Safety Belt Use
in West Virginia, 2012

Division of Motor Vehicles
West Virginia Department of Transportation

CLICK IT OR TICKET

MSCJRS, LLC

Mountain State Criminal Justice Research Services

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About MSCJRS…

Mountain State Criminal Justice Research Services (MSCJRS) is a private research company that conducts criminal justice and social science research and offers consultation, training, and grant-writing services to government agencies, nonprofit institutions, and private businesses. MSCJRS seeks to improve policy and practice through research and analysis and provides consultation to governmental and nongovernmental entities in the areas of grant-writing and program development.

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Introduction

Traffic crashes are a leading cause of death for both adults and children in the United States (National Highway Traffic Safety Association, 2007a). Yet, while research shows that some of these traffic crash fatalities could be prevented, many passenger vehicle occupants still do not "buckle up" prior to traveling on our nation's roadways. In 2006, the NHTSA found that of the 28,141 passenger vehicle occupant fatalities for which restraint use was known, an estimated 15,523 (55%) were *not* wearing a seat belt at the time of the incident (Glassbrenner and Ye, 2007).

Research clearly indicates that increasing the use of safety belts has tremendous potential for saving lives, preventing injuries and reducing the economic costs associated with crashes (NHTSA, 2005). Research has found that lap/shoulder seat belts, when used, can reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent (NHTSA, 2005). Given that research has shown that increasing the use of seat belts can save lives, many states have eagerly participated in a targeted campaign, "Click It or Ticket", to educate the public and ticket vehicle occupants for not using safety belts.

The "Click It or Ticket" campaign is identified as one of the most successful seat belt enforcement campaigns ever, according to NHTSA, and is credited with helping to produce some of the highest seat belt usage rates in the country. Based on NHTSA's National Occupant Protection Use Survey (NOPUS), the seat belt use rate nationwide was 81.0% in 2006, up from 58.0% in 1994 and 71.0% in 2000 (NHTSA, 2007b). As part of West Virginia's efforts to improve highway safety, the Governor's Highway Safety Program (GHSP) has participated in the national "Click It or Ticket" campaign and maintained efforts to monitor safety belt use in the state.

As a result of the GHSP's efforts, the rate of safety belt use in the state increased each year between 2000 and 2008. In 2009, however, the WV seatbelt rate declined slightly for the first time in nearly a decade by 2.5%. This was followed by a much sharper decline in 2010. The safety belt use rate declined by 4.9% compared to the year prior, and 7.5% from the 2007 peak. Nonetheless, WV's safety belt use rate has exceeded the national average for 2006 of 81.0% over the past six consecutive years. In 2005, WV's safety belt use rate was 84.9%. By 2007, the safety belt use rate in WV reached its highest level ever at 89.6%, up from 49.5% in 2000 and a low of 32.0% in 1992. The 2012 safety belt use rate in WV is estimated at 84.03%.

Scope of the Report

This report represents an integral part of WV's efforts to monitor and increase safety belt use in the state. The

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Report Highlights...

• The safety belt use rate in West Virginia steadily increased each year between 2000 and 2007, but declined for three consecutive years until an increase in 2011 (84.9%), followed by a small decline in 2012 to 84.0%..

• The 2012 safety belt use rate in WV is estimated at 84.0%, down less than on percentage point from 2011.

• From 2003 to 2012, the percentage of motorist wearing safety belts increased by 10.3 percentage points from 73.7% in 2003 to 84.0% in 2012.

• Two counties had usage rates drop below eighty percent in 2011, including Lewis (79.6%) and Mercer (73.8%). In 2012, this list expanded to four counties: Berkeley (79.9%), Lewis (76.8%), Mercer (79.6%), and Ohio (79.0%).

• The percentage of passengers belted increased markedly from 80.1% in 2010 to 89.5%, in 2011, but dropping again to 82.9% in 2012..

• Every county included in the survey has experienced increases in the rate of belt use since 2003.

• Two counties had belt use rates above 90.0% in 2012. These include Greenbrier (91.5%) and Monongalia (91.4%) counties.

• Kanawha, Marshall, and Wood counties had the greatest gains in safety belt use between 2003 and 2012 with increases exceeding 16.0%..

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primary purpose of this report is to systematically document the safety belt use rate and identify the primary sources of variation in seat belt use for the state of West Virginia. The *2012 Observational Survey of Safety Belt Use in West Virginia* was conducted under the direction of the West Virginia Division of Motor Vehicles, Governor's Highway Safety Program (GHSP).

The current survey used a multi-stage, stratified cluster sampling procedure to identify 95 sites for vehicle and occupant observations. The data collection procedures for the 2012 survey were guided by the 1998 Uniform Criteria for Observational Surveys of Seat Belt Use established by NHTSA (23 CFR, Part 1340). Extensive efforts were made to adhere to historical site and observation procedures in an effort to provide data directly comparable to the previous safety belt use surveys in the state. As a result, the 2012 survey calculated a statewide safety belt use rate that is comparable to previous years for both drivers and outboard front seat passengers in vehicles.

Observers recorded safety belt information on 19,944 drivers and 3,906 outboard front seat passengers for a total of 20,850 observations. These observations were compiled across 95 observation sites and 14 counties. In accordance with the sampling strategy, the largest percentage of observations occurred in the counties with the largest residential populations. Over forty percent of all vehicles observed were passenger cars (41.8%), followed by sport utility vehicles (26.6%) and trucks (24.4%). Vans comprised less than ten percent of all vehicles observed (7.2%). This pattern is consistent with previous surveys.

More than three-quarters of driver observations occurred in southern (43.0%) and north central (35.7%) areas of the state. Just over ten percent of observations occurred in the eastern (10.9%) and northern panhandle (10.4%) regions of the state. More than half of driver observations took place in rural areas (55.3%) compared to 44.7% of observations in urban areas. Additionally, most observations also occurred on expressways (35.8%) and feeder routes (36.5%) with only 17.1% of observations occurring on trunk lines. These patterns in sampling results are similar to previous observational surveys in West Virginia.

Report Highlights...

• In 2012, the highest percentage of belt use was found for vehicles traveling on feeder routes (85.7%), followed by expressways (84.7%), trunk lines (82.6%), and local routes (82.2%).

• Males were significantly *less* likely to be using a safety belt compared to females in 2012. This is consistent with previous survey years.

• Both drivers and passengers in trucks were significantly *less* likely to be wearing a seat belt compared to occupants in other types of vehicles in 2011 and 2012.

• Drivers traveling in vans and utility vehicles were the most likely group to be wearing a safety belt in 2011 and 2012, followed by drivers in passenger cars.

• Drivers of vehicles traveling on rural roads were significantly *less* likely to be wearing a safety belt in 2011. In 2012, however, rural drivers were slightly more likely to be observed wearing a safety belt.

• Drivers in the eastern and northern panhandle regions of the state were significantly *less* likely to be wearing a seat belt in 2011 and 2012 compared to occupants in other regions.

Organization of the Report

This report begins with a discussion of the sampling procedures and methods used to obtain an estimate of the safety belt use rate in WV. Weighting procedures for obtaining an estimate of belt use by all occupants for each roadway class is also described. This is followed by a presentation of the results. A summary of the characteristics of occupants, vehicles, and observation sites is provided. This report concludes with an analysis of selected characteristics of vehicle occupants and observation sites using the non-weighted sample of observations. It is anticipated that this information will help to identify the conditions in which safety belts are more or less likely to be used in the state.

Methods

Data Collection

The 2012 sampling strategy followed the procedures used in previous surveys. The sample was selected using a multistage, stratified cluster sampling procedure. A sample of counties was selected first and followed by roadways within each county. Once specific roadways were identified, intersections of roads were sampled. Finally, vehicles passing through the intersections were randomly observed. Through this process, a sample of 95 observation sites were identified which provided a representative sample of observation sites for studying safety belt use in West Virginia.

To obtain a representative sample of sites, the state was stratified into four regions to ensure that all regions of the state were represented in the final sample. These regions were identified as the Eastern Panhandle, Northern Panhandle, North Central, and South (see Appendix A). Of the 55 WV counties, roughly one-quarter were randomly selected for inclusion in the survey. Two counties were randomly selected from each of the two panhandles, and five counties each were selected from the North Central and South regions of the state. In total, observations were conducted in 14 counties.

The number of counties sampled per region was based on population levels within regions (Althouse, Heffner, and Elliot, 2001). Based on 2000 Census estimates, the North Central (51%) and Southern (30%) regions of the state combined included roughly 81 percent of population in the state. The Eastern Panhandle (10%) and Northern Panhandle (8%) contained roughly 18 percent. For further information on population estimates and the probability of selection, see Appendix B.

To arrive at the sample of 14 counties utilized in this study, information on population size and region of the state was taken into account. The five largest counties in the state were automatically included in the sample to reflect the relative proportion of the state's population residing in these counties. These counties were Cabell, Kanawha, and Raleigh in the South Region and Wood and Monongalia in the North Central Region. Based on 2000 Census data, these five counties contain 30.5 percent (546,689 residents) of West Virginia's population. Other counties included in the survey were sampled through a random process. The 14 counties altogether contained 52.2 percent of the population (936,170 residents) in 2000.

Within each county, four to eight observation sites were selected. The most densely populated counties contained more sample sites and less densely populated counties contained fewer. Selection of individual observation sites within counties was based on information provided by the West Virginia Department of Highways (DOH). DOH provided information concerning various roadway classifications within each county and the amount of travel per roadway classification. Roadway classifications included local service, feeder routes, trunk lines, and expressway/interstates.

Sampling within each county accounted for differences in travel patterns among the different roadway classifications. Individual observation sites were distributed equal to the measured proportions of travel per roadway classification in each county. Once proportion of travel per roadway classification was identified, equal proportions of intersections per roadway type were designated as observation sites.

