

Iowa's 2007 Child Passenger Safety Survey Project

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

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, the Iowa Legislature revised the requirements of our child passenger safety law. The revised law now requires that:

- Children must ride in an appropriate rear-facing child safety seat until one year of age and at least 20 pounds.
- Children must ride in a child safety seat or a booster seat through the age of 5 years.
- Children ages 6 through 10 must ride in a booster seat and/or seat belt.

The revised law included an 18-month education phase prior to full enforcement of the new requirements. Hence citations for non-compliance with components of the new law were not issued before January 1, 2006.

In order to measure compliance with the law and to direct educational efforts, observational 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:

Due to the revisions in the law, observers must be able to obtain a clear view into the vehicle to see if a booster seat is being used. Therefore beginning with the summer, 2005 survey the basic protocol was changed from the previous "drive-by" observational methodology. Also since the original survey design had not been updated since the 1980s it was decided that the entire Iowa Child Passenger Restraint Survey would be reassessed to ensure the results are a statistically valid representation of Iowa's total population mix. A workgroup consisting of UI IPRC faculty and staff joined by colleagues from the GTSB and Blank Children's Hospital was convened in early 2005 and charged with redesigning the survey methodology.

In order to best represent Iowa's population it was determined that the survey needed to be conducted in 36 communities across the state ranging in size from 1,393 persons in Wellman to Des Moines with nearly 200,000 persons. The list of communities, their size range, and the number of children needing to be observed at each location is listed in Table 1. Figure 1 identifies the communities on a map of Iowa. 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 children who appear to be up to eleven years of age. The surveyor approaches the vehicle and politely asks the adult if they would be willing to participate in a child passenger safety survey. If the adult agrees, the surveyor confirms the age of the child/children 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 a contact for additional information.

Figure 1

2007 Iowa Child Passenger Restraint Survey Locations

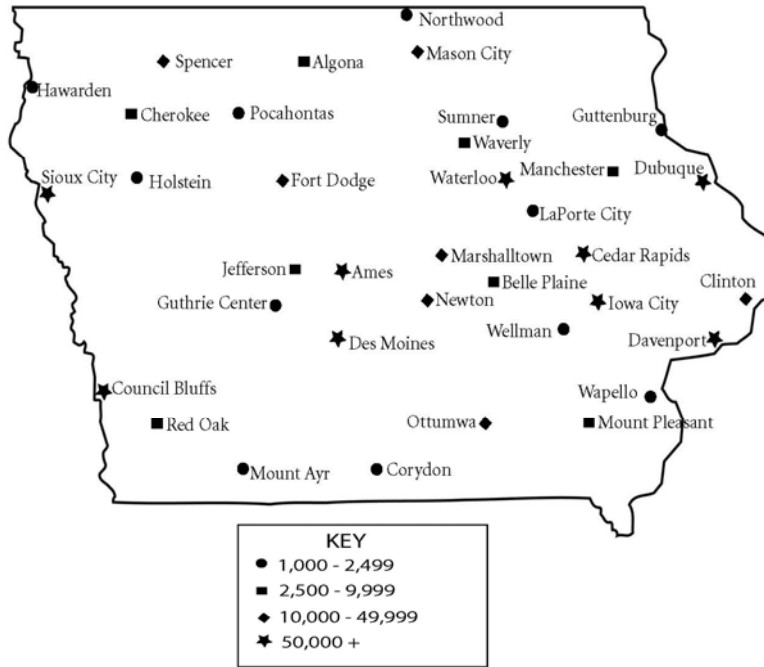


Table 1
2007 Iowa Child Passenger Restraint Survey Locations

Communities 1,000 – 2,499

Minimum of 50 kids observed at each location.

- | | |
|-------------------|---------------|
| 1. Corydon | 7. Mount Ayr |
| 2. Guthrie Center | 8. Northwood |
| 3. Guttenberg | 9. Pocahontas |
| 4. Hawarden | 10. Sumner |
| 5. Holstein | 11. Wapello |
| 6. Laporte City | 12. Wellman |

Communities 2,500 – 9,999

Minimum of 75 kids observed at each location.

1. Algona
2. Belle Plaine
3. Cherokee
4. Jefferson
5. Manchester
6. Mount Pleasant
7. Red Oak
8. Waverly

Communities 10,000 – 49,999

Minimum of 100 observed kids at each location.

1. Clinton
2. Fort Dodge
3. Marshalltown
4. Mason City
5. Newton
6. Ottumwa
7. Spencer

Communities 50,000+

Minimum of 125 observed kids at each location.

1. Ames
2. Cedar Rapids
3. Council Bluffs
4. Davenport
5. Des Moines
6. Dubuque
7. Iowa City
8. Sioux City
9. Waterloo

The IPRC hired three temporary, part-time surveyors and trained them in proper survey protocol. The survey was then carried out across the state during the months of May through September, 2007. A total of 3,010 children from birth through age ten were observed. Table 2 lists the number of infants (< 2 yr.), toddlers (2-5 yrs.) and youth (6-10 yrs.) included in the survey.

Table 2
Number of Children Observed by Age

| Age | Number of Children Observed / Percent |
|-------|---------------------------------------|
| < 2 | 393 / 13.1% |
| 2-5 | 1,197 / 39.8% |
| 6-10 | 1,420 / 47.2% |
| Total | 3,010 / 100% |

Table 3 identifies the number of restrained vs. unrestrained children in each age range (regardless of whether the type of restraint use was appropriate for the child’s age). From this information it is clear that Iowans understand the importance of securing infants in child safety seats, with 99.2% of children age one year or younger appearing to be properly restrained. (Note that “properly restrained” means observing proper use of a child safety seat secured by the vehicle’s seat belt. More technical measures of correct restraint use typically checked in a child seat clinic (e.g. belt tightness) were not evaluated.) However, as the child’s age increases they are less likely to be restrained in the motor vehicle. Ninety-five percent of toddlers and 82% of youth were restrained. Overall, 89.3% of all children observed were restrained.

