July 2009
Seat Belt Use in Florida

Final Report

July 2009
Seat Belt Use in Florida

Final Report

Table of Contents

Introduction

This report documents Florida's annual July 2009 Statewide Seat Belt Use Survey. The survey was conducted by Preusser Research Group, Inc. (PRG), under the direction of the.

The Florida Department of Transportation (FDOT) is responsible for the State of Florida's Highway Safety Program. Occupant protection is among several significant program areas for which FDOT is responsible. A portion of FDOT's occupant protection program funding comes from the Federal Government, which requires administration of a statewide survey of belt use that must adhere to Federal Register Guidelines. Florida's first statewide survey certified under Federal Register Guidelines was completed in 1999. Surveys adhering to Federal Register Guidelines have been completed every year since. The survey first and foremost covered by this report was conducted in July 2009 and it succeeds in providing an accurate and reliable estimate of seat belt use in Florida, at a specific point in time, and is comparable to the first estimate accredited by National Highway Traffic Safety Administration (NHTSA) in 1999 and all statewide surveys conducted thereafter.

In spring of 2006, FDOT contracted with PRG to redesign the statewide survey, conduct observations, and develop an analysis methodology to determine a statewide seat belt use rate for the State of Florida for year 2006. Florida had an approved sampling plan in place since 1999, based on 351 sites across 13 counties.[1] That plan was based on earlier population figures and needed updating. Rather than simply redraw the road sample, a modified design was developed using a new sample of counties and a smaller number of sites. The smaller number of sites in the 2006 design (151 versus 351) still provided an overall belt use estimate with much tighter variability than specified in NHTSA's 1998 TEA 21 Sample Design requirements, while reducing costs to the State and NHTSA and still meeting all Federal Register requirements. The design developed by PRG in 2006 was used again in conducting statewide surveys in 2007 and 2008, as well as in April, June, and July of 2009.

---

[1] Florida Department of Transportation. (1999) 1999 Observational Survey of Seat Belt and Child Restraint Use in Florida. Project OP-99-02-26-01.

Procedures

Overall Design

The overall design was implemented in four steps:

1. Counties for observations were selected from those which total more than 85 percent of the State's population.

2. Roads were stratified by combining related functional use classes within each county. The numbers of sites to be sampled in each stratum-county combination were allocated based on the square root of daily vehicle miles traveled (DVMT).

3. Specific road segments, within stratum within county, were randomly selected from all segments with selection probabilities proportional to their DVMT.

4. Belt use estimation procedures and computations were developed reflecting the design and Section 157 reliability requirements.

County Selection

Table 1 lists the largest 24 Florida counties ordered by population according to 2004 Census figures. The first 24 counties account for 85.8 percent of the State's total population. According to NHTSA's 1998 sampling design suggestions, in the case of 24 qualified counties, a sample of 12 counties for seat belt observations is appropriate. Population figures for the remaining 43 counties are given in Appendix A.

Sample counties are shown highlighted in Table 1. The selection procedure involved successive random selections with the odds of selection proportional to the county's population. The 24 counties were ordered by population and cumulative population percentages were calculated, from 15.83 percent for Miami-Dade through 100 percent for Okaloosa. A random number from a rectangular distribution between 0 and 100 percent was drawn, and the first county whose cumulative population percentage was equal to or greater than the random number was deemed selected. The county was removed from the list, cumulative population percentages recomputed (again going up to 100%), a new random number drawn, and a second county selected. The process was repeated until all 12 counties were selected.

Table 1. Top 24 Florida Counties, by Population.

Location	Region	2004 Population		Cumulative Pct	
		N	Percent	Of Total	Of Top 24
Miami-Dade County	**South**	**2,363,600**	**13.59%**	**13.59%**	**15.83%**
Broward County	**South**	**1,754,893**	**10.09%**	**23.67%**	**27.58%**
Palm Beach County	**South**	**1,243,230**	**7.15%**	**30.82%**	**35.91%**
Hillsborough County	**Central**	**1,101,261**	**6.33%**	**37.15%**	**43.28%**
Orange County	**North**	**989,926**	**5.69%**	**42.84%**	**49.91%**
Pinellas County	**Central**	**928,537**	**5.34%**	**48.18%**	**56.13%**
Duval County	**North**	**821,338**	**4.72%**	**52.90%**	**61.63%**
Polk County	**Central**	**524,389**	**3.01%**	**55.91%**	**65.14%**
Brevard County	Central	519,387	2.99%	58.90%	68.62%
Lee County	**South**	**514,295**	**2.96%**	**61.85%**	**72.06%**
Volusia County	North	478,670	2.75%	64.61%	75.27%
Pasco County	Central	407,799	2.34%	66.95%	78.00%
Seminole County	North	391,449	2.25%	69.20%	80.62%
Sarasota County	Central	355,477	2.04%	71.24%	83.00%
Escambia County	North	298,859	1.72%	72.96%	85.00%
Collier County	**South**	**296,678**	**1.71%**	**74.67%**	**86.99%**
Manatee County	Central	296,385	1.70%	76.37%	88.97%
Marion County	**North**	**291,322**	**1.67%**	**78.04%**	**90.92%**
Lake County	North	260,788	1.50%	79.54%	92.67%
Leon County	**North**	**243,867**	**1.40%**	**80.95%**	**94.30%**
St Lucie County	Central	226,816	1.30%	82.25%	95.82%
Alachua County	North	223,090	1.28%	83.53%	97.31%
Osceola County	Central	219,544	1.26%	84.79%	98.78%
Okaloosa County	North	181,460	1.04%	85.84%	100.00%
Florida State Total		**17,397,161**	100.00%		

* Highlighted counties are in the proposed sample.

