

2019 Safety Belt Usage Survey in Kentucky



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2019 SAFETY BELT USAGE SURVEY IN KENTUCKY

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1.0 INTRODUCTION AND BACKGROUND

The use of safety belts and child safety seats is a proven means of reducing injuries to motor vehicle occupants involved in traffic crashes. There have been various methods used in efforts to increase safety belt and safety seat usage. Past efforts have included public information campaigns, local and statewide legislation, and enforcement of the legislation.

The most recent safety belt legislation in Kentucky involved changing the requirement for the use of safety belts for all vehicle occupants from secondary to primary enforcement. A statewide law providing secondary enforcement was enacted in 1994, with the primary enforcement law passed in 2006. The first legislation in this area in Kentucky was a law enacted by the 1982 Kentucky General Assembly that required the use of a “child restraint system” for children 40 inches or less in height. Prior to the statewide safety belt law, there were local safety belt usage laws in several jurisdictions in Kentucky. The first local safety belt law, that became effective July 1990, was enacted by the Lexington-Fayette Urban County Government.

The first statewide observational surveys were conducted in Kentucky in 1982 and have been conducted annually to document safety belt usage. Following the enactment of the statewide secondary law, safety belt usage among drivers increased each survey year, from four percent in 1982 to 58 percent in 1994. The rate has steadily climbed since 1994. Examples of the increasing rates are 60 percent in 2000, 66 percent in 2004, 73 percent in 2008, and 86 percent in 2014.

Historically, statewide usage of child safety seats (CSS) for children under four years of age has also been tabulated with the safety belt survey. The rate increased from about 15 percent in 1982, before enactment of the mandatory child restraint law, to about 30 percent for 1984 through 1986. After a financial penalty was added to the law, this percentage increased to almost 50 percent in 1988. The continued increase in usage peaked at about 98 percent and remained steady for several years, at which point it was decided that collecting usage rates was no longer a valuable means to evaluate the safety of child safety seats.

The survey methodology used to collect data has been revised slightly a few times. For several years, the statewide belt use survey was based on 200 observation sites in 58 counties taken in the weeks immediately after completing the annual “Click It or Ticket” (CIOT) campaigns. Enforcement and publicity activities related to this campaign typically finish around Memorial Day. Mini-surveys (taken at 21 of the 200 statewide sites) were taken prior to the CIOT, in April, and during the enforcement phase of the CIOT. The relatively large number of sites scattered in so many counties made data collection time-consuming. In 2009, the number of counties for data collection was reduced for the sake of efficiency; now researchers collect data at 150 sites in 15 counties.

In 2018, another update occurred: updated site selection rules were published in the Federal Register Volume 76, Number 63. The methodology is described in detail in the following section of this report. This methodology was developed using the research team’s experience of collecting

safety belt usage rates over the past 35 years in Kentucky along with the guidelines contained in the final rule. The current survey design and selection methodology began with the 2018 survey and were implemented again this year.

The objective of the survey summarized in this report was to establish a statewide safety belt usage rate in Kentucky for 2019. This rate can be compared to those determined from previous surveys. The 2019 statewide survey documents the continued effect associated with law enforcement, related education, and general public attitude.

2.0 SURVEY METHODOLOGY

2.1 SELECTION OF COUNTIES AND NUMBER OF SITES IN EACH COUNTY

A complex multistage sampling design was used to select counties and sites for the survey. The following steps detail that process.

- The number of highway fatalities was summarized for each of Kentucky's 120 counties for the five-year period of 2010 through 2014. The source of the data was Kentucky's crash database (Collision Report Analysis for Safer Highways (CRASH)). The fatality totals were sorted and those counties in the lowest 15th percentile were identified and excluded from consideration. The result was a sample of 77 counties that were considered as potential survey counties.
- Prior to 2013, researchers compiled data from 160 sites in 18 counties. The past data collection has resulted in a standard error of approximately one percent. Based on past experience, the decision was made to sample 20 percent of the 77 counties, which required the identification of 15 counties at 150 sites for data collection. This change was enacted with the 2013 survey and continues with the 2019 survey.
- The method selected to ensure a geographically representative sample of counties across Kentucky was to randomly select a county in each of the 12 Transportation Cabinet highway districts. The districts have similar numbers of counties and provide a good distribution across the state. Three of the districts include the major urban areas in the state. Two counties were selected in each of these three urban districts, which resulted in the selection of a total of 15 counties.
- One county from each rural highway district and two counties from the three urban highway districts were randomly selected. The only exception to the random selection was the automatic selection of Jefferson and Fayette Counties (in two of the urban districts). This was done because these counties (which contain Louisville and Lexington) have much higher

vehicle miles traveled than any other county. Any meaningful statewide sample must include these counties because they are the largest urban centers in Kentucky.

- The objective was to identify 150 data collection sites in the 15 selected counties. Based on the results from past data collection, this number of sites would easily meet the 2.5 percentage point standard error criterion. Additional data would be collected if the standard error exceeded 2.5 percent.
- Past experience has shown that the number of vehicles observed varies dramatically by site (depending on the average daily traffic [ADT] at the site). It is expected that there will be at least 50 observations made at every site. Based on previous surveys, there would be no sites with zero observations and the total statewide sample size should be over 50,000.
- The number of sites selected in each county was based on the vehicle miles traveled (VMT) in each county. Seven categories of VMT were determined, divided at intuitive cutoff points. The number of sites in a county varies from six to 20 and is proportional to that county's VMT. The counties with the most sites are Jefferson (20 sites) and Fayette (16 sites) as they have a much higher VMT than other counties.
- Table 1 lists the counties selected. The numbers of fatalities and vehicle miles traveled are given for each county. The six groupings of counties (based on VMT) are shown, and the number of sites in each county noted.

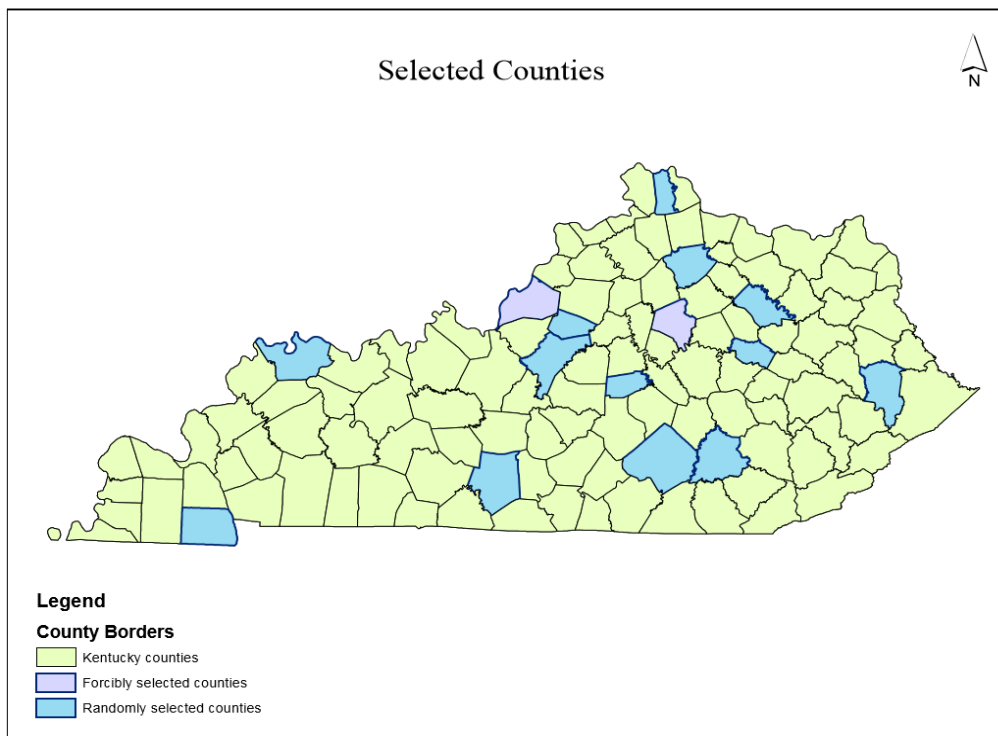
Table 1. Selected Counties

County	Number of Fatalities (2010-2014)	Percent of Statewide Fatalities	Highway District	VMT (x1,000)	Population	VMT Group	Number of Sites
Spencer	20	0.6	5	136,875	17,061	1	6
Harrison	27	0.7	6	143,445	18,846	1	6
Powell	20	0.6	10	172,280	12,613	1	6
Bath	17	0.5	9	182,135	11,591	1	6
Boyle	26	0.7	7	266,450	28,432	2	8
Calloway	42	1.2	1	325,580	37,191	2	8
Floyd	49	1.4	12	438,365	39,451	2	8
Nelson	42	1.2	4	495,670	43,437	2	8
Henderson	28	0.8	2	510,270	46,250	3	10
Barren	59	1.6	3	574,510	42,173	3	10
Pulaski	48	1.3	8	704,085	63,063	4	12
Laurel	67	1.9	11	938,780	58,849	4	12
Kenton	43	1.2	6	1,507,085	159,720	5	14
Fayette	127	3.5	7	3,038,625	295,803	6	16
Jefferson	365	10.1	6	7,313,505	741,096	7	20

- The following list sorts selected counties by highway district. The three urban districts have two counties each and the other nine districts have one county each.

<u>District Number</u>	<u>County</u>	<u>Number of Sites</u>
1	Calloway	8
2	Henderson	10
3	Barren	10
4	Nelson	8
5	Jefferson	20
	Spencer	6
6	Harrison	6
	Kenton	14
7	Boyle	8
	Fayette	16
8	Pulaski	12
9	Bath	6
10	Powell	6
11	Laurel	12
12	Floyd	8

- The following map shows the location of the districts and counties across the state.



2.2 ASSIGN SITES BY HIGHWAY TYPE

- After the counties and the total numbers of data collection sites in each county were determined, the next step was to assign the number of sites by highway type (in each county). The following three roadway types (road class stratum) were used:

1. limited access; primary
2. arterials; secondary
3. local

The survey sites in each county were partitioned among the three highway types based on the VMT for each highway type in that county. In five of the 15 counties, there were no roads in the “limited access” category. Therefore, since there was no VMT and no chance of selection, no road segments for this category were included for these five counties.

- The numbers of sites were adjusted so that data were collected on at least one road in each road stratum class — as long as the county had a road in each class.
- Using the criteria as noted, the following data (Table 2) present the number of sites by county and highway type. Of the 150 sites, there are 46 sites on limited access roadways, 66 sites on arterials and 38 sites on local roads.

