Iowa Seat Belt Use Survey
2013 Data Collection
Methodology Report

September 26, 2013

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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 and was approved by NHTSA on March 19, 2012.

2013 Data Collection
The Iowa GTSB contracted with SBRS to conduct the seat belt use data collection using the newly approved plan in both 2012 and 2013. The primary contact at the Iowa GTSB was Mark Nagel, Occupant Protection Coordinator. The primary contacts at SBRS were Shirley Huck, Assistant Director, and Janice Larson, Survey Director. The SBRS Project Manager for 2013 was Jody Fox.

This report describes the data collection process for obtaining 2013 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 2013 seat belt use data collection involved several components: verifying the usability of the sampled sites, revising materials for Data Collectors, and notifying appropriate local personnel prior to data collection.

Site Verification
The Iowa Seat Belt Survey Plan includes 75 sites sampled for annual observation, with 5 sites in each of 15 sampled counties. The sites are identified by MSLINK numbers. SBRS has worked with staff from

InTrans, the Iowa State University Institute of Transportation, to obtain data and photographic resources that allowed staff to examine each site for accessibility, safety, and practicality.

Results from the 2012 data collection process led to the "permanent" replacement of four sites in 2013, two due to their extremely low traffic volume and two due to safety concerns. These replacements were made prior to the beginning of 2013 data collection and are intended to be permanent, at least until the sample is reviewed and potentially redrawn as stipulated by NHTSA. The remaining 71 sites were technically the same as 2012, with two qualifiers. First, some temporary alternates were required due to road construction as described in the Observation Protocols and Procedures section of this report. Second, two sites that used alternate locations in 2012 due to road construction could revert back to the original sampled sites for 2013 because the road construction was done.

Materials Preparation

After the 75 sites were finalized, SBRS staff reviewed observation forms from 2012 and examined sites on 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 checked road construction schedules and identified five sites that would require an alternate location for observation in 2013. Also, as noted above, two sites that used alternate locations in 2012 due to road construction reverted back to the original sampled sites for 2013. 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 for each Data Collector 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 four data collectors were experienced, having worked as data collectors for the project in 2012. One additional person was trained 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 10-11, 2013, with field data collection beginning on June 12, 2013. 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 (11% 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

Seat Belt Survey Overview
- Study Design
- NHTSA Requirements
- Data Collection Requirements
- Definitions: belt use, passenger vehicles, etc.

Data Collection Procedures
- Assignments & Rescheduling

Site Locations
- Low/High volume roadways
- Locating assigned sites
- Site assignment sheets & maps

Data Collection
- Data Collection forms
- Recording alternate site information
- Traffic Counts
- Recording observations

Sites on Google Earth

Safety and Security – Tom McDonald, InTrans
- Signage and visibility
- Roadway safety

Day 2:

Quality Control and QC monitors

Timesheets and expense reports

Field Practice
- Setting up road work signs
- Interstate overpass observations
- County Road observations
- Street observations

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, **s**eat 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 45 minutes.

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 comparatively 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 2013 data collection, five alternate sites were used. All 5 sites were moved due to major road construction, which was identified by office staff prior to the onset of field work. For each case, an alternate site of the same road type was chosen by the office prior to the Data Collector entering the field.

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. No rescheduling was needed for the 2013 data collection.

Results

Data collection for 2013 occurred from Wednesday, June 12, through Tuesday, June 18, 2013. The 2013 seat belt use data collection resulted in the observation of **12,936 passenger vehicles**, with a right front seat passenger in 4, 325 of those vehicles, for a total of **17,261 potential observations** of belt use. Of these 17,261 potential observations, there were 11,708 drivers and 3,810 right front passengers who were observed to be wearing seat belts, for a total of 15,518 seat belt users. Seat belts were not worn by 798 drivers and 333 right front passengers (total 1,131 unbelted). Data collectors were unable to observe the seat belt use of 430 drivers and 182 passengers, for a total unknown use of 612. The

unknown use, or **"nonresponse rate," is .0355 or 3.55%**. This is well within the range allowed by federal regulations, which require the nonresponse rate to be below 10%.