Individual observation sites in the sample have remained nearly unchanged since previous safety belt surveys. That is, the same 95 sites in the same 14 counties have been used each time a statewide survey has been conducted. For a detailed list of observation sites, see Appendix C. However, in 2002 widespread flooding in southern West Virginia precluded the use of four observation sites in McDowell County. McDowell County is in the south region of the state. Most of the roads in this county were deemed unusable for travel at the time of the survey, making observational surveys of seat belt use impossible.[1] In order not to impact representation of these sites in the sample, four replacement sites were randomly identified in nearby Greenbrier County which is located in the same region of the state. The four

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[1] Beginning in 2002, minor changes were made to the Observational Survey Data Collection Form and observation sites. In 2002, the data collection form no longer gathered information on whether an observed vehicle had a West Virginia license plate. In addition, the 2002 survey required repositioning of a small number of observation sites due to a widespread flooding disaster in McDowell County. A total of four sites were impacted by this incident. The process of repositioning the observation sites involved oversight by the NHTSA's National Center for Statistics and Analysis.

replacement sites in Greenbrier County were randomly sampled in such a way as to match the proportional distribution of roadway classifications in McDowell County. The 2006-2012 survey continued using sites in Greenbrier County.

Procedures

Specific data collection procedures were established prior to the initiation of data collection. The procedures were guided by the 1998 Uniform Criteria for Observational Surveys of Seat Belt Use established by NHTSA (23 CFR, Part 1340).

Safety Belt Observer Instruction Form. A one-page instruction form was developed for review by observers to ensure knowledge of the guidelines for conducting site observations (Appendix D). The Safety Belt Observer Instruction Form provided to each site observer. Moreover, each observer was encouraged to review the guidelines on a periodic basis. A sample of the guidelines set forth on the Safety Belt Observer Instruction Form included:

- Length of observation period would be 45 minutes;

- Vehicle types to include were passenger vehicles, including cars, pickup trucks, sport utility vehicles and vans;

- Observable occupants included drivers and outboard, front seat passengers. Children in a front seat child restraint would be excluded, however, children that are unrestrained and in the front seat would be counted;

- Each lane of traffic in one direction would be observed for an equal amount of time;

- On heavy traffic roadways, if traffic was moving too fast to observe every vehicle, a focal point up the road in the appropriate lane was to be picked. The focal point would indicate a next vehicle for observation after the last vehicle had been recorded;

- If rain, fog or inclement weather occurred, the observer was to wait 15 minutes to see if it would stop. If bad weather persisted, the site was to be

Report Highlights...

- The *2012 Observational Survey of Safety Belt Use in West Virginia* used a multi-stage, stratified cluster sampling procedure to identify 95 sites for vehicle and occupant observations.

- The data collection procedures for the 2011 survey were guided by the 1998 Uniform Criteria for Observational Surveys of Seat Belt Use established by NHTSA (23 CFR, Part 1340).

- Extensive efforts were made to adhere to historical site and observation procedures in an effort to provide data directly comparable to the previous safety belt use surveys in the state.

rescheduled for another day; and

- If construction compromised a site, the observer was told to move one block so that the same stream of traffic could be observed. If this would not work, an alternate site would be selected.

Historical site and observational details were adhered to in order to provide data directly comparable to the previous safety belt use surveys. Features included exact observation location, direction of traffic to be observed, and time of day. These data elements were requisite to 2012 data collection.

Observers. A total of sixteen site observers were selected and trained to conduct the site observations. Nearly all of the observers had previous experience collecting observational safety belt use data. All observers attended a classroom training session where sites and schedules were assigned, observation procedures were explained, and all materials necessary for conducting the observational study were distributed (directions, schedules, site maps, data collection forms, clipboards, pens, return envelopes, etc.).

For training purposes, a minority of observers without previous experience paired with trained and experienced observers to conduct mock-observations prior to actual data

collection. During mock-observations, the experienced observer monitored and ensured that procedures were understood, observations were accurate and data were recorded accurately. These pairings were successful in providing the trainer and trainee the opportunity to correct any problems.

In most instances, two observers were positioned at each observation site. One observer called out data as sampled vehicles passed. It was the primary responsibility of the second observer to record data. Whenever possible, the second observer was also charged with the task of helping to verify the observation details.

Observation Schedule. Observations were made during the daylight hours and all seven days of the week were included in the survey. Careful attention was given to historical information on procedures used in previous surveys. Data collection procedures placed emphasis on replicating date and time information associated with previous surveys. For example, time of day was taken into account to ensure that sites visited during rush hour in past surveys remained rush hour sites, morning sites remained morning sites, afternoon sites remained afternoon sites, and late afternoon sites remained late afternoon sites.

Observation sites were mapped in advance. Mapping helped to identify geographic location of sites as well as the target date and time of day for observation. Mapping enabled observers to plan trips in advance; thereby, increasing efficiency in travel and labor. Since observation work was divided among 16 people, scheduling observations over a short time period was relatively easy. Observers were assigned to four to six observation sites per day.

Data Collection Form. Survey information was recorded on the Observational Survey Data Collection Form (see Appendix E). The data collection form was designed for use in the 2002 statewide survey of safety belt use and has been used in each survey since 2002. The form was designed so that pertinent site information could be recorded. Information was gathered on the observation site as well as the vehicles and occupants observed. Each one-page form included space to record information on 50 vehicles. Observation site and other information captured on the Observational Survey Data Collection Form are summarized below.

Observation site:

- county
- site number and notes
- roadway location
- date of observation
- day of week
- time of day i.e., start time and end time)
- weather conditions (i.e., clear/sunny, light rain, cloudy, fog, clear but wet)

Vehicle/Occupant:

- vehicle type (i.e., car, pick-up, SUV, van)
- driver gender
- passenger gender
- driver belt use/non-use (i.e., yes, no)
- passenger belt use/non- use (i.e., yes, no)

Once the observation data was gathered, the information was entered into a referential database by the West Virginia Governor's Highway Safety Program. After the data were entered, ten percent of cases were randomly drawn and checked for errors. The data were then entered into a statistical analysis package for further cleaning and examination. Weighting procedures used to estimate the overall statewide safety belt use rate were formulated using Microsoft Excel. To check the reliability of the data gathered, comparisons were made between data collected by individual observers and patterns in historical data.

Seat Belt Usage Rate and Variability Calculations

As noted previously, some regions of the state were oversampled relative to the proportion of the state population. In addition, traffic on controlled access roadways was somewhat underrepresented since observations were made only at exit ramps. Therefore, small adjustments in weighting were made using standard statistical procedures to correct for this type of condition.

To ensure appropriate representation in the sample, the five largest population counties (Cabell, Kanawha, Monongalia, Raleigh, and Wood) were sampled with probability 1.00. The

county.

A final adjustment was made in order to ameliorate the effects of a logistical problem in data collection. Because observations of interstate highway occupants could only be conducted at exits, relatively fewer vehicles traveling on interstate highways were observed compared to vehicles on all other roadway types. While twenty-four percent of travel in WV occurs on interstate highways, only approximately seventeen percent of weighted observations came from this type of road. Since drivers and passengers traveling on such roads are more likely than those on other roadway types to wear their safety belts, data were re-weighted to reflect the distribution of traffic across the function classes. Thus, interstate observations were weighted such that they constituted twenty-four percent of the data used to produce the final estimate of statewide belt use, paralleling the proportion of travel that occurs on such roads.

Weighted belt use by all occupants (both drivers and front seat passengers) on roadways in each of the function classes (r) was estimated using the formula shown in Figure 1. The standard deviation of the statewide seat belt use rate was estimated using the formula displayed in Figure 2. The relative error for safety belt use was calculated by dividing the standard error by the estimate.

results were adjusted prior to analysis through the use of differential weighting. The data from each of the 14 counties were given a weight equal to the inverse of their probability of selection, ensuring proper representation of data from each

Results

The results of the analysis on the 20,850 vehicle and occupant observations made in 2012 are presented below. Extensive effort is made to summarize the characteristics of occupants, vehicles, and observation sites. The 2012 safety belt use rate based on the weighted sample of observations is also provided. In addition to the overall safety belt use rate, a description of the weighted belt use rate by roadway type and county is presented. This section concludes with an analysis of selected characteristics of occupants and observation sites using the unweighted sample of observations. The presentation of the results begins with a description of the total number and percentage of front seat occupants observed.

Total Observations and Selected Occupant, Vehicle, and Site Characteristics

Table 1 displays the total number and percentage of observed front seat occupants. As shown in this table, observers recorded safety belt information on 16,944 drivers and 3,906 outboard front seat passengers for a total of 20,850 observations. These observations were compiled across 95 observation sites and 14 counties.. Generally, the largest percentage of observations occurred in the counties with the

Table 1. Number and Percentage of Total Observed Front Seat Occupants, 2012 (N = 20,850)

County	Drivers		Passengers		Total	
	N	%	N	%	N	%
Berkeley	1,003	5.92%	274	7.01%	1,277	6.12%
Cabell	1,589	9.38%	370	9.47%	1,959	9.40%
Greenbrier	850	5.02%	269	6.89%	1,119	5.37%
Harrison	1,511	8.92%	214	5.48%	1,725	8.27%
Kanawha	1,929	11.38%	385	9.86%	2,314	11.10%
Lewis	890	5.25%	182	4.66%	1,072	5.14%
Marshall	776	4.58%	189	4.84%	965	4.63%
Mercer	1,169	6.90%	221	5.66%	1,390	6.67%
Mineral	846	4.99%	213	5.45%	1,059	5.08%
Monongalia	1,796	10.60%	265	6.78%	2,061	9.88%
Ohio	984	5.81%	199	5.09%	1,183	5.67%
Preston	627	3.70%	93	2.38%	720	3.45%
Raleigh	1,750	10.33%	703	18.00%	2,453	11.76%
Wood	1,224	7.22%	329	8.42%	1,553	7.45%
Total	16,944	100.00%	3,906	100.00%	20,850	100.00%

Note: Totals may not add to 100.0% due to rounding.

largest residential populations. For instance, Kanawha County made up only 11.1% of the total observations. Nearly twelve percent of observations occurred in Raleigh County (11.8), followed by Monongalia (9.9%), Harrison (8.3%), Cabell (9.4%), and Harrison (8.3%) counties.