The number of sites in each of the three road classes was determined based on the vehicle miles traveled in each road class. The adjusted number was derived based on the distribution using vehicle miles traveled to ensure that the proper number of sites was provided in each county.

Table 2 **Number of Sites in each County by Roadway Class**

County	Sites Allocated	County VMT	Road Class Stratum	Road Class VMT	Number of Sites if Allocated by VMT	Adjusted Number of Sites	Adjusted Total
Barren	10	1,295,546.57	1	477,600.58	3.68	4	10
			2	421,277.70	3.25	3	
			3	396,904.46	3.06	3	
Bath	6	419,571.82	1	251,211.38	3.59	3	6
			2	35,489.11	0.51	1	
			3	132,871.31	1.90	2	
Boyle	8	634,025.67	1	0	0.00	0	8
			2	476,737.48	6.02	6	
			3	157,288.2	1.98	2	
Calloway	8	685,686.76	1	0	0.00	0	8
			2	380,819.83	4.44	4	
			3	304,866.92	3.56	4	
Fayette	16	6,953,205.55	1	2,801,260.56	6.44	7	16
			2	2,753,762.22	6.34	7	
			3	1,039,477.26	2.39	2	
Floyd	8	1,088,469.03	1	0	0.00	0	8
			2	683,760.42	5.02	5	
			3	404,708.60	2.97	3	
Harrison	6	282,009.08	1	0	0.00	0	6
			2	199,062.2	4.24	4	
			3	111,386.8	2.37	2	
Henderson	10	1,215,962.69	1	357,914.74	2.94	3	10
			2	635,720.17	5.23	5	
			3	222,327.76	1.83	2	
Jefferson	20	17,144,887.20	1	8,654,640.06	10.10	10	20
			2	6,831,426.52	7.97	8	
			3	1,658,820.60	1.94	2	
Kenton	14	3,813,647.07	1	2,192,346.29	8.05	8	14
			2	788,788.57	2.90	3	
			3	756,715.49	2.78	3	
Laurel	12	2,234,033.34	1	996,953.21	5.36	5	12
			2	691,206.99	3.71	4	
			3	602,346.08	3.23	3	
Nelson	8	1,149,251.58	1	328,794.65	2.29	2	8
			2	529,677.87	3.69	4	
			3	290,779.04	2.02	2	
Powell	6	400,626.72	1	229,383.74	3.43	3	6
			2	60,491.68	0.91	1	
			3	110,751.28	1.66	2	
Pulaski	12	1,610,216.16	1	107,180.14	0.79	1	12
			2	965,178.51	7.19	7	
			3	537,857.49	4.00	4	
Spencer	6	289,857.02	1	0	0.00	0	6
			2	171,667.31	3.55	4	
			3	118,189.70	2.45	2	
Totals	150	39,216,996.26	1	16,397,285.35	46.67	46	150
			2	15,625,066.58	64.97	66	
			3	6,845,290.22	38.14	38	
			-	38,867,642.15	149.78	150	

2.3 SELECTION OF DATA COLLECTION SITES

- After the counties and number of sites (by roadway type) in each county were selected, the next portion of the methodology involved: a) randomly selecting roadway segments in each roadway type and b) selecting specific sites within each segment. A file containing all roads in the state (including both state maintained and locally maintained) was used to randomly select roadway segments. The source of the road segment data was a Kentucky Transportation Cabinet (KYTC) file. This file is updated annually and contains data for all public roadways. No exclusions were made.
- The segments were divided into the three highway type categories as previously noted. Segments were randomly selected (by highway type). Segment length (in terms of VMT) was factored into the selection process, with longer sections having a higher probability of selection than shorter sections. The number of randomly selected segments for each highway type category in each county was more than required (see Table 2) to compensate for segments where there were no appropriate data collection sites.
- The randomly selected segments were inspected either remotely, using online imagery, or through a site visit. The necessary numbers of data collection sites (shown in Table 2) were identified for each county and highway type (using the randomly selected segments). Site selection ensured that the observers could obtain data safely and effectively.
- Appendix A (Table 1) contains a list of the 150 data collection sites. The county and road name or number are given along with a reference to locate the observation site. The highway where the data is to be collected is identified. Each site's VMT and the county VMT are given. The probability of selection for each site is provided.
- At least one alternative site was identified for each highway type in each county in the event data could not be obtained at one of the identified sites. If a site was unavailable for a substantial period of time (i.e. construction work), the alternative site was used. To remain consistent, the alternate site would replace the discarded site in future surveys. This year, four alternate sites were necessary. Alternate sites are compiled in Table 2 of Appendix A and are marked in Appendix E.
- Appendix C provides a map of site locations by highway type.
- The number of approaches (by direction of travel) and lanes on the approaches on the specified road were identified at each site. The approach and lane used to collect data were randomly selected.
- Data collectors were positioned at a location to ensure their safety while collecting data.

2.4 DATA COLLECTION PROCEDURE

- Observation times for the 150 sites were randomly assigned (with consideration of grouping sites in counties). Sites in relatively close proximity to one another were designated data collection clusters. The first site within each cluster was assigned a random day and time for completion. Next, all other sites within a cluster were assigned a random time on the same day to maximize efficiency (and minimize time and travel costs).
- Data were collected for one hour at each site with either one or two data collectors (depending on the number of directions of travel included). One hour was required if data were gathered by one data collector on one direction of travel, whereas ½ hour was needed if there were two data collectors on separate directions of travel. There is a reasonable assumption that, for sites where one observer is used, the observed vehicles in one direction on a specific route in one hour will equal the number of vehicles on both directions on that route in ½ hour. Sites requiring only one observer are low-volume roads or T-intersections. On roads with higher traffic volumes, an equal distribution of traffic flow in each direction cannot be assumed; therefore, two observers were used, with one observing each direction. The use of a variable observation period (as described) does not affect the probability of selection.
- Data collection was scheduled to occur between June 3 and August 5. Data collection guidelines stated that data would be collected between 7 am and 6 pm on weekdays. The schedule included rush hour and non-rush hour observations. Start times were staggered to ensure the surveys captured a representative number of sites for each day of the week and time of day.
- Data was collected through direct observation. Appendix B contains the form used to collect and record data. Data was collected using paper forms. The form allows data collectors to record information such as the site number and the date and time of data collection. For drivers and front seat passengers the categories are:
 1. safety belt used (shoulder belt is in front of shoulder),
 2. safety belt not used (shoulder belt not in front of shoulder), and
 3. unknown (cannot be determined if belt is used).

The presence or absence of a passenger in the right front seat is shown by comparing the total number of drivers and passengers in the sample size. Observation for any right seat passenger was obtained for all vehicles. The number of vehicles at a site with only a driver can be calculated by subtracting the total number of front seat passengers from the total number of vehicles observed. The ratio of the total number of recorded unknown values of

belt use to the total number of drivers and passengers observed must not exceed 10 percent. Additional data were collected if the nonresponse threshold was surpassed.

- The following vehicle types (both in-state and out-of-state vehicles) were included in the data collection:
 1. Passenger car (PC) (including commercial vehicles under 10,000 pounds)
 2. Pickup (PU)
 3. Van
 4. Sport utility vehicle (SUV)
- Before starting data collection, data collectors were provided training on the data collection procedure. The classroom training included:
 1. An overview of the project
 2. Description of the data collection form and procedure
 3. Scheduling procedures
 4. Identification of survey sites (and alternatives)
 5. Data input.

After the classroom portion of the training, the data collectors conducted trial surveys at locations representative of the three roadway types included in the survey. A manager was present during these trial surveys to provide guidance. The trial survey results were evaluated to ensure that the data collectors provided consistent and accurate data.

- Times and locations were assigned, with data collected using the previously described form. Drivers received no indication that the data collectors were conducting a safety belt survey. For high volume locations, randomized selection was achieved by recording data for the next vehicle in view after recording the previous data. At low volume locations, data for the driver and outboard front seat passenger were obtained for all vehicles so there was no need for a random selection. For each vehicle, the usage for the driver and any outboard front seat passenger was noted. At intersections, data were collected for vehicles either stopped or moving slowly. At overpasses on limited access highways, an observation position was chosen to allow for an unobstructed view of the vehicle's front seat.
- A quality control monitor conducted random, unannounced visits to collect data at a minimum of 15 of the data collection sites. There were four data collectors and two quality control monitors. The objective was that data were compared for at least two sites for each data collector.

2.5 USAGE RATE CALCULATIONS

The following paragraphs summarize the calculation used to estimate the statewide seat belt usage rate. Seat belt usage rates were calculated using formulas based on the proportion of the state's total vehicle miles travelled (VMT) represented by the site. The seat belt usage rate calculations followed a four-step process.

- First, estimated rates were calculated for each of the road strata within each county. Observed usage rates for all of the sites within each stratum-county combination were combined through simple averaging, as shown in the following formula (1). (Since the sites' original probability of being included in the sample was proportional to their VMT, averaging their usage rates makes use of that sampling probability to reflect their different VMTs).

$$p_{i(j)k} = \sum_{l=1}^{n_{i(j)k}} p_{i(j)kl} / n_{i(j)k} \quad (1)$$

where $i(j)$ = county i within category j (category 1 = one randomly selected county, category 2 = the two districts in which one county was random and one county was forced, and category 3 = two randomly selected counties); k = road functional class stratum; l = site within stratum and county; $n_{i(j)k}$ = number of sites within the stratum-county combination; and $p_{i(j)kl}$ = the observed seat belt use rate at site $i(j)kl = B_{i(j)kl} / O_{i(j)kl}$ (where $B_{i(j)kl}$ = total number of belted occupants (drivers and outboard front-seat passengers) observed at the site and $O_{i(j)kl}$ = total number of occupants (excluding unknown usage) whose belt use was observed at the site).

- Second, a county-by-county seat belt use rate, $p_{i(j)}$, was obtained by combining county-stratum seat belt use rates across strata within counties. These were weighted by the class's relative contribution to total county VMT:

$$p_{i(j)} = \frac{\sum_k VMT_{i(j)k} p_{i(j)k}}{\sum_k VMT_{i(j)k}} \quad (2)$$

where $VMT_{i(j)k}$ = VMT of all roads in stratum k in county $i(j)$, and $p_{i(j)k}$ = seat belt use rate for stratum k in county $i(j)$.

