

INDIANA

TRAFFIC SAFETY FACTS

OCCUPANT PROTECTION, 2013

MAY 2014 • ISSUE 14-C04

This fact sheet summarizes occupant protection data trends at state and county levels. Restraint use and injury analyses are limited to those occurring in passenger vehicles (defined as passenger cars, pickup trucks, sport utility vehicles, and vans). Analyses include data from several sources (see last page for a full list of references, data sources, and definitions). Indiana data come primarily from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 21, 2014.

The overall Indiana observed seatbelt use rate in 2013 was 91.6 percent, up 10 percentage points since 2004 (Figure 1). Indiana observational studies of seatbelt usage conducted annually by the Indiana Criminal Justice Institute (ICJI) show that Indiana's overall seatbelt usage rates have exceeded national rates since 2006.

Vehicle occupants injured in Indiana collisions are counted as having been restrained when the investigating officer selects any one of the following passenger vehicle safety equipment categories on the Indiana Crash Report: (1) lap belt only; (2) harness; (3) airbag deployed and harness; (4) child restraint; or (5) lap and harness. By this standard, 87.7 percent of passenger vehicle occupants injured in 2013 Indiana traffic collisions were wearing safety restraints (Table 2).

HIGHLIGHTS

In 2013, 41,589 passenger vehicle occupants were injured or killed in Indiana traffic collisions; 88 percent were wearing safety restraints.

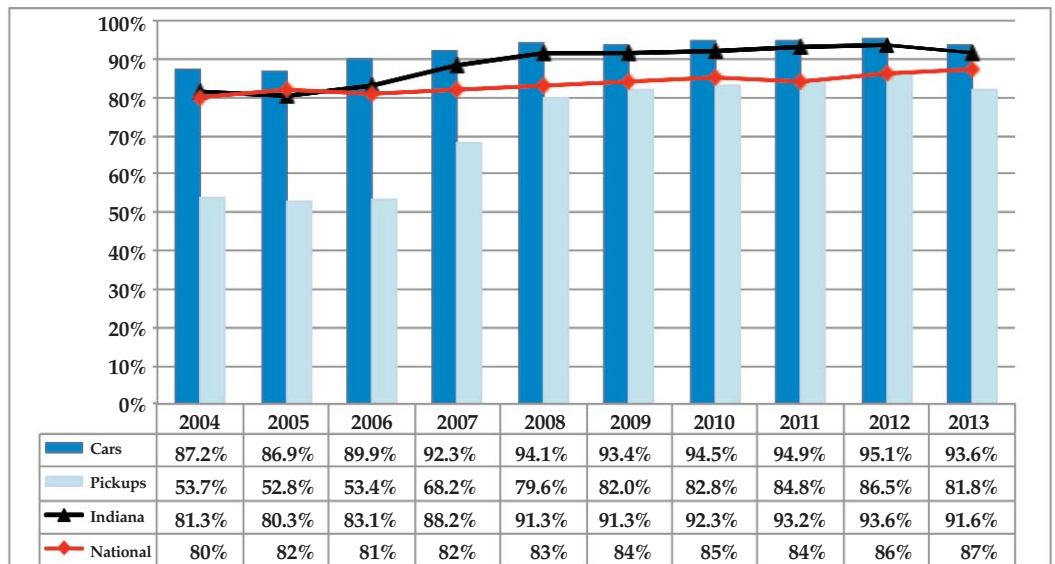
The overall Indiana observed seatbelt use rate in 2013 was 91.6 percent, up 10 percentage points since 2004.

Indiana observational studies of seatbelt usage conducted annually by the Indiana Criminal Justice Institute (ICJI) show that Indiana's overall seatbelt usage rates have exceeded national rates since 2006.

Among those killed in Indiana passenger vehicles (545), 49 percent were unrestrained.

In 2013, drivers of passenger vehicles involved in Indiana collisions were four times more likely to suffer a fatal or incapacitating injury when they were unrestrained than drivers who were restrained.

Figure 1. Indiana observed seatbelt use rates in passenger vehicles, 2004-2013



Sources: Indiana - Indiana Roadside Observational Survey of Safety Belt and Motorcycle Helmet Use, Center for Road Safety, Purdue University, 2013
National - DOT HS 811 875, January 2014

Notes:

- 1) Indiana data (2004-2010) represent the average annual rates of observed restraint use among all Indiana passenger vehicle occupants in a study previously conducted by ICJI twice per year. Beginning in 2011, this study was conducted only once each year; therefore, averages no longer apply from this point forward.
- 2) Car and pickup truck restraint usage rates are specific to Indiana only.





TRAFFIC SAFETY FACTS

The National Highway Traffic Safety Administration (NHTSA) reports that, nationally in 2013, the overall observed seatbelt use rate was 87 percent, up 1 percentage point from 2012 (DOT HS 811 875) (Figure 1). NHTSA identifies safety belt use as the most effective strategy a person can employ to prevent death and minimize injury resulting from traffic collisions (see text box for summary of Indiana Occupant Protection Laws). Research shows that primary enforcement laws increase rates of restraint use and decrease traffic fatality rates (DOT HS 811 458). *Primary enforcement* laws allow a law enforcement officer to stop a vehicle and

issue a citation when the officer observes an unrestrained driver or passenger. *Secondary enforcement* means that a citation for being unrestrained can only be written after the officer stops the vehicle or cites the offender for another infraction. As of July 2013, 33 states (including Indiana) and the District of Columbia have primary enforcement laws in effect (Table 1). With the exception of New Hampshire, the only state with no adult seat belt law, the remaining states have secondary enforcement laws in place.

