

Reducing fatalities and serious bodily injuries

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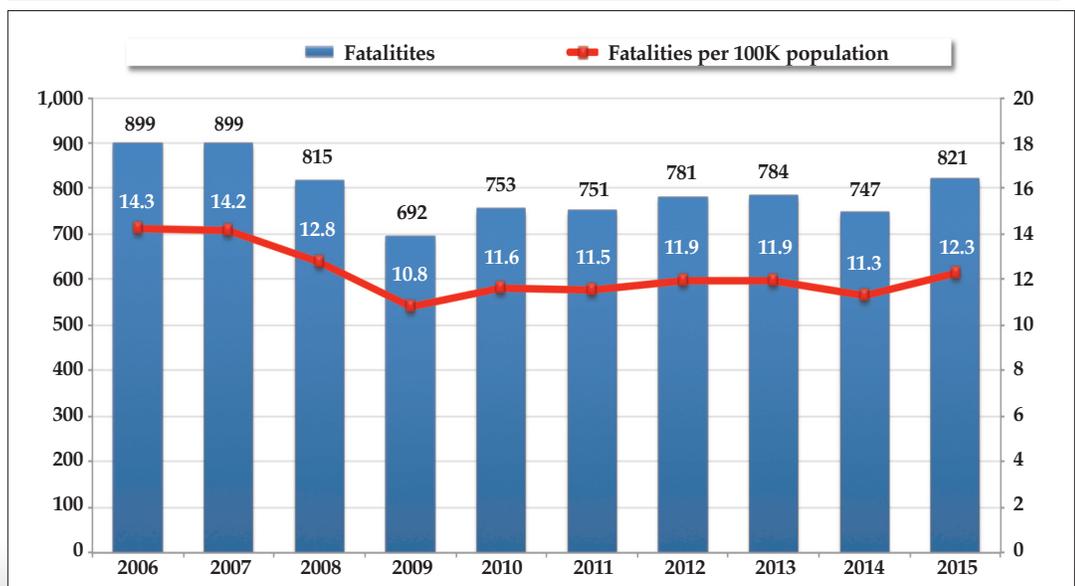
IN 2015:

- In 2015, 821 people were killed in Indiana collisions, a **10 percent increase** from 2014.
- The number of young drivers killed in collisions **increased from 34 in 2014 to 50 in 2015.**
- Indiana motorcyclist fatalities **dropped 14 percent** from 124 in 2014 to 107 in 2015.
- Traffic fatalities that involved an alcohol-impaired driver **dropped 15 percent** from 108 in 2014 to 92 in 2015.

The Traffic Safety Division of the Indiana Criminal Justice Institute (ICJI), in conjunction with the Indiana Governor’s Council on Impaired and Dangerous Driving, annually develops a set of goals and benchmarks as part of the Indiana Highway Safety Plan (HSP) to assess the state of traffic safety in Indiana. These benchmarks correspond to priority program areas established by the National Highway Traffic Safety Administration (NHTSA), targeting the occurrence of fatal and injury collisions as they relate to impaired driving, safety equipment usage, young drivers, motorcycle safety, dangerous driving, children, and non-motorist involvement in collisions.

To assist with this effort, the Indiana University Public Policy Institute (PPI) prepares a set of baseline measures utilizing the most recent Indiana crash data, as well as historical data, maintained by the Indiana State Police. This fact sheet summarizes Indiana traffic safety goals and problem areas identified by ICJI in their annual HSP and includes a general discussion of Indiana crash data trends related to these problem areas. Collision data come from the Indiana State Police Automated Reporting Information Exchange System (ARIES), current as of March 17, 2016. For more details on specific goals identified by ICJI, please refer to the *Indiana Highway Safety Plan*. In 2015, 821 people were killed in Indiana crashes, a 10 percent increase from 2014.

Figure 1. Individuals killed in Indiana collisions, 2006-2015



Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016; U.S. Census Bureau, extracted from STATS Indiana, Indiana Business Research Center

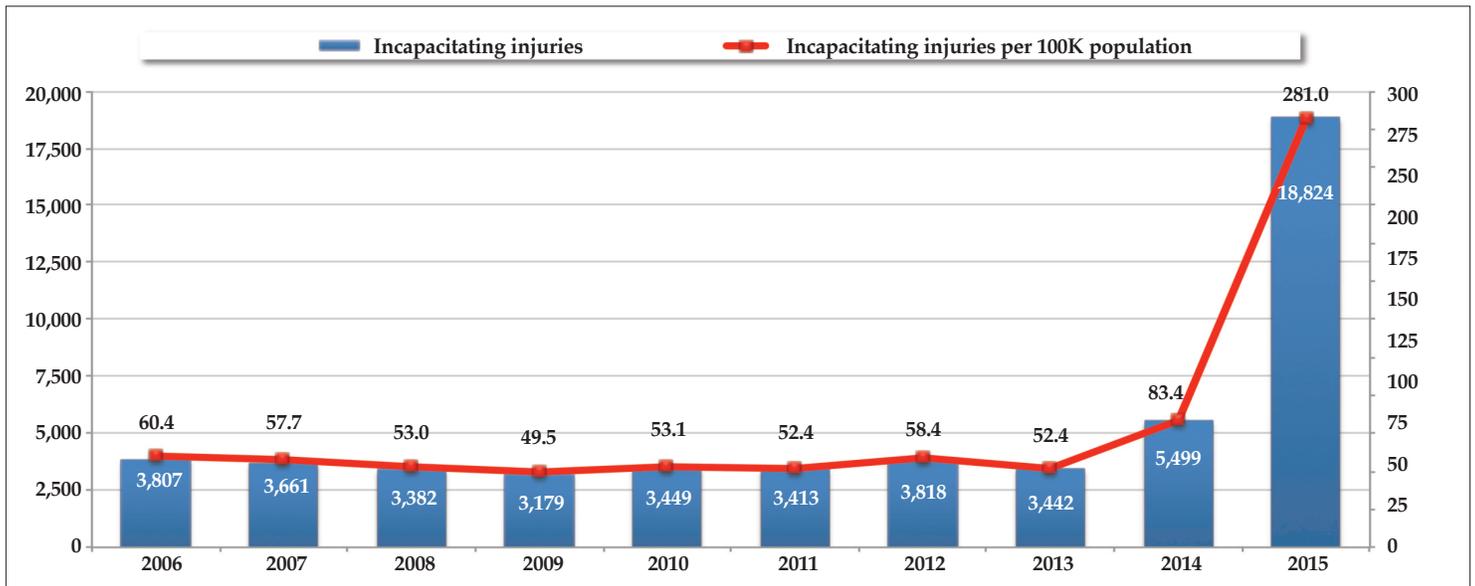


GOAL: Reducing fatalities and serious bodily injuries

The severity of a traffic collision is influenced by many factors, such as seatbelt usage, the speed at which vehicles are traveling, objects collided with, alcohol involvement, or emergency response times. In Indiana, traffic fatality rates had remained generally steady during the previous 5 years prior to the substantial increase reported in 2015. Indiana’s rate of fatalities per 100,000 population reached its highest level since 2008 in 2015 (12.3) (Figure 1). The number of traffic fatalities increased from 747 in 2014 to 821 in 2015, a 10 percent increase.