Sampling Plan Development

The next step determined the distribution of the number of observation sites across counties.

FDOT provided data on more than 32,160 linear miles of roads with total DVMT of more than 424 million vehicle miles traveled. These include 12,050 miles of roads from the State Highway System (State, U.S., or Interstate roads) and other major roads at the city and county level, including a relatively small number of local roads. To place this in perspective, Florida estimates there are an additional 88,000 miles of public roads in the State with an estimated 45 million DVMT; thus, the measured roadways account for about 90 percent of all travel.[2]

---

[2] Florida Department of Transportation, Transportation Statistics Office. (October 2004) *Florida Highway Data 2003 Source Book*.

Of the listed roads, 11,655 miles and 254 million DVMT lie within the sampled counties. Florida roads are divided into 12 functional use classes following Federal Highway Administration categories, from Rural Principal Arterial-Interstate to Urban Local. We eliminated Local roads from the sampling plan (Local roads in the 12 sample counties account for 8 percent of the road segments, 7 percent of the mileage, and just 1 percent of the DVMT). The numbers of road segments in the sample counties, excluding Local roads, are shown in Table 2.

Also shown in Table 2 are Region assignments for the 12 counties. In past belt use reports, Florida was divided into North, Central, and South regions for reporting purposes, and we continued that activity. Regions were devised with approximately equal populations in each. The North region included the counties of Levy, Marion, Putnam, Flagler, and all others farther north. The South region included counties from Manatee across to St. Lucie and farther south. The Central region covered the remaining counties in the middle of the State, including the major metropolitan areas of Tampa-St. Petersburg and Orlando. Region was not considered in the selection of sample counties.

Table 2. Road Segment and Traffic Volume Distribution. [1]

County	Region	Road Segments		Traffic Volume	
		Number	Percent	DVMT	Percent
Miami-Dade County	South	1,417	14.7%	43,563,109	17.3%
Broward County	South	1,164	12.1%	37,351,486	14.9%
Palm Beach County	South	1,003	10.4%	28,584,711	11.4%
Hillsborough County	Central	835	8.7%	27,420,283	10.9%
Orange County	North	1,048	10.9%	27,295,637	10.9%
Pinellas County	Central	885	9.2%	18,043,724	7.2%
Duval County	North	825	8.6%	23,857,142	9.5%
Polk County	Central	935	9.7%	11,862,943	4.7%
Lee County	South	469	4.9%	11,101,995	4.4%
Collier County	South	184	1.9%	7,465,244	3.0%
Marion County	North	505	5.2%	9,091,709	3.6%
Leon County	North	362	3.8%	5,448,078	2.2%
Total, 12 Sampled Counties		9,632	100.0%	251,086,061	100.0%

[1] *Excluding Local Roads and segments in unsampled counties.*

The distribution of road segments across the 10 road functional use classifications (excluding Local) in the 12 sample counties is shown in Table 3. Some of these road segment categories are quite small. In order to produce categories with significant numbers, while still retaining meaningful distinctions, road segments were collapsed into just four stratified categories: Interstates and Other Expressways (n = 746), Other Principal Arterials (other than interstates/expressways) (n = 2,199), Minor Arterials (n = 2,647), and Collectors (n = 4,040). This categorization is the same as used in previous Florida reports. DVMT figures are available for all the road segments in the Florida database and were used to guide the distribution of sites among the counties and road type strata.

Table 3. Numbers of Road Segments by Functional Class and Sample County.

COUNTY	Roadway Functional Class										Total
	1 Rur prin art intst	2 Rur prin art othr	6 Rur minor art	7 Rur major coll	8 Rur minor coll	11 Urb prin art intst	12 Urb prin art xway	14 Urb prin art othr	16 Urb minor art	17 Urb coll	
Miami-Dade	0	12	4	16	2	27	98	259	449	550	1,417
Broward	3	1	0	1	0	70	36	309	349	395	1,164
Palm Beach	0	9	6	12	8	50	12	213	254	439	1,003
Hillsborough	1	8	15	19	7	47	29	234	201	274	835
Orange	0	11	2	8	5	28	82	176	291	445	1,048
Pinellas	0	0	0	1	0	31	10	180	285	378	885
Duval	2	2	4	3	0	50	86	141	243	294	825
Polk	4	32	16	55	11	10	15	200	137	455	935
Lee	1	4	18	37	0	16	6	105	134	148	469
Collier	3	12	8	10	6	4	0	32	43	66	184
Marion	4	40	15	54	73	7	0	87	59	166	505
Leon	2	12	9	8	11	12	0	120	105	83	362
Total	20	143	97	224	123	352	374	2,056	2,550	3,693	9,632

The previous Florida belt use plan called for 351 total sites. In 2005, the observed relative errors of estimate were 0.81% and 0.63% for the baseline and follow-up surveys, respectively, well within NHTSA's requirement of no more than 5 percent. The number of sites was reduced for the 2006 design (targeting a number around 150 sites), effectively cutting the expense to Florida and to NHTSA while still allowing for broad sampling throughout the State, and yet projected to produce a relative error of estimate of less than 2 percent.

