

NON-MOTORISTS 2020

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In 2020:

- 1,691 non-motorists—pedalcyclists, pedestrians, and animal-drawn vehicle drivers—were killed or injured in Indiana collisions.
- 684 pedalcyclists were involved in collisions resulting in 18 fatalities and 481 injured.
- 1,412 pedestrians were involved in collisions resulting in 103 fatalities and 1,070 injured.
- Pedestrian fatalities accounted for 12% of all traffic fatalities.
- Males made up the highest proportion of pedalcyclists involved in crashes, particularly for ages under 15, 15–34, 25–34, and 45–54.
- The most non-motorists were involved in collisions that occurred on weekdays between 3–5:59 p.m.
- 18 pedalcyclists and 62 pedestrians were involved in speed-related crashes.
- In 2020, 29 pedestrians and 2 pedalcyclists were involved in collisions with alcohol-impaired drivers (greater than 0.08 g/dL). Ten pedestrians sustained fatal injuries. No pedalcyclists were killed

The number of pedalcyclists involved in collisions generally declined annually between 2016 and 2020 to a new five-year low of 684 in 2020. This pattern of steady annual decline began in 2013. The number of pedestrians involved in collisions declined between 2016 and 2020 with a peak of 1,914 in 2016 and a new five-year low of 1,412 in 2020. The pattern in the intervening years, however, did not show a consistent decline. The fatality rates from 2019 to 2020 increased from 2.0% to 2.6% for pedalcyclists and 4.7% to 7.3% for pedestrians after declining in the previous year (Figure 1).

This fact sheet summarizes information on Indiana traffic collisions involving non-motorists—pedalcyclists, pedestrians, and animal-drawn vehicle drivers—between 2016 and 2020. It is one in a series of topical fact sheets and examines general trends, injuries by age and gender, collisions by month, day of the week, and time of day, alcohol-related crashes, and the geography of crashes by census locale. The fact sheet also includes an analysis of alcohol impaired non-motorists that has not appeared previously. Indiana collision data is collected by Indiana State Police officers and submitted to the Automated Reporting Information Exchange System (ARIES). The ARIES data used in this report were extracted March 29, 2021.

The pandemic and traffic safety in 2020

The COVID-19 pandemic affected a traffic safety in 2020. Preliminary analyses of traffic safety fatalities by the National Highway Traffic Safety Administration (NHTSA)— using data from the Fatality Analysis Reporting System (FARS)—estimates that while vehicle miles travelled were down nationally in 2020 from 2019, the number of fatalities and the fatality rate per 100 million VMT were higher (NCSA, 2021a). Fatalities among passenger vehicle occupants, motorists, and pedalcyclists are estimated to be up 5%, 9%, and 5%, respectively (NCSA, 2021b). NHTSA’s analysis also suggests risky traffic behaviors increased in 2020 (OBSR, 2021). For example, national fatality counts for unrestrained occupants of passenger vehicles are estimated to be up 15% and deaths from occupant ejections up 20%.

The 2020 Indiana traffic safety data and analysis should be considered carefully in light of the potentially anomalous effects of the pandemic. Further analysis may be needed to evaluate whether the challenges in Indiana were similar to those identified nationally, whether those challenges continue, and whether the addition or adjustment of countermeasures is warranted.

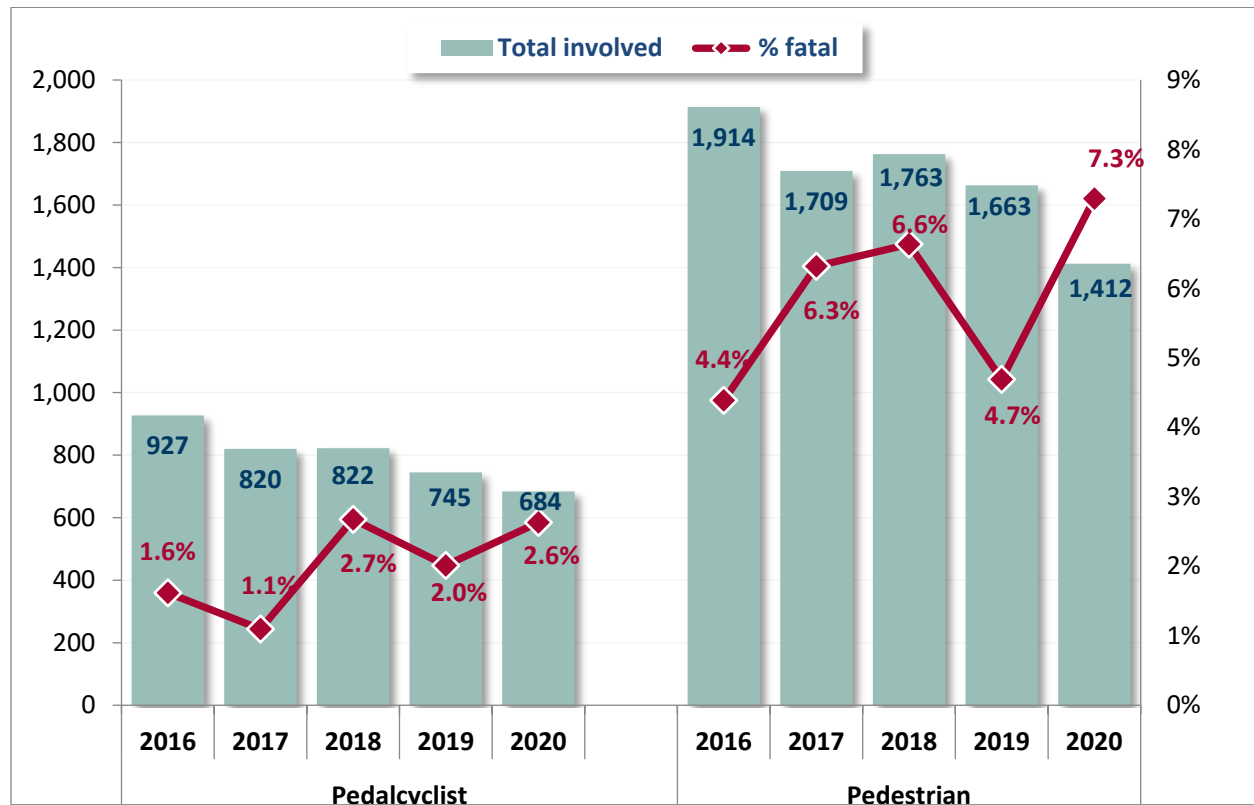
Sources:

National Center for Statistics and Analysis. (2021a, (revised)). Early estimates of motor vehicle traffic fatalities and fatality rate by sub-categories in 2020 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 118). National Highway Traffic Safety Administration.