The most recent ARIES upgrade added a clarification to reporting officers on the definition of incapacitating injuries criteria to include “transported from scene for treatment”; therefore, 2014 and 2015 increases in incapacitating injuries reflect a definitional change and should be interpreted with caution. The result of this change can be seen in Figure 2. The number of incapacitating injuries occurring in Indiana traffic collisions remained fairly steady between 2006 and 2013 with the lowest rate of incapacitating injuries per 100,000 population (49.5) occurring in 2009.

Figure 2. Individuals suffering incapacitating injuries in Indiana collisions, 2006-2015



Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016; U.S. Census Bureau, extracted from STATS Indiana, Indiana Business Research Center

Note: The most recent ARIES upgrade added a clarification to reporting officers on the definition of *incapacitating* injuries criteria to include “transported from scene for treatment”; therefore, 2014 and 2015 increases in incapacitating injuries reflect a definitional change and should be interpreted with caution.

INDIANA TRAFFIC SAFETY QUICK FACTS – 2015

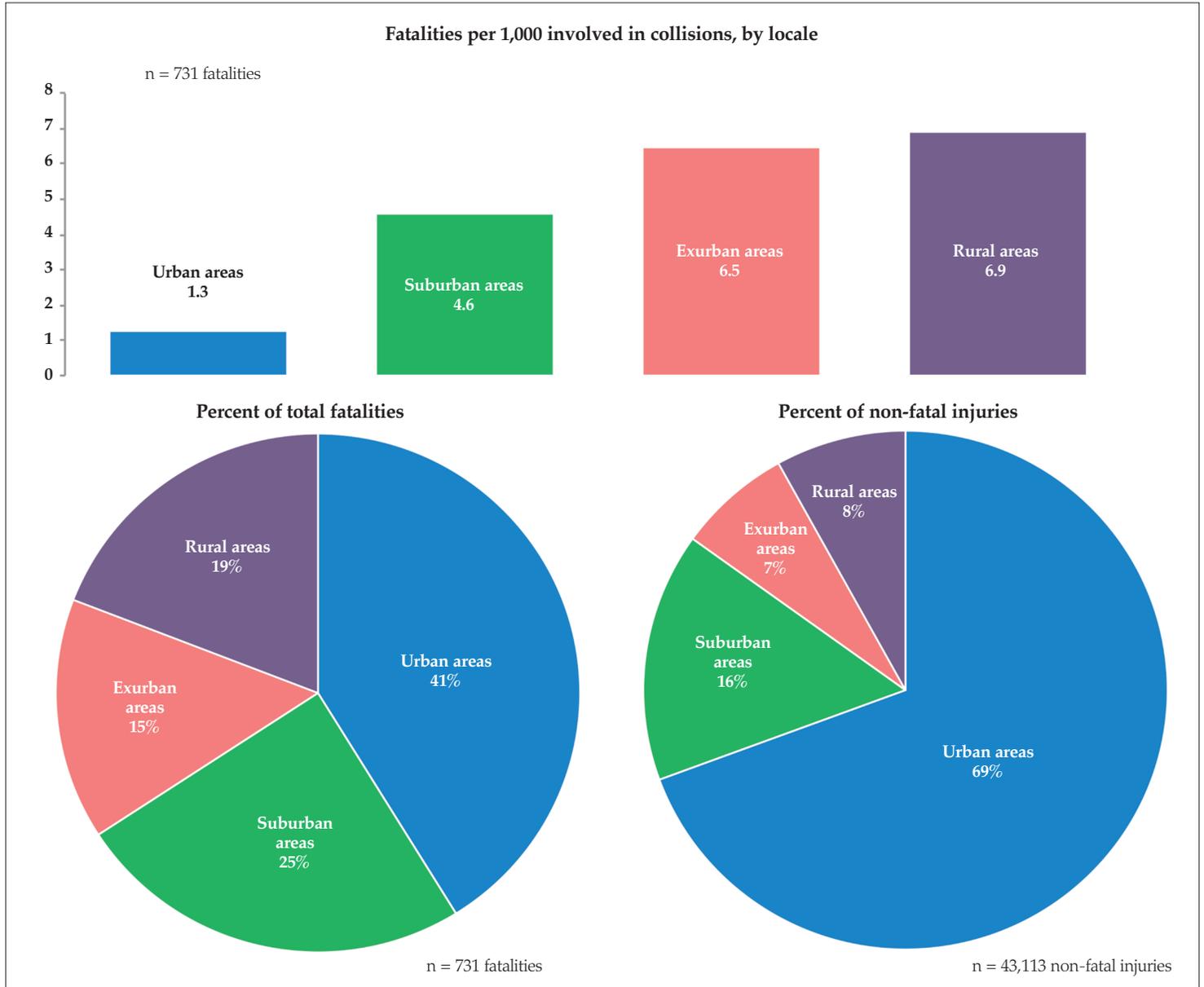
- 216,312 traffic collisions resulting in injury or property damage occurred, a 5 percent increase from 2014.
- There were 756 fatal collisions in 2015 (resulting in 821 fatalities), a 7 percent increase from 2014.
- 28 percent (226 of 821) of Indiana traffic fatalities were speed-related.
- 11 percent (92 of 821) of fatal collisions involved a driver that was legally alcohol-impaired.
- The 15 to 20 year old age group had the highest rate of drivers involved in all collisions in 2015 (1,274 per 10,000 licensed drivers).
- 36 children (ages 14 and under) were killed in 2015 collisions, compared to 21 child traffic fatalities in 2014.
- 102 non-motorists were killed in collisions in 2015 (92 pedestrians, 9 pedalcyclists, and 1 animal-drawn vehicle operator).
- Only 48 percent of the 574 passenger vehicle occupants killed in 2015 collisions were wearing seatbelts.

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Fatalities are more likely to occur in non-urban areas. In 2015, about 19 percent of all traffic fatalities occurred in rural areas, compared to 8 percent of non-fatal injuries (Figure 3). The *rural* rate of fatalities per 1,000

involved in collisions was 6.9 in 2015, compared to 1.3 per 1,000 in *urban* areas.

Figure 3. Fatality rates and geographic distribution of fatalities and non-fatal injuries in Indiana collisions, by Census locale, 2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

- Notes:
- 1) *Non-fatal injuries* include *incapacitating, non-incapacitating, and possible injuries*.
 - 2) Excludes 90 fatalities where locale could not be determined.



