



**Iowa Seat Belt Use Survey
2012 Data Collection
Methodology Report
September 13, 2012**

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Introduction

In an effort to achieve greater consistency and comparability in state-wide seat belt use reporting, the National Highway Traffic Safety Administration (NHTSA) issued new requirements in 2011 for observing and reporting future seat belt use. 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.

The Iowa Governor's Traffic Safety Bureau contracted with Iowa State University's Survey & Behavioral Research Services (SBRS) in 2011 to develop the study design and data collection plan for the State of Iowa annual survey that would meet the new requirements of the NHTSA. A seat belt survey plan for Iowa was developed by SBRS with statistical expertise provided by Zhengyuan Zhu, Ph.D., Associate Professor of Statistics at Iowa State University. The Iowa plan was submitted to NHTSA in December of 2011 and official approval was received on March 19, 2012.

2012 Data Collection

For many years, Iowa seat belt use data has been collected by state and local law enforcement personnel. The new NHTSA requirements prohibit using uniformed officers for that purpose, so data collection for the state of Iowa 2012 Seat Belt Use Survey was contracted to SBRS. The primary contact at the Iowa GTSB is Mark Nagel, Occupant Protection Coordinator. The primary contacts at SBRS are Shirley Huck, Assistant Director, and Janice Larson, Survey Director. The SBRS Project Manager is Jennifer Ensley Gorshe.

In early 2012 the NHTSA extended the deadline for obtaining approval for new state-wide plans; and states were given the option of using either past procedures or new NHTSA-approved plans for their 2012 data collection. The Iowa GTSB and SBRS chose to implement the procedures described in the new NHTSA-approved Iowa plan.

This report describes the data collection process for obtaining 2012 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 2012 seat belt use data collection involved several components: verifying the usability of the new sampled sites, preparing materials for Data Collectors, and notifying appropriate local personnel prior to data collection.

Site Verification

There were 75 sites sampled for observation, with 5 sites in each of 15 sampled counties. The sites were identified by MSLINK numbers. SBRS worked with staff from *InTrans*, the Iowa State University Institute of Transportation, to obtain data and photographic resources that enabled a closer examination of each site. Sites were reviewed for accessibility, safety, and practicality. It was noted that 5 pairs of sites were so close to each other that the Data Collectors would be observing the same vehicles twice, since there were no exits or entrances between them. Two groups of 3 sites were on the same roadway and very close together, although with one or two interchanges/intersections between. In addition, two sites were located in dangerous or impractical locations.

The sample design statistician recommended establishing a rule that, if two sites were on the same primary or secondary roadway and were 5 miles apart or less, a substitute for one of the sites could be selected from one of two supplementary samples that had been drawn. If the sites were on a local road, the distance was 2 miles or less. Substitute sites had to be located on the same type of roadway as the sites they were replacing. The statistician also recommended replacing the dangerous/impractical sites, since safety concerns are of utmost importance. These replacement sites were approved by the statistician as part of the main sample selection process for the initial implementation of the new Iowa plan. They are not considered "alternate sites" as described in the NHTSA's Uniform Criteria.

Materials Preparation

After the 75 sites were finalized, SBRS staff examined the sites on available maps and Google Earth to identify likely observation points that would be safe and still provide the visibility necessary to observe seat belt use. The Project Manager traveled to several sites that were potential problems in order to verify the usability of the sites and locate potential observation spots. No sites were substituted as a result of these visits. SBRS staff prepared a series of maps for Data Collectors to use as references when traveling to sites. Department of Transportation maps, Google maps, and city maps all served as effective resources.

Equipment was procured for use by the Data Collectors, including vests, warning lights, signs, stop watches, and clickers. Data Collection schedules were prepared and administrative procedures were documented.

Notification

Prior to the data collection process, the GTSB representative notified law enforcement personnel in each of the site areas. SBRS staff notified other appropriate city/county and Department of Transportation personnel. The purpose was to ensure that the appropriate people 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

Iowa utilized four data collectors, responsible for 3-4 counties each. Three of the data collectors were located remotely (Des Moines, Cedar Falls, and Anamosa), to reduce expense and travel time to county clusters within the state. A fourth data collector was based out of Ames. Iowa trained one person as a Quality Control Monitor/back up Data Collector. The project manager served as a second Quality Control Monitor.