The previous plan also called for equal numbers of sites across counties. The 2006 survey design distributes sites across counties in a way related to the contribution of the county to the State's total traffic volume. The numbers of road segments and the DVMT totals (Table 2) both show a range of about eight to one; basing numbers of sampling sites on either of those values would produce an unacceptable range, too few sites in the smaller counties, and too many in the largest. In order to reduce this spread, a square root transformation of the DVMT values was used to guide the site sample distribution.

The distribution of road functional class strata differs across counties. To account for this in calculations, DVMT was totaled by county and road class stratum, the square root transformation to those totals was applied, and sites were proportionally distributed to those values.

Table 4 presents the distribution of road strata across counties and shows for each the number of segments, sum of segment DVMTs, square root of the DVMT sum, and number of observation sites. The number of sites, 151, differs from the target of 150 due to rounding. This produced a moderate range of sites across counties, providing for about three times as many sites in the most populous and traffic-dense county as in the least. The numbers of sites per county are virtually identical to the values that would have been generated if they had been based on the square root of county-total DVMT.

Table 4. Roadway Functional Strata by County: Statistics and Recommended Site Samples.

COUNTY		Roadway Functional Strata				
		Interstate or Freeway	Other Principle Arterials	Minor Arterials	Collectors	Total
Miami- Dade	# Segments	125	271	453	568	1,417
	DVMT	15,484,998	11,181,104	11,179,887	5,717,119	43,563,108
	Sqrt(DVMT)	3,935	3,344	3,344	2,391	13,014
	Sample #	**6**	**5**	**5**	**3**	**19**
Broward	# Segments	109	310	349	396	1,164
	DVMT	14,699,297	11,213,888	7,278,789	4,159,513	37,351,487
	Sqrt(DVMT)	3,834	3,349	2,698	2,039	11,920
	Sample #	**6**	**5**	**4**	**3**	**18**
Palm Beach	# Segments	62	222	260	459	1,003
	DVMT	9,378,135	8,070,075	6,175,774	4,960,728	28,584,712
	Sqrt(DVMT)	3,062	2,841	2,485	2,227	10,616
	Sample #	**4**	**4**	**4**	**3**	**15**
Hillsborough	# Segments	77	242	216	300	835
	DVMT	10,040,796	7,201,377	5,843,366	4,334,745	27,420,284
	Sqrt(DVMT)	3,169	2,684	2,417	2,082	10,352
	Sample #	**5**	**4**	**4**	**3**	**16**
Orange	# Segments	110	187	293	458	1,048
	DVMT	9,329,382	6,691,183	6,972,787	4,302,285	27,295,637
	Sqrt(DVMT)	3,054	2,587	2,641	2,074	10,356
	Sample #	**4**	**4**	**4**	**3**	**15**
Pinellas	# Segments	41	180	285	379	885
	DVMT	3,135,263	5,818,727	6,339,649	2,750,085	18,043,724
	Sqrt(DVMT)	1,771	2,412	2,518	1,658	8,359
	Sample #	**3**	**3**	**4**	**2**	**12**
Duval	# Segments	138	143	247	297	825
	DVMT	11,130,756	4,001,300	5,144,566	3,580,519	23,857,141
	Sqrt(DVMT)	3,336	2,000	2,268	1,892	9,497
	Sample #	**5**	**3**	**3**	**3**	**14**
Polk	# Segments	29	232	153	521	935
	DVMT	2,423,662	5,039,643	1,951,641	2,447,996	11,862,942
	Sqrt(DVMT)	1,557	2,245	1,397	1,565	6,763
	Sample #	**2**	**3**	**2**	**2**	**9**
Lee	# Segments	23	109	152	185	469
	DVMT	2,446,086	3,309,576	3,515,492	1,830,840	11,101,994
	Sqrt(DVMT)	1,564	1,819	1,875	1,353	6,611
	Sample #	**2**	**3**	**3**	**2**	**10**
Collier	# Segments	7	44	51	82	184
	DVMT	1,783,194	1,588,095	2,493,065	1,600,888	7,465,242
	Sqrt(DVMT)	1,335	1,260	1,579	1,265	5,440
	Sample #	**2**	**2**	**2**	**2**	**8**
Marion	# Segments	11	127	74	293	505
	DVMT	2,614,270	3,123,946	1,158,690	2,194,803	9,091,709
	Sqrt(DVMT)	1,617	1,767	1,076	1,481	5,942
	Sample #	**2**	**3**	**2**	**2**	**9**
Leon	# Segments	14	132	114	102	362
	DVMT	776,036	2,072,908	1,635,046	964,088	5,448,078
	Sqrt(DVMT)	881	1,440	1,279	982	4,581
	Sample #	**1**	**2**	**2**	**1**	**6**
Total	**# Segments**	**746**	**2,199**	**2,647**	**4,040**	**9,632**
	DVMT	**83,241,875**	**69,311,822**	**59,688,752**	**38,843,609**	**251,086,058**
	Sqrt(DVMT)	**29,115**	**27,748**	**25,577**	**21,011**	**103,451**
	Sample #	**42**	**41**	**39**	**29**	**151**

Site Selection

The actual sample of roadway segments used as seat belt use observation sites was selected after final approval of this Florida observation plan by NHTSA. The objective in sampling involved randomly drawing segments from within county-stratum populations of road segments, with the probability of drawing any segment proportional to its proportion of the total DVMT within the county-stratum.

In order to accomplish this, separately for each county-stratum "pool" of road segments, the following was done:

1. Totaled the DVMT for the road segments in the county-stratum. For each segment, calculated the percentage its DVMT was of the total. With the segments in any order, computed cumulative percentages from the percentage of the first segment to 100%.