Table 3
Restraint Use (Appropriate and Non-Appropriate) by Child’s Age

| Age | Not Restrained Number / Percent | Restrained Number / Percent | Total |
|-------|---------------------------------|-----------------------------|-------|
| < 2 | 3 / 0.8% | 390 / 99.2% | 393 |
| 2-5 | 57 / 4.8% | 1,140 / 95.2% | 1,197 |
| 6-10 | 263 / 18.5% | 1,157 / 81.5% | 1,420 |
| Total | 323 / 10.7% | 2,687 / 89.3% | 3,010 |

The numbers contained in Table 3 for each age group represent children who were restrained by any means including a seatbelt alone, which for infants and toddlers is neither safe nor legal under Iowa’s revised Child Passenger Safety law. Table 4 displays type of restraint use by age of the child. Fortunately 99.0% of the infants observed in the survey were in a restrained child safety seat. However 170 (14.2%) of the 1,197 observed toddlers were restrained only by a seatbelt. The message is clear that Iowans need to be better educated on the importance of using booster seats as well as the proper restraint techniques required by Iowa’s CPS law. If Iowa’s

statewide restraint use is re-calculated without including these improperly restrained children, the statewide average drops from 89.3% to 83.6%.

Table 4
Type of Restraint Use by Child's Age

| Age | Child Safety Seat with Seatbelt | Booster Seat with Seatbelt | Seatbelt only | Not Restrained | Total |
|-------|---------------------------------|----------------------------|---------------|----------------|-------|
| < 2 | 389 / 99.0% | 1 / 0.3% | 0 | 3 / 0.7% | 393 |
| 2-5 | 588 / 49.1% | 382 / 32.0% | 170 / 14.2% | 57 / 4.8% | 1,197 |
| 6-10 | 13 / 0.9% | 153 / 10.8% | 991 / 70.0% | 263 / 18.5% | 1,420 |
| Total | 990 / 32.9% | 536 / 17.8% | 1,161 / 38.6% | 323 / 10.7% | 3,010 |

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 once again true in the 2007 survey. In the most rural communities (1,000-2,499) 87.6% of the children were restrained by some means compared to 94.7% in the urban areas. The same relationship holds true when rates of properly (i.e. legally) restrained children- are compared across small towns (81.6%) and cities (87.5%).

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 | 525 / 87.6% | 489 / 81.6% | 74 / 12.4% | 599 |
| 2,500-9,999 | 507 / 84.6% | 477 / 79.6% | 92 / 15.4% | 599 |
| 10,000-49,999 | 595 / 85.9% | 572 / 82.5% | 98 / 14.1% | 693 |
| ≥ 50,000 | 1,060 / 94.7% | 979 / 87.5% | 59 / 5.3% | 1,119 |
| Total | 2,687 / 89.3% | 2,517 / 83.6% | 323 / 10.7% | 3,010 |

* Properly means in compliance with Iowa law.

Table 6 displays type of restraint use by size of the community.

Table 6
Type of Restraint Use by Community Size

| Community Size | Child Safety Seat with Seatbelt | Booster Seat with Seatbelt | Seatbelt only | Not Restrained | Total |
|----------------|---------------------------------|----------------------------|---------------|----------------|-------|
| 1,000-2,499 | 196 / 32.7% | 95 / 15.9% | 234 / 39.1% | 74 / 12.3% | 599 |
| 2,500-9,999 | 208 / 34.7% | 94 / 15.7% | 205 / 34.2% | 92 / 15.4% | 599 |
| 10,000-49,999 | 211 / 30.4% | 113 / 16.3% | 271 / 39.1% | 98 / 14.1% | 693 |
| ≥ 50,000 | 375 / 33.5% | 234 / 20.9% | 451 / 40.3% | 59 / 5.3% | 1,119 |
| Total | 990 / 32.9% | 536 / 17.8% | 1,161 / 38.6% | 323 / 10.7% | 3,010 |

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 toddler restrained by only a seatbelt. Table 8 presents the restraint use as percentages for each location. Table 8 includes the percentage of children restrained by any means and also those children who are restrained in compliance with Iowa's law. Table 9 lists the percentage of kids properly restrained sorted by community size.