The two day Data Collector and QC Monitor training was held at SBRS facilities on June 11-12, 2012, with field data collection beginning on June 13, 2012. The training included a combination of lecture, classroom and field exercises. Training sessions covered data collection protocols, including how to find the observation sites, choosing an observation location, how to properly collect data, practice in what counts as “use,” “nonuse,” and “use unknown” regarding belt use, 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. Data collectors also received roadside safety training from Tom McDonald, Safety Circuit Rider at Iowa State University’s Institute for Transportation. The training syllabus is shown in Figure 1.

The QC Monitor received additional training focusing on the specific duties of the position. Quality Control duties included conducting unannounced site visits to a minimum of two sites for each Data Collector (13% of the total sites) and reviewing the Data Collector’s field protocol. The QC Monitor met with the Data Collector in the field to answer questions and offer assistance as needed.

Data Collectors were provided with bright yellow vests to wear for safety. Each Data Collector also had a flashing yellow light to put on his/her car and a clicker-counter and stop watch to use as needed. Large “Road Work Ahead” signs were provided for use in high speed areas as appropriate.

Figure 1.

Day 1

Data Collection Overview

- Overview of data collection procedure and tasks
- Definitions of belt/booster seat use, passenger vehicles, etc.
- Direction of travel/Number of observed lanes

Scheduling

- Assigned day/times
- Duration at each site
- Temporary impediments such as weather
- Permanent impediments at data collection sites

Site Locations

- Low volume roadways
- High volume roadways
 - Overpasses
 - Exit ramp/rest stop protocol
- Locating assigned road segments and observation sites
- Site assignment sheets

Observation Protocol

- Arrival
- Data collection forms
- Recording alternate site information
- Traffic Counts
- Recording observations

Safety and Security – Tom McDonald, InTRANS

- Signage and visibility
- Roadway safety

Day 2:

Quality Control and QC monitors

Field Practice

- Interstate overpass observations
- County Road observations
- Street observations

Training Debriefing

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 Appendix 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 front drivers and 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 assigned one county with five observation sites per work day. A schedule of sites with observation start times was provided by the office 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 and continue for exactly one hour.

Observations

Data Collectors observed one lane and one direction of travel per observation site. The direction of travel was randomly assigned by the office; 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 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 at which data collectors could safely move their vehicles from the roadway. In some cases Data Collectors observed from their vehicle while, in other cases, observing from outside of the vehicle was most effective.

Whenever possible, observations for high-volume, limited access roadways were made from an overpass. Observing from an overpass allowed for easy viewing of seatbelt use for 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 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.

From 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 count continued for 15 minutes, at which point 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 to adjust the seat belt usage observation data when observations were made away from the selected road segment at a rest stop or exit ramp.

Alternate Sites

If locating a useable and safe place to observe 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 2012 data collection, three alternate sites were used. Two sites were moved due to major road construction, which was identified by office staff prior to the onset of field work. For each of these two cases, an alternate site of the same road type (one primary and one local) was chosen by the office prior to the Data Collector entering the field. The third alternate site was chosen in the field because of problems with locating a safe observation point within the remaining time frame. In this third case, a different observation point was chosen along the assigned roadway, approximately five miles from the assigned road segment.

Rescheduling

If an assigned road segment was temporarily unavailable due to a traffic accident or inclement weather, data collection was to be rescheduled for the same time and day of the week. For the 2012 data collection only one site needed rescheduling due to rain. In this instance approximately 25 minutes of

data had been collected before the weather impaired visibility enough that data collection could not continue. The data collector returned to the site at the same time of day one week later to obtain observation data for the remaining 35 minutes.

Results

Data collection for 2012 occurred from Wednesday, June 13, through Tuesday, June 19, 2012. The one location site described above that could not be completed due to rain was rescheduled and the last 35 minutes of data collection occurred on Friday, June 22.