2. Generated a random number from a rectangular distribution between 0 and 100%.

3. Accepted as an observation site the first segment whose cumulative percentage was equal to or greater than the random number.

4. Removed that segment from the list, recomputed total DVMT, percentages and cumulative percentages, and returned to step 2.

5. Continued selecting until twice the required number of sites had been selected, preserving the order of selection.

Seat Belt Usage Rate and Variability Calculations

Calculation of Overall Seat Belt Usage Rate

Seat belt use rates were calculated using formulas based on the proportion of the State's total DVMT (excluding local-road DVMT) "represented" by the site. Seat belt use rate calculations follow a three-step process.

First, estimated rates were calculated for each of the four road type strata within each county. Observed use rates for all of the sites within each stratum-county combination were combined by simple averaging, as shown in formula (1). (Since the sites' original probability of inclusion in the sample was proportional to their DVMT, averaging their use rates makes use of that sampling probability to reflect their different DVMTs.)

$$p_{ij} = \sum_{k=1}^{n_{ij}} p_{ijk} / n_{ij} \tag{1}$$

where i = stratum, j = county, k = site within stratum and county, n_{ij} = number of sites within the stratum-county, and p_{ijk} = the observed seat belt use rate at site $ijk = B_{ijk}/O_{ijk}$, where B_{ijk} = total

number of belted occupants (drivers and outboard front-seat passengers) observed at the site, and O_{ijk} = total number of occupants whose belt use was observed at the site, according to the selection and observation procedures described in the Observations section of this report.

Next, stratum-county seat belt use rates were combined across strata within counties, weighted by the stratum's relative contribution to total county DVMT, to yield a county-by-county seat belt use rate p_j:

$$p_j = \frac{\sum_i DVMT_{ij} p_{ij}}{\sum_i DVMT_{ij}} \tag{2}$$

where i = stratum, j = county, $DVMT_{ij}$ = DVMT of all roads in stratum i in county j, and p_{ij} = seat belt use rate for stratum i in county j.

Finally, rates from the 12 counties were combined by weighting them by their statewide DVMT values $DVMT_j$ times W_j:

$$p = \frac{\sum_j DVMT_j W_j p_j}{\sum_j DVMT_j W_j} \tag{3}$$

where $DVMT_j$ = total DVMT for county j and W_j = the inverse of the probability of their selection, i.e., 1/(population of county j / total population of 24 possible sample counties):

$$W_j = \frac{\sum_{l=1}^{24} Pop_l}{12 Pop_j} \tag{4}$$

The result is a weighted combination of the individual site seat belt use rates.

Estimates of belt use for subgroups of road users, such as male drivers, female passengers, male drivers of pickup trucks, etc., were calculated as simple belt use averages of all observations within the subgroups across the State. This is because the distribution of types of vehicles and occupants across county and road segment type, though unknown, is likely unequal. Without knowing the actual distributions on which to base weighting formulas, using unweighted simple belt use calculations is the simplest reasonable approach. It has the further advantage of making all of the subgroup calculations somewhat comparable to each other.

Calculation of the Standard Error of the Overall Seat Belt Use Rate

Standard error of estimate values were estimated through a jackknife approach, based on the general formula:

$$\hat{\sigma}_{\hat{p}} = [\frac{n-1}{n} \sum_{i=1}^{n} (\hat{p}_i - \hat{p})^2]^{1/2} \qquad (5)$$

where $\hat{\sigma}_{\hat{p}}$ = standard deviation (standard error) of the estimated statewide seat belt use proportion $\hat{p}$ (equivalent to p in the notation of formulas 1-3), n = the number of sites, i.e., 151, 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 was the 95% confidence interval, i.e., $\hat{p} \pm 1.96\hat{\sigma}_{\hat{p}}$. These values are reported for the overall statewide seat belt use rate.

Observations

Observers
Observers were hired and trained by PRG. Most have conducted seat belt observations for PRG in previous studies, and all were trained to the specific requirements for the Florida belt use survey. Prior to any data collection, observers reviewed procedures, had classroom instruction, and participated in training sessions that included on-street practice. These observers performed all field data collection.

Scheduling
Observations were conducted July 7-17 during daylight hours, between 7 a.m. and 6:15 p.m. For each site, a site schedule specified time of day, day of week, roadway to observe, and direction of traffic to observe. Time of day was specified as one of five time periods, 7 – 9:15 a.m., 9:15 – 11:30 a.m., 11:30 a.m. – 1:45 p.m., 1:45 – 4 p.m., and 4 – 6:15 p.m., with the one-hour observation period to take place within the broader time period. Time of day and day of week were randomly assigned on a per-county basis. Survey schedules were developed in advance and provided to individual observers.

Observation sites were mapped in advance (Appendix D). Mapping helped to identify geographic location of sites as well as the target day 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 seven survey crews, scheduling observations over a short time period was relatively easy. Observers were assigned three to five observation sites per day.

Site Observation Details
In advance of visiting the sites, maps were developed that provided details such as road name or number and road segment begin and end points. Because of the extent of data to observe on each vehicle, observation points were sought where traffic will naturally slow or stop. For street locations, and assuming segments had generally equivalent traffic along their entire length, we sought suitable observation points toward the middle of the segments. Locations were at or near intersections where vehicles slow down, increasing the time for observation and improving data completeness and accuracy. For limited access highway segments, traffic was captured at or near

an exit ramp where traffic was slow enough to allow reliable and accurate observations to be made.