National Center for Statistics and Analysis. (2021b). Early estimate of motor vehicle traffic fatalities in 2020 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 115). National Highway Traffic Safety Administration.

Office of Behavioral Safety Research. (2021, June). Update to special reports on traffic safety during the COVID-19 public health emergency: Fourth quarter data (Report No. DOT HS 813 135). National Highway Traffic Safety Administration.

Figure 1. Non-motorists involved in Indiana collisions and fatality rate, by person type, 2016–20



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

General trends

Approximately 1% of individuals involved in collisions between 2016 and 2020 were non-motorists (Table 1). During this period, pedestrians accounted for 65% of the non-motorists involved in collisions (calculated from Table 1). Pedalcyclists accounted for 30% of these non-motorists.

In 2020, the number of collisions involving non-motorists was at a five-year low. While collisions with incapacitating and non-incapacitating injuries also were at five-year lows, the number of fatalities increased 31% from 2019 to 2020. The increase came principally from an increase in fatalities among pedalcyclists and pedestrians. The number of pedalcyclists that sustained incapacitating injuries also increased from 2019 to 2020.

There were 105 animal- drawn operators involved in collisions in 2020, with 2 deaths and 17 injuries reported. In spite of the increase in the number of these non-motorists involved in collisions from 2019 to 2020, the proportion who were killed or experienced incapacitating injuries decreased by 30%.

Table 1. Individuals involved in Indiana collisions, by person type and injury status, 2016–20

	2016	2017	2018	2019	2020	Annual rate of change	
						2019–20	2016–20
All individuals	364,358	358,134	352,419	350,900	275,671	-21.4%	-6.7%
Fatal	834	925	880	808	896	10.9%	1.8%
Incapacitating	20,994	20,243	19,997	19,843	17,188	-13.4%	-4.9%
Non-incapacitating	31,623	30,672	28,309	26,494	21,725	-18.0%	-9.0%
Not injured	310,907	306,294	303,233	303,755	235,862	-22.4%	-6.7%
All non-motorists	2,934	2,656	2,685	2,508	2,201	-12.2%	-6.9%
Fatal	99	118	141	94	123	30.9%	5.6%
Incapacitating	1,017	903	933	900	852	-5.3%	-4.3%
Non-incapacitating	1,228	1,087	1,091	967	716	-26.0%	-12.6%
Not injured	590	548	520	547	510	-6.8%	-3.6%
Non-motorists as percent of total	0.8%	0.7%	0.8%	0.7%	0.8%	11.7%	-0.2%
Fatal	11.9%	12.8%	16.0%	11.6%	13.7%	18.0%	3.7%
Incapacitating	4.8%	4.5%	4.7%	4.5%	5.0%	9.3%	0.6%
Non-incapacitating	3.9%	3.5%	3.9%	3.6%	3.3%	-9.7%	-4.0%
Not injured	0.2%	0.2%	0.2%	0.2%	0.2%	20.1%	3.3%
Pedalcyclist	927	820	822	745	684	-8.2%	-7.3%
Fatal	15	9	22	15	18	20.0%	4.7%
Incapacitating	269	255	237	218	249	14.2%	-1.9%
Non-incapacitating	412	357	373	328	232	-29.3%	-13.4%
Not injured	231	199	190	184	185	0.5%	-5.4%
Pedestrian	1,914	1,709	1,763	1,663	1,412	-15.1%	-7.3%
Fatal	84	108	117	78	103	32.1%	5.2%
Incapacitating	733	629	682	666	593	-11.0%	-5.2%
Non-incapacitating	803	711	698	633	477	-24.6%	-12.2%
Not injured	294	261	266	286	239	-16.4%	-5.0%
Animal-drawn vehicle operator	93	127	100	100	105	5.0%	3.1%
Fatal	0	1	2	1	2	100.0%	N/A
Incapacitating	15	19	14	16	10	-37.5%	-9.6%
Non-incapacitating	13	19	20	6	7	16.7%	-14.3%
Not injured	65	88	64	77	86	11.7%	7.2%

Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) Non-motorists include pedalcyclists, pedestrians, and animal-drawn vehicle operators.
- 2) Not injured category includes individuals involved in collisions reported as null in the injury status field.

Non-motorist injuries by age and gender

In 2020, the largest number of pedalcyclists involved in crashes were under age 15 and ages 15–20 (Table 2). The highest numbers in the previous four years were in similar cohorts except for the addition of the ages 25–34 cohort in 2019. More pedalcyclists were involved in collisions in 2020 than in the previous four years for three age groups: ages 45–54, ages 55–64, and ages 75 and older. The greatest percentage changes by cohort from 2019 to 2020 were for ages 75+ (up 56%), and ages 21–24 (down 53%). Pedalcyclists in all age cohorts, except ages 75 and older, had negative annual rates of change for 2016 to 2020.

The largest number of pedestrians involved in crashes in 2020 were ages 25–34 (Table 2). These same cohorts had the highest numbers in 2019 although in a different order. The same cohort experiencing the most collisions in 2017 and 2018. Fewer pedestrians were involved in collisions in 2020 than in 2019 across age cohorts with the exception that pedestrians ages 20–24 were involved in the same number of collisions in both years. The greatest percentage changes by age cohort from 2019 to 2020 were for ages 75+ (down 38%), under age 15 (down 34%), and ages 55–64 (down 31%). Pedestrians in all age cohorts had negative annual rates of change from 2016 to 2020.

In 2020, pedalcyclists ages 75 and older and ages 35–44 were most likely to suffer fatal or incapacitating injuries as the result of a collision (Table 3). Among children and young adults, pedalcyclists under age 15 experienced a greater percentage of fatal and incapacitating injuries than pedalcyclists ages 15–24. The rate of fatal and incapacitating injuries was higher in 2020 than in the previous four years for pedalcyclists ages 15 and under and ages 25–54. The mean age for pedalcyclists killed or incapacitated in 2020 was 35.9.

In 2020, pedestrians ages 75 and older were most likely to experience fatal or incapacitating injuries during collisions (Table 3). The proportion of fatal and incapacitating injuries for collisions was higher in 2020 than in the previous four years for all age cohorts starting at ages 21–24. In 2018–20, the likelihood of fatal or incapacitating injuries for collisions involving pedestrians generally increased with age starting at ages 15–20. The mean age of pedestrians killed or incapacitated in 2020 collisions was 40.0.