- In the third step, category-weighted seat belt use rates were obtained by combining and weighting the rates from the sampled counties in each category by their VMT values and probabilities of being selected:

$$p_j = \frac{\sum_i VMT_{i(j)} W_{i(j)} p_{i(j)}}{\sum_i VMT_{i(j)} W_{i(j)}} \quad (3)$$

where $VMT_{i(j)}$ = total VMT for county i in category j and $W_{i(j)}$ = the inverse of the probability of the county's selection: where j is one of the three following categories:

One county randomly selected from district ($j = 1$)

Highway Districts 1,2,3,4,8,9,10,11, and 12

$$W_{i(1)} = \frac{\sum_{L=1}^{x_m} VMT_{L(1)}}{VMT_{i(1)}} \quad (4)$$

where m = county i 's district, x_m = the number of counties in District m , L is the L^{th} county in District m , $VMT_{L(1)}$ = the VMT in county L , $VMT_{i(1)}$ = the VMT in county i .

One county randomly selected from district and one county certainly selected ($j = 2$)

Highway Districts 5 and 7

$$W_{i(2)} = \frac{\sum_{L=1}^{y_m} VMT_{L(2)}}{VMT_{i(2)}} \quad (5)$$

where m = county i 's district, y_m = the number of counties in district m excluding the certain county, L is the L^{th} county in district m , $VMT_{L(2)}$ = the VMT in county L , $VMT_{i(2)}$ = the VMT in county i .

Or for certainty counties:

$$W_{i(2)} = 1$$

Two counties randomly selected from district ($j = 3$)

Highway District 6 only

$$W_{i(3)} = \frac{\sum_{L=1}^{11} VMT_{L(3)}}{2 \times VMT_{i(3)}} \quad (6)$$

where L is the L^{th} county in District 6, $VMT_{L(3)}$ = the VMT in county L , $VMT_{i(3)}$ = the VMT in county i .

Finally, the statewide belt use proportion was calculated by combining the category proportions weighted by their proportion of statewide VMT:

$$p = \frac{\sum_{j=1}^3 VMT_j p_j}{\sum_{j=1}^3 VMT_j} \quad (7)$$

The result is a combination of the individual site seat belt usage rates weighted to reflect each site's importance in the total state VMT.

Estimates of subgroups of occupants, such as drivers or passengers and vehicle type (passenger car, pickup, etc.) were calculated using the same procedure.

2.6 NONRESPONSIVE JUDGEMENT

- Based on data collection protocol and past experience, including the provision for using alternate observation sites, road segments with non-zero eligible volume and zero observations conducted should not occur. Nevertheless, if eligible vehicles passed an eligible site or an alternate eligible site during the observation time, but no usable data were collected for some reason, this site would be considered a non-responding site. The weight for a non-responding site was distributed over other sites in the same road type in the same primary sampling unit (PSU).

Let:

$$\pi_{gchi} = \pi_{gc}\pi_{hi|gc}$$

be the road segment selection probability, and

$$w_{gchi} = \frac{1}{\pi_{gchi}}$$

be the road segment weight.

The non-responding site nonresponse adjustment factor:

$$f_{gch} = \frac{\sum_{all\ i} w_{gchi}}{\sum_{responding\ i} w_{gchi}}$$

would be multiplied to all weights of non-missing road segments in the same road type of the same county, and the missing road segments would be dropped from the analysis file.

However, if there were no vehicles passing the site during the selected observation time (60

minutes) this was treated as an empty block at this site. Accordingly, the site would not be considered as a non-responding site and would not require non-response adjustment.

2.7 IMPUTATION

No imputation was done on missing data.

2.8 STANDARD ERROR CALCULATION

- The standard error of the overall seat belt use rate was calculated using the following procedure. Standard error of estimate values was estimated through a jackknife approach, based on the general formula:

$$\hat{\sigma}_{\hat{p}} = \left[\frac{n-1}{n} \sum_{(i)=1}^n (p_{(i)} - p)^2 \right]^{1/2} \quad (5)$$

where $\hat{\sigma}_{\hat{p}}$ = standard deviation (standard error) of the estimated statewide seat belt use proportion $\hat{p}$ (equivalent to p in the notation of formulas 1-3; n = the number of sites (i.e., 150); and $\hat{p}_i$ = the estimated statewide belt use proportion with site i excluded from the calculation.

The relative error rate, i.e., $\hat{\sigma}_{\hat{p}} / \hat{p}$, was also calculated, as well as the approximate 95% confidence interval, i.e., $\hat{p} \pm 1.96\hat{\sigma}_{\hat{p}}$. These values were reported for the overall statewide seatbelt use rate.

3.0 SURVEY RESULTS

- Table 3 summarizes usage rates for all front seat occupants (drivers and passengers) for the various types of highways and road classifications. The overall statewide usage rate in 2019, using the data collected at 150 sites and the described weighting procedure, was 89.66 percent. This is a very small decrease from 89.99 percent in 2018. The 95 percent confidence interval is approximately 0.55 percent (89.11 to 90.21). Standard error is 0.28 percent.
- The sample size of all front seat occupants was approximately 92,875. The statewide rate for drivers was 90.1 percent with a rate of 87.7 percent for front seat passengers.

TABLE 3. USAGE RATE FOR FRONT-SEAT OCCUPANTS (BY ROAD CLASS)

ROAD CLASSIFICATION	PERCENT USAGE BY TYPE		
	DRIVERS	PASSENGERS	ALL
Limited Access	92.9	90.7	92.5
Arterials	89.6	86.3	89.1
Locals	86.2	86.1	86.1
All	90.1	87.7	89.7

- Appendices D and E provide summaries of the data collected (by site). For each site, the usage rate and sample size are given for all front seat occupants, drivers, and front seat passengers. The relative error and confidence interval are given for the “all front seat occupants” category. The percent unknown is given for each site. Also, the site type (original or alternate), date observed, and site sample weight are provided.
- Usage rates ranged from 74.0 percent (a rural, local location in Harrison County) to 96.1 percent (a limited access highway in Fayette County). There were 62 sites that had a usage rate of 90 percent or more, with 41 on a limited access road, 19 on an arterial and two on a local road. The highest rate found on a non-limited access road was 94.4 percent at a high-volume urban arterial in Fayette County.
- The highest unknown rate at any site was 8.1 percent. Only two sites had unknown usage rates exceeding five percent. Total rate of seat belt use is 0.42% percent.
- A substantial difference in usage rate (for all front seat occupants) was noted when vehicle type and road class were considered (Table 4). The rate varied by vehicle type from a low of

78.9 percent for pickup trucks on local roads to 94.4 percent for SUVs on limited access roads.

- For each vehicle type, the lowest usage rate was on local roads, while the highest rate was on limited access highways.
- Examining usage rates according to road class revealed that rates ranged from 86.1 percent on local roads to 92.5 percent on limited access highways.
- For each road classification, the lowest usage rate was for pickups. For limited access roads, the vehicle types with a usage rate less than 90 percent were pickups and vans.

TABLE 4. USAGE RATE FOR FRONT-SEAT OCCUPANTS (BY ROAD CLASS AND VEHICLE TYPE)
PERCENT USAGE BY VEHICLE TYPE

ROAD CLASSIFICATION	PC	PU	VAN	SUV	ALL
Limited Access	92.9	88.5	89.9	94.4	92.5
Arterials	90.0	81.4	89.4	92.1	89.1
Locals	87.5	78.9	87.4	89.7	86.1
All	90.5	83.7	89.2	92.4	89.7

PC – passenger car

PU – pickup

VAN – van

SUV – sport utility vehicle

- Table 5 summarizes usage rate by county. The rate varied from a high of 91.6 percent in Fayette County to a low of 83.8 percent in Harrison County. The rate exceeded 90 percent in three counties and was never less than 80 percent.
- Boyle County had the second lowest usage rate (85.2 percent), while Pulaski County had the third lowest rate (85.7 percent). Last year, the three lowest performers were Harrison, Pulaski, and Powell counties.
- Jefferson County had the second highest usage rate (91.2 percent), and Kenton had the third highest rate (90.6 percent). This has been typical in past years and it accurately reflects the trend towards higher usage rates in urban counties.

- Nine counties saw increases in usage from 2018, and six decreased. The three urban counties—Fayette, Jefferson, and Kenton—all decreased. The largest decreases were seen in Jefferson (-1.6 percent), Kenton (-0.9 percent), and Laurel (-0.9 percent). The largest increases were seen in rural counties: Harrison (+4.2 percent), followed by Pulaski (+3.6 percent) and Bath (+2.7 percent).

TABLE 5. USAGE RATE FOR FRONT-SEAT OCCUPANTS (BY COUNTY)

COUNTY	PERCENT USAGE BY TYPE		
	DRIVERS	PASSENGERS	ALL
BARREN	87.2	88.4	87.4
BATH	88.2	88.6	88.3
POWELL	87.6	83.3	86.4
SPENCER	86.1	89.4	86.6
FAYETTE	92.3	88.0	91.6
JEFFERSON	91.6	89.0	91.2
KENTON	91.1	89.9	90.8
LAUREL	87.9	87.2	87.7
PULASKI	85.9	85.2	85.7
BOYLE	85.9	82.1	85.2
CALLOWAY	87.6	84.3	87.1
FLOYD	86.8	82.6	86.0
HARRISON	84.4	81.3	83.8
HENDERSON	89.3	88.6	89.2
NELSON	87.4	88.0	87.5
All	90.1	87.7	89.7

- Usage rates by county and vehicle type are presented in Table 6. These rates ranged from a high of 94.2 percent for SUVs in Fayette County to a low of 76.6 percent for pickup trucks in Harrison County. The usage rate for pickup trucks was less than 80 percent in six counties.

TABLE 6. USAGE RATE FOR FRONT-SEAT OCCUPANTS (BY COUNTY AND VEHICLE TYPE)

COUNTY	PERCENT USAGE BY VEHICLE TYPE				
	PC	PU	VAN	SUV	ALL
BARREN	89.5	82.1	89.1	89.5	87.4
BATH	88.6	81.5	91.9	92.6	88.3
POWELL	88.8	79.8	88.0	89.0	86.4
SPENCER	88.8	81.0	88.5	88.5	86.6
FAYETTE	92.5	85.8	87.4	94.2	91.6
JEFFERSON	91.6	85.8	89.7	93.2	91.2
KENTON	91.5	81.8	89.0	93.5	90.8
LAUREL	88.4	83.0	91.5	89.5	87.7
PULASKI	86.9	79.4	85.2	91.0	85.7
BOYLE	86.0	79.8	87.1	88.2	85.2
CALLOWAY	86.8	80.5	90.4	92.8	87.1
FLOYD	87.7	77.3	90.9	91.1	86.0
HARRISON	85.6	76.6	85.9	89.8	83.8
HENDERSON	90.7	84.5	90.9	91.5	89.2
NELSON	89.2	79.5	93.0	92.3	87.5
All	90.5	83.7	89.2	92.4	89.7

- While the data collection procedure has changed several times, 2019 usage rates can still be judiciously compared to the statewide rates from past years (Table 7). Statewide rates have dramatically increased from four percent in 1982 to just under 90 percent in 2019. Increased usage over the years is related to a combination of changes in safety belt legislation and increased enforcement and education.

