

INDIANA TRAFFIC SAFETY FACTS

May 2010



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 2009 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the fourth 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 young 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, 2009, approximately 99 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.



MOTORCYCLES 2009

From 2008 to 2009, fatalities and injuries to Indiana motorcycle riders declined to the lowest level since 2006. In 2009, Indiana motorcyclists were involved in 3,276 collisions, resulting in 113 fatalities (unless noted otherwise, *motorcycles* and *mopeds* are grouped together in this factsheet). Fatalities included 107 motorcycle operators, four motorcycle passengers, and one driver and one passenger in two other vehicles. This fact sheet examines motorcycle collisions within Indiana, including fatality and injury rates among riders, alcohol-related collisions, helmet use, licensing statistics, and the geography of those collisions in the state. Indiana data are drawn from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Overview

Persons killed in motorcycle crashes in Indiana declined 15 percent, from 133 in 2008 to 113 in 2009 (Table 1).

Individuals killed in motorcycle collisions accounted for 16.3 percent (113/692) of total Indiana traffic fatalities. Indiana motorcycle collisions per 10,000 registered motorcycles decreased over the 2008 to 2009 period, from 190.7 to 162.1. The fatality rate per 10,000 motorcycles also dropped (6.6 to 5.6) from 2008 to 2009. This is the first annual decrease in total motorcycle collisions in the 2003-2009 period.

Collisions, units, and individuals involved

In 2009, there were 3,276 collisions involving motorcycles in Indiana, a 14.2 percent decline from 2008 (calculated from Table 2). Single vehicle crashes accounted for 45.6 percent of all motorcycle collisions. Of the 111 fatal collisions, 48 (43.2 percent) were single-vehicle. Total collisions declined in each category of collision severity from 2008 to 2009. In 2009, the probability that a given collision resulted in one or more fatalities remained steady at 3.4 percent. During the past five years, multi-vehicle motorcycle collisions have consistently had slightly higher fatality rates than single vehicle collisions.

Altogether in 2009, 3,354 motorcycles crashed on their own or collided with 1,799 other vehicles, 15 pedestrians, and 7 pedalcyclists. Table 3 classifies the vehicles by *unit severity*, meaning the most serious injury associated with a vehicle or the non-motorist. Among all vehicles, 112 had one or more fatalities on board. Overall, the number of motorcycles involved in crashes has grown at an average rate of 3.8 percent annually. Both Tables 2 and 3 suggest that from 2005 to 2009, motorcycles have become slightly more likely to be involved in multi- rather than single-vehicle collisions.

In 2009, there were 3,276 collisions involving motorcycles in Indiana, a 14.2 percent decline from 2008.

Table 1: Indiana motorcycle and moped collisions, 2003-2009

Year	Motorcycle collisions	Motorcycles involved in fatal collisions	Fatal motorcycle collisions			Registered motorcycles	Per 10,000 registered motorcycles		Total traffic fatalities	Motorcycle percentage of total fatalities
			Persons killed (in all units)	Single vehicle	Multiple vehicle		Indiana collisions	Indiana fatalities		
2003	2,442	78	78	27	49	145,948	167.3	5.3	833	9.4%
2004	2,873	105	109	38	62	154,739	185.7	7.0	947	11.5%
2005	2,906	114	113	48	65	164,423	176.7	6.9	938	12.0%
2006	3,098	113	109	42	62	162,683	190.4	6.7	899	12.1%
2007	3,556	121	125	51	66	185,048	192.2	6.8	898	13.9%
2008	3,822	128	133	53	72	200,387	190.7	6.6	815	16.3%
2009	3,276	118	113	48	63	202,146	162.1	5.6	692	16.3%

Sources:

- 1) Collision data
Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.
- 2) Registration Data
Indiana Bureau of Motor Vehicles, as of April 1, 2010.