The 2012 seat belt use data collection resulted in the observation of **13,926 passenger vehicles**, with a right front seat passenger in 4,992 of those vehicles, for a total of **18,918 potential observations** of belt use. Of these 18,918 potential observations, there were 12,649 drivers and 4,305 right front passengers who were observed to be wearing seat belts, for a total of 16,954 seat belt users. Seat belts were not worn by 784 drivers and 311 right front passengers (total 1095 unbelted). Data collectors were unable to observe the seat belt use of 493 drivers and 376 passengers, for a total unknown use of 869. The unknown use, or **“nonresponse rate,” is .0459 or 4.59%**. This is well within the range allowed by federal regulations, which require the nonresponse rate to be below 10%.

Federal regulations require the calculation of seat belt use to be conducted with weighted data as described in the approved survey plan. Based on the weighted data, **Iowa’s overall seat belt use rate is 92.38%**, with an estimated standard error of 0.0107 ($\pm 1\%$).

Because the data collection sampling, observation protocol, and weighting requirements are different than in past years, it was anticipated that the overall seat belt use rate would probably be different than in previous years.

Table 1 lists the 75 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 (drivers, passengers, combined) 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 total shown here for the state does not equal the weighted Iowa seat belt use required by federal regulations. 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 required the new 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 seat belt use of drivers and passengers by time of day and road type. The percentages included in the table are unweighted.

