

NON-MOTORIST 2017





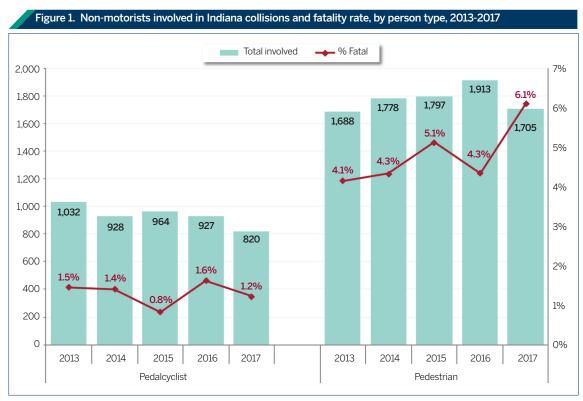
IN 2017:

- 2,105 non-motorists were killed or injured in Indiana collisions.
 Among non-motorists injured in crashes, 5 percent were killed (115 fatalities, a 17 percent increase from 2016).
- 820 pedalcyclists were involved in collisions— 10 were killed and 612 were injured
- 1,705 pedestrians were involved in collisions— 104 were killed and 1,304 were injured
- Most non-motorists were involved in collisions that occurred during weekdays between 3:00 – 5:59 p.m.
- Male pedalcyclists, particularly those between the ages of 15 and 24, represented the highest proportion of pedalcyclists involved in crashes.
- 29 pedestrians were involved in alcoholimpaired traffic collisions, which involved a driver with a blood alcohol content (BAC) test result at or above 0.08 grams per deciliter (g/dL).
- 20 pedalcyclists and 92 pedestrians were involved in speed-related collisions.

This fact sheet summarizes information on traffic collisions involving non-motorists in Indiana between 2013 and 2017. Non-motorists include *pedalcyclists*, *pedestrians*, and *animal-drawn vehicle operators*. It examines different dimensions of collisions involving non-motorists, in particular pedalcyclists and pedestrians. Indiana collision data come from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of April 6, 2018.

As shown in Figure 1, the number of collisions involving pedalcyclists has declined from 1,032 during 2013 to

five-year low of 820 in 2017. Crashes involving pedestrians rose from 1,688 in 2013 to a five-year high of 1,913 in 2016 and declined to 1,705 in 2017. Between 2016 and 2017, collisions involving pedalcyclists declined by 12 percent 927 to 820 (calculated from Figure 1). The rate of pedalcyclist fatalities decreased from 1.6 in 2016 to 1.2 in 2017. Collisions involving pedestrians during 2017 fell 11 percent from 2016 (calculated from Figure 1). The rate of pedestrian fatalities increased from 4.3 to 6.1.



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of April 6, 2018

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GENERAL TRENDS

From 2013 to 2017, approximately one percent of individuals involved in Indiana collisions were nonmotorists (calculated from Table 1). The overall number of non-motorists involved in collisions has remained fairly constant over the past 5 years with a -1.6 percent annual rate of change. During this period, the number of non-motorists killed increased by 7 percent annually while the number non-motorists injured decreased by 3 percent. During 2017, approximately 4 percent of all individuals killed or injured in Indiana collisions were non-motorists. Of the three categories of non-motorists involved in collisions, on average between 2013 and 2017, pedestrians typically accounted 63 percent of the total, followed by pedalcyclists (on average about 33 percent of total non-motorists) (calculated from Table 1).

Table 1. Individuals involved in Indiana collisions, by person type and injury status, 2013-2017