Between 2016 and 2020, 81% of pedalcyclists and 58% of pedestrians involved in collisions were male (Table 4). In 2020, male pedalcyclists who were ages 20 and under accounted for 28% of crashes, while pedestrians in these cohorts accounted for only 14% of crashes. Among pedalcyclists in crashes, males in each of four cohorts—ages 25–34, ages 35–44, ages 45–54, and ages 55–64—each accounted for 9%–11% of crashes. Among pedestrians in crashes, only males ages 25–34 and ages 35–44 accounted for this level of crashes.

Table 2. Non-motorists involved in Indiana collisions by age group, 2016–20

	Individuals					Annual rate of change	
	2016	2017	2018	2019	2020	2019–20	2016–20
Pedalcyclist							
<15	187	173	138	125	123	-1.6%	-9.9%
15–20	183	157	176	122	110	-9.8%	-11.9%
21–24	90	94	73	80	38	-52.5%	-19.4%
25–34	124	117	117	123	90	-26.8%	-7.7%
35–44	97	67	93	78	72	-7.7%	-7.2%
45–54	100	88	83	88	92	4.5%	-2.1%
55–64	93	79	99	71	81	14.1%	-3.4%
65–74	41	35	35	48	32	-33.3%	-6.0%
75+	12	10	8	9	14	55.6%	3.9%
All ages	927	820	822	744	652	-12.4%	-8.4%
Pedestrian							
<15	298	238	210	209	139	-33.5%	-17.4%
15–20	237	227	216	183	156	-14.8%	-9.9%
21–24	161	131	142	104	104	0.0%	-10.3%
25–34	270	269	290	245	238	-2.9%	-3.1%
35–44	231	198	218	226	192	-15.0%	-4.5%
45–54	250	244	224	209	152	-27.3%	-11.7%
55–64	250	206	231	257	177	-31.1%	-8.3%
65–74	140	128	133	145	108	-25.5%	-6.3%
75+	76	66	99	81	50	-38.3%	-9.9%
All ages	1,913	1,707	1,763	1,659	1,316	-20.7%	-8.9%



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Note: Excludes invalid age.

Table 3. Non-motorists with fatal and incapacitating injuries in Indiana collisions, by age, 2016–20

	Individuals				
	2016	2017	2018	2019	2020
Pedalcyclist					
<15	27.3%	32.4%	25.4%	34.9%	37.4%
15–20	21.9%	30.6%	30.7%	20.5%	30.0%
21–24	35.6%	28.7%	24.7%	25%	31.6%
25–34	28.2%	30.8%	25.6%	25.2%	37.8%
35–44	33.0%	29.9%	28.0%	33.3%	47.2%
45–54	41.0%	38.6%	38.6%	34.9%	42.4%
55–64	32.3%	32.9%	46.5%	36.6%	43.2%
65–74	46.3%	40.0%	40.0%	54.2%	37.5%
75+	33.3%	30.0%	50.0%	33.3%	50.0%
All ages	30.6%	32.2%	31.5%	31.1%	38.7%
Pedestrian					
<15	41.3%	43.3%	47.1%	46.4%	46.0%
15–20	44.3%	35.2%	40.3%	33.9%	42.3%
21–24	41.0%	36.6%	40.1%	39.4%	48.1%
25–34	39.6%	40.9%	40.0%	38.4%	47.1%
35–44	43.7%	45.5%	44.0%	47.3%	52.6%
45–54	36.0%	48.8%	46.9%	47.4%	50.7%
55–64	46.0%	41.3%	50.2%	48.6%	55.4%
65–74	49.3%	46.9%	46.6%	50.3%	53.7%
75+	53.9%	63.6%	61.6%	51.9%	66.0%
All ages	42.7%	43.2%	45.3%	44.6%	50.1%



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Note: Excludes invalid age.

Table 4. Non-motorists involved in Indiana collisions, by person type, age group, and gender, 2016–20

Pedalcyclist

Age group	2016		2017		2018		2019		2020	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<15	15.6%	4.5%	17.1%	4.0%	12.4%	4.4%	13.3%	3.5%	14.7%	4.1%
15–20	15.6%	4.1%	15.5%	3.5%	16.8%	4.6%	13.7%	2.4%	13.0%	3.8%
21–24	8.4%	1.3%	9.5%	2.0%	7.2%	1.7%	7.5%	3.2%	4.4%	1.4%
25–34	11.7%	1.7%	10.4%	3.8%	11.3%	2.9%	13.6%	3.0%	11.3%	2.5%
35–44	8.1%	2.4%	5.4%	2.8%	9.4%	1.9%	8.4%	2.2%	9.5%	1.5%
45–54	9.0%	1.8%	8.9%	1.8%	9.4%	0.7%	9.7%	2.2%	11.2%	2.9%
55–64	8.2%	1.8%	8.1%	1.5%	10.2%	1.8%	8.0%	1.6%	10.4%	2.0%
65–74	3.9%	0.5%	3.9%	0.4%	3.8%	0.5%	6.1%	0.4%	4.0%	0.9%
75+	1.2%	0.1%	1.1%	0.1%	0.5%	0.5%	1.1%	0.1%	1.4%	0.8%
All ages	81.7%	18.3%	80.0%	20.0%	80.9%	19.1%	81.4%	18.6%	80.1%	19.9%

Pedestrian

Age group	2016		2017		2018		2019		2020	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<15	10.2%	5.4%	9.3%	4.7%	6.7%	5.2%	8.3%	4.3%	6.5%	4.0%
15–20	6.9%	5.5%	7.5%	5.7%	6.5%	5.7%	6.0%	5.1%	7.8%	4.0%
21–24	5.2%	3.2%	3.9%	3.8%	4.1%	3.9%	3.7%	2.6%	4.9%	3.0%
25–34	8.6%	5.5%	8.6%	7.2%	9.2%	7.3%	9.2%	5.5%	11.3%	6.8%
35–44	7.2%	4.9%	6.6%	5.0%	7.3%	5.0%	8.1%	5.5%	9.1%	5.6%
45–54	7.7%	5.4%	8.9%	5.4%	8.0%	4.7%	7.7%	4.9%	6.8%	4.7%
55–64	7.4%	5.7%	6.7%	5.3%	7.6%	5.5%	8.5%	7.0%	8.0%	5.5%
65–74	3.8%	3.5%	3.5%	4.0%	4.4%	3.2%	5.2%	3.5%	4.0%	4.2%
75+	2.0%	2.0%	2.3%	1.5%	2.6%	3.1%	2.2%	2.7%	1.9%	1.9%
All ages	58.9%	41.1%	57.3%	42.7%	56.4%	43.6%	59.0%	41.0%	60.5%	39.5%



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Note: Excludes unknown gender and invalid age.

