2021 Safety Belt Usage Survey in Kentucky

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1. 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 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 15 percent in 1982, before the enactment of the mandatory child restraint law, to about 30 percent from 1984 to 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 had minor revisions. 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 numerous 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 2021. This rate can be compared to those determined from previous surveys. The 2021 statewide survey documents the continued effect associated with law enforcement, related education, and general public attitude.

2. 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 with fatality rates 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 2021 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 the 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. There would be no sites with zero observations based on previous surveys, 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 VMT are given for each county. The six groupings of counties (based on VMT) are shown, and the number of sites in each county is 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.

District Number	County	Number of Sites
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

- Figure 1 shows the location of the counties included in the study.
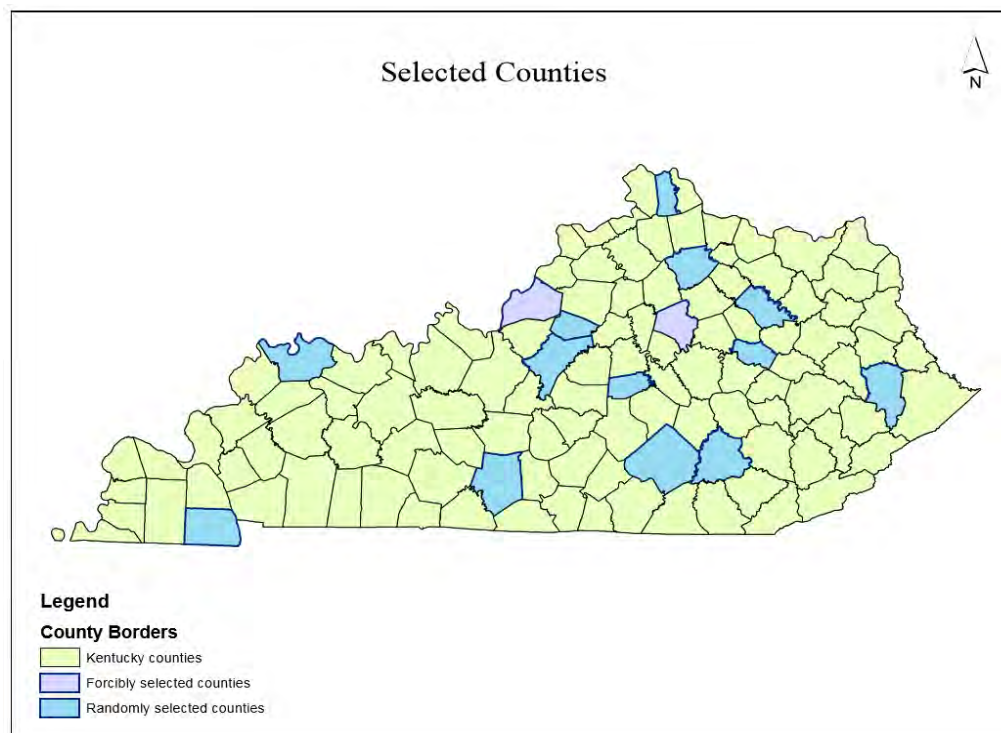
Figure 1 Map of Study Locations

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 to ensure 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) presents 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	

County	Sites Allocated	County VMT	Road Class Stratum	Road Class VMT	Number of Sites if Allocated by VMT	Adjusted Number of Sites	Adjusted Total
			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). The 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 3) 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 A1) 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, one alternate site was necessary. It was due to construction. The options for alternate sites are compiled in Table A2 of Appendix A, and the one required this year is 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 the data were gathered by one data collector in one direction of travel, whereas ½ hour was needed if there were two data collectors in 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 1 and August 13. 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 were collected through direct observation. Appendix B contains the form used to collect and record data. Data were 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)
  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:

- Passenger car (PC) (including commercial vehicles under 10,000 pounds)
- Pickup (PU)
- Van
- Sport utility vehicle (SUV)

Before starting data collection, data collectors were provided training on the data collection procedure. The classroom training included:

- An overview of the project
- Description of the data collection form and procedure
- Scheduling procedures
- Identification of survey sites (and alternatives)
- 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 three 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 traveled (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).

$$p_{i(j)k} = \sum_{l=1}^{n_{i(j)k}} p_{i(j)kl} \, / \, n_{i(j)k} \qquad \text{(Eq. 1)}$$

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:

$$p_{i(j)} = \frac{\sum_k VMT_{i(j)k} \, p_{i(j)k}}{\sum_k VMT_{i(j)k}} \qquad \text{(Eq. 2)}$$

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:

$$p_{(j)} = \frac{\sum_i VMT_{i(j)} \, W_{i(j)} \, p_{i(j)}}{\sum_i VMT_{i(j)} \, W_{i(j)}} \qquad \text{(Eq. 3)}$$

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:

$$W_{i(1)} = \frac{\sum_{L=1}^{x_m} VMT_{L(1)}}{VMT_{i(1)}} \qquad \text{(Eq. 4)}$$

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

<u>One county randomly selected from district and one county certainly selected (j = 2)</u>

Highway Districts 5 and 7:

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

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

Or for certainty counties:

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

<u>Two counties randomly selected from district (j = 3)</u>

Highway District 6 only:

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

where L is the Lth 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:

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

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 delete-1 jackknife approach, based on the general formula:

$$\hat{\sigma}_{\hat{p}} = [\frac{n-1}{n} \sum_{(i)=1}^{n} (\hat{p}_{(i)} - \hat{p})^2]^{\frac{1}{2}}$$

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. 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 2021, using the data collected at 150 sites and the described weighting procedure, was 89.78 percent. This is a small increase from 89.66 percent in 2019. The 95 percent confidence interval is 89.08 to 90.48, which has a margin of error of 0.70 percent. Standard error is 0.36 percent.

- The sample size of all front seat occupants was approximately 67,722. The statewide rate for drivers was 89.7 percent with a rate of 90.4 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	93.0	93.3	93.0
Arterials	89.1	89.7	89.2
Locals	85.8	87.9	86.1

- 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 at a rural, local location in Harrison County to 96.0 percent at an arterial in Kenton County. (From past experience, it is rare that the highest usage rate is on an arterial rather than a limited access road.) There were 72 sites that had a usage rate of 90 percent or more, with 45 on a limited access road, 23 on an arterial, and 4 on a local road.

- The highest unknown rate at any site was 7.3 percent. Only seven sites had unknown usage rates exceeding five percent. The average unknown rate from all sites is two 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 73.2 percent for pickup trucks on local roads to a high of 94.8 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 93.0 percent on limited access highways.

