GREENWAY
Transportation Planning

Minnesota Distracted Driving Survey: 2015

GREENWAY

Minnesota Distracted Driving Survey: 2015 Final Report

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1. Executive Summary

This distracted driving study was sponsored by the Department of Public Safety, Office of Traffic Safety (OTS). The purpose of the study was to collect direct observations of distracted driving behavior. The survey was conducted from July 27 to August 9, 2015 at 201 sites in 40 counties across the State of Minnesota. Drivers of cars, van/minivans, sport utility vehicles (SUVs) and pickup trucks were included in the survey.

A total of 11,471 drivers were observed during the study. Overall, 29.13 percent (weighted estimate) of the drivers were found to be distracted.

Observational data were entered into SAS and SPSS databases for analysis and calculating the distracted driving rate and its variance. The resulting rankings of driver distractions from the most frequent distraction to the least frequent is tabulated below.

Rank Order	Distraction Type
1	Rear passenger interaction
2	Cell phone handling
3	Cell phone conversation
4	Eating
5	Smoking
6	Reaching for objects (undetermined)
7	Drinking
8	Front passenger interaction
9	Other: Car console interaction Pets Reading Music Grooming Other electronic device

Other notable findings include:

- Driver distraction rate for males is higher, at 30.15 percent vs. females at 27.59 percent.
- The 16–29 driver age group has the highest distraction rate, at 35.46 percent.
- Among vehicle types, vans/minivan drivers have the highest distraction rate, at 37.64 percent.

2. Introduction

This distracted driving study was sponsored by the Department of Public Safety, Office of Traffic Safety (OTS). The purpose of the study was to collect direct observation data on distracted driving behavior to support law enforcement efforts and evaluate the success of Minnesota's no texting law. The OTS was also interested in other distracting behaviors beyond those covered by the texting law. Information from this study may also be used to target media messages aimed at reducing distracted driving.

An observational pilot survey (Phase One) was conducted June 22 and 23 to determine what types of distractions can be observed and recorded. Following the pilot survey the methodology was refined and the statewide survey was conducted from July 27 to August 9 at 201 sites in 40 counties across Minnesota. The observational methodology is generally the same as the Annual Statewide Seatbelt Survey, but with modifications to accommodate additional observation of stationary vehicles in one portion of the survey methodology.

3. Methods

The 2015 Minnesota Distracted Driving Survey was designed to meet all the sampling and data quality requirements of the Uniform Criteria for State Observational Surveys of Seat Belt Use (Code of Federal Regulations Title 23: Highways, Part 1340) issued by the National Highway Traffic Safety Administration (NHTSA), but with modifications to accommodate observation of driver distraction in both free-flow and stationary conditions.

1. Sites were selected from the statewide probability-based sample using the population of road segments within each county. All observations were conducted at or near the vicinity of controlled intersections (i.e. yield, stop control or traffic lights) to facilitate observation of driver behavior.
2. Data were collected through direct observation at the pre-determined sites. Three experienced observers from prior Minnesota seat belt use surveys and one new observer were hired and trained. A field supervisor was assigned a quality control role and monitored observations conducted at 5 percent of all sites.
3. Drivers of all vehicles weighing less than 10,000 pound, including both passenger and commercial vehicles, were observed. Vehicles were classified into four categories: cars, vans/minivans, sport utility vehicles (SUVs), and pick-up trucks.
4. All observations were conducted between 7 a.m. and 6 p.m. Driver observations were conducted for 45 minutes per site, at up to six sites per day for each observer. Start times were staggered to ensure that a representative number of weekday, weekend, rush hour and non-rush hour observations were included.
5. No observations were rescheduled or relocated to alternate sites due to safety concerns, construction or inclement weather. However, the survey supervisor had to cover two late afternoon urban sites due to traffic delays. Appendix A presents the surveyed road segments.
6. Observational data were collected on iPads™ and uploaded daily for back up and monitoring. Appendix B presents the screenshot of the data collection forms. The electronic data served as input into SAS and SPSS programs for data file aggregation and analysis.

Details of the survey methodology are presented in the Observer Training Manual submitted to the OTS as a separate document.

3.1 Sample Design

As stated above the sample design for the statewide seat belt survey was adopted for the distracted driver survey. This sample of locations was generated in 2012 and has been used in in three successive annual seatbelt observation studies. Minnesota is composed of 87 counties; 51 of which account for 85.5 percent of the passenger vehicle crash-related fatalities according to Fatality Analysis Reporting System (FARS) data averages for the period 2007–2009. These 51 counties were included in the sample pool for the study.

Using 2010 Road Segment data provided by MnDOT, a listing of county road segments was developed. Each segment was identified by road functional classification (Interstate/Primary, Arterial/Secondary, and Local), by Average Annual Daily Traffic (AADT) and segment length. This descriptive information allowed for stratification of road segments. A systematic probability proportional to size (PPS) sample was adopted to select the road segments to be used as observation sites.

Counties were stratified in three levels of total vehicle miles traveled (VMT) (i.e., high, medium, and low) with the exception of Hennepin County, which was treated as its own stratum. Road segments were selected randomly and with PPS from all segments in the sampling frame. The road segments were stratified by functional classification (Interstate/Primary, Arterial/Secondary, and Local). This process resulted in the selection of 240 road segments (4 strata x 60 sites per stratum) spread over 44 counties. Additional stages of selection were used to determine the individual site observation period, travel direction, lane, and vehicles to be observed, at random and with known probability.

For the distracted driving survey, an additional stage of selection was employed to exclude low response sites and road segments with no controlled intersection. This was necessary to reduce the disproportionate influence of low-response sites in determining the statewide rate and allow for more time to observe driver behavior. This reduced the number of survey sites from 240 to 201. At the request of OTS, a subset of 31 traffic light-controlled sites was randomly selected for red stage observation. At these locations, eligible vehicles were only observed while the traffic light controlling their movement was in its red phase. This was done to determine if the behavior of drivers stopped at a red light is different from those from the free-flow or moving vehicle observation sites (170 sites) — a point that was not clearly demonstrated in the pilot survey.

3.2 Distraction Definitions

Drivers were recorded as distracted when any of the following behaviors were observed:

- Interacting with Front or Back passenger - Drivers were classified in this category if observed conversing or interacting with other vehicle occupants. Distraction due to other occupants in the vehicle was further divided by front or back seat passenger position. A baseline count of when passengers were present in the vehicle (whether distracting or not) was also taken.
- Cell phone handling - Drivers were classified in this category if observed holding a cell phone but not engaged in conversation (e.g., dialing, texting or viewing).
- Cell phone conversation - Drivers were classified in this category if observed utilizing cell phone for hand-held or hands-free conversation.
- Eating - Drivers were classified in this category if observed to be holding any open food or to have it on their lap accessible for immediate consumption.
- Smoking - Drivers were classified in this category if they were observed to be holding any smoking product/item.
- Reaching for object - Drivers were classified in this category if observed reaching for any objects that do not appear to be related to the control of the vehicle. This included reaching for items on the adjacent seats, floor, car exterior, pockets, etc..
- Drinking - As "Eating" above but for beverage container.
- Other - drivers were classified in this category if they were observed to be interacting with any distractor other than (those listed above). Some common examples were pre-programmed to be selectable from a pull-down list of "other" distractors, but the software also prompted the observers to identify the other distractor by typing into a text field on the form. Some definitions of other distractors include:
    - Control car console - if manipulating car dials e.g., audio, climate controls or in-vehicle information display.
    - Pets - if observed with a pet on their lap or actively engaging with pet inside vehicle.
    - Reading - if actively looking at any printed document.

- Music - if distracted by loud music or playing musical instrument.
- Grooming - if engaged in extended personal grooming (e.g., applying make-up, shaving).
- Other electronic device - if actively interacting with all other electronic device other than a cell phone.