Non-motorists in collisions by month, day of the week, and time of day

In 2020, higher numbers of pedalcyclists and pedestrians were involved in collisions on weekdays than on weekends (Table 5). The highest number of pedalcyclists were involved in collisions on Fridays, followed closely by Thursdays. The highest numbers of pedestrians were involved in collisions on Wednesdays, Thursdays, and Fridays.

More than 70% of pedalcyclists and more than 50% of pedestrians were involved in collisions that occurred noon–8:59 p.m. The highest number of pedalcyclists involved crashes was during the 3:00-5:59 p.m. timeframe—generally considered to be rush hour. The highest number of pedestrians involved was 6:00-8:59 p.m., with substantial numbers also during rush hour.

In 2020, there were 200 or more non-motorists involved in collisions in each of the months between June and November (Figure 2). This period accounted for 61% of non-motorists involved in collisions during the year. The non-motorists involved in collisions in 2019 for each of these months was greater than in 2020. In 2019, these same months accounted for 70% of non-motorists involved in collisions during that year. In 2020, The number of non-motorists involved in collisions dipped to the lowest number in April, likely due in part to the beginning of pandemic mitigation measures. In previous years, this dip typically occurred in February or March.

Table 5. Non-motorists involved in Indiana collisions, by person type, time of day, and day of week, 2020

Pedalcyclist

Time of day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total by time of day	% by time of day
Midnight–2:59 a.m.	1	2	0	0	1	2	2	8	1.2%
3–5:59 a.m.	0	2	1	0	2	5	2	12	1.8%
6–8:59 a.m.	4	8	10	9	9	9	6	55	8.0%
9–11:59 a.m.	7	8	9	11	9	13	9	66	9.6%
Noon–2:59 p.m.	15	21	19	21	22	16	20	134	19.6%
3–5:59 p.m.	12	32	35	23	36	39	26	203	29.7%
6–8:59 p.m.	16	23	20	22	21	19	25	146	21.3%
9–11:59 p.m.	5	4	8	9	10	13	11	60	8.8%
Total	60	100	102	95	110	116	101	684	100%
% by day	8.8%	14.6%	14.9%	13.9%	16.1%	17.0%	14.8%	100%	

Pedestrian

Time of day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total by time of day	% by time of day
Midnight–2:59 a.m.	16	4	3	13	5	12	13	66	4.8%
3–5:59 a.m.	12	8	9	7	7	7	10	60	4.4%
6–8:59 a.m.	3	24	28	18	27	28	6	134	9.8%
9–11:59 a.m.	8	23	15	30	37	25	16	154	11.3%
Noon–2:59 p.m.	25	23	34	36	43	40	31	232	17.0%
3–5:59 p.m.	28	39	43	41	30	45	30	256	18.8%
6–8:59 p.m.	31	41	28	48	38	46	42	274	20.1%
9–11:59 p.m.	24	23	28	27	31	19	33	185	13.6%
Total	147	185	188	220	218	222	181	1,361	100%
% by day	10.8%	13.6%	13.8%	16.2%	16.0%	16.3%	13.3%	100%	

Non-motorists (pedalcyclist and pedestrian)

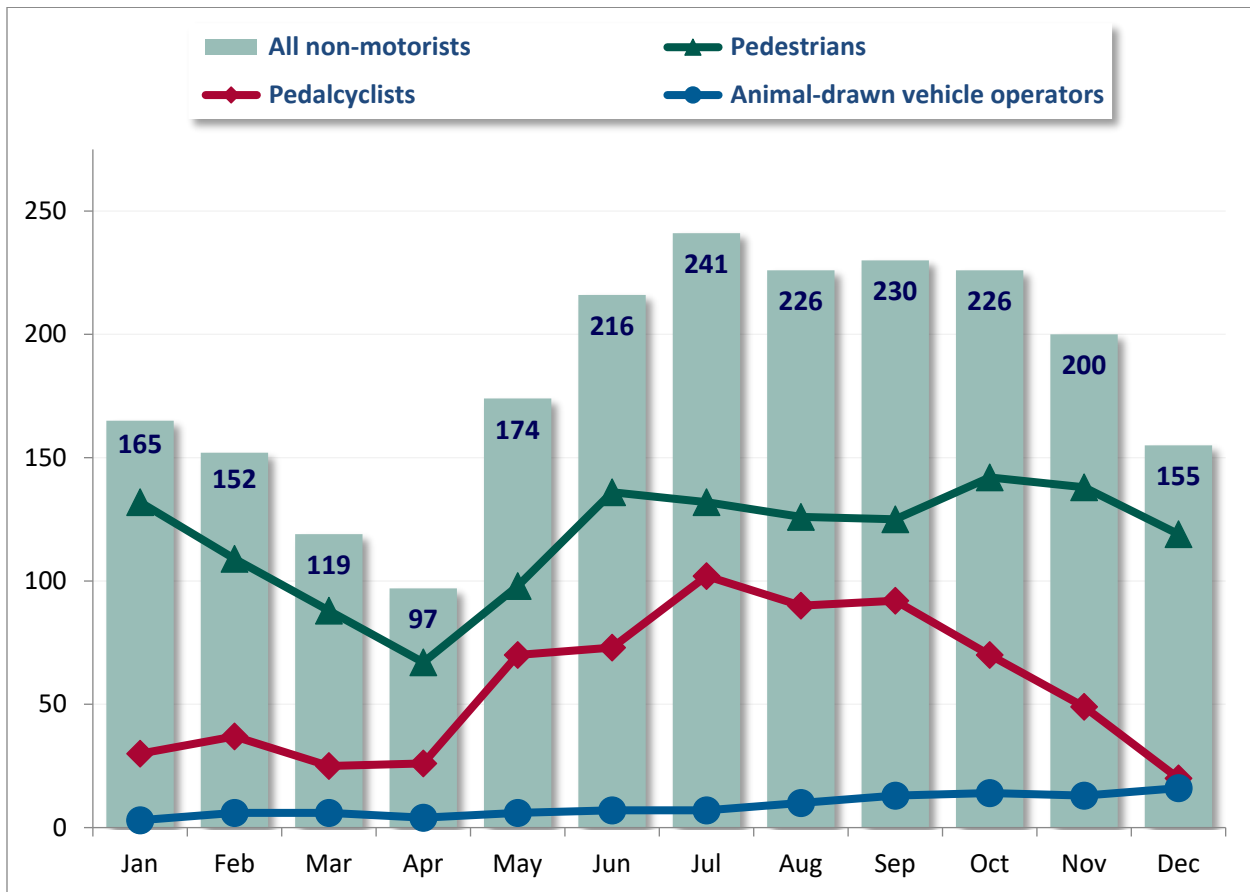
Time of day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total by time of day	% by time of day
Midnight–2:59 a.m.	17	6	3	13	6	14	15	74	5.4%
3–5:59 a.m.	12	10	10	7	9	12	12	72	5.3%
6–8:59 a.m.	7	32	38	27	36	37	12	189	13.9%
9–11:59 a.m.	15	31	24	41	46	38	25	220	16%
Noon–2:59 p.m.	40	44	53	57	65	56	51	366	26.9%
3–5:59 p.m.	40	71	78	64	66	84	56	459	33.7%
6–8:59 p.m.	47	64	48	70	59	65	67	420	30.9%
9–11:59 p.m.	29	27	36	36	41	32	44	245	18.0%
Total	207	285	290	315	328	338	282	2,045	100%
% by day	10.1%	13.9%	14.2%	15.4%	16.0%	16.5%	13.8%	100%	