Table 2: Collisions involving motorcycles and mopeds, by collision severity, 2005-2009

Collision severity	2005	2006	2007	2008	2009	Average annual change
All collisions	2,906	3,098	3,556	3,822	3,276	3.6%
Fatal	113	104	117	125	111	0.0%
Incapacitating	379	440	525	462	438	4.6%
Non-incapacitating	1,604	1,713	1,969	2,184	1,786	3.6%
Property damage only	810	841	945	1,051	941	4.2%
Single-vehicle collisions	1,341	1,463	1,644	1,794	1,493	3.5%
Fatal	48	42	51	53	48	0.9%
Incapacitating	193	243	286	240	228	5.6%
Non-incapacitating	839	932	1,040	1,183	934	3.8%
Property damage only	261	246	267	318	283	2.7%
Multi-vehicle collisions	1,565	1,635	1,912	2,028	1,783	3.9%
Fatal	65	62	66	72	63	-0.4%
Incapacitating	186	197	239	222	210	3.7%
Non-incapacitating	765	781	929	1,001	852	3.5%
Property damage only	549	595	678	733	658	5.1%
Probability of fatal collision						
All collisions	3.9%	3.4%	3.3%	3.3%	3.4%	
Single-vehicle collisions	3.6%	2.9%	3.1%	3.0%	3.2%	
Multiple-vehicle collisions	4.2%	3.8%	3.5%	3.6%	3.5%	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Non-incapacitating collision severity includes collisions with injuries reported as *non-incapacitating* and *possible*.

Table 3: Units involved in motorcycle and moped collisions, by unit type and severity, 2005-2009

Unit type x unit injury severity	2005	2006	2007	2008	2009	Average annual change
Motorcycle or moped	2,965	3,163	3,656	3,915	3,354	3.8%
Fatal	112	104	118	123	110	0.0%
Incapacitating	378	437	523	461	438	4.6%
Non-incapacitating	1,606	1,720	1,973	2,205	1,793	3.7%
Property damage only	869	902	1,042	1,126	1,013	4.3%
Other units	1,645	1,696	1,970	2,097	1,821	3.1%
Fatal	1	1	3	2	2	--
Incapacitating	6	11	11	8	3	-1.6%
Non-incapacitating	107	113	125	106	101	-0.9%
Property damage only	1,531	1,571	1,831	1,981	1,715	3.5%
Total	4,610	4,859	5,626	6,012	5,175	3.5%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Non-incapacitating collision severity includes collisions with injuries reported as *non-incapacitating* and *possible*.

Other units includes *pedestrians* and *pedalcyclists*.

Altogether in 2009, 3,354 motorcycles crashed on their own or collided with 1,799 other vehicles, 15 pedestrians, and 7 pedalcyclists.

Table 4: Individuals on motorcycles and mopeds, by person type and injury status, 2005-2009

Person type & individual injury severity	2005	2006	2007	2008	2009	Average annual change
Operator	2,813	3,008	3,468	3,726	3,180	3.8%
Fatal	110	97	113	118	107	-0.1%
Incapacitating	345	407	498	439	408	5.4%
Non-incapacitating	1,578	1,698	1,938	2,169	1,757	3.7%
Other	157	83	54	36	31	-32.3%
Not injured	623	723	865	964	877	9.5%
Injured occupant	283	319	335	378	306	2.9%
Fatal	2	11	9	12	4	99.6%
Incapacitating	51	63	70	59	60	5.2%
Non-incapacitating	216	237	238	290	229	2.7%
Other	6	2	1	2	1	-16.7%
Not injured	8	6	17	15	12	31.6%
All motorcyclists	3,096	3,327	3,803	4,104	3,486	3.7%
Fatal	112	108	122	130	111	0.3%
Incapacitating	396	470	568	498	468	5.3%
Non-incapacitating	1,794	1,935	2,176	2,459	1,986	3.5%
Other	163	85	55	38	32	-32.5%
Not injured	631	729	882	979	889	9.6%
Percent not injured and other	25.6%	24.5%	24.6%	24.8%	26.4%	
Probability of injury status						
Fatal	3.6%	3.2%	3.2%	3.2%	3.2%	
Incapacitating	12.8%	14.1%	14.9%	12.1%	13.4%	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

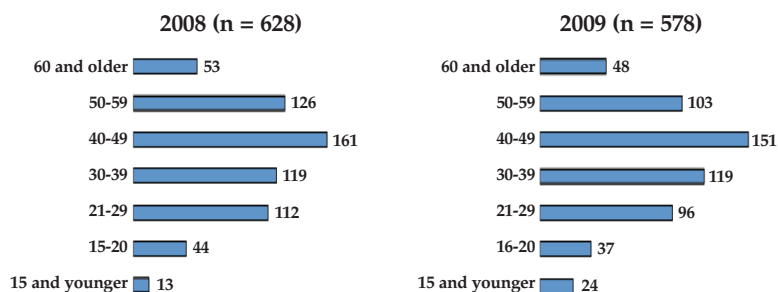
Notes:

Excludes non-motorcyclists.