3.3 Distracted Driving Estimator

Segment AADT and daily vehicle miles traveled (DVMT) were used to estimate the distracted driver rate as follows:

Let the driver distraction status be:

$$y_{ghijklmn} = \begin{cases} 1, & if\ distracted \\ 0, & otherwise \end{cases}.$$

The distracted driver rate estimator is a ratio estimator:

$$p_{VMT} = \frac{\sum_g \sum_h \sum_i w_{ghi} VMT_{ghi} p_{ghi}}{\sum_{all\ jklmn\ in\ ghi} w_{jklm|ghi}}.$$

Here w_{ghi} is the road segment weight, VMT_{ghi}, is the road segment VMT. The road segment level distracted driver rate p_{ghi} is estimated by:

$$p_{ghi} = \frac{\sum_{all\ jklmn\ in\ ghi} w_{jklm|ghi} y_{ghijklmn}}{\sum_{all\ jklmn\ in\ ghi} w_{jklm|ghi}}.$$

Here weight $w_{jklm|ghi} = (\pi_{j|ghi}\pi_{k|ghij}\pi_{l|ghijk}\pi_{m|ghijkl})^{-1}$ is the subsequent vehicle selection probability after the site is selected. Case weights were only applied to the data gathered from the 170 free-flow observation sites where every n^{th} vehicle was observed. Data from the 31 red stage sites were excluded as there is no valid way to weight the cases from that methodology.

Further assuming that all vehicles observed at the same road segment *i* have the equal selection probabilities for the subsequent sampling after road segment selection, then all weights $w_{jklm|ghi}$ for the same road segment are equal and can be cancelled in the calculation of p_{ghi}. One example of this situation is treating the observed vehicles at the same site as a simple random sample of all vehicles passing that site. So p_{ghi} can be estimated by the sample mean.

The distracted driver rate estimator is a ratio estimator:

$$Pghi = \frac{1}{n_{ghi}} \sum\nolimits_{all\ jklmn\ in\ ghi} y_{ghijklmn}$$

Together the road segment level DVMT and the assumption of equal vehicle selection probabilities at the same site not only simplify the road segment level distracted driver rate estimation, but dramatically reduce the amount of information to be collected in the field.

3.4 Variance Estimation

PROC SURVEYFREQ and PROC SURVEYMEANS in SAS were used for the ratio estimator ρ_{VMT} along with the joint PSU selection probabilities to calculate the distracted driver rate and its variance. This rate was calculated based on the data from the free-flow sites (i.e., red-stage sites were excluded) because only the free-flow sites data could be accurately weighted for use in statistical analyses.

3.5 Data Analysis

SPSS and Microsoft Excel were used to calculate frequencies and multi-way frequency tables (cross tabulations). Data for red-stage and free-flow conditions were aggregated separately and then combined to calculate unweighted totals and percentages. Weighted totals and percentages were based on the free-flow sites' data.

4. Survey Results

4.1 Overall Measures of Distracted Driving

The 2015 Minnesota distracted driving survey included 11,471 vehicle observations. The overall (unweighted) driver distraction rate was 30.01 percent.

Table 1: Unweighted Distraction Conditions

	Number			Percent	
Group/ Subgroup	Distracted	Not Distracted	Total	Distracted	Not Distracted
Gender					
Male	2,025	4,820	6,845	29.58	70.42
Female	1,406	3,201	4,607	30.52	69.48
Age					
11–15[1]	1	3	4	25.00	75.00
16–29	702	1,241	1,943	36.13	63.87
30–64	2,524	5,827	8,351	30.22	69.78
65+	205	956	1,161	17.66	82.34
Vehicle Type					
Car	1,445	3,621	5,066	28.52	71.48
Pickup	506	1,210	1,716	29.49	70.51
SUV	1,040	2,325	3,365	30.91	69.09
Van	447	862	1,309	34.15	65.85
Distractor					
Cell Call	558	10,913	11,471	4.86	95.14
Cell Handling	584	10,887	11,471	5.09	94.91
Reaching	172	11,299	11,471	1.50	98.50
Smoking	270	11,201	11,471	2.35	97.65
Pass Front	115	11,356	11,471	1.00	99.00
Pass Back	1,427	10,044	11,471	12.44	87.56
Drinking	215	11,256	11,471	1.87	98.13
Eating	144	11,327	11,471	1.26	98.74
Other	133	11,338	11,471	1.16	98.84

Note: [1] Sample size is small resulting in lower confidence in the percentage of distracted drivers.

Red-stage site data is included in the unweighted totals and percentages. The separate unweighted distracted driving rates are 28.72 percent for red stage sites and 30.37 percent for free-flow observation sites.

All Case weights, as described earlier, were applied to the data gathered from the free-flow observations of 8,929 drivers. In the following analysis, the red-stage data are excluded, as there was no valid way to weight the cases from that methodology. The total weighted number of drivers was 2,799,533. Overall, an estimated 815,390 were distracted resulting in a distraction rate of 29.13 percent (standard error = 2.11 percent). The 95 percent confidence interval on this estimate is 24.96 percent to 33.29 percent. Note that since the unweighted values for both red-stage and free-flow sites are well within the 95 percent confidence limits calculated for the weighted data, it can be concluded that there is no statistically significant difference between the two observation protocols.

Table 2: Weighted Estimates of Driver Distraction

	Number			Percent	
Group/ Subgroup	Distracted	Not Distracted	Total	Distracted	Not Distracted
Gender					
Male	496,517	1,150,393	1,646,910	30.15	69.85
Female	317,537	833,204	1,150,741	27.59	72.41
Age					
11–15[1]	19	579	598	3.18	96.82
16–29	167,865	305,471	473,336	35.46	64.54
30–64	596,374	1,413,346	2,009,720	29.67	70.33
65+	49,511	264,747	314,258	15.75	84.25
Vehicle Type					
Car	299,555	840,758	1,140,313	26.27	73.73
Pickup	141,282	308,537	449,819	31.41	68.59
SUV	248,857	624,593	873,450	28.49	71.51
Van	125,064	207,199	332,263	37.64	62.36
Distractor					
Cell Call	123,317	2,676,216	2,799,533	4.40	95.60
Cell Handling	132,857	2,666,676	2,799,533	4.75	95.25
Reaching	46,069	2,753,464	2,799,533	1.65	98.35
Smoking	58,951	2,740,582	2,799,533	2.11	97.89
Pass Front	33,419	2,766,114	2,799,533	1.19	98.81
Pass Back	332,534	2,466,999	2,799,533	11.88	88.12
Drinking	45,250	2,754,283	2,799,533	1.62	98.38
Eating	60,575	2,738,958	2,799,533	2.16	97.84
Other	19,734	2,779,799	2,799,533	0.70	99.30

Note: [1] Sample size is small resulting in lower confidence in the percentage of distracted drivers.

Table 3: Distractor Type by Gender (Weighted N and Percent)

Distractor	Number Distracted[1]		Percent Distracted	
	Male	Female	Male	Female
Cell Call	76,831	45,486	4.7	4.0
Cell Handling	87,473	45,122	5.3	3.9
Reaching	18,761	27,302	1.1	2.4
Smoking	33,524	25,427	2.0	2.2
Pass Front	8,321	25,097	0.5	2.2
Pass Back	235,806	96,728	14.3	8.4
Drinking	23,583	21,647	1.4	1.9
Eating	18,856	41,719	1.1	3.6
Other	10,396	9,339	0.6	0.8

NOTE: [1]There were weighted totals of 1,646,911 males and 1,150,742 females.

Table 3 shows the weighted number and percent of males and females distracted by each distractor type. The widest differences were for distraction by back seat passengers, eating and distraction by front seat passengers.

Figure 1 shows the unweighted distracted driving percentages across days of the week. Figure 2 shows the unweighted percentages across times of the day. In both cases, the unweighted data are preferable to the weighted in that they show less extreme variation across time or days — weighting in these cases appears to have exaggerated relatively minor differences.

