Center for CSSM Survey Statistics and Methodology

Iowa Seat Belt Use Survey
2024 Data Collection
Methodology Report

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Introduction

In 2011 the National Highway Traffic Safety Administration (NHTSA) issued new requirements for observing and reporting seat belt use that were designed to achieve greater consistency and comparability in state-wide seat belt use reporting. The requirements included the involvement of a qualified statistician in the sampling and weighting portions of the process as well as a variety of operational details. Each state's sampling plan and its selected sample of road segments was required to be reviewed and redrawn every five years.

The Iowa Governor's Traffic Safety Bureau contracted with Iowa State University's Center for Survey Statistics and Methodology (CSSM) (then Survey & Behavioral Research Services) in 2011 to develop the study design and data collection plan for the State of Iowa's annual survey that would meet NHTSA's new requirements. A seat belt survey plan for Iowa was developed by CSSM with statistical expertise provided by Zhengyuan Zhu, Ph.D., Professor of Statistics at Iowa State University and Director of CSSM. The plan was approved by NHTSA on March 19, 2012 and implemented by CSSM each year thereafter.

As required by NHTSA, the Iowa plan was revised and a new sample drawn in the fall/winter of 2016 by Dr. Emily Berg, Assistant Professor of Statistics at Iowa State University. Dr. Berg followed the protocol of the original approved plan, sampling 15 counties (as in 2012) and increasing the number of sampled road segments from 75 to 84. The revised plan was approved in March of 2017 and implemented by CSSM annually from 2017-2021. In late 2021 the plan was again revised with new counties and road segments sampled by Dr. Berg. This plan, again with 84 road segments from 15 counties, was approved in March of 2022 and implemented from 2022-2023.

2024 Data Collection

The Iowa GTSB has contracted with CSSM on an annual basis to conduct the seat belt use data collection since 2012. The primary contact at the Iowa GTSB in 2024 is Marigrace Porcelli, Program Administrator. The primary contact at CSSM is Allison Anderson, Survey Unit Director. The CSSM Seat Belt Survey Project Manager is Neely Lehman. The CSSM statistician is Emily Berg, PhD, Assistant Professor of Statistics at Iowa State University. This report describes the data collection process for obtaining 2024 seat belt use data as stipulated by the approved study design. It also includes tables with overall results showing seat belt use in Iowa.

Preparation

Preparation for the 2024 seat belt use data collection involved several components, including verification of the usability of the sampled sites, revision of materials for Data Collectors, and notification of appropriate local personnel prior to data collection.

Site Verification.

The Iowa Seat Belt Survey Plan includes 84 road segments or sites sampled for annual observation, allocated among 15 sampled counties. There are 5 sites in 14 of the counties and 14 sites in Polk County. The sites are identified by Object ID and Route ID numbers. CSSM worked with staff from *InTrans*, the Iowa State University Institute of Transportation, to obtain data and photographic resources that allow staff to examine each site remotely for accessibility, safety, and practicality. The CSSM Project Managers examined the 84 sites and checked with the Department of Transportation and other online sources for scheduled construction that could impact traffic patterns. All 84 sites were verified as safe and useable for 2024.

Materials Preparation.

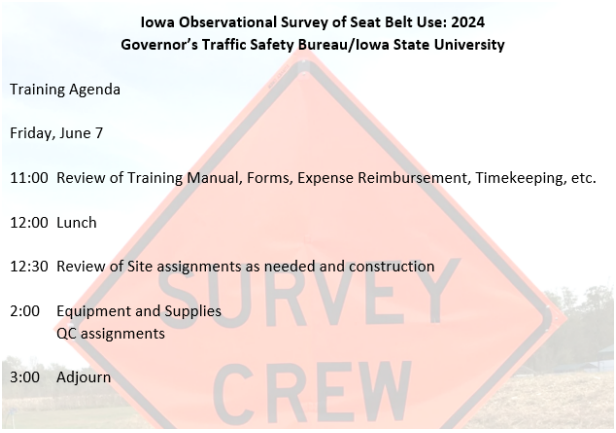
CSSM staff used online maps and Google Earth to identify and recommend observation points that would be safe and still provide the visibility necessary to observe seat belt use. CSSM staff created maps and travel directions for Data Collectors to use as references when traveling to sites. Google Earth and Google maps served as effective resources. Equipment was prepared for use by Data Collectors, including vests, hats, warning lights, "Survey Crew" signs, and timers. Data collection forms were updated and printed. Data Collection schedules were prepared for each Data Collector and administrative procedures were documented.

Notification.

Prior to the beginning of data collection, the GTSB representative notified law enforcement personnel in each of the site areas. CSSM staff notified other appropriate city/county and Department of Transportation personnel. The purpose was to ensure that the appropriate officials in each site area would be aware of the project and the days and times that Data Collectors would be at work in their area.

Data Collection Staff Training

Figure 1.



Iowa used three data collectors in 2024, responsible for 20 to 24 sites each. All three data collectors were experienced, having worked as data collectors for the project in the past. Quality Control (QC) functions were filled by two CSSM staff members.

