	3,463	2,967	3,122	2.7%	5.2%
Fatal	94	109	113	100	99	1.3%	-1.0%
Injury	2,035	2,320	2,453	2,042	2,177	1.7%	6.6%
Not injured	678	818	897	825	846	5.7%	2.5%
Female	510	549	637	515	599	4.1%	16.3%
Fatal	14	13	16	11	11	-5.9%	0.0%
Injury	447	476	541	444	535	4.6%	20.5%
Not injured	49	60	80	60	53	2.0%	-11.7%
Operators only							
Male	2,758	3,192	3,385	2,910	3,044	2.5%	4.6%
Fatal	93	109	113	100	96	0.8%	-4.0%
Injury	1,992	2,277	2,387	1,992	2,110	1.4%	5.9%
Not injured	673	806	885	818	838	5.6%	2.4%
% alcohol	10.8%	11.1%	10.6%	9.7%	8.7%		
Female	243	271	337	266	293	4.8%	10.2%
Fatal	4	4	4	7	4	0.0%	-42.9%
Injury	191	212	256	204	237	5.5%	16.2%
Not injured	48	55	77	55	52	2.0%	-5.5%
% alcohol	7.4%	5.2%	4.2%	3.0%	4.1%		
Fatality rates							
Male operators	3.4%	3.4%	3.3%	3.4%	3.2%		
Female operators	1.6%	1.5%	1.2%	2.6%	1.4%		
Male passengers	2.0%	0.0%	0.0%	0.0%	3.8%		
Female passengers	3.7%	3.2%	4.0%	1.6%	2.3%		

Source: Indiana State Police

In terms of the number of Indiana motorcyclists killed from 2006 to 2010, the modal (proportionally highest) age category was 40 to 49 years (Figure 3). Accordingly, between 2006 and 2010, the average age of motorcycle riders killed in Indiana collisions was about 41 years. However, during this period, the fatality rate per 100 persons involved

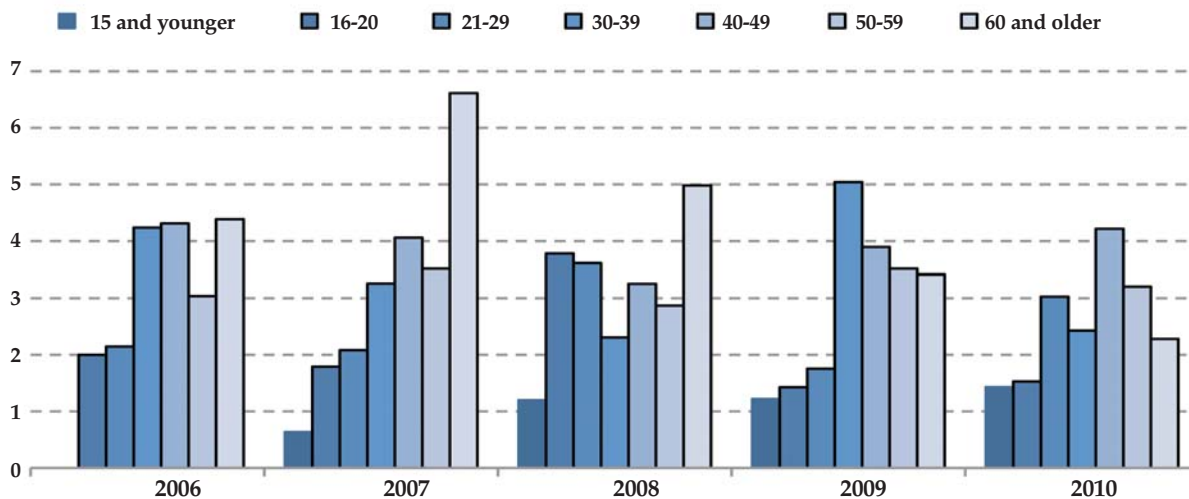
varied by age category (Figure 4). From 2006 to 2008, the highest fatality rates were in the 60 years and above age group. In 2009, riders aged 30 to 39 years had the highest fatality rate, but in 2010, the 40 to 49 year old group had the highest rate. The overall fatality rate in 2010, 3 percent, was the lowest during the 2006 to 2010 period (calculated from Table 1).