Non-incapacitating collision severity includes collisions with injuries reported as non-incapacitating and possible.

Other injuries include refused (treatment) and unknown.

Figure 1: Fatal and incapacitating injuries of motorcycle and moped riders by age, 2008-2009



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Note:

Includes riders of motorcycles and mopeds, where age is known.

The probability of incapacitating injuries was 12.1 percent in 2008, but increased to 13.4 percent in 2009.

There were 3,486 individuals on motorcycles involved in collisions in 2009, of which 111 were killed (Table 4). The number of individuals killed on motorcycles declined 14.6 percent from 2008 to 2009. Considering all collisions, the probability of a fatal injury to a motorcyclist has remained at 3.2 percent the last four years. The probability of incapacitating injuries was 12.1 percent in 2008, but increased to 13.4 percent in 2009. When Indiana motorcycle crashes occurred, nearly three-quarters (72.4 percent) of motorcycle operators and 96 percent of motorcycle passengers suffered some form of injury.

Age

The age distribution of seriously injured motorcyclists remained similar from 2008 to 2009. Motorcyclists age 40 to 49 years comprised the largest group of individuals with fatal or incapacitating injuries (Figure 1). All age groups experienced declines in the number of seriously injured riders, except the youngest group (which increased) and the 30 to 39 year old group (which remained the same). The number of seriously injured motorcyclists 15 years and under nearly doubled, from 13 in 2008 to 24 in 2009.

Driver's license status

Indiana requires a motorcycle license or endorsement for the operator of any motorized two-wheel vehicle that can be driven on public roadways at 25 miles per hour or more (see IC 9-21-11-12 and IC 9-24-8). In 2009, slightly more than one-

half of all motorcycle and moped operators involved in crashes had some type of valid motorcycle license (Table 5). In fatal crashes, only 40.2 percent of operators had valid motorcycle licenses.

Generally, the percentage of collision-involved motorcyclists with valid motorcycle licenses increased from 2005 to 2009 (Table 6). However, there are substantial differences between the driver's license status of motorcycle versus moped operators. Moped operators involved in collisions were much more likely to be completely unlicensed (42.6 percent in 2009). In comparison, fewer than three percent of collision-involved motorcycle operators were unlicensed from 2005 through 2009.

Indiana data suggest a direct positive relationship between operator age and the likelihood of proper motorcycle licensing (Table 7). In 2009, slightly more than one-third of 16 to 20 year old operators in crashes had valid motorcycle permits, whereas more than half of operators 40 years of age and older had proper licenses.

Use of helmets

From 2005 to 2009 in Indiana, the proportion of collision-involved motorcyclists wearing helmets did not change substantially (Table 8). There are, however, major differences in helmet-use by motorcycle versus moped riders: less than two percent of moped riders were helmeted, compared to more than one-third of motorcycle riders. Focusing only on motorcycle riders, close to two-thirds of motorcycle riders involved and more than three-fourths of riders killed in Indiana crashes in 2009 did not wear a helmet. Overall, helmet use was associated with lower probabilities of death or incapacitating injury in Indiana motorcycle collisions. The probability of fatal injuries for non-helmeted riders in 2009 (4 percent) was 1.9 times greater than helmeted riders (2.2 percent). Generally, slightly higher proportions of motorcyclists with helmets were reported as not injured, compared to those without helmets in both 2008 and 2009 (calculated from Table 8).

Alcohol-related collisions

Considering all collisions involving motorcycles in Indiana, 10 percent in 2009 were classified as alcohol-related (Table 9). It is

Table 5: Driver's license status of Indiana motorcycle and moped operators involved in collisions, 2005-2009

Count of motorcycle operators (where license status is known)	2005	2006	2007	2008	2009	Average annual change
All collisions	2,656	2,822	3,394	3,666	3,128	5.0%
Motorcycle licenses	876	1,151	1,638	1,866	1,607	18.4%
Other licenses	1,601	1,417	1,401	1,396	1,119	-8.2%
Probationary or learner permit	47	36	50	58	61	9.2%
No license	132	218	305	346	341	29.3%
Fatal injuries	107	90	112	116	107	1.1%
Motorcycle licenses	36	38	56	58	43	7.7%
Other licenses	66	49	49	46	52	-4.7%
Probationary or learner permit	2	-	1	4	1	--
No license	3	3	6	8	11	42.7%
Motorcycle licenses as percent of total						
All crashes	33.0%	40.8%	48.3%	50.9%	51.4%	
Fatal injuries	33.6%	42.2%	50.0%	50.0%	40.2%	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Includes cases where license status is known.