Table 1. States with primary enforcement seatbelt laws

Alabama	Hawaii	Michigan	Rhode Island
Alaska	Illinois	Minnesota	South Carolina
Arkansas	Indiana	Mississippi	Tennessee
California	Iowa	New Jersey	Texas
Connecticut	Kansas	New Mexico	Washington
Delaware	Kentucky	New York	West Virginia
District of Columbia	Louisiana	North Carolina	Wisconsin
Florida	Maine	Oklahoma	
Georgia	Maryland	Oregon	

Source: *Seat Belt Use in 2013—Overall Results*, DOT HS 811 875, January 2014 (table extracted)

Note: This list is current as of July 2013.

 Indicates Great Lakes Region state

Indiana Occupant Protection Laws

Effective July 1, 2007, Indiana law requires all passenger vehicle occupants 16 and older to ride properly restrained in a vehicle. This law applies to all seating positions in all vehicles, including pick-up trucks and SUVs.¹ The current Indiana child passenger restraint law requires all child occupants (ages 15 and younger) to be properly restrained in a child restraint device or seat belt in all seating positions in all vehicles.² In addition to legislative efforts, child passenger safety experts have developed recommended safety standards and best practices that include the use of rear facing child safety seats as long as possible, or, at a minimum, until a child is two years old and weighs at least 20 pounds. These guidelines also include the use of booster safety seats for children who have outgrown child safety seats with harnesses. Children then may transition to the use of adult seat belts. It is recommended that all children under the age of 13 ride in the back seat of the vehicle.

¹Passenger Restraint Systems, IC 9-19-10-2; available at <http://www.ai.org/legislative/ic/code/title9/ar19/ch10.html>

²Passenger Restraint Systems, IC 9-19-10-2; available at <http://www.ai.org/legislative/ic/code/title9/ar19/ch10.html>

GENERAL TRENDS

Table 2 shows the overall rate of restraint usage among passenger vehicle occupants involved in Indiana crashes was 90.6 percent in 2013, a rate that has remained essentially unchanged since 2009. Rates of restraint usage among passenger vehicle occupants injured in Indiana traffic collisions decreased as the severity of injuries increased. In 2013, among the 545 passenger vehicle occupants killed, 51 percent were restrained. Approximately 74 percent of the 2,474 individuals suffering incapacitating

injuries were restrained, illustrating that individuals who obtain fatal and incapacitating injuries in collisions are far more likely to be unrestrained.

Rates of unrestrained fatal and incapacitating injuries in Indiana collisions were consistently higher between 2009 and 2013 in vehicles with a driver who was speeding and in vehicles with an alcohol-impaired driver (Figure 2). In 2013, the rate of fatal and incapacitating injuries per 1,000 individuals involved in crashes was 2.1, compared to 10.7 per 1,000 in vehicles with a driver who was speeding and 21.3 per 1,000 in vehicles where the driver was legally impaired.

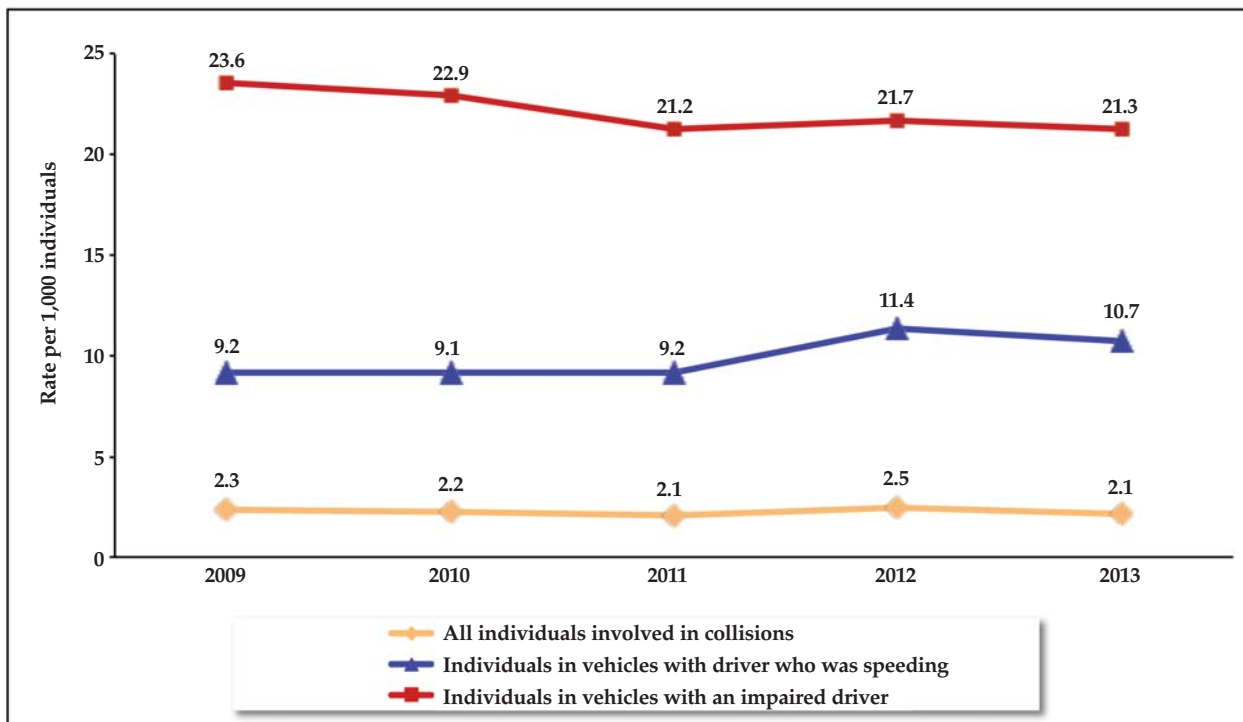
Table 2. Restraint use and injury status among individuals involved in Indiana passenger vehicles collisions, 2009-2013