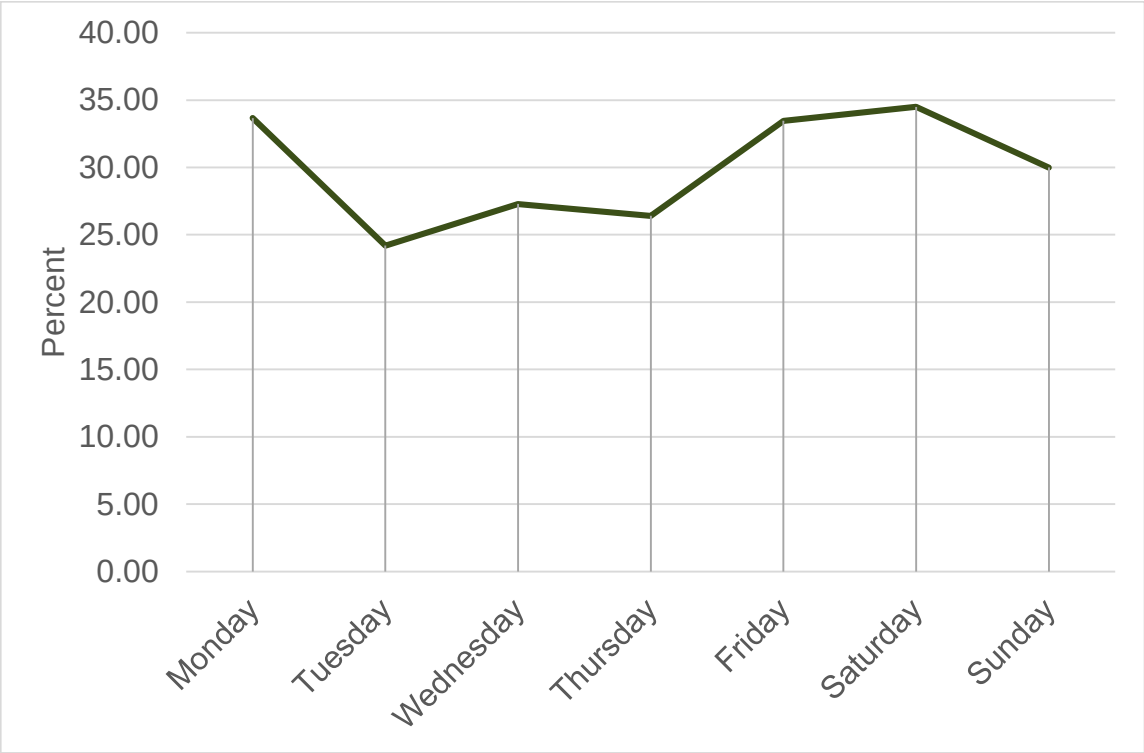


Figure 1. Distracted Driving Across Days of the Week

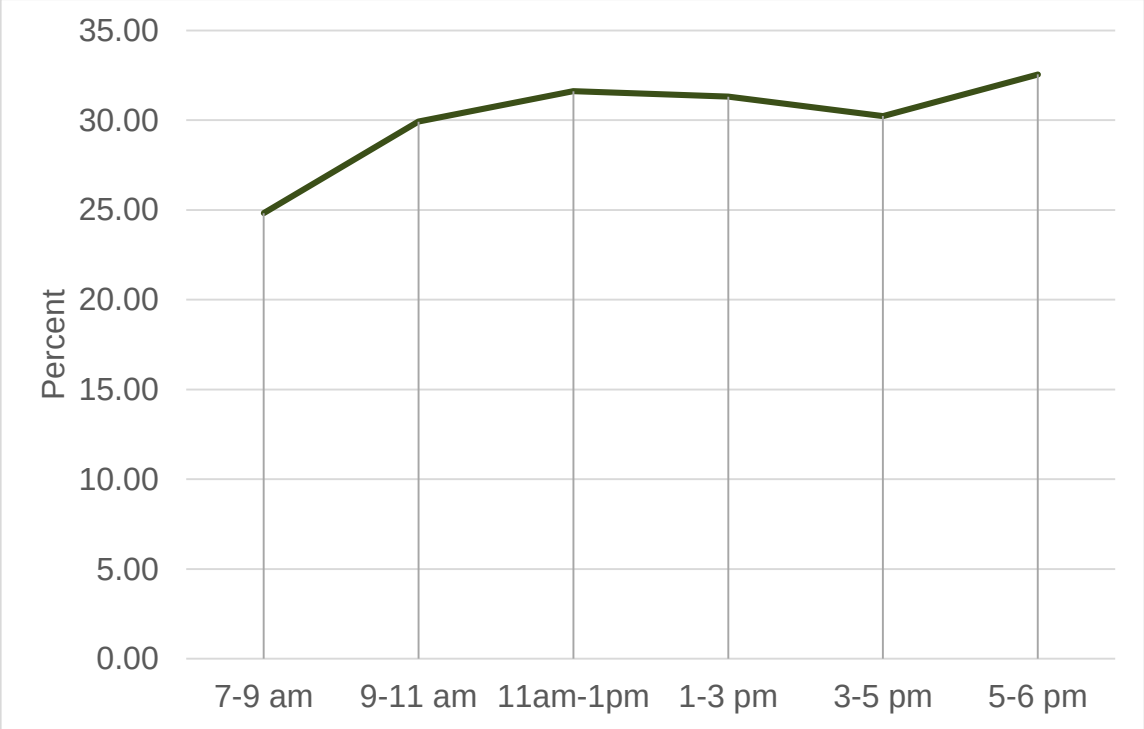


Figure 2. Distracted Driving Across Hours of the Day

4.2 Distraction Summary Tables

Table 4 presents the driver distraction results for each stratum. The unweighted and weighted percent distracted values and unweighted Ns (actual) number of drivers observed. The presentation in the body of this report of both weighted and unweighted values was determined by a close examination of the results to identify areas of analysis where the unweighted values appear to offer a more accurate representation of the information for policy makers. All of the analyses (both weighted and unweighted) appear in a separate report provided to the Office of Traffic Safety.

Table 4. Number and Percent of Distracted Drivers (Unweighted and Weighted) Function of Stratum, Roadway Type

Stratum	Location/Road Type	N	Percent Unweighted	Percent Weighted
Hennepin	Primary	2,507	27.12	33.09
Hennepin	Secondary	1,300	34.92	32.36
Hennepin	Local[1]	179	25.70	25.18
High VMT	Primary	2,160	28.66	30.87
High VMT	Secondary	1,078	32.93	30.28
High VMT	Local[1]	133	34.59	37.12
Med VMT	Primary	1,390	34.75	35.20
Med VMT	Secondary	788	29.31	35.54
Med VMT	Local[1]	84	23.81	23.34
Low VMT	Primary	1,123	29.92	39.02
Low VMT	Secondary	712	24.02	30.20
Low VMT	Local[1]	17	5.88	4.18
Overall	**Statewide**	**11,471**	**30.01**	**29.13**

Note: [1] Sample size is small resulting in lower confidence in the percentage of distracted drivers.

Table 5 presents the number of (unweighted) observations and the unweighted and weighted percentage of drivers distracted as a function of Site Type, Time of Day, Day of Week, Time of Day, and commercial status of vehicles.

Table 5. Number of Observations (N) and Percent of Distracted Drivers (Unweighted and Weighted) by Subgroup

Group/ Subgroup	N	Percent Unweighted	Percent Weighted
Overall	**11,471**	**30.01**	**29.13**
Site Type			
Intersection	6,012	31.30	29.02
Ramp	5,459	28.58	31.58
Area Type			
Urban Metro[1]	7,544	29.76	30.85
Rural	3,927	30.48	27.53
Time of Day			
7–9 a.m.	1,672	24.82	24.61
9–11 a.m.	2,918	29.92	27.04
11 a.m.–1 p.m.	3,037	31.61	28.26
1–3 p.m.	2,514	31.30	30.71
3–5 p.m.	1,118	30.23	39.37
5–6 p.m.[2]	212	32.55	46.60
Day of Week			
Monday	1,981	33.67	28.05
Tuesday	1,062	24.20	12.43
Wednesday	2,195	27.29	29.20
Thursday	1,969	26.41	28.11
Friday	1,784	33.46	33.43
Saturday	1,290	34.50	34.86
Sunday	1,190	30.00	33.41
Weather			
Sunny	7,697	30.71	31.41
Cloudy	2,906	30.25	23.75
Rainy	728	21.84	27.80
Commercial			
Commercial Vehicle	734	30.11	37.48
Not Commercial	10,737	30.00	28.64

Notes: [1] Urban area taken as 7 county metro district (i.e., Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington).

[2] Sample size is small resulting in lower confidence in the percentage of distracted drivers.