TABLE 7. TREND IN STATEWIDE USAGE RATES

PERCENT USING SAFETY BELTS			
YEAR	ALL FRONT SEAT OCCUPANTS	DRIVERS	CHILDREN UNDER FOUR YEARS OF AGE*
1982	**	4	15
1983	**	6	24
1984	**	7	30
1985	9	9	29
1986	13	13	30
1988	20	21	48
1989	25	26	49
1990	33	32	57
1991	39	39	57
1992	40	41	62
1993	42	42	61
1994	58	58	72
1995	54	54	66
1996	55	55	79
1997	54	54	82
1998	54	54	80
1999	59	59	89
2000	60	60	87
2001	62	62	89
2002	62	62	93
2003	66	65	95
2004	66	66	96
2005	67	67	94
2006	67	68	94
2007	72	72	98
2008	73	74	98
2009	80	80	99
2010	80	81	96
2011	82	83	97
2012	84	84	98
2013	85	85	**
2014	86	87	**
2015	87	87	**
2016	87	87	**
2017	87	87	**
2018	90	90	**
2019	90	90	**

*Children using either safety seat or safety belt. Children seated in front or rear seat.

**Data not obtained.

- Survey locations have often changed due to modifications of the data collection procedure (in 1990, 1999, 2009, 2013, and 2018). In order to provide a consistent baseline by which to evaluate the data, mini-surveys have been performed in tandem with the main one. For the past several years, mini-surveys have collected data at 21 sites (selected from the 200 sites for the survey first used prior to the change in sites made in 2009). The 21 sites represented seven road functional classifications and three regions of the state.

This mini-survey was conducted in 2019 to enable a comparison of identical sites over an extended number of years. Appendix F contains the results for the mini-survey sites for the nine years of 2011 through 2019. The usage rate at the mini-survey locations in 2019 was 88.3 percent. This is a one percent decrease from 2018, which shows consistency with the slight decrease in the official survey results. Usage rates increased at seven locations, decreased at ten locations, and four remained the same.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- The data show that the level of safety belt usage in 2019 (89.66 percent) decreased from 2018 (89.99 percent). The usage rate in 2018 was the highest since surveys began in 1982, and the usage rate in 2019 is not far behind.
- 2019 is not the first year that the rate has slightly decreased. Large annual increases can no longer be reasonably expected, as the seatbelt usage rate is probably subject to regression toward the mean.
- Other than a few exceptions, this survey has shown a progressive increase in usage rates observed since 1982. The improvement can be related to the enactment and enforcement of safety belt laws along with increased education.
- The data support maintaining the education and enforcement efforts of the primary safety belt law. Safety belt usage varies by county and vehicle type. Focusing on this variability indicates locations where more emphasis would be beneficial.
- Data shows that the lowest usage rates are for pickups. The exemption for safety belt use for occupants of farm vehicles should be changed.
- Modifying the driver point system so that a driver receives points when they are cited for failure to use a safety belt should be considered. This could aid enforcement.
- Consideration should be given to increasing the dollar amount drivers are fined when cited for failure to wear a safety belt.

Appendix A.

Data Collection Sites

Appendix A- Table 1. Data Collection Sites

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
1	Barren	Primary	I-65	KY-1339	38857	477600.6	0.081359
2	Barren	Primary	I-65	KY-70	146182.7	477600.6	0.306077
3	Barren	Primary	Louie B Nunn Pkwy	US-68	18850.49	477600.6	0.039469
4	Barren	Primary	Louie B Nunn Pkwy	KY-1519	33654.7	477600.6	0.070466
5	Barren	Secondary	US-31 E	US-31 E	2945.846	421277.7	0.006993
6	Barren	Secondary	US-31 E	U-Haul Dealer	2724.208	421277.7	0.006467
7	Barren	Secondary	US-31 E	Horton Rigdon Rd	3632.248	421277.7	0.008622
8	Barren	Local Road	Roseville Rd	Smith Cemetary Rd	707.8448	396904.5	0.001783
9	Barren	Local Road	S Dixie Hwy	Whitney Woods Dr	523.5719	396904.5	0.001319
10	Barren	Local Road	N Dixie Hwy	Caldwell St	1341.091	396904.5	0.003379
11	Bath	Primary	I-64	US 60 (Overpass)	57444.12	251211.4	0.228668
12	Bath	Primary	I-64	KY 36 (Overpass)	6152.065	251211.4	0.02449
13	Bath	Primary	I-64	Exit 123 (Ramp)	22634.75	251211.4	0.090102
14	Bath	Local Road	KY 11	Old Hwy 11	381.2956	35489.11	0.010744
15	Bath	Local Road	KY 36	KY 36	1892.102	132871.3	0.01424
16	Bath	Local Road	US-60	Wyoming Rd	521.6197	132871.3	0.003926
17	Boyle	Secondary	KY 34	Old Bridge Rd	5954.96	476737.5	0.012491
18	Boyle	Secondary	US-127	Lisa Ave	2842.602	476737.5	0.005963
19	Boyle	Secondary	US-127	Baughman Ave	1868.244	476737.5	0.003919
20	Boyle	Secondary	US-150 Bypass	N Stewarts Ln	4352.291	476737.5	0.009129
21	Boyle	Secondary	US-150	Beech St	5425.55	476737.5	0.011381
22	Boyle	Secondary	US-150 Bypass	Commerce St	1939.328	476737.5	0.004068
23	Boyle	Local Road	Simpson Ln	Old US 127	696.2081	157288.2	0.004426
24	Boyle	Local Road	W Shelby St	S Lucas St	1022.232	157288.2	0.006499
25	Calloway	Secondary	KY 80 E	KY 80	881.5246	380819.8	0.002315
26	Calloway	Secondary	KY 80 E	KY 80	844.1597	380819.8	0.002217
27	Calloway	Secondary	N 12 th St	Lowes Dr	8958.889	380819.8	0.023525
28	Calloway	Secondary	US 641 N	Wild Rose Salon	8018.754	380819.8	0.021057
29	Calloway	Local Road	Sycamore St	S 11 th St	553.4066	304866.9	0.001815
30	Calloway	Local Road	KY 94 W	J W Williams Ln	713.2595	304866.9	0.00234
31	Calloway	Local Road	KY-121	Cook Store Trail	959.1452	304866.9	0.003146
32	Calloway	Local Road	Chestnut St	N Cherry St	533.9933	304866.9	0.001752
33	Fayette	Primary	I-64	KY-859 (Overpass)	184822.6	2801261	0.065978
34	Fayette	Primary	I-75	US-25 (Overpass)	295045.9	2801261	0.105326
35	Fayette	Primary	I-75	KY-353 (Overpass)	152458.1	2801261	0.054425

Appendix A- Table 1. Data Collection Sites (continued)

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
36	Fayette	Primary	I-75	US-25 (Overpass)	72503.3	2801261	0.025882
37	Fayette	Primary	I-75	KY-1973 (Overpass)	20751.79	2801261	0.007408
38	Fayette	Primary	KY-4	Development Dr (Overpass)	45217.08	2801261	0.016142
39	Fayette	Primary	KY-4	Alumni Dr (Overpass)	15101.73	2801261	0.005391
40	Fayette	Secondary	N Limestone	Rand Ave	636.2219	2753762	0.000231
41	Fayette	Secondary	Clays Mill Rd	Beth Ln	1504.999	2753762	0.000547
42	Fayette	Secondary	Man O' War Blvd	Lyon Dr	6489.488	2753762	0.002357
43	Fayette	Secondary	Mason Headley Rd	Tazewell Dr	835.5706	2753762	0.000303
44	Fayette	Secondary	KY-1974	Lansdowne Dr	1508.923	2753762	0.000548
45	Fayette	Secondary	KY-1974	Albany Rd	1988.996	2753762	0.000722
46	Fayette	Secondary	US-68	KY-3367	10162.61	2753762	0.00369
47	Fayette	Local Road	Greendale Rd	US-421	3279.075	1039477	0.003155
48	Fayette	Local Road	Armstrong Mill Rd	Kenesaw Dr	2690.47	1039477	0.002588
49	Floyd	Secondary	KY-80	Judge Dr	4185.767	683760.4	0.006122
50	Floyd	Secondary	KY-80	CR 1224	5679.145	683760.4	0.008306
51	Floyd	Secondary	KY-23	School St	3715.89	683760.4	0.005434
52	Floyd	Secondary	KY-23	Branhams Ct	3909.545	683760.4	0.005718
53	Floyd	Secondary	KY-23	KY-1428	14347.53	683760.4	0.020983
54	Floyd	Local Road	KY-680	Tackett Branch Rd	217.2425	404708.6	0.000537
55	Floyd	Local Road	KY-680	KY-979	2328.031	404708.6	0.005752
56	Floyd	Local Road	KY-1428	Old Abbott Mountain Rd	1307.28	404708.6	0.00323
57	Harrison	Secondary	KY 36 E	Culpepper Dr	2035.088	199062.2	0.010223
58	Harrison	Secondary	KY 36 W	Hendricks Ln	3361.698	199062.2	0.016888
59	Harrison	Secondary	US 62 W	Grays Run Pike	1895.136	199062.2	0.00952
60	Harrison	Secondary	US 62 W	Wornall Ln	7878.791	199062.2	0.03958
61	Harrison	Local Road	N Church St	Reynolds Ave	185.1159	111386.8	0.001662
62	Harrison	Local Road	KY 32 W	Lowery Ln	551.3195	111386.8	0.00495
63	Henderson	Primary	Audubon Pkwy	KY-812 (Overpass)	33451.1	357914.7	0.093461
64	Henderson	Primary	Audubon Pkwy	Alves Ferry Rd (Overpass)	17474.66	357914.7	0.048824
65	Henderson	Primary	I-69	KY-425 (Overpass)	7824.502	357914.7	0.021861
66	Henderson	Secondary	KY-812	Sam Ball Way	2326.645	635720.2	0.00366
67	Henderson	Secondary	US-41 N	Race Track Rd	3856.102	635720.2	0.006066
68	Henderson	Secondary	US-60 W	6 th St	851.616	635720.2	0.00134
69	Henderson	Secondary	US-60 W	Corydon Geneva Rd	6896.596	635720.2	0.010848
70	Henderson	Secondary	US-60 E	KY-414	1847.159	635720.2	0.002906
71	Henderson	Local Road	South Water St	Dixon St	37.64173	222327.8	0.000169
72	Henderson	Local Road	KY-136 W	KY-266	1328.322	222327.8	0.005975