Figure 3. Count of motorcyclists killed by age, 2006-2010



	2006	2007	2008	2009	2010
Average age of motorcycle fatalities	41.4	43.4	39.1	41.6	40.9

Figure 4. Fatality rate per 100 persons involved by age, 2006-2010



Source: Indiana State Police

LICENSING

Proper motorcycle endorsements among Indiana motorcycle operators in crashes in 2010 remained about the same as in the past, while non-licensed moped operators involved in collisions increased (Table 4). In 2010, about two-thirds of Indiana motorcyclists involved in collisions had proper motorcycle endorsements, similar to 2009. The number of collision-involved motorcyclists with proper motorcycle endorsements grew annually 9.5 percent since 2006.

However, this was not the case with Indiana moped riders: in 2010, approximately 40 percent of collision-involved moped operators had no license at all and few had motorcycle operator licenses (Figure 5). The number of moped operators without a driver's license increased 19 percent annually since 2006. Considering all operators in collisions, males were more likely to be properly licensed than females (Table 5).

Nonetheless, the license status of motorcycle and moped operators involved in collisions did not appear to be linked systematically to higher proportions of fatal and incapacitating injuries from 2006 to 2010 (not shown in tables).

Table 4. License status of collision-involved motorcycle and moped operators, 2006-2010

Operators	Count					Annual rate of change	
	2006	2007	2008	2009	2010	2006-10	2009-10
Motorcycle	2,509	2,888	3,003	2,513	2,553	0.4%	1.6%
Motorcycle license	1,137	1,630	1,858	1,593	1,636	9.5%	2.7%
Other license	1,248	1,157	1,048	832	851	-9.1%	2.3%
Probationary	15	14	21	19	13	-3.5%	-31.6%
Unknown status	56	25	13	12	7	-40.5%	-41.7%
No license	53	62	63	57	46	-3.5%	-19.3%
Moped	499	580	723	667	785	12.0%	17.7%
Motorcycle license	14	8	8	14	13	-1.8%	-7.1%
Other license	169	244	348	287	348	19.8%	21.3%
Probationary	21	36	37	42	49	23.6%	16.7%
Unknown status	130	49	47	40	44	-23.7%	10.0%
No license	165	243	283	284	331	19.0%	16.5%

Figure 5. License status of collision-involved operators, 2010

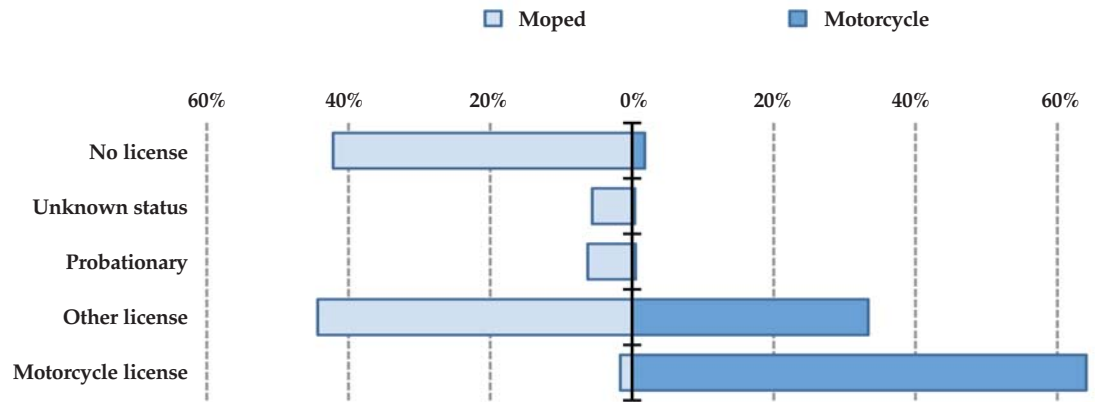


Table 5. License status of collision-involved motorcycle and moped operators by gender, 2006-2010