Passenger vehicle occupant injuries	2009	2010	2011	2012	2013	% change ('12 - '13)	Annual rate of change ('09 - '13)
All occupants	283,544	288,843	280,469	283,010	287,477	1.6%	0.3%
Restrained	256,103	262,212	254,140	256,505	260,542	1.6%	0.4%
<i>Restraint use rate</i>	90.3%	90.8%	90.6%	90.6%	90.6%	0.0%	0.1%
Fatalities	497	548	514	516	545	5.6%	2.3%
Restrained	239	261	254	247	278	12.6%	3.9%
<i>Restraint use rate</i>	48.1%	47.6%	49.4%	47.9%	51.0%	6.6%	1.5%
Incapacitating injuries	2,358	2,505	2,426	2,759	2,474	-10.3%	1.2%
Restrained	1,713	1,863	1,799	2,008	1,825	-9.1%	1.6%
<i>Restraint use rate</i>	72.6%	74.4%	74.2%	72.8%	73.8%	1.4%	0.4%
Non-incapacitating injuries	38,437	38,903	36,575	37,590	36,571	-2.7%	-1.2%
Restrained	33,926	34,727	32,628	33,440	32,561	-2.6%	-1.0%
<i>Restraint use rate</i>	88.3%	89.3%	89.2%	89.0%	89.0%	0.1%	0.2%
Other injuries	3,875	2,272	1,708	1,733	1,999	15.3%	-15.3%
Restrained	3,630	2,018	1,508	1,547	1,795	16.0%	-16.1%
<i>Restraint use rate</i>	93.7%	88.8%	88.3%	89.3%	89.8%	0.6%	-1.1%
Not injured	238,377	244,615	239,246	240,412	245,888	2.3%	0.8%
Restrained	216,595	223,343	217,951	219,263	224,083	2.2%	0.9%
<i>Restraint use rate</i>	90.9%	91.3%	91.1%	91.2%	91.1%	-0.1%	0.1%

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Note: Totals include individuals with 'NULL' and unknown restraint use.

Figure 2. Unrestrained fatal and incapacitating injury rates per 1,000 individuals involved in Indiana collisions, by drivers speeding and driver impairment, 2009-2013



Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014



RESTRAINT USE AND VEHICLE TYPE

Table 3 shows the relative risk of fatal or incapacitating injury increases substantially when passenger vehicle occupants in crashes were unrestrained. In 2013, only one-tenth of a percent of restrained individuals in each of the four passenger vehicle types involved in collisions were killed. Among unrestrained individuals injured in passenger cars, 5.8 percent were killed, making an individual 52 times more likely to be killed in

2013 crashes in a passenger car when unrestrained compared to when they were restrained. Unrestrained occupants of pickup trucks were 37 times more likely to be killed and 20 times more likely to suffer incapacitating injuries in traffic collisions than occupants using safety restraints. Unrestrained occupants of SUVs had the highest relative risk (85.7) of being killed in collisions compared to restrained occupants in the same vehicle type. These relative risk ratios were all statistically significant ($p < 0.05$).

Table 3. Passenger vehicle occupants involved in Indiana collisions, by vehicle type, restraint use, and injury status, 2013

Restraint use and injury status	Passenger cars		Pickup trucks		SUVs		Vans	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total
Restrained (R)	173,648	100.0%	32,571	100.0%	38,459	100.0%	15,864	100.0%
Fatal	195	0.1%	36	0.1%	29	0.1%	18	0.1%
Incapacitating	1,277	0.7%	195	0.6%	242	0.6%	111	0.7%
Non-incapacitating	22,532	13.0%	2,950	9.1%	4,941	12.8%	2,138	13.5%
Other	1,077	0.6%	265	0.8%	317	0.8%	136	0.9%
No injury	148,567	85.6%	29,125	89.4%	32,930	85.6%	13,461	84.9%
Not restrained (NR)	2,216	100.0%	806	100.0%	495	100.0%	235	100.0%
Fatal	129	5.8%	33	4.1%	32	6.5%	9	3.8%
Incapacitating	233	10.5%	95	11.8%	56	11.3%	28	11.9%
Non-incapacitating	1,108	50.0%	383	47.5%	266	53.7%	140	59.6%
Other	20	0.9%	2	0.2%	1	0.2%	0	0.0%
No injury	726	32.8%	293	36.4%	140	28.3%	58	24.7%
Relative risk of injury (% NR / % R)								
Fatal		51.8		37.0		85.7		33.8
Incapacitating		14.3		19.7		18.0		17.0

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

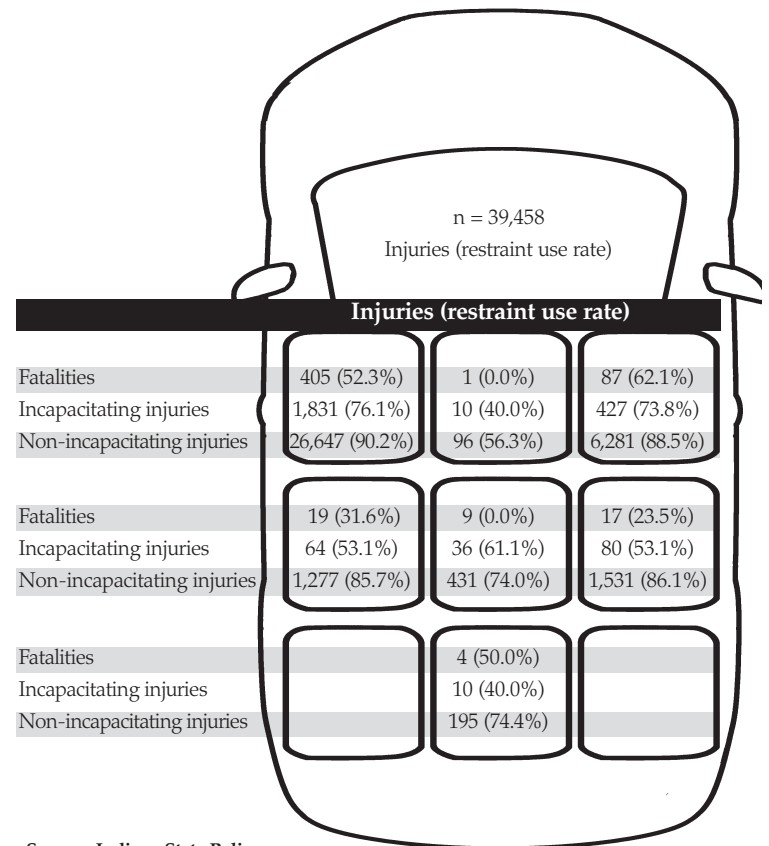
- 1) Excludes individuals involved in collisions where restraint use was unknown.
- 2) Percent totals may not add up to 100 due to rounding.
- 3) All relative risk ratios are significant ($p < 0.05$).