4.3 Interpretation of Weighted and Unweighted Values

Throughout this report both weighted and unweighted totals and percentages are provided. The reader is encouraged to use both sets of numbers to draw insights from the data. For the statewide total distraction, the weighted number is clearly preferred. It takes advantage of the careful sampling of sites throughout the state and the known traffic volume differences among the selected sites. One way to use the combination of weighted and unweighted data is to look for converging evidence — if some factor is relatively high in both views of the data, decision makers can be confident in drawing conclusions about it. Conversely, if weighting drastically changes the results, or rank ordering of results by prevalence, decision makers may take that as an indication that the evidence is less strong and thus they should proceed with caution and perhaps seek some external confirming evidence before making programmatic changes.

The reader should be careful when interpreting weighted results such as those for Tuesdays (see Table 5) and the 5–6 p.m. time period. The extremely low rate of distraction for Tuesdays (12.43 percent) in the weighted data is most likely due to a small number of sites that had very few observations, but very high case weights in the final analysis. Similarly, the extremely high rate (46.6 percent) for the 5–6 p.m. time period is likely due to a small number of sites given a high weighting factor. This type of anomaly is not unexpected and serves as an indicator (as noted in the discussion) that there is likely to be variability year-to-year in results divided by days of the week or time of day.

Another point to bear in mind with weighted data is that the estimate of standard error is important for interpreting the results. The overall distraction rate is surrounded by a 95 percent confidence limit such that we are 95 percent certain that the *true* value of overall distraction is between 24.96 percent and 33.29 percent.

A careful look at weighted and unweighted data together can convince the reader that some sub-groups really are more distracted. Drivers aged 16–29 (see Tables 1 and 2) are clearly more distracted than all other driver age groups. Van drivers are more likely to be distracted than drivers of any other vehicle type. Back seat passengers are by far the most prevalent source of distraction.

5. Summary and Discussion

The 2015 Minnesota Distracted Driving Survey was successful in collecting statewide data on the prevalence of driver distraction and drivers' use of specific types of distractors while driving. This is the first formal, statewide study of driver distraction in Minnesota and, as such, there are no prior years' data with which to compare the 2015 results. The statewide driver distraction rate of 29.13 percent is in keeping with other estimates derived from injury and fatality statistics. In 2008, NHTSA's *Traffic Safety Facts* (DOT HS 811 216) included estimates showing 16 percent of fatal crashes and 21 percent of non-fatal injury crashes involved distraction. Based on analysis of the 100-Car Naturalistic Driving Study, 22 percent of crashes and *near crashes* involved driver distraction. In 2012, NHTSA (DOT HS 812 012) reported that 3,328 people were killed and an estimated 421,000 were injured in distraction-affected crashes nationally.

Minnesota's study of distracted driving is unique in that it simultaneously codes for distraction due to passengers and a list of other distractors, including use of cell phones for conversation or manual operations. In this study, interaction with other occupants of the vehicle was directly observed as an active conversation. This differs from other studies where the presence of passengers was coded as distracting regardless of whether or not a conversation was observed. In the Minnesota study, roughly 30 percent of vehicles included occupants other than the driver (i.e., passengers); of those, observers recorded active conversations 48.5 percent of the time. Rear seat passengers were in conversation with the driver in 11.9 percent of all vehicles, and front seat passengers were in conversation with the driver in 1.2 percent of all vehicles. Together, passengers were by far the most prevalent source of distraction. Cell phone operation (4.8 percent) and cell phone calls (4.4 percent) were the second and third most prevalent sources of distraction. Eating (2.2 percent), smoking (2.1 percent), reaching for unspecified object or control (1.6 percent) and drinking (1.6 percent), and other distractors 0.7 percent) accounted for the remaining distractors observed in the study.

Male drivers (30.1 percent) were more likely distracted than female drivers (27.6 percent). Teen and young adult (16–29 years old) drivers were the most likely to be distracted (35.5 percent), followed by adults aged 30–64 (29.7 percent) and drivers aged 65 and over (15.8 percent). Comparing among vehicle types, drivers of vans were the most likely to be distracted (37.6 percent), followed by drivers of pickup trucks (31.4 percent), SUVs (28.5 percent), and passenger cars (26.3 percent). Commercial drivers (37.5 percent) were more likely to

be distracted than were drivers of non-commercial vehicles (28.6 percent).

Drivers on local roads (20.3 percent) were less likely to be distracted than those driving on secondary (31.2 percent) or primary (35.1 percent) roadways. Drivers in cloudy (23.8 percent) and rainy (27.8 percent) conditions were less likely than those driving in sunny conditions (31.4 percent); however, there were very few observations in rainy conditions because the survey procedure called for a halt to observations in anything more than a drizzle.

Monday and weekend days were the most likely on which to observe distraction (all were above 30 percent unweighted). Tuesday had the lowest percentage distraction (24.2 percent unweighted). Distraction appeared to increase across the day from a low of 24.8 percent (unweighted) between 7 and 9 a.m. to a high of 32.6 percent (unweighted) between 5 and 6 p.m. Taking into account prior experience with the Minnesota seat belt survey, the days of the week and hours of the day relationships are subject to change from year to year.

The results indicate that drivers in Minnesota are distracted. The overall rate of 29.13 percent is disturbing, given the national statistics on injuries and fatalities in distraction-affected crashes. There is no easily calculated link between distraction and increased risk of a crash — NHTSA is currently doing research to quantify the risks. It is also not clear just *how* distracting each distractor is. For example, a conversation with a front seat passenger (presumably an adult or older teen) may actually decrease risk of a crash as that person may help the driver identify risks in the traffic situation. Conversations with back seat passengers may, for similar reasons increase risk because the (often younger) passengers are not trained to identify traffic risks and might not be counted on to stop distracting the driver if the overall traffic situation becomes riskier.

Cell phone use, either for conversation or for text-based manipulation, has been researched extensively and found to increase crash risk to about the same degree (though in different ways) as alcohol intoxication at the 0.08 percent BAC level; however, such results must be viewed with caution as they are based on closed course or simulator-based studies rather than naturalistic driving. The rate of cell phone distraction in Minnesota is high (more than 9 percent of drivers in aggregate were using or handling a cell phone). Cell phones were the second and third most prevalent distractor type after back seat passengers.

APPENDIX A

List of Road Segment Samples by Stratum

List of Road Segment Samples by Stratum

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
Hennepin County Stratum						
1	55	Primary	Hennepin	Traffic Light	WB US 55 & CH 116 (Pinto Dr.) RT Lane	Free-flow
2	62	Primary	Hennepin	Traffic Light	EB MN 62 & Lyndale Ave S off ramp RT Lane	Free-flow
3	62	Primary	Hennepin	Stop Sign	EB MN 62 & 28th Ave S off ramp RT Lane	Free-flow
4	94	Primary	Hennepin	Traffic Light	SEB I-94 & MN 101 (Main St) off ramp RT	Free-flow
5	94	Primary	Hennepin	Stop Sign	SEB I-94 & Maple Grove Pkwy off ramp RT	Free-flow
6	94	Primary	Hennepin	Traffic Light	NWB I-94 & Maple Grove Pkwy off ramp RT	Red Stage
7	94	Primary	Hennepin	Traffic Light	WB I-94 & CH 61 (Hemlock La) off ramp RT	Free-flow
8	94	Primary	Hennepin	Yield	EB I-94 & CH 152 (Brooklyn Blvd) off ramp RT	Free-flow
9	94	Primary	Hennepin	Stop Sign	SB I-94 & 53rd Ave off ramp RT	Free-flow
10	94	Primary	Hennepin	Traffic Light	WB I-94 & Riverside Ave S off ramp RT	Free-flow
11	100	Primary	Hennepin	Traffic Light	SB MN 100 & CH 40 (Glenwood Ave) off ramp RT	Free-flow
12	100	Primary	Hennepin	Traffic Light	NB MN 100 & 36th Ave N off ramp RT	Red Stage