- For each road classification, the lowest usage rate was for pickups. On limited access roads, pickup trucks were the only vehicle type to have an average usage rate less than 90 percent.

Table 4 Usage Rate For Front-Seat Occupants (By Road Class And Vehicle Type)

Road Classification	Percent Usage by Vehicle Type				
	PC	PU	VAN	SUV	ALL
Limited Access	93.2	87.7	94.1	94.8	93.0
Arterials	89.3	81.6	91.2	93.0	89.2
Locals	87.2	73.2	89.5	91.4	86.1
All	**90.4**	**81.6**	**92.2**	**93.4**	**89.8**

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 92.1 percent in Kenton County to a low of 83.0 percent in Boyle County. The rate exceeded 90 percent in three counties and was never less than 80 percent for drivers or passengers.

- Harrison County had the second lowest usage rate (84.5 percent), while Pulaski County had the third lowest rate (85.5 percent). Last time this survey was performed, the three lowest performers were also Harrison, Boyle, and Pulaski counties.

- Fayette County had the second highest usage rate (92.0 percent), and Jefferson had the third highest rate (90.9 percent). This has been typical in past years and it accurately reflects the trend towards higher usage rates in urban counties.

- Ten counties saw increases in usage from 2019, while four decreased and one stayed the same. The counties that had a decrease in seatbelt usage are Bath, Jefferson, Pulaski, and Boyle.

Table 5 Usage Rate for Front-Seat Occupants (by County)

County	Percent Usage by Type		
	Drivers	Passengers	All
Barren	87.6	88.6	87.8
Bath	86.8	90.2	87.4
Powell	86.5	88.2	86.8
Spencer	88.7	88.2	88.7
Fayette	92.1	91.5	92.0
Jefferson	90.8	91.8	90.9
Kenton	92.3	90.8	92.1
Laurel	89.6	91.4	89.9
Pulaski	84.7	90.2	85.5
Boyle	83.3	80.4	83.0
Calloway	87.1	89.4	87.3
Floyd	87.4	87.9	87.5
Harrison	84.6	81.9	84.5
Henderson	89.4	93.7	90.0
Nelson	87.4	87.9	87.5
All	**89.7**	**90.4**	**89.8**

- Usage rates by county and vehicle type are presented in Table 6. These rates ranged from a high of 95.6 percent for SUVs in Harrison County to a low of 66.7 percent for pickup trucks in Boyle County. Historically, SUVs have

the highest usage rate and pickup trucks have the lowest usage rate. The usage rate for pickup trucks was less than 80 percent in nine 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	88.5	81.7	89.5	91.9	87.8
Bath	89.6	76.1	92.8	93.8	87.4
Powell	91.0	73.6	92.7	92.1	86.8
Spencer	89.4	79.3	95.8	93.1	88.7
Fayette	92.4	84.6	91.1	94.7	92.0
Jefferson	90.4	84.4	92.8	93.5	90.9
Kenton	92.9	83.9	91.9	95.3	92.1
Laurel	90.6	83.8	94.3	91.7	89.9
Pulaski	85.9	75.5	88.9	91.3	85.5
Boyle	86.6	66.7	85.1	90.9	83.0
Calloway	91.1	75.8	92.3	91.9	87.3
Floyd	88.9	79.1	89.3	91.8	87.5
Harrison	89.0	68.3	94.8	95.6	84.5
Henderson	91.6	81.8	95.7	94.3	90.0
Nelson	88.8	77.8	92.2	91.8	87.5
All	**90.4**	**81.6**	**92.2**	**93.4**	**89.8**

PC – Passenger Car; PU – Pickup; VAN – Van; SUV – Sport Utility Vehicle

- While the data collection procedure has changed several times, 2021 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 2021. Increased usage over the years is related to a combination of changes in safety belt legislation and increased enforcement and education.

Table 7 Historical Trends in Statewide Safety Belt Usage Rates

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	**
2021	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 2021 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 2021. The usage rate at the mini-survey locations in 2021 was 90.4 percent. This is an almost two percent increase from 2019, which shows consistency with the official survey results. Usage rates increased at sixteen locations and decreased at five locations.

4. Conclusions and Recommendations

- The data show that the level of safety belt usage in 2021 (89.78 percent) increased slightly from 2019 (89.66 percent). The highest usage rate since the surveys began was 89.99 percent in 2018, and the usage rate in 2021 remains close to that number.

- 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.

- As the state usage rate get higher, regular large increases like the ones seen in earlier years can no longer be expected. The seatbelt usage rate is probably subject to regression toward the mean and it seems to be hovering around 90 percent for the past several years.

- 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. Education campaigns focused on pickup drivers in rural areas should be considered.

- 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

Table A1 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	18850.5	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	2945.8	421277.7	0.006993
6	Barren	Secondary	US-31 E	U-Haul Dealer	2724.2	421277.7	0.006467
7	Barren	Secondary	US-31 E	Horton Rigdon Rd	3632.2	421277.7	0.008622
8	Barren	Local Road	Roseville Rd	Smith Cemetery Rd	707.8	396904.5	0.001783
9	Barren	Local Road	S Dixie Hwy	Whitney Woods Dr	523.6	396904.5	0.001319
10	Barren	Local Road	N Dixie Hwy	Caldwell St	1341.1	396904.5	0.003379
11	Bath	Primary	I-64	US 60 (Overpass)	57444.1	251211.4	0.228668
12	Bath	Primary	I-64	KY 36 (Overpass)	6152.1	251211.4	0.024490
13	Bath	Primary	I-64	Exit 123 (Ramp)	22634.8	251211.4	0.090102
14	Bath	Local Road	KY 11	Old Hwy 11	381.3	35489.11	0.010744
15	Bath	Local Road	KY 36	KY 36	1892.1	132871.3	0.014240
16	Bath	Local Road	US-60	Wyoming Rd	521.6	132871.3	0.003926
17	Boyle	Secondary	KY 34	Old Bridge Rd	5955.0	476737.5	0.012491
18	Boyle	Secondary	US-127	Lisa Ave	2842.6	476737.5	0.005963
19	Boyle	Secondary	US-127	Baughman Ave	1868.2	476737.5	0.003919
20	Boyle	Secondary	US-150 Bypass	N Stewarts Ln	4352.3	476737.5	0.009129
21	Boyle	Secondary	US-150	Beech St	5425.6	476737.5	0.011381
22	Boyle	Secondary	US-150 Bypass	Commerce St	1939.3	476737.5	0.004068
23	Boyle	Local Road	Simpson Ln	Old US 127	696.2	157288.2	0.004426
24	Boyle	Local Road	W Shelby St	S Lucas St	1022.2	157288.2	0.006499
25	Calloway	Secondary	KY 80 E	KY 80	881.5	380819.8	0.002315
26	Calloway	Secondary	KY 80 E	KY 80	844.2	380819.8	0.002217
27	Calloway	Secondary	N 12th St	Lowes Dr	8958.9	380819.8	0.023525
28	Calloway	Secondary	US 641 N	Wild Rose Salon	8018.8	380819.8	0.021057