RESTRAINT USE AND SEATING POSITION

Figure 3 shows injury counts and restraint usage rates for 2013 by injury type and vehicle seating position. The greatest number of fatalities occurred in the driver seating position (405), among which 52 percent were restrained. About 62 percent of the 87 individuals killed in the front right passenger seat were restrained, and 22 percent of the 45 individuals killed in the rear seating positions were restrained (calculated from Figure 3). All of the 9 individuals killed in the rear center seating position were unrestrained.

In 2013, the risk of fatal and incapacitating injuries was greater for unrestrained occupants of passenger vehicles across all seating positions (Table 4). Occupants seated in the driver's position who were unrestrained were 4.4 times more likely to suffer fatal and incapacitating injuries than those who were restrained. Unrestrained passenger vehicle occupants seated in the *far back/sleeper* position (typically found in SUVs and vans) were 3.4 times more likely to suffer fatal and incapacitating injuries than occupants who were restrained. All relative risk ratios are significant ($p < 0.05$).

Figure 3. Individuals in Indiana passenger vehicle collisions by injury status, seating position, and restraint use, 2013



Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

- 1) Injuries include only individuals with fatal, incapacitating, and non-incapacitating (defined as non-incapacitating and possible) injuries where valid seating position was identified.
- 2) Percentages depicted are the percentage of individuals reported to be properly restrained by injury type in each seating position. Both not restrained and unknown restraint use codes are included in the totals for restraint use rate calculations.

Table 4. Risk of fatal or incapacitating injury to passenger vehicle occupants involved in Indiana collisions, by restraint use and seating position, 2013

Seating position	Restrained?	Fatal/incap injuries	Non-serious injuries	Total	% Fatal/incap injury	Relative risk	Lower limit	Upper limit
Front left (driver)	No	408	1,158	1,566	26.1%	4.4	4.0	4.9
	Yes	1,605	25,765	27,370	5.9%			
Front center	No	2	26	28	7.1%	1.0	0.2	5.3
	Yes	4	54	58	6.9%			
Front right	No	102	368	470	21.7%	3.5	2.9	4.3
	Yes	369	5,581	5,950	6.2%			
Rear left	No	37	106	143	25.9%	7.4	4.9	11.2
	Yes	40	1,109	1,149	3.5%			
Rear center	No	15	67	82	18.3%	2.9	1.6	5.3
	Yes	22	327	349	6.3%			
Rear right	No	34	113	147	23.1%	6.0	4.0	8.8
	Yes	54	1,338	1,392	3.9%			
Far back/sleeper	No	5	32	37	13.5%	3.4	1.1	10.6
	Yes	6	146	152	3.9%			
Total	No	603	1,870	2,473	24.4%	4.3	3.9	4.7
	Yes	1,731	28,739	30,470	5.7%			

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

- 1) Limited to individuals with valid seating position and restraint use identified. Individuals coded as unknown restraint use are excluded.
- 2) Non-serious injuries excludes NULL values in the injury status code field.
- 3) Relative risk of fatal or incapacitating injury = the percent of unrestrained fatal/incap injuries in a given seating position divided by the percent of restrained fatal/incap injuries in the same seating position.
- 4) With the exception of the front center seating position, all relative risk ratios are significant at $p < 0.05$.

RESTRAINT USE AND AGE

Rates of restraint use among passenger vehicle occupants involved in Indiana traffic collisions were lower for individuals suffering fatal and incapacitating injuries across all age groups than the overall passenger vehicle occupant restraint usage rate (Table 5). The lowest rate of restraint use among all passenger vehicle occupants in 2013 collisions occurred in the 8 to 14 age group (82.5 percent). When looking at restraint use by age

and gender between 2009 and 2013, males in collisions were consistently more likely to be unrestrained than their female counterparts in the same age groups (Table 6). In particular, males in the 8 to 14 age group represented the highest proportion of passenger vehicle occupants in collisions who were unrestrained for each year between 2009 and 2013. Among female occupants only, those between the ages of 8 and 14 years old also represented the highest proportion of unrestrained across all age groups.

Table 5. Individuals involved in Indiana passenger vehicle collisions by age group, injury status, and restraint use, 2013


Age group	All involved			Fatal injuries			Incapacitating injuries		
	Total	Restrained	Restraint use rate	Total	Restrained	Restraint use rate	Total	Restrained	Restraint use rate
< 1	125	117	93.6%	2	1	50.0%	2	2	100.0%
1 - 3	411	378	92.0%	4	3	75.0%	17	14	82.4%
4 - 7	745	661	88.7%	7	3	42.9%	20	14	70.0%
8 - 14	1,573	1,298	82.5%	11	6	54.5%	74	52	70.3%
15 - 20	41,483	37,552	90.5%	70	28	40.0%	346	229	66.2%
21 - 24	33,127	29,782	89.9%	67	22	32.8%	307	211	68.7%
25 - 34	57,053	51,440	90.2%	101	37	36.6%	427	300	70.3%
35 - 44	45,680	41,542	90.9%	66	34	51.5%	340	245	72.1%
45 - 54	43,053	39,323	91.3%	57	30	52.6%	392	307	78.3%
55 - 64	33,516	30,757	91.8%	64	40	62.5%	272	225	82.7%
65 - 74	18,633	17,070	91.6%	35	28	80.0%	161	133	82.6%
75+	11,474	10,462	91.2%	61	46	75.4%	114	91	79.8%
Unknown	604	160	26.5%	0	0	na	2	2	100.0%
<i>Total</i>	<i>287,477</i>	<i>260,542</i>	<i>90.6%</i>	<i>545</i>	<i>278</i>	<i>51.0%</i>	<i>2,474</i>	<i>1,825</i>	<i>73.8%</i>

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

- 1) Total columns include individuals reported with unknown and invalid safety equipment type.
- 2) The < 1 year old age group excludes data records coded as *drivers age 0 years*, due to unavailable or invalid age reported. *Unknown age or birthdate* often result in a default coded value of "zero years" in the ARIES database that is not an accurate value of driver age. These drivers are included in the unknown age category.

