

# Iowa Child Passenger Safety Survey

**2023**

*Conducted by the  
University of Iowa Injury Prevention Research Center  
Under contract to Iowa Governor's Traffic Safety Bureau*

**IOWA**

---

**Injury Prevention  
Research Center**



## Background

Since 1985, Iowa has had a law requiring all young children riding in motor vehicles to be properly protected through the use of child seats, booster seats, and/or seat belts. In 2004 and again in 2009, the Iowa Legislature revised the requirements of the child passenger safety law. Iowa's current child passenger safety law requires that:

<i>Children must ride in an appropriate rear-facing child safety seat until one year of age and at least 20 pounds.</i>
<i>Children must ride in a child safety seat or a booster seat through the age of 5 years.</i>
<i>Children ages 6 through 17 must ride in a booster seat or be secured by a seat belt.</i>

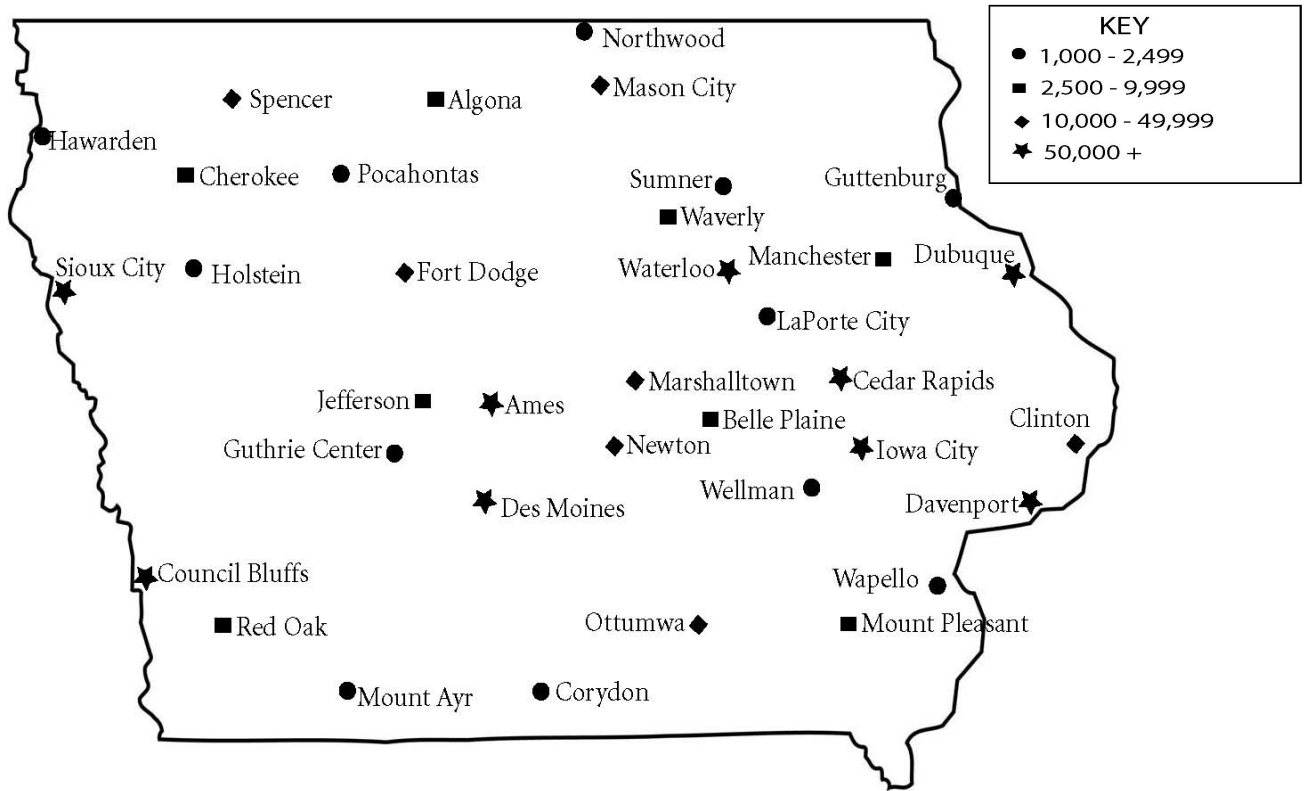
In order to measure compliance with these laws and to direct educational efforts, observational child restraint usage surveys have been conducted annually since 1988. The surveys are funded by the Governor's Traffic Safety Bureau (GTSB) within the Iowa Department of Public Safety. The GTSB has contracted with The University of Iowa Injury Prevention Research Center (UI IPRC) to conduct these child passenger safety surveys since 1996.

## Introduction and Methods

In an effort to accurately determine compliance with Iowa's child passenger safety law, in particular the requirement for use of child safety and booster seats, observers must be able to obtain a clear view into the vehicle. Starting with the 2005 survey, the basic protocol was changed from the previous "drive-by" observational methodology to a more "in-person" approach. The original survey design had not been updated since the 1980s, so the entire Iowa Child Passenger Restraint Survey protocol was also reassessed to ensure statistically valid representation of Iowa's total population mix. A workgroup consisting of UI IPRC faculty and staff and colleagues from the GTSB and Blank Children's Hospital was convened in early 2005 and charged with redesigning the survey methodology.

Researchers determined that to best represent Iowa's population the survey needed to be conducted in 36 communities across the state ranging in size from 1,424 persons in Wellman to Des Moines with 217,521 persons. Figure 1 identifies the communities on a map of Iowa. The list of communities, their size range, and the number of children needing to be observed at each location is listed in Table 1. Note that as a result of the 2010 Census, the town of Hawarden's population increased to 2,546 thus bumping them into the second tier of community size and increasing their sample size from 50 to 75 observations.

The workgroup decided that the survey would best be implemented at sites such as gas stations or fast-food restaurants where the surveyor could approach the motor vehicle and quickly collect the desired information. The protocol calls for a well-identified surveyor to position themselves where they can see vehicles pull up carrying passengers who appear to be up to seventeen years of age. The surveyor approaches the vehicle and politely asks the driver if they would be willing to participate in a child and youth passenger safety survey. If the driver agrees, the surveyor confirms the age of the passenger(s) in the vehicle and quickly notes restraint use. No identifying information is collected (e.g., names or license plate numbers). The surveyor thanks the occupants and offers the adult a card describing Iowa's child passenger safety law and identifying who to contact for additional information.