Table 1. 2012 Seat Belt Usage

No.	County	MSLINK	Location	Road Type	Day	Start Time	Vehicle Count	Drivers Belted	Right Front Passenger Count	Right Front Passenger Belted
1	Black Hawk	15146	Logan Ave	Secondary	Mon	745 am	56	48	12	11
2	Black Hawk	19553	Wagner Rd	Local	Mon	905 am	31	26	5	4
3	Black Hawk	20423	W 4th St	Secondary	Mon	1040 am	131	90	27	20
4	Black Hawk	14934	US 20	Secondary	Mon	1229 pm	471	394	149	132
5	Black Hawk	14766	I-380	Primary	Mon	215 pm	248	217	51	19
6	Grundy	104904	IA 57/110th	Secondary	Wed	820 am	75	60	17	15
7	Grundy	309294	US 20	Secondary	Wed	957 am	209	191	94	81
8	Grundy	104906	Hwy 17S/240th St	Secondary	Thu	1130 am	39	32	14	11
9	Grundy	104947	Hwy 17S/Grundy	Secondary	Thu	120 pm	56	43	13	9
10	Grundy	105710	Blackhawk St	Local	Wed	330 pm	37	25	6	6
11	Hardin	113806	US 65	Secondary	Tues	910 am	45	41	15	13
12	Hardin	115349	Washington Ave	Local	Tues	1040 am	287	248	58	47
13	Hardin	113774	US 65	Secondary	Tues	1217 pm	133	125	44	42
14	Hardin	317413	US 20	Secondary	Tues	147 pm	136	125	49	40
15	Hardin	115768	Davis St	Local	Tues	335 pm	2	1	1	0
16	Howard	123235	US 63	Secondary	Sat	933 am	49	32	14	10
17	Howard	123337	IA 9	Secondary	Sat	1050 am	87	74	32	27
18	Howard	123901	N Elm St	Local	Sat	1219 pm	112	95	47	27
19	Howard	123646	Oak Ave	Local	Sat	200 pm	5	4	1	1
20	Howard	123218	US 63	Secondary	Sat	330 pm	68	64	23	22
21	Iowa	128308	IA 212	Secondary	Sun	1030 am	143	92	51	26
22	Iowa	128184	I-80	Primary	Sun	1225 pm	383	322	224	164
23	Iowa	128321	I-80 (exit 220)	Primary	Sun	148 pm	165	153	85	76
24	Iowa	128805	U Ave	Local	Sun	317 pm	6	6	1	1
25	Iowa	128271	I-80	Primary	Sun	443 pm	487	451	308	265
26	Johnson	142458	Co Rd F28	Local	Mon	849 am	96	88	20	18
27	Johnson	140584	I-80	Primary	Mon	1035 am	310	292	129	123
28	Johnson	140747	I-80	Primary	Mon	1225 pm	324	290	139	124
29	Johnson	143552	N Dubuque St	Secondary	Mon	235 pm	152	147	46	39
30	Johnson	141004	US 218	Secondary	Mon	415 pm	382	368	148	127
31	Linn	160569	Co Rd D62	Local	Tues	935 am	32	25	13	8
32	Linn	158613	I-380/Hwy 27	Primary	Tues	1120 am	407	380	128	120
33	Linn	159047	US 151	Secondary	Tues	135 pm	265	201	77	57
34	Linn	161809	32nd St NE	Secondary	Tues	405 pm	551	507	87	53
35	Linn	166008	16th Ave SW	Secondary	Tues	555 pm	184	164	45	31
36	Marion	180068	IA 163	Secondary	Fri	850 am	253	252	72	72
37	Marion	180790	Co Rd G28	Local	Fri	1023 am	45	44	8	7
38	Marion	181891	S Clark St	Local	Fri	1215 pm	85	80	16	14
39	Marion	179982	IA 92	Secondary	Fri	145 pm	62	62	16	16
40	Marion	179837	IA 5	Secondary	Fri	320 pm	200	200	71	69
41	Polk	215201	I-35	Primary	Sat	855 am	630	612	348	312
42	Polk	215128	I-35/80	Primary	Sat	1040 am	174	161	92	78
43	Polk	216760	IA 141	Secondary	Sat	120 pm	597	585	191	191
44	Polk	227016	University Ave	Secondary	Sat	245 pm	574	348	206	206
45	Polk	226253	100th St	Local	Sat	405 pm	174	171	66	66
46	Pottawattamie	229603	W Broadway	Secondary	Mon	730 am	198	194	25	25
47	Pottawattamie	229207	I-80	Primary	Mon	900 am	123	123	67	66
48	Pottawattamie	229092	I-29	Primary	Mon	1040 am	30	30	4	4
49	Pottawattamie	230468	Old Morman Br Rd	Local	Mon	1230 pm	82	82	22	22
50	Pottawattamie	229130	I-29	Primary	Mon	200 pm	151	148	73	71
51	Scott	242971	I-80	Primary	Wed	915 am	228	207	107	92
52	Scott	243108	I-80	Primary	Wed	1058 am	23	20	12	8
53	Scott	248805	Valley Drive	Local	Wed	1249 pm	103	85	15	11
54	Scott	247785	Eastern Ave	Secondary	Wed	250 pm	267	231	49	38
55	Scott	246517	E 53rd St	Secondary	Wed	420 pm	566	520	143	111
56	Shelby	249972	Co Rd F58	Local	Sun	1040 am	11	10	1	1
57	Shelby	249594	US 59	Secondary	Sun	1210 pm	66	65	24	24
58	Shelby	250675	12th St	Secondary	Sun	140 pm	67	63	27	26
59	Shelby	250849	Eva St	Local	Sun	330 pm	5	5	2	2
60	Shelby	249736	IA 44	Secondary	Sun	500 pm	36	36	18	18
61	Story	257296	Lincoln Way	Secondary	Thu	730 am	166	153	24	23
62	Story	257855	University Blvd	Secondary	Thu	905 am	135	124	35	29
63	Story	255469	I-35	Primary	Thu	1101 am	445	412	157	140
64	Story	256910	Co Rd E29/190th	Local	Thu	1243 pm	42	36	8	6
65	Story	255562	I-35	Primary	Thu	220 pm	510	492	219	194
66	Warren	273908	I-35	Primary	Thu	915 am	209	199	90	77
67	Warren	334868	I-35	Primary	Thu	1050 am	267	213	147	116
68	Warren	274137	Us 65/69	Secondary	Thu	1245 pm	267	206	77	66
69	Warren	275330	S 5th St	Local	Thu	245 pm	105	90	28	23
70	Warren	311642	IA 5	Secondary	Thu	415 pm	457	419	137	124
71	Webster	283076	IA 7/190th	Secondary	Fri	915 am	92	81	29	21
72	Webster	283806	Old Hwy 20	Secondary	Fri	1055 am	138	125	48	43
73	Webster	311763	2nd Ave N	Secondary	Fri	100 pm	259	222	86	75
74	Webster	283683	Co Rd D20/200th	Local	Fri	245 pm	96	78	34	27
75	Webster	283317	Taylor Ave	Local	Fri	445 Pm	44	44	25	22
TOTALS							13926	12649	4992	4305