Whereas in past surveys, five of the fourteen counties contained less than five percent of the total number of observations, only two counties had less than five percent in 2012•1. These counties included Marshall (4.6%) and Preston (3.5%). These patterns are consistent with having observations distributed based on where most people live and drive.

The distribution of selected occupant, vehicle, and site characteristics based on the total number of observations are presented in Table 2. In terms of occupant characteristics, most drivers were male while a greater percentage of passengers were female. Of the 19,944 drivers observed, a total of 9,975 or 58.9% were male compared to 6,969 or 41.1% were female. In contrast, two-thirds of passengers were female. Of the 3,906 passengers observed, 64.5% were female and 35.5% were male. These patterns are consistent with previous years.

Passenger cars were the most common vehicle type observed in 2012. Roughly forty percent of all vehicles observed were passenger cars (41.8%), followed by sport utility vehicles (26.6%), trucks (24.4%). Vans comprised less than ten percent of all vehicles observed (7.2%).

In terms of site characteristics, the largest percentages of observations were made in rural areas on expressway or feeder routes and in the southern and north central regions of the state. More than half of driver observations occurred in rural areas (55.3%) compared to 44.7% of observations in urban areas. Additionally, most observations also occurred on expressways (35.8%) and feeder routes (26.5%) with only 17.1% of observations occurring on trunk lines.

Finally, a vast majority of observations took place in the south and north central regions of the state. While this has been the case in previous surveys, the proportion of observations in the southern region of the state dropped from 44.5% in 2010 to 38.1% in 2011 but has returned to 43.0% of observations in 2012. Roughly thirty-five percent of driver observations occurred in the north central area of the state (35.7%). Ten percent of observations took place in the eastern

Table 2. Distribution of selected occupant, vehicle, and site characteristics, 2012

Variable	N	%
Occupant/Vehicle Characteristics		
Gender		
Driver		
Male	9975	58.9
Female	6969	41.1
Total	16944	100.0
Passenger		
Male	1387	35.5
Female	2519	64.5
Total	3906	100.0
Vehicle Type		
Car	7079	41.8
Pickup	4140	24.4
Van	1226	7.2
Utility	4499	26.6
Total	16944	100.0
Site Characteristics		
Land Use		
Urban	7566	44.7
Rural	9378	55.3
Total	16944	100.0
Roadway		
Expressway	6059	35.8
Feeder Route	4490	26.5
Local Service	3505	20.7
Trunk Line	2890	17.1
Total	16944	100.0
Region		
Eastern Panhandle	1849	10.9
Northern Panhandle	1760	10.4
North Central	6048	35.7
South	7287	43.0
Total	16944	100.0

(10.9%) and northern panhandle (10.4%) regions of the state.

Weighted Safety Belt Use Rate, 2012

The safety belt use rate in West Virginia increased steadily between 2000 and 2008, followed by a 2.5% decline in 2009. In 2008, the weighted safety belt use rate reached a near high of 89.5%. This nearly equal to the high of 89.6% achieved in 2007. The 2008 rate was up from 49.5% in 2000 and a low of 32.0% in 1992. A slight decline in the safety belt use rate occurred between 2008 and 2009, resulting in a statewide rate of 87.0%. The 2010 safety belt use rate declined further to 82.1%—the lowest observed rate since 2004—before rising again to 84.9% in 2011. The safety belt rate for 2012 is 84.0%.

Graph 1 shows the rate of safety belt use in over the ten year period from 2003 to 2012. As shown in this graph, the safety belt use rate was at 73.7% in 2003. Over the next several years, the use rate increased to 89.6% prior to subsequent declines. From the low of 32.0% in 1992, the safety

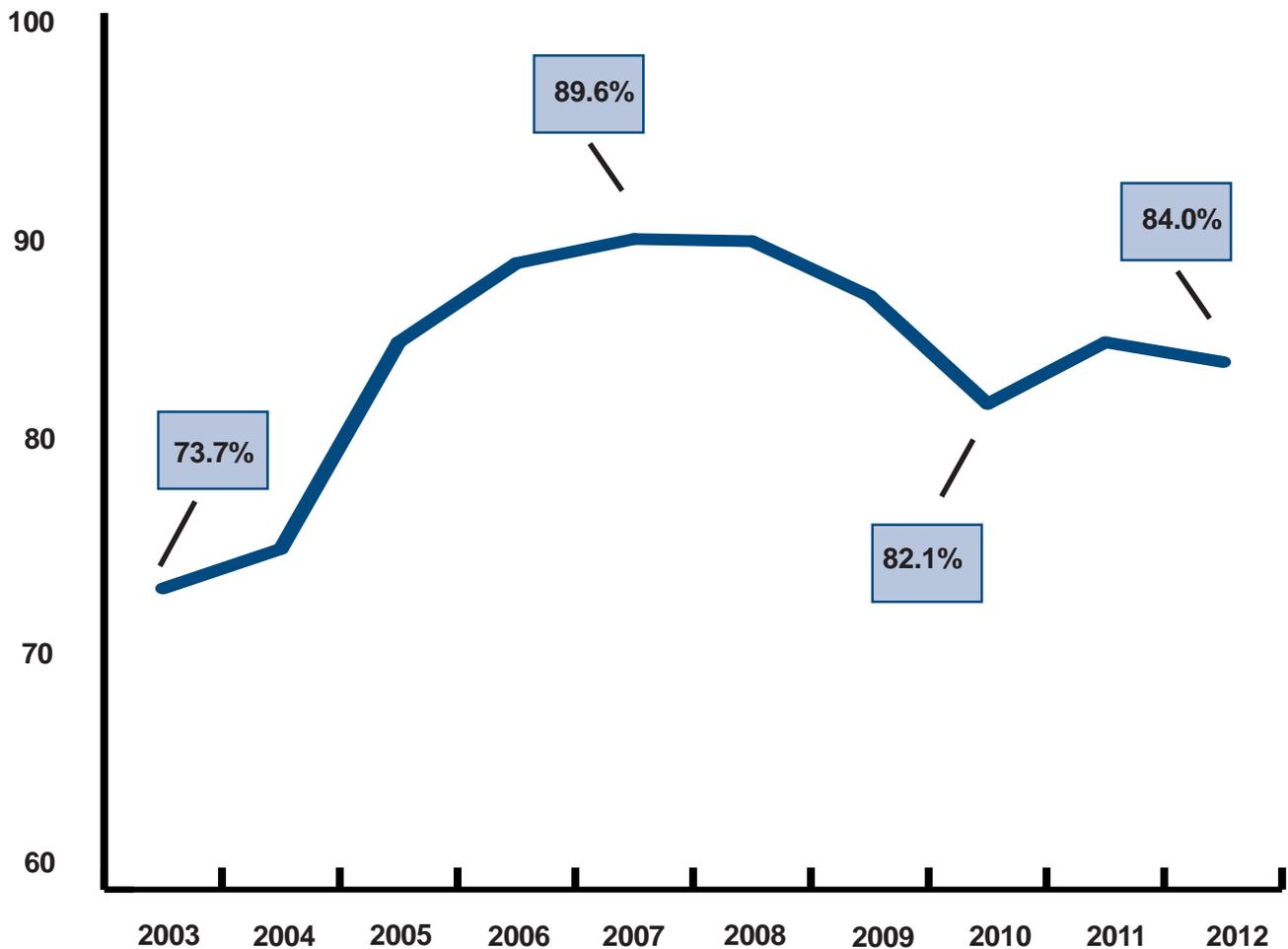**Graph 1. Weighted Safety Belt Use Rate in West Virginia, 2003-2012**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	**Percent Difference 2003-2012**
Berkeley	74.8	68.1	82.9	83	83.7	88.1	85.7	81.4	83.8	79.9	5.1
Cabell	77.1	86.5	85.9	90.5	89.9	90.0	90.4	87.8	89.8	88.5	11.4
Greenbrier	76.5	83.2	87.1	88.0	90.3	90.7	85.1	82.3	89.7	91.5	15.0
Harrison	78.3	66.8	81.6	89.1	89.9	92.2	89.5	91.0	91.7	80.5	2.2
Kanawha	67.0	79.9	86.5	87.6	90.7	86.2	80.8	62.3	84.9	86.4	19.4
Lewis	75.8	77.5	84.7	86.8	87.1	88.5	86.3	85.7	79.6	76.8	1.0
Marshall	70.9	78.4	85.8	93.9	94.1	92	91.8	90.3	82.6	87.1	16.2
Mercer	69.4	66.8	85.2	89.8	89.8	88.7	86.5	78.8	73.8	79.6	10.2
Mineral	70.9	76.5	85.7	88.5	88.3	88.2	82.0	78.8	84.2	83.0	12.1
Monongalia	82.4	84.1	87.1	91.1	93.3	95.2	93.9	93.5	92.4	91.4	9.0
Ohio	74.7	81.6	80.7	91.8	92.0	89.6	90.9	87.8	84.4	79.0	4.3
Preston	78.1	85.0	85.7	89.7	90.9	92.5	90.9	92.5	88.5	89.9	11.8
Raleigh	77.5	79.9	87.9	91.2	90.4	91	88.7	87.0	89.4	80.5	3.0
Wood	71.5	72.4	82.4	83.6	88.7	88.3	90.4	89.1	88.2	87.8	16.3
Statewide	**73.7**	**75.5**	**84.9**	**88.5**	**89.6**	**89.5**	**87.0**	**82.1**	**84.9**	**84.0**	**10.3**

Table 3. Percent Weighted Safety Belt Use Rate by County, 2003-2012

belt use rate increased 57.6 percentage points to 89.6% in 2007 before dropping three consecutive years to 82.1% in 2010. In 2011, the use rate increased nearly three percentage points to 84.9% compared to a year ago before dropping to 84.0% in 2012.