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Note: Data limited to collisions where day and time were reported.

Figure 2. Non-motorists involved in collisions, by person type and month, 2020



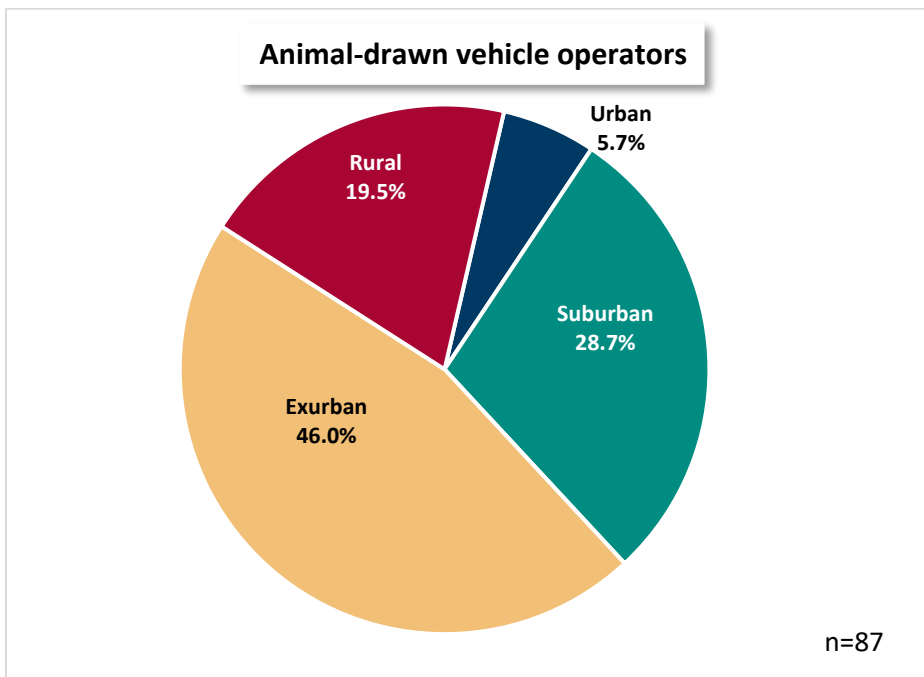
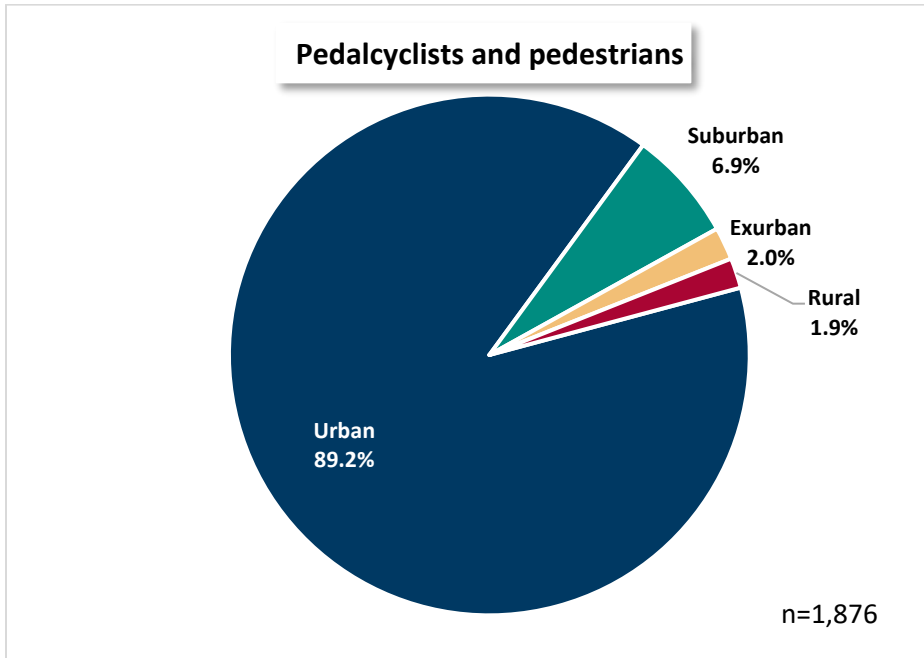
Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

In 2020, pedalcyclists were involved in collisions most often in July, August, and September (Figure 2). In 2019, pedalcyclists were involved most often in collisions in September, August, and June. In 2019 and 2020, the most pedestrians were involved in collisions in October and November. In 2020, the most animal-drawn vehicle operators were involved in crashes in December and October. In 2019, these non-motorists were involved most often in collisions in October and November.

Non-motorists in collisions by census locale

In 2020, almost 90% of pedalcyclists and pedestrians were involved in collisions that occurred in urban areas (Figure 3). Most animal drawn vehicle drivers involved in collisions that occurred in exurban and suburban areas, likely due to more conflict with motor vehicles than in more rural areas.

Figure 3. Collisions involving non-motorists, by census locale, 2020
Format bar charts side by side



Non-motorist action and attributability

In 2020, the most common pedalcyclist and pedestrian actions in crashes was crossing at an intersection—39% and 18%, respectively (calculated using Table 6). The next most common action was biking or walking on the roadway (15% and 14%, respectively) (Table 6). Among crashes in which the cause of the crash was attributed to a non-motorist, the most common action for pedalcyclists also was crossing the street at the intersection (41%). The most common action for pedestrians was crossing the street not at an intersection (25%). The actions that resulted most often in the attribution of the crash to the non-motorist were pedestrians walking against traffic (72%) and both pedalcyclists and pedestrians crossing the street not at the intersection (79% and 72%, respectively).