Appendix A- Table 1. Data Collection Sites (continued)

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
73	Jefferson	Primary	I-265	Greyling Dr (Overpass)	151548.4	8654640	0.01751
74	Jefferson	Primary	I-64	Payne St (Overpass)	37213.4	8654640	0.0043
75	Jefferson	Primary	I-64	Oxmoor Ave (Overpass)	88248.92	8654640	0.010197
76	Jefferson	Primary	I-64	Gilliland Rd (Overpass)	251990.6	8654640	0.029116
77	Jefferson	Primary	I-65	South Park Rd (Overpass)	220316.3	8654640	0.025456
78	Jefferson	Primary	I-65	Hindman Richardson Connector(Overpass)	51133.08	8654640	0.005908
79	Jefferson	Primary	I-264	KY-1703 (Overpass)	88238.47	8654640	0.010196
80	Jefferson	Primary	I-264	KY-1932 (Overpass)	64826.25	8654640	0.00749
81	Jefferson	Primary	I-264	US 42 (Overpass)	13745.03	8654640	0.001588
82	Jefferson	Primary	I-265	Old Heady Rd (Overpass)	182342.9	8654640	0.021069
83	Jefferson	Secondary	Lower Hunters Trce	Upper Hunters Trce	2054.958	6831427	0.000301
84	Jefferson	Secondary	Six Mile Ln	KY-1747	1796.249	6831427	0.000263
85	Jefferson	Secondary	KY-1703	Tartan Way	4800.577	6831427	0.000703
86	Jefferson	Secondary	KY-1819	Mary Dell Ln	3609.67	6831427	0.000528
87	Jefferson	Secondary	KY-2052	Rangeland Rd	10117	6831427	0.001481
88	Jefferson	Secondary	US-31 W	KY-44	9369.713	6831427	0.001372
89	Jefferson	Secondary	US-60	Ten Pin Ln	3530.199	6831427	0.000517
90	Jefferson	Secondary	US-150	KY-61	2075.091	6831427	0.000304
91	Jefferson	Local Road	St Matthews Ave	Westport Rd	1260.388	1658821	0.00076
92	Jefferson	Local Road	Furman Blvd	Hikes Ln	567.0951	1658821	0.000342
93	Kenton	Primary	I-75	Eads Rd (Overpass)	164573.8	2192346	0.075067
94	Kenton	Primary	I-75	KY 18 (Overpass)	87747.62	2192346	0.040025
95	Kenton	Primary	I-75	KY-1072 (Overpass)	135206	2192346	0.061672
96	Kenton	Primary	I-75	KY-371 (Overpass)	51533.66	2192346	0.023506
97	Kenton	Primary	I-75	US-25 (Overpass)	50514.12	2192346	0.023041
98	Kenton	Primary	I-275	Taylor Mill Rd (Overpass)	69352.61	2192346	0.031634
99	Kenton	Primary	I-275	KY-1303 (Overpass)	117457.1	2192346	0.053576
100	Kenton	Primary	I-275	Hulbert Ave (Overpass)	59111.16	2192346	0.026900
101	Kenton	Secondary	KY-16	Mills Rd	1150.857	788788.6	0.001459
102	Kenton	Secondary	US-25	Highland Ave	625.4784	788788.6	0.000793
103	Kenton	Secondary	US-25	KY-1072	2819.103	788788.6	0.003574
104	Kenton	Local Road	Fowler Creek Rd	Cox Rd	559.5268	756715.5	0.000739
105	Kenton	Local Road	Chancellor Dr	Thomas More Pkwy	185.4616	756715.5	0.000245

Appendix A- Table 1. Data Collection Sites (continued)

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
106	Kenton	Local Road	Madison Pike	Spinning Wheel Tavern	3715.925	756715.5	0.004911
107	Laurel	Primary	I-75	Keavy Rd	30390.94	996953.2	0.030484
108	Laurel	Primary	I-75	E State Hwy 552	107019.1	996953.2	0.107346
109	Laurel	Primary	I-75	KY-192	194457.1	996953.2	0.195051
110	Laurel	Primary	I-75	West Hal Rogers Pkwy	107576.6	996953.2	0.107905
111	Laurel	Primary	I-75	N Laurel Rd	151318.8	996953.2	0.151781
112	Laurel	Secondary	Hal Rogers Pkwy	KY-192	1360.117	691207	0.001968
113	Laurel	Secondary	Russell Dyche Memorial Hwy	Warren Grove Rd	6930.687	691207	0.010027
114	Laurel	Secondary	S US Highway 25	Victory Community Church of Corbin	2537.49	691207	0.003671
115	Laurel	Secondary	S US Highway 25	Fariston Rd	4188.784	691207	0.00606
116	Laurel	Local Road	W Laurel Rd	Dogwood Trail	3835.293	602346.1	0.006367
117	Laurel	Local Road	Keavy Rd	Maple Grove School Rd	1805.773	602346.1	0.002998
118	Laurel	Local Road	Cherry Ave	Super Car Wash Center	758.6308	602346.1	0.001259
119	Nelson	Primary	Martha Layne Collins-Bluegrass Pkwy	KY-55	18157.02	328794.7	0.055223
120	Nelson	Primary	Martha Layne Collins-Bluegrass Pkwy	Old Tunnell Mill Rd	7256.396	328794.7	0.02207
121	Nelson	Secondary	John Rowan Blvd	Ben Frye Ave	17263.3	529677.9	0.032592
122	Nelson	Secondary	New Shepherdsville Rd	Samuels Loop	13839.07	529677.9	0.026127
123	Nelson	Secondary	New Haven Rd	Culverton Schoolhouse Rd	4899.541	529677.9	0.00925
124	Nelson	Secondary	North Third St	E Stephen Foster Ave (Roundabout)	859.8554	529677.9	0.001623
125	Nelson	Local Road	Stonehouse Rd	Stonefield Way	194.1612	290779	0.000668
126	Nelson	Local Road	Woodlawn Rd	CR-1522	382.3636	290779	0.001315
127	Powell	Primary	Bert T Combs-Mountain Pkwy	KY 15 (Overpass)	25115.68	229383.7	0.109492
128	Powell	Primary	Bert T Combs-Mountain Pkwy	Campton Rd	19471.23	229383.7	0.084885
129	Powell	Primary	Bert T Combs-Mountain Pkwy	Campton Rd	8309.661	229383.7	0.036226
130	Powell	Secondary	Stanton Rd	Hatton Creek Rd	5381.654	60491.68	0.088965
131	Powell	Local Road	E College Ave	Ewen St	1097.355	110751.3	0.009908
132	Powell	Local Road	Irvine Rd	Powell Rd	630.0167	110751.3	0.005689
133	Pulaski	Primary	Louie B Nunn Pkwy	KY-914	25871.91	107180.1	0.241387
134	Pulaski	Secondary	KY-80	N Main St	2310.472	965178.5	0.002394
135	Pulaski	Secondary	KY-90	Old Hwy 90 Loop 2 Rd	1069.956	965178.5	0.001109

Appendix A- Table 1. Data Collection Sites (continued)

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
136	Pulaski	Secondary	KY-1247	George Harrison Rd	1815.616	965178.5	0.001881
137	Pulaski	Secondary	US-27	CR-1281J	1677.529	965178.5	0.001738
138	Pulaski	Secondary	US-27	KY-1247	5074.869	965178.5	0.005258
139	Pulaski	Secondary	US-27	W Langdon Rd	2531.783	965178.5	0.002623
140	Pulaski	Secondary	US-27	Rosemill Ln	1869.944	965178.5	0.001937
141	Pulaski	Local Road	McKee Rd	US-27	215.2236	537857.5	0.0004
142	Pulaski	Local Road	E. Washington Dr	US-27	544.8866	537857.5	0.001013
143	Pulaski	Local Road	KY-39	KY-635	1288.44	537857.5	0.002396
144	Pulaski	Local Road	KY-80	Cains Store Cemetary Road	1405.139	537857.5	0.002612
145	Spencer	Secondary	Mt. Washington Rd	Hardesty Ridge Rd	1398.627	171667.3	0.008147
146	Spencer	Secondary	Taylorsville Rd	Ashland Meadows Dr	4734.463	171667.3	0.027579
147	Spencer	Secondary	Taylorsville Rd	Goebel Rd	540.6374	171667.3	0.003149
148	Spencer	Secondary	Taylorsville Rd	Hochstrasser Ln	10644.4	171667.3	0.062006
149	Spencer	Local Road	Little Mount Rd	KY-3200	1446.822	118189.7	0.012242
150	Spencer	Local Road	Elk Creek Rd	Essex Way	198.7898	118189.7	0.001682

Appendix A- Table 2. Alternate Data Collection Sites

Site	Road Class	County	Road Surveyed	Reference
151	Primary	Barren	Cumberland Pkwy	E Main St (Overpass)
152	Secondary	Barren	Scottsville Rd	W Mathews Mill Rd
153	Local Road	Barren	Mammoth Cave Rd	Harper's Ridgetop Market
154	Primary	Bath	I-64	Break in Hwy
155	Secondary	Bath	KY-11	KY-1198
156	Local Road	Bath	KY-1198	KY-11
157	Secondary	Boyle	E Lexington Ave	Bowlarama Lanes
158	Local Road	Boyle	Shakertown Rd	Coffee Tree Dr
159	Secondary	Calloway	Main St	N 13 th St
160	Local Road	Calloway	Pottertown Rd	KY-94
161	Primary	Fayette	W New Circle Rd	Old Frankfort Pike (Overpass)
162	Secondary	Fayette	Clays Mill Rd	Fairfield Dr
163	Local Road	Fayette	Greendale Rd	Buck Ln
164	Secondary	Floyd	US-23	Rose Dr
165	Local Road	Floyd	KY-122	Rite Aid
166	Secondary	Harrison	KY Highway 36 W	US-27 C
167	Local Road	Harrison	E Bridge St	Webster Ave
168	Primary	Henderson	I-69	KY-416
169	Secondary	Henderson	US-41 North	Thorntons Gas
170	Local Road	Henderson	KY-416 W	2 nd St
171	Primary	Jefferson	Gene Snyder Freeway	Greyling Dr
172	Secondary	Jefferson	Blue Lick Rd	Ripple Creek Dr
173	Local Road	Jefferson	Central Ave	Lindbergh Dr
174	Primary	Kenton	I-75	Kyles Ln
175	Secondary	Kenton	Commonwealth Ave	Elm St
176	Local Road	Kenton	Fowler Creek Rd	Cox Rd
177	Primary	Laurel	I-75	KY-909 (Overpass)
178	Secondary	Laurel	N Main St	W 5 th St
179	Local Road	Laurel	N Laurel Rd	KY-3434
180	Primary	Nelson	Bluegrass Pkwy	US-31 E (Overpass)
181	Secondary	Nelson	New Shepherdsville Rd	KY-221
182	Local Road	Nelson	Solitude Rd	US-31 E
183	Primary	Powell	Bert Combs Mtn Pkwy	KY-1184 (Overpass)
184	Secondary	Powell	W College Ave	CR-1264
185	Local Road	Powell	11 th St	10 th Ave
186	Primary	Pulaski	Cumberland Pkwy	KY-80 (Overpass)
187	Secondary	Pulaski	Main St	E French Ave
188	Local Road	Pulaski	KY-192	Grundy Rd
189	Secondary	Spencer	Taylorsville Rd	Little Mt Rd
190	Local Road	Spencer	Bloomfield Rd	KY-1066

Appendix B.