Motorcycle licenses category includes motorcycle licenses, motorcycle endorsements, and motorcycle learner permits.

Other licenses include operator, chauffeur, commercial driver, and public passenger chauffeur.

Table 6: Percentage of driver's license types held by Indiana motorcycle and moped operators involved in collisions, 2005-2009

Operators	2005	2006	2007	2008	2009
Motorcycles	2,499	2,509	2,888	3,003	2,513
Other license	61.0%	50.3%	40.5%	35.6%	33.9%
Motorcycle licenses	34.9%	45.3%	56.4%	61.9%	63.4%
No license	1.2%	2.1%	2.1%	2.1%	2.3%
Unknown or not reported	2.9%	2.2%	0.9%	0.4%	0.5%
Mopeds	314	499	580	723	667
Other license	39.5%	38.1%	48.3%	53.3%	49.3%
Motorcycle licenses	1.0%	2.8%	1.4%	1.1%	2.1%
No license	32.5%	33.1%	41.9%	39.1%	42.6%
Unknown or not reported	27.1%	26.1%	8.4%	6.5%	6.0%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Motorcycle licenses category includes motorcycle licenses, motorcycle endorsements, and motorcycle learner permits.

Other licenses include operator, chauffeur, commercial driver, and public passenger chauffeur.

Table 7: Percentage of collision-involved motorcycle-moped operators with valid motorcycle licenses by age cohort, 2005-2009

Age category	2005	2006	2007	2008	2009	Average annual change
15 and under	3.1%	1.3%	3.2%	3.3%	2.9%	18.7%
16-20	23.8%	26.8%	27.5%	33.5%	34.5%	10.0%
21-29	29.6%	36.2%	42.7%	44.9%	45.9%	12.0%
30-39	30.1%	41.8%	48.5%	49.1%	48.1%	13.5%
40-49	35.7%	43.8%	54.1%	56.2%	56.1%	12.4%
50-59	41.9%	50.8%	60.4%	62.7%	64.1%	11.6%
60 or older	47.9%	49.5%	62.1%	65.2%	68.7%	9.8%
Total	33.0%	40.8%	48.3%	50.9%	51.4%	12.1%
N	2,645	2,819	3,392	3,664	3,128	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

N = count of all motorcycle or moped operators involved in collisions, where valid age and license status were reported.

Average annual change reflects change in percentage of motorcycle licenses.

Table 8: Individuals on motorcycles and mopeds and injury status of individuals on motorcycles, by reported helmet use, 2005-2009

	Number of injuries					As percent of total		
	2005	2006	2007	2008	2009			
Operators and passengers								
Motorcycles	2,737	2,794	3,171	3,312	2,758			
Helmet reported	866	967	995	1,168	975			
Percent helmeted	31.6%	34.6%	31.4%	35.3%	35.4%			
Mopeds	359	533	632	792	728			
Helmet reported	42	47	21	14	12			
Percent helmeted	11.7%	8.8%	3.3%	1.8%	1.6%			
	Number of injuries					As percent of total		
	2005	2006	2007	2008	2009	2008	2009	Change
For motorcycles only								
Helmet use reported	866	967	995	1,168	975	100%	100%	
Fatal	20	19	30	31	21	2.7%	2.2%	-0.5%
Incapacitating	103	119	113	118	96	10.1%	9.8%	-0.3%
Non-incapacitating	498	583	590	692	561	59.2%	57.5%	-1.7%
Other	56	25	15	8	6	0.7%	0.6%	-0.1%
Not injured	189	221	247	319	291	27.3%	29.8%	2.5%
No helmet use reported	1,871	1,827	2,176	2,144	1,783	100%	100%	
Fatal	83	77	85	83	71	3.9%	4.0%	0.1%
Incapacitating	254	289	373	292	278	13.6%	15.6%	2.0%
Non-incapacitating	1,059	994	1,175	1,258	961	58.7%	53.9%	-4.8%
Other	91	46	30	18	16	0.8%	0.9%	0.1%
Not injured	384	421	513	493	457	23.0%	25.6%	2.6%
Helmet reported as percentage of total								
All crashes	31.6%	34.6%	31.4%	35.3%	35.4%			
Fatal crashes	19.4%	19.8%	26.1%	27.2%	22.8%			

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Note:

Non-incapacitating injuries include those reported as non-incapacitating and possible.