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

County	Drivers				Right Front Passengers				TOTAL			
	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Black Hawk	937	775	82	80	244	186	31	27	1181	961	113	107
Grundy	416	351	49	16	144	122	19	3	560	473	68	19
Hardin	603	540	52	11	167	142	13	12	770	682	65	23
Howard	321	269	36	16	117	87	22	8	438	356	58	24
Iowa	1184	1024	80	80	669	532	56	81	1853	1556	136	161
Johnson	1264	1185	40	39	482	431	27	24	1746	1616	67	63
Linn	1439	1277	76	86	350	269	10	71	1789	1546	86	157
Marion	645	638	5	2	183	178	2	3	828	816	7	5
Polk	1929	1877	22	30	903	853	30	20	2832	2730	52	50
Pottawattamie	584	577	2	5	191	188	1	2	775	765	3	7
Scott	1187	1063	92	32	326	260	30	36	1513	1323	122	68
Shelby	185	179	5	1	72	71	1	0	257	250	6	1
Story	1298	1217	61	20	443	392	22	29	1741	1609	83	49
Warren	1305	1127	116	62	479	406	29	44	1784	1533	145	106
Webster	629	550	66	13	222	188	18	16	851	738	84	29
TOTAL	13926	12649	784	493	4992	4305	311	376	18918	16954	1095	869

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

County	Drivers		Right Front Passengers		TOTAL	
	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Black Hawk	82.7%	90.4%	76.2%	85.7%	81.4%	89.5%
Grundy	84.4%	87.8%	84.7%	86.5%	84.5%	87.4%
Hardin	89.6%	91.2%	85.0%	91.6%	88.6%	91.3%
Howard	83.8%	88.2%	74.4%	79.8%	81.3%	86.0%
Iowa	86.5%	92.8%	79.5%	90.5%	84.0%	92.0%
Johnson	93.8%	96.7%	89.4%	94.1%	92.6%	96.0%
Linn	88.7%	94.4%	76.9%	96.4%	86.4%	94.7%
Marion	98.9%	99.2%	97.3%	98.9%	98.6%	99.1%
Polk	97.3%	98.8%	94.5%	96.6%	96.4%	98.1%
Pottawattamie	98.8%	99.7%	98.4%	99.5%	98.7%	99.6%
Scott	89.6%	92.0%	79.8%	89.7%	87.4%	91.6%
Shelby	96.8%	97.3%	98.6%	98.6%	97.3%	97.7%
Story	93.8%	95.2%	88.5%	94.7%	92.4%	95.1%
Warren	86.4%	90.7%	84.8%	93.3%	85.9%	91.4%
Webster	87.4%	89.3%	84.7%	91.3%	86.7%	89.8%
TOTAL	90.8%	94.2%	86.2%	93.3%	89.6%	93.9%

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

Road Type	Drivers				Right Front Passengers				TOTAL			
	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Local	1400	1243	130	27	377	313	41	23	1777	1556	171	50
Primary	5114	4722	185	207	2380	2049	132	199	7494	6771	317	406
Secondary	7412	6684	469	259	2235	1943	138	154	9647	8627	607	413
TOTAL	13926	12649	784	493	4992	4305	311	376	18918	16954	1095	869

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

Road Type	Drivers		Right Front Passengers		TOTAL	
	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Local	88.8%	90.5%	83.0%	88.4%	87.6%	90.1%
Primary	92.3%	96.2%	86.1%	93.9%	90.4%	95.5%
Secondary	90.2%	93.4%	86.9%	93.4%	89.4%	93.4%
TOTAL	90.8%	94.2%	86.2%	93.3%	89.6%	93.9%