Data Collection Form

SAFETY BELT DATA COLLECTION FORM

Date: _____ Starting Time: _____ Ending Time: _____ Int #: _____

Location: _____ Sheet #: _____

Observer: _____ Comment: _____

DRIVER USAGE

Vehicle	Safety Belt	None	Unknown
PC			
PU			
VAN			
SUV			

FRONT-SEAT OCCUPANT USAGE (OVER 3 YEARS OF AGE)

Vehicle	Safety Belt	None	Unknown
PC			
PU			
VAN			
SUV			

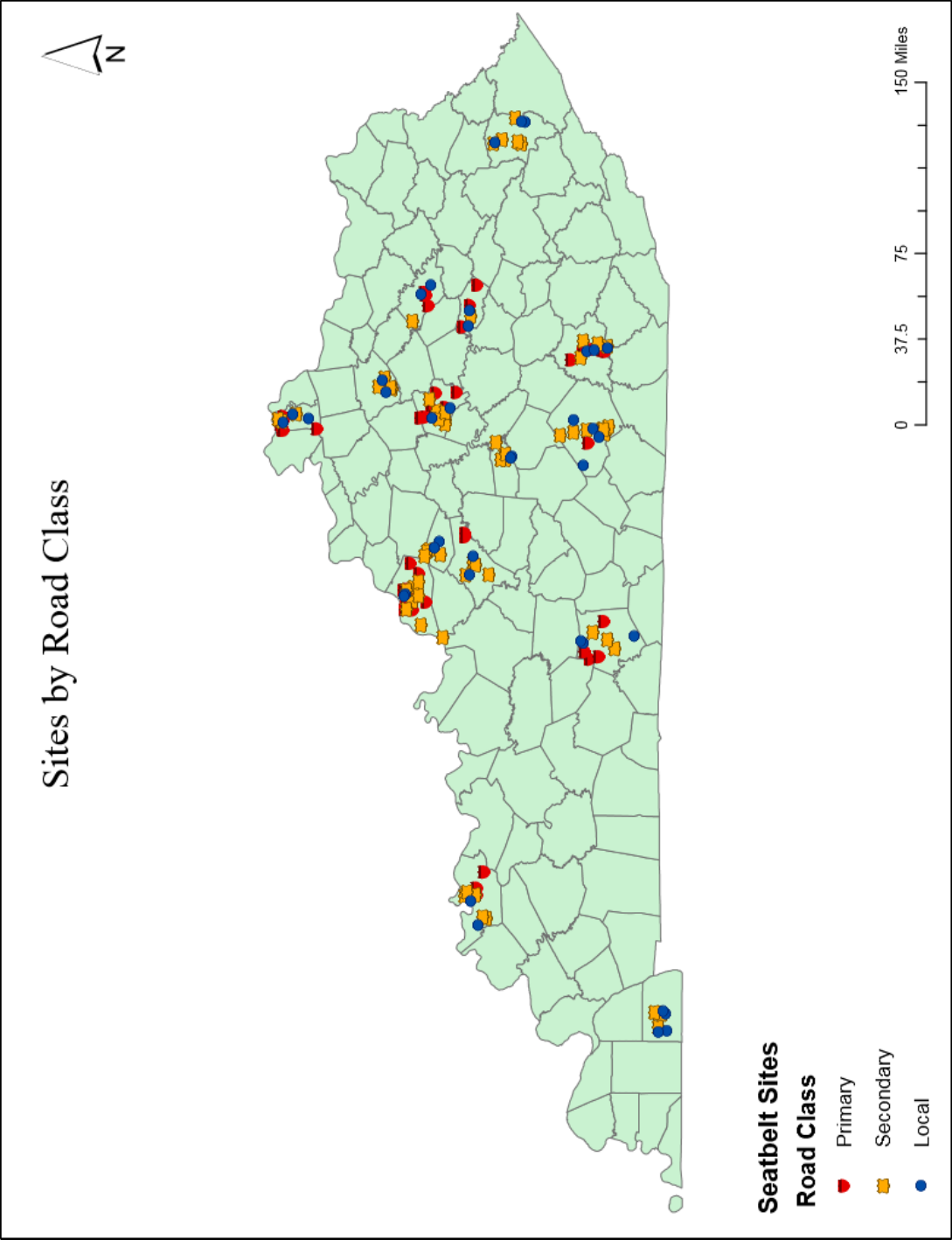
Yes:

Total:

Percent usage:

Appendix C.

Data Collection Site Map



Appendix D.

Summary of Data (by Site)

APPENDIX D. SUMMARY OF DATA

ALL FRONT SEAT OCCUPANTS						CATEGORY			
Location Number	Sample	Percent Usage	Relative Error*	Margin of Error*	Percent Unknown	DRIVERS		FRONT SEAT PASSENGERS	
						Sample	Percent Usage	Sample	Percent Usage
1	1250	91.8	0.8	1.5	0.2	906	91.5	344	92.4
2	970	91.3	1.0	1.8	0.1	700	91.3	270	91.5
3	397	90.9	1.6	2.8	1.0	277	90.3	120	92.5
4	231	91.3	2.0	3.6	0.4	174	92.5	57	87.7
5	196	86.7	2.8	4.7	2.0	158	85.4	38	92.1
6	508	87.4	1.7	2.9	0.4	410	87.3	98	87.8
7	207	88.4	2.5	4.4	1.4	152	88.8	55	87.3
8	53	79.2	7.0	10.9	0.0	44	77.3	9	88.9
9	465	86.9	1.8	3.1	1.3	358	87.4	107	85.0
10	237	81.0	3.1	5.0	0.8	184	81.5	53	79.2
11	499	93.0	1.2	2.2	0.8	378	92.9	121	93.4
12	502	93.6	1.2	2.1	1.0	367	93.5	135	94.1
13	439	90.4	1.6	2.8	0.2	347	92.2	92	83.7
14	144	88.2	3.0	5.3	1.4	106	87.7	38	89.5
15	62	80.6	6.2	9.8	7.5	50	78.0	12	91.7
16	143	80.4	4.1	6.5	4.7	111	81.1	32	78.1
17	361	90.0	1.8	3.1	0.0	281	91.5	80	85.0
18	908	85.2	1.4	2.3	0.2	722	87.1	186	78.0
19	989	86.1	1.3	2.2	0.2	820	87.7	169	78.7
20	809	88.5	1.3	2.2	0.5	683	89.6	126	82.5
21	252	86.1	2.5	4.3	1.2	207	85.5	45	88.9
22	668	86.1	1.6	2.6	0.7	526	87.6	142	80.3
23	85	78.8	5.6	8.7	0.0	70	78.6	15	80.0
24	155	80.6	3.9	6.2	0.0	118	79.7	37	83.8
25	142	88.0	3.1	5.3	1.4	120	89.2	22	81.8
26	175	92.0	2.2	4.0	1.1	141	92.9	34	88.2
27	807	91.1	1.1	2.0	0.7	691	91.8	116	87.1
28	490	91.2	1.4	2.5	0.8	393	91.1	97	91.8
29	229	87.8	2.5	4.2	0.9	194	89.2	35	80.0
30	112	83.0	4.3	7.0	0.0	93	83.9	19	78.9
31	106	84.0	4.2	7.0	0.0	88	84.1	18	83.3
32	171	76.0	4.3	6.4	1.2	145	75.2	26	80.8
33	890	94.3	0.8	1.5	0.2	788	94.4	102	93.1
34	1684	94.1	0.6	1.1	0.0	1224	94.7	460	92.6
35	1979	92.1	0.7	1.2	0.1	1653	93.3	326	85.6
36	1587	91.0	0.8	1.4	0.0	1166	92.8	421	86.0
37	1194	96.1	0.6	1.1	0.2	982	96.0	212	96.7
38	967	89.1	1.1	2.0	0.5	808	90.0	159	84.9
39	1318	91.0	0.9	1.5	0.0	1095	91.8	223	87.4
40	256	85.2	2.6	4.4	0.4	201	86.6	55	80.0
41	499	94.4	1.1	2.0	1.0	440	94.5	59	93.2