Table 9: Collisions involving motorcycles or mopeds, by alcohol involvement and vehicles involved, 2005-2009

	2005	2006	2007	2008	2009	Average annual change
Motorcycle or moped collisions						
Single-vehicle	1,341	1,463	1,644	1,794	1,493	3.5%
Alcohol-related	203	223	263	275	199	1.2%
Percent alcohol-related	15.1%	15.2%	16.0%	15.3%	13.3%	-2.9%
Multi-vehicle	1,565	1,635	1,912	2,028	1,783	3.9%
Alcohol-related	146	152	140	135	127	-3.3%
Percent alcohol-related	9.3%	9.3%	7.3%	6.7%	7.1%	-5.9%
All collisions	2,906	3,098	3,556	3,822	3,276	3.6%
Alcohol-related	349	375	403	410	326	-1.0%
Percent alcohol-related	12.0%	12.1%	11.3%	10.7%	10.0%	-4.5%
Fatal collisions involving motorcycle or moped						
Single-vehicle	48	42	51	53	48	0.9%
Alcohol-related	22	21	24	25	16	-5.5%
Percent alcohol-related	45.8%	50.0%	47.1%	47.2%	33.3%	-6.5%
Multi-vehicle	65	62	66	72	63	-0.4%
Alcohol-related	24	22	17	14	13	-14.0%
Percent alcohol-related	36.9%	35.5%	25.8%	19.4%	20.6%	-12.4%
All fatal collisions	113	104	117	125	111	0.0%
Alcohol-related	46	43	41	39	29	-10.4%
Percent alcohol-related	40.7%	41.3%	35.0%	31.2%	26.1%	-10.2%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Alcohol-related crashes are defined based on information from the Indiana Officer's Standard Crash Report input to Indiana ARIES. A record is alcohol-related if any of the following conditions is met:

1. Primary factor = *Alcoholic beverages* OR
2. Contributing circumstance = *Alcoholic beverages* OR
3. BAC test result > 0 for driver or non-motorist OR
4. Apparent physical condition = *Had been drinking* for driver or non-motorist OR
5. OWI (operating while intoxicated) citation issued to driver.

important to emphasize that alcohol involvement does not necessarily imply causation of a collision. Nonetheless, alcohol was a factor in single-vehicle motorcycle crashes (13.3 percent) almost twice as frequently as multiple vehicle collisions (7.1 percent). (In single-vehicle collisions, motorcycles are the alcohol-related vehicle; in multi-vehicle collisions, the other vehicle could be alcohol-related.) Considering only fatal motorcycle collisions in Indiana, about 26 percent were alcohol-related in 2009, a decrease from the 31.2 percent rate in 2008. Significantly, the five-year average annual growth rates for various types of alcohol-related motorcycle collisions are generally declining.

From 2005 to 2009, the percent of all collision-involved motorcycle operators who had consumed alcohol declined an average of 2.5 percent annually. In 2009, of the 107 fatalities among Indiana motorcycle operators, 23 (21.5 percent) had been drinking (Table 10), a notable reduction from the 30.5 percent rate in 2008. The number of operators killed who had been drinking has decreased since 2007, from 39 to 23. For 2009, the percent of individuals with fatal or incapacitating injuries was 1.7 times

Table 10: Motorcycle and moped operators involved in collisions, by alcohol involvement and injury status, 2005-2009