Davidon trong / Indiana atatus		Cou	nt of indivi	duals		Annual rate of change		
Person type / Injury status	2013	2014	2015	2016	2017	2016-17	2013-17	
All individuals	310,303	330,978	351,272	364,28	357,843	-1.8%	3.6%	
Fatal	784	745	816	829	911	9.9%	3.8%	
Non-fatal injury	47,534	48,563	51,467	52,616	50,905	-3.3%	1.7%	
Not injured	261,985	281,670	298,989	310,841	306,027	-1.5%	4.0%	
All non-motorists	2,829	2,818	2,867	2,933	2,652	-9.6%	-1.6%	
Fatal	87	90	101	98	115	17.3%	7.2%	
Non-fatal injury	2,279	2,231	2,223	2,245	1,990	-11.4%	-3.3%	
Not injured	463	497	543	590	547	-7.3%	4.3%	
Non-motorists as % of total	0.9%	0.9%	0.8%	0.8%	0.7%	-8.0%	-5.0%	
Fatal	11.1%	12.1%	12.4%	11.8%	12.6%	6.8%	3.3%	
Non-fatal injury	4.8%	4.6%	4.3%	4.3%	3.9%	-8.4%	-5.0%	
Not injured	0.2%	0.2%	0.2%	0.2%	0.2%	-5.8%	0.3%	
Pedalcyclist	1,032	928	964	927	820	-11.5%	-5.6%	
Fatal	15	13	8	15	10	-33.3%	-9.6%	
Non-fatal injury	822	713	733	681	612	-10.1%	-7.1%	
Not injured	195	202	223	231	198	-14.3%	0.4%	
Pedestrian	1,688	1,778	1,797	1,913	1,705	-10.9%	0.3%	
Fatal	70	77	92	83	104	25.3%	10.4%	
Non-fatal injury	1,429	1,486	1,453	1,536	1,340	-12.8%	-1.6%	
Not injured	189	215	252	294	261	-11.2%	8.4%	
Animal-drawn vehicle operator	109	112	106	93	127	36.6%	3.9%	
Fatal	2	0	1	0	1	na	-15.9%	
Non-fatal injury	28	32	37	28	38	35.7%	7.9%	
Not injured	79	80	68	65	88	35.4%	2.7%	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of April 6, 2018

Notes

1) Non-motorists include pedalcyclists, pedestrians, and animal-drawn vehicle operators.

3) Not injured status includes individuals involved in collisions reported as null values in the injury status code field.

²⁾ Non-fatal injury includes incapacitating, non-incapacitating, possible, not reported, unknown, and refused (treatment) injury categories.

NON-MOTORIST INJURIES BY AGE AND GENDER

Figure 2 shows the number of non-motorists involved in Indiana collisions by age and proportion that experienced fatal and incapacitating injuries. Most non-motorists involved in Indiana collisions during 2017 were 34 years of age or younger. Across age group categories, the largest number of pedalcyclists (173) involved in crashes was lessthan-15-years of age. Among pedestrians involved in collisions, the largest number (268) were in the 25- to 34-year old age cohort. The probability of being killed or injured increased with age among pedestrians. The mean age of pedalcyclists killed or injured in traffic crashes was 35.8 years and 41.1 years among pedestrians (not shown in table).

Figure 2. Non-motorists involved in Indiana collisions and fatal and incapacitating injury rate, by person type and age group, 2017



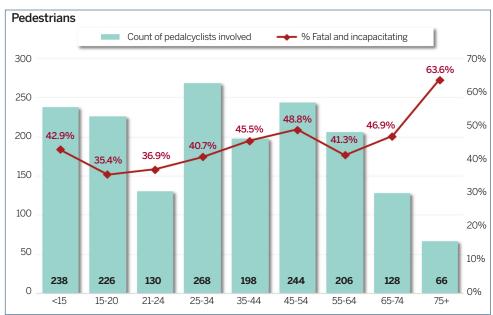




Table 2 includes the percentage of pedestrians and pedalcyclists involved in crashes by gender and age group. On average between 2013 and 2017, male pedalcyclists accounted for 80 percent of collisions involving pedalcyclists (calculated from Table 2). During the five-year period, an average of 58 percent of pedestrians involved in Indiana traffic

collisions were male. In 2017, male pedalcyclists 24 years of age and younger accounted for 42 percent of collisions involving pedalcyclists, compared with 10 percent of collisions that involved female pedalcyclists in this age group.

Table 2. Proportion of pedalcyclists and pedestrians involved in Indiana collisions, by age group and gender, 2013-2017