ALL FRONT SEAT OCCUPANTS						CATEGORY			
Location Number	Sample	Percent Usage	Relative Error*	Margin of Error*	Percent Unknown	DRIVERS		FRONT SEAT PASSENGERS	
						Sample	Percent Usage	Sample	Percent Usage
42	650	93.2	1.1	1.9	0.8	543	93.6	107	91.6
43	563	90.4	1.4	2.4	0.4	472	90.5	91	90.1
44	850	94.0	0.9	1.6	0.5	764	94.5	86	89.5
45	722	93.6	1.0	1.8	0.1	646	94.6	76	85.5
46	467	91.4	1.4	2.5	0.4	389	92.3	78	87.2
47	232	90.9	2.1	3.7	1.3	202	91.1	30	90.0
48	215	86.5	2.7	4.6	0.9	180	88.3	35	77.1
49	294	83.3	2.6	4.3	0.0	228	83.8	66	81.8
50	374	83.4	2.3	3.8	1.1	289	85.1	85	77.6
51	565	88.8	1.5	2.6	0.2	481	89.2	84	86.9
52	772	88.9	1.3	2.2	1.2	658	89.7	114	84.2
53	529	86.2	1.7	2.9	0.2	426	88.3	103	77.7
54	119	83.2	4.1	6.7	0.0	88	83.0	31	83.9
55	155	85.2	3.4	5.6	3.1	123	87.0	32	78.1
56	230	88.7	2.4	4.1	0.4	188	88.3	42	90.5
57	173	82.7	3.5	5.6	0.0	133	83.5	40	80.0
58	146	85.6	3.4	5.7	0.0	107	87.9	39	79.5
59	190	87.4	2.8	4.7	2.1	167	87.4	23	87.0
60	189	86.8	2.8	4.8	2.1	160	87.5	29	82.8
61	77	87.0	4.4	7.5	0.0	61	86.9	16	87.5
62	50	74.0	8.4	12.2	3.8	43	74.4	7	71.4
63	230	92.6	1.9	3.4	1.3	186	93.5	44	88.6
64	195	89.7	2.4	4.3	0.0	163	90.2	32	87.5
65	321	90.0	1.9	3.3	0.6	238	89.1	83	92.8
66	239	88.3	2.4	4.1	1.2	204	88.2	35	88.6
67	962	93.6	0.8	1.6	0.4	870	93.7	92	92.4
68	217	86.6	2.7	4.5	0.9	182	86.8	35	85.7
69	451	90.2	1.5	2.7	1.1	383	91.4	68	83.8
70	389	85.6	2.1	3.5	1.0	324	87.0	65	78.5
71	151	84.8	3.4	5.7	0.7	113	83.2	38	89.5
72	95	90.5	3.3	5.9	3.1	85	89.4	10	100.0
73	928	94.4	0.8	1.5	0.5	763	94.8	165	92.7
74	1860	94.2	0.6	1.1	0.1	1683	94.7	177	89.3
75	2689	92.0	0.6	1.0	0.1	2255	92.4	434	89.9
76	1518	93.7	0.7	1.2	0.0	1190	92.9	328	96.3
77	2119	91.5	0.7	1.2	0.0	1797	91.8	322	89.8
78	1006	91.0	1.0	1.8	0.0	696	91.8	310	89.0
79	2567	93.8	0.5	0.9	0.3	2384	94.2	183	88.5
80	2490	93.9	0.5	0.9	1.0	1889	93.9	601	94.0
81	1213	91.8	0.9	1.5	0.1	1021	91.8	192	91.7
82	1282	93.2	0.8	1.4	0.6	1033	94.1	249	89.6
83	465	86.5	1.8	3.1	0.2	400	87.0	65	83.1
84	427	91.1	1.5	2.7	3.6	365	91.8	62	87.1

ALL FRONT SEAT OCCUPANTS						CATEGORY			
Location Number	Sample	Percent Usage	Relative Error*	Margin of Error*	Percent Unknown	DRIVERS		FRONT SEAT PASSENGERS	
						Sample	Percent Usage	Sample	Percent Usage
85	644	93.5	1.0	1.9	1.2	570	93.7	74	91.9
86	410	88.5	1.8	3.1	1.2	372	88.7	38	86.8
87	718	88.0	1.4	2.4	0.0	596	88.8	122	84.4
88	495	86.9	1.7	3.0	0.0	372	87.6	123	84.6
89	1871	91.8	0.7	1.2	0.0	1667	92.4	204	86.3
90	671	89.4	1.3	2.3	0.0	520	89.8	151	88.1
91	409	89.2	1.7	3.0	0.5	359	89.1	50	90.0
92	426	89.7	1.6	2.9	0.0	336	90.5	90	86.7
93	1778	92.0	0.7	1.3	0.0	1382	91.6	396	93.2
94	1515	92.9	0.7	1.3	0.1	1171	93.3	344	91.3
95	2019	89.8	0.7	1.3	0.0	1635	89.9	384	89.6
96	1658	92.3	0.7	1.3	0.0	1238	92.7	420	91.0
97	2261	93.1	0.6	1.0	0.0	1745	94.5	516	88.6
98	1490	91.1	0.8	1.4	0.0	1212	91.2	278	91.0
99	1389	92.4	0.8	1.4	0.1	1025	93.8	364	88.7
100	775	90.7	1.1	2.0	0.0	639	90.6	136	91.2
101	484	89.9	1.5	2.7	0.8	424	90.3	60	86.7
102	816	90.2	1.2	2.0	0.1	693	90.5	123	88.6
103	526	90.9	1.4	2.5	0.2	452	91.6	74	86.5
104	101	89.1	3.5	6.1	0.0	83	88.0	18	94.4
105	205	88.3	2.5	4.4	1.0	150	90.0	55	83.6
106	125	88.0	3.3	5.7	15.0	108	87.0	17	94.1
107	1147	91.5	0.9	1.6	0.4	817	91.2	330	92.1
108	1113	93.2	0.8	1.5	0.3	767	94.1	346	91.0
109	1414	93.4	0.7	1.3	0.3	937	93.4	477	93.3
110	979	93.6	0.8	1.5	0.2	659	94.2	320	92.2
111	1478	92.6	0.7	1.3	0.4	1119	92.9	359	91.4
112	249	81.9	3.0	4.8	1.6	203	81.8	46	82.6
113	434	90.3	1.6	2.8	0.0	363	91.2	71	85.9
114	364	88.2	1.9	3.3	0.0	313	88.5	51	86.3
115	432	82.9	2.2	3.6	0.5	334	85.0	98	75.5
116	379	81.0	2.5	3.9	2.6	327	80.1	52	86.5
117	135	85.2	3.6	6.0	3.6	101	85.1	34	85.3
118	408	77.7	2.7	4.0	0.0	331	76.7	77	81.8
119	332	88.3	2.0	3.5	0.0	253	88.1	79	88.6
120	275	92.0	1.8	3.2	0.0	202	91.6	73	93.2
121	700	88.4	1.4	2.4	0.1	613	88.4	87	88.5
122	398	87.4	1.9	3.3	2.5	332	88.6	66	81.8
123	154	81.8	3.8	6.1	1.3	121	81.8	33	81.8
124	525	89.0	1.5	2.7	0.2	427	88.3	98	91.8
125	50	86.0	5.7	9.6	0.0	41	85.4	9	88.9
126	345	86.4	2.1	3.6	1.1	288	86.1	57	87.7
127	323	88.5	2.0	3.5	0.9	222	91.9	101	81.2

ALL FRONT SEAT OCCUPANTS						CATEGORY			
Location Number	Sample	Percent Usage	Relative Error*	Margin of Error*	Percent Unknown	DRIVERS		FRONT SEAT PASSENGERS	
						Sample	Percent Usage	Sample	Percent Usage
128	421	91.0	1.5	2.7	0.0	286	91.6	135	89.6
129	384	92.4	1.5	2.6	0.8	275	92.4	109	92.7
130	192	82.3	3.3	5.4	1.5	155	84.5	37	73.0
131	255	79.6	3.2	4.9	1.9	213	79.3	42	81.0
132	234	80.3	3.2	5.1	1.7	188	80.9	46	78.3
133	159	91.2	2.5	4.4	2.5	119	92.4	40	87.5
134	750	91.2	1.1	2.0	0.4	602	91.5	148	89.9
135	531	83.8	1.9	3.1	0.2	405	83.5	126	84.9
136	227	84.6	2.8	4.7	0.0	173	83.8	54	87.0
137	280	85.4	2.5	4.1	0.4	234	84.6	46	89.1
138	655	84.4	1.7	2.8	0.2	477	84.3	178	84.8
139	428	88.6	1.7	3.0	0.7	336	89.3	92	85.9
140	306	87.3	2.2	3.7	1.0	244	88.1	62	83.9
141	79	84.8	4.8	7.9	1.3	63	88.9	16	68.8
142	570	89.3	1.5	2.5	0.2	457	90.4	113	85.0
143	102	78.4	5.2	8.0	0.0	76	76.3	26	84.6
144	106	80.2	4.8	7.6	1.9	94	78.7	12	91.7
145	210	85.2	2.9	4.8	0.0	165	86.1	45	82.2
146	618	89.3	1.4	2.4	1.4	498	89.2	120	90.0
147	365	88.5	1.9	3.3	0.5	294	89.5	71	84.5
148	345	89.9	1.8	3.2	1.4	304	89.8	41	90.2
149	271	86.7	2.4	4.0	0.7	212	86.8	59	86.4
150	50	82.0	6.6	10.6	0.0	41	78.0	9	100.0

*Percent (using .95 probability)

Appendix E.

Summary of Data (with sample weights)

APPENDIX E. Summary of Data (with sample weights)

Site ID	Site Type	Date Observed	Site Sample Weight	Number of Drivers	Number of front Passengers	Number of Occupants belted	Number of Occupants unbelted	Number of Occupants with unknown belt use
1	Original	7/15/2019	0.14	906	344	1147	103	2
2	Original	7/15/2019	0.14	700	270	886	84	1
3	Original	7/15/2019	0.14	277	120	361	36	4
4	Original	7/1/2019	0.14	174	57	211	20	1
5	Original	7/12/2019	0.07	158	38	170	26	4
6	Original	7/1/2019	0.07	410	98	444	64	2
7	Original	7/1/2019	0.07	152	55	183	24	3
8	Original	6/24/2019	0.00	44	9	42	11	0
9	Original	6/24/2019	0.00	358	107	404	61	6
10	Original	7/12/2019	0.00	184	53	192	45	2
11	Original	6/4/2019	0.05	378	121	464	35	4
12	Original	6/4/2019	0.05	367	135	470	32	5
13	Original	7/18/2019	0.05	347	92	397	42	1
14	Original	6/25/2019	0.01	106	38	127	17	2
15	Original	7/11/2019	0.00	50	12	50	12	5
16	Original	7/11/2019	0.00	111	32	115	28	7
17	Original	7/12/2019	0.02	281	80	325	36	0
18	Original	6/20/2019	0.02	722	186	774	134	2
19	Original	6/20/2019	0.02	820	169	852	137	2
20	Original	6/20/2019	0.02	683	126	716	93	4
21	Original	6/20/2019	0.02	207	45	217	35	3
22	Original	6/20/2019	0.02	526	142	575	93	5
23	Original	7/12/2019	0.00	70	15	67	18	0
24	Original	7/12/2019	0.00	118	37	125	30	0
25	Original	6/18/2019	0.03	120	22	125	17	2
26	Original	6/11/2019	0.03	141	34	161	14	2
27	Original	7/10/2019	0.03	691	116	735	72	6
28	Original	6/18/2019	0.03	393	97	447	43	4
29	Original	6/11/2019	0.00	194	35	201	28	2
30	Original	7/18/2019	0.00	93	19	93	19	0
31	Original	7/19/2019	0.00	88	18	89	17	0
32	Original	7/18/2019	0.00	145	26	130	41	2
33	Original	6/3/2019	1.45	788	102	839	51	2
34	Original	6/27/2019	1.45	1224	460	1585	99	0
35	Original	6/19/2019	1.45	1653	326	1822	157	1
36	Original	6/27/2019	1.45	1166	421	1444	143	0
37	Original	6/3/2019	1.45	982	212	1148	46	2