**Figure 1. 2023 Iowa Child Passenger Survey Locations**

**Table 1. Iowa Child Passenger Restraint Survey Locations, 2023**

<p><b>Communities 1,000 – 2,499</b> Minimum of 50 kids observed at each location</p>	<ol style="list-style-type: none"> <li>1. Corydon</li> <li>2. Guthrie Center</li> <li>3. Guttenberg</li> <li>4. Holstein</li> <li>5. Laporte City</li> <li>6. Mount Ayr</li> <li>7. Northwood</li> <li>8. Pocahontas</li> <li>9. Sumner</li> <li>10. Wapello</li> <li>11. Wellman</li> </ol>
<p><b>Communities 2,500 – 9,999</b> Minimum of 75 kids observed at each location</p>	<ol style="list-style-type: none"> <li>1. Algona</li> <li>2. Belle Plaine</li> <li>3. Cherokee</li> <li>4. Hawarden</li> <li>5. Jefferson</li> <li>6. Manchester</li> <li>7. Mount Pleasant</li> <li>8. Red Oak</li> <li>9. Waverly</li> </ol>
<p><b>Communities 10,000 – 49,999</b> Minimum of 100 observed kids at each location</p>	<ol style="list-style-type: none"> <li>1. Clinton</li> <li>2. Fort Dodge</li> <li>3. Marshalltown</li> <li>4. Mason City</li> <li>5. Newton</li> <li>6. Ottumwa</li> <li>7. Spencer</li> </ol>
<p><b>Communities 50,000+</b> Minimum of 125 observed kids at each location</p>	<ol style="list-style-type: none"> <li>1. Ames</li> <li>2. Cedar Rapids</li> <li>3. Council Bluffs</li> <li>4. Davenport</li> <li>5. Des Moines</li> <li>6. Dubuque</li> <li>7. Iowa City</li> <li>8. Sioux City</li> <li>9. Waterloo</li> </ol>

The IPRC hired two temporary part-time surveyors and trained them in proper survey protocol. The survey was then carried out across the state during the months of July through September 2023. All observations were of children and youth from birth through age seventeen and accompanying adult or teen (aged 16 or 17) drivers.

**Results**

Observations were attempted with a total of 1,287 drivers, of which 1,268 (98.5%) drivers agreed to participate. These 1,268 drivers were carrying a total of 3,133 children. The breakdown of missing and/or incomplete data is as follows:

- 99 (3.3%) child passenger observations were missing child age due to parent refusal to provide that information
- 2 (0.1%) driver observations were missing Driver Belted values due surveyor error

The observable values of those who refused to give their age or child’s ages were still collected (e.g., restraint use, seating position) when possible, given they have historically been more likely to have unrestrained children/passengers. The following results include these observable values in the totals otherwise the missing data or refusals are noted with each table. Table 2 lists the number of infants (< 2 yr.), toddlers (2-5 yrs.), youth (6-13 yrs.), and teens (14-17) included in the survey. Throughout the report there was a total of 3,133 youth observed, but if age was not available during observation the total was 3,034.

**Table 2. Number of Children Observed by Age**

Age	Number of Children Observed / Percent
< 2	173 / 5.7%
2-5	990 / 32.6%
6-13	1,715 / 56.5%
14-17	156 / 5.1%
Total	3,034 * / 100%

*\*99 missing data on age not included*

Table 3 identifies the number of restrained versus unrestrained passengers in each age range (regardless of whether the type of restraint use was appropriate for the child's age). In 2023, 96.8% of children observed under age 6 were restrained by some means. From this information, it is clear that lowans understand the importance of securing infants in child safety seats, with 100% of children aged one year or younger being properly restrained. While the majority of children are being restrained in motor vehicles, as the child's age increases, they are less likely to be restrained. 96.3% of toddlers (2-5), 89.0% of youth (6-13), and 80.1% of teens (14-17) were restrained. Overall, 91.6% of all children observed were restrained (by any means); a decrease of 7.0% from the 2022 survey total of 98.6%.

**Table 3. Restraint Use by Child's Age**

Age	Not Restrained Number / Percent	Restrained Number / Percent	Total
< 2	0 / 0.0%	173 / 100%	173
2-5	37 / 3.7%	953 / 96.3%	990
6-13	188 / 11.0%	1,527 / 89.0%	1,715
14-17	31 / 19.9%	125 / 80.1%	156
Total	256 / 8.4%	2,778 / 91.6%	3,034*

*\*99 missing data*

The numbers contained in Table 3 for each age group represent children who were restrained by any means including a seat belt alone, which for infants and toddlers is neither safe nor legal under Iowa's Child Passenger Safety law. Table 4 displays type of restraint use by age of the child. Of the 990 toddlers (2-5 year olds) observed, 199 (20.1%) were restrained only by a seat belt, which is a small decrease from 2022 (21.4%). This percentage of improper toddler restraint is troubling. **If Iowa's statewide restraint use is re-calculated without including the improperly restrained children in this age group, the statewide average drops from 91.6% to 84.5%.**

**Table 4. Type of Restraint Use by Child's Age**

Age	Child Safety Seat with Seat belt	Booster Seat with Seat belt	Seat belt only	Not Restrained	Total
< 2	173 / 100%	0 / 0%	0 / 0%	0 / 0%	173
2-5	448 / 45.3 %	306 / 30.9%	199 / 20.1%	37 / 3.7%	990
6-13	5 / 0.3%	78 / 4.5%	1,444 / 84.2%	188 / 11.0%	1,715
14-17	0 / 0.0%	0 / 0%	125 / 80.1%	31 / 19.9%	156
Total	626 / 20.6%	384 / 12.7%	1,768 / 58.3%	256 / 8.4%	3,034*

*\*99 missing data*

The trend in previous observational surveys of restraint use in Iowa has been that persons in the metropolitan areas restrain their children at a higher rate than those in the rural communities. As displayed in Table 5, this was not the case in the 2023 survey; rather, a variety of usage rates were seen in the community groups. Table 5 displays rates of proper restraint compared with rates of restraint by any means and rates of no restraint. Note that “properly restrained” means being restrained in accordance with Iowa’s child passenger restraint law. Technical measures of correct restraint use typically checked in a child seat clinic, e.g., belt tightness, were not evaluated. In the most rural communities (1,000-2,499) 91.7% of the children were restrained by some means similar to the 91.6% in the urban areas. Although the 2023 disparity is not as drastic as past years, rates of properly restrained children were lower in the most rural communities (82.6%) than in urban areas (84.6%).

**Table 5. Restraint Use by Community Size**

Community Size	Number / % Restrained (by any means)	Number / % Restrained Properly*	Number / % Not Restrained	Total
1,000-2,499	508 / 91.7%	433 / 82.6%	46 / 8.3%	554
2,500-9,999	644 / 95.1%	582 / 88.6%	33 / 4.9%	677
10,000-49,999	661 / 88.6%	594 / 82.0%	85 / 11.4%	746
≥ 50,000	1,059 / 91.6%	955 / 84.6%	97 / 8.4%	1,156
Total	2,872 / 91.7%	2,564 / 84.5%	261 / 8.3%	3,133*

\* Properly means in compliance with Iowa law.

Table 6 displays the type of restraint use type by size of the community. This table includes information of observations where age information was not available (one additional observation). In 2022, communities with a population of 2,500-9,999 had the highest proportion of unrestrained children (2.1%). Unlike 2022, communities with a population of 10,000-49,999 had the highest proportion of unrestrained children (11.4%) in 2023.