Training for 2024 was held at CSSM on June 7, 2024, with field data collection beginning on June 8, 2024. (See Figure 1 for the training agenda.) Training sessions reviewed data collection protocols, including how to find the observation sites, choosing an observation location, how to properly collect data, practice in what counts as seat belt "use," "nonuse," and "use unknown," what to do if data cannot be collected at a site due to road construction, weather, or other circumstances, and the appropriate management and submission of collected data.

Some sites were brought up on Google Earth and discussed with the assigned observer, so that access to the sites and safe observation locations were clearly understood. Some observers were returning to the same county sites that they have observed for two prior years, and some were assigned to new counties they hadn't visited before. Time was focused on sites observers were not previously familiar with to identify safe observation points and travel routes between sites.

The quality control monitors reviewed their procedures with the Project Manager to ensure that they were updated on specific duties of the position. Quality Control duties included conducting unannounced site visits to a minimum of two sites for each Data Collector and reviewing the Data Collector's field protocol. The QC Monitors met with the Data Collectors in the field to answer questions and offer assistance as needed.

Data Collectors were provided with bright yellow high-vis vests and hats to wear for safety and protection from sun and light rain. Each Data Collector had a flashing amber light to put on his/her car and timer to use as needed. Each Data Collector was also provided with two "Survey Crew" signs and sandbag weights for use in high-speed or high traffic areas and other sites as appropriate.

Observation Protocols and Procedures

All passenger vehicles, including commercial vehicles weighing less than 10,000 pounds, were eligible for observation. Data Collectors completed two forms in the field, the Observation Site Form and the Observation Tally Form, which are shown in Appendices A and B. The Observation Site Form documented descriptive information about each site. Data Collectors recorded information including observation date, site location and number, alternative site data, traffic directions and lanes available and observed, start and end times for observations, and weather conditions.

The Observation Tally Form was used to mark belt use/non-use/unknown use for drivers and right front passengers. Using the Observation Tally Form, seat belt use observations were made of all passenger vehicle drivers and right front seat occupants in the selected lane. The only passenger vehicle right front seat occupants excluded from the study were child passengers traveling in child seats with harness straps. If there was no passenger in the right front seat of an observed vehicle, that information was also noted on the Observation Tally Form.

Seat Belt use categories - Data Collectors recorded belt use for the driver and right front seat passenger using the definitions shown in Figure 2 below, which were provided in the federal regulations.

Figure 2.

Code	Meaning	Definition
Y	Yes, belted	The shoulder belt is in front of the person's shoulder.
N	No, unbelted	The shoulder belt is not in front of the person's shoulder.
U	Unknown	It cannot reasonably be determined whether the driver or right front passenger is belted.
NP	No passenger	There is no right front passenger present.

Scheduling.

Data collectors were generally assigned one county with five observation sites per work day. The 14 Polk County sites were divided among two Data Collectors and completed in one day. A schedule of sites with observation start times was provided by CSSM in order to ensure a representative sampling of times of day for the data collection and to allow for proper notification of county/city and law enforcement personnel. Observations were to start at the assigned times, as much as possible, and to continue for exactly 45 minutes each.

Observations.

Data Collectors observed one lane and one direction of travel per observation site. The direction of travel was identified by the Project Manager in keeping with the sampled direction associated with segments of divided highways; however, Data Collectors were allowed to observe the other direction if safety or windshield glare dictated. Deviations from the randomly assigned direction were noted on the Observation Site Form. If an assigned road segment included an intersection, Data Collectors were instructed to make sure they observe traffic traveling on the assigned road segment, not the cross-street.

Lower volume roadways such as county roads and streets were observed from a field drive or other location where data collectors could safely move their vehicles from the roadway. In some cases, Data Collectors observed from their vehicle while, in most cases, observing from outside of the vehicle was more effective.

Whenever possible, observations for high-volume, limited access roadways were made from an overpass. Observing from an overpass allows for comparatively easy viewing of seatbelt use by both the driver and the passenger. Gravel road overpasses were preferred because of the low traffic volume, reducing safety hazards to the Data Collector. In some instances, observing from an overpass required moving the observation point from the specific road segment by a few miles; however, because of the limited exit and entrance ramps to these roadways, there were no significant changes to the observed vehicles between the assigned road segment and the observation point.

If a low volume overpass was not available, Data Collectors were allowed to observe traffic at an exit ramp or rest stop. Because the exit ramp/rest stop only sampled a portion of the traffic passing on the main highway, an additional traffic volume count was required in order to adjust for the reduced numbers. Data collectors completed a traffic count of the assigned highway segment immediately following the observations at the ramp/rest stop. Using a safe observation point from which to view passing cars (but not necessarily belt usage), the data collector counted passing cars in one direction and in one lane of the assigned road segment, timing the number of minutes to reach a count of 100 cars. If the traffic volume was low, the data collector recorded the number of cars observed in a 15-minute time frame. This traffic count information was recorded on the Observation Site Form and was used by the statistician to adjust the seat belt usage observation data for weighting purposes. Two rest stop sites were used in 2024, as in previous years, no additional rest stop sites were added in 2024.

Alternate Sites.