Site ID	Site Type	Date Observed	Site Sample Weight	Number of Drivers	Number of front Passengers	Number of Occupants belted	Number of Occupants unbelted	Number of Occupants with unknown belt use
38	Alternate	6/19/2019	1.45	808	159	862	105	5
39	Original	6/27/2019	1.45	1095	223	1200	118	0
40	Original	7/5/2019	0.63	201	55	218	38	1
41	Original	6/3/2019	0.63	440	59	471	28	5
42	Original	6/27/2019	0.63	543	107	606	44	5
43	Original	7/5/2019	0.63	472	91	509	54	2
44	Original	6/3/2019	0.63	764	86	799	51	4
45	Original	6/19/2019	0.63	646	76	676	46	1
46	Original	6/27/2019	0.63	389	78	427	40	2
47	Original	7/5/2019	0.00	202	30	211	21	3
48	Original	6/3/2019	0.00	180	35	186	29	2
49	Original	7/31/2019	0.07	228	66	245	49	0
50	Original	6/17/2019	0.07	289	85	312	62	4
51	Original	7/15/2019	0.07	481	84	502	63	1
52	Original	6/17/2019	0.07	658	114	686	86	9
53	Original	7/15/2019	0.07	426	103	456	73	1
54	Original	7/31/2019	0.00	88	31	99	20	0
55	Original	7/11/2019	0.00	123	32	132	23	5
56	Original	7/9/2019	0.00	188	42	204	26	1
57	Original	6/28/2019	0.01	133	40	143	30	0
58	Original	7/5/2019	0.01	107	39	125	21	0
59	Original	6/28/2019	0.01	167	23	166	24	4
60	Original	6/28/2019	0.01	160	29	164	25	4
61	Original	7/5/2019	0.00	61	16	67	10	0
62	Original	7/31/2019	0.00	43	7	37	13	2
63	Original	6/6/2019	0.13	186	44	213	17	3
64	Original	6/26/2019	0.13	163	32	175	20	0
65	Original	7/9/2019	0.13	238	83	289	32	2
66	Original	7/25/2019	0.06	204	35	211	28	3
67	Original	6/6/2019	0.06	870	92	900	62	4
68	Original	6/26/2019	0.06	182	35	188	29	2
69	Original	7/3/2019	0.06	383	68	407	44	5
70	Original	7/9/2019	0.06	324	65	333	56	4
71	Original	7/25/2019	0.00	113	38	128	23	1
72	Original	7/3/2019	0.00	85	10	86	9	3
73	Alternate	6/20/2019	6.52	763	165	876	52	5
74	Original	6/12/2019	6.52	1683	177	1752	108	1
75	Original	6/21/2019	6.52	2255	434	2474	215	3
76	Original	7/17/2019	6.52	1190	328	1422	96	0

Site ID	Site Type	Date Observed	Site Sample Weight	Number of Drivers	Number of front Passengers	Number of Occupants belted	Number of Occupants unbelted	Number of Occupants with unknown belt use
77	Alternate	6/21/2019	6.52	1797	322	1939	180	0
78	Original	7/3/2019	6.52	696	310	915	91	0
79	Original	6/12/2019	6.52	2384	183	2407	160	8
80	Original	6/20/2019	6.52	1889	601	2338	152	24
81	Original	7/26/2019	6.52	1021	192	1113	100	1
82	Original	6/20/2019	6.52	1033	249	1195	87	8
83	Original	6/14/2019	2.86	400	65	402	63	1
84	Original	7/10/2019	2.86	365	62	389	38	16
85	Original	7/10/2019	2.86	570	74	602	42	8
86	Original	7/10/2019	2.86	372	38	363	47	5
87	Original	6/14/2019	2.86	596	122	632	86	0
88	Original	7/3/2019	2.86	372	123	430	65	0
89	Original	6/21/2019	2.86	1667	204	1717	154	0
90	Original	6/14/2019	2.86	520	151	600	71	0
91	Original	7/3/2019	0.00	359	50	365	44	2
92	Original	7/3/2019	0.00	336	90	382	44	0
93	Original	7/11/2019	0.64	1382	396	1635	143	0
94	Original	7/19/2019	0.64	1171	344	1407	108	1
95	Original	7/24/2019	0.64	1635	384	1814	205	0
96	Original	7/19/2019	0.64	1238	420	1530	128	0
97	Original	7/8/2019	0.64	1745	516	2106	155	0
98	Original	7/19/2019	0.64	1212	278	1358	132	0
99	Original	7/8/2019	0.64	1025	364	1284	105	1
100	Original	7/11/2019	0.64	639	136	703	72	0
101	Original	6/12/2019	0.27	424	60	435	49	4
102	Original	7/19/2019	0.27	693	123	736	80	1
103	Original	7/8/2019	0.27	452	74	478	48	1
104	Alternate	7/11/2019	0.00	83	18	90	11	0
105	Original	6/12/2019	0.00	150	55	181	24	2
106	Original	6/12/2019	0.00	108	17	110	15	22
107	Original	6/27/2019	0.33	817	330	1049	98	5
108	Original	6/24/2019	0.33	767	346	1037	76	3
109	Original	6/27/2019	0.33	937	477	1320	94	4
110	Original	6/24/2019	0.33	659	320	916	63	2
111	Original	6/27/2019	0.33	1119	359	1368	110	6
112	Original	6/24/2019	0.13	203	46	204	45	4
113	Original	7/23/2019	0.13	363	71	392	42	0
114	Original	6/26/2019	0.13	313	51	321	43	0

Site ID	Site Type	Date Observed	Site Sample Weight	Number of Drivers	Number of front Passengers	Number of Occupants belted	Number of Occupants unbelted	Number of Occupants with unknown belt use
115	Original	7/2/2019	0.13	334	98	358	74	2
116	Original	6/26/2019	0.00	327	52	307	72	10
117	Original	7/2/2019	0.00	101	34	115	20	5
118	Original	6/26/2019	0.00	331	77	317	91	0
119	Original	7/11/2019	0.21	253	79	293	39	0
120	Original	7/17/2019	0.21	202	73	253	22	0
121	Original	7/11/2019	0.07	613	87	619	81	1
122	Original	7/17/2019	0.07	332	66	348	50	10
123	Original	7/17/2019	0.07	121	33	126	28	2
124	Original	7/11/2019	0.07	427	98	467	58	1
125	Original	7/1/2019	0.00	41	9	43	7	0
126	Original	7/1/2019	0.00	288	57	298	47	4
127	Original	7/19/2019	0.04	222	101	286	37	3
128	Original	6/21/2019	0.04	286	135	383	38	0
129	Original	6/21/2019	0.04	275	109	355	29	3
130	Original	7/19/2019	0.02	155	37	158	34	3
131	Original	6/21/2019	0.00	213	42	203	52	5
132	Original	7/19/2019	0.00	188	46	188	46	4
133	Original	6/5/2019	0.13	119	40	145	14	4
134	Original	6/13/2019	0.07	602	148	684	66	3
135	Original	7/8/2019	0.07	405	126	445	86	1
136	Original	6/14/2019	0.07	173	54	192	35	0
137	Original	6/13/2019	0.07	234	46	239	41	1
138	Original	7/8/2019	0.07	477	178	553	102	1
139	Original	6/14/2019	0.07	336	92	379	49	3
140	Original	6/13/2019	0.07	244	62	267	39	3
141	Original	6/5/2019	0.00	63	16	67	12	1
142	Original	6/14/2019	0.00	457	113	509	61	1
143	Original	7/8/2019	0.00	76	26	80	22	0
144	Original	6/5/2019	0.00	94	12	85	21	2
145	Original	6/28/2019	0.01	165	45	179	31	0
146	Original	6/28/2019	0.01	498	120	552	66	9
147	Original	7/2/2019	0.01	294	71	323	42	2
148	Original	7/2/2019	0.01	304	41	310	35	5
149	Original	7/2/2019	0.00	212	59	235	36	2
150	Original	6/28/2019	0.00	41	9	41	9	0
Totals				74373	18097	83755	8715	405

Appendix F.

Mini-Survey Data

County	Intersection Description	2011	2012	2013	2014	2015	2016	2017	2018	2019
Barren	I-65 at Exit 53	89	91	91	89	91	90	88	96	91
Meade	US 31W at KY 1638	82	85	88	88	89	88	88	91	88
Grayson	KY 259 at US 62	81	81	84	85	85	79	85	85	87
Logan	US 68X at KY 3240	81	79	84	83	82	86	83	83	87
Hopkins	I-69 at Exit 116	87	87	87	91	91	95	91	93	91
Henderson	Us 41A at 5th St.	83	84	85	85	88	80	88	90	90
Calloway	KY 1637 at 16th	79	82	82	85	88	88	85	90	89
Shelby	I-64 at Exit 28	86	89	88	93	95	94	93	97	93
Woodford	US 60 at US 62	89	84	94	93	89	93	88	94	90
Oldham	KY 146 at KY 329B	89	89	88	90	92	92	94	91	91
Franklin	KY 2820 at US 127	75	80	87	87	79	73	84	74	83
Kenton	I-75 at Exit 186	88	88	91	92	92	93	93	95	89
Jefferson	US 31W at KY 841	79	78	85	87	87	84	88	86	86
Boone	US 42 at US 25	84	87	86	87	88	91	88	88	89
Boyd	I-64 at Exit 185	85	86	84	90	91	85	88	91	91
Lincoln	US 27 at US 150	77	80	86	86	82	87	82	88	86
Carter	US 60 at KY 7	72	78	80	81	81	80	83	84	87
Floyd	KY 680 at KY 122	60	60	70	71	68	63	66	66	74
Rowan	I-64 at Exit 137	84	86	84	89	89	83	92	95	90
Laurel	US 25E at US 25	79	79	79	81	85	82	83	83	92
Pulaski	KY 80 at KY 39	76	84	79	81	85	88	84	90	84
		82.2	83.4	85.8	87.4	87.6	87.2	87.5	89.4	88.3