Table 6. Proportion of individuals in Indiana collisions who were unrestrained, by age group and gender, 2009-2013



Age group	2009		2010		2011		2012		2013	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	7.6%	7.8%	11.7%	9.3%	7.8%	7.6%	13.3%	5.8%	9.8%	8.5%
1-3	5.9%	7.3%	9.0%	8.6%	8.6%	6.9%	7.9%	6.5%	8.5%	4.9%
4-7	11.0%	9.2%	12.1%	9.7%	10.8%	8.4%	11.4%	10.1%	11.5%	9.4%
8-14	23.1%	13.4%	27.1%	15.2%	17.5%	12.5%	24.0%	15.3%	17.9%	13.1%
15-20	11.8%	8.3%	13.5%	9.6%	11.1%	8.7%	13.5%	10.3%	11.1%	9.0%
21-24	12.5%	8.4%	13.6%	8.5%	12.0%	8.2%	13.3%	9.2%	11.8%	8.5%
25-34	11.9%	8.5%	12.7%	8.7%	10.7%	8.1%	11.9%	8.8%	10.9%	8.4%
35-44	10.3%	7.8%	11.0%	8.2%	10.0%	7.8%	11.3%	8.8%	10.2%	7.9%
45-54	10.0%	7.7%	10.4%	7.9%	9.1%	7.2%	10.2%	7.8%	9.3%	7.5%
55-64	8.8%	7.2%	9.1%	7.4%	8.7%	7.1%	9.5%	7.5%	8.8%	7.7%
65-74	9.2%	7.2%	9.5%	7.2%	9.0%	6.8%	9.6%	7.2%	8.7%	7.6%
75 +	9.3%	7.7%	10.2%	7.9%	9.0%	6.7%	9.7%	7.3%	8.6%	7.5%
All ages	10.9%	8.0%	11.7%	8.4%	10.2%	7.8%	11.5%	8.6%	10.2%	8.1%

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

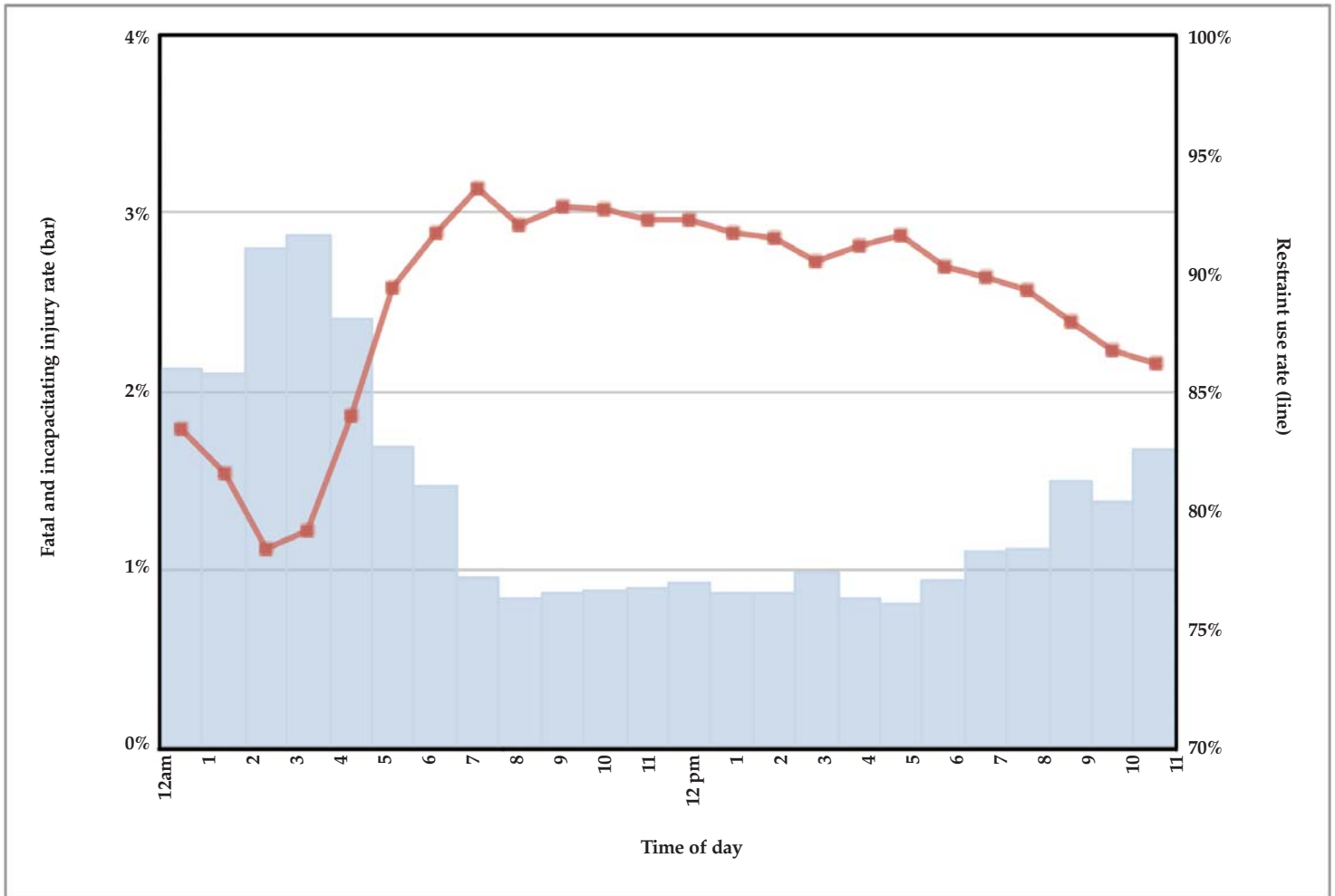
- 1) Data limited to individuals with valid gender and age reported.
- 2) Percent unrestrained includes individuals reported with "No restraint" and NULL values in the restraint use code field.
- 3) The < 1 year old age group excludes data records coded as *drivers age 0 years*, due to unavailable or invalid age reported. *Unknown age or birthdate* often result in a default coded value of "zero years" in the ARIES database that is not an accurate value of driver age. These drivers are included in the *unknown* age category.