Operators by injury status	2005	2006	2007	2008	2009	Average annual change
Operator had NOT been drinking	2,528	2,692	3,101	3,351	2,890	4.0%
Fatal	75	67	74	82	84	3.3%
Incapacitating	287	342	414	356	355	6.5%
Non-incapacitating	1,431	1,520	1,743	1,956	1,596	3.7%
Other	147	78	45	35	28	-32.9%
Not injured	588	685	825	922	827	9.6%
Fatal + incapacitating percentage	14.3%	15.2%	15.7%	13.1%	15.2%	2.2%
Operator had been drinking	285	316	367	375	290	1.6%
Fatal	35	30	39	36	23	-7.0%
Incapacitating	58	65	84	83	53	1.0%
Non-incapacitating	147	178	195	213	161	3.9%
Other	10	5	9	1	3	35.3%
Not injured	35	38	40	42	50	9.5%
Fatal + incapacitating percentage	32.6%	30.1%	33.5%	31.7%	26.2%	-4.8%
Percent classified as alcohol-related						
All motorcycle and moped operators	10.1%	10.5%	10.6%	10.1%	9.1%	-2.5%
Fatalities	31.8%	30.9%	34.5%	30.5%	21.5%	-8.1%
Incapacitating	16.8%	16.0%	16.9%	18.9%	13.0%	-4.6%
Alcohol lethality ratio	2.28	1.98	2.13	2.43	1.73	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Alcohol lethality ratio calculated as the ratio of the alcohol-related fatal + incapacitating percentage to the non-alcohol related fatal + incapacitating percentage.

Non-incapacitating includes possible injuries.

Table 11: Motorcycle and moped operators by injury status and blood alcohol content (BAC) range, in grams/deciliter (g/dL), 2005-2009

BAC (g/dL) range	2005	2006	2007	2008	2009
Non-fatal or no injuries	2,703	2,911	3,355	3,608	3,073
Not reported or no test	2,584	2,757	3,224	3,444	2,937
< 0.01	26	41	32	52	38
0.01 < 0.08	21	28	18	35	21
0.08 < 0.15	26	31	30	39	35
0.15 < 0.60	46	54	51	37	42
0.60 and greater	-	-	-	1	-
Percent 0.08 and greater	2.7%	2.9%	2.4%	2.1%	2.5%
Percent greater than 0.01	3.4%	3.9%	3.0%	3.1%	3.2%
Fatal injuries	110	97	113	118	107
Not reported or no test	37	48	45	42	71
< 0.01	41	21	34	44	16
0.01 < 0.08	6	5	5	5	7
0.08 < 0.15	9	7	10	12	7
0.15 < 0.60	17	16	19	15	6
0.60 and greater	-	-	-	-	-
Percent 0.08 and greater	23.6%	23.7%	25.7%	22.9%	12.1%
Percent greater than 0.01	29.1%	28.9%	30.1%	27.1%	18.7%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

Notes:

Indiana ARIES data produce reported BAC levels for motorcycle operators involved in crashes, although these estimates are subsequently re-estimated by NHTSA using imputation models, and ARIES fatality counts by BAC level are thus typically less than later federal estimates. NHTSA performs imputation routines to re-estimate state level alcohol involvement, which increases the federal estimates of the percentage of alcohol-related motorcycle fatalities. Information reported here is based only on non-imputed alcohol data included in the ARIES data extract as of March 1, 2010.

higher when motorcycle operators had been drinking, also a substantial drop from the 2008 rate (2.4).

Table 11 shows the blood alcohol content (BAC) ranges (in grams per deciliter, or g/dL) for Indiana motorcycle operators involved in all crashes, and those involved in fatal crashes from 2005 to 2009. In 2008, nearly 23 percent of motorcycle operator fatalities had reported BAC levels of 0.08 g/dL or greater; in 2009, the rate dropped to 12.1 percent, by far the lowest rate since 2005. This is compared to 2.5 percent of motorcycle operators in non-fatal collisions. (However, please note that as of March 1, 2010, BAC test results for 71 of the 107 operator fatalities were not reported in ARIES.)