**Table 6. Type of Restraint Use by Community Size**

Community Size	Child Safety Seat with Seat belt	Booster Seat with Seat belt	Seat belt only	Not Restrained	Total
1,000-2,499	112 / 20.2%	77 / 13.9%	319 / 57.6%	46 / 8.3%	554
2,500-9,999	125 / 18.5%	101 / 14.9%	418 / 61.7%	33 / 4.9%	677
10,000-49,999	158 / 21.2%	73 / 9.8%	430 / 57.6%	85 / 11.4%	746
≥ 50,000	259 / 22.4%	144 / 12.5%	656 / 56.7%	97 / 8.4%	1,156
Total	654 / 20.9%	395 / 12.6%	1,823 / 58.2%	261 / 8.3%	3,133

Information on the number of children by age and restraint use observed at each individual location can be found in Table 7 including the number of toddlers (2-5 year olds) restrained by only a seat belt. Table 8 presents the restraint use by age as percentages for each location. Table 8 includes the percentage of children restrained by any means and those children who are restrained in compliance with Iowa’s law for each survey location. Table 9 lists the percentage of children properly restrained sorted by community size, ranging from 55.2% to 96.9%.

**Table 7. Restraint Use by Child Age and Survey Location, 2023**

	Total Kids	Age < 2				Age 2 - 5				Age 6-13				Age 14-17			
		CSS	Booster	Belt	None	CSS	Booster	Belt Only	None	CSS	Booster	Belt Only	None	CSS	Booster	Belt Only	None
Algona	73	3	0	0	0	11	3	4	2	0	3	36	5	0	0	4	2
Ames	124	5	0	0	0	18	8	8	1	0	0	49	24	0	0	7	4
Belle Plaine	72	3	0	0	0	5	8	7	0	0	0	48	0	0	0	1	0
Cedar Rapids	122	8	0	0	0	22	22	10	0	0	2	54	0	0	0	4	0
Cherokee	74	5	0	0	0	9	4	3	2	0	6	33	4	0	0	5	3
Clinton	97	3	0	0	0	15	14	9	0	0	5	51	0	0	0	0	0
Corydon	47	3	0	0	0	5	9	6	0	0	2	22	0	0	0	0	0
Council Bluffs	123	8	0	0	0	33	6	5	0	2	3	56	3	0	0	4	3
Davenport	143	6	0	0	0	21	29	10	0	0	4	73	0	0	0	0	0
Des Moines	123	7	0	0	0	15	2	1	6	0	6	69	7	0	0	8	2
Dubuque	124	7	0	0	0	8	13	7	0	0	1	83	0	0	0	5	0
Fort Dodge	99	6	0	0	0	9	3	2	0	0	5	59	9	0	0	6	0
Guthrie Center	50	1	0	0	0	5	7	4	0	0	0	29	0	0	0	4	0
Guttenberg	48	4	0	0	0	16	5	4	0	0	2	17	0	0	0	0	0
Hawarden	72	5	0	0	0	16	10	2	0	0	6	30	0	0	0	2	1
Holstein	48	3	0	0	0	6	2	1	1	0	2	17	9	0	0	6	1
Iowa City	122	8	0	0	0	28	10	9	0	0	5	56	0	0	0	6	0
Jefferson	74	4	0	0	0	9	3	1	3	0	3	37	7	0	0	4	3
LaPorte City	46	2	0	0	0	2	2	4	0	0	1	34	0	0	0	1	0
Manchester	72	6	0	0	0	14	12	3	0	0	0	36	0	0	0	1	0
Marshalltown	104	9	0	0	0	10	3	8	5	0	0	36	24	0	0	6	3
Mason City	130	8	0	0	0	19	8	3	5	0	3	55	18	0	0	11	0
Mount Ayr	47	2	0	0	0	7	5	4	0	0	0	27	0	0	0	2	0
Mount Pleasant	72	2	0	0	0	8	13	5	0	0	1	43	0	0	0	0	0
Newton	98	10	0	0	0	14	4	6	1	0	2	36	13	0	0	7	5
Northwood	47	3	0	0	0	6	2	6	2	0	0	17	8	0	0	1	2
Ottumwa	98	4	0	0	0	9	11	13	0	0	0	57	0	0	0	4	0
Pocahontas	49	1	0	0	0	4	5	5	2	0	2	16	13	0	0	1	0
Red Oak	75	5	0	0	0	8	13	9	0	0	0	35	0	0	0	5	0
Sioux City	125	7	0	0	0	9	5	6	6	2	1	42	39	0	0	6	2
Spencer	98	6	0	0	0	30	10	3	0	0	4	42	0	0	0	3	0
Sumner	47	2	0	0	0	8	10	6	0	0	1	19	0	0	0	1	0
Wapello	48	4	0	0	0	5	9	3	1	0	0	21	5	0	0	0	0
Waterloo	123	5	0	0	0	29	17	13	0	0	5	50	0	0	0	4	0
Waverly	73	5	0	0	0	5	12	6	0	0	2	38	0	0	0	5	0
Wellman	47	3	0	0	0	10	7	3	0	1	1	21	0	0	0	1	0
<b>TOTAL</b>	<b>3034</b>	<b>173</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>448</b>	<b>306</b>	<b>199</b>	<b>37</b>	<b>5</b>	<b>78</b>	<b>1444</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>125</b>	<b>31</b>



**Table 8. Percent Restraint Use by Child Age and Survey Location, 2023**

	<b>% All Kids Properly Restrained</b>	<b>% All kids Restrained</b>	<b>% &lt; 2 Properly Restrained</b>	<b>% 2-5 Properly Restrained</b>	<b>% 6-13 Restrained</b>	<b>% 14-17 Restrained</b>
Algona	82.2%	88%	100%	70%	88.6%	66.7%
Ames	70.2%	77%	100%	74.3%	67.1%	63.6%
Belle Plaine	88.9%	100%	66.7%	65%	100%	100%
Cedar Rapids	91.8%	100%	100%	81.5%	100%	100%
Cherokee	82.4%	86.7%	80%	72.2%	90.7%	62.5%
Clinton	90.7%	100%	100%	76.3%	100%	n/a
Corydon	87.2%	100%	100%	70%	100%	n/a
Council Bluffs	88.6%	95.2%	87.5%	88.6%	95.3%	57.1%
Davenport	93%	100%	100%	83.3%	100%	n/a
Des Moines	86.2%	88.1%	85.7%	70.8%	91.5%	80%
Dubuque	94.4%	100%	100%	75%	100%	100%
Fort Dodge	88.9%	91.1%	100%	85.7%	87.7%	100%
Guthrie Center	92%	100%	100%	75%	100%	100%
Guttenberg	91.7%	100%	100%	84%	100%	n/a
Hawarden	94.4%	98.7%	80%	92.9%	100%	66.7%
Holstein	75%	78%	100%	80%	67.9%	85.7%
Iowa City	91.8%	100%	87.5%	80.9%	100%	100%
Jefferson	81.1%	82.7%	100%	75%	85.1%	57.1%
LaPorte City	91.3%	100%	100%	50%	100%	100%
Manchester	95.8%	100%	100%	89.7%	100%	100%
Marshalltown	59.6%	69.5%	77.8%	50%	60%	66.7%
Mason City	79.2%	82.7%	87.5%	77.1%	76.3%	100%
Mount Ayr	91.5%	100%	100%	75%	100%	100%
Mount Pleasant	93.1%	100%	100%	80.8%	100%	n/a
Newton	74.5%	80%	100%	72%	74.5%	58.3%
Northwood	61.7%	72%	100%	50%	68%	33.3%
Ottumwa	86.7%	100%	100%	60.6%	100%	100%
Pocahontas	59.2%	70.6%	100%	56.2%	58.1%	100%
Red Oak	88%	100%	100%	70%	100%	100%
Sioux City	55.2%	63%	85.7%	53.8%	53.6%	75%
Spencer	96.9%	100%	100%	93%	100%	100%
Sumner	87.2%	100%	100%	75%	100%	100%
Wapello	81.2%	88.2%	100%	77.8%	80.8%	n/a
Waterloo	89.4%	100%	100%	78%	100%	100%
Waverly	91.8%	100%	100%	73.9%	100%	100%
Wellman	91.5%	100%	100%	85%	100%	100%