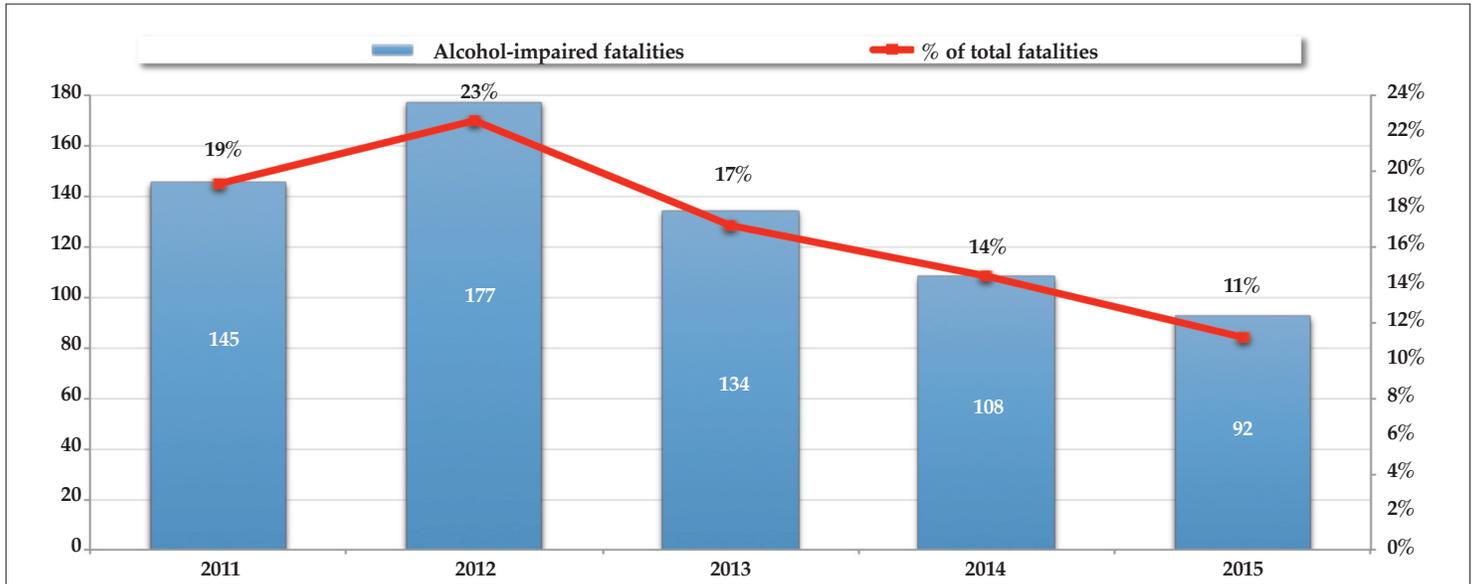
GOAL: Reducing impaired driving

Since 2012, Indiana traffic fatalities that involved an impaired driver have declined. As of March 17, 2016, both the number (92) and percent (11 percent) of 2015 Indiana traffic fatalities that involved an impaired driver (blood alcohol content [BAC] = 0.08 grams per deciliter or higher) were at a five-year low (Figure 4). These 2015 numbers are likely to increase, however, once BAC results reported after the March 17, 2016, extract are analyzed. It is also important to note that it is possible that a portion of impaired driving in Indiana crashes goes unreported; for example, among

all drivers involved in fatal collisions in 2015 (n=1,151) as reported by ARIES, only 62 percent were tested for drugs and/or alcohol, 38 percent had reported drug test results, and 36 percent had reported BACs.

Rates of driver alcohol impairment vary by vehicle type. Figure 5 shows that, in 2015, moped operators had the highest rate of impaired driving (38 percent) in fatal crashes across all vehicle types. Fourteen percent of pickup truck drivers and 9 percent of passenger car drivers in fatal collisions were driving impaired.

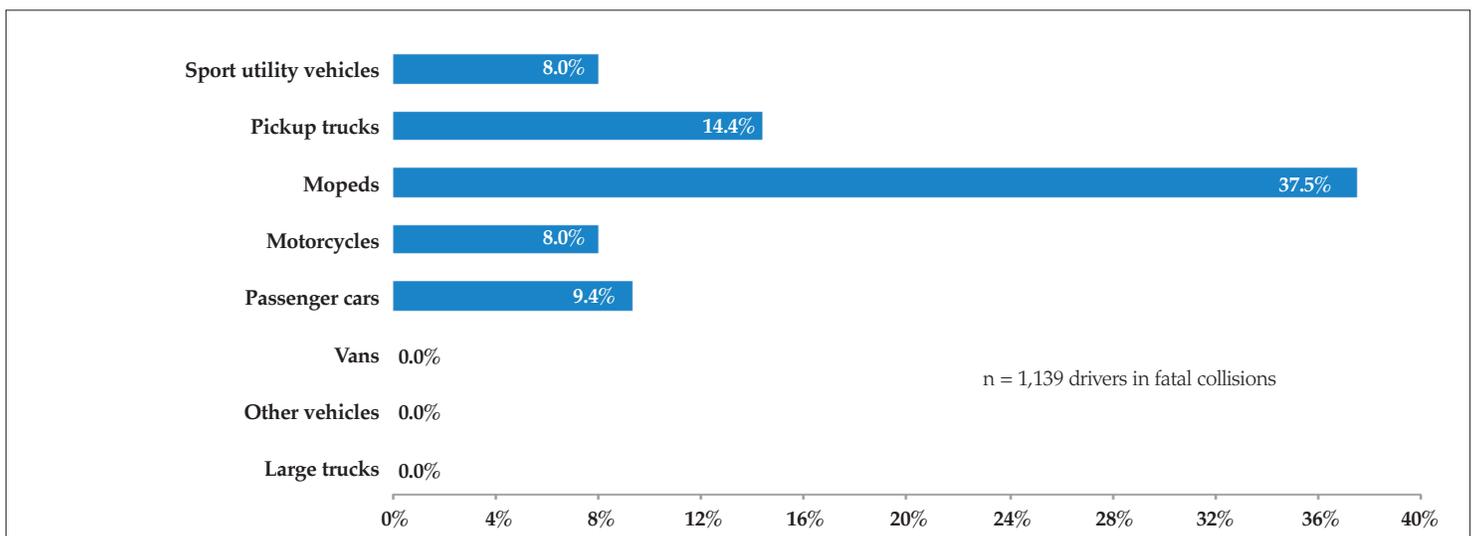
Figure 4. Indiana alcohol-impaired traffic fatalities as a percent of total traffic fatalities, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Note: When considering the reported decreases in 2015 alcohol-impaired crashes and fatalities, it is important to note that these numbers are likely to increase somewhat once BAC results reported after the March 17, 2016, extract are analyzed.

Figure 5. Percent of drivers involved in fatal collisions that were legally impaired, by vehicle type, 2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Notes:

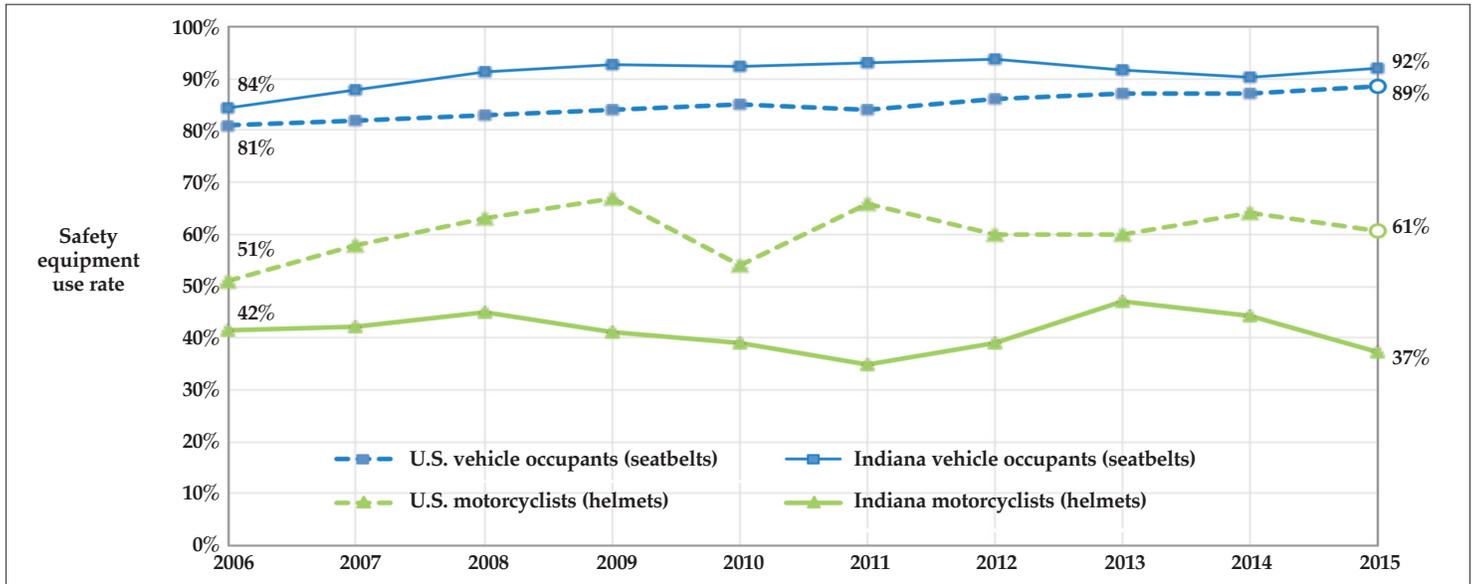
- 1) Other vehicles includes commercial buses, school buses, farm vehicles, and recreational vehicles.
- 2) Non-motorists and unknown vehicle types are excluded.
- 3) Motorcycles include motorcycles and motor driven cycles Class A. Mopeds include mopeds, motorized bicycles, and motor driven cycles Class B.