Operators only						Annual rate of change	
	2006	2007	2008	2009	2010	2006-10	2009-10
Male	2,758	3,192	3,385	2,910	3,044	2.5%	4.6%
Other license	1,302	1,306	1,259	1,024	1,090	-4.3%	6.4%
Motorcycle license	1,079	1,522	1,741	1,502	1,538	9.3%	2.4%
Probationary	32	46	51	50	51	12.4%	2.0%
Unknown status	162	62	49	43	42	-28.6%	-2.3%
No license	183	256	285	291	323	15.3%	11.0%
Female	243	271	337	266	293	4.8%	10.2%
Other license	113	94	135	94	109	-0.9%	16.0%
Motorcycle license	70	115	125	103	111	12.2%	7.8%
Probationary	4	4	7	11	11	28.8%	0.0%
Unknown status	21	9	9	8	8	-21.4%	0.0%
No license	35	49	61	50	54	11.5%	8.0%
% motorcycle license							
Female	28.8%	42.4%	37.1%	38.7%	37.9%		
Male	39.1%	47.7%	51.4%	51.6%	50.5%		

Sources: Indiana State Police; Indiana Bureau of Motor Vehicles

Note: Probationary includes probation and learner's permits.

HELMET USE

Among motorcycle riders from 2006 to 2010, the rate of helmet use in collisions remained steady at about one in three using a helmet; among moped riders, helmet use declined to less than one in 100 in 2010 (Table 6).

Helmet use in fatal collisions involving motorcycles was less than one in five in 2010, and none among moped fatalities. Male and female motorcycle operators involved in collisions had similar reported rates of helmet use (Table 7). The highest rates of helmet use during 2006 to 2010 were among 16 to 20 year old riders (in Indiana, motorcycle riders 17 years old and under are required to wear helmets—see IC 9-19-7-1) and those 50 years and older (Figure 6). In Indiana, collision-involved riders not wearing helmets were about twice as likely to be killed as helmeted riders during the 2006 to 2010 period (not shown in tables).

Table 6. Helmet use by operators and passengers in Indiana collisions by vehicle type, 2006-2010

All injuries	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Motorcycles	2,794	3,171	3,312	2,758	2,858	0.6%	3.6%
Helmet reported	967	995	1,168	975	980	0.3%	0.5%
% helmet	34.6%	31.4%	35.3%	35.4%	34.3%	-0.2%	-3.0%
Mopeds	533	632	792	728	864	12.8%	18.7%
Helmet reported	47	21	14	12	6	-40.2%	-50.0%
% helmet	8.8%	3.3%	1.8%	1.6%	0.7%	-47.0%	-57.9%
Total	3,327	3,803	4,104	3,486	3,722	2.8%	6.8%
% helmet	30.5%	26.7%	28.8%	28.3%	26.5%	-3.4%	-6.4%
Fatal injuries							
Motorcycle	96	115	114	92	103	1.8%	12.0%
Helmet reported	19	30	31	21	18	-1.3%	-14.3%
% helmet	19.8%	26.1%	27.2%	22.8%	17.5%	-3.1%	-23.4%
Moped	12	7	16	19	7	-12.6%	-63.2%
Helmet reported	--	--	--	--	--		
% helmet	0%	0%	0%	0%	0%		
Total	108	122	130	111	110	0.5%	-0.9%
% helmet	17.6%	24.6%	23.8%	18.9%	16.4%	-1.8%	-13.5%