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

	Drivers Belted	Total Drivers	Passengers Belted	Total Passengers	% of Drivers Belted	% of Passengers Belted
Sunday	1203	1369	603	741	87.87%	81.38%
Local	21	22	4	4	95.45%	100.00%
Primary	926	1035	505	617	89.47%	81.85%
Secondary	256	312	94	120	82.05%	78.33%
Monday	2537	2785	805	917	91.10%	87.79%
Local	196	209	44	47	93.78%	93.62%
Primary	1100	1186	407	463	92.75%	87.90%
Secondary	1241	1390	354	407	89.28%	86.98%
Tuesday	1817	2042	411	517	88.98%	79.50%
Local	274	321	55	72	85.36%	76.39%
Primary	380	407	120	128	93.37%	93.75%
Secondary	1163	1314	236	317	88.51%	74.45%
Wednesday	1339	1508	362	443	88.79%	81.72%
Local	110	140	17	21	78.57%	80.95%
Primary	227	251	100	119	90.44%	84.03%
Secondary	1002	1117	245	303	89.70%	80.86%
Thursday	2419	2698	818	949	89.66%	86.20%
Local	126	147	29	36	85.71%	80.56%
Primary	1316	1431	527	613	91.96%	85.97%
Secondary	977	1120	262	300	87.23%	87.33%
Friday	1188	1274	366	405	93.25%	90.37%
Local	246	270	70	83	91.11%	84.34%
Secondary	942	1004	296	322	93.82%	91.93%
Saturday	2146	2250	940	1020	95.38%	92.16%
Local	270	291	94	114	92.78%	82.46%
Primary	773	804	390	440	96.14%	88.64%
Secondary	1103	1155	456	466	95.50%	97.85%
Total	12649	13926	4305	4992	90.83%	86.24%

Table 7. Driver and Passenger Seat Belt Use by Time of Day and Road Type (n & unweighted %)

	Drivers Belted	Total Drivers	Passengers Belted	Total Passengers	% of Drivers Belted	% of Passengers Belted
7AM to 759AM	395	420	59	61	94.05%	96.72%
Secondary	395	420	59	61	94.05%	96.72%
8AM to 859AM	1012	1054	417	457	96.02%	91.25%
Local	88	96	18	20	91.67%	90.00%
Primary	612	630	312	348	97.14%	89.66%
Secondary	312	328	87	89	95.12%	97.75%
9AM to 959AM	1049	1153	401	469	90.98%	85.50%
Local	51	63	12	18	80.95%	66.67%
Primary	529	560	235	264	94.46%	89.02%
Secondary	469	530	154	187	88.49%	82.35%
10AM to 1059AM	1399	1646	500	609	84.99%	82.10%
Local	302	343	55	67	88.05%	82.09%
Primary	716	804	329	384	89.05%	85.68%
Secondary	381	499	116	158	76.35%	73.42%
11AM to 1159AM	824	891	271	299	92.48%	90.64%
Primary	792	852	260	285	92.96%	91.23%
Secondary	32	39	11	14	82.05%	78.57%
12PM to 1259PM	1780	2068	632	765	86.07%	82.61%
Local	378	424	80	108	89.15%	74.07%
Primary	612	707	288	363	86.56%	79.34%
Secondary	790	937	264	294	84.31%	89.80%
1PM to 159PM	1454	1607	490	544	90.48%	90.07%
Primary	153	165	76	85	92.73%	89.41%
Secondary	1301	1442	414	459	90.22%	90.20%
2PM to 259PM	1755	1888	618	707	92.96%	87.41%
Local	172	206	51	63	83.50%	80.95%
Primary	857	909	284	343	94.28%	82.80%
Secondary	726	773	283	301	93.92%	94.02%
3PM to 359PM	301	318	100	104	94.65%	96.15%
Local	37	50	9	10	74.00%	90.00%
Secondary	264	268	91	94	98.51%	96.81%
4PM to 459PM	2480	2661	768	914	93.20%	84.03%
Local	215	218	88	91	98.62%	96.70%
Primary	451	487	265	308	92.61%	86.04%
Secondary	1814	1956	415	515	92.74%	80.58%
5PM to 559PM	200	220	49	63	90.91%	77.78%
Secondary	200	220	49	63	90.91%	77.78%
Grand Total	12649	13926	4305	4992	90.83%	86.24%