Two sites were permanently replaced with alternates following data collection in 2022 for data collector safety reasons, one in Polk County and one in Pottawattamie County. In 2024, during the assessment of all road segment availability it was determined the sites in Tama and Clinton Counties that required alternates in 2023 were no longer under construction or part of a detour. Observations were resumed at the original sample locations for 2024 data collection. For all other sites, if there was difficulty in locating a useable and safe place to observe that required the Data Collector to deviate farther than 2 miles (or more than one block in city situations) from the selected road segment, he/she was instructed to call the office before proceeding and to note the location as an alternate site on the Observation Site form. For the 2024 no additional data collection sites were needed.

Rescheduling.

If an assigned road segment was temporarily unavailable due to a traffic accident or inclement weather, data collection was to be rescheduled another week for the same time and day of the week. Hamilton, Tama and O'Brien County sites needed to be rescheduled in 2024 due to inclement weather.

Results

Data collection for 2024 occurred from Saturday, June 8 through Monday, June 24, 2024. The 2024 seat belt use data collection resulted in the observation of **15,833 passenger vehicles**, with a right front seat passenger in 5,718 of those vehicles, for a total of **21,551 potential observations** of belt use. Of these 21,551 potential observations, there were 15,171 drivers and 5,282 right front passengers who were observed wearing seat belts (total 20,453 seat belt users). Seat belts were not worn by 549 drivers and 402 right front passengers (total 951 unbelted). Data collectors were unable to identify the seat belt use of 113 drivers and 34 passengers (total 147 unknown use). The **unknown use, or "nonresponse rate," is .7%**. This is well within the range allowed by federal regulations, which require the nonresponse rate to be below 10%.

Federal regulations require a minimum of 7500 observations, and the 2024 total of 15,833 passenger vehicles with 21,551 observed occupants far exceeds the minimum requirement.

Six quality control checks were completed in 2024. Each of the three data collectors was observed by a quality control monitor at two unannounced sites to ensure compliance with project protocols. This comprises 7.1% of the sites (6 out of 84), which exceeds the minimum of 5% required by federal regulations. Data collectors were all found to be at their correct locations and counting appropriately with proper safety guidelines followed.

CSSM held a debriefing session with Data Collectors and Quality Control Monitors on Friday, June 28, 2024. The primary purpose was to identify any problems or issues relating to the selected sites that should be addressed in future data collection. Data collectors identified two sites that they may use a different observation point at next year, still within the same road segment, no alternate road sections are needed.

Federal regulations require the calculation of seat belt use to be conducted with weighted data as described in the approved survey plan. Data weighting was completed by Dr. Emily Berg, Assistant Professor of Statistics at Iowa State University. Based on the weighted data, **Iowa's overall seat belt use rate for 2024 is 94.003%**, with an **estimated standard error of** 0.913**% (± 0.9%)**. The standard error for 2024 observations falls within NTSA's established limits of **±**2.5%. Weighted seat belt use rates and standard errors for the state and by driver and passenger are shown in Figure 3 with overall weighted state-wide rates since 2014 shown in Figure 4.

Figure 3. Iowa's Seat Belt Use Estimates and Standard Errors, 2023.

Category	Estimate (%)	Standard Error (%)
Total Iowa	94.003	0.913
Driver	94.747	0.481
Passenger	91.719	2.365

Figure 4. Iowa's Annual Weighted Seat Belt Use Rate, 2014-2024.

Year	Weighted Belt Use
2024	**94.00%**
2023	**96.99%**
2022	**95.88%**
2021	92.66%
2020	95.2%
2019	94.6%
2018	93.9%
2017	91.4%
2016	93.8%
2015	93.0%
2014	92.8%

Tables and Appendices

Table 1 lists the 84 observation sites with selected characteristics and the number of belted drivers and right front passengers.

Tables 2 and 3 show the seat belt use of drivers and passengers by county. Table 2 contains the number or count of each category of belt use by drivers, passengers, and total for each sampled county. Table 3 contains two types of unweighted percentages of belt use for drivers, passengers, and combined total for each county. The "% of Total Belted" is the percent of the total number of persons (both drivers and passengers) who were belted. The "% of Known Belted" removes the persons with unknown belt use from the base number, so it becomes the percent of persons with known seat belt status who were belted. **Note that these percentages are unweighted and the state-wide seat belt use percentage in this table is slightly different than the weighted seat belt use percentage required by federal regulations for reporting.** Nevertheless, the unweighted percentages in Table 3 enable legitimate comparisons between seat belt users/nonusers and between counties.

Tables 4 and 5 show the seat belt use of drivers and passengers by road type. Table 4 contains the number in each category and Table 5 contains unweighted percentages. Federal regulations require the survey plan to classify road types as primary (including interstates), secondary, and local.

Table 6 contains seat belt use of drivers and passengers by day of the week and road type. The percentages included in the table are unweighted.

Table 7 contains sample weights for each observation site as well as seat belt use for drivers and passengers (number or count). This information is provided for Part B reporting purposes.