TIME OF DAY AND RESTRAINT USE

In 2013, the highest percentage of hourly fatal and incapacitating injuries occurred during late overnight hours (between 12am and 4am) (Figure 4). Crash data also show that the lowest hourly rates of restraint usage

occurred this same time period. For example, the highest percentage of hourly fatal and incapacitating injuries in 2013 occurred between the hours of 2am (2.8 percent) and 3am (2.9 percent), while the lowest hourly rate of restraint use occurred during these same hours, 78 percent and 79 percent, respectively.

Figure 4. Indiana fatal and incapacitating injuries and restraint use in passenger vehicles, by time of day, 2013



Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

- 1) *Fatal and incapacitating injury rate* represents *fatal or incapacitating* injuries as a proportion of all individuals involved in collisions.
- 2) *Restraint use rate* includes individuals reported with unknown and invalid safety equipment type.



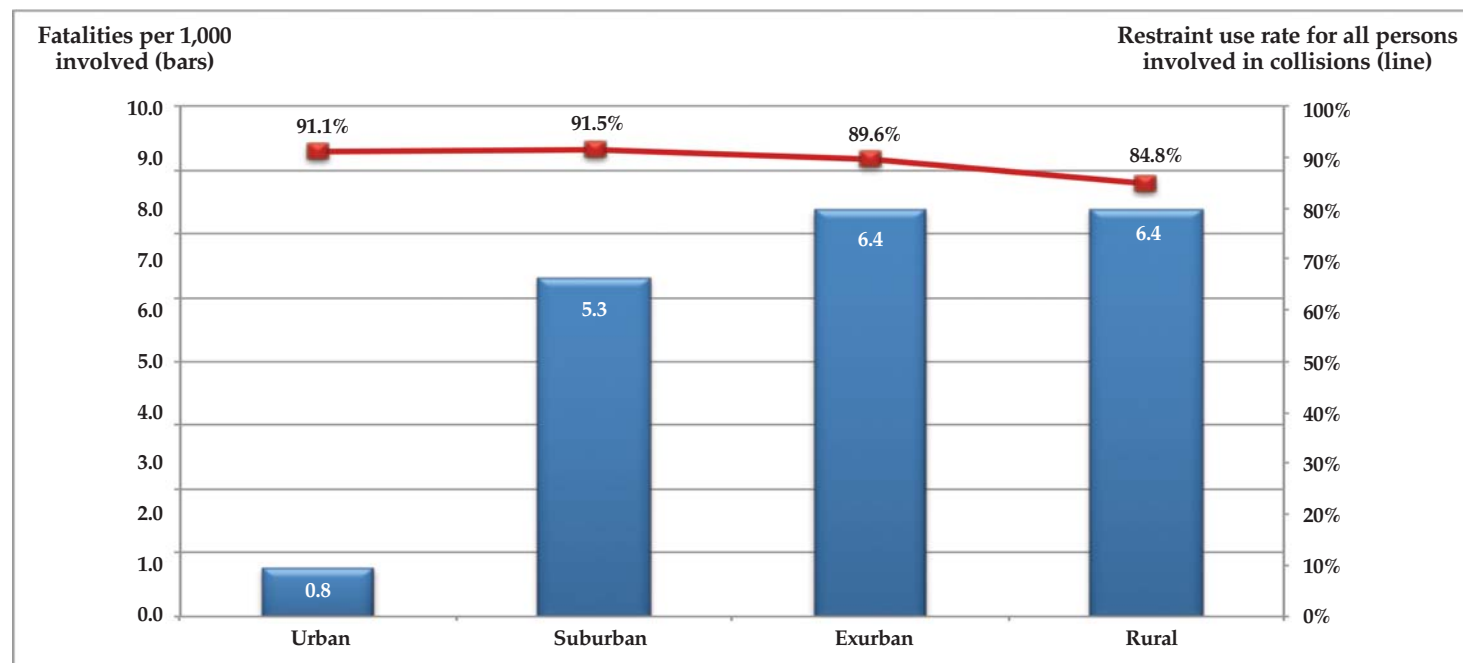
GEOGRAPHY OF INDIANA RESTRAINT USE

The 2013 fatality rate per 1,000 individuals involved in collisions was lower in Indiana *urban* (0.8 per 1,000) and *suburban* (5.3) locales than in surrounding *exurban* (6.4) and *rural* (6.4) areas (Figure 5). Conversely, rates of restraint use were slightly higher in *urban* (91.1 percent) and *suburban* (91.5 percent) locales than in areas designated as *exurban* (89.6 percent) and *rural* (84.8 percent). In 2013, this risk of fatal and incapacitating injury was greater for unrestrained occupants of passenger vehicles across all locales (Table 7). Occupants of vehicles involved in collisions in urban areas who were unrestrained were 4.4 times more likely to suffer fatal and incapacitating injuries than those that were wearing safety restraints. Unrestrained passenger vehicle occupants in suburban areas were 3.6 times more likely to suffer fatal and incapacitating injuries than occupants who were restrained. All relative risk ratios are significant ($p < 0.05$).