Weighted Safety Belt Use Rate by County

Table 3 displays the weighted safety belt use rate by county since 2003. All fourteen counties experienced increases in the rate of belt use over this 10-year period. In 2003, safety belt use rates ranged from a low of 67.0% in Kanawha County to a high of 82.4% in Monongalia County.[2] No other counties

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[2] Observations sites in McDowell County were replaced with sites randomly selected in Greenbrier County in 2002. For more information, see footnote 1.

had a safety belt use rates less than 70.0% in 2003.

By 2005, all fourteen counties had a safety belt use rate above eighty percent with many county usage rates exceeding ninety percent. This trend continued through 2009. In 2010, however, three counties had usage rates drop below eighty percent. These counties include Kanawha (62.3%), Mercer (78.8%), and Mineral (78.8%). In 2011, both Lewis (79.6%) and Mercer (73.8%) counties reported use rates less than eighty percent. Kanawha, Marshall, and Wood counties had the greatest gains in safety belt use between 2003 and 2012 with percentage increases exceeding 16.0%..

In 2012, only two of the fourteen counties had safety belt use rates above 90.0% compared to four in 2010. These counties included Monongalia (91.4%) and Greenbrier (91.5%). Mercer County had the lowest reported safety belt use rate at 73.8% in 2011, with Lewis County (76.8%) having the lowest rate of use in 2012.

Weighted Safety Belt Use Rate by Road Type

Despite the recent declines, the safety belt use rate has increased substantially for every major road type since 2003. Observations were conducted at four different roadways classifications: expressways, feeder routes, local service roads, and trunk lines.

In 2003, vehicle occupants were less likely to be observed wearing a safety belt when traveling on trunk line and local routes. Only 71.8% of vehicle occupants on both routes were observed wearing a safety belt in 2003. This is compared to 72.4% of vehicle occupants on feeder routes and 75.7% on expressways. As a result, vehicle occupants were more likely to be wearing a safety belt when traveling on the state's expressways compared to other types of roadways.

By 2010, however, safety belt use was above eighty percent for all road types and there was little difference in the weighted safety belt use rate for vehicle occupants by roadway type. Roughly eighty percent of all vehicles observed in 2010 to 2012 had a belted occupant, regardless of road type. In 2011, the highest percentage of belt use was found for vehicles traveling on the state's expressways (86.3%), followed by local routes (84.1%), feeder routes (83.8%), and trunk lines (82.9%). In 2012, the highest percentage of belt use was found for feeder routes (85.7%) and expressways (84.7%).

As a result, there has been a notable increase in the rate of safety belt use on all types of roadways in the state since 2003. The largest percentage point increases occurred for

Graph 2. Weighted Safety Belt Use Rate by Road Type, 2003-2012
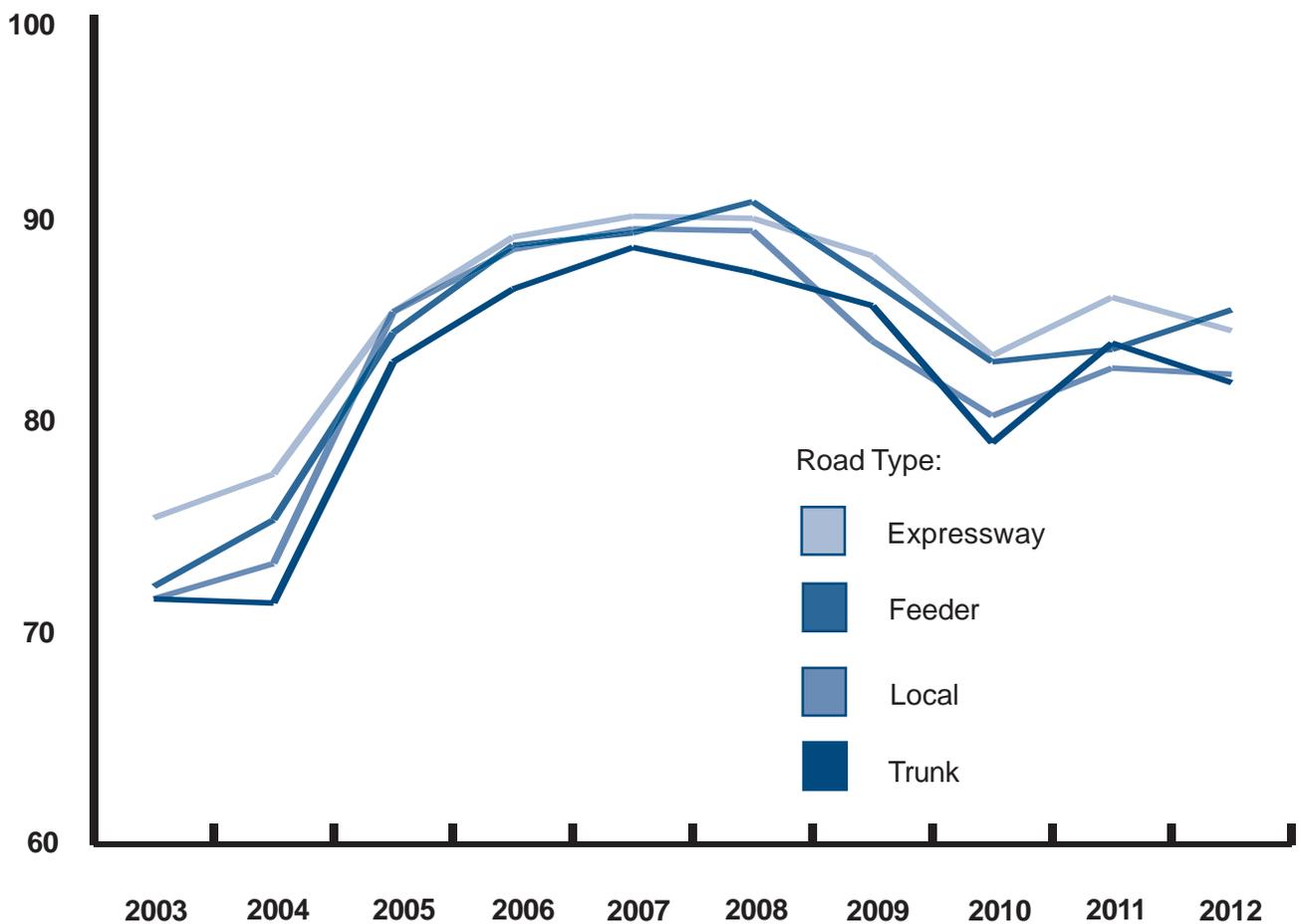
Graph 3. Distribution of Drivers and Passengers Belted, 2012

No
15.2%

Yes
84.8%

Drivers

No
17.1%

Yes
82.9%
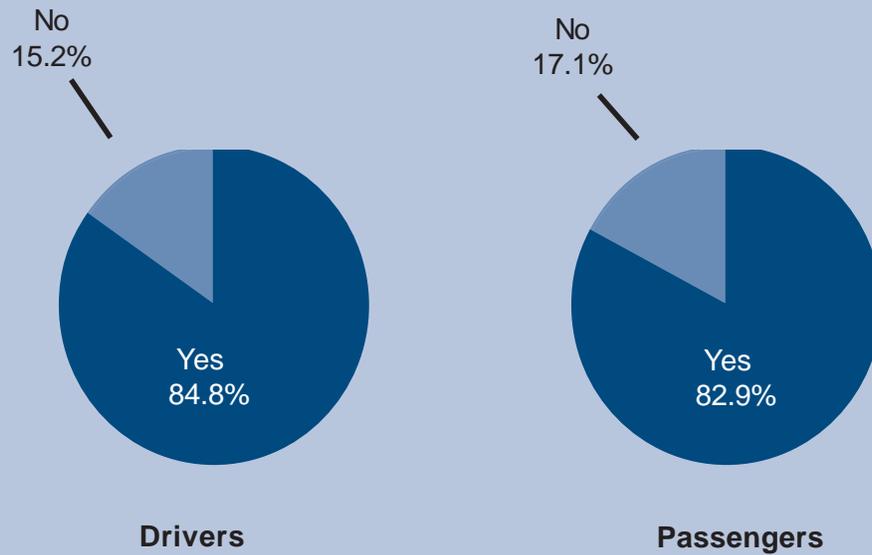
Passengers

Note: Drivers, N = 16,944; Passengers, N = 3,906

feeder routes, increasing from 72.4% in 2003 to 85.7% in 2012. This translates into a 13.3 percentage point increase in the use of safety belts on trunk lines since 2003. Local routes and trunk lines followed closely behind with a 10.4 and 10.5 percentage point increases, respectively. A less pronounced percentage point increase was also found expressways (9.0).

Characteristics of Belted Drivers and Passengers

The previous section presented the weighted results of safety belt use for the state as well as by county and road type. The remaining sections of this report present the results of additional analysis using the *unweighted* sample of observations. The purpose is to identify variation in safety belt usage by occupant and site characteristics as well as vehicle type. It is anticipated that this information will help to identify the conditions in which safety belts are more or less likely to be used in the state.