The number of observations in 2013 is less than in 2012 because the observation time at each site was reduced from 60 minutes to 45 minutes. Federal regulations require a minimum of 7500 observations, and the 2013 total of 12,936 passenger vehicles with 17,261 occupants far exceeds the minimum. Each data collector was observed by a quality control monitor at two unannounced sites to ensure compliance with project protocols. This comprises 10.7% of the sites (8 out of 75), which exceeds the minimum of 5% required by federal regulations.

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 91.86%**, with an estimated standard error of 0.0064 (± 1%). This is a very slight decrease from the 2012 seat belt use rate of 92.38%. This decrease is not statistically significant.

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. 2013 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	Fri	7:45 AM	am	59	52	7	6
2	Black Hawk	19553	Wagner Rd	Local	Fri	9:00 AM	am	44	39	1	1
3	Black Hawk	20423	W 4th St	Secondary	Fri	10:30 AM	am	147	138	32	31
4	Black Hawk	14934	US 20	Secondary	Tues	11:45 AM	am	354	338	101	92
5	Black Hawk	14766	I-380/Hwy 27	Primary	Fri	2:00 AM	pm	258	241	112	109
6	Grundy	104904	IA 57/110th	Secondary	Mon	8:18 AM	am	57	52	8	6
7	Grundy	309294	US 20	Secondary	Mon	9:45 AM	am	147	138	70	67
8	Grundy	104906	Hwy 175/240th St	Secondary	Mon	11:30 AM	am	34	31	10	10
9	Grundy	104947	Hwy 175/260th/Grundy Ave	Secondary	Mon	1:45 AM	pm	49	45	6	6
10	Grundy	105710	Blackhawk St	Local	Mon	3:00 AM	pm	33	27	8	5
11	Hardin	113806	US-65	Secondary	Thurs	12:30 PM	pm	44	40	8	5
12	Hardin	115349	Washington Ave/Old US 20	Local	Thurs	1:45 AM	pm	179	161	37	31
13	Hardin	113774	US-65	Secondary	Thurs	2:46 AM	pm	105	103	22	22
14	Hardin	317413	US-20	Secondary	Thurs	4:04 AM	pm	159	151	65	64
15	Hardin	332704	E Main St	Local	Thurs	5:15 AM	pm	20	15	6	4
16	Howard	123235	US 63	Secondary	Sun	9:45 AM	am	56	52	32	26
17	Howard	123337	IA 9	Secondary	Sun	10:49 AM	am	64	59	35	29
18	Howard	123901	N Elm St	Local	Sun	11:50 AM	am	48	35	15	15
19	Howard	123646	Oak Ave	Local	Sun	2:00 AM	pm	5	5	3	3
20	Howard	123218	US 63	Secondary	Sun	3:30 AM	pm	121	111	60	51
21	Iowa	128308	IA 212/Western Ave	Secondary	Wed	10:00 AM	am	81	72	20	19
22	Iowa	128184	I-80	Primary	Wed	11:30 AM	am	259	249	100	90
23	Iowa	128231	I-80	Primary	Wed	1:30 AM	pm	71	70	32	31
24	Iowa	128805	U Ave	Local	Wed	2:45 AM	pm	8	7	1	0
25	Iowa	128271	I-80	Primary	Wed	4:15 AM	pm	295	286	104	98
26	Johnson	142458	Co Rd F28/ Mehaffey Bridge Rd	Local	Thurs	7:30 AM	am	69	65	17	17
27	Johnson	140584	I 80	Primary	Thurs	9:15 AM	am	282	278	112	104
28	Johnson	140747	I 80	Primary	Thurs	10:45 AM	am	258	251	112	105
29	Johnson	143552	N Dubuque St	Secondary	Thurs	12:45 PM	pm	91	85	32	29
30	Johnson	141004	US 218/IA 27	Secondary	Thurs	2:15 AM	pm	311	299	118	112
31	Linn	160569	Co Rd D62/Coggon Rd	Local	Tues	8:00 AM	am	18	17	2	2
32	Linn	158613	I 380/Hwy 27	Primary	Tues	10:00 AM	am	234	231	88	85