Figure 6. Percent helmet use reported in all collisions by age, 2006-2010

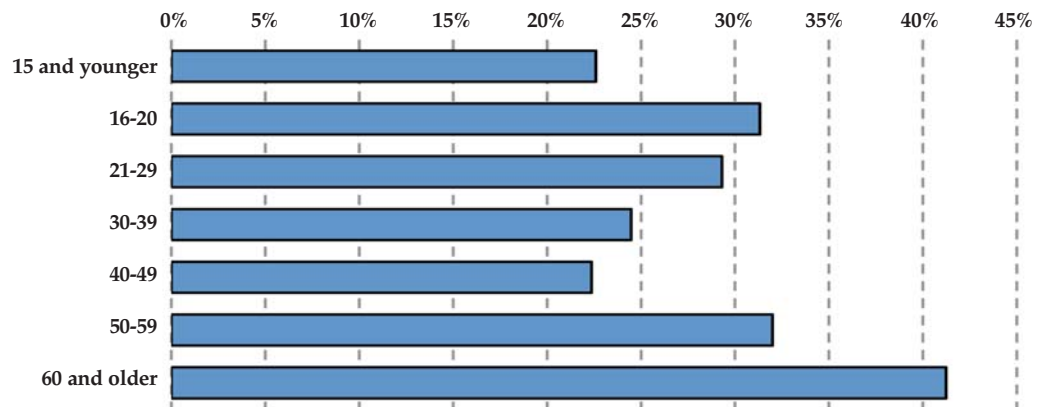


Table 7. Helmet use reported by gender, 2006-2010

All riders	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Female	510	549	637	515	599	4.1%	16.3%
Helmet reported	158	141	181	132	152	-1.0%	15.2%
% helmet	31.0%	25.7%	28.4%	25.6%	25.4%	-4.9%	-1.0%
Male	2,807	3,247	3,463	2,967	3,122	2.7%	5.2%
Helmet reported	855	874	1,000	854	834	-0.6%	-2.3%
% helmet	30.5%	26.9%	28.9%	28.8%	26.7%	-3.2%	-7.2%
Operators only							
Female	243	271	337	266	293	4.8%	10.2%
Helmet reported	87	82	105	78	84	-0.9%	7.7%
% helmet	35.8%	30.3%	31.2%	29.3%	28.7%	-5.4%	-2.2%
Male	2,758	3,192	3,385	2,910	3,044	2.5%	4.6%
Helmet reported	843	865	989	843	819	-0.7%	-2.8%
% helmet	30.6%	27.1%	29.2%	29.0%	26.9%	-3.1%	-7.1%

Source: Indiana State Police

SPEEDING

While motorcycle operators and passengers linked to excess speed accounted for only about 10 percent of all collision-involved motorcyclists, speeding collisions were especially deadly. Fatality rates for individuals in speeding-involved motorcycle collisions were typically two or more times higher than non-speeding fatality rates from 2006 to 2010 (Table 8). More than 30 percent of all speeding collisions from 2006 to 2010 involved motorcycle operators between the ages of 21 and 29 years, and another 22 percent involved operators aged 30 to 39 years (Figure 7). In contrast, non-speeding motorcycle collisions are more evenly distributed among all age groups 21 to 60 years (Figure 8). Considering the likelihood of speeding within motorcycle operator age groups, those aged between 16 and 29 years were most likely to be speeding in collisions; those aged 60 years and above were least likely.

Table 8. Motorcycle operators and passengers in speeding and non-speeding collisions, 2006-2010

Individuals	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Non-speeding	2,954	3,407	3,712	3,166	3,355	3.2%	6.0%
Fatal	82	91	94	89	88	1.8%	-1.1%
Injury	2,191	2,490	2,700	2,238	2,423	2.5%	8.3%
Not injured	681	826	918	839	844	5.5%	0.6%
Speeding	363	389	388	316	366	0.2%	15.8%
Fatal	26	31	35	22	22	-4.1%	0.0%
Injury	291	306	294	248	289	-0.2%	16.5%
Not injured	46	52	59	46	55	4.6%	19.6%
% fatal							
Non-speeding	2.8%	2.7%	2.5%	2.8%	2.6%		
Speeding	7.2%	8.0%	9.0%	7.0%	6.0%		

Figure 7. Percent of operator age group comprising speeding and non-speeding motorcycle collisions, 2006-2010