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
13	169	Primary	Hennepin	Traffic Light	NB US 169 & CH 1 (Pioneer Tr) off ramp RT	Free-flow
14	169	Primary	Hennepin	Stop Sign	NB US 169 & 7th St S off ramp RT	Free-flow
15	169	Primary	Hennepin	Traffic Light	NB US 169 & CH 81 (Lakeland Ave) RT	Free-flow
16	169	Primary	Hennepin	Traffic Light	SB US 169 & 117th Ave N RT	Free-flow
17	212	Primary	Hennepin	Traffic Light	SWB US 212 & CH 4 (Eden Prairie Rd) off ramp RT	Red Stage
18	394	Primary	Hennepin	Traffic Light	EB I-394 & CH 61 (Plymouth Rd) off ramp RT	Free-flow
19	394	Primary	Hennepin	Traffic Light	WB I-394 & CH 61 (Plymouth Rd) off ramp RT	Free-flow
20	394	Primary	Hennepin	Traffic Light	WB I-394 & Xenia Ave S off ramp RT	Red Stage
21	394	Primary	Hennepin	Traffic Light	EB I-394 & CH 2 (Penn Ave S) off ramp RT	Free-flow
22	494	Primary	Hennepin	Traffic Light	EB I-494 & CH 1 (24th Ave) off ramp RT	Free-flow
23	494	Primary	Hennepin	Traffic Light	EB I-494 & CH 17 (France Ave S) off ramp RT	Free-flow
24	494	Primary	Hennepin	Traffic Light	WB I-494 & Prairie Center Dr. off ramp RT	Free-flow
25	494	Primary	Hennepin	Traffic Light	SB I-494 & CH 62 (Townline Rd) off ramp RT	Red Stage
26	494	Primary	Hennepin	Traffic Light	NB I-494 & CH 5 (Minnetonka Blvd) off ramp RT	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
27	494	Primary	Hennepin	Stop Sign	SB I-494 & CH 16& CH 5 (Minnetonka Blvd) off ramp RT	Free-flow
28	494	Primary	Hennepin	Traffic Light	SB I-494 & CR 6 off ramp	Free-flow
29	494	Primary	Hennepin	Traffic Light	SB I-494 & Carlson Pkwy off ramp RT	Free-flow
30	494	Primary	Hennepin	Traffic Light	SB I-494 & CH 9 (Rockford Rd) off ramp RT	Red Stage
31	694	Primary	Hennepin	Yield	WB I-94 & Shingle Creek Pkwy off ramp RT	Free-flow
34	00000035W	Primary	Hennepin	Traffic Light	SB I-35 & Washington Ave S off ramp RT	Free-flow
35	27000101	Secondary	Hennepin	Traffic Light	SB CH 101 & MN 62	Free-flow
36	25850305	Secondary	Hennepin	Traffic Light	SB 3rd Ave S & 10th St S	Free-flow
37	27000016	Secondary	Hennepin	Stop Sign	SB McGinity Rd W (CH 16) & I - 494	Free-flow
38	32100108	Secondary	Hennepin	Traffic Light	WB W77th St & Lyndale Ave RT+T	Red Stage
39	32300297	Secondary	Hennepin	Stop Sign	SB W Broadway Ave & 39th Ave N	Free-flow
40	5	Secondary	Hennepin	Traffic Light	WN MN 5 & CH 4 (Eden Prairie Rd) RT	Free-flow
41	27000116	Secondary	Hennepin	Traffic Light	NB Ch 116 & CH 30 (97th Ave N) RT	Free-flow
42	27000116	Secondary	Hennepin	Traffic Light	SB CH 116 (Pinto Dr.) / MN 55 RT	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
43	27000156	Secondary	Hennepin	Traffic Light	SB CH 156 (Winnetka Ave N) & Plymouth Ave RT+T	Red Stage
44	27000001	Secondary	Hennepin	Traffic Light	WB CH 1 (Old Shakopee Rd) & Bush Lake Rd RT	Free-flow
45	27000152	Secondary	Hennepin	Traffic Light	NWB CH 152 &CH 130 (69th Ave) RT	Free-flow
46	27000019	Secondary	Hennepin	Traffic Light	SB CH 19 (Manitou Rd)/Smith Town Rd RT	Free-flow
47	15650014	Secondary	Hennepin	Traffic Light	NB Greenfield Rd & CH 10 (Woodland Tr) RT	Free-flow
48	27000048	Secondary	Hennepin	Traffic Light	NB CH 48 (26th Ave S) & CH 5 (Franklin Ave)	Red Stage
49	27000101	Secondary	Hennepin	Traffic Light	SB CH 101 (Central Ave) & US 12	Free-flow
50	31050158	Secondary	Hennepin	Stop Sign	NB Medicine Ridge Road / 29th Ave	Free-flow
51	27000003	Secondary	Hennepin	Traffic Light	EB CH 3 (Excelsior Blvd) / WoodLand Rd	Free-flow
52	27000156	Secondary	Hennepin	Traffic Light	SB CH 156 (Winnetka Ave N) / 10th Ave RT+T	Free-flow
53	27000009	Secondary	Hennepin	Traffic Light	WB CH 9 (Rockford Rd) & Plymouth Blvd)	Red Stage
54	31050248	Local	Hennepin	Stop Sign	SB Merrimac La & CH 6	Free-flow
56	11050488	Local	Hennepin	Stop Sign	SB Browndale Ave &W 50th St	Free-flow
57	31051568	Local	Hennepin	Stop Sign	SB Niagara Lane / CR 47	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
58	11050150	Local	Hennepin	Traffic Light	NB Woodale Ave & W 50th St	Free-flow
High VMT Stratum						
61	52	Primary	Dakota	Traffic Light	SB US 52 & CH 73 (Thompson Ave) off ramp RT	Free-flow
62	00000035E	Primary	Ramsey	Stop Sign	WB I-35E & W Victoria Ave off ramp	Free-flow
63	19000042	Primary	Dakota	Traffic Light	EB CH 42 & CH 23 (Cedar Ave) RT	Free-flow
64	00000035W	Primary	Ramsey	Stop Sign	NB I-35W & CH 96 off ramp RT	Free-flow
65	94	Primary	Ramsey	Stop Sign	WBD I-94 & US 61 (Mounds Blvd) off ramp LT	Free-flow
66	94	Primary	Washington	Traffic Light	EB I-94 & MN 95 (CH 18) off ramp RT	Free-flow
67	94	Primary	Ramsey	Traffic Light	EB I-94 5th St off ramp/ N Smith Ave RT	Red Stage
68	10	Primary	Ramsey	Stop Sign	WB US 10 & Airport Rd Off ramp RT	Free-flow
69	94	Primary	Washington	Traffic Light	WB I-94 & MN 95 (Manning Ave S) off ramp RT	Free-flow
70	00000035E	Primary	Dakota	Traffic Light	NB I-35E & CH 32 (Cliff Rd) off ramp RT	Free-flow
71	10	Primary	Anoka	Traffic Light	SB US 10 & Foley Blvd NW, off-ramp RT	Red Stage
72	35	Primary	Dakota	Traffic Light	SB I-35 & CH 70 (210th St W) off ramp RT	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
73	94	Primary	Washington	Traffic Light	WB I-94 & MN 95 (CH 18) off ramp RT	Free-flow
74	94	Primary	Washington	Traffic Light	EB I-94 & CH 13 (Radio Dr.) off ramp RT	Free-flow
75	316	Primary	Dakota	Stop Sign	SB MN 316 & US 61	Free-flow
76	52	Primary	Dakota	Stop Sign	NB US 52 & Ch 46 (160th St W) off ramp	Free-flow
77	494	Primary	Washington	Traffic Light	SWB I-494 & Lake Rd off ramp RT	Free-flow
78	00000035E	Primary	Ramsey	Traffic Light	SB I-35E & MN 13 off ramp RT	Red Stage
79	00000035E	Primary	Dakota	Traffic Light	NB I-35E & MN 110 off ramp RT	Free-flow
80	280	Primary	Ramsey	Stop Sign	NB MN 280 & Energy Park Drive Off ramp RT	Free-flow
82	94	Primary	Ramsey	Traffic Light	WB I-94 & Vandalia Ave off ramp RT	Free-flow
83	36	Primary	Washington	Traffic Light	EB MN 36 & MN 5 (Stillwater Blvd) off ramp RT	Red Stage
84	694	Primary	Ramsey	Traffic Light	EB I-694 & US 61 off ramp RT	Free-flow
85	19000042	Primary	Dakota	Traffic Light	EB CH 42 & CH 31 (Pilot Knob Rd) RT	Free-flow
86	494	Primary	Washington	Traffic Light	NWB I-494 & Lake Rd off ramp RT	Free-flow
87	35	Primary	Washington	Traffic Light	SB I-35 & MN 97 Lake Dr. off ramp RT	Red Stage