Pedalcyclists

Age group	2013		2014		2015		2016		2017		Annual rate of change, 2013-17	
	Female	Male	Female	Male								
<15	4.2%	17.2%	4.4%	18.3%	6.7%	17.6%	4.5%	15.6%	4.0%	17.1%	-0.8%	0.0%
15-20	3.9%	15.0%	3.9%	14.5%	4.5%	12.9%	4.1%	15.6%	3.5%	15.5%	-2.2%	0.9%
21-24	1.8%	10.1%	4.2%	7.8%	1.8%	7.5%	1.3%	8.4%	2.0%	9.5%	1.6%	-1.3%
25-34	3.2%	10.7%	3.1%	11.1%	2.1%	10.7%	1.7%	11.7%	3.8%	10.4%	4.4%	-0.6%
35-44	1.6%	7.1%	1.3%	7.2%	1.8%	7.4%	2.4%	8.1%	2.8%	5.4%	14.3%	-6.6%
45-54	2.1%	10.7%	1.3%	9.8%	2.6%	10.0%	1.8%	9.0%	1.8%	8.9%	-3.7%	-4.3%
55-64	1.5%	7.5%	1.5%	7.0%	1.5%	8.2%	1.8%	8.2%	1.5%	8.1%	0.3%	2.0%
65-74	0.3%	1.9%	0.4%	3.0%	0.7%	3.1%	0.5%	3.9%	0.4%	3.9%	6.0%	19.2%
75+	0.2%	1.2%	0.2%	0.9%	0.3%	0.8%	0.1%	1.2%	0.1%	1.1%	-10.9%	-1.3%
All ages	18.8%	81.2%	20.4%	79.6%	21.9%	78.1%	18.3%	81.7%	20.0%	80.0%	1.5%	-0.4%

Pedestrians

Age group	2013		2014		2015		2016		2017		Annual rate of change, 2013-17	
0.0	Female	Male	Female	Male								
<15	6.7%	11.9%	6.4%	8.9%	5.2%	9.9%	5.4%	10.2%	4.8%	9.2%	-8.2%	-6.2%
15-20	5.2%	7.5%	4.3%	7.6%	5.5%	8.5%	5.5%	6.9%	5.7%	7.5%	1.4%	-1.1%
21-24	3.8%	4.4%	3.0%	5.1%	3.6%	4.7%	3.2%	5.2%	3.8%	3.8%	0.1%	-3.4%
25-34	6.4%	8.7%	6.5%	8.6%	5.7%	10.0%	5.5%	8.6%	7.2%	8.5%	3.0%	-0.6%
35-44	5.5%	6.0%	5.3%	7.9%	4.9%	6.0%	4.9%	7.2%	5.0%	6.6%	-2.5%	2.6%
45-54	5.1%	8.4%	5.4%	7.9%	5.6%	7.8%	5.4%	7.7%	5.4%	8.9%	1.4%	1.6%
55-64	3.9%	5.5%	4.4%	6.6%	4.6%	7.5%	5.6%	7.4%	5.3%	6.8%	8.1%	5.2%
65-74	3.3%	3.5%	3.8%	3.3%	2.8%	3.1%	3.5%	3.8%	4.0%	3.5%	0.3%	1.6%
75+	2.2%	2.0%	2.7%	2.3%	2.2%	2.3%	2.0%	2.0%	1.5%	2.3%	-8.7%	3.9%
All ages	42.1%	57.9%	41.8%	58.2%	40.1%	59.9%	41.0%	59.0%	42.7%	57.3%	0.4%	-0.3%



TIME OF DAY, DAY OF WEEK, AND MONTH

Table 3 illustrates collisions involving pedalcyclists and pedestrians by day of week and time of day, divided into eight 3-hour intervals starting at midnight. Among both pedalcyclists and pedestrians involved in collisions during 2017, the count was highest on weekdays with the highest number

among pedalcyclists (147) occurring on Thursdays and on Fridays among pedestrians (290). The 3 p.m. to 5:59 p.m. time period had the highest percentage of collisions involving both pedalcyclists (30 percent) and pedestrians (22 percent). When the 3 p.m. to 5:59 p.m. and next time interval (6 p.m. to 8:59 p.m.) are combined, over one-half (51 percent) of all collisions involving pedalcyclists and 41 percent of all collisions involving pedestrians occurred during the late afternoon and evening.

Table 3. Non-motorists involved in Indiana collisions, by person type, time of day, and day of week, 2017

Pedalcyclists

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total by time of day	% by time of day
Midnight-2:59 a.m.	3	2	1	5	3	0	3	17	2.1%
3-5:59 a.m.	1	2	1	2	3	5	2	16	2.0%
6-8:59 a.m.	0	12	14	12	22	10	3	73	8.9%
9-11:59 a.m.	7	17	13	16	11	11	19	94	11.5%
Noon-2:59 p.m.	17	23	19	16	23	19	27	144	17.6%
3-5:59 p.m.	25	34		39	43	37	26	249	
6-8:59 p.m.	12	26	27	24	32	29	20	170	20.7%
9-11:59 p.m.	8	3	14	5	10	8	9	57	7.0%
Total	73	119	134	119	147	119	109	820	100.0%
% by day	8.9%	14.5%	16.3%	14.5%	17.9%	14.5%	13.3%	100.0%	