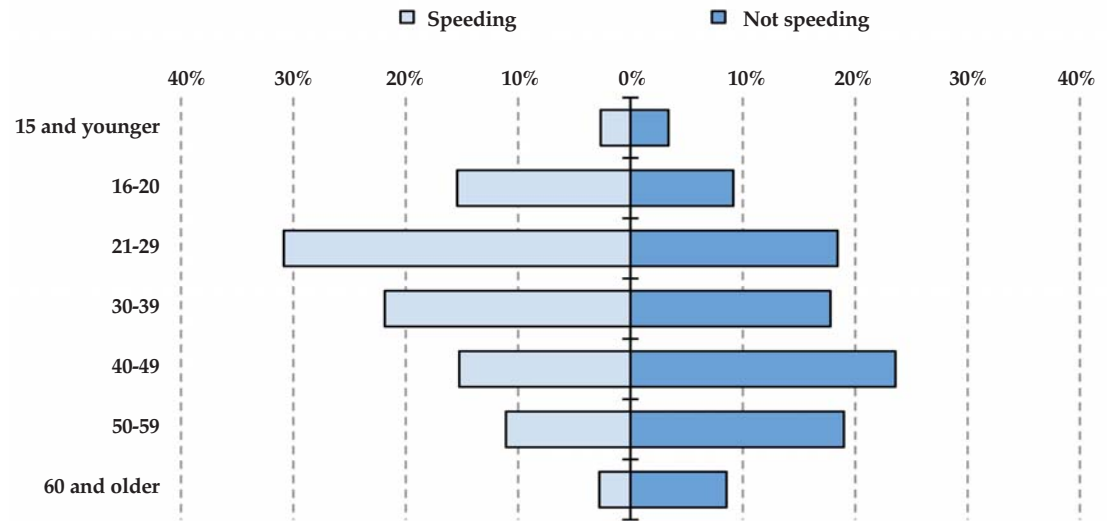
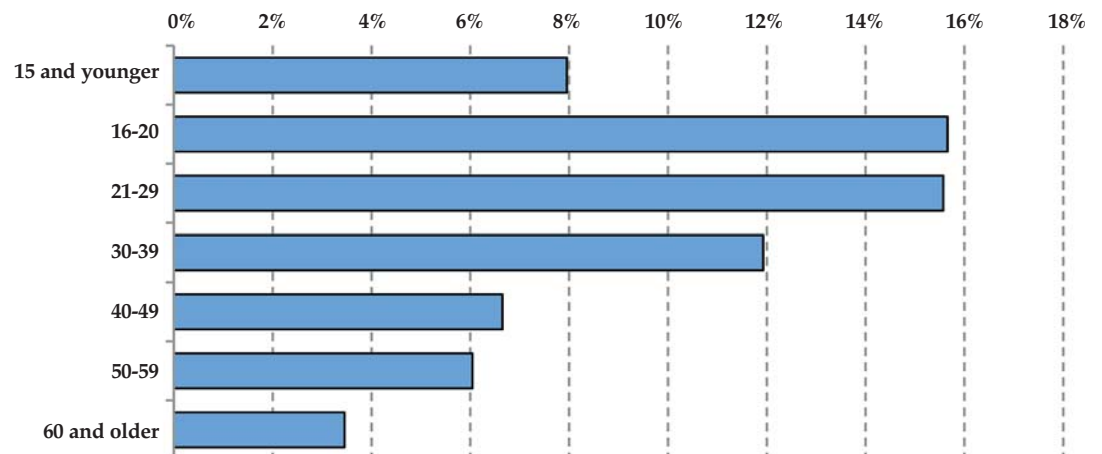


Figure 8. Percent of operator age group classified as speeding in motorcycle collisions, 2006-2010



Source: Indiana State Police

ALCOHOL

Operators of motorcycles and mopeds continued to have higher rates of alcohol involvement than drivers of other vehicle types. However, rates of alcohol-involvement have declined generally for motorcycle operators during the 2006 to 2010 period (Table 9). In 2006, alcohol-involved

motorcycle operators were four times more likely to die than non-drinking operators; by 2010, the ratio dropped to twice as likely (calculated from Table 9). Nevertheless, from 2009 to 2010 in Indiana, the proportion of legally impaired operators (0.08 BAC or more) increased from 19 to 24 percent of fatalities, and from 3.7 to 4.2 percent of operators with non-fatal injuries (Table 10).