Data Collection

Data collection was done according to the instructions in Appendix B. All private passenger vehicles were eligible to be observed. Survey information was recorded on an observation data collection form (Appendix C). The form was designed so that pertinent site information can be documented, including county name, city/town/area identifier, exact roadway location, date, day of week, time, weather condition, and direction of traffic flow and lane(s) observed. Each one-page form includes space to record information on 25 vehicles, the driver of that vehicle, and the outboard, front seat passenger, if any. If more than 25 observations were made, additional sheets were used and all sheets for the observation site-period were fastened together. Observations included estimations of person gender, age category (16-59 vs. 60 and above), and race (White, Black, Hispanic, or Other) in addition to belt use.

Building a Data Set

Observation data were keypunched by Preusser Research Group, Inc staff. A thorough check of the data yielded minimal errors, all of which were corrected pre-analysis. The data set was analyzed using the Statistical Package for the Social Sciences (SPSS). Weighting procedures, used to estimate the overall statewide average, were calculated using Microsoft Excel.

Calculation of Seat Belt Usage Rate

Preusser Research Group developed an excel spreadsheet in which raw data observations were recorded and belt use and variability calculations performed. Calculation of seat belt usage rates followed the formulas provided above. For the statewide belt use figure to be reported to NHTSA, observations included all vehicle types and drivers and outboard front seat passengers. It is normal that seat belt usage rates are calculated for subsets of interest, e.g., drivers alone, passengers alone, drivers and/or passengers within vehicle type, or males or females alone. As noted above, those calculations were based on simple rates of belt use tallied across the entire data set of individual observations.

July 2009 Florida Statewide Use Rate Survey Results

Observers recorded belt use information on 32,330 drivers and 6,976 outboard front seat passengers observed across 151 sample sites within 12 counties. Table 5 displays number of drivers and passengers observed per county, and in addition, separates the counties by region.

Table 5. Number of Observed Front Seat Occupants per County/Region

	Drivers	Passengers	Total
North Region	**4,889**	**1,481**	**6,370**
Duval County	2,719	757	3,476
Leon County	1,052	277	1,329
Marion County	1,118	447	1,565
Central Region	**8,189**	**1,679**	**9,868**
Hillsborough County	2,655	608	3,263
Orange County	2,102	503	2,605
Pinellas County	2,292	370	2,662
Polk County	1,140	198	1,338
South Region	**19,252**	**3,816**	**23,068**
Broward County	5,299	869	6,168
Collier County	2,183	396	2,579
Dade County	5,620	981	6,601
Lee County	2,399	711	3,110
Palm Beach County	3,751	859	4,610
Statewide Total	**32,330**	**6,976**	**39,306**

Surveys of belt use conducted during the 1990s indicated no sustained increase in Florida's statewide use rate during that decade. Florida's seat belt use rate then improved over time after the year 2000. Increases measured over this time are due, at least in part, to the implementation of highly and widely visible efforts to enforce Florida's adult seat belt law.

The overall belt use rate, for drivers and passengers combined, measured 85.2 percent in July 2009 (Relative Standard Error = 0.655%; 95 Percent Confidence Interval 84.1% – 86.2%). The weighted belt use rate was equal among drivers compared to passengers. Figure 1, on the subsequent page, shows the trend in belt use over time.

Table 6. Weighted Statewide Seat Belt Use Rate for Florida

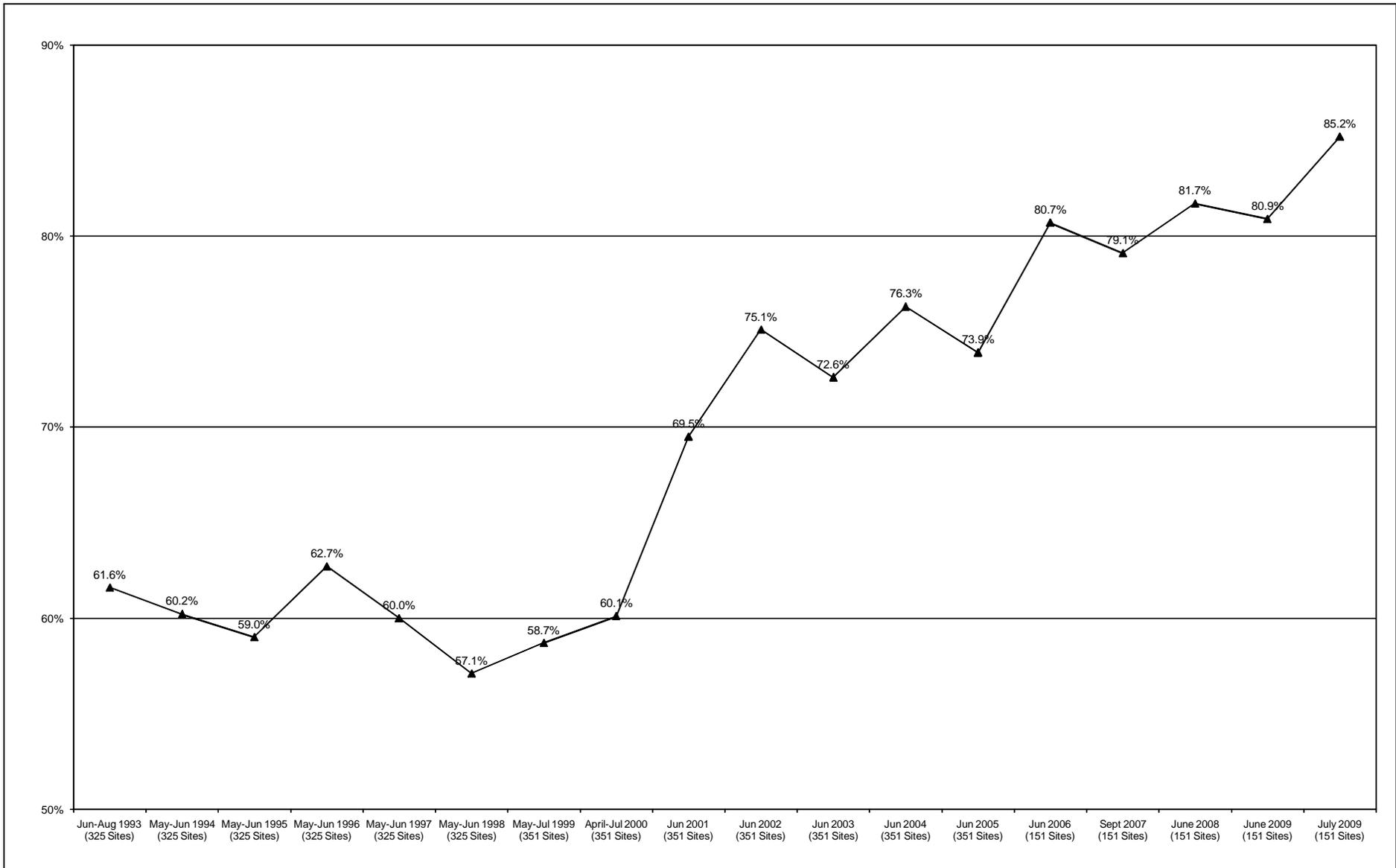|	**July 2009** (N=39,306)
July 2009 Statewide Use Rate	85.2