Graph 3 displays the unweighted distribution of drivers and passengers belted in 2012. As shown in this graph, a determination of whether a safety belt was being used was made on a total of 16,944 drivers and 3,906 passengers. Based on these observations, nearly the same percentage of drivers and passengers were observed wearing a safety belt. Eighty-

Graph 4. Distribution of drivers and passengers belted by gender, 2012

82.2%
88.4%
74.3%
87.7%
Yes
No

Male   Female
Driver

Male   Female
Passenger
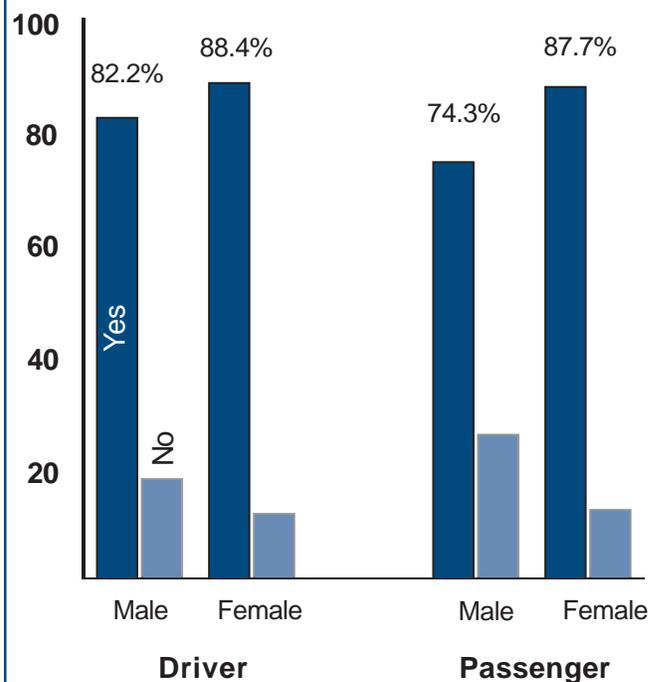
Note: Driver, N = 16,944; Passengers, N = 3,906

four percent of drivers (84.8%) compared to 82.9% of passengers were observed wearing a seat belt in 2012. As a result, approximately fifteen percent of drivers (15.2%) and seventeen percent of passengers (17.1%) were *not* belted based on the results of this survey. For passengers in particular, this represents in large increase in the number of unbelted occupants from 2011. In 2011, only 10.5% ten percent of passengers were not belted, compared to 17.1% in 2012. The 2012 percentage of unbelted passengers is more consistent with historical results.

Drivers and Passengers Belted by Gender

Graph 4 displays the results of safety belt use by gender. The findings illustrate that there are significant gender differences in the use of safety belts across gender. Generally speaking, males were *less* likely to use safety belts compared to females. This has been a consistent finding of the observation surveys. However, the percentage of male passengers *not* wearing a belt in 2012 was much less compared to years past. Eight to ninety percent of male passengers have been observed wearing a seatbelt historically, compared to only 74.3% in 2012. Nonetheless, the gender gap held true regardless of whether the vehicle occupant was a driver or passenger.

As shown in Graph 4, male drivers were significantly less likely than female drivers to be belted (Chi-square = 124.97; p < .001). Nearly ninety percent of female drivers were observed wearing a safety belt (88.4%) compared to 82.2% of male drivers. Hence, nearly twenty percent of male drivers were observed *not* wearing a seat belt in 2012 (17.8%).

Graph 5. Proportion of Drivers Belted by Vehicle Type and Site Characteristics, 2012

Note: N = 16,944; *** p < .001; ** p < .01; * p < .05
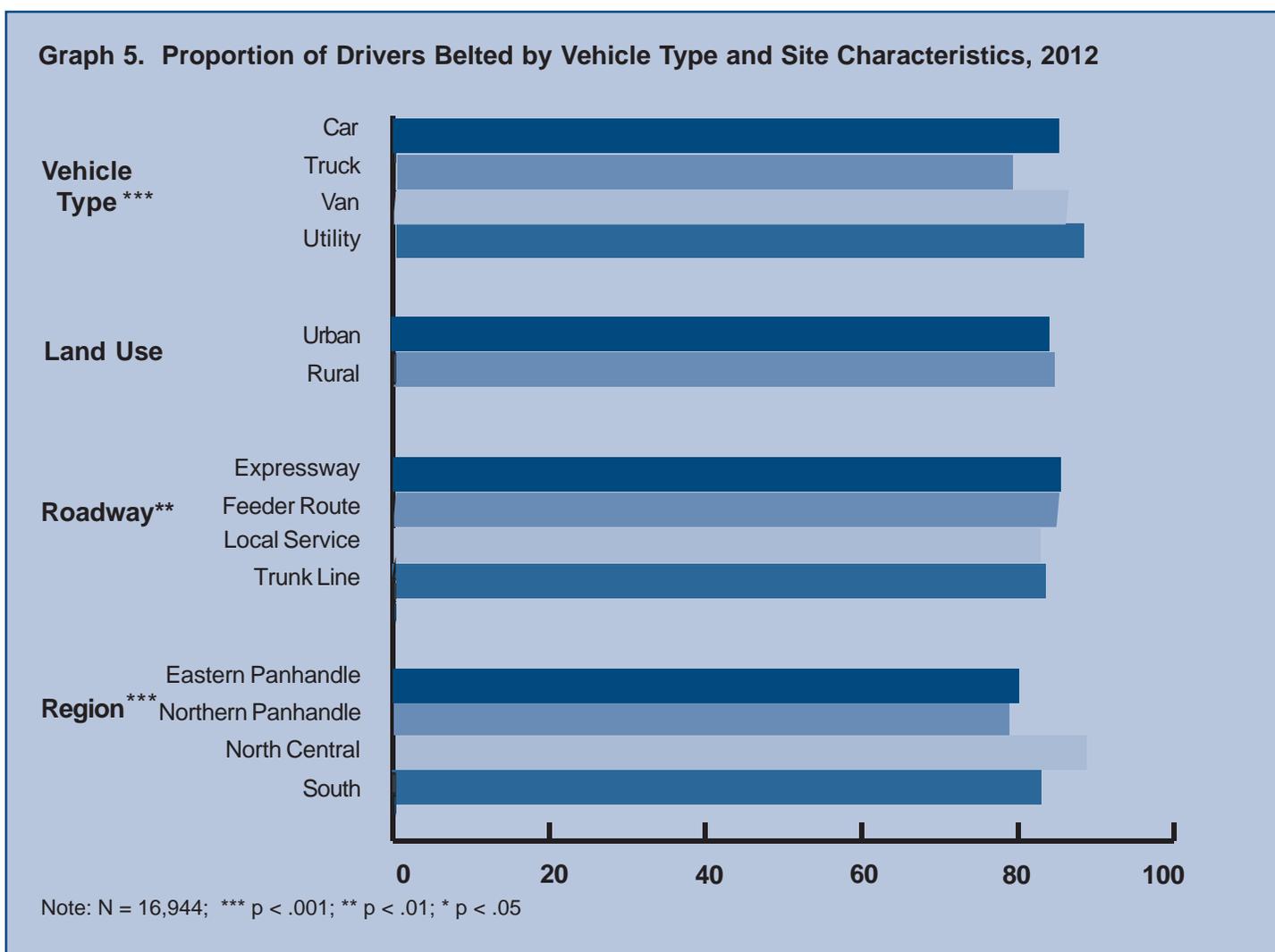
Graph 6. Proportion of Passengers Belted by Vehicle Type and Site Characteristics, 2012

Vehicle Type *
- Car
- Truck
- Van
- Utility

Land Use*
- Urban
- Rural

Roadway
- Expressway
- Feeder Route
- Local Service
- Trunk Line

Region* **
- Eastern Panhandle
- Northern Panhandle
- North Central
- South

(x-axis: 0, 20, 40, 60, 80, 100)
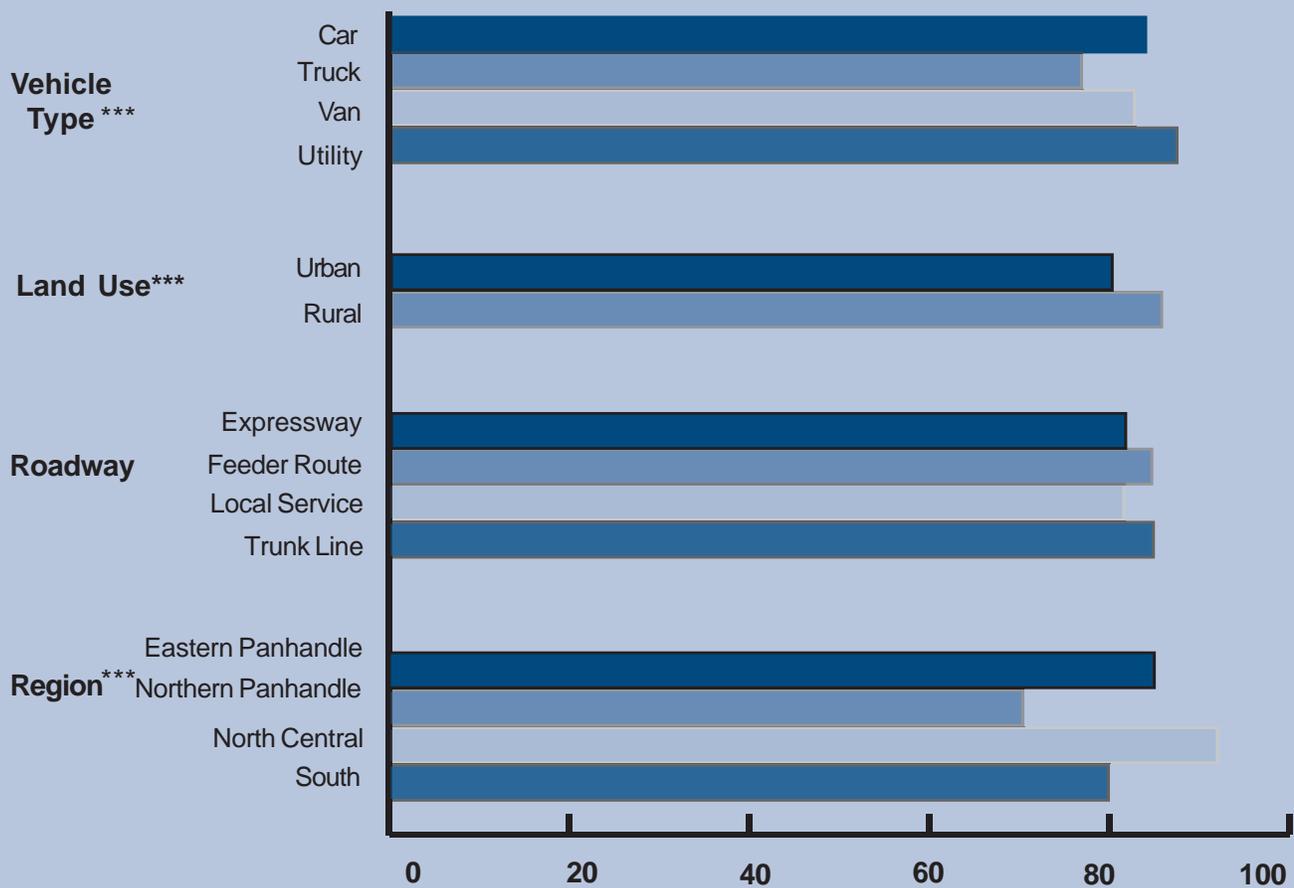
Note: N = 3,906 *** p < .001; ** p < .01; * p < .05

A similar pattern was present for vehicle passengers. Males were significantly less likely than females to be wearing a safety belt when traveling as a vehicle passenger (Chi-square = 114.79; p < .001). The percentage of male passengers wearing a seat belt dropped markedly between 2009 and 2010, but increased again in 2011. Nearly twenty percent fewer males were observed wearing a safety belt in 2010 compared to 2009. Thus, almost thirty percent fewer males (61.9%) were observed wearing a safety belt compared to females, when traveling as a passenger. By 2011, however, the rate of use among male passengers increased from 61.9% in 2010 to 85.4% in 2011. Unfortunately, the rate of male passengers belted dropped again to 74.3% in 2012.