**Table 9. Percent of Children Properly Restrained by Community Size, 2023**

Communities 1,000 - 2,499	<b>Corydon</b>	87.2%
	<b>Guthrie Center</b>	92.0%
	<b>Guttenberg</b>	91.7%
	<b>Holstein</b>	75.0%
	<b>Laporte City</b>	91.3%
	<b>Mount Ayr</b>	91.5%
	<b>Northwood</b>	61.7%
	<b>Pocahontas</b>	59.2%
	<b>Sumner</b>	87.2%
	<b>Wapello</b>	81.2%
	<b>Wellman</b>	91.5%
Communities 2,500 - 9,999	<b>Algona</b>	82.2%
	<b>Belle Plaine</b>	88.9%
	<b>Cherokee</b>	82.4%
	<b>Hawarden</b>	94.4%
	<b>Jefferson</b>	81.1%
	<b>Manchester</b>	95.8%
	<b>Mount Pleasant</b>	93.1%
	<b>Red Oak</b>	88.0%
	<b>Waverly</b>	91.8%
Communities 10,000 - 49,999	<b>Clinton</b>	90.7%
	<b>Fort Dodge</b>	88.9%
	<b>Marshalltown</b>	59.6%
	<b>Mason City</b>	79.2%
	<b>Newton</b>	74.5%
	<b>Ottumwa</b>	86.7%
	<b>Spencer</b>	96.9%
Communities 50,000+	<b>Ames</b>	70.2%
	<b>Cedar Rapids</b>	91.8%
	<b>Council Bluffs</b>	88.6%
	<b>Davenport</b>	93.0%
	<b>Des Moines</b>	86.2%
	<b>Dubuque</b>	94.4%
	<b>Iowa City</b>	91.8%
	<b>Sioux City</b>	55.2%
<b>Waterloo</b>	89.4%	

The survey also collected information on child placement within the vehicle—front seat vs. back seat. Safety experts strongly recommend placing all children in the rear seat regardless of their age. Table 10 displays the number and percentage of children in each location by type of restraint use. Overall, 83% of all children and youth were observed in the back seat. Almost all the children in child safety seats (98.8%) and booster seats (99%) were placed in the backseat. However, of those restrained only by a seat belt the percentages were slightly more equally distributed between the front (25.9%) and back (74.1%). Unrestrained children were mainly in the back (78.2%), compared to the front (21.8%). In 2022, there was a total of 42 youth not restrained out of the total observed (3,050). We have seen an increase in the amount of youth not restrained in 2023, with 261 youth not restrained out of the total observed (3,133).

**Table 10. Type of Restraint Use by Location in the Vehicle, 2023**

Restraint Type	Front Seat	Back Seat	Total
Child Safety Seat with Seat belt	8 / 1.2%	646 / 98.8%	654
Booster Seat with Seat belt	4 / 1.0%	391 / 99.0%	395
Seat belt only	472 / 25.9%	1,351 / 74.1%	1,823
<b>Not Restrained</b>	57 / 21.8%	204 / 78.2%	261
<b>Total</b>	541 / 17.3%	2,592 / 82.7%	3,133

The surveyors also noted whether the motor vehicle drivers were wearing their seat belts. 96% of the drivers observed were wearing a seat belt, which decreased from 2022 (99.8%). Tables 11 and 12 list observed driver seat belt use by community size and for each community, respectively.

**Table 11. Driver Seat Belt Use by Community Size, 2023**

Community Size	Driver Belted	Driver Not Belted	Total
1,000-2,499	512 / 92.4%	42 / 7.6%	554
2,500-9,999	661 / 97.6%	16 / 2.4%	677
10,000-49,999	639 / 85.9%	105 / 14.1%	744
≥ 50,000	1,108 / 95.8%	48 / 4.2%	1,156
<b>Total</b>	2,920 / 93.3%	211 / 6.7%	3,131*

*\*2 missing data*

**Table 12. Driver Seat Belt Use, 2023**

	<b>Total Drivers Observed</b>	<b>Number Drivers Belted</b>	<b>% Drivers Belted</b>	<b>Number Drivers Not Belted</b>	<b>% Drivers Not belted</b>
<b>Algona</b>	35	33	94.3	2	5.7
<b>Ames</b>	59	52	88.1	7	11.9
<b>Belle Plaine</b>	24	24	100	0	0
<b>Cedar Rapids</b>	40	40	100	0	0
<b>Cherokee</b>	37	32	86.5	5	13.5
<b>Clinton</b>	34	34	100	0	0
<b>Corydon</b>	18	18	100	0	0
<b>Council Bluffs</b>	50	47	94	3	6
<b>Davenport</b>	52	52	100	0	0
<b>Des Moines</b>	49	44	89.8	5	10.2
<b>Dubuque</b>	41	41	100	0	0
<b>Fort Dodge</b>	43	38	88.4	5	11.6
<b>Guthrie Center</b>	18	18	100	0	0
<b>Guttenberg</b>	18	18	100	0	0
<b>Hawarden</b>	37	37	100	0	0
<b>Holstein</b>	33	20	60.6	13	39.4
<b>Iowa City</b>	51	51	100	0	0
<b>Jefferson</b>	42	38	90.5	4	9.5
<b>LaPorte City</b>	17	17	100	0	0
<b>Manchester</b>	27	27	100	0	0
<b>Marshalltown</b>	47	32	68.1	14	29.8
<b>Mason City</b>	71	44	62	26	36.6
<b>Mount Ayr</b>	16	16	100	0	0
<b>Mount Pleasant</b>	28	28	100	0	0
<b>Newton</b>	51	42	82.4	9	17.6
<b>Northwood</b>	25	19	76	6	24
<b>Ottumwa</b>	35	35	100	0	0
<b>Pocahontas</b>	29	22	75.9	7	24.1
<b>Red Oak</b>	25	25	100	0	0
<b>Sioux City</b>	55	45	81.8	10	18.2
<b>Spencer</b>	44	44	100	0	0
<b>Sumner</b>	18	18	100	0	0
<b>Wapello</b>	18	18	100	0	0
<b>Waterloo</b>	39	39	100	0	0
<b>Waverly</b>	25	25	100	0	0
<b>Wellman</b>	17	17	100	0	0
<b>TOTAL</b>	1,268	1,150	90.7	116	9.1

## Conclusions

Results from the 2023 survey indicate that the majority of lowans understand the importance of restraining their children. This is especially true for infants (100%) being restrained in child safety seats. Among children aged 5 and under, 3.7% were observed to be not restrained by any means. Data from 2021-2022, held a constant trend of 0.0% of children 5 and under not being restrained by any means. This year, 2023, we have seen an increase from 0% to 3.7% for children ages 2 to 5 not being restrained at all (by any means), which is the highest it has been in the past 5 years. In addition, a decrease was observed from 2022 driver restraint rates (99.8%) to 2023 (96%).