Table 6. Non-motorists involved in Indiana collisions, by person type, action, and attributability, 2020

Pedalcyclist			
Action	Total involved	# attributable to pedalcyclist	% attributable to pedalcyclist
Against traffic	22	13	59.1%
Crossing at intersection	264	128	48.5%
Crossing not at intersection	43	34	79.1%
Moving	57	20	35.1%
Not in roadway	22	9	40.9%
On designated non-motorist lane	20	5	25.0%
On roadway	102	46	45.1%
On shoulder	8	3	37.5%
With traffic	40	4	10.0%
Other	36	21	58.3%
Unknown	70	30	42.9%
Total	684	313	45.8%

Pedestrian			
Action	Total involved	# attributable to pedestrian	% attributable to pedestrian
Against traffic	25	18	72.0%
Crossing at intersection	257	88	34.2%
Crossing not at intersection	183	131	71.6%
Getting in or out of vehicle	31	11	35.5%
Moving	91	19	20.9%
Not in roadway	117	14	12.0%
On designated non-motorist lane	13	6	46.2%
On roadway	204	115	56.4%
On shoulder	45	12	26.7%
Standing	75	13	17.3%
With traffic	33	11	33.3%
Working	32	7	21.9%
Other	160	51	31.9%
Unknown	146	37	25.3%
Total	1,412	533	37.7%



Source: Analysis provided by the Indiana University Public Policy Institute using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Note: A vehicle or non-motorist is attributable to the occurrence of a collision when the officer marks a contributing circumstance for that vehicle that also matches the collision primary factor.

Non-motorists in alcohol-impaired collisions

In 2020, 29 pedestrians and 2 pedalcyclists were involved in collisions with alcohol-impaired drivers (greater than 0.08 g/dL) (Table 7). These numbers are similar to those in 2019. No pedalcyclists and 10 pedestrians sustained fatal injuries in 2020. Two pedalcyclists and four pedestrians were reported with fatal injuries the previous year.

The analysis includes new data about alcohol-impaired pedalcyclists and pedestrians involved in collisions. Only a small percentage of non-motorists involved in 2020 collisions were identified as alcohol impaired: 1% of pedestrians and 0.4% of pedalcyclists (Table 8). The percentages for the five-year period are similar. Pedestrians and pedalcyclists who sustained fatal injuries in 2020 were more likely to be alcohol impaired than non-motorists who sustained non-fatal injuries or who were not injured. About 11% of non-motorists in both groups who were killed were also alcohol impaired. The percentages of pedestrians who were killed and were alcohol impaired was greater for 2017–19: 12%, 13%, and 15%, respectively. The percentage in 2016 was substantially lower at 5%. There were no fatalities reported for alcohol-impaired pedalcyclists for the four years prior to 2020.

The percentages of pedestrians and pedalcyclists who were involved in collisions, alcohol-impaired, and taking particular actions at the time of the collision varies across the five-year period covered here. Table 9 shows the highest percentages of alcohol-impaired non-motorists by non-motorist action at the time of the collision by year. Across the five period, 2% or more of pedestrians in collisions—who were crossing mid-block or at a non-intersection location, walking against traffic, or walking in the roadway—were identified as alcohol impaired. For pedalcyclists, 1% or more involved in collisions who were taking an action not predefined (“other”) were identified as alcohol impaired. Readers should take care not to over-interpret the data here due to small numbers.

Non-motorists in speed-related collisions

A collision is defined as speed related if a driver is issued a speeding citation or if an officer lists “unsafe speed” or “speed to fast for weather conditions” as a primary or contributing factor. For the five-year period 2016–2020, 2% of crashes involving pedalcyclists were speed-related (calculated from Figure 4). Between 2016 and 2019, there was a continuous annual decline in the number of annual speed-related collisions involving pedalcyclists to the five-year low of 11 collisions. The number ticked up to 18 in 2020, the same number of crashes as in 2018. One-third of the pedalcyclists involved in these crashes in 2020 sustained fatal or incapacitating injuries. In the previous four years, there were no alcohol-impaired pedalcyclists who were reported to have sustained fatal injuries

For the five-year period 2016–2020, 5% of crashes involving pedalcyclists were speed-related (Figure 5). The number of pedestrians involved in speed-related collisions declined continuously over the five-year period to a new low of 62. In 2020, while almost half (47%) of pedestrians in these crashes sustained fatal or incapacitating injuries, it was the lowest rate for the five-year period.

Table 7. Non-motorists involved in Indiana collisions, by person type, injury status, and driver alcohol impairment, 2016–20

	2016			2017			2018			2019			2020		
	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	927	5	0.5%	820	1	0.1%	822	2	0.2%	745	4	0.5%	684	2	0.3%
Fatal	15	1	6.7%	9	1	11.1%	22	0	0.0%	15	2	13%	18	0	0.0%
Incapacitating	269	0	0.0%	255	0	0%	237	1	0%	218	0	0.0%	249	2	0.8%
Non-incapacitating	412	3	0.7%	357	0	0.0%	373	1	0%	328	2	0.6%	232	0	0.0%
Not injured	231	1	0.4%	199	0	0.0%	190	0	0%	184	0	0%	185	0	0.0%
Pedestrian	1,914	39	2.0%	1,709	31	2%	1,763	19	1.1%	1,663	28	1.7%	1,412	29	2.1%
Fatal	84	7	8.3%	108	5	4.6%	117	4	3.4%	78	4	5.1%	103	10	9.7%
Incapacitating	733	17	2.3%	629	8	1.3%	682	6	0.9%	666	14	2.1%	593	11	1.9%
Non-incapacitating	803	12	1.5%	711	11	1.5%	698	6	0.9%	633	6	0.9%	477	6	1.3%
Not injured	294	3	1.0%	261	7	2.7%	266	3	1.1%	286	4	1.4%	239	2	0.8%

Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) The alcohol-impaired category represents the number of non-motorists involved in collisions with drivers having a reported BAC of 0.08 g/dL or higher.
- 2) Non-incapacitating injuries include those classified as non-incapacitating, null, possible, refused, and unknown.