Drivers Belted by Vehicle Type and Site Characteristics

Graph 5 displays the proportion of drivers belted by vehicle type and various site characteristics. The results indicate that there was substantial variation in drivers belted by vehicle type, land use, and region of the state. In 2011, with the exception of roadway, there were significant differences in the likelihood of drivers wearing safety belts across these factors. These results differ slightly from 2010 where use varied significantly by type of roadway and land use was not a significant factor. In 2012, the patterns are again similar to the 2010 results, with all factors having significant variation in observed rates of safety belt use rates, except land use.

For 2012, the analysis of drivers belted by vehicle type showed that individuals driving trucks were significantly *less* likely to be wearing a seat belt compared to drivers of other

types of vehicles (Chi-square = 145.29; p < .001). This is consistent with results found in previous years. Less than eighty percent of truck drivers were wearing a seat belt (79.3%), compared to nearly ninety percent of drivers traveling in other types of vehicles. Drivers traveling in vans (86.5%) and utility vehicles (88.4%) were the most likely group to be wearing a safety belt in 2012, closely followed by drivers in passenger cars (85.3%). These results are consistent with previous observational surveys.

Significant difference in safety belt use among drivers was also found for type of roadway and region of the state. However, use rates did *not* significantly vary by land use as in 2011. Therefore, both urban and rural drivers were equally likely to be observed wearing (or not wearing) a safety belt in 2012. Lastly, drivers traveling in the northern and eastern panhandles were significantly *less* likely to be wearing a seat belt in 2011 and 2012 compared to other regions in the state. As a result, drivers in southern and north central parts of the state were more likely to be observed wearing a safety belt in 2011 and 2012.

Passengers Belted by Vehicle Type and Site Characteristics

Similar to the previous analysis, Graph 6 displays the results for passengers. In the case of passengers, however, significant differences for belt use were found for vehicle type and region of the state in 2011. While land use was a significant factor in seat belt use in 2010, the results for 2011 showed that passengers in both urban and rural settings were equally likely to be wearing a safety belt. Similar to the results of 2010, rural passengers were significantly more likely to be observed wearing a safety belt in 2012.

As shown in Graph 6, passengers traveling in trucks were significantly *less* likely to be wearing a seat belt compared to other vehicle types (Chi-square = 39.509; p < .001). These results are similar to what was observed for drivers and passengers in previous years. Nonetheless, there were substantial gains in the percentage of truck passengers observed wearing seatbelts in 2011 compared to 2010. In 2010, only 69.3% of truck passengers were observed wearing a seat belt compared to 83.6% in 2011. In 2012, however, this percentage has again dropped to 76.7% of truck passengers having been observed wearing a safety belt. Passengers traveling in sport utility vehicles were most likely to be observed

wearing a seat belt in 2012 at 87.3%.

Safety belt use among vehicle passengers also significantly varied depending on the region of the state. Passengers traveling in the north central region of the state were significantly *more* likely to be wearing a safety belt in both 2011 and 2012. Over ninety-five percent of passengers in the north central region were observed wearing a seat belt in 2012 (92.0%). This was followed by the eastern panhandle at 85.0%.

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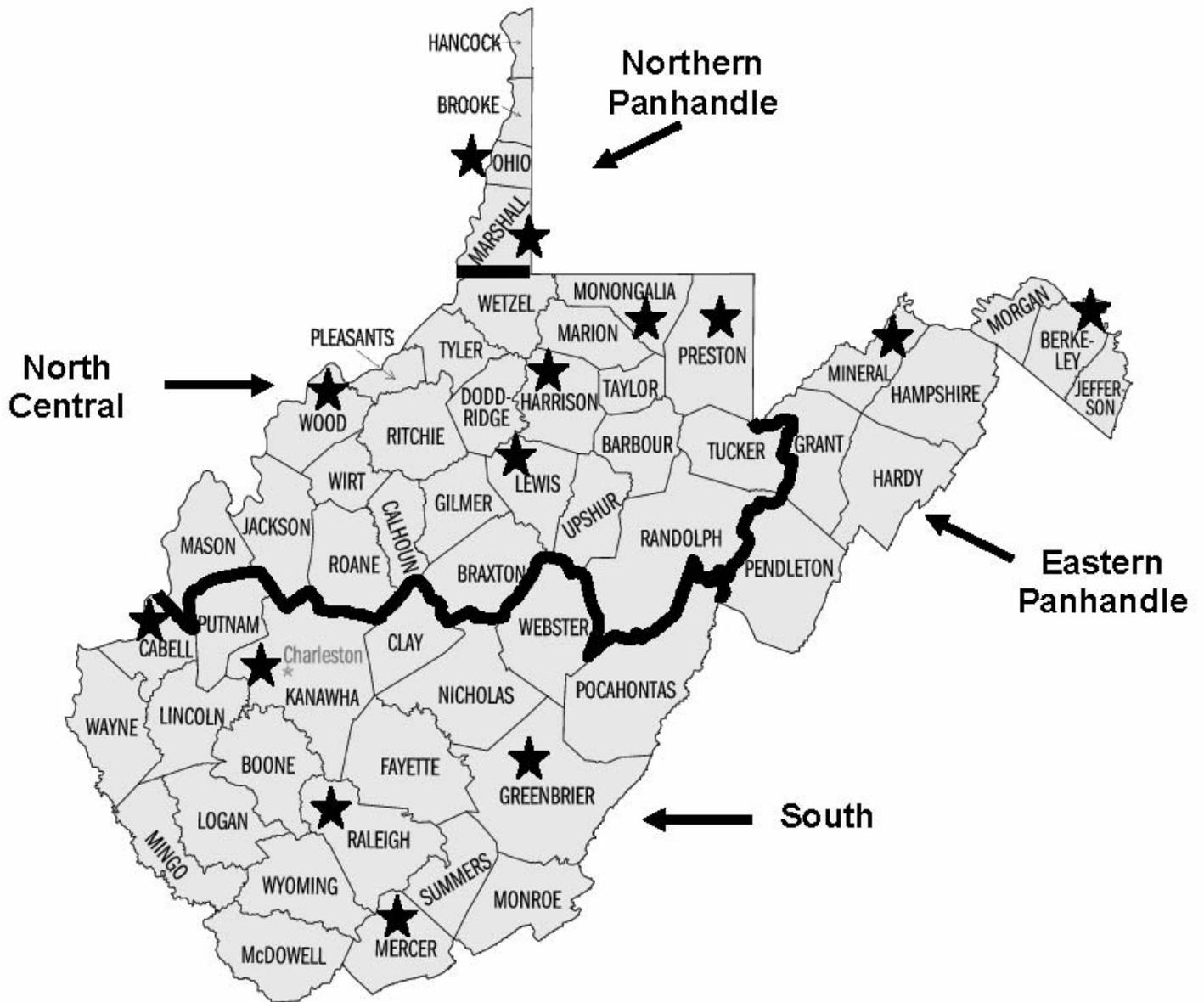
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Appendices

Appendix B: County Populations and Probability of Selection

County Selection Procedures

The following summary of procedures for county selection was acquired from the West Virginia University's Survey Research Center (Althouse et al., 2001).

Some regions of the state were over-sampled relative to the proportion of the state population that resides there. West Virginia's population at the time when the original sample was drawn = 1,793,477. To ensure their representation in the sample, the five larges counties (Cabell, Kanawha, Monongalia, Raleigh and Wood) were sampled with probability 1.00. The results were adjusted prior to analysis by the use of differential weighting to take this into account: data from each of the 14 counties were given a weight equal to the inverse of their probability of selection, ensuring proper representation of data from each county.