Maps 1 and 2 illustrate 2013 Indiana county restraint use (percent of

unrestrained passenger vehicle occupants in crashes) and fatal/incapacitating crash injury rates (per 10,000 population). Although there were some exceptions, the maps illustrate a general pattern of higher fatal and incapacitating injury rates, combined with higher rates of unrestrained individuals in crashes, found in clusters of counties in the southern half the state. A number of primarily urban counties located in the central and northern portions of the state (e.g., Allen, Lake, Hamilton, Marion, and Tippecanoe) show relatively low rates of unrestrained occupants (below the median) as well as low rates of fatal and incapacitating injuries. The median county rate of unrestrained occupants in Indiana passenger vehicle collisions was 12.9 percent, while the mean rate was 14.6 percent. The median county fatal and incapacitating injury rate was 5.3 per 10,000 of the population, and the mean fatal and incapacitating injury rate was 5.8 per 10,000.

Figure 5. Indiana traffic fatalities, by restraint use and locale, 2013



Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Note: Limited to individuals with valid locale identified.

Table 7. Risk of fatal and incapacitating injury to passenger vehicle occupants involved in Indiana collisions, by restraint use and locale, 2013

Locale	Restrained?	Fatal/incap injuries	Non-serious injuries	Total	% Fatal/incap injury	Relative risk	Lower limit	Upper limit
Urban	No	229	1,023	1,252	18.3%	4.4	3.9	5.0
	Yes	1,027	23,712	24,739	4.2%			
Suburban	No	146	340	486	30.0%	3.6	3.0	4.2
	Yes	491	5,354	5,845	8.4%			
Exurban	No	95	221	316	30.1%	3.0	2.5	3.7
	Yes	267	2,403	2,670	10.0%			
Rural	No	124	283	407	30.5%	3.0	2.5	3.6
	Yes	274	2,395	2,669	10.3%			
Total	No	594	1,867	2,461	24.1%	4.2	3.9	4.6
	Yes	2,059	33,864	35,923	5.7%			

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014

Notes:

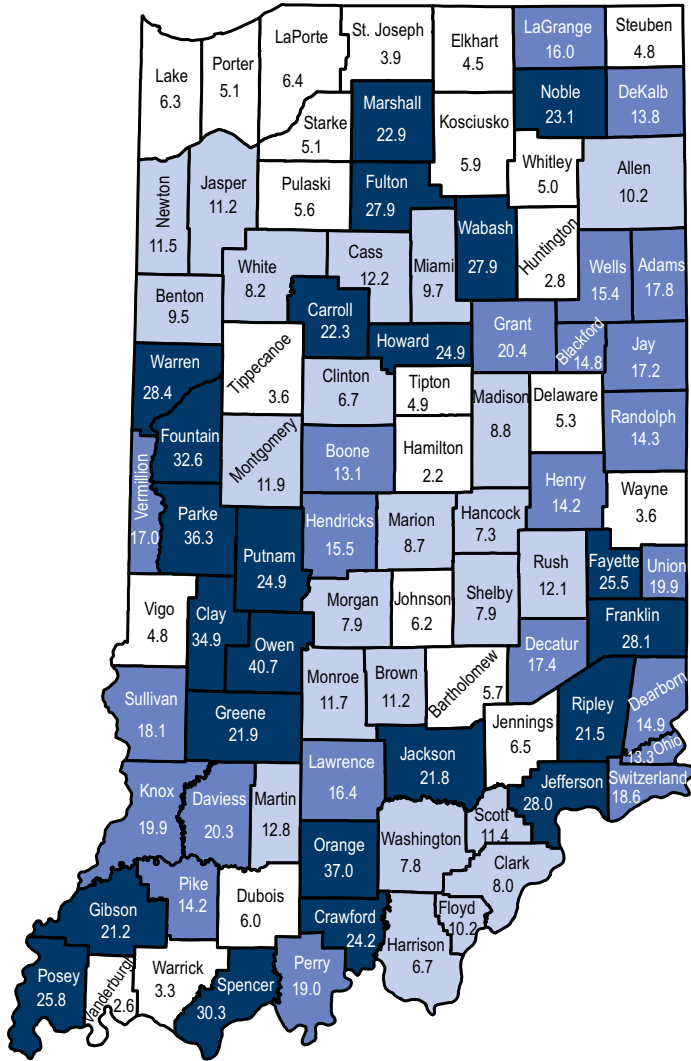
- 1) Limited to individuals with valid locale and restraint use identified. Individuals coded as *unknown* restraint use are excluded.
- 2) Non-serious injuries excludes NULL values in the injury status code field.
- 3) Relative risk of fatal and incapacitating injury = the percent of *unrestrained* fatal/incap injuries in a given locale divided by the percent of *restrained* fatal/incap injuries in the same locale.
- 4) All relative risk ratios are significant at $p < 0.05$.