Table 8. Impaired non-motorists involved in Indiana collisions by person type and injury status, 2016–20

	2016			2017			2018			2019			2020		
	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	927	2	0.2%	820	3	0.4%	822	2	0.2%	745	3	0.4%	684	3	0.4%
Fatal	15	0	0.0%	9	0	0.0%	22	0	0.0%	15	0	0.0%	18	2	11.1%
Incapacitating	269	1	0.4%	255	0	0.0%	237	2	0.8%	218	3	1.4%	249	0	0.0%
Non-incapacitating	412	0	0.0%	357	2	0.6%	373	0	0.0%	328	0	0.0%	232	1	0.4%
Not injured	231	1	0.4%	199	1	0.5%	190	0	0.0%	184	0	0.0%	185	0	0.0%
Pedestrian	1,914	16	0.8%	1,709	18	1%	1,763	25	1.4%	1,663	18	1.1%	1,412	14	1.0%
Fatal	84	4	4.8%	108	13	12.0%	117	15	12.8%	78	12	15.4%	103	11	10.7%
Incapacitating	733	5	0.7%	629	3	0.5%	682	5	0.7%	666	1	0.2%	593	1	0.2%
Non-incapacitating	803	5	0.6%	711	0	0.0%	698	3	0.4%	633	4	0.6%	477	0	0.0%
Not injured	294	2	0.7%	261	2	0.8%	266	2	0.8%	286	1	0.3%	239	2	0.8%



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) The alcohol-impaired category represents the number of non-motorists involved in collisions with a reported BAC of 0.08 g/dL or higher.
- 2) Non-incapacitating injuries include those classified as non-incapacitating, null, possible, refused, and unknown.

Table 9. Alcohol-impaired non-motorists involved in Indiana collisions by person type and non-motorist action, 2016–20

Pedalcyclist

Action	2016			2017			2018			2019			2020		
	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired
Against traffic	50	0	0.0%	34	0	0.0%	35	0	0.0%	31	0	0.0%	22	0	0.0%
Crossing at intersection	282	0	0.0%	275	0	0.0%	274	2	0.7%	237	2	0.8%	264	1	0.4%
Crossing not at intersection	76	0	0.0%	59	0	0.0%	56	0	0.0%	56	1	1.8%	43	1	2.3%
Moving	85	0	0.0%	81	0	0.0%	78	0	0.0%	62	0	0.0%	57	0	0.0%
Not in Roadway	38	0	0.0%	27	1	3.7%	26	0	0.0%	27	0	0.0%	22	0	0.0%
On designated non-motorist lane	25	0	0.0%	24	0	0.0%	29	0	0.0%	29	0	0.0%	20	0	0.0%
On roadway	144	0	0.0%	105	1	1.0%	115	0	0.0%	112	0	0.0%	102	0	0.0%
On shoulder	19	0	0.0%	26	0	0.0%	18	0	0.0%	16	0	0.0%	8	0	0.0%
With traffic	63	0	0.0%	44	0	0.0%	45	0	0.0%	54	0	0.0%	40	0	0.0%
Other	51	2	3.9%	41	0	0.0%	44	0	0.0%	28	0	0.0%	36	0	0.0%
Unknown	94	0	0.0%	104	1	1.0%	102	0	0.0%	93	0	0.0%	70	1	1.4%
Total	927	2	0.2%	820	3	0.4%	822	2	0.2%	745	3	0.4%	684	3	0.4%

Pedestrian

Action	2016			2017			2018			2019			2020		
	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired	Total involved	# impaired non-motorists	% impaired
Against traffic	34	1	2.9%	29	0	0.0%	28	0	0.0%	29	0	0.0%	25	2	8.0%
Crossing at intersection	372	2	0.5%	361	5	1.4%	396	3	0.8%	319	0	0.0%	257	1	0.4%
Crossing not at intersection	288	6	2.1%	248	1	0.4%	266	9	3.4%	271	13	4.8%	183	2	1.1%
Getting in or out of vehicle	32	1	3.1%	33	0	0.0%	37	0	0.0%	27	0	0.0%	31	0	0.0%
Getting off or on school bus	5	0	0.0%	1	0	0.0%	5	0	0.0%	2	0	0.0%	0	0	N/A
Moving	127	0	0.0%	87	0	0.0%	111	0	0.0%	120	1	0.8%	91	0	0.0%
Not in Roadway	124	0	0.0%	146	0	0.0%	121	0	0.0%	119	1	0.8%	117	0	0.0%
On designated non-motorist lane	31	0	0.0%	37	0	0.0%	25	0	0.0%	26	0	0.0%	13	0	0.0%
On roadway	253	3	1.2%	199	6	3.0%	273	8	2.9%	239	2	0.8%	204	6	2.9%
On shoulder	48	0	0.0%	39	0	0.0%	45	0	0.0%	35	0	0.0%	45	1	2.2%
Standing	102	0	0.0%	77	0	0.0%	64	0	0.0%	64	0	0.0%	75	0	0.0%
With traffic	40	0	0.0%	35	0	0.0%	36	0	0.0%	19	0	0.0%	33	1	3.0%
Working	22	0	0.0%	22	0	0.0%	15	0	0.0%	30	0	0.0%	32	0	0.0%
Other	222	0	0.0%	183	3	1.6%	172	2	1.2%	191	1	0.5%	160	0	0.0%
Unknown	214	3	1.4%	212	3	1.4%	169	3	1.8%	172	0	0.0%	146	1	0.7%
Total	1,914	16	0.8%	1,709	18	1.1%	1,763	25	1.4%	1,663	18	1.1%	1,412	14	1.0%