33	Linn	164085	Center Point Rd	Secondary	Tues	11:30 AM	am	215	204	51	46
34	Linn	161809	32nd St, NE, Cedar Rapids	Secondary	Tues	1:30 AM	pm	225	210	56	53
35	Linn	166008	16th Ave SW	Secondary	Tues	3:00 AM	pm	116	109	32	30
36	Marion	180068	IA 163	Secondary	Fri	10:02 AM	am	222	186	94	69
37	Marion	180790	Co Rd G28/Washington St	Local	Fri	11:15 AM	am	78	65	25	20
38	Marion	181891	S Clark St	Local	Fri	1:15 AM	pm	77	64	20	13
39	Marion	179982	IA 92	Secondary	Fri	2:30 AM	pm	115	102	36	31
40	Marion	179837	IA 5	Secondary	Fri	3:54 OM	pm	230	189	88	71
41	Polk	215201	I 35	Primary	Thurs	3:17 AM	pm	507	407	170	150
42	Polk	215390	I 235	Primary	Thurs	10:15 AM	am	611	546	132	113
43	Polk	216760	IA 141	Secondary	Thurs	5:16 AM	pm	728	573	144	99
44	Polk	227016	University Ave	Secondary	Thurs	11:25 AM	am	302	283	66	61
45	Polk	226230	109th St	Local	Thurs	1:28 AM	pm	89	75	16	14
46	Pottawattamie	229603	W Broadway	Secondary	Satur	9:00 AM	am	125	113	49	42
47	Pottawattamie	229207	I 80	Primary	Satur	2:45 AM	pm	245	235	151	143
48	Pottawattamie	229164	I 80	Primary	Satur	10:30 AM	am	588	528	282	259
49	Pottawattamie	334415	I 29	Primary	Satur	1:15 AM	pm	547	494	305	270
50	Pottawattamie	233075	S 10th St	Local	Satur	7:45 AM	am	15	11	3	1
51	Scott	242971	I 80	Primary	Mon	9:15 AM	am	270	266	118	113
52	Scott	243108	I 80	Primary	Mon	11:00 AM	am	16	16	12	11
53	Scott	248805	Valley Dr	Local	Mon	1:15 AM	pm	69	64	16	16
54	Scott	247785	Eastern Ave	Secondary	Mon	3:00 AM	pm	246	233	70	64
55	Scott	246517	E 53rd St	Secondary	Mon	4:15 AM	pm	453	442	75	70
56	Shelby	249972	Co Rd F58	Local	Sun	10:28 AM	am	6	6	2	1
57	Shelby	249594	US 59	Secondary	Sun	11:30 AM	am	98	86	50	43
58	Shelby	250675	12th St/Linden Rd	Secondary	Sun	2:30 AM	pm	60	50	24	21
59	Shelby	250640	19th St	Local	Sun	1:28 AM	pm	59	49	18	13
60	Shelby	249736	IA-44/1000th St	Secondary	Sun	3:50 AM	pm	33	30	23	21
61	Story	257296	Lincoln Way	Secondary	Wed	7:27 AM	am	145	135	24	21
62	Story	257855	University Blvd	Secondary	Wed	8:27 AM	am	157	147	25	19
63	Story	255469	I-35	Primary	Wed	10:00 AM	am	316	290	127	114
64	Story	256910	Co Rd E29/190th St	Local	Wed	11:30 AM	am	36	32	10	9
65	Story	255562	I-35	Primary	Wed	1:33 AM	pm	333	278	129	105
66	Warren	273908	I-35	Primary	Mon	10:00 AM	am	248	233	111	94
67	Warren	334871	I-35	Primary	Mon	11:30 AM	am	294	251	100	68
68	Warren	274344	US 28/Sunset Dr	Secondary	Mon	1:45 AM	pm	121	100	34	31
69	Warren	275330	S 5th St	Local	Mon	4:35 AM	pm	137	122	23	19
70	Warren	311642	IA-5	Secondary	Mon	3:09 AM	pm	316	281	84	70
71	Webster	283076	IA 7/190th St	Secondary	Tues	5:00 AM	pm	158	132	30	23
72	Webster	283806	Old Hwy 20/ Co D20	Secondary	Tues	3:38 AM	pm	99	89	32	24
73	Webster	311763	2nd Ave N	Secondary	Tues	2:24 AM	pm	194	168	65	56
74	Webster	283683	Co D20/200th St	Local	Tues	12:58 PM	pm	58	55	20	18
75	Webster	283317	Co P70/Taylor Ave	Local	Tues	10:45 AM	am	19	16	7	6
	TOTALS							**12936**	**11708**	**4325**	**3810**