Pedestrians

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total by time of day	% by time of day
Midnight-2:59 a.m.	11	1	9	11	3	9	24	68	3.7%
3-5:59 a.m.	12	9	6	8	7	6	8	56	4.4%
6-8:59 a.m.	2	35	42	34	52	34	7	206	11.8%
9-11:59 a.m.	14	17	19	34	31	22	27	164	11.6%
Noon-2:59 p.m.	22	35	34	30	33	47	44	245	16.3%
3-5:59 p.m.	28	64	65	64	65	64	40	390	
6-8:59 p.m.	38	49	53	52	48	64	39	343	18.7%
9-11:59 p.m.	19	35	25	30	29	44	51	233	11.2%
Total	146	245	253	263	268	290	240	1705	100.0%
% by day	8.4%	15.7%	14.4%	16.3%	13.5%	16.6%	15.1%	100.0%	



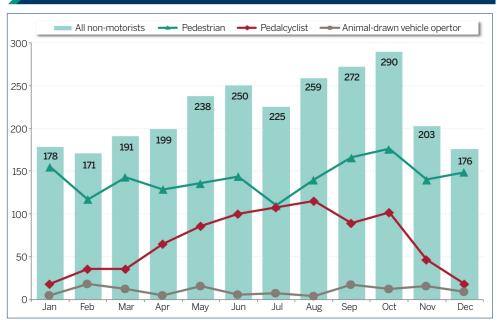


The number of non-motorists involved in Indiana collisions by month during 2017 is shown in Figure 3. Approximately two-thirds of non-motorists were involved in traffic collisions between April and October. This increase coincides with a larger number of pedalcyclists involved in crashes between June and August and an increase in pedestrians involved in crashes during the months of September and October. The number of animal-drawn vehicle operators involved in collisions peaked in February and September.

ALCOHOL-IMPAIRED COLLISIONS

In 2017, 29 pedestrians were involved in alcoholimpaired crashes (Table 4), which involved either a driver or non-motorist with a blood alcohol content (BAC) test result at or above 0.08 grams per deciliter (g/dL). The number of pedalcyclists in alcohol-impaired collisions decreased from 9 in 2013 to 0 in 2017. The number of pedestrians involved in alcohol-impaired collisions increased from 37 in 2013 to a five-year high of 41 in 2015 and declined to 29 in 2017. In 2017, 3 pedestrian collisions that were alcohol-impaired resulted in fatalities. None of the pedestrians were reported to be impaired.

Figure 3. Non-motorists involved in collisions, by person type, and month, 2017



lable 4. Non-inotorists involved in indiana comstons, by person type, injury status, and accord impairment, 2013-2017											
	2013	2014	2015	2016							

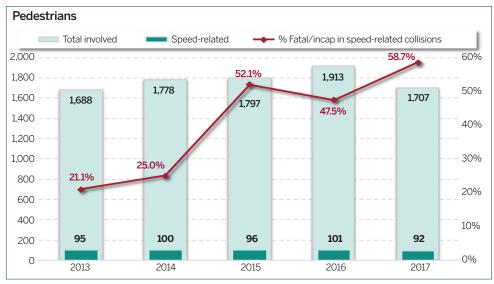
		2013			2014			2015			2016			2017	
	Total involved	Alcohol- impaired	% impaired	Total involved	Alcohol- impaired	% impaired	Total involved	Alcohol- impaired	% impaired	Total involved	Alcohol- impaired	% impaired	Total involved	Alcohol- impaired	% impaired
Pedalcyclist	1,032	9	0.9%	928	4	0.4%	964	8	0.8%	927	5	0.5%	820	0	0.0%
Fatal	15	1	6.7%	13	1	7.7%	8	1	12.5%	15	1	6.7%	10	0	0.0%
Non-fatal injury	822	8	1.0%	713	3	0.4%	733	5	0.7%	681	3	0.4%	612	0	0.0%
Not injured	195	0	0.0%	202	0	0.0%	223	2	0.9%	231	1	0.4%	198	0	0.0%
Pedestrian	1,688	37	2.2%	1,778	33	1.9%	1,797	41	2.3%	1,913	37	1.9%	1,705	29	1.7%
Fatal	70	1	1.4%	77	2	2.6%	92	4	4.3%	83	5	6.0%	104	3	2.9%
Non-fatal injury	1,429	33	2.3%	1,486	26	1.7%	1,453	35	2.4%	1,536	29	1.9%	1,340	19	1.4%
Not injured	189	3	1.6%	215	5	2.3%	252	2	0.8%	294	3	1.0%	261	7	2.7%