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
29	Calloway	Local Road	Sycamore St	S 11th St	553.4	304866.9	0.001815
30	Calloway	Local Road	KY 94 W	J W Williams Ln	713.3	304866.9	0.002340
31	Calloway	Local Road	KY-121	Cook Store Trail	959.1	304866.9	0.003146
32	Calloway	Local Road	Chestnut St	N Cherry St	534.0	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
36	Fayette	Primary	I-75	US-25 (Overpass)	72503.3	2801261	0.025882
37	Fayette	Primary	I-75	KY-1973 (Overpass)	20751.8	2801261	0.007408
38	Fayette	Primary	KY-4	Development Dr (Overpass)	45217.1	2801261	0.016142
39	Fayette	Primary	KY-4	Alumni Dr (Overpass)	15101.7	2801261	0.005391
40	Fayette	Secondary	N Limestone	Rand Ave	636.2	2753762	0.000231
41	Fayette	Secondary	Clays Mill Rd	Beth Ln	1505.0	2753762	0.000547
42	Fayette	Secondary	Man O' War Blvd	Lyon Dr	6489.5	2753762	0.002357
43	Fayette	Secondary	Mason Headley Rd	Tazewell Dr	835.6	2753762	0.000303
44	Fayette	Secondary	KY-1974	Lansdowne Dr	1508.9	2753762	0.000548
45	Fayette	Secondary	KY-1974	Albany Rd	1989.0	2753762	0.000722
46	Fayette	Secondary	US-68	KY-3367	10162.6	2753762	0.003690
47	Fayette	Local Road	Greendale Rd	US-421	3279.1	1039477	0.003155
48	Fayette	Local Road	Armstrong Mill Rd	Kenesaw Dr	2690.5	1039477	0.002588
49	Floyd	Secondary	KY-80	Judge Dr	4185.8	683760.4	0.006122
50	Floyd	Secondary	KY-80	CR 1224	5679.1	683760.4	0.008306
51	Floyd	Secondary	KY-23	School St	3715.9	683760.4	0.005434
52	Floyd	Secondary	KY-23	Branhams Ct	3909.5	683760.4	0.005718
53	Floyd	Secondary	KY-23	KY-1428	14347.5	683760.4	0.020983
54	Floyd	Local Road	KY-680	Tackett Branch Rd	217.2	404708.6	0.000537
55	Floyd	Local Road	KY-680	KY-979	2328.0	404708.6	0.005752
56	Floyd	Local Road	KY-1428	Old Abbott Mountain Rd	1307.3	404708.6	0.003230
57	Harrison	Secondary	KY 36 E	Culpepper Dr	2035.1	199062.2	0.010223

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
58	Harrison	Secondary	KY 36 W	Hendricks Ln	3361.7	199062.2	0.016888
59	Harrison	Secondary	US 62 W	Grays Run Pike	1895.1	199062.2	0.009520
60	Harrison	Secondary	US 62 W	Wornall Ln	7878.8	199062.2	0.039580
61	Harrison	Local Road	N Church St	Reynolds Ave	185.1	111386.8	0.001662
62	Harrison	Local Road	KY 32 W	Lowery Ln	551.3	111386.8	0.004950
63	Henderson	Primary	Audubon Pkwy	KY-812 (Overpass)	33451.1	357914.7	0.093461
64	Henderson	Primary	Audubon Pkwy	Alves Ferry Rd (Overpass)	17474.7	357914.7	0.048824
65	Henderson	Primary	I-69	KY-425 (Overpass)	7824.5	357914.7	0.021861
66	Henderson	Secondary	KY-812	Sam Ball Way	2326.6	635720.2	0.003660
67	Henderson	Secondary	US-41 N	Race Track Rd	3856.1	635720.2	0.006066
68	Henderson	Secondary	US-60 W	6th St	851.6	635720.2	0.001340
69	Henderson	Secondary	US-60 W	Corydon Geneva Rd	6896.6	635720.2	0.010848
70	Henderson	Secondary	US-60 E	KY-414	1847.2	635720.2	0.002906
71	Henderson	Local Road	South Water St	Dixon St	37.6	222327.8	0.000169
72	Henderson	Local Road	KY-136 W	KY-266	1328.3	222327.8	0.005975
73	Jefferson	Primary	I-265	Greyling Dr (Overpass)	151548.4	8654640	0.017510
74	Jefferson	Primary	I-64	Payne St (Overpass)	37213.4	8654640	0.004300
75	Jefferson	Primary	I-64	Oxmoor Ave (Overpass)	88248.9	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)	51133.1	8654640	0.005908
79	Jefferson	Primary	I-264	KY-1703 (Overpass)	88238.5	8654640	0.010196
80	Jefferson	Primary	I-264	KY-1932 (Overpass)	64826.3	8654640	0.007490
81	Jefferson	Primary	I-264	US 42 (Overpass)	13745.0	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	2055.0	6831427	0.000301
84	Jefferson	Secondary	Six Mile Ln	KY-1747	1796.2	6831427	0.000263
85	Jefferson	Secondary	KY-1703	Tartan Way	4800.6	6831427	0.000703