Appendix A. Observation Site Form
Appendix B. Observation Tally Form

Table 1. 2024 Seat Belt Usage by Site

No.	County	ObjectID	Road Name	Road Type	Day of Week	Start Time	Vehicle Count	Drivers Belted	Right Front Passenger Count	Right Front Passengers Belted
1	Cass	62871013	I 80 E	Primary	Saturday	04:15pm	235	233	132	123
2	Cass	62869070	I 80 E	Primary	Saturday	02:00pm	301	297	173	159
3	Cass	62873677	I 80 W	Primary	Saturday	03:05pm	293	287	172	154
4	Cass	62881404	10TH STREET	Local	Saturday	12:05pm	56	53	21	21
5	Cass	62919461	IA 92	Secondary	Saturday	11:00am	67	64	28	28
6	Cedar	62798486	IA 130	Secondary	Saturday	01:46pm	41	39	19	18
7	Cedar	62872668	I 80 W	Primary	Saturday	09:45am	338	328	202	193
8	Cedar	62873984	I 80 W	Primary	Saturday	11:55am	32	31	18	18
9	Cedar	62876490	I 80 W	Primary	Saturday	08:20am	281	276	149	144
10	Cedar	62950525	ROSE AVENUE	Local	Saturday	10:56am	9	8	1	1
11	Clinton	62819116	US 30 E	Secondary	Wednesday	9:20 AM	135	128	36	35
12	Clinton	62827550	US 61 S	Secondary	Wednesday	07:55am	127	121	43	40
13	Clinton	62900672	MILL CREEK PKWY	Local	Wednesday	12:50pm	126	121	35	35
14	Clinton	62797689	5TH AVENUE SOUTH	Secondary	Wednesday	11:24am	63	60	16	15
15	Clinton	63002428	US 30 W	Secondary	Wednesday	10:30am	124	115	33	32
16	Hamilton	62935472	US 69 N/S	Secondary	Thursday	09:45am	34	33	11	11
17	Hamilton	62861630	I 35 N	Primary	Thursday	11:10am	420	412	214	203
18	Hamilton	62858913	I 35 N	Primary	Thursday	01:55pm	444	429	206	188
19	Hamilton	62921261	I 35 S	Primary	Thursday	12:50pm	435	420	209	201
20	Hamilton	63013008	ALFRED STREET	Local	Thursday	08:15am	4	1	1	0
21	Hardin	62781357	US 20 W	Secondary	Wednesday	09:50am	157	154	60	53
22	Hardin	62783085	US 20 W	Secondary	Wednesday	01:20pm	183	178	52	47
23	Hardin	62845110	CO HWY D35	Local	Wednesday	10:40am	2	2	0	0
24	Hardin	62997885	DEPOT STREET	Local	Wednesday	12:15pm	10	10	1	1
25	Hardin	63014889	US 20 E	Secondary	Wednesday	09:00am	151	141	50	46
26	Jasper	62744348	IA 163 E	Secondary	Tuesday	02:37pm	236	217	71	62
27	Jasper	62868826	E 19TH STREET N	Local	Tuesday	09:32am	20	17	2	1
28	Jasper	62879158	I 80 E	Primary	Tuesday	10:35am	308	286	118	94
29	Jasper	62871279	I 80 E	Primary	Tuesday	12:05pm	287	269	116	98
30	Jasper	62872270	I 80 E	Primary	Tuesday	01:36pm	223	208	81	62
31	Madison	62792082	NE 4TH STREET	Local	Sunday	05:10pm	15	12	5	5
32	Madison	62873812	I 80 W	Primary	Sunday	04:00pm	555	548	341	318
33	Madison	62910006	IA 92	Secondary	Sunday	11:30am	128	123	70	64
34	Madison	62920420	US 169	Secondary	Sunday	01:30pm	35	33	11	11
35	Madison	62946268	2ND AVENUE	Local	Sunday	02:40pm	2	2	2	2
36	Mills	62754731	221ST STREET	Local	Tuesday	11:45am	66	61	11	9
37	Mills	62858774	I 29 S	Primary	Tuesday	09:00am	262	254	104	99
38	Mills	62782194	I 29 N	Primary	Tuesday	10:15am	212	210	107	101
39	Mills	62861429	I 29 S	Primary	Tuesday	07:45am	252	245	92	86
40	Mills	63036628	US 34	Secondary	Tuesday	01:45pm	173	169	64	60
41	Muscatine	62846476	IA 38	Secondary	Friday	10:05am	97	94	35	34
42	Muscatine	62883673	US 6	Secondary	Friday	09:03am	32	31	10	9
43	Muscatine	62943188	US 61 N	Secondary	Friday	11:14am	167	160	48	45