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

	Drivers				Right Front Passengers				TOTAL			
County	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Black Hawk	862	808	30	24	253	239	14	0	1115	1047	44	24
Grundy	320	293	17	10	102	94	7	1	422	387	24	11
Hardin	507	470	24	13	138	126	10	2	645	596	34	15
Howard	294	262	25	7	145	124	16	5	439	386	41	12
Iowa	714	684	22	8	257	238	17	2	971	922	39	10
Johnson	1011	978	18	15	391	367	17	7	1402	1345	35	22
Linn	808	771	25	12	229	216	12	1	1037	987	37	13
Marion	722	606	59	57	263	204	23	36	985	810	82	93
Polk	2237	1884	216	137	528	437	48	43	2765	2321	264	180
Pottawattamie	1520	1381	103	36	790	715	67	8	2310	2096	170	44
Scott	1054	1021	28	5	291	274	15	2	1345	1295	43	7
Shelby	256	221	33	2	117	99	13	5	373	320	46	7
Story	987	882	69	36	315	268	23	24	1302	1150	92	60
Warren	1116	987	73	56	352	282	30	40	1468	1269	103	96
Webster	528	460	56	12	154	127	21	6	682	587	77	18
Total	**12936**	**11708**	**798**	**430**	**4325**	**3810**	**333**	**182**	**17261**	**15518**	**1131**	**612**

Table 3. 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
Black Hawk	93.7%	96.4%	94.5%	94.5%	93.9%	96.0%
Grundy	91.6%	94.5%	92.2%	93.1%	91.7%	94.2%
Hardin	92.7%	95.1%	91.3%	92.6%	92.4%	94.6%
Howard	89.1%	91.3%	85.5%	88.6%	87.9%	90.4%
Iowa	95.8%	96.9%	92.6%	93.3%	95.0%	95.9%
Johnson	96.7%	98.2%	93.9%	95.6%	95.9%	97.5%
Linn	95.4%	96.9%	94.3%	94.7%	95.2%	96.4%
Marion	83.9%	91.1%	77.6%	89.9%	82.2%	90.8%
Polk	84.2%	89.7%	82.8%	90.1%	83.9%	89.8%
Pottawattamie	90.9%	93.1%	90.5%	91.4%	90.7%	92.5%
Scott	96.9%	97.3%	94.2%	94.8%	96.3%	96.8%
Shelby	86.3%	87.0%	84.6%	88.4%	85.8%	87.4%
Story	89.4%	92.7%	85.1%	92.1%	88.3%	92.6%
Warren	88.4%	93.1%	80.1%	90.4%	86.4%	92.5%
Webster	87.1%	89.1%	82.5%	85.8%	86.1%	88.4%
Total	90.5%	93.6%	88.1%	92.0%	89.9%	93.2%

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

	Drivers				Right Front Passengers				Total			
Road Type	**Total**	**Belted**	**Not Belted**	**Un-Known**	**Total**	**Belted**	**Not Belted**	**Un-Known**	**Total**	**Belted**	**Not Belted**	**Un-Known**
Local	1067	930	107	30	250	208	28	14	1317	1138	135	44
Primary	5632	5150	301	181	2297	2062	164	71	7929	7212	465	252
Secondary	6237	5628	390	219	1778	1540	141	97	8015	7168	531	316
TOTAL	**12936**	**11708**	**798**	**430**	**4325**	**3810**	**333**	**182**	**17261**	**15518**	**1131**	**612**

Table 5. 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	87.2%	89.7%	83.2%	88.1%	86.4%	89.4%
Primary	91.4%	94.5%	89.8%	92.6%	91.0%	93.9%
Secondary	90.2%	93.5%	86.6%	91.6%	89.4%	93.1%
TOTAL	**90.5%**	**93.6%**	**88.1%**	**92.0%**	**89.9%**	**93.2%**