Table 9. Motorcycle and moped operators involved in collisions by alcohol involvement and injury status, 2006-2010

Operators by injury status	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Had not been drinking	2,692	3,101	3,351	2,880	3,049	3.2%	5.9%
Fatal	67	74	82	78	73	2.2%	-6.4%
Incapacitating	342	414	356	353	392	3.5%	11.0%
Non-incapacitating	1,520	1,743	1,956	1,595	1,708	3.0%	7.1%
Other/not injured	763	870	957	854	876	3.5%	2.6%
<i>Fatal + incap %</i>	15.2%	15.7%	13.1%	15.0%	15.3%		
Had been drinking	316	367	375	300	289	-2.2%	-3.7%
Fatal	30	39	36	29	27	-2.6%	-6.9%
Incapacitating	65	84	83	55	65	0.0%	18.2%
Non-incapacitating	178	195	213	162	162	-2.3%	0.0%
Other/not injured	43	49	43	54	35	-5.0%	-35.2%
<i>Fatal + incap %</i>	30.1%	33.5%	31.7%	28.0%	31.8%		
% alcohol-related							
All operators	10.5%	10.6%	10.1%	9.4%	8.7%		
Fatal only	30.9%	34.5%	30.5%	27.1%	27.0%		

Table 10. Motorcycle and moped operators involved in collisions by blood alcohol content and injury status, 2006-2010

BAC (g/dL) range	2006	2007	2008	2009	2010	Annual rate of change	
						2006-10	2009-10
Fatal	97	113	118	107	100	0.8%	-6.5%
Not reported or no test	48	45	42	58	44	-2.2%	-24.1%
< 0.01	21	34	44	21	29	8.4%	38.1%
0.01 < 0.08	5	5	5	8	3	-12.0%	-62.5%
0.08 < 0.15	7	10	12	11	10	9.3%	-9.1%
0.15 and greater	16	19	15	9	14	-3.3%	55.6%
% 0.08 or more	23.7%	25.7%	22.9%	18.7%	24.0%		
% > 0.01	28.9%	30.1%	27.1%	26.2%	27.0%		
Non-fatal or no injuries	2,911	3,355	3,608	3,073	3,238	2.7%	5.4%
Not reported or no test	2,757	3,224	3,443	2,880	3,016	2.3%	4.7%
< 0.01	41	32	52	55	51	5.6%	-7.3%
0.01 < 0.08	28	18	35	24	35	5.7%	45.8%
0.08 < 0.15	31	30	39	36	56	15.9%	55.6%
0.15 and greater	54	51	39	78	80	10.3%	2.6%
% 0.08 or more	2.9%	2.4%	2.2%	3.7%	4.2%		
% > 0.01	3.9%	3.0%	3.1%	4.5%	5.3%		

Source: Indiana State Police

OPERATOR HISTORY

In 2010, motorcycle operators were more likely to have a history of traffic convictions (which could have occurred from operating any vehicle, not just a motorcycle) than all other passenger vehicle drivers involved in collisions (Table 11). One of every 8 motorcycle operators in crashes had at least one prior conviction for serious traffic offenses, compared to one of 18 for all other passenger vehicle operators. Motorcycle operators in 2010 were more than twice as likely as passenger vehicle operators to have had prior serious traffic offenses. Considering motorcyclists only, male operators were twice as likely as female operators to have a history of serious traffic convictions.

Table 11. Vehicle operators in Indiana crashes by prior convictions for serious traffic offenses, by vehicle type and gender, 2010

Prior convictions	Motorcycle operators			Passenger vehicle drivers		
	Female	Male	Total	Female	Male	Total
None	200	2,089	2,289	94,325	99,808	194,159
One or more	14	285	299	3,127	7,724	10,854
1	10	198	208	2,622	6,146	8,770
2	3	60	63	381	1,173	1,555
3+	1	27	28	124	405	529
Total	214	2,374	2,588	97,452	107,532	205,013
% one or more	6.5%	12.0%	11.6%	3.2%	7.2%	5.3%

Source: Indiana State Police

Notes:

- 1) Serious traffic offenses are defined as misdemeanor and felony traffic convictions.
- 2) Passenger vehicles Total includes operators where gender was not reported.