South	22 Counties			North Central	21 Counties		
County	Population	Cumulative	Probability of Selection in Stratum	County	Population	Cumulative	Probability of Selection in Stratum
*Kanawha	207,619		1.00	*Wood	89,915		1.00
*Cabell	96,827		1.00	*Monongalia	75,509		1.00
*Raleigh	76,819		1.00	*Harrison	69,371	69,371	0.54
*Mercer	64,980	64,980	0.24	Marion	57,249	126,620	0.45
Fayette	47,952	112,932	0.18	*Preston	29,037	155,657	0.24
Logan	43,032	155,964	0.16	Randolph	27,803	183,460	0.21
Putnam	42,835	198,799	0.16	Jackson	25,938	209,398	0.21
Wayne	41,636	240,435	0.16	Upsur	22,867	232,265	0.18
McDowell	35,233	275,668	0.14	Wetzel	19,258	251,523	0.15
*Greenbrier	34,693	310,361	0.12	*Lewis	17,223	268,746	0.15
Mingo	33,739	344,100	0.12	Barbour	15,699	284,445	0.12
Wyoming	28,990	373090	0.10	Taylor	15,144	299,589	0.12
Nicolas	26,775	399,865	0.10	Roane	15,120	314,709	0.12
Boone	25,870	425,735	0.10	Ritchie	10,233	324,942	0.09
Mason	25,178	450,913	0.10	Tyler	9,796	334,738	0.09
Lincoln	21,382	472,295	0.08	Calhoun	7,885	342,623	0.06
Summers	14,204	486,499	0.06	Tucker	7,728	350,351	0.06
Braxton	12,998	499,497	0.04	Gilmer	7,669	358,020	0.06
Monroe	12,406	511,903	0.04	Pleasants	7,546	365,566	0.06
Webster	10,729	522,632	0.04	Doddridge	6,994	372,560	0.06
Clay	9,983	532,615	0.04	Wirt	5,192	377,752	0.03
Pocahontas	9,008	541,623	0.04				
Total	922,888	541,623		Total	540,176	377,752	

Proportion of Population (922,888/1,793,477) = 51%
Proportion of Sample (5/14 Counties) = 36%

Proportion of Population (540,176/1,793,477) = 30%
Proportion of Sample (5/14 Counties) = 36%

Northern Panhandle	8 Counties			Eastern Panhandle	4 Counties		
County	Population	Cumulative	Probability of Selection in Stratum	County	Population	Cumulative	Probability of Selection in Stratum
*Berkeley	59,253	59,253	0.66	*Ohio	50,871	50,871	0.68
Jefferson	35,926	95,179	0.40	*Marshall	37,356	88,227	0.50
*Mineral	26,697	121,876	0.30	Hancock	35,233	123,460	0.46
Hampshire	16,498	138,374	0.18	Brooke	26,992	150,452	0.36
Morgan	12,128	150,502	0.14				
Hardy	10,977	161,479	0.12				
Grant	10,428	171,907	0.12				
Pendleton	8,054	179,961	0.08				
Total	179,961	179,961		Total	150,452	150,452	

Proportion of Population (179,961/1,793,477) = 10%
Proportion of Sample (2/14 Counties) = 14%

Proportion of Population (150,452/1,793,477) = 8%
Proportion of Sample (2/14 Counties) = 14%

Appendix C: Safety Belt Observational Survey Site List

Site#	Map#	County	Day	BeginTime	EndTime	Urban	Class	Location
18	1	Berkeley	Sun	2:30 PM	4:30 PM	Rural	Expwy	181 Northbound Exit 12-WV 45 (Martinsville)
28	2	Berkeley	Mon	8:00 AM	10:00 AM	Rural	Expwy	181 southbound Exit 23-US 11 (Failing Water)
38	3	Berkeley	Mon	2:30 PM	4:30 PM	Rural	Feeder	WV 45 at Intersection with County 45/2 and County 45/3
48	4	Berkeley	Tues	8:00 AM	10:00 AM	Rural	Local	County Route ¼ (eastbound) at Intersection with County Route 1 (Route 4 ends at Intersection)
58	4	Berkeley	Mon	10:00 AM	12:00 AM	Rural	Local	County Route 12 at Intersection with US 11
68	5	Berkeley	Tues	10:00 AM	12:00 AM	Rural	Trunk	WV 9 at Intersection with County 4/13 (9/13) appears to have 2 intersections at 9)
78	6	Berkeley	Sat	12:30 PM	2:30 PM	Urban	Feeder	WV 45 at Intersection with US 11 in Martinsville (Westbound only)
88	7	Berkeley	Mon	12:30 PM	2:30 PM	Urban	Local	County Route 10/1 (Eastbound only) at Intersection with US 11
98	8	Cabell	Sat	12:30 PM	2:30 AM	Rural	Expwy	WV 2 at intersection with county 7, North of Barboursville
108	87	Cabell	Tues	10:00 AM	12:00 AM	Rural	Feeder	WV 10a at intersection with US 60
118	9	Cabell	Sun	2:30 PM	4:30 PM	Rural	Local	County Route 21 (Westbound) at intersection with County Route 1
128	88	Cabell	Tues	12:30 PM	2:30 PM	Rural	Local	I64 Eastbound, Exit 11 - WV 10 (Hal Greer Boulevard)
138	10	Cabell	Wed	8:00 AM	10:00 AM	Urban	Expwy	WV 2 3rd Avenue and 20th Street in Huntington (WV 2 turns into US 60)
148	11	Cabell	Wed	10:00 AM	12:00 AM	Urban	Feeder	WV 106 at intersection with WV 2 in Huntington
158	89	Cabell	Tues	2:30 PM	4:30 AM	Rural	Local	City Route 32/69 (8th Avenue) at 20th Street in Huntington
168	90	Cabell	Tues	8:00 AM	10:00 AM	Urban	Trunk	WV 10 (Hal Greer Blvd.) at intersection with 5th Avenue in Huntington
178	12	Harrison	Wed	8:00 AM	10:00 AM	Rural	Expwy	US 50 at Intersection with county 33, West of Clarksburg
188	13	Harrison	Thur	10:00 AM	12:00 AM	Rural	Feeder	WV 76 at intersection with US 50 (East of Bridgeport)
198	14	Harrison	Wed	10:00 AM	12:00 AM	Rural	Local	County 11 at County 9 (Wilsonburg)
208	15	Harrison	Sun	2:30 PM	4:30 PM	Rural	Local	County route 24 (Northbound) at intersection with US 19 (Route 24 ends at intersection)
218	16	Harrison	Sat	12:30 PM	2:30 PM	Rural	Trunk	WV 20 at intersection with County 9
228	17	Harrison	Thur	8:00 AM	10:00 AM	Urban	Expwy	I79 Exit 119 (Clarksburg) northbound or Southbound (Exit 119 marks intersection with US 50)
238	18	Harrison	Wed	2:30 PM	4:30 PM	Urban	Expwy	US 50 at intersection with US 20 in Clarksburg
248	19	Harrison	Wed	12:30 PM	2:30 PM	Urban	Feeder	US 19 at intersection with WV in Clarksburg
258	20	Kanawha	Sun	2:30 PM	4:30 PM	Rural	Expwy	US 119 intersection with WV 114 in Big Chimney
268	21	Kanawha	Wed	2:30 PM	4:30 PM	Rural	Feeder	WV 61 at intersection with WV 94 in Marmet
278	91	Kanawha	Sat	12:30 PM	2:30 PM	Rural	Local	County Route 21 (Northbound) at intersection WV 622
288	22	Kanawha	Thur	8:00 AM	10:00 AM	Urban	Expwy	I77Exit 99 Greenbrier Street (WV 114) in Charleston
298	23	Kanawha	Thur	10:00 AM	12:00 AM	Urban	Expwy	I79 Exit 102 (Westmoreland Street) in Charleston
308	92	Kanawha	Mon	10:00 AM	12:00 AM	Urban	Feeder	US 60 at intersection with WV 35 West of St. Albans
318	93	Kanawha	Wed	12:30 PM	2:30 PM	Urban	Local	City Route 10/25
328	94	Kanawha	Mon	8:00 AM	10:00 AM	Urban	Trunk	County Route 9 at intersection with county Route 3, south of St. Albans
338	24	Lewis	Thur	9:00 AM	10:30 AM	Rural	Expwy	I79, exit 99 at US 33
348	25	Lewis	Thur	7:30 AM	9:00 AM	Rural	Expwy	US 33 at intersection with County 15 (from South) and County 36 (from North) in Hirner
368	26	Lewis	Thur	10:30 AM	12:00 AM	Rural	Local	County Route 14 at intersection with US 119
378	27	Lewis	Fri	2:00 PM	3:30 PM	Rural	Local	County Route 1 (northbound) at intersection with County Route 1/6 (Butchersville, by Jackson Mill)
388	28	Lewis	Thur	12:30 PM	2:00 PM	Urban	Local	US 19 at intersection with US 33/119 in Weston
398	29	Marshall	Thur	12:30 PM	2:00 PM	Rural	Expwy	US 250 at intersection with US 88
408	30	Marshall	Fri	7:30 PM	9:00 AM	Rural	Expwy	WV 2 at County Route 29, Burch Ridge road (Franklin, south of Moundsville)
418	31	Marshall	Thur	2:00 PM	3:30 PM	Rural	Feeder	US 250 at intersection with WV 891
428	32	Marshall	Sat	3:30 PM	5:00 PM	Rural	Local	County Route 25 at intersection with US 250 (Cameron)
438	33	Marshall	Thur	10:30 PM	12:00 AM	Rural	Local	County Route 88/12 at intersection with WV 88 (east of Benwood) (Back-up 88/13)
448	34	Marshall	Fri	9:00 AM	10:30 AM	Urban	Expwy	WV 2 at intersection with 250/88 in Moundsville
458	75	Greenbrier	Tues	8:00 AM	10:00 AM	Rural	Feeder	WV Route 3 at intersection with County Route 3/2 (Alderson Cemetery Road)
468	76	Greenbrier	Tues	10:00 AM	12:00 AM	Rural	Local	County Route 43 at intersection with County Route 58 (located off Route 63 where the Greenbrier River leaves Route 63)