The results also revealed there several areas with room for improvement. It remains pertinent that lowans be informed on the importance of using booster seats, child safety seats, and what type of restraint their child needs in accordance with Iowa law. The 2023 results showed children aged 2-5 had the highest rate of being improperly restrained. For instance, children who fall within this age group should be restrained by a safety seat or booster, however, 20.1% of children were restrained by a seat belt only.

Contrary to years 2018-2020, the 2023 survey results did not show a clear pattern in rates of restraint use in by community size. In prior years there was a somewhat linear pattern of restraint use decreasing as the size of the community decreased. However, this year results showed restraint use by any means among all children was highest (95.1%) in the communities with a population of 2,500-9,999, compared to the other community sizes which were both smaller and larger. In 2023, the lowest level of restraint use (88.6%) was observed in communities with a population between 10,000-49,999. This is not comparable to the previous years, 2018-2020, in which restraint use was more frequent in larger communities.

The survey also collects information on child placement within the vehicle—front seat vs. back seat. Safety experts strongly recommend placing all children in the rear seat regardless of their age. Overall, 82.7% of all children and youth were observed in the back seat. Almost all the children in child safety seats (98.8%) and booster seats (99.0%) were placed in the back seat, while 74.1% of those restrained only with a seat belt were secured in the back seat. Of the passengers riding unrestrained, the percentage riding in the front seat increased from 7.1% in 2022 to 21.8% in 2023. This emphasizes a continued need to reach out to drivers on the importance of child restraint use in all seating positions within a vehicle and encouraging placement of children in the back seat whenever possible.

## **Appendix A**

### **Iowa's 2023 Child Passenger Safety Survey Project Personnel**

Conducted by the University of Iowa Injury Prevention Research Center  
Under contract to Iowa Governor's Traffic Safety Bureau

#### **Principal Investigator**

Cara J. Hamann, MPH, PhD  
Associate Professor  
The University of Iowa Injury Prevention Research Center  
145 N. Riverside Dr.  
S449 CPHB  
Iowa City, IA 52242  
(319) 384-1513  
cara-hamann@uiowa.edu

#### **Field Surveyors**

Tina Ostrander  
Kat Altenhofen

#### **Report Preparation**

Elise Markham  
Laura Rockwell

#### **Data Analyst**

Stephanie Jansson

#### **GTSB Contact**

Amanda Woods and Brandi Thompson

#### **Acknowledgments**

The research team would like to thank the local community sites for their annual support of the project by allowing us to survey at public locations within their community. We would also like to thank Ryan Dusil for his instrumental work on creating the electronic survey materials that our team utilized to create this report.

## **Appendix B**

### **Comparison of 2018- 2023 Iowa Child Passenger Safety Survey Results**

The following Tables allow for comparison between the 2018-2023 child passenger safety survey results.

#### **Comparison Tables**

1. Number of Children Observed by Age
2. Restraint Use by Child's Age
3. Type of Restraint Use by Child's Age
4. Restraint Use by Community Size
5. Type of Restraint Use by Community Size
6. Restraint Use by Child's Age by Survey Location
7. Type of Restraint Use by Location in the Vehicle
8. Driver Seat Belt Use by Community Size
9. Driver Seat Belt Use by Survey Location

**Comparison Table 1  
Number of Children Observed by Age**

<b>Age</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>&lt; 2</b>	204 / 6.9%	200 / 6.5%	157 / 6.7%	160 / 5.4%	200 / 6.6%	173 / 5.7%
<b>2-5</b>	763 / 25.6%	834 / 27.0%	595 / 25.5%	1085 / 36.5%	929 / 30.5%	990 / 32.6%
<b>6-13</b>	145 / 48.5%	1,501 / 48.6%	1,154 / 49.5%	1,618 / 54.4%	1,574 / 51.6%	1,715 / 56.5%
<b>14-17</b>	568 / 19.1%	556 / 18.0%	426 / 18.3%	112 / 3.8%	345 / 11.3%	156 / 5.1%
<b>Total</b>	2,980 / 100%	3,091 / 100%	2,404 / 100%	2,975 / 100%	3,048 / 100%	3,034 / 100%

**Comparison Table 2  
Restraint Use by Child's Age**

<b>% Not Restrained</b>							<b>% Restrained</b>						
<b>Age</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Age</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>&lt; 2</b>	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	<b>&lt; 2</b>	100%	99.0%	100%	100%	100%	100%
<b>2-5</b>	1.3%	2.2%	1.3%	0.0%	0.0%	3.7%	<b>2-5</b>	98.7%	97.8%	98.7%	100%	100%	96.3%
<b>6-13</b>	3.3%	3.5%	6.2%	5.6%	2.4%	11.0%	<b>6-13</b>	96.7%	96.5%	93.9%	94.4%	97.6%	89.0%
<b>14-17</b>	4.9%	7.7%	14.6%	12.0%	1.2%	19.9%	<b>14-17</b>	95.1%	92.3%	85.5%	88.0%	98.8%	80.1%
<b>Total</b>	2.9%	3.7%	6.1%	3.5%	1.4%	8.6%	<b>Total</b>	97.1%	96.3%	94.0%	96.5%	98.6%	94.7%



**Comparison Table 3  
Type of Restraint Use by Child's Age**

Child Safety Seat with Seat belt							Booster Seat with Seat belt						
Age	2018	2019	2020	2021	2022	2023	Age	2018	2019	2020	2021	2022	2023
< 2	98.5%	99.0%	99.4%	100%	100%	100%	< 2	1.0%	0.0%	0.0%	0.0%	2.0%	0.0%
2-5	58.7%	58.0%	58.4%	53.3%	52.0%	45.3%	2-5	33.8%	34.5%	36.7%	28.4%	26.6%	30.9%
6-13	1.0%	1.9%	2.3%	0.3%	0.4%	0.3%	6-13	20.8%	18.5%	21.4%	3.9%	2.9%	4.5%
14-17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14-17	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
<b>Total</b>	<b>22.3%</b>	<b>23.0%</b>	<b>22.8%</b>	<b>24.9%</b>	<b>22.4%</b>	<b>21.6%</b>	<b>Total</b>	<b>18.8%</b>	<b>18.3%</b>	<b>20.0%</b>	<b>12.5%</b>	<b>9.7%</b>	<b>13.0%</b>