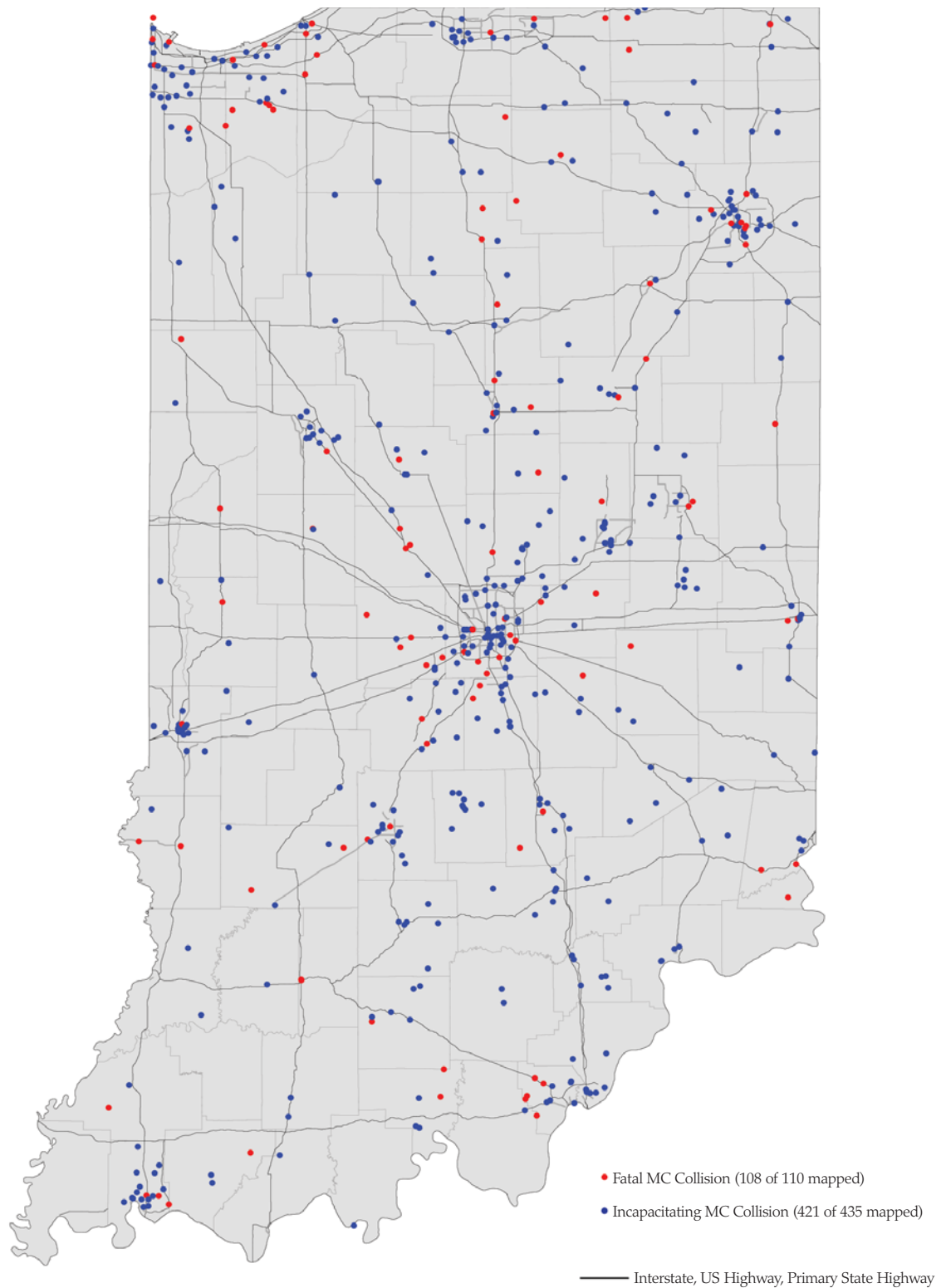
Geography of collisions

Motorcyclist fatalities and incapacitating injuries were generally concentrated in several areas in 2009, as shown in Map 1. These were typically areas of higher population densities (e.g., Gary, Fort Wayne, Indianapolis, and Evansville). In addition, there is a notable concentration of fatal collisions that occurred in 2009 south of the US 40 and I-70 corridor in southern Marion, northern Johnson, and southern Hendricks counties.

Conclusions

Statistics regarding Indiana motorcycle crashes improved in 2009. The decline in motorcyclist fatalities and injuries from 2008 to 2009 was significant: there was a 14.6 percent decrease in deaths, and a 17 percent decline in non-fatal injuries (calculated from Table 4). These reductions were accompanied by slightly lower rates of single-vehicle motorcycle collisions in which alcohol was involved, for both fatal and non-fatal crashes. In 2009, there were few if any improvements in reported helmet use in crashes—the rate of helmet use remained at slightly more than one-third of all motorcycle riders involved in collisions. Finally, while improvements occurred, the percentage of total traffic fatalities in Indiana attributable to motorcycles—16.3 percent—remained high, and is substantially larger than the 2003 proportion (9.4 percent) (see Table 1).

Map 1: Indiana fatal and incapacitating motorcycle collisions, 2009



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2010.

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.

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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.

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 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 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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