Table 7
2007 Restraint Use by Child's Age By Survey Location

| | Total Kids | Age < 2 | | | Age 2 - 5 | | | | Age 6 - 10 | | | |
|----------------|------------|---------|---------|------|-----------|---------|-----------|------|------------|---------|-----------|------|
| | | CSS | Booster | None | CSS | Booster | Belt Only | None | CSS | Booster | Belt Only | None |
| Algona | 75 | 3 | 0 | 0 | 18 | 9 | 5 | 1 | 0 | 5 | 20 | 14 |
| Ames | 125 | 19 | 0 | 0 | 26 | 16 | 4 | 0 | 0 | 6 | 52 | 2 |
| Belle Plaine | 74 | 7 | 0 | 0 | 13 | 18 | 8 | 1 | 0 | 5 | 21 | 1 |
| Cedar Rapids | 124 | 30 | 0 | 0 | 21 | 28 | 12 | 0 | 0 | 8 | 23 | 2 |
| Cherokee | 75 | 8 | 0 | 0 | 19 | 6 | 4 | 0 | 0 | 6 | 21 | 11 |
| Clinton | 100 | 10 | 0 | 0 | 15 | 17 | 2 | 1 | 0 | 1 | 45 | 9 |
| Corydon | 50 | 6 | 0 | 0 | 15 | 2 | 3 | 0 | 0 | 2 | 19 | 3 |
| Council Bluffs | 125 | 19 | 1 | 0 | 28 | 18 | 6 | 2 | 1 | 6 | 36 | 8 |
| Davenport | 125 | 28 | 0 | 0 | 22 | 22 | 15 | 0 | 1 | 7 | 29 | 1 |
| Des Moines | 125 | 14 | 0 | 0 | 31 | 21 | 8 | 1 | 0 | 3 | 42 | 5 |
| Dubuque | 123 | 14 | 0 | 0 | 15 | 11 | 5 | 0 | 0 | 7 | 55 | 16 |
| Fort Dodge | 100 | 11 | 0 | 0 | 23 | 7 | 6 | 3 | 0 | 0 | 40 | 10 |
| Guthrie Center | 50 | 3 | 0 | 0 | 18 | 4 | 4 | 3 | 1 | 3 | 10 | 4 |
| Guttenberg | 50 | 6 | 0 | 0 | 8 | 4 | 2 | 0 | 0 | 2 | 25 | 3 |
| Hawarden | 50 | 3 | 0 | 0 | 12 | 2 | 3 | 2 | 0 | 1 | 18 | 9 |
| Holstein | 50 | 5 | 0 | 1 | 15 | 2 | 4 | 4 | 0 | 2 | 9 | 8 |
| Iowa City | 122 | 9 | 0 | 0 | 17 | 22 | 20 | 1 | 0 | 9 | 41 | 3 |
| Jefferson | 75 | 8 | 0 | 0 | 25 | 5 | 4 | 1 | 2 | 2 | 18 | 10 |
| LaPorte City | 50 | 6 | 0 | 0 | 6 | 2 | 2 | 0 | 0 | 1 | 23 | 10 |
| Manchester | 75 | 9 | 0 | 0 | 9 | 5 | 0 | 1 | 0 | 4 | 27 | 20 |
| Marshalltown | 100 | 9 | 0 | 1 | 23 | 6 | 3 | 7 | 0 | 7 | 30 | 14 |
| Mason City | 100 | 12 | 0 | 0 | 20 | 8 | 2 | 2 | 1 | 3 | 35 | 17 |
| Mount Ayr | 50 | 6 | 0 | 0 | 10 | 6 | 0 | 1 | 0 | 1 | 15 | 11 |
| Mt. Pleasant | 75 | 49 | 0 | 1 | 11 | 8 | 1 | 2 | 1 | 0 | 2 | 0 |
| Newton | 100 | 11 | 0 | 0 | 22 | 14 | 3 | 1 | 1 | 9 | 31 | 8 |
| Northwood | 50 | 6 | 0 | 0 | 10 | 8 | 4 | 0 | 0 | 1 | 18 | 3 |
| Ottumwa | 93 | 9 | 0 | 0 | 14 | 19 | 3 | 3 | 0 | 11 | 25 | 9 |
| Pocahontas | 50 | 5 | 0 | 0 | 17 | 4 | 2 | 2 | 0 | 3 | 15 | 2 |
| Red Oak | 75 | 8 | 0 | 0 | 9 | 6 | 7 | 6 | 0 | 2 | 27 | 10 |
| Sioux City | 125 | 10 | 0 | 0 | 24 | 19 | 6 | 2 | 3 | 9 | 44 | 8 |
| Spencer | 100 | 10 | 0 | 0 | 20 | 10 | 4 | 5 | 0 | 1 | 42 | 8 |
| Sumner | 50 | 11 | 0 | 0 | 6 | 8 | 1 | 1 | 0 | 2 | 17 | 4 |
| Wapello | 50 | 2 | 0 | 0 | 7 | 12 | 6 | 0 | 0 | 5 | 15 | 3 |
| Waterloo | 125 | 15 | 0 | 0 | 27 | 8 | 5 | 2 | 1 | 13 | 48 | 6 |
| Waverly | 75 | 3 | 0 | 0 | 6 | 10 | 1 | 2 | 0 | 3 | 39 | 11 |
| Wellman | 49 | 5 | 0 | 0 | 6 | 15 | 5 | 0 | 1 | 3 | 14 | 0 |
| TOTAL | 3010 | 389 | 1 | 3 | 588 | 382 | 170 | 57 | 13 | 153 | 991 | 263 |

Table 8
Percent Restraint Use by Child's Age By Survey Location

| | Percent All Kids Properly* Restrained | Percent All Kids Restrained (Includes Age 2-5 in Seat Belt Only) | Percent Age < 2 Properly* Restrained | Percent Age 2-5 Properly* Restrained | Percent Age 6-10 Properly* Restrained |
|----------------|---------------------------------------|--|--------------------------------------|--------------------------------------|---------------------------------------|
| Algona | 73.3% | 80.0% | 100.0% | 81.8% | 64.1% |
| Ames | 95.2% | 98.4% | 100.0% | 91.3% | 96.7% |
| Belle Plaine | 86.5% | 97.3% | 100.0% | 77.5% | 96.3% |
| Cedar Rapids | 88.7% | 98.4% | 100.0% | 80.3% | 93.9% |
| Cherokee | 80.0% | 85.3% | 100.0% | 86.2% | 71.1% |
| Clinton | 88.0% | 90.0% | 100.0% | 91.4% | 83.6% |
| Corydon | 88.0% | 94.0% | 100.0% | 85.0% | 87.5% |
| Council Bluffs | 87.2% | 92.0% | 95.0% | 85.2% | 84.3% |
| Davenport | 87.2% | 99.2% | 100.0% | 74.6% | 97.4% |
| Des Moines | 88.8% | 95.2% | 100.0% | 85.2% | 90.0% |
| Dubuque | 82.9% | 87.0% | 100.0% | 83.9% | 79.5% |
| Fort Dodge | 81.0% | 87.0% | 100.0% | 76.9% | 80.0% |
| Guthrie Center | 78.0% | 86.0% | 100.0% | 75.9% | 77.8% |
| Guttenberg | 90.0% | 94.0% | 100.0% | 85.7% | 90.0% |
| Hawarden | 72.0% | 78.0% | 100.0% | 73.7% | 67.9% |
| Holstein | 66.0% | 74.0% | 83.3% | 68.0% | 57.9% |
| Iowa City | 80.3% | 96.7% | 100.0% | 65.0% | 94.3% |
| Jefferson | 80.0% | 85.3% | 100.0% | 85.7% | 68.8% |
| LaPorte City | 76.0% | 80.0% | 100.0% | 80.0% | 70.6% |
| Manchester | 72.0% | 72.0% | 100.0% | 93.3% | 60.8% |
| Marshalltown | 75.0% | 78.0% | 90.0% | 74.4% | 72.5% |
| Mason City | 79.0% | 81.0% | 100.0% | 87.5% | 69.6% |
| Mount Ayr | 76.0% | 76.0% | 100.0% | 94.1% | 59.3% |
| Mt. Pleasant | 94.7% | 96.0% | 98.0% | 86.4% | 100.0% |
| Newton | 88.0% | 91.0% | 100.0% | 90.0% | 83.7% |
| Northwood | 86.0% | 94.0% | 100.0% | 81.8% | 86.4% |
| Ottumwa | 83.9% | 87.1% | 100.0% | 84.6% | 80.0% |
| Pocahontas | 88.0% | 92.0% | 100.0% | 84.0% | 90.0% |
| Red Oak | 69.3% | 78.7% | 100.0% | 53.6% | 74.4% |
| Sioux City | 87.2% | 92.0% | 100.0% | 84.3% | 87.5% |
| Spencer | 83.0% | 87.0% | 100.0% | 76.9% | 84.3% |
| Sumner | 88.0% | 90.0% | 100.0% | 87.5% | 82.6% |
| Wapello | 82.0% | 94.0% | 100.0% | 76.0% | 87.0% |
| Waterloo | 89.6% | 93.6% | 100.0% | 83.3% | 91.2% |
| Waverly | 81.3% | 82.7% | 100.0% | 84.2% | 79.2% |
| Wellman | 89.8% | 100.0% | 100.0% | 80.8% | 100.0% |