Seat belt Only							Not Restrained						
Age	2018	2019	2020	2021	2022	2023	Age	2018	2019	2020	2021	2022	2023
< 2	0.5%	0.0%	0.6%	0.0%	1.5%	0%	< 2	0.0%	1.0%	0.0%	0.0%	0.0%	0%
2-5	6.2%	5.3%	3.5%	18.4%	21.4%	20.1%	2-5	1.3%	2.2%	1.4%	0.0%	0.0%	3.7%
6-13	75.0%	76.2%	70.1%	90.3%	94.3%	84.2%	6-13	3.3%	3.5%	6.2%	5.6%	2.4%	11.0%
14-17	94.9%	92.1%	85.2%	88.0%	98.8%	80.1%	14-17	4.9%	7.7%	14.6%	12.0%	1.2%	19.9%
<b>Total</b>	<b>56.1%</b>	<b>55.0%</b>	<b>51.1%</b>	<b>59.1%</b>	<b>66.5%</b>	<b>60.1%</b>	<b>Total</b>	<b>2.9%</b>	<b>3.7%</b>	<b>6.1%</b>	<b>3.5%</b>	<b>1.4%</b>	<b>8.6%</b>

**Comparison Table 4  
Restraint Use by Community Size**

Community Size	Percent Restrained (by any means)						Percent Restrained Properly*						Percent Not Restrained					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
1,000-2,499	93.3%	92.2%	88.8%	97.3%	98.9%	91.7%	90.4%	89.7%	88.0%	89.6%	89.7%	82.6%	6.7%	7.8%	11.2%	2.7%	1.1%	8.3%
2,500-9,999	98.2%	95.6%	93.0%	96.6%	97.9%	95.1%	97.1%	94.7%	91.7%	90.2%	93.1%	88.6%	1.8%	4.4%	7.0%	3.4%	2.1%	4.9%
10,000-49,999	96.0%	95.9%	95.8%	95.2%	98.1%	88.6%	94.4%	94.4%	94.0%	89.5%	93.1%	82.0%	4.0%	4.1%	4.2%	4.8%	1.9%	11.4%
≥ 50,000	99.0%	98.9%	96.9%	96.9%	99.2%	91.6%	97.5%	97.7%	96.5%	89.9%	91.2%	84.6%	1.0%	1.1%	3.2%	3.1%	0.8%	8.4%
<b>Total</b>	<b>97.1%</b>	<b>96.3%</b>	<b>93.9%</b>	<b>96.5%</b>	<b>98.6%</b>	<b>91.7%</b>	<b>95.4%</b>	<b>94.9%</b>	<b>93.0%</b>	<b>89.8%</b>	<b>91.9%</b>	<b>84.5%</b>	<b>2.9%</b>	<b>3.7%</b>	<b>6.1%</b>	<b>3.5%</b>	<b>1.4%</b>	<b>8.3%</b>

\*Properly means in compliance with Iowa law.

**Comparison Table 5  
Type of Restraint Use by Community Size**

Community Size	Child Safety Seat with Seat belt						Booster Seat with Seat belt					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
1,000-2,499	19.0%	18.4%	17.3%	25.9%	20.8%	20.2%	16.1%	15.9%	18.2%	13.1%	10.0%	13.9%
2,500-9,999	24.3%	23.4%	24.6%	20.6%	24.0%	18.5%	18.8%	17.0%	18.9%	13.0%	10.8%	14.9%
10,000-49,999	18.6%	23.2%	21.7%	24.7%	22.8%	21.2%	19.7%	19.6%	21.9%	9.0%	7.7%	9.8%
≥ 50,000	23.9%	24.4%	25.6%	27.2%	22.0%	22.4%	19.4%	19.5%	20.0%	14.0%	10.2%	12.5%
Total	21.9%	22.9%	22.7%	24.9%	22.4%	21%	18.7%	18.3%	19.7%	12.5%	9.7%	12.6%

Community Size	Seat belt only						Not Restrained					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
1,000-2,499	56.9%	57.9%	53.4%	58.3%	68.1%	57.6%	8.0%	7.8%	11.2%	2.7%	1.1%	8.3%
2,500-9,999	55.1%	54.8%	48.6%	63.0%	63.1%	61.7%	1.9%	4.8%	8.0%	3.4%	2.1%	4.9%
10,000-49,999	57.3%	52.3%	79.8%	61.4%	67.7%	57.6%	4.4%	4.9%	6.7%	4.9%	1.9%	11.4%
≥ 50,000	55.5%	54.9%	50.7%	55.8%	67.0%	56.7%	1.2%	1.1%	3.7%	3.1%	0.8%	8.4%
Total	56.1%	54.8%	50.7%	59.1%	66.5%	58.2%	3.3%	4.0%	7.0%	3.5%	1.4%	8.3%

**Comparison Table 6  
Restraint Use by Child Age and Survey Location**

	Percent Age < 2 Properly* Restrained						Percent Age 2-5 Properly* Restrained					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Algona	100%	100%	100%	100%	100%	100%	95.0%	95.8%	95.8%	75.0%	86.7%	70%
Ames	100%	100%	100%	100%	100%	100%	95.1%	91.7%	100%	83.3%	92.3%	74.3%
Belle Plaine	100%	100%	100%	100%	100%	66.7%	93.3%	94.7%	100%	90.9%	87.5%	65%
Cedar Rapids	100%	100%	100%	100%	100%	100%	83.3%	90.9%	92.3%	91.8%	62.5%	81.5%
Cherokee	100%	100%	100%	100%	100%	80%	95.5%	92.0%	95.7%	100%	83.3%	72.2%
Clinton	100%	100%	100%	100%	100%	100%	85.7%	96.2%	85.7%	60.5%	76.7%	76.3%
Corydon	100%	100%	100%	n/a	100%	100%	91.7%	100%	100%	100%	100%	70%
Council Bluffs	100%	100%	100%	100%	100%	87.5%	100%	94.9%	100%	86.2%	100%	88.6%
Davenport	75.0%	100%	100%	100%	93.8%	100%	100%	69.7%	90%	75.9%	68.3%	83.3%
Des Moines	100%	100%	100%	100%	100%	85.7%	97.3%	100%	100%	100%	96.2%	70.8%
Dubuque	100%	100%	100%	100%	85.7%	100%	87.5%	100%	100%	68.6%	66.7%	75%
Fort Dodge	100%	100%	100%	100%	100%	100%	87.0%	100%	95.7%	100%	75.0%	85.7%
Guthrie Center	100%	100%	100%	100%	100%	100%	100%	100%	100%	91.7%	90.9%	75%
Guttenberg	100%	100%	100%	100%	100%	100%	82.4%	100%	100%	63.0%	60.0%	84%
Hawarden	100%	100%	100%	100%	100%	80%	100%	93.8%	88.2%	85.7%	100%	92.9%
Holstein	100%	100%	100%	100%	100%	100%	100%	100%	100%	77.8%	100%	80%
Iowa City	100%	100%	100%	100%	100%	87.5%	98.1%	96.8%	100%	87.5%	86.3%	80.9%
Jefferson	100%	100%	100%	100%	100%	100%	100%	100%	90.9%	87.5%	94.7%	75%
LaPorte City	100%	100%	100%	100%	85.7%	100%	75.0%	60.0%	75%	78.6%	65.6%	50%
Manchester	100%	100%	100%	100%	100%	100%	94.1%	87.5%	100%	60.7%	59.1%	89.7%
Marshalltown	100%	66.7%	100%	100%	100%	77.8%	96.8%	86.2%	83.3%	92.3%	92.3%	50%
Mason City	100%	100%	100%	100%	100%	87.5%	100%	96.2%	92.9%	92.6%	92.0%	77.1%
Mount Ayr	100%	100%	100%	100%	100%	100%	100%	72.7%	66.7%	92.3%	66.7%	75%
Mt. Pleasant	100%	100%	100%	100%	100%	100%	90.6%	89.5%	100%	84.4%	93.9%	80.8%
Newton	88.9%	100%	100%	n/a	75.0%	100%	87.5%	100%	93.8%	71.4%	88.0%	72%
Northwood	100%	100%	100%	100%	100%	100%	100%	78.6%	90.9%	100%	100%	50%
Ottumwa	100%	100%	100%	100%	100%	100%	77.8%	75.0%	96.2%	72.9%	75.7%	60.6%
Pocahontas	100%	100%	100%	100%	n/a	100%	100%	95.7%	100%	70.6%	100%	56.2%
Red Oak	100%	100%	100%	100%	100%	100%	94.4%	95.0%	88.9%	85.7%	87.5%	70%
Sioux City	100%	100%	100%	100%	100%	85.7%	96.4%	100%	97.2%	72.2%	88.0%	53.8%
Spencer	100%	100%	100%	100%	100%	100%	96.2%	93.3%	100%	100%	90.9%	93%
Sumner	100%	100%	100%	100%	85.7%	100%	87.5%	83.3%	100%	69.0%	59.3%	75%
Wapello	100%	100%	100%	100%	50.0%	100%	68.8%	84.6%	100%	85.7%	60.0%	77.8%
Waterloo	100%	100%	100%	100%	100%	100%	81.8%	97.4%	97.3%	77.6%	60.4%	78%
Waverly	100%	100%	100%	100%	100%	100%	94.7%	100%	100%	75.6%	76.7%	73.9%
Wellman	100%	100%	100%	100%	100%	100%	78.6%	66.7%	100%	85.7%	75.0%	85%