44	Muscatine	62971371	US 61 N	Secondary	Friday	01:10pm	207	203	71	63
45	Muscatine	63042421	200TH STREET	Local	Friday	02:20pm	74	68	10	10
46	O'Brien	62761855	390TH STREET	Local	Monday	10:00am	45	43	11	9
47	O'Brien	62867037	IA 60 N	Secondary	Monday	11:55am	129	120	51	50
48	O'Brien	62886573	IA 60 S	Secondary	Monday	11:00am	124	117	59	53
49	O'Brien	62948573	IA 10 E/W	Secondary	Monday	09:00am	16	15	4	4
50	O'Brien	63020223	NW BOULEVARD	Local	Monday	12:50pm	29	27	7	6
51	Polk	62876369	I 80 W	Primary	Thursday	03:00pm	579	558	154	129
52	Polk	62748369	IA 163 E	Secondary	Thursday	11:45am	180	166	55	45
53	Polk	62772160	MUSKOGEE AVENUE	Local	Thursday	02:25pm	3	2	0	0
54	Polk	62831528	FLEUR DRIVE	Secondary	Thursday	01:10pm	504	458	113	102
55	Polk	62859653	NW 9TH STREET	Local	Thursday	10:25am	13	13	5	5
56	Polk	62861559	I 35 N	Primary	Thursday	01:00pm	507	498	91	83
57	Polk	62876189	I 80 W	Primary	Thursday	08:15am	572	557	187	182
58	Polk	62873841	I 80 W	Primary	Thursday	07:00am	12	12	2	2
59	Polk	63029382	Ashworth Road	Secondary	Thursday	11:55am	91	85	12	12
60	Polk	62828269	I 235 W	Primary	Thursday	04:30pm	757	685	128	112
61	Polk	62879911	I 80 E	Primary	Thursday	04:00pm	787	777	87	80
62	Polk	62884333	60TH STREET	Secondary	Thursday	02:00pm	209	203	45	43
63	Polk	62924625	US 69 N/S	Secondary	Thursday	09:25am	120	115	23	23
64	Polk	63081332	GRAND AVENUE	Secondary	Thursday	03:25pm	245	219	33	27
65	Pottawattamie	62765549	10TH AVENUE	Local	Monday	01:00pm	12	10	3	3
66	Pottawattamie	62869130	I 80 E	Primary	Monday	10:30am	393	386	187	180
67	Pottawattamie	62872327	I 80 W	Primary	Monday	02:45pm	410	406	147	140
68	Pottawattamie	62875270	I 80 W	Primary	Monday	11:55am	328	316	163	156
69	Pottawattamie	62976124	NASH BOULEVARD	Secondary	Monday	03:45pm	161	154	52	50
70	Scott	62826343	US 61 S	Secondary	Monday	12:30pm	139	130	32	31
71	Scott	62868688	I 80 E	Primary	Monday	09:35am	293	281	129	123
72	Scott	62877733	I 80 W	Primary	Monday	11:00am	341	327	163	159
73	Scott	62947974	E PLEASANT STREET	Local	Monday	02:39pm	9	8	1	1
74	Scott	63046770	EAST 53RD STREET	Secondary	Monday	03:40pm	306	293	69	61
75	Tama	62827370	US 63 N/S	Secondary	Sunday	01:20pm	43	42	17	16
76	Tama	62828413	US 63 N/S	Secondary	Sunday	12:25pm	65	57	31	26
77	Tama	62893597	EAST STREET	Local	Sunday	10:00am	11	9	2	2
78	Tama	62983342	IA 8 E/W	Secondary	Sunday	10:50am	33	31	23	23
79	Tama	62991055	BUSINESS US 30	Local	Sunday	02:25pm	50	45	20	16
80	Woodbury	62774974	CHAMBERS STREET	Local	Friday	01:15pm	69	61	18	18
81	Woodbury	62782484	US 20 W	Secondary	Friday	10:55am	97	91	39	33
82	Woodbury	62865471	I 29 S	Primary	Friday	03:30pm	370	360	195	176
83	Woodbury	62996218	US 20 E	Secondary	Friday	12:00pm	168	161	57	55
84	Woodbury	63042628	WESLEY PARKWAY	Secondary	Friday	02:20pm	194	182	52	47
1	Cass	62871013	I 80 E	Primary	Saturday	04:15pm	235	233	132	123
							15833	**15171**	**5718**	**5282**

Table 2. 2024 Driver and Passenger Seat Belt Use by County (n)

	Driver				Right Front Passenger				Total			
County	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Cass	952	934	18	0	526	485	41	0	1478	1419	59	0
Cedar	701	682	11	8	389	374	13	2	1090	1056	24	10
Clinton	575	545	24	6	163	157	6	0	738	702	30	6
Hamilton	1337	1295	42	0	641	603	38	0	1978	1898	80	0
Hardin	503	485	18	0	163	147	16	0	666	632	34	0
Jasper	1074	997	51	26	388	317	53	18	1462	1314	104	44
Madison	735	718	17	0	429	400	29	0	1164	1118	46	0
Mills	965	939	26	0	378	355	23	0	1343	1294	49	0
Muscatine	577	556	13	8	174	161	10	3	751	717	23	11
O'Brien	343	322	21	0	132	122	10	0	475	444	31	0
Polk	4579	4348	181	50	935	845	84	6	5514	5193	265	56
Pottawattamie	1304	1272	32	0	552	529	23	0	1856	1801	55	0
Scott	1088	1039	34	15	394	375	14	5	1482	1414	48	20
Tama	202	184	18	0	93	83	10	0	295	267	28	0
Woodbury	898	855	43	0	361	329	32	0	1259	1184	75	0
TOTALS	**15833**	**15171**	**549**	**113**	**5718**	**5282**	**402**	**34**	**21551**	**20453**	**951**	**147**

Table 3. 2024 Driver and Passenger Seat Belt Use by County (unweighted percentages)