* Properly refers to in compliance with Iowa law.

Table 9
Percentage of Children Properly Restrained
Sorted by Community Size

| <u>Communities 1,000 - 2,499</u> | | <u>Communities 10,000 – 49,999</u> | |
|---|-------|---|-------|
| Guttenberg | 90.0% | Clinton | 88.0% |
| Wellman | 89.8% | Newton | 88.0% |
| Pocahontas | 88.0% | Ottumwa | 83.9% |
| Sumner | 88.0% | Spencer | 83.0% |
| Corydon | 88.0% | Fort Dodge | 81.0% |
| Northwood | 86.0% | Mason City | 79.0% |
| Wapello | 82.0% | Marshalltown | 75.0% |
| Guthrie Center | 78.0% | | |
| Mount Ayr | 76.0% | <u>Communities 50,000+</u> | |
| LaPorte City | 76.0% | Ames | 95.2% |
| Hawarden | 72.0% | Waterloo | 89.6% |
| Holstein | 66.0% | Des Moines | 88.8% |
| | | Cedar Rapids | 88.7% |
| | | Sioux City | 87.2% |
| | | Davenport | 87.2% |
| | | Council Bluffs | 87.2% |
| | | Dubuque | 82.9% |
| | | Iowa City | 80.3% |
| <u>Communities 2,500 - 9,999</u> | | | |
| Mount Pleasant | 94.7% | | |
| Belle Plaine | 86.5% | | |
| Waverly | 81.3% | | |
| Cherokee | 80.0% | | |
| Jefferson | 80.0% | | |
| Algona | 73.3% | | |
| Manchester | 72.0% | | |
| Red Oak | 69.3% | | |

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, 88% of all children were observed in the back seat. Ninety-eight percent of the children in child safety seats were in the back seat, 95% of the children in booster seats were in the back, and 80% restrained only with seat belts were secured in the rear location. Of the children riding unrestrained, 74% were in the back seat.

Table 10
Type of Restraint Use by Location in the Vehicle

| Restraint Type | Front Seat | Back Seat | Total |
|---------------------------------|-------------|---------------|-------|
| Child Safety Seat with Seatbelt | 19 / 1.9% | 958 / 98.1% | 977 |
| Booster Seat with Seatbelt | 26 / 4.9% | 503 / 95.1% | 529 |
| Seatbelt only | 230 / 20.0% | 921 / 80.0% | 1,151 |
| Not Restrained | 84 / 26.3% | 235 / 73.7% | 319 |
| Total | 359 / 12.1% | 2,617 / 87.9% | 2,976 |

If possible, the surveyor also noted whether or not the motor vehicle drivers were wearing their seat belts. Eighty-seven percent of the drivers observed were wearing a seat belt. Table 11 contains driver seat belt use data by size grouping of the community. Much like the child passenger restraint use statistics, drivers in the most rural communities had the lowest usage rate (77%) compared to the urban areas (93%). Table 12 lists observed seat belt use for each community.

Table 11
Driver Seat Belt Use by Community Size

| Community Size | Driver Belted | Driver Not Belted | Total |
|----------------|---------------|-------------------|-------|
| 1,000-2,499 | 456 / 77.2% | 135 / 22.8% | 591 |
| 2,500-9,999 | 507 / 86.2% | 81 / 13.8% | 588 |
| 10,000-49,999 | 575 / 85.1% | 101 / 14.9% | 676 |
| ≥ 50,000 | 1,013 / 92.8% | 79 / 7.2% | 1,092 |
| Total | 2,551 / 86.6% | 396 / 13.4% | 2,947 |