Figure 1. Florida Statewide Observational Survey of Belt Use Results; 1993 – July 2009

Descriptive Information – Based on Raw Data Counts

Belt use differed by roadway type. As shown in Figure 2, belt use was highest on Interstates (86.8 percent) and Principal Arterials (87.1 percent), which typically have higher traffic densities and higher rates of speed traveled. Observers measured the lowest usage on Collectors (84.0 percent), which are roadways usually found within neighborhoods in city limits. This pattern of results has been similar year to year.
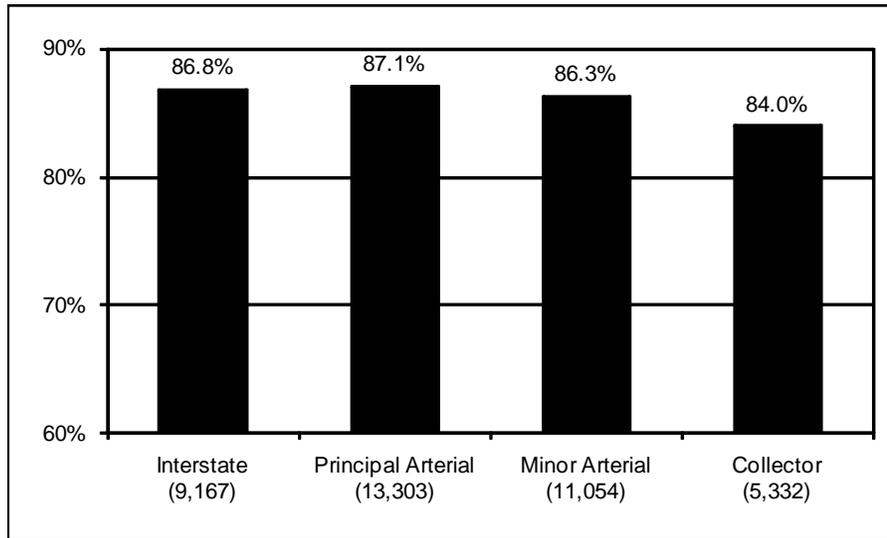

Figure 2. Observed Belt Use Rate by Roadway Type

The July 2009 observational survey indicated little variation in belt usage when comparing days of week or times of day. Friday yielded the highest usage compared to the other days of week, while Tuesday yielded the lowest use rate (Figure 3). Otherwise, the daily rates are comparatively level. Figure 4 shows slightly higher belt usage during morning and afternoon rush hours, otherwise rates held more or less steady throughout the day.
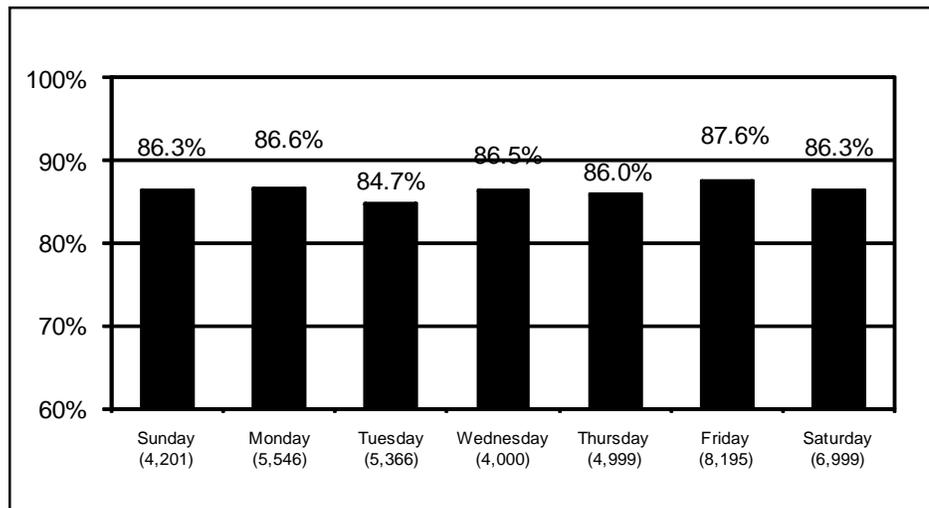