**Comparison Table 6 (continued)  
Restraint Used by Child Age and Survey Location**

	Percent Age 6-13 Restrained						Percent Age 14-17 Restrained					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Algona	89.2%	93.9%	93.9%	100%	95.5%	88.6%	100%	76.9%	76.9%	100%	100%	66.7%
Ames	97.9%	100%	95.1%	100%	98.4%	67.1%	100%	100%	94.1%	83.3%	100%	63.6%
Belle Plaine	100%	97.4%	100%	100%	100%	100%	100%	100%	75.0%	n/a	n/a	100%
Cedar Rapids	98.2%	97.1%	96.2%	100%	100%	100%	100%	100%	90.9%	n/a	100%	100%
Cherokee	100%	97.0%	96.8%	91.4%	86.7%	90.7%	87.5%	75.0%	90.9%	71.4%	93.8%	62.5%
Clinton	98.1%	100%	88.9%	100%	100%	100%	100%	100%	100%	100%	100%	n/a
Corydon	85.7%	84.4%	76.2%	100%	100%	100%	58.3%	80.0%	73.3%	100%	100%	n/a
Council Bluffs	100%	96.1%	96.8%	79.8%	95.5%	95.3%	95.7%	100%	100%	57.1%	100%	57.1%
Davenport	100%	100%	97.8%	100%	100%	100%	100%	100%	100%	100%	100%	n/a
Des Moines	97.9%	98.3%	96.2%	85.9%	100%	91.5%	91.3%	93.8%	81.8%	71.4%	100%	80%
Dubuque	97.4%	98.4%	98.4%	100%	100%	100%	100%	100%	95.5%	100%	100%	100%
Fort Dodge	97.8%	97.7%	96.0%	85.9%	93.0%	87.7%	94.4%	100%	100%	100%	100%	100%
Guthrie Center	89.5%	93.3%	92.3%	83.3%	93.9%	100%	86.7%	81.3%	42.9%	n/a	100%	100%
Guttenberg	100%	100%	100%	100%	100%	100%	100%	100%	100%	n/a	100%	n/a
Hawarden	91.4%	86.5%	84.2%	92.2%	100%	100%	100%	81.3%	43.8%	100.0%	92.3%	66.7%
Holstein	100%	92.3%	100%	93.1%	100%	67.9%	100%	60%	69.2%	85.7%	100%	85.7%
Iowa City	100%	100%	76.9%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jefferson	100%	97.4%	100%	95.6%	94.7%	85.1%	100%	54.6%	62.5%	100%	100%	57.1%
LaPorte City	96.2%	100%	100%	100%	100%	100%	100%	85.7%	87.5%	100%	n/a	100%
Manchester	100%	100%	100%	100%	100%	100%	100%	100%	90.1%	100%	100%	100%
Marshalltown	96.7%	83.0%	100%	100%	95.8%	60%	85.0%	83.3%	66.7%	100%	100%	66.7%
Mason City	94.0%	97.7%	96.6%	93.7%	100%	76.3%	92.0%	95.5%	87.5%	33.3%	91.3%	100%
Mount Ayr	79.3%	90.0%	77.8%	100%	96.4%	100%	80.0%	73.3%	100%	n/a	100%	100%
Mt. Pleasant	100%	100%	100%	100%	100%	100%	100%	100%	84.2%	100%	100%	n/a
Newton	97.5%	87.0%	92.0%	75.5%	91.7%	74.5%	90.9%	94.1%	87.5%	33.3%	100%	58.3%
Northwood	82.6%	82.6%	85.2%	81.3%	100%	68%	78.6%	66.7%	80.0%	n/a	100%	33.3%
Ottumwa	90.4%	100%	94.5%	100%	100%	100%	92.3%	100%	90.9%	100%	100%	100%
Pocahontas	100%	84.6%	73.1%	100%	90.0%	58.1%	84.6%	72.7%	66.7%	n/a	100%	100%
Red Oak	96.7%	94.3%	96.8%	81.6%	96.3%	100%	93.3%	100%	66.7%	n/a	100%	100%
Sioux City	93.6%	100%	97.6%	100%	92.9%	53.6%	100%	95.8%	89.3%	n/a	100%	75%
Spencer	100%	100%	100%	96.5%	100%	100%	100%	90.9%	93.3%	100%	100%	100%
Sumner	100%	95.2%	93.1%	100%	100%	100%	100%	100%	85.7%	100%	n/a	100%
Wapello	95.8%	96.6%	86.4%	100%	100%	80.8%	100%	100%	92.9%	100%	100%	n/a
Waterloo	100%	100%	98.4%	100%	100%	100%	100%	100%	88.9%	100%	100%	100%
Waverly	100%	100%	97.7%	100%	100%	100%	100%	100%	85.7%	n/a	n/a	100%
Wellman	87.0%	100%	83.9%	100%	100%	100%	100%	100%	100%	100%	n/a	100%