Table 12
Driver Seat Belt Use by Survey Location

| | Total Drivers Observed | Number / % Drivers Belted | Number / % Drivers NOT Belted |
|----------------|------------------------|---------------------------|-------------------------------|
| Algona | 75 | 62 / 82.7% | 13 / 17.3% |
| Ames | 125 | 125 / 100% | 0 / 100% |
| Belle Plaine | 72 | 68 / 94.4% | 4 / 5.6% |
| Cedar Rapids | 120 | 115 / 95.8% | 5 / 4.2% |
| Cherokee | 74 | 63 / 85.1% | 11 / 14.9% |
| Clinton | 98 | 90 / 91.8% | 8 / 8.2% |
| Corydon | 50 | 37 / 74.0% | 13 / 26.0% |
| Council Bluffs | 125 | 109 / 87.2% | 16 / 12.8% |
| Davenport | 122 | 115 / 94.3% | 7 / 5.7% |
| Des Moines | 124 | 112 / 90.3% | 12 / 9.7% |
| Dubuque | 118 | 104 / 88.1% | 14 / 11.9% |
| Fort Dodge | 99 | 80 / 80.8% | 19 / 19.2% |
| Guthrie Center | 50 | 33 / 66.0% | 17 / 34.0% |
| Guttenberg | 50 | 40 / 80.0% | 10 / 20.0% |
| Hawarden | 50 | 39 / 78.0% | 11 / 22.0% |
| Holstein | 50 | 29 / 58.0% | 21 / 42.0% |
| Iowa City | 121 | 113 / 93.4% | 8 / 6.6% |
| Jefferson | 75 | 57 / 76.0% | 18 / 24.0% |
| LaPorte City | 45 | 39 / 86.7% | 6 / 13.3% |
| Manchester | 70 | 64 / 91.4% | 6 / 8.6% |
| Marshalltown | 100 | 85 / 85.0% | 15 / 15.0% |
| Mason City | 100 | 76 / 76.0% | 24 / 24.0% |
| Mount Ayr | 50 | 28 / 56.0% | 22 / 44.0% |
| Mount Pleasant | 73 | 72 / 98.6% | 1 / 1.4% |
| Newton | 100 | 96 / 96.0% | 4 / 4.0% |
| Northwood | 50 | 36 / 72.0% | 14 / 28.0% |
| Ottumwa | 80 | 58 / 72.5% | 22 / 27.5% |
| Pocahontas | 48 | 44 / 91.7% | 4 / 8.3% |
| Red Oak | 74 | 54 / 73.0% | 20 / 27.0% |
| Sioux City | 125 | 112 / 89.6% | 13 / 10.4% |
| Spencer | 99 | 90 / 90.9% | 9 / 9.1% |
| Sumner | 49 | 37 / 75.5% | 12 / 24.5% |
| Wapello | 50 | 47 / 94.0% | 3 / 6.0% |
| Waterloo | 112 | 108 / 96.4% | 4 / 3.6% |
| Waverly | 75 | 67 / 89.3% | 8 / 10.7% |
| Wellman | 49 | 47 / 95.9% | 2 / 4.1% |
| TOTAL | 2947 | 2,551 / 86.6% | 396 / 13.4% |

Conclusions:

In their 2004 session the Iowa Legislature passed and the Governor signed into law a bill that strengthened the Iowa Child Passenger Safety Law. This new law requires toddlers from age 2 through 5 years to be secured using either a child safety seat or booster seat. As a result of this new requirement the annual Iowa Child Passenger Restraint Survey protocol was redesigned to allow the surveyors to obtain a better view into vehicles. The survey was also re-designed to result in a better statistical representation of the entire state population. Hence the new survey design has a higher level of validity. This greater accuracy comes from having the surveyor actually ask the age of the child (as opposed to making a judgment call previously) and it is also a better representation of the state's overall population.

Results from the 2007 survey indicate that the vast majority of Iowans understand the importance of restraining their children. This is especially true for infants; ninety-nine percent were restrained in child safety seats. However, in the toddler group, age 2-5 years, 14% (down from 19% in 2006) were restrained only in a seatbelt. The lack of child safety seat or booster seat use is both unsafe and illegal. This indicates that educational efforts should be directed toward parents of children in this age group. In general as the child's age increases the restraint usage decreases.

As in past years, the 2007 survey results indicated lower restraint use in the more rural communities. Fortunately 88% of children were placed in the rear seat of the motor vehicle, with the higher percentages being the infants and toddlers.

The 2007 Iowa Child Passenger Restraint Survey was successfully completed and will continue to provide valuable comparable information for years to come. If efforts to further strengthen Iowa's child passenger safety law are successful, the survey protocol will once again need to be reexamined.

Appendix B contains a comparison of the 2005 survey to 2007 results. While individual survey location results varied between the two years, overall survey results improved across the board. This was true in terms of child restraint use and placement within the vehicle. The 2007 survey indicated a slight drop in driver occupant restraint use. Comparison to results of annual surveys prior to 2005 would not be valid due to the changes in survey protocols implemented in 2005.

Appendix A

Iowa's 2007 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

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Appendix B

Comparison of 2005, 2006, and 2007 Iowa Child Passenger Safety Survey Results

The following Tables allow for comparison between the 2005, 2006, and 2007 child passenger safety survey results. Comparison to results of annual surveys prior to 2005 would not be valid due to the changes in survey protocols implemented in 2005.

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**

| Age | Number/Percent of Children Observed | | |
|-------|-------------------------------------|---------------|---------------|
| | 2005 | 2006 | 2007 |
| < 2 | 335 / 11.0% | 264 / 8.7% | 393 / 13.1% |
| 2-5 | 1,436 / 47.0% | 1,346 / 44.5% | 1,197 / 39.8% |
| 6-10 | 1,286 / 42.1% | 1,416 / 46.8% | 1,420 / 47.2% |
| Total | 3,057 / 100% | 3,026 / 100% | 3,010 / 100% |

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

| Age | Percent Not Restrained | | | Percent Restrained | | |
|-------|------------------------|-------|-------|--------------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| < 2 | 1.5% | 1.9% | 0.8% | 98.5% | 98.1% | 99.2% |
| 2-5 | 15.8% | 8.6% | 4.8% | 84.2% | 91.4% | 95.2% |
| 6-10 | 25.2% | 18.5% | 18.5% | 74.8% | 81.5% | 81.5% |
| Total | 18.2% | 12.6% | 10.7% | 81.8% | 87.4% | 89.3% |

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

| Age | Child Safety Seat with Seatbelt | | | Booster Seat with Seatbelt | | | Seatbelt only | | | Not Restrained | | |
|-------|---------------------------------|-------|-------|----------------------------|-------|-------|---------------|-------|-------|----------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| < 2 | 98.5% | 96.6% | 99.0% | .3% | 1.9% | 0.3% | 0 | 0 | 0 | 1.2% | 1.9% | 0.7% |
| 2-5 | 42.0% | 29.8% | 49.1% | 19.1% | 41.9% | 32.0% | 23.1% | 19.7% | 14.2% | 15.8% | 8.5% | 4.8% |
| 6-10 | 0.5% | 0.2% | 0.9% | 4.0% | 7.5% | 10.8% | 70.2% | 73.8% | 70.0% | 25.2% | 18.5% | 18.5% |
| Total | 30.7% | 21.8% | 32.9% | 10.7% | 22.3% | 17.8% | 40.4% | 43.3% | 38.6% | 18.2% | 12.6% | 10.7% |