Figure 3. Observed Seat Belt Use Rate by Day of Week
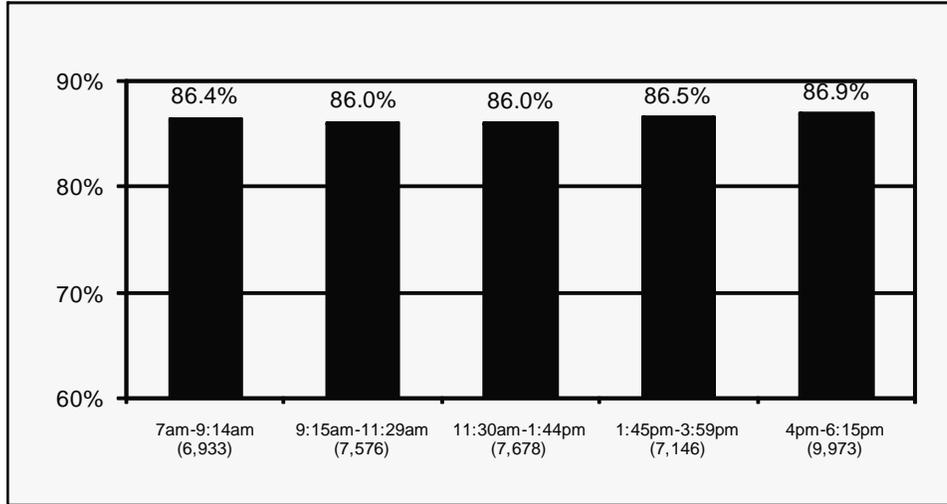
Figure 4. Observed Seat Belt Use Rate by Time of Day

The survey results indicated that belt usage measured lower among male occupants compared to female occupants (Figure 5). Male passengers were less likely belted compared to male drivers (Figure 6). Male passengers measured 4.8 points lower than their driver counterparts (79.7 percent vs. 84.5 percent, respectively). Less discrepancy was found in belt use among female drivers and female passengers.
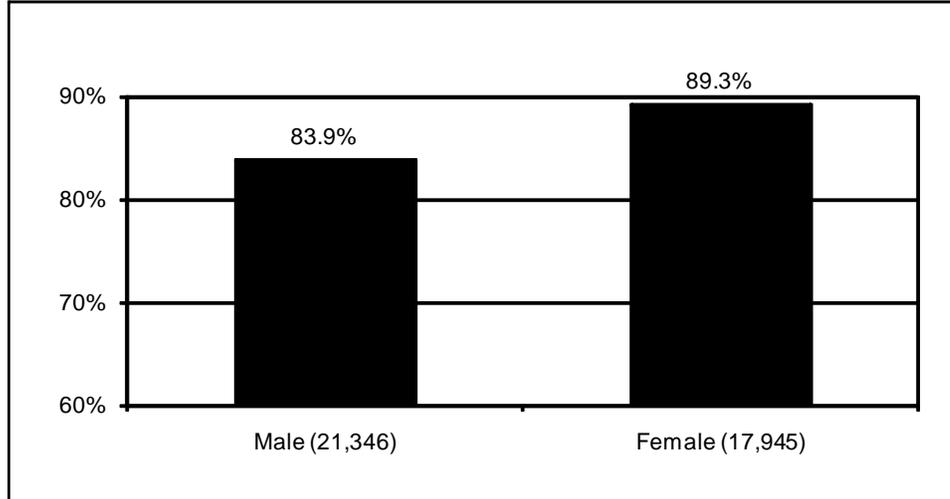
Figure 5. Observed Seat Belt Use Rate by Gender
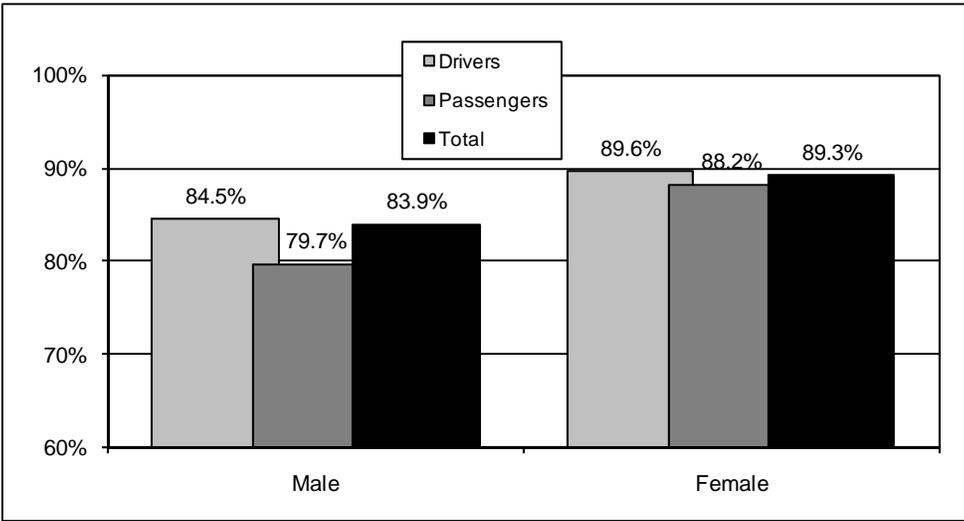
Figure 6. Observed Seat Belt Use Rate by Gender and Seating Position