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
86	Jefferson	Secondary	KY-1819	Mary Dell Ln	3609.7	6831427	0.000528
87	Jefferson	Secondary	KY-2052	Rangeland Rd	10117.0	6831427	0.001481
88	Jefferson	Secondary	US-31 W	KY-44	9369.7	6831427	0.001372
89	Jefferson	Secondary	US-60	Ten Pin Ln	3530.2	6831427	0.000517
90	Jefferson	Secondary	US-150	KY-61	2075.1	6831427	0.000304
91	Jefferson	Local Road	St Matthews Ave	Westport Rd	1260.4	1658821	0.000760
92	Jefferson	Local Road	Furman Blvd	Hikes Ln	567.1	1658821	0.000342
93	Kenton	Primary	I-75	Eads Rd (Overpass)	164573.8	2192346	0.075067
94	Kenton	Primary	I-75	KY 18 (Overpass)	87747.6	2192346	0.040025
95	Kenton	Primary	I-75	KY-1072 (Overpass)	135206.0	2192346	0.061672
96	Kenton	Primary	I-75	KY-371 (Overpass)	51533.7	2192346	0.023506
97	Kenton	Primary	I-75	US-25 (Overpass)	50514.1	2192346	0.023041
98	Kenton	Primary	I-275	Taylor Mill Rd (Overpass)	69352.6	2192346	0.031634
99	Kenton	Primary	I-275	KY-1303 (Overpass)	117457.1	2192346	0.053576
100	Kenton	Primary	I-275	Hulbert Ave (Overpass)	59111.2	2192346	0.026900
101	Kenton	Secondary	KY-16	Mills Rd	1150.9	788788.6	0.001459
102	Kenton	Secondary	US-25	Highland Ave	625.5	788788.6	0.000793
103	Kenton	Secondary	US-25	KY-1072	2819.1	788788.6	0.003574
104	Kenton	Local Road	Fowler Creek Rd	Cox Rd	559.5	756715.5	0.000739
105	Kenton	Local Road	Chancellor Dr	Thomas More Pkwy	185.5	756715.5	0.000245
106	Kenton	Local Road	Madison Pike	Spinning Wheel Tavern	3716.0	756715.5	0.004911
107	Laurel	Primary	I-75	Keavy Rd	30390.9	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	1360.1	691207	0.001968
113	Laurel	Secondary	Russell Dyche Memorial Hwy	Warren Grove Rd	6930.7	691207	0.010027

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
114	Laurel	Secondary	S US Highway 25	Victory Community Church of Corbin	2537.5	691207	0.003671
115	Laurel	Secondary	S US Highway 25	Fariston Rd	4188.8	691207	0.006060
116	Laurel	Local Road	W Laurel Rd	Dogwood Trail	3835.3	602346.1	0.006367
117	Laurel	Local Road	Keavy Rd	Maple Grove School Rd	1805.8	602346.1	0.002998
118	Laurel	Local Road	Cherry Ave	Super Car Wash Center	758.6	602346.1	0.001259
119	Nelson	Primary	Martha Layne Collins-Bluegrass Pkwy	KY-55	18157.0	328794.7	0.055223
120	Nelson	Primary	Martha Layne Collins-Bluegrass Pkwy	Old Tunnell Mill Rd	7256.4	328794.7	0.022070
121	Nelson	Secondary	John Rowan Blvd	Ben Frye Ave	17263.3	529677.9	0.032592
122	Nelson	Secondary	New Shepherdsville Rd	Samuels Loop	13839.1	529677.9	0.026127
123	Nelson	Secondary	New Haven Rd	Culverton Schoolhouse Rd	4899.5	529677.9	0.009250
124	Nelson	Secondary	North Third St	E Stephen Foster Ave (Roundabout)	859.9	529677.9	0.001623
125	Nelson	Local Road	Stonehouse Rd	Stonefield Way	194.2	290779	0.000668
126	Nelson	Local Road	Woodlawn Rd	CR-1522	382.4	290779	0.001315
127	Powell	Primary	Bert T Combs-Mountain Pkwy	KY 15 (Overpass)	25115.7	229383.7	0.109492
128	Powell	Primary	Bert T Combs-Mountain Pkwy	Campton Rd	19471.2	229383.7	0.084885
129	Powell	Primary	Bert T Combs-Mountain Pkwy	Campton Rd	8309.7	229383.7	0.036226
130	Powell	Secondary	Stanton Rd	Hatton Creek Rd	5381.7	60491.68	0.088965
131	Powell	Local Road	E College Ave	Ewen St	1097.4	110751.3	0.009908
132	Powell	Local Road	Irvine Rd	Powell Rd	630.0	110751.3	0.005689
133	Pulaski	Primary	Louie B Nunn Pkwy	KY-914	25871.9	107180.1	0.241387
134	Pulaski	Secondary	KY-80	N Main St	2310.5	965178.5	0.002394
135	Pulaski	Secondary	KY-90	Old Hwy 90 Loop 2 Rd	1070.0	965178.5	0.001109
136	Pulaski	Secondary	KY-1247	George Harrison Rd	1815.6	965178.5	0.001881
137	Pulaski	Secondary	US-27	CR-1281J	1677.5	965178.5	0.001738
138	Pulaski	Secondary	US-27	KY-1247	5074.9	965178.5	0.005258
139	Pulaski	Secondary	US-27	W Langdon Rd	2531.8	965178.5	0.002623
140	Pulaski	Secondary	US-27	Rosemill Ln	1869.9	965178.5	0.001937

Site	County	Road Type	Road Surveyed	Reference	VMT	County VMT	Probability of Selection
141	Pulaski	Local Road	McKee Rd	US-27	215.2	537857.5	0.000400
142	Pulaski	Local Road	E. Washington Dr	US-27	544.9	537857.5	0.001013
143	Pulaski	Local Road	KY-39	KY-635	1288.4	537857.5	0.002396
144	Pulaski	Local Road	KY-80	Cains Store Cemetary Road	1405.1	537857.5	0.002612
145	Spencer	Secondary	Mt. Washington Rd	Hardesty Ridge Rd	1398.6	171667.3	0.008147
146	Spencer	Secondary	Taylorsville Rd	Ashland Meadows Dr	4734.5	171667.3	0.027579
147	Spencer	Secondary	Taylorsville Rd	Goebel Rd	540.6	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	1446.8	118189.7	0.012242
150	Spencer	Local Road	Elk Creek Rd	Essex Way	198.8	118189.7	0.001682

Table A2 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 13th 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	2nd 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 5th 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	11th St	10th 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