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
88	610	Primary	Anoka	Traffic Light	EB MN 610 & CH 51 (Univ Ave NW) off ramp RT	Free-flow
89	13	Primary	Dakota	Traffic Light	EB MN 13& CH 31 (Lynn Ave) RT	Free-flow
90	62000010	Secondary	Ramsey	Traffic Light	SEB CH 10 / CH 44 (Silver Lake Rd) RT	Free-flow
91	62000003	Secondary	Ramsey	Traffic Light	EB CH 3 (MSAS 237) / Quincy St RT+T	Red Stage
92	34250288	Secondary	Ramsey	Traffic Light	WB Phalen Blvd / Payne Ave RT+T	Free-flow
93	110	Secondary	Dakota	Traffic Light	WB MN 110 & MN 3 (Robert Tr S) off ramp RT	Free-flow
94	10630124	Secondary	Dakota	Traffic Light	SB Cliff Lake Rd & Target Access T	Free-flow
95	34250119	Secondary	Ramsey	Stop Sign	NEB S Dodd Rd & W Baker St	Free-flow
96	51	Secondary	Ramsey	Traffic Light	SB MN51 (Snelling Ave) / Larpenteur Ave W RT	Red Stage
98	28880121	Secondary	Washington	Stop Sign	SB Hadley Ave N & 40th St N	Free-flow
99	2000009	Secondary	Anoka	Stop Sign	SB CH 9 (Lake George Blvd NW) & CH 22 (Viking Blvd NW)	Free-flow
101	5	Secondary	Washington	Traffic Light	EB MN 5 (34th St N) / CR 13 (Ideal Ave) RT	Free-flow
102	51	Secondary	Ramsey	Traffic Light	SB MN51 (Snelling Ave) & Lydia Ave RT	Free-flow
103	21500105	Secondary	Dakota	Roundabout	NB Highview Ave & Dodd Blvd	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
104	10630103	Secondary	Dakota	Stop Sign	SB Blackhawk Rd / Deerwood Dr.	Free-flow
105	2000007	Secondary	Anoka	Traffic Light	SB CH 7 (7th Ave) / E Main St RT	Free-flow
106	2000017	Secondary	Anoka	Traffic Light	SB CH 17 (Lexington Ave NE) / CH 23 (Lake Dr.) RT	Red Stage
107	62000034	Secondary	Ramsey	Traffic Light	WB CH 31 (W University Ave) & Hamline Ave RT+T	Free-flow
108	62000051	Secondary	Ramsey	Traffic Light	SB CH 51 (Lexington Ave) / University Ave RT	Free-flow
109	2000007	Secondary	Anoka	Traffic Light	NB CH 7 (7th Ave) & Grant St RT+T	Free-flow
110	2000001	Secondary	Anoka	Traffic Light	SB CH 1 (E River Rd) & CH 132 (85th Ave NE) RT+T	Red Stage
111	2000058	Secondary	Anoka	Stop Sign	EB 181st Ave NW & CH 58 (Palm St NW)	Free-flow
112	2000011	Secondary	Anoka	Traffic Light	WB CH 11 (Northdale Blvd NW) & CH 78 (Hanson Blvd NW) RT	Free-flow
113	34251285	Local	Ramsey	Stop Sign	WB E Ross Ave & N Waukon Ave	Free-flow
114	31480319	Local	Anoka	Stop Sign	WB 143rd Ave NW & CH 56 (Ramsey Blvd NW)	Free-flow
115	24050100	Local	Washington	Stop Sign	SB Lincolntown Ave & Old Wildwood Rd	Free-flow
116	34250378	Local	Ramsey	Stop Sign	SB Marion St & W Cottage Ave	Free-flow
119	36750124	Local	Washington	Traffic Light	NB Market Dr. & W Orleans St RT+T	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
120	880713	Local	Anoka	Stop Sign	WB 150th Ave NW &Raven St NW	Free-flow
Medium VMT Stratum						
121	35	Primary	Rice	Stop Sign	NB I-35 &MN 60 off ramp LT, Fairbault	Free-flow
122	94	Primary	Stearns	Stop Sign	SEB I-94 & MN 23 off ramp, St Cloud	Free-flow
124	14	Primary	Olmsted	Traffic Light	SB US 14 & 2th St SW, RT Rochester	Free-flow
125	169	Primary	St. Louis	Stop Sign	SB US 169 & MN 37 RT, Hibbing	Free-flow
126	55000022	Primary	Olmsted	Traffic Light	NB CH 22 (Salem Rd SW) & CH 25 (16th St SW) RT, Rochester	Red Stage
127	25	Primary	Sherburne	Traffic Light	NB MN 25 & US 10 RT, Big Lake	Free-flow
128	371	Primary	Crow Wing	Traffic Light	NB MN 371 & CR 77 (Wise Rd), RT	Free-flow
129	35	Primary	Chisago	Traffic Light	SB I-35 & Ch 22 (Viking Blvd) off ramp RT+T, Wyoming	Free-flow
130	94	Primary	Wright	Traffic Light	SB I-94 & MN 25 (Pine St) off ramp RT, Monticello	Red Stage
131	169	Primary	Sherburne	Traffic Light	NB US 169 & CH 12 (Main St) RT, Elk River	Free-flow
132	35	Primary	Chisago	Traffic Light	SB I-35 &MN 95 (St Crix Tr) off ramp RT, North Branch	Free-flow
133	169	Primary	Scott	Traffic Light	NB US 169 & MN 282 (2nd St NW) RT, Jordan	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
134	169	Primary	Scott	Stop Sign	SB US 169 & MN 19 (280th St W) off ramp R/LT+T, Belle Plaine	Free-flow
135	14	Primary	Olmsted	Stop Sign	NB US 14 & 6th St SW, RT Rochester	Free-flow
136	73000075	Primary	Stearns	Traffic Light	EB CH 75 (Division St) & CH 81 (15th Ave N) T. Waite Park	Red Stage
137	10	Primary	Sherburne	Traffic Light	NB US 10 & 171 St RT, Elk River	Free-flow
139	35	Primary	Chisago	Stop Sign	SB I-35 &CH 19 (Stacy Tr N) off ramp, Stacy	Free-flow
140	10	Primary	Otter Tail	Stop Sign	NB US 10 & MN 87 off ramp, Frazee	Free-flow
141	169	Primary	Sherburne	Traffic Light	NB US 169 & CH 4 (Fremont Ave NW) RT, Zimmerman	Free-flow
142	55	Primary	Wright	Traffic Light	NEB MN 55 (Cherry St) / Main, RT+T, Rockford	Red Stage
143	53	Primary	St. Louis	Stop Sign	NB US 53 & MN 37, Eveleth, Top of off ramp	Free-flow
144	371	Primary	Crow Wing	Traffic Light	NB MN 371 & CH 18 RT, Nisswa	Red Stage
145	10	Primary	Sherburne	Traffic Light	EB US 10 (Jefferson Blvd) & MN 25 (Lake St S) RT+T Big Lake	Free-flow
146	7	Primary	Carver	Traffic Light	EB MN 7 & CR 92 Main St RT, St. Bonifacius	Free-flow
148	169	Primary	Sherburne	Stop Sign	NB US 169 & CH 9 (293rd Ave NW) off ramp, Princeton	Free-flow
149	52	Primary	Olmsted	Traffic Light	NB US 52 & CH 25 (16th St SW) off ramp RT, Rochester	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
150	69000012	Secondary	St. Louis	Stop Sign	SB Lester River Rd & E Superior St, Duluth	Free-flow
152	13000010	Secondary	Chisago	Stop Sign	WB CH 2 (Stark Rd) & MN 95 RT, Cambridge	Free-flow
153	69000115	Secondary	St. Louis	Stop Sign	EB CR 115 & Vermilion Dr.	Free-flow
154	56000001	Secondary	Otter Tail	Stop Sign	EB CH 1 & MN 78, Ottertail	Free-flow
156	13000020	Secondary	Chisago	Stop Sign	NB CH 20 (Furuby Rd) & CH 9 (Oasis Rd N) Lindstrom	Free-flow
158	78	Secondary	Otter Tail	Stop Sign	NB MN 78 & MN 210, Battle Lake	Free-flow
159	73000003	Secondary	Stearns	Traffic Light	SB CH 2/3 & CR 75 RT	Red Stage
160	169	Secondary	St. Louis	Stop Sign	WB MN 169 & MN 1, Ely	Free-flow
163	86000039	Secondary	Wright	Stop Sign	EB CH 39 (Club View Rd) & Elm St, Monticello	Free-flow
164	33800141	Secondary	Stearns	Stop Sign	SB Cooper Ave & 33rd St S, St Cloud	Free-flow
165	10400110	Secondary	St. Louis	Traffic Light	NEB N 40th W & Grand Ave, Duluth RT+T	Free-flow
166	69000004	Secondary	St. Louis	Traffic Light	SB CH 4 (Mesaba Ave) & MN 194, Duluth RT	Free-flow
167	34700103	Secondary	Stearns	Traffic Light	NB Pine Cone Rd & CH 133 (Heritage Rd), Sartell RT	Free-flow
168	86000034	Secondary	Wright	Traffic Light	EB CH 34 (10th St) / Labeaux Ave NE, Hanover RT	Red Stage