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	**483**	**550**	**223**	**262**	**87.82%**	**85.11%**
Local	95	118	32	38	80.51%	84.21%
Secondary	388	432	191	224	89.81%	85.27%
Monday	**2301**	**2490**	**650**	**745**	**92.41%**	**87.25%**
Local	213	239	40	47	89.12%	85.11%
Primary	766	828	286	341	92.51%	83.87%
Secondary	1322	1423	324	357	92.90%	90.76%
Tuesday	**1569**	**1690**	**435**	**484**	**92.84%**	**89.88%**
Local	88	95	26	29	92.63%	89.66%
Primary	231	234	85	88	98.72%	96.59%
Secondary	1250	1361	324	367	91.84%	88.28%
Wednesday	**1566**	**1701**	**506**	**572**	**92.06%**	**88.46%**
Local	39	44	9	11	88.64%	81.82%
Primary	1173	1274	438	492	92.07%	89.02%
Secondary	354	383	59	69	92.43%	85.51%
Thursday	**3332**	**3755**	**930**	**1057**	**88.74%**	**87.98%**
Local	316	357	66	76	88.52%	86.84%
Primary	1482	1658	472	526	89.38%	89.73%
Secondary	1534	1740	392	455	88.16%	86.15%
Friday	**1076**	**1230**	**351**	**415**	**87.48%**	**84.58%**
Local	168	199	34	46	84.42%	73.91%
Primary	241	258	109	112	93.41%	97.32%
Secondary	667	773	208	257	86.29%	80.93%
Saturday	**1381**	**1520**	**715**	**790**	**90.86%**	**90.51%**
Local	11	15	1	3	73.33%	33.33%
Primary	1257	1380	672	738	91.09%	91.06%
Secondary	113	125	42	49	90.40%	85.71%
Total	**11708**	**12936**	**3810**	**4325**	**90.51%**	**88.09%**

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 759 AM	**91**	**103**	**7**	**8**	**88.35%**	**87.50%**
Local	39	44	1	1	88.64%	100.00%
Secondary	52	59	6	7	88.14%	85.71%
8AM to 859 AM	**907**	**963**	**305**	**323**	**94.18%**	**94.43%**
Local	579	612	201	213	94.61%	94.37%
Secondary	328	351	104	110	93.45%	94.55%
9AM to 959AM	**143**	**160**	**26**	**32**	**89.38%**	**81.25%**
Local	31	34	10	10	91.18%	100.00%
Primary	67	77	10	16	87.01%	62.50%
Secondary	45	49	6	6	91.84%	100.00%
10AM to 1059AM	**1013**	**1097**	**354**	**395**	**92.34%**	**89.62%**
Local	111	121	51	60	91.74%	85.00%
Primary	380	404	152	176	94.06%	86.36%
Secondary	522	572	151	159	91.26%	94.97%
11AM to 1159AM	**2003**	**2077**	**682**	**725**	**96.44%**	**94.07%**
Local	489	505	150	164	96.83%	91.46%
Primary	644	676	213	223	95.27%	95.52%
Secondary	870	896	319	338	97.10%	94.38%
12PM to 1259PM	**360**	**416**	**119**	**151**	**86.54%**	**78.81%**
Local	186	222	69	94	83.78%	73.40%
Secondary	174	194	50	57	89.69%	87.72%
1PM to 159PM	**2587**	**3029**	**737**	**872**	**85.41%**	**84.52%**
Local	1693	1986	375	466	85.25%	80.47%
Primary	717	841	307	337	85.26%	91.10%
Secondary	177	202	55	69	87.62%	79.71%
2PM to 259PM	**2060**	**2210**	**805**	**883**	**93.21%**	**91.17%**
Local	510	563	281	317	90.59%	88.64%
Primary	266	270	113	118	98.52%	95.76%
Secondary	1284	1377	411	448	93.25%	91.74%
3PM to 359PM	**1097**	**1237**	**366**	**430**	**88.68%**	**85.12%**
Local	116	131	64	73	88.55%	87.67%
Primary	82	96	30	34	85.42%	88.24%
Secondary	899	1010	272	323	89.01%	84.21%
4PM to 459PM	**1208**	**1373**	**329**	**414**	**87.98%**	**79.47%**
Local	89	99	24	32	89.90%	75.00%
Primary	281	316	70	84	88.92%	83.33%
Secondary	838	958	235	298	87.47%	78.86%
5PM to 559PM	**239**	**271**	**80**	**92**	**88.19%**	**86.96%**
Local	55	58	18	20	94.83%	90.00%
Secondary	184	213	62	72	86.38%	86.11%
Grand Total	**11708**	**12936**	**3810**	**4325**	**90.51%**	**88.09%**

Appendix A. Observation Site Form

Iowa Seat Belt Survey

Observation Site Form

Data Collector ID# _____ **Date:** _____ / _____ / 2013

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

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			
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