GEOGRAPHY

Indiana ARIES data traditionally classified collisions as urban or rural, based strictly on whether a collision was within the incorporated limits of a municipality. By this criterion, the majority of fatal motorcycle collisions were classified as rural from 2006 to 2010, while motorcycle collisions involving non-fatal injuries ranged from 53 to 60 percent urban (Table 12). However, if the state of Indiana is divided more carefully into urban, suburban, exurban, and rural categories (based on US Census definitions of urban places) reflecting a continuum of population density, the majority of fatal motorcycle collisions—about 60 to 65 percent—occurred in urban and suburban locations from 2006 to 2010. In 2010, only about 16 percent of fatal crashes were located in purely rural areas (i.e., areas five or more miles away from more densely populated urban areas). Thus, most fatal and injury collisions involving motorcycles occurred within more densely populated, built-up urban and suburban areas.

Table 12. Injury collisions involving motorcycles or mopeds by severity and location, 2006-2010

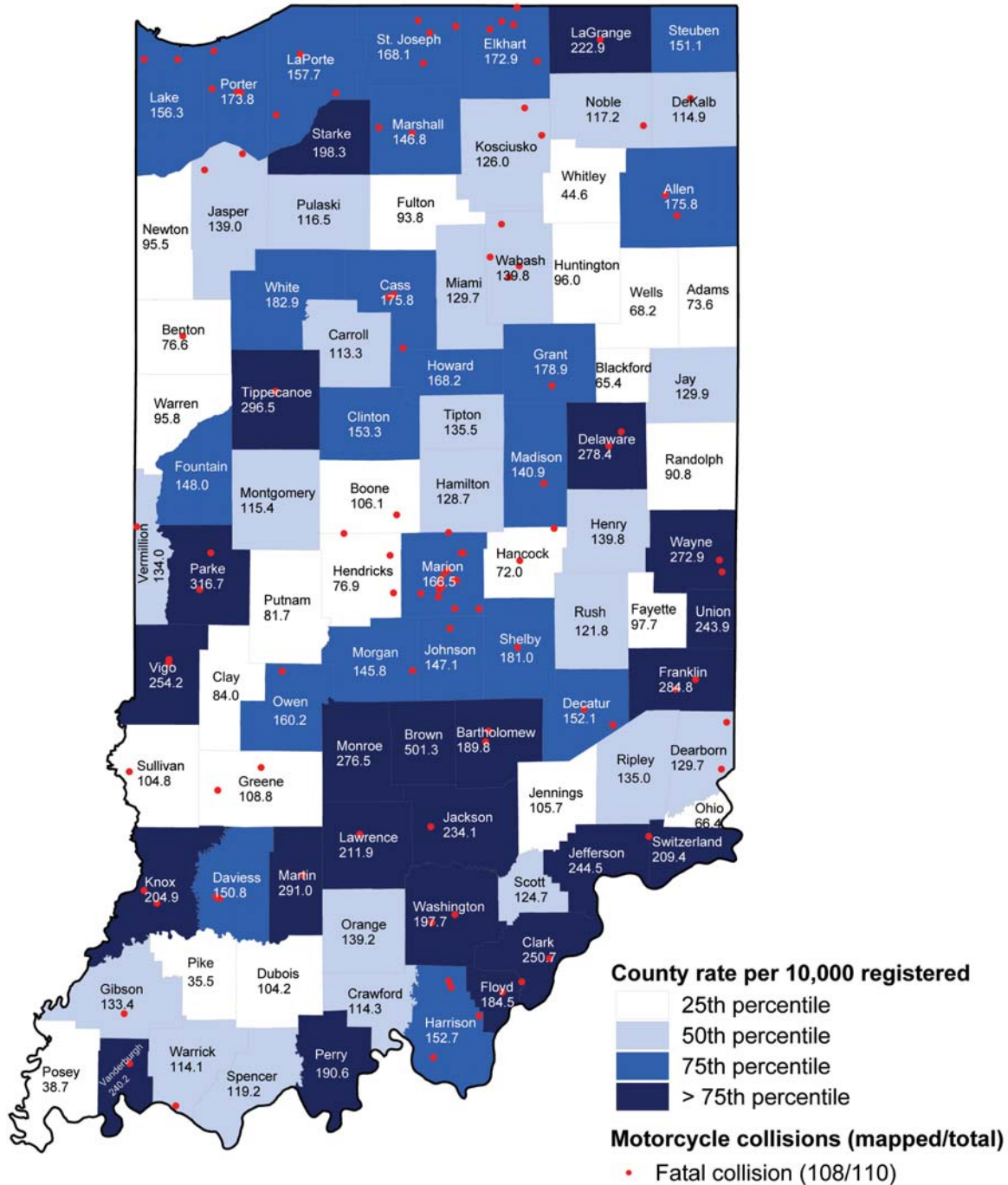
	2006	2007	2008	2009	2010
Incorporated limits					
Fatal	104	117	125	111	110
Urban	46.2%	39.3%	52.0%	42.3%	49.1%
Rural	53.8%	60.7%	48.0%	57.7%	50.9%
Non-fatal injury	2,153	2,494	2,646	2,224	2,410
Urban	52.7%	56.9%	57.9%	60.3%	60.2%
Rural	47.2%	43.0%	42.0%	39.7%	39.8%
Census locality					
Fatal	104	117	125	111	110
Urban	36.5%	36.8%	49.6%	45.9%	44.5%
Suburban	25.0%	26.5%	24.8%	25.2%	20.9%
Exurban	9.6%	21.4%	9.6%	9.0%	10.0%
Rural	7.7%	15.4%	15.2%	17.1%	16.4%
Unknown	21.2%	--	0.8%	2.7%	8.2%
Non-fatal injury	2,153	2,494	2,646	2,224	2,410
Urban	43.0%	52.0%	58.0%	60.1%	57.3%
Suburban	11.8%	13.0%	19.0%	16.9%	18.2%
Exurban	5.8%	6.0%	8.3%	8.0%	8.3%
Rural	6.0%	8.2%	10.9%	11.1%	11.7%
Unknown	33.5%	20.8%	3.7%	4.0%	4.5%