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
170	70000021	Secondary	Scott	Stop Sign	SEB CH 21 (Credit River Rd) / Main Ave, Prior Lake	Free-flow
171	4350126	Secondary	Crow Wing	Roundabout	EB W College Dr. / 4th St, Brainerd	Free-flow
172	32351803	Local	Olmsted	Stop Sign	SB Kenosha Dr. / Valleyhigh Rd, Rochester	Free-flow
176	8600036	Local	Crow Wing	Stop Sign	SB Cross Ave NW & MN 210 (Main St), Crosby	Free-flow
177	86000561	Local	Wright	Stop Sign	NB Desoto Ave NW & CH 37, Maple Lake	Free-flow
178	19600108	Local	Scott	Stop Sign	NB Fleetwood Blvd & 2nd St W, Jordan	Free-flow
179	73000168	Local	Stearns	Stop Sign	NB CH 168 / CH 17, Melrose	Free-flow
180	34200440	Local	Wright	Stop Sign	WB Town Center Dr NE & Edgewood Dr NE, St Michael	Free-flow
Low VMT Stratum						
181	60	Primary	Nobles	Roundabout	SB MN 60 & CH 35, Worthington	Free-flow
182	90	Primary	Winona	Stop Sign	EB I90 & MN 43, Rushford Top of EB off ramp	Free-flow
185	94	Primary	Douglas	Stop Sign	NB I-94 & CH 7, Brandon off ramp	Free-flow
186	2	Primary	Itasca	Traffic Light	WB US 2 & 2nd St SE, Deer River RT+T	Free-flow
187	90	Primary	Martin	Stop Sign	WB I-90 & MN 15 (State St) off ramp, Fairmont	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
189	23	Primary	Kandiyohi	Traffic Light	NB MN 23 & W South St, Spicer RT	Free-flow
190	10	Primary	Clay	Stop Sign	WB US 10 & MN 32 N, Hawley top of off ramp RT	Free-flow
191	71	Primary	Jackson	Traffic Light	SB US 71 (3rd St) & North Hwy, Jackson	Free-flow
192	10	Primary	Benton	Stop Sign	NB US 10 / CH 2 (125th St) off ramp, Rice LT	Free-flow
193	2	Primary	Itasca	Traffic Light	EB US 2 & La Prairie Ave, Grand Rapids RT+T	Red Stage
194	371	Primary	Cass	Traffic Light	NB MN 371 / Barclay Ave, Pine River RT	Free-flow
195	10	Primary	Benton	Stop Sign	SB US 10 & CH 33 (1st Ave), Sauk Rapids RT	Free-flow
196	52	Primary	Goodhue	Stop Sign	NB US 52 & MN 19 (W Main St) off ramp, Cannon Falls	Free-flow
197	90	Primary	Martin	Stop Sign	WB I-90 & MN 4 (Main St) off ramp, Sherburne	Free-flow
198	59	Primary	Lyon	Traffic Light	NB US 59 & Boyer Dr., Marshall RT	Free-flow
199	65	Primary	Isanti	Traffic Light	NB MN 65 (Candy St SE) & CH 5 RT, Isanti	Free-flow
200	10	Primary	Morris	Traffic Light	NB US 10 / E Center St, Royalton RT+T	Red Stage
202	169	Primary	Mille Lacs	Stop Sign	NB US 169 & MN 23, Milaca off ramp	Free-flow
203	23	Primary	Kandiyohi	Stop Sign	EB MN 23 Bypass off ramp & Veterans Dr., Paynesville	Free-flow

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
204	94	Primary	Todd	Stop Sign	NEB I-94 & MN 127, Osakis off ramp	Free-flow
206	35	Primary	Pine	Stop Sign	NB I-35 & MN 324 (Hillside Ave), top of NB off ramp	Free-flow
207	2	Primary	Polk	Traffic Light	SB US 2 / US 2 E Robert St LT, Crookston	Red Stage
208	60	Primary	Nobles	Roundabout	SB MN 60 & I-90 RT to on-ramp, Worthington	Free-flow
210	63	Secondary	Wabasha	Traffic Light	NB US 63 / US 61, Lake City RT+T	Free-flow
211	27	Secondary	Douglas	Traffic Light	EB MN 27 & CH 45, Alexandria	Free-flow
212	68	Secondary	Blue Earth	Stop Sign	EB MN 68 & US 169, Mankato	Free-flow
213	24000030	Secondary	Freeborn	Stop Sign	NB CH 30 (850th Ave) & CH 46, Albert Lea	Free-flow
214	31000088	Secondary	Itasca	Stop Sign	SWB Pinchery Rd / US 2, Cohasset	Free-flow
215	64	Secondary	Hubbard	Stop Sign	NB MN 64 / MN 34 Broadway St, Akeley	Free-flow
216	26450135	Secondary	Clay	Traffic Light	NB 34th St S / US 10 RT, Moorehead	Free-flow
217	450116	Secondary	Freeborn	Stop Sign	SB N Newton Ave & E William St, Albert Lea	Free-flow
218	3000034	Secondary	Becker	Stop Sign	SB CH34 & CR143 Ogema	Free-flow
219	5700113	Secondary	Isanti	Traffic Light	NB Main St / 11th St, Cambridge	Red Stage

ID[1]	Route No.	Road Type	County	Traffic Control	Observation Site	Protocol
221	34000025	Secondary	Kandiyohi	Stop Sign	EB MN 21 (60th Ave NE) & US 71, Wilmar	Free-flow
223	49000021	Secondary	Morris	Stop Sign	NB CH 21 (Great River Rd) / CR26 Nature Rd, Royalton	Free-flow
225	650130	Secondary	Douglas	Traffic Light	WB 22nd Ave / MN 27, Alexandria RT+T	Free-flow
226	22850106	Secondary	Morrison	Traffic Light	SB 4th St NE / Mn 27, Little Falls	Free-flow
227	58000110	Secondary	Pine	Stop Sign	WB CH 110 (570th St) & CH 361 (Forest Blvd), Pine City	Free-flow
228	60000011	Secondary	Polk	Traffic Light	WB MN 11 (260th St SW) / US 2,Crookston	Red Stage
232	29950057	Local	Hubbard	Stop Sign	WB 5th St W & Main St S, Park Rapids	Free-flow
235	46000009	Local	Martin	Stop Sign	SB CR9 S Seely St / CR 8 Wenberg St, Dunnell	Free-flow
238	74000038	Local	Steele	Stop Sign	NB SW 62nd Ave& CR 2 (Old Us 14), Owatonna	Free-flow
240	48000188	Local	Mille Lacs	Stop Sign	WB 125th St & US 169, Milaca	Free-flow