**Comparison Table 7  
Type of Restraint Use by Location in the Vehicle**

Restraint Type	Front Seat						Back Seat					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Child Safety Seat with Seat belt	0.6%	1.8%	1.3%	0.4%	0.4%	1.2%	99.4%	98.2%	98.7%	99.6%	99.6%	98.8%
Booster Seat with Seat belt	1.9%	1.2%	1.7%	0.8%	1.3%	1.0%	98.1%	98.8%	98.3%	99.2%	98.7%	99%
Seat belt only	49.5%	47.9%	45.0%	21.2%	33.7%	26%	50.5%	52.1%	55.0%	78.6%	66.3%	74%
<b>Not Restrained</b>	36.6%	47.1%	50.3%	3.8%	7.1%	22%	63.4%	52.9%	49.7%	96.2%	92.9%	78%
<b>Total</b>	29.4%	28.8%	26.9%	12.8%	22.7%	17%	70.6%	71.2%	73.1%	87.2%	77.3%	83%

**Comparison Table 8  
Driver Seat Belt Use by Community Size**

Community Size	Driver Belted						Driver Not Belted					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
1,000-2,499	89.2%	90.4%	84.4%	100%	99.3%	92%	10.8%	9.6%	15.6%	0.0%	0.7%	7.6%
2,500-9,999	94.8%	92.2%	88.1%	100%	100%	98%	5.2%	7.8%	11.9%	0.0%	0%	2.4%
10,000-49,999	93.6%	93.9%	89.7%	98.4%	100%	86%	6.4%	6.1%	10.3%	1.6%	0%	14%
≥ 50,000	96.5%	97.5%	95.2%	100%	100%	96%	3.5%	2.5%	4.8%	0.0%	0%	4.2%
<b>Total</b>	94.0%	94.1%	90.2%	99.7%	99.8%	93%	6.0%	5.9%	9.9%	0.3%	0.2%	6.7%

**Comparison Table 9  
Driver Seat Belt Use by Survey Location**

	Percent Drivers Belted						Percent Drivers NOT Belted					
	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Algona	84.8%	84.8%	96.2%	100%	100%	94.3%	15.2%	15.2%	3.9%	0.0%	0.0%	5.7%
Ames	95.8%	100%	94.1%	100%	100%	88.1%	4.2%	0.0%	5.9%	0.0%	0.0%	11.9%
Belle Plaine	97.8%	98.0%	94.3%	100%	100%	100%	2.2%	2.0%	5.71%	0.0%	0.0%	0.0%
Cedar Rapids	93.9%	98.8%	95.7%	100%	100%	100%	6.1%	1.2%	4.3%	0.0%	0.0%	0.0%
Cherokee	91.5%	91.3%	97.7%	100%	100%	86.5%	8.5%	8.7%	2.3%	0.0%	0.0%	13.5%
Clinton	97.5%	100%	95.5%	100%	100%	100%	2.5%	0.0%	4.6%	0.0%	0.0%	0.0%
Corydon	77.8%	90.6%	81.3%	100%	100%	100%	22.2%	9.4%	18.8%	0.0%	0.0%	0.0%
Council Bluffs	94.8%	94.7%	97.8%	100%	100%	94%	5.2%	5.3%	2.2%	0.0%	0.0%	6.0%
Davenport	98.8%	100%	98.2%	100%	100%	100%	1.2%	0.0%	1.8%	0.0%	0.0%	0.0%
Des Moines	93.7%	97.1%	91.8%	100%	100%	89.8%	6.3%	2.9%	8.2%	0.0%	0.0%	10.2%
Dubuque	97.4%	98.9%	97.2%	100%	100%	100%	2.6%	1.1%	2.8%	0.0%	0.0%	0.0%
Fort Dodge	92.2%	98.3%	91.3%	92.7%	100%	88.4%	7.8%	1.7%	8.7%	7.3%	0.0%	11.6%
Guthrie Center	81.1%	90.3%	91.3%	100%	100%	100%	18.9%	9.7%	12.9%	0.0%	0.0%	0.0%
Guttenberg	97.3%	100%	100%	100%	100%	100%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Hawarden	91.1%	87.8%	80.9%	100%	100%	100%	8.9%	12.2%	19.2%	0.0%	0.0%	0.0%
Holstein	86.7%	87.5%	85.0%	100%	100%	60.6%	13.3%	12.5%	15.0%	0.0%	0.0%	39.4%
Iowa City	100%	98.4%	100%	100%	100%	100%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%
Jefferson	97.6%	89.1%	74.2%	100%	100%	90.5%	2.4%	10.9%	25.8%	0.0%	0.0%	9.5%
LaPorte City	94.9%	94.4%	100%	100%	100%	100%	5.1%	5.6%	0.0%	0.0%	0.0%	0.0%
Manchester	98.1%	100%	100%	100%	100%	100%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Marshalltown	89.5%	86.2%	94.3%	100%	100%	68.1%	10.5%	13.8%	5.7%	0.0%	0.0%	29.8%
Mason City	95.0%	98.4%	88.4%	100%	100%	62%	5.0%	1.6%	11.6%	0.0%	0.0%	36.6%
Mount Ayr	80.0%	81.8%	74.3%	100%	100%	100%	20.0%	18.2%	25.7%	0.0%	0.0%	0.0%
Mount Pleasant	98.0%	100%	92.5%	100%	100%	100%	2.0%	0.0%	7.5%	0.0%	0.0%	0.0%
Newton	88.1%	87.9%	86.1%	100%	100%	82.4%	11.9%	12.1%	14.0%	0.0%	0.0%	17.6%
Northwood	80.7%	81.5%	100%	100%	100%	76%	13.4%	18.5%	0.0%	0.0%	0.0%	24.0%
Ottumwa	93.1%	98.7%	97.6%	100%	100%	100%	6.9%	1.3%	2.4%	0.0%	0.0%	0.0%
Pocahontas	86.5%	85.2%	85.2%	100%	95.8%	75.9%	13.5%	14.8%	14.8%	0.0%	4.2%	24.1%
Red Oak	94.1%	94.2%	86.1%	100%	100%	100%	5.9%	5.8%	14.0%	0.0%	0.0%	0.0%
Sioux City	94.6%	100%	91.4%	100%	100%	81.8%	5.4%	0.0%	8.6%	0.0%	0.0%	18.2%
Spencer	98.6%	93.0%	94.7%	100%	100%	100%	1.5%	7.0%	5.3%	0.0%	0.0%	0.0%
Sumner	100%	97.1%	91.7%	100%	100%	100%	0.0%	2.9%	8.3%	0.0%	0.0%	0.0%
Wapello	97.4%	97.4%	89.7%	100%	92.9%	100%	2.6%	2.6%	10.3%	0.0%	7.1%	0.0%
Waterloo	100%	100%	98.3%	100%	100%	100%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%
Waverly	100%	100%	96.2%	100%	100%	100%	0.0%	0.0%	3.9%	0.0%	0.0%	0.0%
Wellman	94.7%	100%	91.2%	100%	100%	100%	5.3%	0.0%	8.8%	0.0%	0.0%	0.0%
TOTAL	94.0%	95.5%	92.2%	99.7%	99.9%	90.7%	6.0%	4.5%	7.9%	0.3%	0.1%	9.1%