GOAL: Increasing safety equipment usage

Indiana’s observational rate of restraint use among passenger vehicle occupants has increased from 84 percent in 2006 to 92 percent in 2015, 3 percentage points higher than the reported 2015 national rate. Observed helmet use among motorcyclists in Indiana, which is not legally mandated by the state, consistently lagged far behind the national rate between

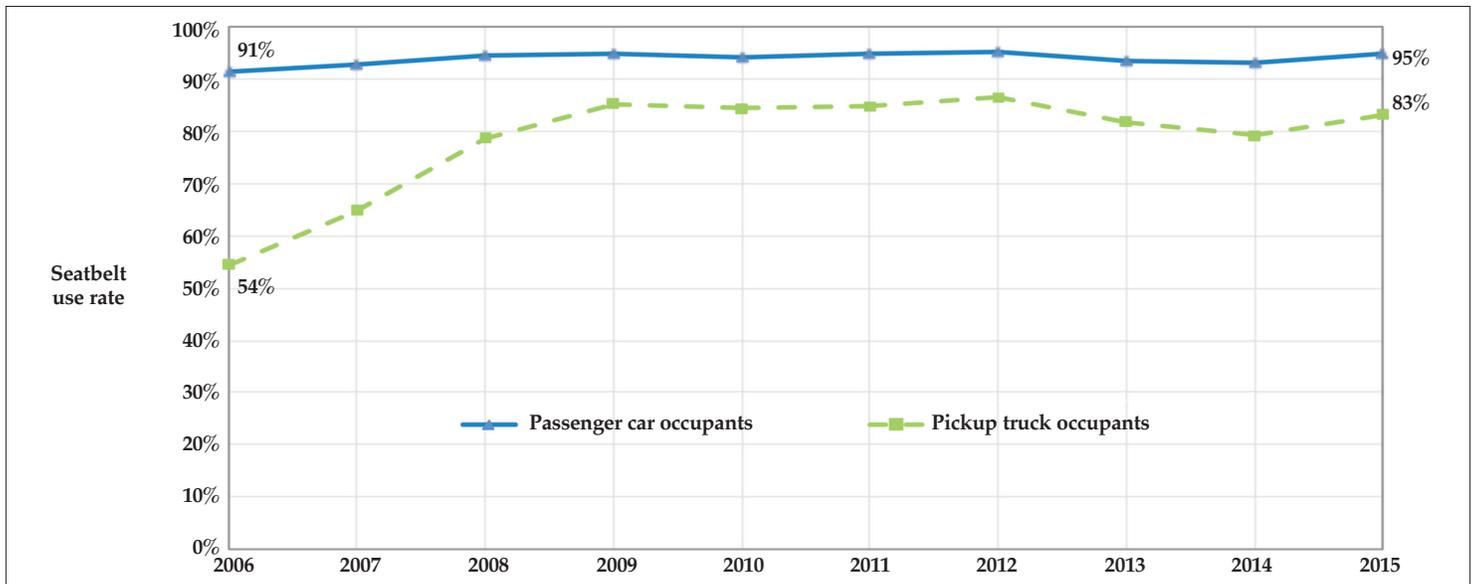
2006 and 2015. In 2015, 37 percent of motorcyclists in Indiana were wearing helmets, compared to 61 percent nationally in 2015 (Figure 6). According to observational surveys conducted in Indiana, pickup truck restraint use rates, while continually lagging behind rates for passenger cars, have increased considerably over the past decade, from a rate of 54 percent in 2006 to 83 percent in 2015 (Figure 7).

Figure 6. Comparison of observed safety equipment usage rates by vehicle type, 2006-2015



Sources:
Seat Belt Use in 2015 - Use Rates in the States and Territories. National Highway Traffic Safety Administration: DOT HS 812 243
Motorcycle Helmet Use in 2015—Overall Results. National Highway Traffic Safety Administration: DOT HS 812 275
Indiana Safety Belt Observational Survey, June 2015, Survey Results. Center for Road Safety, Purdue University

Figure 7. Observed seatbelt usage rates on Indiana roads by vehicle type, 2006-2015



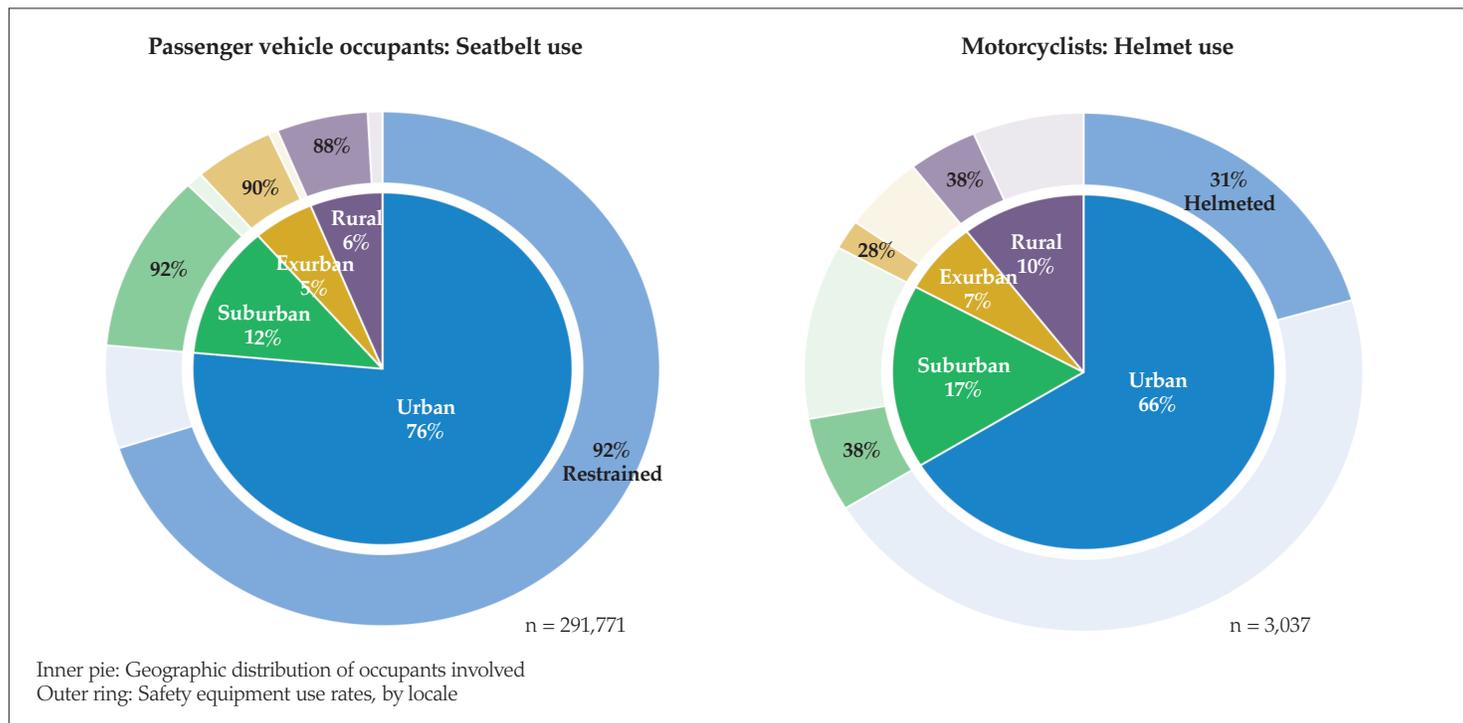
Source: Indiana Safety Belt Observational Survey, June, 2015, Survey Results. Center for Road Safety, Purdue University