SPEED-RELATED COLLISIONS

A collision is defined as speed-related in Indiana ARIES data if any of the following conditions is met: unsafe speed or speed too fast for weather conditions is listed as the primary or a contributing factor of the collision; or a vehicle driver is issued a speeding citation. In 2017, 20 pedalcyclists and 92 pedestrians were involved in speed-related traffic collisions (Figure 4). The number of pedalcyclists in speed-related collisions increased from 30 in 2013 to a five-year high of 35 in 2014. On average between 2013 and 2017, 6 percent of collisions involving pedestrians were speed-related crashes (not shown in Figure 4). The proportion of both pedalcyclists and pedestrians that experienced fatal and incapacitating injuries in speed-related crashes has risen steadily over the five-year period.

Figure 4. Non-motorists involved in Indiana collisions, by person type, speed involvement, and fatal and incapacitating injury rate, 2013-2017



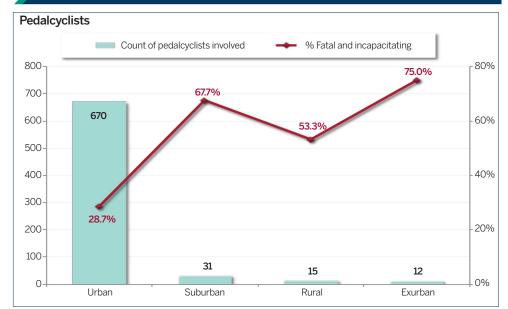


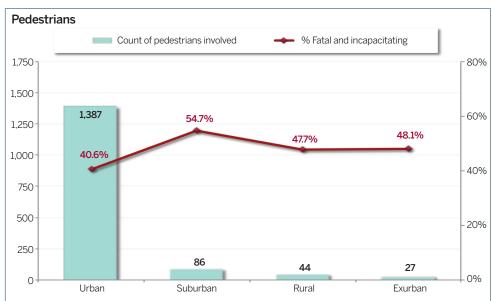


GEOGRAPHY OF COLLISIONS

Pedalcyclist collision counts in 2017 were substantially higher in Indiana urban (670) areas than surrounding *suburban* (31), *rural* (15), and *exurban* (12) locales (Figure 5). However, the proportion of crashes that resulted in fatalities and incapacitating injuries was much higher in in *exurban* (75 percent), *suburban* (68 percent), and *rural* (53 percent) areas than locales identified as *urban* (29 percent). Similarly, counts of collisions involving pedestrians were considerably higher in *urban* (1,387) areas than *suburban* (86), *rural* (44), and *exurban* (27) locales. The fatal and incapacitating injury rate among pedestrians involved in traffic collisions was 41 percent in *urban* but roughly 7 to 14 percent higher in other locales.

Figure 5. Non-motorists involved in Indiana collisions, by person type and census locale, 2017





DEFINITIONS

Alcohol-impaired collision - A collision is considered *alcohol-impaired* when any vehicle driver or non-motorists involved has a BAC test result at or above 0.08 g/dL.

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 2013 to 2017, it is calculated as (Value in 2017 / Value in 2013)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).

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

Not injured status includes individuals involved in collisions reported as null values in the injury status code field. NOTE: The *not injured* category in ARIES should include only uninjured *drivers*; nonetheless, *vehicle occupants* are sometimes reported as *not injured* on the crash report completed by the investigating officer.

Non-motorists include animal-drawn vehicle operators, pedalcyclists, and pedestrians.

Speed-related collision - A collision is defined as speed-related in Indiana ARIES data if any of the following conditions is met: Unsafe speed or speed too fast for weather conditions is listed as the primary or a contributing factor of the collision; or a vehicle driver is issued a speeding citation.

DATA SOURCES



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 (http://trafficsafety.iupui.edu), the ICJI website (www.in.gov/cji/), or you may contact the PPI at 317-261-3000.

INDIANA UNIVERSITY PUBLIC POLICY INSTITUTE



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 twelfth 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 for each county and municipality. 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. Collision 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.

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.

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