Sites by Road Class

Seatbelt Sites
Road Class
- Primary
- Secondary
- Local

0   37.5   75   150 Miles
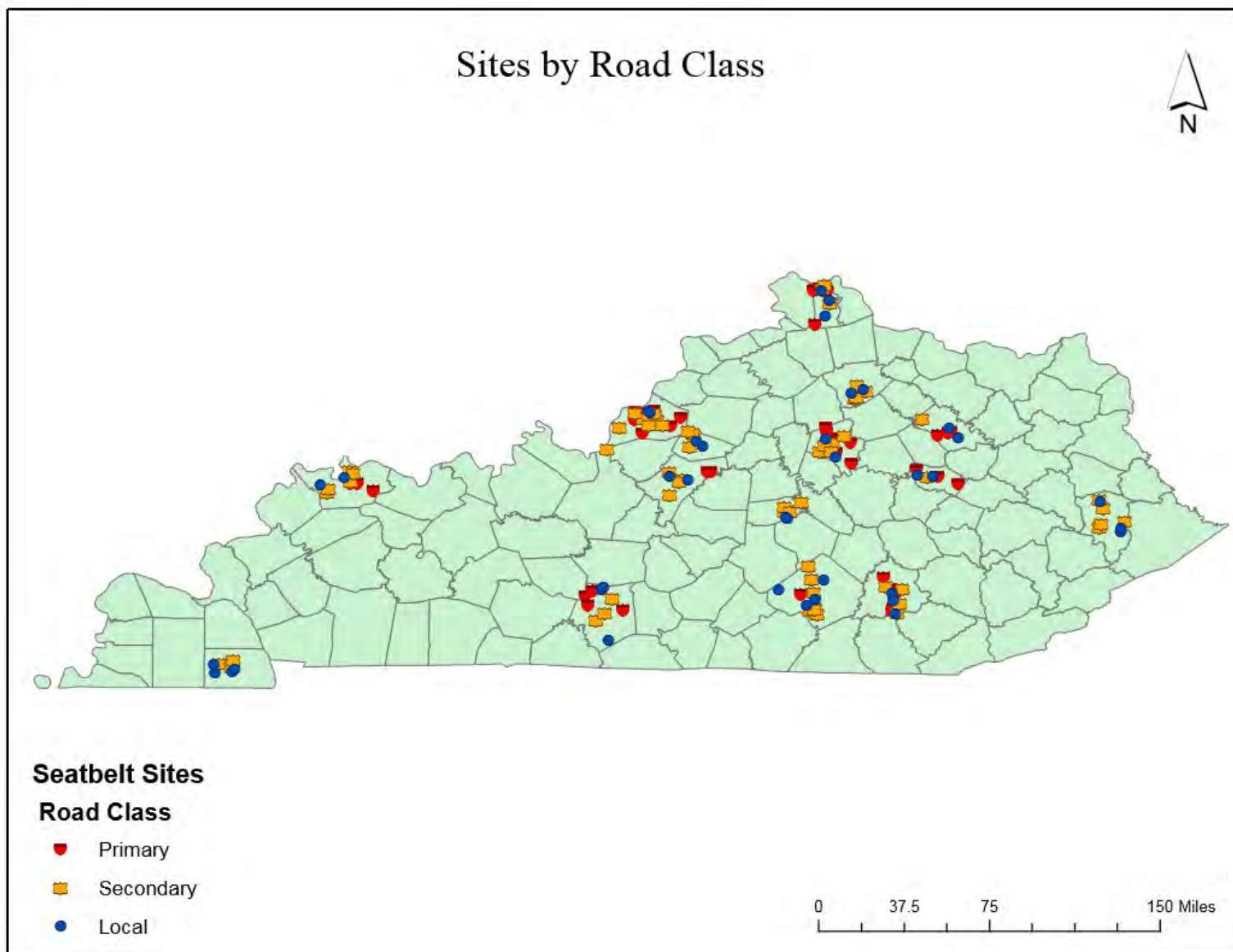
Appendix D Summary of Data (by Site)

| All Front Seat Occupants | | | | | | Category | | | |
| | | | | | | Drivers | | Front Seat Passengers | |
Location Number	Sample	Percent Usage	Relative Error (%)*	Margin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
1	579	94.1	1	1.9	1	453	94.9	126	91.3
2	774	93.9	0.9	1.7	1.3	545	94.3	229	93
3	284	91.9	1.8	3.2	2.4	228	91.2	56	94.6
4	165	87.9	2.9	5	2.4	132	90.2	33	78.8
5	158	84.8	3.4	5.6	2.5	122	82.8	36	91.7
6	589	86.9	1.6	2.7	2.3	482	87.1	107	86
7	171	88.9	2.7	4.7	3.9	144	88.2	27	92.6
8	57	82.5	6.1	9.9	5	45	82.2	12	83.3
9	419	83.8	2.2	3.5	1.2	348	83.6	71	84.5
10	331	85.2	2.3	3.8	2.4	278	84.2	53	90.6
11	582	90.9	1.3	2.3	1.4	449	91.3	133	89.5
12	497	93	1.2	2.2	0.8	399	92.2	98	95.9
13	496	93.3	1.2	2.2	0.8	393	93.4	103	93.2
14	207	84.5	3	4.9	3.3	178	83.1	29	93.1
15	80	77.5	6	9.2	5.9	63	76.2	17	82.4
16	179	79.9	3.8	5.9	3.2	150	78.7	29	86.2
17	517	87.4	1.7	2.9	0	459	87.4	58	87.9
18	681	82.5	1.8	2.9	1.2	578	82.2	103	84.5
19	825	86.5	1.4	2.3	3.7	709	87.7	116	79.3
20	621	85.2	1.7	2.8	1.7	566	85.3	55	83.6
21	350	82.6	2.5	4	1.4	323	83.6	27	70.4
22	422	88.4	1.8	3.1	0.7	363	88.2	59	89.8
23	143	76.2	4.7	7	5.3	110	76.4	33	75.8
24	166	74.7	4.5	6.6	5.7	127	75.6	39	71.8
25	168	89.3	2.7	4.7	2.3	150	90	18	83.3
26	192	91.1	2.2	4	4.5	161	91.3	31	90.3
27	653	90.5	1.3	2.2	0.8	555	89.5	98	95.9

Location Number	Sample	Percent Usage	Relative Error (%)*	Martin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
28	366	89.9	1.8	3.1	1.6	323	90.4	43	86
29	289	87.2	2.3	3.9	2.7	238	87	51	88.2
30	167	82.6	3.5	5.7	4.6	154	81.2	13	100
31	90	82.2	4.9	7.9	3.2	72	81.9	18	83.3
32	172	82.6	3.5	5.7	3.9	155	81.9	17	88.2
33	767	93.9	0.9	1.7	1.2	610	93.3	157	96.2
34	1075	95.3	0.7	1.3	0.5	873	95.8	202	93.6
35	1288	92.4	0.8	1.4	1.2	987	92	301	93.7
36	1131	94	0.8	1.4	0.5	893	93.4	238	96.2
37	922	94	0.8	1.5	0.6	668	93.9	254	94.5
38	723	90	1.2	2.2	1.2	620	91	103	84.5
39	849	93.3	0.9	1.7	1.2	734	93.2	115	93.9
40	262	86.6	2.4	4.1	2.6	227	86.3	35	88.6
41	570	93.9	1.1	2	1.2	517	93.6	53	96.2
42	235	92.3	1.9	3.4	2.5	211	91.9	24	95.8
43	269	90.7	2	3.5	1.1	237	92.8	32	75
44	560	94.8	1	1.8	0.4	492	94.9	68	94.1
45	482	93.8	1.2	2.2	1.6	442	93.9	40	92.5
46	401	92	1.5	2.7	2	357	91.6	44	95.5
47	710	90.4	1.2	2.2	1.8	633	90.2	77	92.2
48	160	86.9	3.1	5.2	1.8	135	87.4	25	84
49	261	88.1	2.3	3.9	2.6	194	89.2	67	85.1
50	276	92.4	1.7	3.1	1.1	224	90.6	52	100
51	360	85.8	2.1	3.6	1.9	293	86	67	85.1
52	465	93.3	1.2	2.3	0	394	92.9	71	95.8
53	321	88.8	2	3.5	2.1	274	90.1	47	80.9
54	110	78.2	5	7.7	3.5	90	78.9	20	75
55	127	87.4	3.4	5.8	3.8	103	86.4	24	91.7
56	251	85.7	2.6	4.3	3.5	204	84.8	47	89.4