Source: Indiana State Police

Additionally, Indiana counties vary in their rates of injury-related motorcycle collisions per 10,000 county motorcycle registrations (Map 1). Counties with the highest collision rates in 2010 were located in south central and far southeastern Indiana, areas marked by scenic driving areas (e.g., Brown County) and riverboat gambling. Other counties with

50th percentile and above motorcycle collision rates were located in far northern Indiana. Predictably, the predominantly urban counties in the state had the heaviest concentrations of injury collisions. Patterns of fatal collisions were distributed less systematically among various areas within the state.

Map 1. Indiana motorcycle collisions per 10,000 registered motorcycles and location of fatal motorcycle collisions, 2010



Sources: Indiana State Police, 2010; Indiana Bureau of Motor Vehicles, 2010.

Note: Five fatal collisions did not have sufficient information to locate them at the street level. These collisions were located at the center of the county in which they occurred.

DEFINITIONS

Alcohol-impaired: when the driver has a blood alcohol content (BAC) test result at or above 0.08 g/dL.

Census locality: Urban is defined as Census 2000 Urban Areas, *suburban* as areas within 2.5 miles of urban boundaries, *exurban* as areas within 2.5 miles of suburban boundaries, and *rural* as areas beyond exurban boundaries (i.e., everything else).

Non-fatal injury: includes *incapacitating, non-incapacitating, possible, not reported, unknown, refused (treatment)*, and invalid injury categories.

Speeding: applies when a vehicle driver was issued a speeding citation or driving at an unsafe speed, as indicated by *unsafe speed* or *speed too fast for weather conditions* as a contributing factor to the collision. Indiana Code 9-21-5-1 delineates this action from the legal perspective.

DATA SOURCES

Fatality Analysis Reporting System, National Highway Traffic Safety Administration, current as of February 1, 2011.

<http://www-fars.nhtsa.dot.gov/Main/index.aspx>.

Indiana Bureau of Motor Vehicles, current as of March 1, 2011.

Indiana State Police Automated Reporting Information Exchange System (ARIES), current as of March 1, 2011.

This publication was prepared on behalf of the Indiana Criminal Justice Institute (ICJI) 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 ICJI and the National Highway Traffic Safety Administration.

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



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Traffic Safety Project

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 collisions. 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 2010 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the fifth year of this partnership. 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 law enforcement officers. As of December 31, 2010, approximately 99 percent of all collisions are entered electronically through 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.

The Indiana Criminal Justice Institute

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 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

The Center for Criminal Justice Research, one of two 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.

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