Restraint use and helmet use among people involved in collisions varies by Census locale. Restraint use among passenger vehicle occupants in 2015 collisions was higher in more densely populated *urban* areas (92 percent) and *suburban* areas (92 percent), compared to 90 percent in exurban areas and 86 percent in *rural* areas (Figure 8). Helmet usage is

far lower than seatbelt usage across all locales, but helmet usage among motorcyclists involved in collisions is highest in *rural* areas in Indiana. Among motorcyclists in collisions, 31 percent of motorcyclists in *urban* areas were helmeted, compared to 38 percent in *rural* areas.

Figure 8. Safety equipment usage among vehicle occupants and motorcyclists in collisions, by Census locale, 2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Notes:

- 1) Passenger vehicles include vehicles reported as a *passenger car, pickup truck, van, or sport utility vehicle.*
- 2) *Motorcycles include motorcycles, motor driven cycles Class A, mopeds, motorized bicycles, and motor driven cycles Class B.*
- 3) Excludes cases where locale could not be determined.

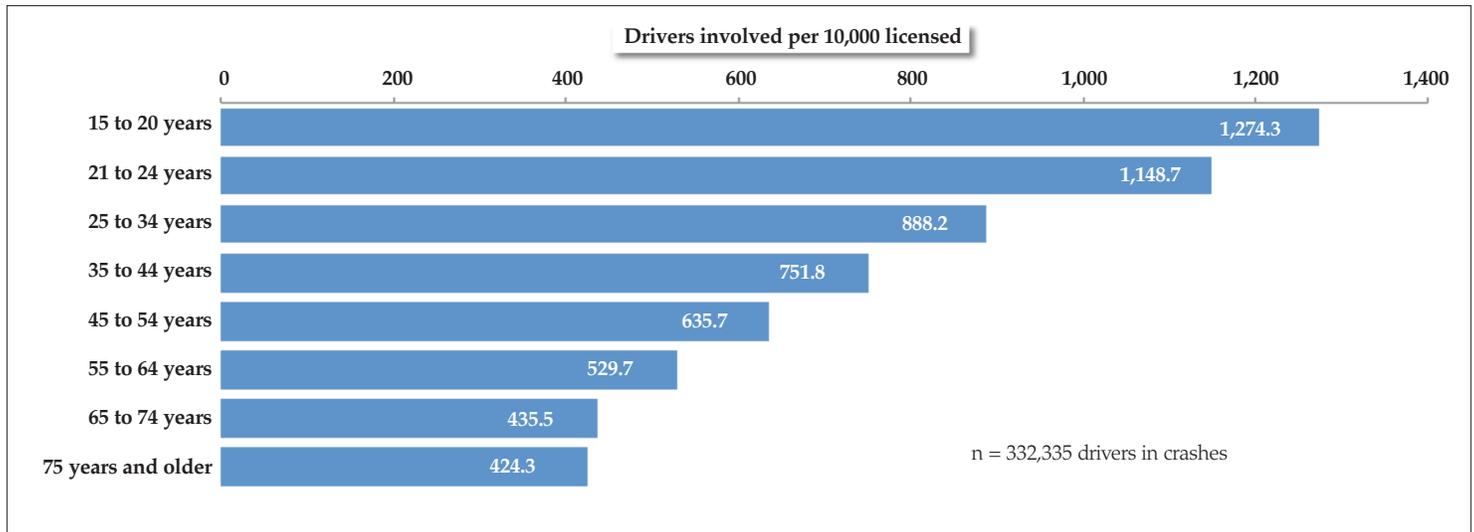
GOAL: Reducing young driver involvement in fatal crashes

In 2015, collision involvement rates were higher among young drivers than any other age group (Figure 9). Crash rates are lowest among drivers 75 years and older (424 per 10,000 licensed). Drivers, ages 15 to 20 years old, had the highest rate of crash involvement (1,274 per 10,000 licensed). Young drivers, generally, are more likely than older drivers to

be involved in collisions due to aggressive driving behavior and a lack of experience.

The overall number of young drivers involved in collisions has increased from 40,504 in 2014 to 44,095 in 2015 (not shown). The number of young drivers killed in collisions also increased from 34 in 2014 to 52 in 2015 (Figure 10).