Location Number	Sample	Percent Usage	Relative Error (%)*	Martin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
57	88	87.5	4	6.9	3.3	70	85.7	18	94.4
58	95	83.2	4.6	7.5	0	81	84	14	78.6
59	148	88.5	3	5.1	1.3	125	87.2	23	95.7
60	177	88.1	2.8	4.8	3.3	152	88.2	25	88
61	81	86.4	4.4	7.5	1.2	72	88.9	9	66.7
62	50	74	8.4	12.2	3.8	43	74.4	7	71.4
63	205	92.7	2	3.6	1.9	170	91.8	35	97.1
64	325	93.2	1.5	2.7	4.1	242	93.4	83	92.8
65	330	93	1.5	2.7	2.4	247	91.5	83	97.6
66	178	87.6	2.8	4.8	1.7	162	87	16	93.8
67	666	92.2	1.1	2	0.6	589	91.5	77	97.4
68	263	86.7	2.4	4.1	2.6	205	86.8	58	86.2
69	350	86.9	2.1	3.5	2.2	313	85.9	37	94.6
70	313	90.7	1.8	3.2	2.8	268	91	45	88.9
71	223	90.1	2.2	3.9	1.8	205	90.2	18	88.9
72	105	86.7	3.8	6.5	7.1	91	84.6	14	100
73	708	91.4	1.2	2.1	1.5	587	90.5	121	95.9
74	1051	93.2	0.8	1.5	1	965	92.8	86	97.7
75	1405	92.6	0.8	1.4	0.6	1226	92.3	179	94.4
76	1059	93.5	0.8	1.5	0.5	915	93.8	144	91.7
77	999	93.7	0.8	1.5	1	799	93.6	200	94
78	1132	92.2	0.9	1.6	0	883	94.2	249	85.1
79	1130	93.3	0.8	1.5	0.7	1016	93.4	114	92.1
80	1182	92.6	0.8	1.5	0.7	1027	92.5	155	93.5
81	731	94.9	0.9	1.6	1.3	668	94.9	63	95.2
82	709	93.1	1	1.9	0.8	621	92.8	88	95.5
83	370	87.3	2	3.4	2.1	323	87	47	89.4
84	219	91.3	2.1	3.7	2.2	190	90.5	29	96.6
85	459	94.6	1.1	2.1	1.3	399	94	60	98.3

Location Number	Sample	Percent Usage	Relative Error (%)*	Martin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
86	340	86.5	2.1	3.6	2.9	306	85.6	34	94.1
87	427	87.8	1.8	3.1	2.1	379	88.1	48	85.4
88	339	92	1.6	2.9	3.1	302	91.7	37	94.6
89	748	89.7	1.2	2.2	1.1	648	90	100	88
90	353	80.7	2.6	4.1	0.6	303	81.8	50	74
91	584	90.1	1.4	2.4	0.7	531	90	53	90.6
92	324	87	2.1	3.7	2.7	288	86.8	36	88.9
93	1298	93.4	0.7	1.4	0.5	982	94.8	316	88.9
94	1043	93.2	0.8	1.5	0.7	844	93.6	199	91.5
95	990	93.2	0.9	1.6	0.4	815	93	175	94.3
96	1192	91.4	0.9	1.6	0.8	903	90.9	289	92.7
97	1118	93.9	0.8	1.4	0.6	928	94.4	190	91.6
98	1082	91.3	0.9	1.7	0.7	869	90.7	213	93.9
99	1279	94.4	0.7	1.3	0.9	1115	94	164	97.6
100	677	92.5	1.1	2	0.1	570	92.6	107	91.6
101	441	90.2	1.6	2.8	0.7	347	90.8	94	88.3
102	620	96	0.8	1.5	1.4	539	96.3	81	93.8
103	691	93.3	1	1.9	0.7	609	93.9	82	89
104	138	87	3.3	5.6	1.4	119	88.2	19	78.9
105	146	89	2.9	5.1	2.7	118	89	28	89.3
106	166	89.2	2.7	4.7	2.9	140	89.3	26	88.5
107	678	93.8	1	1.8	1.2	493	94.1	185	93
108	1008	93.6	0.8	1.5	0.7	717	93.4	291	93.8
109	742	92.9	1	1.9	1.6	549	92.3	193	94.3
110	737	94	0.9	1.7	0.4	581	94.1	156	93.6
111	678	92.5	1.1	2	0.6	563	91.8	115	95.7
112	182	86.3	3	5	5.7	148	86.5	34	85.3
113	403	90.3	1.6	2.9	0	331	90.3	72	90.3
114	292	92.1	1.7	3.1	0	264	91.3	28	100

Location Number	Sample	Percent Usage	Relative Error (%)*	Martin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
115	328	89.9	1.8	3.3	2.1	277	89.2	51	94.1
116	245	88.6	2.3	4	0.8	197	88.3	48	89.6
117	232	86.6	2.6	4.4	2.5	205	86.8	27	85.2
118	360	78.1	2.8	4.3	2.2	289	76.8	71	83.1
119	338	91.1	1.7	3	1.5	241	92.5	97	87.6
120	250	93.2	1.7	3.1	4.2	203	92.1	47	97.9
121	649	89.4	1.4	2.4	0.8	587	89.3	62	90.3
122	291	89.3	2	3.5	3	247	89.1	44	90.9
123	205	79.5	3.5	5.5	3.8	191	80.1	14	71.4
124	335	86.9	2.1	3.6	0	254	86.6	81	87.7
125	51	82.4	6.5	10.5	7.3	43	83.7	8	75
126	180	86.7	2.9	5	0	154	84.4	26	100
127	259	91.1	1.9	3.5	0	194	91.8	65	89.2
128	317	91.5	1.7	3.1	3.4	240	90.4	77	94.8
129	234	91.5	2	3.6	3.7	183	90.7	51	94.1
130	212	80.7	3.4	5.3	1.9	177	80.8	35	80
131	187	81.3	3.5	5.6	4.1	163	80.4	24	87.5
132	274	80.3	3	4.7	1.1	217	80.6	57	78.9
133	179	91.1	2.3	4.2	3.2	151	91.4	28	89.3
134	617	92.2	1.2	2.1	4	509	92.3	108	91.7
135	286	85.7	2.4	4.1	2.7	236	85.2	50	88
136	150	86	3.3	5.6	3.2	122	84.4	28	92.9
137	243	82.7	2.9	4.8	1.6	203	82.8	40	82.5
138	345	83.5	2.4	3.9	1.7	269	83.3	76	84.2
139	282	87.9	2.2	3.8	2.4	218	87.6	64	89.1
140	192	83.9	3.2	5.2	2.5	162	85.2	30	76.7
141	73	86.3	4.7	7.9	1.4	66	84.8	7	100
142	249	86.3	2.5	4.3	1.2	205	85.9	44	88.6
143	145	84.1	3.6	5.9	4.6	125	81.6	20	100