	Drivers		Right Front Passengers		TOTAL	
County	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Cass	98.1%	98.1%	92.2%	92.2%	96.0%	96.0%
Cedar	97.3%	98.4%	96.1%	96.6%	96.9%	97.8%
Clinton	94.8%	95.8%	96.3%	96.3%	95.1%	95.9%
Hamilton	96.9%	96.9%	94.1%	94.1%	96.0%	96.0%
Hardin	96.4%	96.4%	90.2%	90.2%	94.9%	94.9%
Jasper	92.8%	95.1%	81.7%	85.7%	89.9%	92.7%
Madison	97.7%	97.7%	93.2%	93.2%	96.0%	96.0%
Mills	97.3%	97.3%	93.9%	93.9%	96.4%	96.4%
Muscatine	96.4%	97.7%	92.5%	94.2%	95.5%	96.9%
O'Brien	93.9%	93.9%	92.4%	92.4%	93.5%	93.5%
Polk	95.0%	96.0%	90.4%	91.0%	94.2%	95.1%
Pottawattamie	97.5%	97.5%	95.8%	95.8%	97.0%	97.0%
Scott	95.5%	96.8%	95.2%	96.4%	95.4%	96.7%
Tama	91.1%	91.1%	89.2%	89.2%	90.5%	90.5%
Woodbury	95.2%	95.2%	91.1%	91.1%	94.0%	94.0%
Total	**95.8%**	**96.5%**	**92.4%**	**92.9%**	**94.9%**	**95.6%**

Table 4. 2024 Seat Belt Use by Road Type (n)

	Drivers				Right Front Passengers				Total Occupants			
Road Type	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Local	625	573	48	4	156	145	11	0	781	718	59	4
Primary	10227	9896	268	63	4067	3763	283	21	14294	13659	551	84
Secondary	4981	4702	233	46	1495	1374	108	13	6476	6076	341	59
TOTAL	**15833**	**15171**	**549**	**113**	**5718**	**5282**	**402**	**34**	**21551**	**20453**	**951**	**147**

Table 5. 2024 Seat Belt Use by Road Type (unweighted percentages)

	Drivers		Right Front Passengers		Total	
Road Type	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Local	91.7%	92.3%	92.9%	92.9%	91.9%	92.4%
Primary	96.8%	97.4%	92.5%	93.0%	95.6%	96.1%
Secondary	94.4%	95.3%	91.9%	92.7%	93.8%	94.7%
TOTAL	**95.8%**	**96.5%**	**92.4%**	**92.9%**	**94.9%**	**95.6%**

Table 6. 2024 Driver and Passenger Seat Belt Use by Day and Road Type (n & unweighted %)

	Drivers Belted	Total Drivers	Passengers Belted	Total Passengers	% Drivers Belted	% Passengers Belted
Sunday	**902**	**937**	**483**	**522**	**96.3%**	**92.5%**
Local	68	78	25	29	87.2%	86.2%
Primary	548	555	318	341	98.7%	93.3%
Secondary	286	304	140	152	94.1%	92.1%
Monday	**2633**	**2735**	**1026**	**1078**	**96.3%**	**95.2%**
Local	88	95	19	22	92.6%	86.4%
Primary	1716	1765	758	789	97.2%	96.1%
Secondary	829	875	249	267	94.7%	93.3%
Tuesday	**1936**	**2039**	**672**	**766**	**94.9%**	**87.7%**
Local	78	86	10	13	90.7%	76.9%
Primary	1472	1544	540	618	95.3%	87.4%
Secondary	386	409	122	135	94.4%	90.4%
Wednesday	**1030**	**1078**	**304**	**326**	**95.5%**	**93.3%**
Local	133	138	36	36	96.4%	100.0%
Primary	0	0	0	0	0.0%	0.0%
Secondary	897	940	268	290	95.4%	92.4%
Thursday	**5643**	**5916**	**1448**	**1576**	**95.4%**	**91.9%**
Local	16	20	5	6	80.0%	83.3%
Primary	4348	4513	1180	1278	96.3%	92.3%
Secondary	1279	1383	263	292	92.5%	90.1%
Friday	**1411**	**1475**	**490**	**535**	**95.7%**	**91.6%**
Local	129	143	28	28	90.2%	100.0%
Primary	360	370	176	195	97.3%	90.3%
Secondary	922	962	286	312	95.8%	91.7%
Saturday	**1616**	**1653**	**859**	**915**	**97.8%**	**93.9%**
Local	61	65	22	22	93.8%	100.0%
Primary	1452	1480	791	846	98.1%	93.5%
Secondary	103	108	46	47	95.4%	97.9%
Total	**15171**	**15833**	**5282**	**5718**	**95.8%**	**92.4%**

Table 7. Sample Weights and Seat Belt Use by Observation Site: Part B Reporting Data (n)