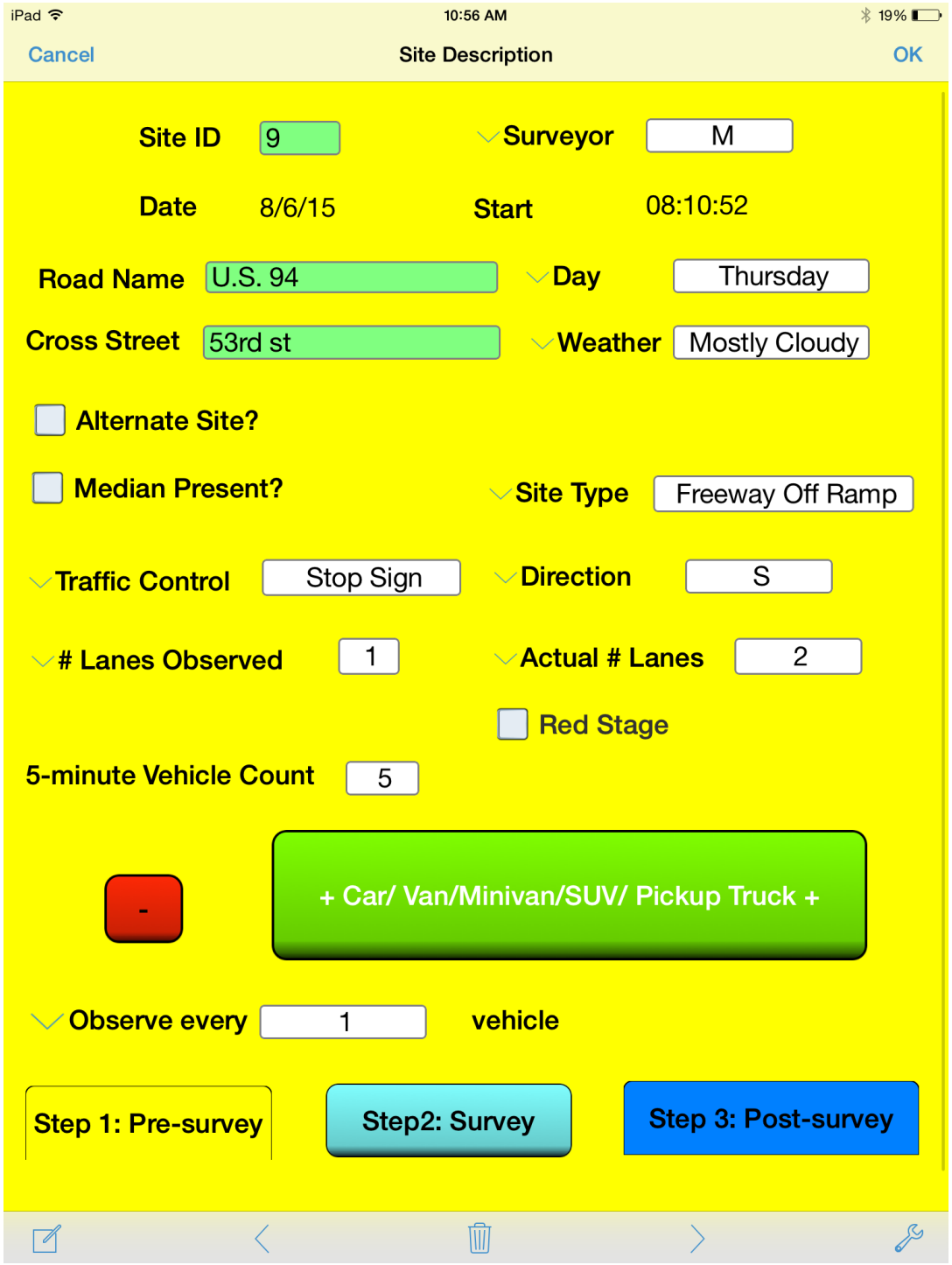
Note: [1] Site ID corresponds to Seat Belt Survey designations. Skipped numbers correspond to excluded sites. Total number of observed sites is 201.

APPENDIX B

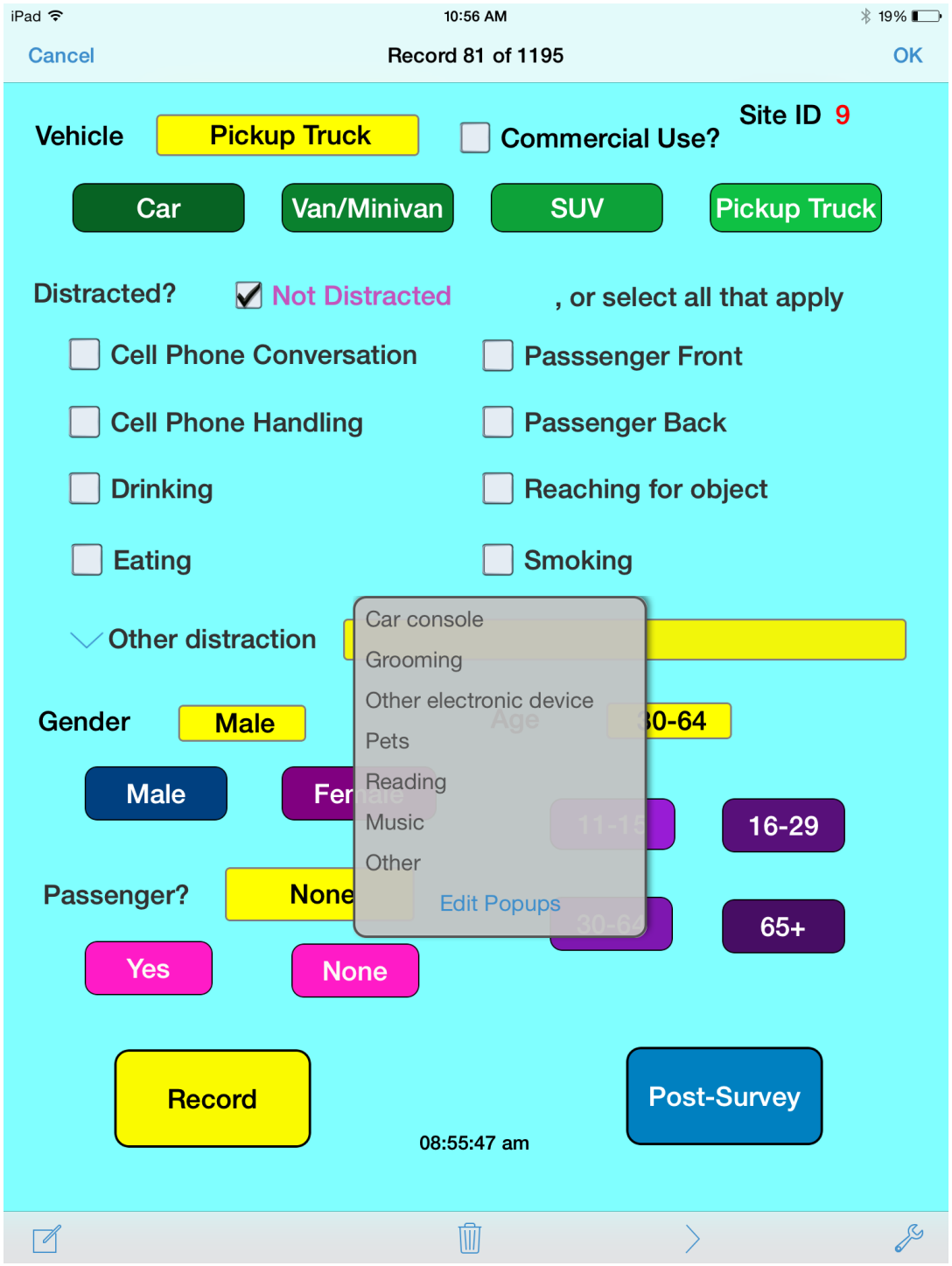
Data Collection Forms

Minnesota Distracted Driving Observation Forms:

Site Description Form



Survey Form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19%
Cancel
Record 81 of 1195
OK
Vehicle
Pickup Truck
Commercial Use?
Site ID 9
Car
Van/Minivan
SUV
Pickup Truck
Distracted?
Not Distracted
, or select all that apply
Cell Phone Conversation
Passsenger Front
Cell Phone Handling
Passenger Back
Drinking
Reaching for object
Eating
Smoking
Other distraction
Car console
Grooming
Other electronic device
Pets
Reading
Music
Other
Edit Popups
Gender
Male
Male
16-29
Passenger?
None
Yes
None
65+
Record
Post-Survey
08:55:47 am

Post-Survey Form