Figure 9. Drivers in Indiana crashes per 10,000 licensed, by age group, 2015

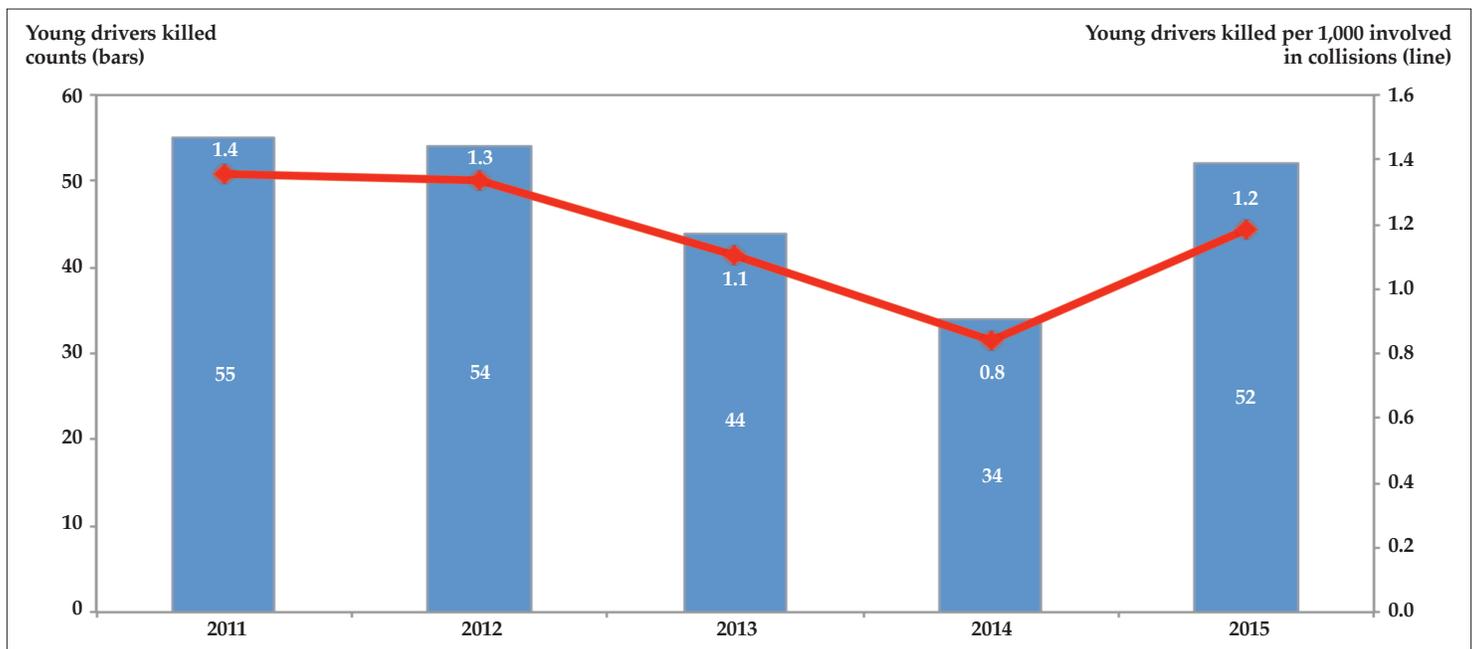


Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016; Indiana Bureau of Motor Vehicles, April 20, 2016

Notes:

- 1) Vehicle types reported as *animal-drawn vehicle*, *pedestrian*, and *bicycle* are excluded. *Unknown* vehicle types are also excluded.
- 2) Drivers with unknown or invalid age are excluded.

Figure 10. Young drivers killed in Indiana collisions, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Notes:

- 1) *Young drivers* include drivers ages 15 to 20 years old.
- 2) *Non-motorists* and *unknown* vehicle types are excluded.

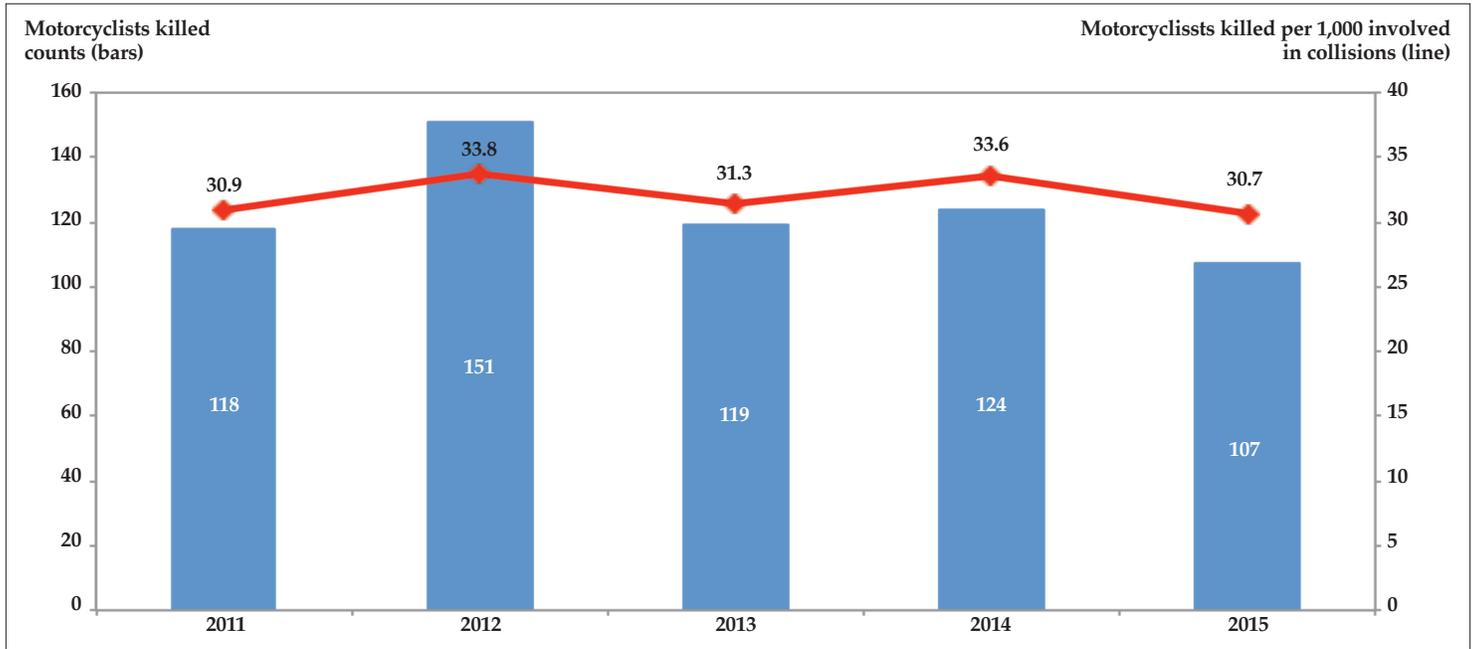


GOAL: Reducing motorcyclist fatalities

2015 marked a five-year low (107) in the number of Indiana motorcyclists killed in collisions (Figure 11). The rate per 1,000 motorcyclists involved in crashes decreased from 34 per 1,000 in 2014 to 31 per 1,000 in 2015.

Even with this improvement, earlier exhibits demonstrate two major contributing factors to Indiana's motorcycle and moped fatality rate: the high rate of impaired motorcycle and moped operators illustrated in Figure 5, and the low rate of helmet usage illustrated in Figure 6.

Figure 11. Motorcyclists killed in Indiana collisions, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Note: Motorcyclists include operators and passengers of motorcycles, motor driven cycles Class A, mopeds, motorized bicycles, and motor driven cycles Class B.