Location Number	Sample	Percent Usage	Relative Error (%)*	Martin of Error (%)*	Percent Unknown	Sample	Percent Usage	Sample	Percent Usage
144	125	76.8	4.9	7.4	5.3	108	73.1	17	100
145	166	89.2	2.7	4.7	4	139	88.5	27	92.6
146	522	91.2	1.4	2.4	1.1	485	91.1	37	91.9
147	248	89.1	2.2	3.9	2	226	89.8	22	81.8
148	253	89.3	2.2	3.8	1.6	229	89.1	24	91.7
149	253	90.1	2.1	3.7	2.3	198	89.4	55	92.7
150	52	84.6	5.9	9.8	1.9	47	85.1	5	80

*$\alpha = 0.05$

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 w/ Unknown Belt Use
1	Original	7/21/21	0.14	459	126	545	34	6
2	Original	7/7/21	0.14	555	229	727	47	10
3	Original	7/21/21	0.14	235	56	261	23	7
4	Original	7/7/21	0.14	136	33	145	20	4
5	Original	7/21/21	0.07	126	36	134	24	4
6	Original	7/7/21	0.07	496	107	512	77	14
7	Original	7/7/21	0.07	151	27	152	19	7
8	Original	6/28/21	0	48	12	47	10	3
9	Original	8/2/21	0	353	71	351	68	5
10	Original	6/28/21	0	286	53	282	49	8
11	Original	7/22/21	0.05	457	133	529	53	8
12	Original	7/22/21	0.05	403	98	462	35	4
13	Original	7/22/21	0.05	397	103	463	33	4
14	Original	6/30/21	0.01	185	29	175	32	7
15	Original	8/5/21	0	68	17	62	18	5
16	Original	6/30/21	0	156	29	143	36	6
17	Original	6/24/21	0.02	459	58	452	65	0
18	Original	6/14/21	0.02	586	103	562	119	8
19	Original	7/19/21	0.02	741	116	714	111	32
20	Original	6/14/21	0.02	577	55	529	92	11
21	Original	8/9/21	0.02	328	27	289	61	5
22	Original	6/14/21	0.02	366	59	373	49	3
23	Original	7/19/21	0	118	33	109	34	8
24	Original	7/19/21	0	137	39	124	42	10
25	Original	6/10/21	0.03	154	18	150	18	4
26	Original	7/6/21	0.03	170	31	175	17	9
27	Original	6/14/21	0.03	560	98	591	62	5

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 w/ Unknown Belt Use
28	Original	6/10/21	0.03	329	43	329	37	6
29	Original	7/6/21	0	246	51	252	37	8
30	Original	6/14/21	0	162	13	138	29	8
31	Original	6/29/21	0	75	18	74	16	3
32	Original	8/11/21	0	162	17	142	30	7
33	Original	8/6/21	1.45	619	157	720	47	9
34	Original	6/7/21	1.45	878	202	1025	50	5
35	Original	6/10/21	1.45	1002	302	1190	98	16
36	Original	6/7/21	1.45	899	238	1063	68	6
37	Original	7/13/21	1.45	674	254	867	55	6
38	Original	7/15/21	1.45	629	103	651	72	9
39	Original	6/7/21	1.45	744	115	792	57	10
40	Original	6/10/21	0.63	234	35	227	35	7
41	Original	7/13/21	0.63	524	53	535	35	7
42	Original	6/7/21	0.63	217	24	217	18	6
43	Original	6/11/21	0.63	240	32	244	25	3
44	Original	7/13/21	0.63	494	68	531	29	2
45	Original	6/7/21	0.63	450	40	452	30	8
46	Original	6/7/21	0.63	365	44	369	32	8
47	Original	6/10/21	0	646	77	642	68	13
48	Original	7/15/21	0	138	25	139	21	3
49	Original	7/20/21	0.07	201	67	230	31	7
50	Original	7/28/21	0.07	227	52	255	21	3
51	Original	7/20/21	0.07	300	67	309	51	7
52	Original	7/28/21	0.07	394	71	434	31	0
53	Original	7/20/21	0.07	281	47	285	36	7
54	Original	8/5/21	0	94	20	86	24	4

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 w/ Unknown Belt Use
55	Original	7/27/21	0	108	24	111	16	5
56	Original	7/22/21	0	213	47	215	36	9
57	Original	7/19/21	0.01	73	18	77	11	3
58	Original	8/16/21	0.01	81	14	79	16	0
59	Original	7/19/21	0.01	127	23	131	17	2
60	Original	7/19/21	0.01	158	25	156	21	6
61	Original	8/16/21	0	73	9	70	11	1
62	Original	8/6/21	0	45	7	37	13	2
63	Original	6/15/21	0.13	174	35	190	15	4
64	Original	7/8/21	0.13	256	83	303	22	14
65	Original	7/19/21	0.13	255	83	307	23	8
66	Original	7/12/21	0.06	165	16	156	22	3
67	Original	6/15/21	0.06	593	77	614	52	4
68	Original	7/8/21	0.06	211	59	228	35	7
69	Original	6/22/21	0.06	321	37	304	46	8
70	Original	7/19/21	0.06	277	45	284	29	9
71	Original	7/12/21	0	209	18	201	22	4
72	Original	6/22/21	0	99	14	91	14	8
73	Original	6/17/21	6.52	597	122	647	61	11
74	Original	7/14/21	6.52	976	86	980	71	11
75	Original	6/28/21	6.52	1235	179	1301	104	9
76	Original	7/28/21	6.52	920	144	990	69	5
77	Original	6/17/21	6.52	809	200	936	63	10
78	Original	6/23/21	6.52	883	249	1044	88	0
79	Original	7/14/21	6.52	1024	114	1054	76	8
80	Original	6/28/21	6.52	1035	155	1095	87	8
81	Original	7/28/21	6.52	678	63	694	37	10