#	#	County	Day	Time 1	Time 2	Area	Class	Location
478	77	Greenbrier	Tues	12:30 PM	2:30 PM	Rural	Trunk	US Route 219 at intersection with Gypsy Mountain Road (County Route 24) located between Fairlea and Ronceverte
488	78	Greenbrier	Tues	2:30 PM	4:30 PM	Rural	Trunk	Route 20 at intersection with Simms Mountain Road, located south of Rainelle and Lilly Park.
498	79	Mercer	Wed	10:00 AM	12:00 AM	Rural	Expwy	US 19 at intersection with 19/29 south of Princeton
508	80	Mercer	Wed	12:30 PM	2:30 PM	Rural	Expwy	US 460 at intersection with County Route 34/1 south of Princeton
518	81	Mercer	Wed	8:00 AM	10:00 AM	Rural	Feeder	WV 10 at intersection with County Route 6 (Lashmeet)
528	82	Mercer	Wed	2:30 PM	4:30 PM	Rural	Feeder	WV 112 at intersection with County Route 219/6 (east of Oakvale)
538	83	Mercer	Thur	8:00 AM	10:00 AM	Rural	Local	County Route 25 at intersection with US 19
548	84	Mercer	Thur	10:00 AM	12:00 AM	Rural	Trunk	WV 20 at intersection with US 52
558	85	Mercer	Sun	12:30 PM	2:30 PM	Urban	Expwy	US 460 at intersection with County Route 21/1 in Bluefield
568	86	Mercer	Sun	2:30 PM	4:30 PM	Urban	Trunk	US 52 at intersection with WV 598 (east of Cumberland Road in Bluefield)
578	35	Mineral	Wed	2:00 PM	3:30 PM	Rural	Local	County Route 28/5 (Northbound) at intersection with County Route 28
588	36	Mineral	Wed	9:00 AM	10:30 AM	Rural	Trunk	US 220 at intersection with US 50
598	37	Mineral	Wed	7:30 AM	9:00 AM	Rural	Trunk	WV 93 at intersection with US 50
608	38	Mineral	Wed	10:30 AM	12:00 AM	Rural	Trunk	WV 972 at intersection with US 220
618	39	Mineral	Wed	12:30 PM	2:00 PM	Rural	Trunk	WV 46 at intersection with US 220
628	40	Mineral	Wed	3:30 PM	5:00 PM	Urban	Trunk	WV 28 at entrance to Cumberland County Airport (County 28/11) 21
638	41	Monongalia	Wed	2:30 PM	4:30 PM	Urban	Expwy	I68 at Exit 4 (WV 7, Sabraton)
648	42	Monongalia	Thur	10:00 AM	12:00 AM	Urban	Expwy	I79 at Exit 152 (US 19, Westover)
658	43	Monongalia	Wed	12:30 PM	2:30 PM	Urban	Feeder	WV 7 at intersection with County 75 Dellslow
668	44	Monongalia	Sat	10:00 AM	12:00 AM	Urban	Local	County Route 75/2 at intersection with County Route 75
678	45	Monongalia	Fri	2:30 PM	4:30 PM	Urban	Trunk	US 119 at intersection with WV 705
688	46	Monongalia	Fri	12:30 PM	2:30 PM	Rural	Feeder	WV 705 at intersection with Van Voorhis
698	47	Monongalia	Sat	8:00 AM	10:00 AM	Rural	Local	City route 47/89 at University Avenue (in Morgantown, Evansdale Drive near McDonalds)
708	48	Monongalia	Thur	8:00 AM	10:00 AM	Rural	Trunk	US 119 at intersection with US 19
718	49	Ohio	Mon	7:30 AM	9:00 AM	Rural	Expwy	I70, Exit 1 (County 41)
728	50	Ohio	Tues	3:30 PM	5:00 PM	Rural	Local	County Route 25 at intersection with WV 88
738	51	Ohio	Mon	10:30 AM	12:00 AM	Urban	Expwy	I470, Exit 1 (US 250)
748	52	Ohio	Tues	2:00 PM	3:30 PM	Urban	Expwy	WV 2 at intersection with 12th Street in Wheeling
758	53	Ohio	Mon	9:00 PM	10:30 PM	Urban	Feeder	WV 88 at intersection with US 40
768	54	Ohio	Tues	12:30 PM	2:00 PM	Urban	Local	(Use back-up, 252 is closed) North Huron at US 40
778	55	Preston	Mon	8:00 AM	10:00 AM	Rural	Expwy	I68, Exit 23 (Bruceton Mills)
788	56	Preston	Mon	10:00 AM	12:00 AM	Rural	Feeder	County 70 at intersection with WV 26 in Tunnelton
798	57	Preston	Tues	2:30 PM	4:30 PM	Rural	Feeder	WV 7 at intersection with WV 26 in Kingwood
808	58	Preston	Tues	12:30 PM	2:30 PM	Rural	Local	County Route 59 at WV 26 in Tunnelton
818	59	Raleigh	Sat	2:30 PM	4:30 PM	Rural	Expwy	I64 Exit 124 (US 19, East Beckley)
828	60	Raleigh	Fri	8:00 AM	10:00 AM	Rural	Expwy	US 19 at intersection with WV 3 (Shady Spring, South of Beckley)
838	61	Raleigh	Sat	8:00 AM	10:00 AM	Rural	Feeder	WV 41 at intersection with WV 61
848	62	Raleigh	Sat	10:00 AM	12:00 AM	Rural	Feeder	WV 41 at intersection with WV 41/24, (isn't marked; 8/10 mile south of 41 & 6 intersection)
858	63	Raleigh	Fri	2:30 PM	4:30 PM	Rural	Local	County Route 1 at intersection with County Route 7 (In Cirtsville I77)
868	64	Raleigh	Fri	12:30 PM	2:30 PM	Urban	Expwy	I77 Exit 44 (WV 3, Beckley)
878	65	Raleigh	Sat	12:30 PM	2:30 PM	Urban	Feeder	WV 41 at intersection US 19
888	66	Raleigh	Fri	10:00 AM	12:00 AM	Urban	Trunk	WV 3 at intersection with WV 16 in Beckley
898	67	Wood	Wed	12:30 PM	2:30 PM	Rural	Expwy	I77, Exit 179 (WV 2, Emerson Avenue)
908	68	Wood	Wed	2:30 PM	4:30 PM	Rural	Expwy	WV 50 at intersection with County 50/36 and County 50/37 near Murphytown
918	69	Wood	Wed	10:00 AM	12:00 AM	Rural	Feeder	WV 14 at intersection with WV 31
928	70	Wood	Wed	8:00 AM	10:00 AM	Rural	Feeder	WV 31 at intersection with WV 14
938	71	Wood	Mon	12:30 PM	2:30 PM	Rural	Local	County Route 21 (Northbound) at intersection with WV 14
948	72	Wood	Sun	10:00 AM	12:00 AM	Urban	Expwy	US 50 at intersection with 13th Street in Parkersburg
958	73	Wood	Sun	8:00 AM	10:00 AM	Urban	Feeder	WV 47 at intersection with US 50
968	74	Wood	Mon	2:30 PM	4:30 PM	Urban	Local	County route 32 at intersection with WV 14 in Parkersburg

Appendix D: Safety Belt Observer Instructions

Safety Belt Observer Instruction Form

- Eligible vehicles need to have at least four tires and be one of the following: Passenger automobile, pickup truck, recreational vehicle, jeep or van (private, public and commercial). Pickup trucks should be coded "truck." Jeeps, Broncos, Blazers and other vehicles of similar type should be coded "SUV." Do not include straight trucks (like a UPS truck) or tractor-trailers. Eligible vehicles should be observed regardless of the state in which they are registered.

- Belt use will be observed for front seat occupants only. Observe and record data for the <u>driver</u> and <u>passenger in the right front seat</u>. If there is more than one front seat passenger, observe only the "outside" passenger. Do not record data for passengers in the back seat or for a third passenger riding in the middle of the front seat.

- If a child is present in the front seat in a child restraint seat, <u>do not</u> record anything. However, children riding in the front seat, regardless of age, who are <u>not</u> in child restraint seats should be observed as any other front seat passenger.

- Each observation period will last for 45 minutes.

The following procedures will be used in conducting observations of belt use:

1. As you observe an eligible vehicle, record the type of vehicle (car, truck, sport utility, van), sex (male or female) and restrained by shoulder belt (yes or no) of the front seat occupants (driver and front seat "outside" passenger only).

2. If you notice a lap belt in use without a shoulder belt, it should be recorded as <u>not restrained</u>. Only shoulder belts are to be counted.

3. If the vehicle is equipped with shoulder belts but the person has the shoulder strap under his/her arm or behind the back, this should be recorded as <u>not</u> restrained.

4. Observe belt use ONLY for the lane(s) indicated on the site maps provided to you. The lane(s) are indicated by arrows on the site maps.

5. In many situations, it will be possible to observe every vehicle in the designated lane. However, if traffic is moving too fast to observe every vehicle, you should determine a focal point up the road in the appropriate lane. Observe the next vehicle to pass the focal point after the last vehicle has been coded.

6. Do not observe if it is raining, or if there is fog or inclement weather. If you arrive at a site and it begins to rain, do not collect data in the rain. Find a dry place and wait 15 minutes to see if the rain stops. If the rain stops, start observing again and extend the observation period to make up for the time missed. Otherwise, you will have to reschedule the site. (Note: rain means real rain, not light fog, or drizzle, or mist).

7. If more than one data sheet is used, staple sheets together at the end of the observation period and note the number of sheets used at the top of the data form.

8. It may happen that the site you are assigned is seriously compromised due to construction. If this occurs you may move one block in any direction on the same street such that you are observing the same stream of traffic that would have normally been observed had there been no construction. If moving one block will not solve the problem, then do not observe. An alternate site will be selected and observed on some future date.

Appendix E: Observational Survey Data Collection Form

Safety Belt Observational Survey Data Collection Form

COUNTY NAME:_____   SITE NUMBER:_____

SITE NOTES:_____

DATE: _____ - _____ - _____

WEATHER CONDITIONS (Circle one):
1) Clear/Sunny   2) Light Rain   3) Cloudy   4) Fog   5) Clear But Wet

START TIME:_____   END TIME:_____

	DRIVER			PASSENGER			DRIVER			PASSENGER		
Veh. #	Vehicle C = car T = pick up S = suv V = van	Sex M = male F = female N/S = unsure	Use Y = yes N = no	Sex M = male F = female N/S = unsure	Use Y = yes N = no	Veh. #	Vehicle C = car T = pick up S = suv V = van	Sex M = male F = female N/S = unsure	Use Y = yes N = no	Sex M = male F = female N/S = unsure	Use Y = yes N = no	
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3						28						
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25						50						

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FORM 2002