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

| Community Size | Number / % Restrained (by any means) | | | Number / % Restrained Properly* | | | Number / % Not Restrained | | |
|----------------|--------------------------------------|-------|-------|---------------------------------|-------|-------|----------------------------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| 1,000-2,499 | 71.8% | 81.2% | 87.6% | 63.8% | 73.5% | 81.6% | 28.2% | 18.8% | 12.4% |
| 2,500-9,999 | 83.1% | 90.5% | 84.6% | 73.6% | 82.1% | 79.6% | 16.9% | 9.5% | 15.4% |
| 10,000-49,999 | 79.6% | 85.4% | 85.9% | 66.4% | 78.9% | 82.5% | 20.4% | 14.6% | 14.1% |
| ≥ 50,000 | 87.8% | 90.3% | 94.7% | 76.0% | 79.0% | 87.5% | 12.2% | 9.7% | 5.3% |
| Total | 81.8% | 87.4% | 89.3% | 70.9% | 78.5% | 83.6% | 18.2% | 12.6% | 10.7% |

*Properly means in compliance with Iowa law.

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

| Community Size | Child Safety Seat with Seatbelt | | | Booster Seat with Seatbelt | | | Seatbelt only | | | Not Restrained | | |
|----------------|---------------------------------|-------|-------|----------------------------|-------|-------|---------------|-------|-------|-----------------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| 1,000-2,499 | 29.2% | 21.1% | 32.7% | 10.5% | 22.0% | 15.9% | 32.0% | 38.0% | 39.1% | 28.2% | 18.8% | 12.3% |
| 2,500-9,999 | 26.4% | 27.6% | 34.7% | 2.5% | 21.9% | 15.7% | 44.3% | 41.0% | 34.2% | 16.9% | 9.5% | 15.4% |
| 10,000-49,999 | 26.6% | 20.1% | 30.4% | 7.0% | 19.7% | 16.3% | 46.0% | 45.6% | 39.1% | 20.4% | 14.6% | 14.1% |
| ≥ 50,000 | 36.4% | 20.1% | 33.5% | 12.1% | 24.3% | 20.9% | 39.3% | 45.9% | 40.3% | 12.2% | 9.7% | 5.3% |
| Total | 30.7% | 21.8% | 32.9% | 10.7% | 22.3% | 17.8% | 40.4% | 43.3% | 38.6% | 18.2% | 12.6% | 10.7% |