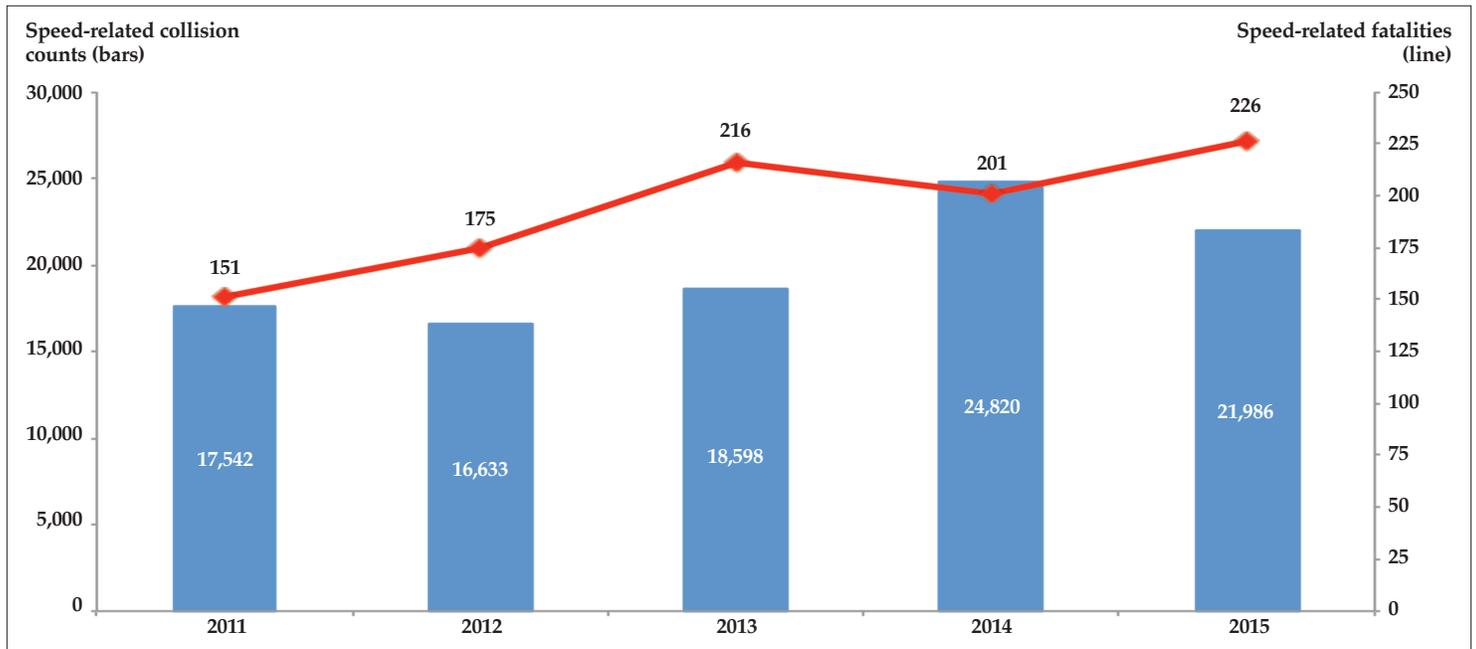
2015 marked a five-year low in the number of Indiana motorcyclists killed in crashes.

GOAL: Reducing dangerous driving

The number of fatalities in Indiana collisions that involved a speeding driver reached a five-year high, increasing from 151 in 2011 to 226 in 2016 (Figure 12). The total number of speed-related collisions increased

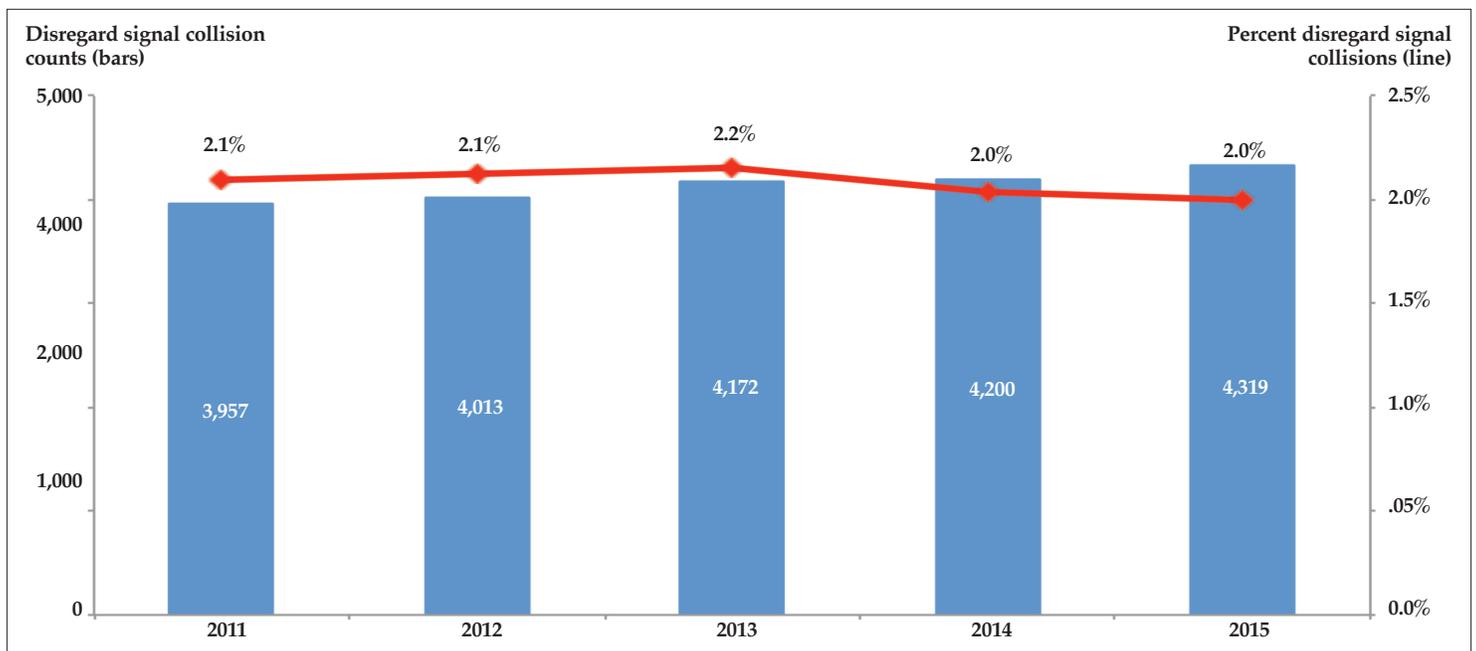
from 17,542 to 21,986 during this same period. Disregarding traffic signals is also a form of dangerous driving. Both the number and percent of Indiana collisions that involved a driver who disregarded a signal has remained steady since 2011 (Figure 13).

Figure 12. Indiana collisions that involved a speeding driver, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Figure 13. Indiana collisions that involved a driver that disregarded a signal, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

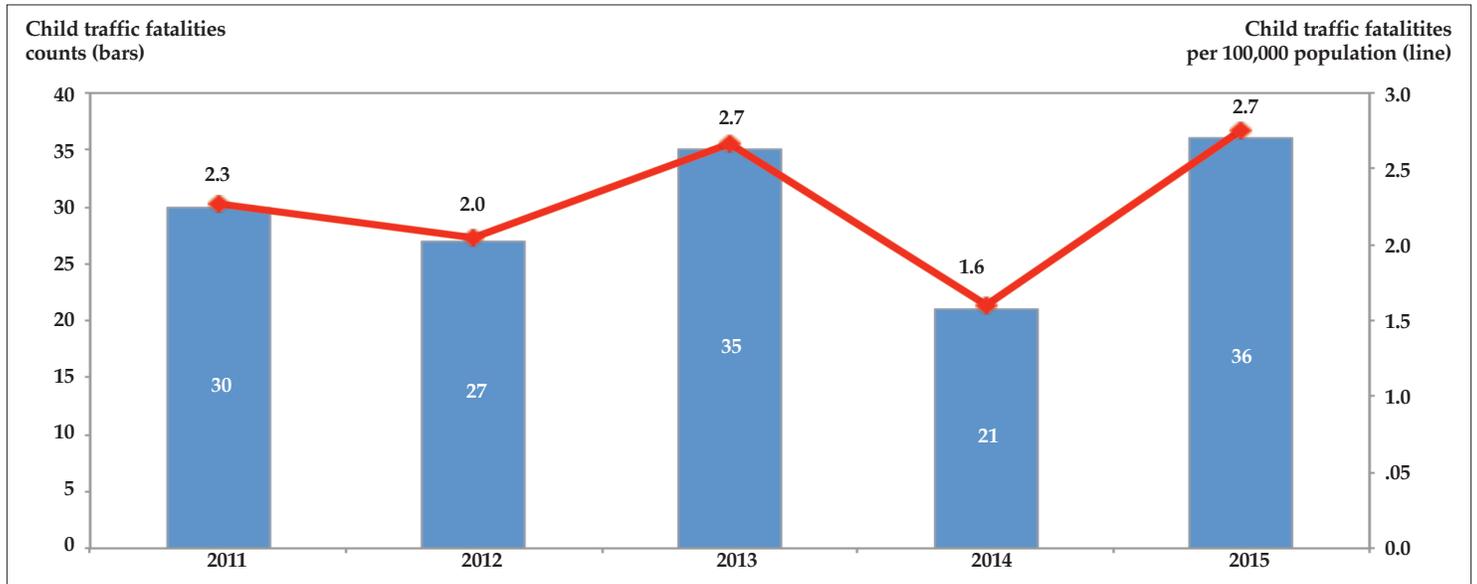


GOAL: Reducing fatalities and serious injuries among children

From 2014 to 2015, the number of children killed in Indiana traffic collisions increased from 21 to 36 (Figure 14). The rate per 100,000 popula-