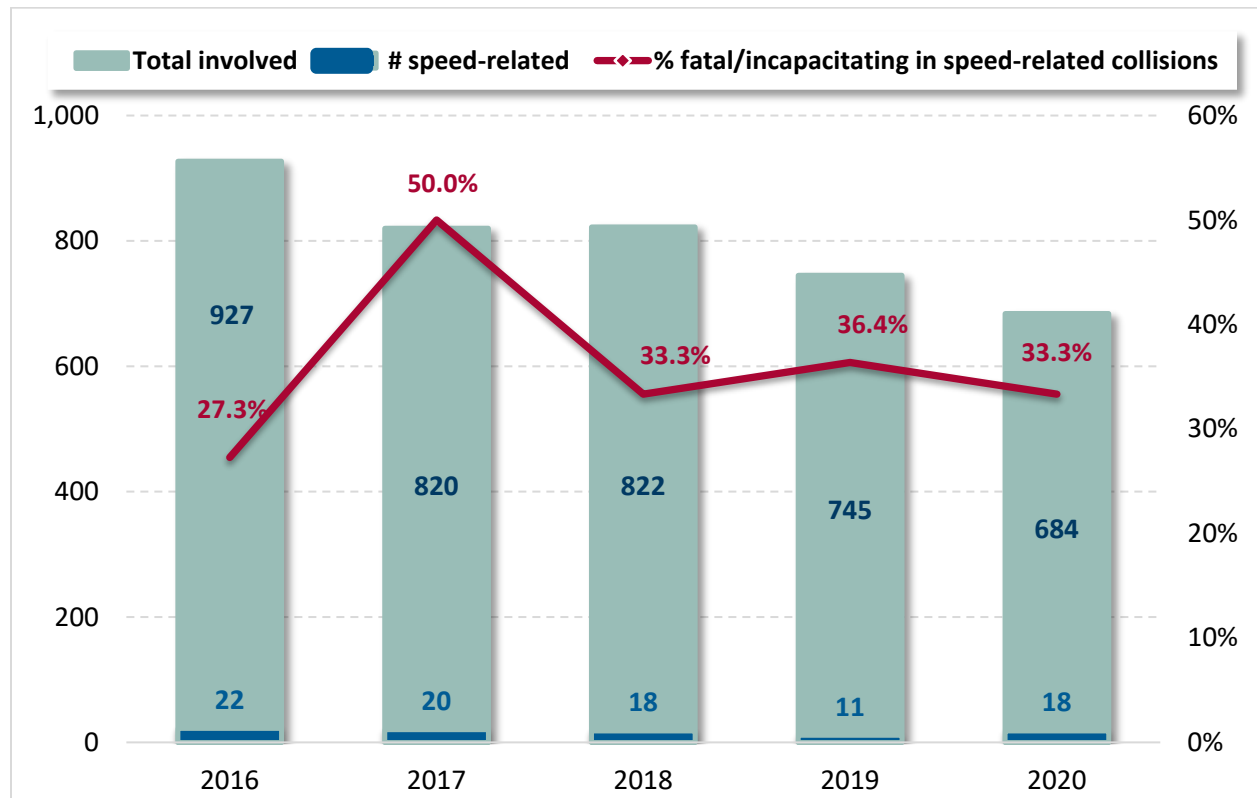
Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

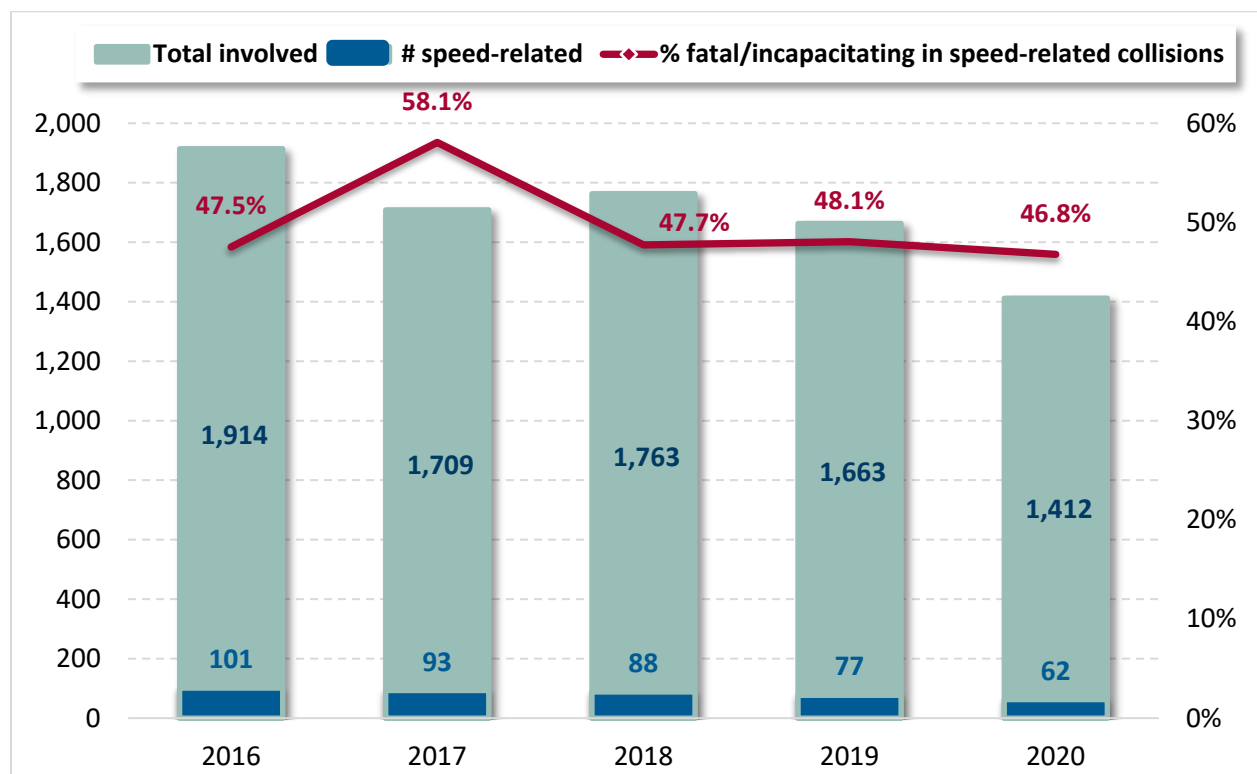
- 1) The alcohol-impaired category represents the number of non-motorists involved in collisions with a reported BAC of 0.08 g/dL or higher.
- 2) A vehicle or non-motorist is attributable to the occurrence of a collision when the officer marks a contributing circumstance for that vehicle that also matches the collision primary factor.

Figure 4. Non-motorists involved in Indiana collisions, by person type, speed involvement, and fatal/incapacitating injury rate, 2016–20

Pedalcyclist



Pedestrian



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) A collision is defined as speed-related in Indiana ARIES data if any of the following conditions are 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.
- 2) Non-incapacitating injuries include those classified as non-incapacitating, null, possible, refused, and unknown

Definitions

- **Alcohol-impaired collision:** a collision is considered alcohol-impaired when any vehicle driver involved has a BAC test result at or above 0.08 g/dL.
- **Annual rate of change (ARC):** 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 2016 to 2020, it is calculated as $(\text{Value in 2019}/\text{Value in 2015})^{1/4}-1$.
- **Attributability:** a vehicle or non-motorist is attributable to the occurrence of a collision when the officer marks a contributing circumstance for that vehicle that also matches the collision primary factor.
- **Census locale:** urban is defined as Census 2000 Urban Areas (2007–09) or Census 2010 Urban Areas (2010–11). Suburban is defined 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:** 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:** includes 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 are 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 source

Indiana State Police. Automated Reporting Information Exchange System (ARIES), downloaded March 29, 2021.