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 w/ Unknown Belt Use
82	Original	6/17/21	6.52	627	88	660	49	6
83	Original	7/28/21	2.86	331	47	323	47	8
84	Original	7/28/21	2.86	195	29	200	19	5
85	Original	7/14/21	2.86	405	60	434	25	6
86	Original	6/17/21	2.86	316	34	294	46	10
87	Original	7/28/21	2.86	388	48	375	52	9
88	Original	6/23/21	2.86	313	37	312	27	11
89	Original	6/28/21	2.86	656	100	671	77	8
90	Original	7/19/21	2.86	305	50	285	68	2
91	Original	6/23/21	0	535	53	526	58	4
92	Original	8/2/21	0	297	36	282	42	9
93	Original	6/17/21	0.64	988	316	1212	86	6
94	Original	6/9/21	0.64	851	199	972	71	7
95	Original	6/30/21	0.64	819	175	923	67	4
96	Original	6/9/21	0.64	913	289	1089	103	10
97	Original	6/30/21	0.64	935	190	1050	68	7
98	Original	6/9/21	0.64	877	213	988	94	8
99	Original	6/30/21	0.64	1126	164	1208	71	11
100	Original	7/27/21	0.64	571	107	626	51	1
101	Original	6/17/21	0.27	350	94	398	43	3
102	Original	7/27/21	0.27	548	81	595	25	9
103	Original	6/30/21	0.27	614	82	645	46	5
104	Original	6/17/21	0	121	19	120	18	2
105	Original	6/21/21	0	121	29	130	16	4
106	Original	6/21/21	0	145	26	148	18	5
107	Original	6/29/21	0.33	501	185	636	42	8
108	Original	7/12/21	0.33	724	291	943	65	7

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 w/ Unknown Belt Use
109	Original	6/29/21	0.33	561	193	689	53	12
110	Original	7/12/21	0.33	583	157	693	44	3
111	Alternate	6/29/21	0.33	567	115	627	51	4
112	Original	7/12/21	0.13	159	34	157	25	11
113	Original	7/29/21	0.13	331	72	364	39	0
114	Original	7/29/21	0.13	264	28	269	23	0
115	Original	7/26/21	0.13	284	51	295	33	7
116	Original	7/20/21	0	199	48	217	28	2
117	Original	7/26/21	0	211	27	201	31	6
118	Original	8/13/21	0	297	71	281	79	8
119	Original	6/8/21	0.21	246	97	308	30	5
120	Original	6/23/21	0.21	214	47	233	17	11
121	Original	6/9/21	0.07	592	62	580	69	5
122	Original	6/23/21	0.07	256	44	260	31	9
123	Original	8/10/21	0.07	199	14	163	42	8
124	Original	7/21/21	0.07	254	81	291	44	0
125	Original	7/21/21	0	47	8	42	9	4
126	Original	7/21/21	0	154	26	156	24	0
127	Original	6/24/21	0.04	194	65	236	23	0
128	Original	6/21/21	0.04	251	77	290	27	11
129	Original	6/21/21	0.04	192	51	214	20	9
130	Original	6/24/21	0.02	181	35	171	41	4
131	Original	7/26/21	0	171	24	152	35	8
132	Original	6/24/21	0	220	57	220	54	3
133	Original	8/12/21	0.13	157	28	163	16	6
134	Original	8/12/21	0.07	535	108	569	48	26
135	Original	7/13/21	0.07	244	50	245	41	8

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 w/ Unknown Belt Use
136	Original	8/9/21	0.07	127	28	129	21	5
137	Original	6/22/21	0.07	207	40	201	42	4
138	Original	7/13/21	0.07	275	76	288	57	6
139	Original	8/9/21	0.07	225	64	248	34	7
140	Original	6/22/21	0.07	167	30	161	31	5
141	Original	6/9/21	0	67	7	63	10	1
142	Original	6/9/21	0	208	44	215	34	3
143	Original	6/15/21	0	132	20	122	23	7
144	Original	6/15/21	0	115	17	96	29	7
145	Original	6/16/21	0.01	146	27	148	18	7
146	Original	6/16/21	0.01	491	37	476	46	6
147	Original	7/15/21	0.01	231	22	221	27	5
148	Original	7/15/21	0.01	233	24	226	27	4
149	Original	7/23/21	0	204	55	228	25	6
150	Original	6/16/21	0	48	5	44	8	1
Totals				56,537	11,185	60,548	6,211	963

Appendix F Mini-Survey Data

County	Intersection Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2021
Barren	I-65 at Exit 53	89	91	91	89	91	90	88	96	91	96
Meade	US 31W at KY 1638	82	85	88	88	89	88	88	91	88	90
Grayson	KY 259 at US 62	81	81	84	85	85	79	85	85	87	85
Logan	US 68X at KY 3240	81	79	84	83	82	86	83	83	87	88
Hopkins	I-69 at Exit 116	87	87	87	91	91	95	91	93	91	94
Henderson	Us 41A at 5th St.	83	84	85	85	88	80	88	90	90	90
Calloway	KY 1637 at 16th	79	82	82	85	88	88	85	90	89	91
Shelby	I-64 at Exit 28	86	89	88	93	95	94	93	97	93	95
Woodford	US 60 at US 62	89	84	94	93	89	93	88	94	90	87
Oldham	KY 146 at KY 329B	89	89	88	90	92	92	94	91	91	94
Franklin	KY 2820 at US 127	75	80	87	87	79	73	84	74	83	86
Kenton	I-75 at Exit 186	88	88	91	92	92	93	93	95	89	94
Jefferson	US 31W at KY 841	79	78	85	87	87	84	88	86	86	86
Boone	US 42 at US 25	84	87	86	87	88	91	88	88	89	94
Boyd	I-64 at Exit 185	85	86	84	90	91	85	88	91	91	87
Lincoln	US 27 at US 150	77	80	86	86	82	87	82	88	86	87
Carter	US 60 at KY 7	72	78	80	81	81	80	83	84	87	88
Floyd	KY 680 at KY 122	60	60	70	71	68	63	66	66	74	85
Rowan	I-64 at Exit 137	84	86	84	89	89	83	92	95	90	93
Laurel	US 25E at US 25	79	79	79	81	85	82	83	83	92	92
Pulaski	KY 80 at KY 39	76	84	79	81	85	88	84	90	84	89
		82.2	83.4	85.8	87.4	87.6	87.2	87.5	89.4	88.3	90.4