tion of children (ages 0 to 14) killed in traffic collisions in Indiana also increased from 1.6 to 2.7 during this time period.

Figure 14. Children, ages 14 and under, killed in Indiana collisions, 2011-2015



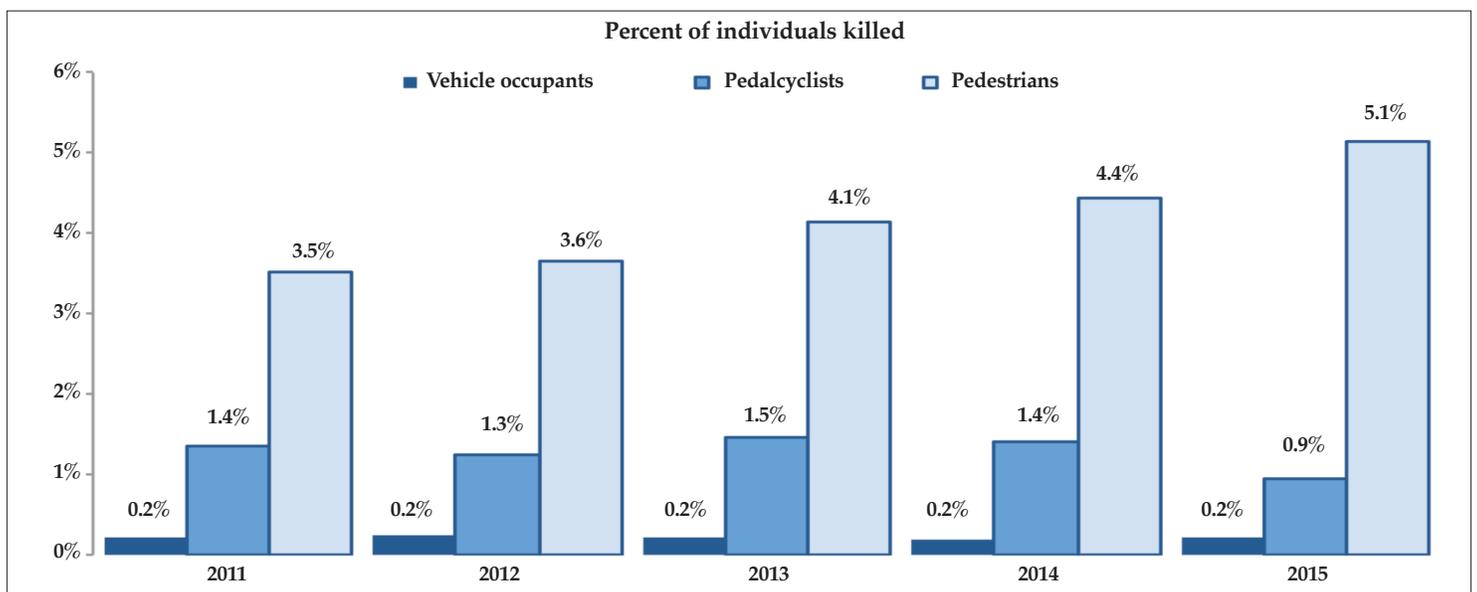
Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

GOAL: Reducing fatalities and serious injuries among non-motorists

In 2015, non-motorists (pedestrians and pedalcyclists) represented less than 1 percent of all individuals in traffic collisions, but 12 percent of total Indiana traffic fatalities (not shown). The percent of all pedestrians in

Indiana crashes that were killed increased from 4.4 percent in 2014 to 5.1 percent in 2015 and has been on the rise since 2011 (Figure 15). The percent of vehicle occupants killed in collisions remained steady during this same time period, and the percent of pedalcyclist fatalities in crashes declined slightly in 2015.

Figure 15. Fatalities in Indiana collisions as a percent of all involved, by person type, 2011-2015



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 17, 2016

Notes:

- 1) *Animal-drawn vehicle occupants* are excluded.
- 2) The most recent ARIES upgrade added a clarification to reporting officers on the definition of incapacitating injuries criteria to include "transported from scene for treatment"; therefore, 2014 and 2015 increases in incapacitating injuries reflect a definitional change and should be interpreted with caution.

DEFINITIONS

- **Alcohol-impaired** - A driver or operator is classified as *alcohol-impaired* when the driver has a blood alcohol content (BAC) test result at or above 0.08 g/dL.
- **Census Locale** - Urban is defined as Census 2010 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).
- **Moped** - vehicle classified as a *moped*, *motor-driven cycle class B*, or *motorized bicycle*.
- **Motorcycle** - vehicle classified as a *motorcycle* or a *motor-driven cycle class A*.
- **Non-motorists** are defined as *animal-drawn vehicle operators*, *pedalcyclists*, and *pedestrians*.
- **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*.

DATA SOURCES

Indiana State Police Automated Reporting Information Exchange System (ARIES), current as of March 17, 2016.

Indiana Bureau of Motor Vehicles, current as of April 20, 2016.

U.S. Census Bureau, Annual Estimates of the Resident Population by Single-Year of Age and Sex for the United States and States (2014), provided by the Indiana Business Research Center, Indiana University.

REFERENCES

Center for Road Safety. 2015. *Indiana Roadside Observational Survey of Safety Belt and Motorcycle Helmet Use*. Purdue University.

Motorcycle Helmet Use in 2015—Overall Results. National Highway Traffic Safety Administration: DOT HS 812 275

Seat Belt Use in 2015 - Use Rates in the States and Territories. National Highway Traffic Safety Administration: DOT HS 812 243



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 publications that 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

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 collaborates each year with the Indiana Criminal Justice Institute to analyze vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the tenth year of this partnership. Research findings are summarized in a series of publications on various aspects of traffic collisions, including alcohol-related crashes, commercial vehicles, dangerous driving, child passenger safety, motorcycles, occupant protection, and drivers. An additional publication provides detailed information on county and municipality data. 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. Crash reports for all Indiana collisions are entered electronically through ARIES. Collisions trends 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. 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. 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 IU Public Policy Institute delivers unbiased research and data-driven, objective, expert analysis to help public, private and nonprofit sectors make important decisions that directly impact quality of life in Indiana. Using the knowledge and expertise of our staff and faculty, we provide research and analysis that is free of political and ideological bias. A multidisciplinary institute within the Indiana University School of Public and Environmental Affairs (SPEA), our efforts also support 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



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