Site ID	Site Type	Date Observed	Sample Weight	Number of Drivers	Number of Front Passengers	Number of Occupants Belted	Number of Occupants Unbelted	Number of Occupants Unknown Belt Use
301	Original	6/8/2024	47.76406742	235	132	356	11	0
302	Original	6/8/2024	330.717446	301	173	456	18	0
303	Original	6/8/2024	83.33237406	293	172	441	24	0
304	Original	6/8/2024	1093.542917	56	21	74	3	0
305	Original	6/8/2024	381.5156151	67	28	92	3	0
306	Original	6/15/2024	231.5322024	41	19	57	2	1
307	Original	6/15/2024	33.35465161	338	202	521	13	6
308	Original	6/15/2024	1400.615166	32	18	49	1	0
309	Original	6/15/2024	223.2330819	281	149	420	7	3
310	Original	6/15/2024	13505.2184	9	1	9	1	0
311	Original	6/19/2024	332.5263233	135	36	163	5	3
312	Original	6/19/2024	2553.595256	127	43	161	8	1
313	Original	6/19/2024	468.2567764	126	35	156	3	2
314	Original	6/19/2024	6395.941711	63	16	75	4	0
315	Original	6/19/2024	227.2718916	124	33	147	10	0
316	Original	6/20/2024	44004.12511	34	11	44	1	0
317	Original	6/20/2024	23.43638478	420	214	615	19	0
318	Original	6/20/2024	62.43854024	444	206	617	33	0
319	Original	6/20/2024	48.50361707	435	209	621	23	0
320	Original	6/20/2024	7919.639615	4	1	1	4	0
321	Original	6/19/2024	108.8412011	157	60	207	10	0
322	Original	6/19/2024	1807.725441	183	52	225	10	0
323	Original	6/19/2024	2149.931632	2	0	2	0	0
324	Original	6/19/2024	7903.234144	10	1	11	0	0
325	Original	6/19/2024	114.0486426	151	50	187	14	0
326	Original	6/18/2024	1590.622391	236	71	279	21	7
327	Original	6/18/2024	3203.203685	20	2	18	4	0
328	Original	6/18/2024	46.75491782	308	118	380	32	14
329	Original	6/18/2024	124.6887654	287	116	367	22	14
330	Original	6/18/2024	103.2311211	223	81	270	25	9
331	Original	6/16/2024	11139.20342	15	5	17	3	0
332	Original	6/16/2024	187.2715634	555	341	866	30	0
333	Original	6/16/2024	277.5003028	128	70	187	11	0
334	Original	6/16/2024	1733.624868	35	11	44	2	0
335	Original	6/16/2024	15010.88792	2	2	4	0	0
336	Original	6/11/2024	4875.239511	66	11	70	7	0
337	Original	6/11/2024	40.17870062	262	104	353	13	0
338	Original	6/11/2024	42.67769356	212	107	311	8	0
339	Original	6/11/2024	375.2958392	252	92	331	13	0
340	Original	6/11/2024	816.532318	173	64	229	8	0
341	Original	6/14/2024	61.02668232	97	35	128	3	1
342	Original	6/14/2024	447.3230096	32	10	40	1	1
343	Original	6/14/2024	647.1841996	167	48	205	8	2

Site ID	Site Type	Date Observed	Sample Weight	Number of Drivers	Number of Front Passengers	Number of Occupants Belted	Number of Occupants Unbelted	Number of Occupants Unknown Belt Use
344	Original	6/14/2024	588.9716003	207	71	266	7	5
345	Original	6/14/2024	2209.655156	74	10	78	4	2
346	Original	6/24/2024	267.9291172	45	11	52	4	0
347	Original	6/24/2024	1026.588464	129	51	170	10	0
348	Original	6/24/2024	370.252558	124	59	170	13	0
349	Original	6/24/2024	1259.320084	16	4	19	1	0
350	Original	6/24/2024	942.9104692	29	7	33	3	0
351	Original	6/13/2024	534.0552336	579	154	687	46	0
352	Original	6/13/2024	130.1634286	180	55	211	15	9
353	Original	6/13/2024	11848.34123	3	0	2	1	0
354	Original	6/13/2024	578.7946428	504	113	560	44	13
355	Original	6/13/2024	12239.90208	13	5	18	0	0
356	Original	6/13/2024	334.8498123	507	91	581	17	0
357	Original	6/13/2024	867.9286059	572	187	739	20	0
358	Alternate	6/13/2024	46.7796284	12	2	14	0	0
359	Original	6/13/2024	334.4006287	91	12	97	6	0
360	Original	6/13/2024	670.5806222	757	128	797	61	27
361	Original	6/13/2024	131.3698877	787	87	857	17	0
362	Original	6/13/2024	1019.364875	209	45	246	8	0
363	Original	6/13/2024	338.5022629	120	23	138	5	0
365	Original	6/13/2024	239.1784889	245	33	246	25	7
366	Original	6/10/2024	1559.146041	12	3	13	2	0
367	Original	6/10/2024	1214.770515	393	187	566	14	0
368	Original	6/10/2024	159.856342	410	147	546	11	0
369	Original	6/10/2024	125.9489281	328	163	472	19	0
370	Original	6/10/2024	899.9487487	161	52	204	9	0
371	Original	6/17/2024	3388.001588	139	32	161	6	4
372	Original	6/17/2024	570.8568078	293	129	404	14	4
373	Original	6/17/2024	260.1531308	341	163	486	11	7
374	Original	6/17/2024	15512.09203	9	1	9	1	0
375	Original	6/17/2024	849.0066139	306	69	354	16	5
376	Original	6/23/2024	105.3294625	43	17	58	2	0
377	Original	6/23/2024	1239.451534	65	31	83	13	0
378	Original	6/23/2024	12978.58445	11	2	11	2	0
379	Original	6/23/2024	1712.851845	33	23	54	2	0
380	Original	6/23/2024	577.9058662	50	20	61	9	0
381	Original	6/21/2024	1935.159127	69	18	79	8	0
382	Original	6/21/2024	32059.85385	97	39	124	12	0
383	Original	6/21/2024	39.26782778	370	195	536	29	0
384	Original	6/21/2024	89.73162702	168	57	216	9	0
385	Original	6/21/2024	565.4102821	194	52	229	17	0
			TOTALS:	**15833**	**5718**	**20453**	**951**	**147**