Map 1. Percent of unrestrained passenger vehicle occupants in collisions by county, 2013

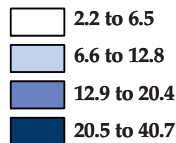
Median county percent unrestrained = 12.9

Mean county percent unrestrained = 14.6

n = 287,477 individuals injured or involved in collisions



Percent unrestrained passenger vehicle occupants

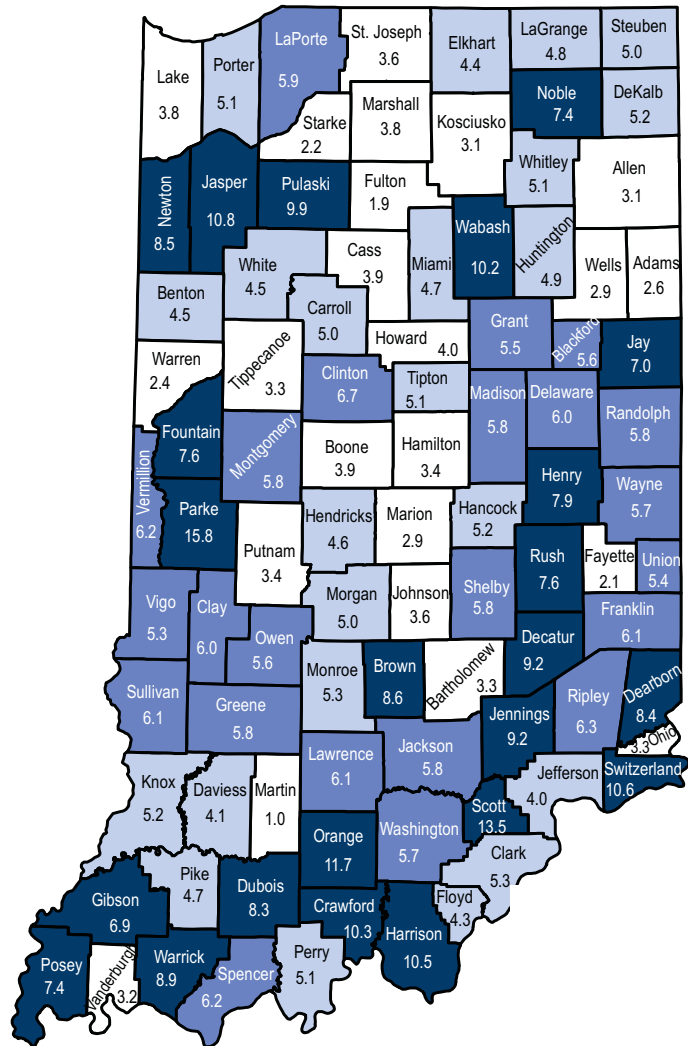


Map 2. Passenger vehicle fatal and incapacitating injury rates by county, 2013

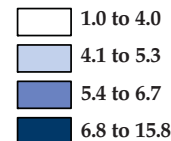
Median county fatal/incap injury rate = 5.3

Mean county fatal/incap injury rate = 5.8

n = 3,019 fatal and incapacitating injuries in collisions



Fatal and incapacitating injuries per 10k population



Sources:
 Injuries — Indiana State Police Automated Reporting Information Exchange System, as of March 21, 2014
 Population — U.S. Census Bureau



DEFINITIONS

- **Annual Rate of Change (ARC)** is the rate that a beginning value must increase/decrease each period (e.g. month, quarter, year) in a time series to arrive at the ending value in the time series. ARC is a "smoothed" rate of change because it measures change in a variable as if the change occurred at a steady rate each period with compounding. For example, to measure change in a variable from 2008 to 2012, it is calculated as $(\text{Value in 2013} / \text{Value in 2009})^{1/4} - 1$.
- **Census locale:** *Urban* is defined as Census 2000 Urban Areas (2007-2009) or Census 2010 Urban Areas (2010-2011), *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).
- **Not injured** status includes individuals involved in collisions reported as null values in the injury status code field.
- **Non-incapacitating** injuries include those injuries reported as *non-incapacitating* or *possible*.
- **Other** injury status includes *not reported*, *unknown*, and *refused* (treatment) status codes.
- **Passenger vehicles** are defined as *passenger cars*, *pickup trucks*, *sport utility vehicles*, and *vans*.
- **Restraint use** - Vehicle occupants injured in Indiana collisions are counted as having been restrained when the investigating officer selects any one of the following passenger vehicle safety equipment categories on the Indiana Crash Report: (1) *lap belt only*; (2) *harness*; (3) *airbag deployed and harness*; (4) *child restraint*; or (5) *lap and harness*.

REFERENCES

- National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Seat Belt Use in 2013—Overall Results*, DOT HS 811 875, January 2014.
- National Center for Statistics and Analysis. *Summary of Vehicle Occupant Protection Laws*, DOT HS 811 458, Washington, DC: National Highway Traffic Safety Administration, April 2011.

DATA SOURCES

- Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 21, 2014.
- *Indiana Roadside Observational Survey of Safety Belt and Motorcycle Helmet Use*, Center for Road Safety, Purdue University, June 2013.
- National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Seat Belt Use in 2013—Overall Results*, DOT HS 811 875, January 2014.
- U.S. Census Bureau, State Single Year of Age and Sex Population Estimates: April 1, 2010 to July 1, 2012, <http://www.census.gov/popest/data/state/asrh/2012/index.html>



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

An electronic copy of this document can be accessed via the PPI website (www.policyinstitute.iu.edu), the ICJI website (www.in.gov/cji/), or you may contact the PPI at 317-261-3000.

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 Public Policy Institute is collaborating with the Indiana Criminal Justice Institute to analyze 2013 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the eighth year of this partnership. Research findings are summarized in a series of fact sheets on various aspects of traffic collisions, including alcohol-related crashes, trucks, dangerous driving, children, motorcycles, occupant protection, and drivers. An additional publication provides information on county and municipality data, and the final publication produced is 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, 2013, approximately 99 percent of all collisions are entered electronically through ARIES. Trends in collisions incidence as reported in these publications 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 Public Policy Institute (PPI) is a collaborative, multidisciplinary research institute within the Indiana University School of Public and Environmental Affairs (SPEA), Indianapolis. PPI 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. PPI also supports the Indiana Advisory Commission on Intergovernmental Relations (IACIR).

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.



INDIANA UNIVERSITY PUBLIC POLICY INSTITUTE



SCHOOL OF PUBLIC AND ENVIRONMENTAL AFFAIRS

INDIANA UNIVERSITY
IUPUI

Author: Dona Sapp, Senior Policy Analyst