Comparison Table 6
Restraint Use by Child's Age By Survey Location

| | Percent All Kids Properly* Restrained | | | Percent All Kids Restrained (Includes Age 2-5 in Seat Belt Only) | | | Percent Age < 2 Properly* Restrained | | | Percent Age 2-5 Properly* Restrained | | | Percent Age 6-10 Properly* Restrained | | |
|----------------|---------------------------------------|-------|-------|--|-------|-------|--------------------------------------|--------|--------|--------------------------------------|-------|-------|---------------------------------------|-------|--------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| Algona | 65.3% | 78.7% | 73.3% | 69.3% | 86.7% | 80.0% | 100.0% | 100.0% | 100.0% | 69.7% | 70.6% | 81.8% | 48.4% | 82.4% | 64.1% |
| Ames | 63.0% | 91.2% | 95.2% | 81.9% | 96.8% | 98.4% | 100.0% | 91.7% | 100.0% | 54.7% | 87.5% | 91.3% | 63.8% | 94.7% | 96.7% |
| Belle Plaine | 90.7% | 87.8% | 86.5% | 96.0% | 93.2% | 97.3% | 100.0% | 100.0% | 100.0% | 84.0% | 80.0% | 77.5% | 93.3% | 90.7% | 96.3% |
| Cedar Rapids | 86.7% | 70.2% | 88.7% | 95.0% | 94.4% | 98.4% | 100.0% | 100.0% | 100.0% | 79.1% | 52.7% | 80.3% | 93.9% | 95.3% | 93.9% |
| Cherokee | 84.0% | 89.3% | 80.0% | 94.7% | 93.3% | 85.3% | 100.0% | 100.0% | 100.0% | 70.6% | 88.6% | 86.2% | 93.1% | 85.7% | 71.1% |
| Clinton | 93.0% | 85.0% | 88.0% | 99.0% | 92.0% | 90.0% | 100.0% | 100.0% | 100.0% | 77.8% | 75.0% | 91.4% | 98.4% | 87.9% | 83.6% |
| Corydon | 38.0% | 56.0% | 88.0% | 60.0% | 64.0% | 94.0% | NONE | 100.0% | 100.0% | 41.2% | 62.5% | 85.0% | 31.3% | 42.9% | 87.5% |
| Council Bluffs | 65.6% | 75.2% | 87.2% | 79.2% | 84.0% | 92.0% | 93.3% | 90.0% | 95.0% | 62.1% | 71.7% | 85.2% | 61.4% | 74.5% | 84.3% |
| Davenport | 88.8% | 80.0% | 87.2% | 95.2% | 89.6% | 99.2% | 100.0% | 100.0% | 100.0% | 82.4% | 71.1% | 74.6% | 92.1% | 83.6% | 97.4% |
| Des Moines | 64.0% | 81.5% | 88.8% | 79.2% | 88.7% | 95.2% | 94.1% | 100.0% | 100.0% | 54.9% | 74.6% | 85.2% | 67.6% | 85.2% | 90.0% |
| Dubuque | 88.8% | 75.2% | 82.9% | 99.2% | 94.4% | 87.0% | 100.0% | 100.0% | 100.0% | 84.5% | 59.4% | 83.9% | 90.9% | 92.3% | 79.5% |
| Fort Dodge | 52.0% | 85.0% | 81.0% | 74.0% | 89.0% | 87.0% | 100.0% | 100.0% | 100.0% | 31.5% | 85.0% | 76.9% | 71.1% | 82.0% | 80.0% |
| Guthrie Center | 44.0% | 76.0% | 78.0% | 54.0% | 84.0% | 86.0% | 100.0% | 100.0% | 100.0% | 43.5% | 76.0% | 75.9% | 25.0% | 68.4% | 77.8% |
| Guttenberg | 66.0% | 68.0% | 90.0% | 76.0% | 76.0% | 94.0% | 100.0% | 100.0% | 100.0% | 57.7% | 70.6% | 85.7% | 68.4% | 64.5% | 90.0% |
| Hawarden | 58.0% | 60.0% | 72.0% | 60.0% | 70.0% | 78.0% | 100.0% | 100.0% | 100.0% | 54.5% | 56.0% | 73.7% | 52.2% | 59.1% | 67.9% |
| Holstein | 56.0% | 74.0% | 66.0% | 66.0% | 78.0% | 74.0% | 100.0% | 50.0% | 83.3% | 52.6% | 72.7% | 68.0% | 55.2% | 70.0% | 57.9% |
| Iowa City | 96.8% | 87.2% | 80.3% | 99.2% | 90.4% | 96.7% | 100.0% | 90.0% | 100.0% | 92.3% | 90.4% | 65.0% | 98.7% | 84.1% | 94.3% |
| Jefferson | 57.3% | 82.4% | 80.0% | 64.0% | 89.2% | 85.3% | 87.5% | 100.0% | 100.0% | 53.3% | 73.3% | 85.7% | 54.1% | 86.5% | 68.8% |
| LaPorte City | 84.0% | 68.6% | 76.0% | 96.0% | 80.4% | 80.0% | 100.0% | 100.0% | 100.0% | 63.6% | 63.0% | 80.0% | 100.0% | 71.4% | 70.6% |
| Manchester | 72.3% | 73.3% | 72.0% | 83.1% | 90.7% | 72.0% | 100.0% | 100.0% | 100.0% | 59.0% | 55.3% | 93.3% | 81.6% | 90.0% | 60.8% |
| Marshalltown | 51.0% | 72.0% | 75.0% | 74.0% | 80.0% | 78.0% | 100.0% | 92.3% | 90.0% | 38.2% | 59.5% | 74.4% | 55.9% | 77.8% | 72.5% |
| Mason City | 55.0% | 70.0% | 79.0% | 71.0% | 76.0% | 81.0% | 100.0% | 100.0% | 100.0% | 47.7% | 77.5% | 87.5% | 50.0% | 60.4% | 69.6% |
| Mount Ayr | 32.0% | 76.0% | 76.0% | 38.0% | 82.0% | 76.0% | 88.9% | 100.0% | 100.0% | 29.2% | 83.3% | 94.1% | 5.9% | 68.0% | 59.3% |
| Mt. Pleasant | 76.0% | 85.3% | 94.7% | 94.7% | 94.7% | 96.0% | 100.0% | 100.0% | 98.0% | 51.7% | 74.1% | 86.4% | 89.5% | 91.1% | 100.0% |
| Newton | 46.0% | 71.0% | 88.0% | 61.0% | 80.0% | 91.0% | 100.0% | 83.3% | 100.0% | 33.3% | 63.0% | 90.0% | 56.8% | 77.1% | 83.7% |
| Northwood | 76.0% | 82.0% | 86.0% | 84.0% | 84.0% | 94.0% | 100.0% | 100.0% | 100.0% | 60.0% | 82.4% | 81.8% | 85.2% | 77.8% | 86.4% |
| Ottumwa | 98.0% | 83.0% | 83.9% | 100.0% | 91.0% | 87.1% | 100.0% | 100.0% | 100.0% | 93.8% | 63.6% | 84.6% | 100.0% | 91.7% | 80.0% |

| | Percent All Kids Properly* Restrained | | | Percent All Kids Restrained (Includes Age 2-5 in Seat Belt Only) | | | Percent Age < 2 Properly* Restrained | | | Percent Age 2-5 Properly* Restrained | | | Percent Age 6-10 Properly* Restrained | | |
|------------|---------------------------------------|-------|-------|--|--------|--------|--------------------------------------|--------|--------|--------------------------------------|-------|-------|---------------------------------------|--------|--------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| Pocahontas | 74.0% | 87.8% | 88.0% | 78.0% | 87.8% | 92.0% | 100.0% | 100.0% | 100.0% | 83.3% | 83.3% | 84.0% | 27.3% | 88.5% | 90.0% |
| Red Oak | 61.3% | 64.0% | 69.3% | 69.3% | 76.0% | 78.7% | 100.0% | 100.0% | 100.0% | 48.6% | 58.1% | 53.6% | 67.6% | 69.0% | 74.4% |
| Sioux City | 69.6% | 82.4% | 87.2% | 76.8% | 90.4% | 92.0% | 100.0% | 100.0% | 100.0% | 62.5% | 65.9% | 84.3% | 69.7% | 88.9% | 87.5% |
| Spencer | 70.0% | 86.0% | 83.0% | 78.0% | 90.0% | 87.0% | 100.0% | 100.0% | 100.0% | 63.0% | 87.2% | 76.9% | 67.5% | 82.2% | 84.3% |
| Sumner | 62.0% | 64.0% | 88.0% | 72.0% | 84.0% | 90.0% | 100.0% | 100.0% | 100.0% | 44.4% | 50.0% | 87.5% | 65.4% | 92.3% | 82.6% |
| Wapello | 81.6% | 90.0% | 82.0% | 81.6% | 94.0% | 94.0% | 100.0% | 100.0% | 100.0% | 77.3% | 89.5% | 76.0% | 76.5% | 88.5% | 87.0% |
| Waterloo | 65.0% | 68.8% | 89.6% | 85.7% | 84.0% | 93.6% | 92.9% | 100.0% | 100.0% | 50.0% | 58.3% | 83.3% | 80.4% | 75.4% | 91.2% |
| Waverly | 81.8% | 96.0% | 81.3% | 93.5% | 100.0% | 82.7% | 100.0% | 100.0% | 100.0% | 71.8% | 94.8% | 84.2% | 90.6% | 100.0% | 79.2% |
| Wellman | 94.0% | 86.0% | 89.8% | 96.0% | 90.0% | 100.0% | 100.0% | 100.0% | 100.0% | 93.8% | 89.5% | 80.8% | 93.9% | 81.5% | 100.0% |

* Properly refers to in compliance with Iowa law.