Appendix A. Observation Site Form

Iowa Seat Belt Survey
Observation Site Form

Data Collector ID# _____

Date: ____/____/2012

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 30 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

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				VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
	Y	N	U	Y	N	U	NP		Y	N	U	Y	N	U	NP
1	Y	N	U	Y	N	U	NP	41	Y	N	U	Y	N	U	NP
2	Y	N	U	Y	N	U	NP	42	Y	N	U	Y	N	U	NP
3	Y	N	U	Y	N	U	NP	43	Y	N	U	Y	N	U	NP
4	Y	N	U	Y	N	U	NP	44	Y	N	U	Y	N	U	NP
5	Y	N	U	Y	N	U	NP	45	Y	N	U	Y	N	U	NP
6	Y	N	U	Y	N	U	NP	46	Y	N	U	Y	N	U	NP
7	Y	N	U	Y	N	U	NP	47	Y	N	U	Y	N	U	NP
8	Y	N	U	Y	N	U	NP	48	Y	N	U	Y	N	U	NP
9	Y	N	U	Y	N	U	NP	49	Y	N	U	Y	N	U	NP
10	Y	N	U	Y	N	U	NP	50	Y	N	U	Y	N	U	NP
11	Y	N	U	Y	N	U	NP	51	Y	N	U	Y	N	U	NP
12	Y	N	U	Y	N	U	NP	52	Y	N	U	Y	N	U	NP
13	Y	N	U	Y	N	U	NP	53	Y	N	U	Y	N	U	NP
14	Y	N	U	Y	N	U	NP	54	Y	N	U	Y	N	U	NP
15	Y	N	U	Y	N	U	NP	55	Y	N	U	Y	N	U	NP
16	Y	N	U	Y	N	U	NP	56	Y	N	U	Y	N	U	NP
17	Y	N	U	Y	N	U	NP	57	Y	N	U	Y	N	U	NP
18	Y	N	U	Y	N	U	NP	58	Y	N	U	Y	N	U	NP
19	Y	N	U	Y	N	U	NP	59	Y	N	U	Y	N	U	NP
20	Y	N	U	Y	N	U	NP	60	Y	N	U	Y	N	U	NP
21	Y	N	U	Y	N	U	NP	61	Y	N	U	Y	N	U	NP
22	Y	N	U	Y	N	U	NP	62	Y	N	U	Y	N	U	NP
23	Y	N	U	Y	N	U	NP	63	Y	N	U	Y	N	U	NP
24	Y	N	U	Y	N	U	NP	64	Y	N	U	Y	N	U	NP
25	Y	N	U	Y	N	U	NP	65	Y	N	U	Y	N	U	NP
26	Y	N	U	Y	N	U	NP	66	Y	N	U	Y	N	U	NP
27	Y	N	U	Y	N	U	NP	67	Y	N	U	Y	N	U	NP
28	Y	N	U	Y	N	U	NP	68	Y	N	U	Y	N	U	NP
29	Y	N	U	Y	N	U	NP	69	Y	N	U	Y	N	U	NP
30	Y	N	U	Y	N	U	NP	70	Y	N	U	Y	N	U	NP
31	Y	N	U	Y	N	U	NP	71	Y	N	U	Y	N	U	NP
32	Y	N	U	Y	N	U	NP	72	Y	N	U	Y	N	U	NP
33	Y	N	U	Y	N	U	NP	73	Y	N	U	Y	N	U	NP
34	Y	N	U	Y	N	U	NP	74	Y	N	U	Y	N	U	NP
35	Y	N	U	Y	N	U	NP	75	Y	N	U	Y	N	U	NP
36	Y	N	U	Y	N	U	NP	76	Y	N	U	Y	N	U	NP
37	Y	N	U	Y	N	U	NP	77	Y	N	U	Y	N	U	NP
38	Y	N	U	Y	N	U	NP	78	Y	N	U	Y	N	U	NP
39	Y	N	U	Y	N	U	NP	79	Y	N	U	Y	N	U	NP
40	Y	N	U	Y	N	U	NP	80	Y	N	U	Y	N	U	NP