Appendix A. Observation Site Form 2024

Iowa Seat Belt Survey

Observation Site Form

Data Collector ID# _____ **Date:** _____ / _____ **/2024**

Site Identification:

ID: _____ **County :** _____

Road Name: _____ **Co Site #:** _____

Site Start and End Time:

Start time for observations: _____**am/pm**

End time for observations: _____**am/pm**

(Total observation period MUST last exactly 45 minutes)

Site Description:

Selected traffic flow direction: North South East West

Total number of lanes in selected direction: _____

Weather Conditions: **Clear** **Cloudy/PC** **Light Fog** **Light Rain**

Alternate Site Information:

Is this an alternate site (not including a recommended observation point)**?** **No** **Yes**

If yes, why was an alternate site needed?

_____

Traffic Count:

Is a traffic count required (exit ramp or rest stop)**?** **No** **Yes**

If yes,
Number of Cars: _____ **Duration:** _____

Appendix B. Observation Tally Form 2024

Iowa Seat Belt Survey – Observation Form

County: _____ **Page** ___ **of** ___

County site #: _____

ID #: _____ **Data Collector ID#** _____

Responses: Y = Yes, N = No, U = Unknown, NP = No Passenger

VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
1	Y	N	U	Y	N	U	NP
2	Y	N	U	Y	N	U	NP
3	Y	N	U	Y	N	U	NP
4	Y	N	U	Y	N	U	NP
5	Y	N	U	Y	N	U	NP
6	Y	N	U	Y	N	U	NP
7	Y	N	U	Y	N	U	NP
8	Y	N	U	Y	N	U	NP
9	Y	N	U	Y	N	U	NP
10	Y	N	U	Y	N	U	NP
11	Y	N	U	Y	N	U	NP
12	Y	N	U	Y	N	U	NP
13	Y	N	U	Y	N	U	NP
14	Y	N	U	Y	N	U	NP
15	Y	N	U	Y	N	U	NP
16	Y	N	U	Y	N	U	NP
17	Y	N	U	Y	N	U	NP
18	Y	N	U	Y	N	U	NP
19	Y	N	U	Y	N	U	NP
20	Y	N	U	Y	N	U	NP
21	Y	N	U	Y	N	U	NP
22	Y	N	U	Y	N	U	NP
23	Y	N	U	Y	N	U	NP
24	Y	N	U	Y	N	U	NP
25	Y	N	U	Y	N	U	NP
26	Y	N	U	Y	N	U	NP
27	Y	N	U	Y	N	U	NP
28	Y	N	U	Y	N	U	NP
29	Y	N	U	Y	N	U	NP
30	Y	N	U	Y	N	U	NP
31	Y	N	U	Y	N	U	NP
32	Y	N	U	Y	N	U	NP
33	Y	N	U	Y	N	U	NP
34	Y	N	U	Y	N	U	NP
35	Y	N	U	Y	N	U	NP
36	Y	N	U	Y	N	U	NP
37	Y	N	U	Y	N	U	NP
38	Y	N	U	Y	N	U	NP
39	Y	N	U	Y	N	U	NP
40	Y	N	U	Y	N	U	NP

VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
41	Y	N	U	Y	N	U	NP
42	Y	N	U	Y	N	U	NP
43	Y	N	U	Y	N	U	NP
44	Y	N	U	Y	N	U	NP
45	Y	N	U	Y	N	U	NP
46	Y	N	U	Y	N	U	NP
47	Y	N	U	Y	N	U	NP
48	Y	N	U	Y	N	U	NP
49	Y	N	U	Y	N	U	NP
50	Y	N	U	Y	N	U	NP
51	Y	N	U	Y	N	U	NP
52	Y	N	U	Y	N	U	NP
53	Y	N	U	Y	N	U	NP
54	Y	N	U	Y	N	U	NP
55	Y	N	U	Y	N	U	NP
56	Y	N	U	Y	N	U	NP
57	Y	N	U	Y	N	U	NP
58	Y	N	U	Y	N	U	NP
59	Y	N	U	Y	N	U	NP
60	Y	N	U	Y	N	U	NP
61	Y	N	U	Y	N	U	NP
62	Y	N	U	Y	N	U	NP
63	Y	N	U	Y	N	U	NP
64	Y	N	U	Y	N	U	NP
65	Y	N	U	Y	N	U	NP
66	Y	N	U	Y	N	U	NP
67	Y	N	U	Y	N	U	NP
68	Y	N	U	Y	N	U	NP
69	Y	N	U	Y	N	U	NP
70	Y	N	U	Y	N	U	NP
71	Y	N	U	Y	N	U	NP
72	Y	N	U	Y	N	U	NP
73	Y	N	U	Y	N	U	NP
74	Y	N	U	Y	N	U	NP
75	Y	N	U	Y	N	U	NP
76	Y	N	U	Y	N	U	NP
77	Y	N	U	Y	N	U	NP
78	Y	N	U	Y	N	U	NP
79	Y	N	U	Y	N	U	NP
80	Y	N	U	Y	N	U	NP