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

| Restraint Type | Front Seat | | | Back Seat | | |
|---------------------------------|------------|-------|-------|-----------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| Child Safety Seat with Seatbelt | 2.7% | 4.0% | 1.9% | 97.3% | 96.0% | 98.1% |
| Booster Seat with Seatbelt | 7.3% | 2.7% | 4.9% | 92.7% | 97.3% | 95.1% |
| Seatbelt only | 26.6% | 23.9% | 20.0% | 73.4% | 76.1% | 80.0% |
| Not Restrained | 30.7% | 27.1% | 26.3% | 69.3% | 72.9% | 73.7% |
| Total | 17.9% | 15.2% | 12.1% | 82.1% | 84.8% | 87.9% |

Comparison Table 8
Driver Seat Belt Use by Community Size

| Community Size | Driver Belted | | | Driver Not Belted | | |
|----------------|---------------|-------|-------|-------------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| 1,000-2,499 | 69.8% | 78.7% | 77.2% | 30.2% | 21.3% | 22.8% |
| 2,500-9,999 | 81.7% | 89.6% | 86.2% | 18.3% | 10.4% | 13.8% |
| 10,000-49,999 | 90.6% | 88.6% | 85.1% | 9.4% | 11.4% | 14.9% |
| ≥ 50,000 | 90.0% | 91.7% | 92.8% | 10.0% | 8.3% | 7.2% |
| Total | 84.5% | 88.0% | 86.6% | 15.5% | 12.0% | 13.4% |

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

| | Percent Drivers Belted | | | Percent Drivers NOT Belted | | |
|----------------|------------------------|--------|-------|----------------------------|-------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| Algona | 62.2% | 80.0% | 82.7% | 37.8% | 20.0% | 17.3% |
| Ames | 92.7% | 94.4% | 100% | 7.3% | 5.6% | 100% |
| Belle Plaine | 92.7% | 97.3% | 94.4% | 7.3% | 2.7% | 5.6% |
| Cedar Rapids | 97.5% | 96.8% | 95.8% | 2.5% | 3.2% | 4.2% |
| Cherokee | 96.0% | 87.8% | 85.1% | 4.0% | 12.2% | 14.9% |
| Clinton | 97.0% | 96.0% | 91.8% | 3.0% | 4.0% | 8.2% |
| Corydon | 50.0% | 42.0% | 74.0% | 50.0% | 58.0% | 26.0% |
| Council Bluffs | 79.0% | 79.2% | 87.2% | 21.0% | 20.8% | 12.8% |
| Davenport | 92.8% | 93.6% | 94.3% | 7.2% | 6.4% | 5.7% |
| Des Moines | 90.4% | 88.0% | 90.3% | 9.6% | 12.0% | 9.7% |
| Dubuque | 96.8% | 98.4% | 88.1% | 3.2% | 1.6% | 11.9% |
| Fort Dodge | 91.0% | 81.0% | 80.8% | 9.0% | 19.0% | 19.2% |
| Guthrie Center | 60.0% | 82.0% | 66.0% | 40.0% | 18.0% | 34.0% |
| Guttenberg | 90.0% | 88.0% | 80.0% | 10.0% | 12.0% | 20% |
| Hawarden | 50.0% | 60.0% | 78.0% | 50.0% | 40.0% | 22% |
| Holstein | 74.0% | 88.0% | 58.0% | 26.0% | 12.0% | 42% |
| Iowa City | 93.6% | 97.6% | 93.4% | 6.4% | 2.4% | 6.6% |
| Jefferson | 66.7% | 86.7% | 76.0% | 33.3% | 13.3% | 24.0% |
| LaPorte City | 92.0% | 90.2% | 86.7% | 8.0% | 9.8% | 13.3% |
| Manchester | 91.6% | 94.7% | 91.4% | 8.4% | 5.3% | 8.6% |
| Marshalltown | 86.0% | 91.0% | 85.0% | 14.0% | 9.0% | 15.0% |
| Mason City | 85.0% | 69.0% | 76.0% | 15.0% | 31.0% | 24.0% |
| Mount Ayr | 24.0% | 60.0% | 56.0% | 76.0% | 40.0% | 44.0% |
| Mount Pleasant | 75.7% | 100.0% | 98.6% | 24.3% | 0.0% | 1.4% |
| Newton | 86.0% | 91.0% | 96.0% | 14.0% | 9.0% | 4.0% |
| Northwood | 93.9% | 80.09% | 72.0% | 6.1% | 20.0% | 28.0% |
| Ottumwa | 99.0% | 95.0% | 72.5% | 1.0% | 5.0% | 27.5% |
| Pocahontas | 66.0% | 76.0% | 91.7% | 34.0% | 24.0% | 8.3% |
| Red Oak | 70.7% | 72.0% | 73.0% | 29.3% | 28.0% | 27.0% |
| Sioux City | 80.5% | 83.2% | 89.6% | 19.5% | 16.8% | 10.4% |
| Spencer | 90.0% | 97.0% | 90.9% | 10.0% | 3.0% | 9.1% |
| Sumner | 66.0% | 88.0% | 75.5% | 34.0% | 12.0% | 24.5% |
| Wapello | 81.2% | 95.9% | 94.0% | 18.8% | 4.1% | 6.0% |
| Waterloo | 86.4% | 94.4% | 96.4% | 13.6% | 5.6% | 3.6% |
| Waverly | 97.4% | 98.7% | 89.3% | 2.6% | 1.36% | 10.7% |
| Wellman | 92.0% | 94.0% | 95.9% | 8.0% | 6.0% | 4.1% |
| TOTAL | 84.5% | 88.0% | 86.6% | 15.5% | 12.0% | 13.4% |