Figure 7 shows belt use by occupant race. Belt usage measured lower among black occupants when compared to all other races or ethnicities.
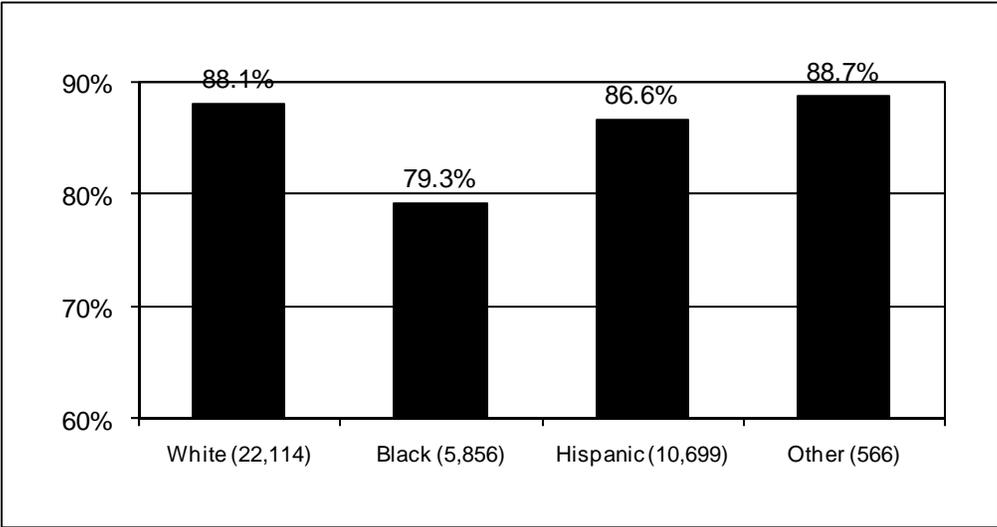
Figure 7. Observed Seat Belt Use Rate by Race of Occupant

The pattern of belt use results among the observed race/ethnicity categories remained similar when male occupants and female occupants were examined separately, with males measuring lower in general (Figures 8 and 9).
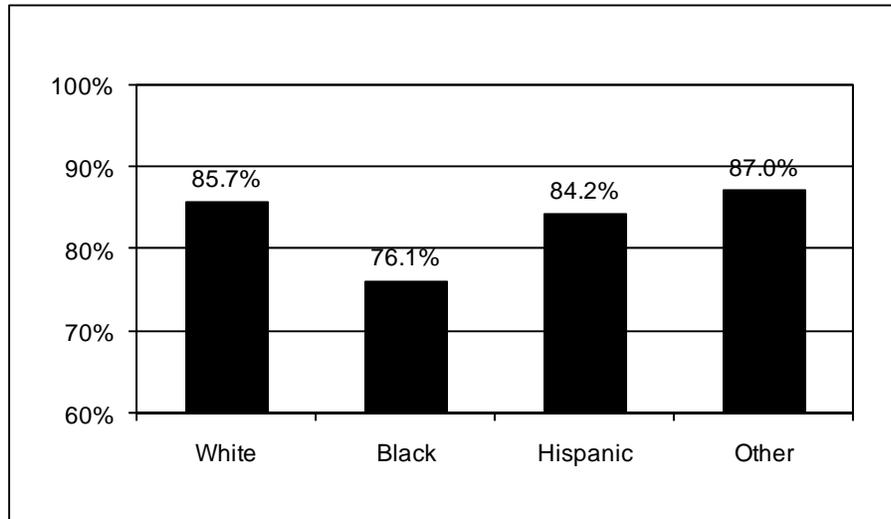
Figure 8. Observed Seat Belt Use Rate for Male Occupants by Race
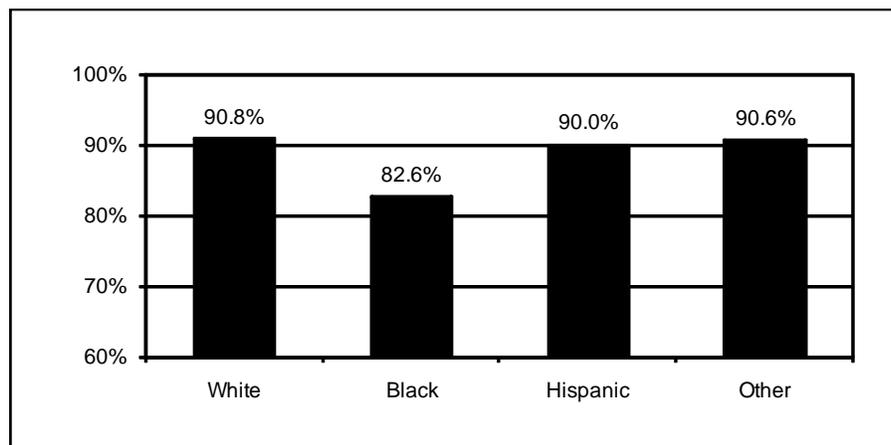
Figure 9. Observed Seat Belt Use Rate for Female Occupants by Race

The July 2009 survey indicated slight differences between drivers and passengers among race categories. Figure 10 shows that in most cases, passengers wore belts slightly less often than their driver counterparts. This was true for all race categories with the exception of white occupants, where passenger use was slightly higher than driver use.
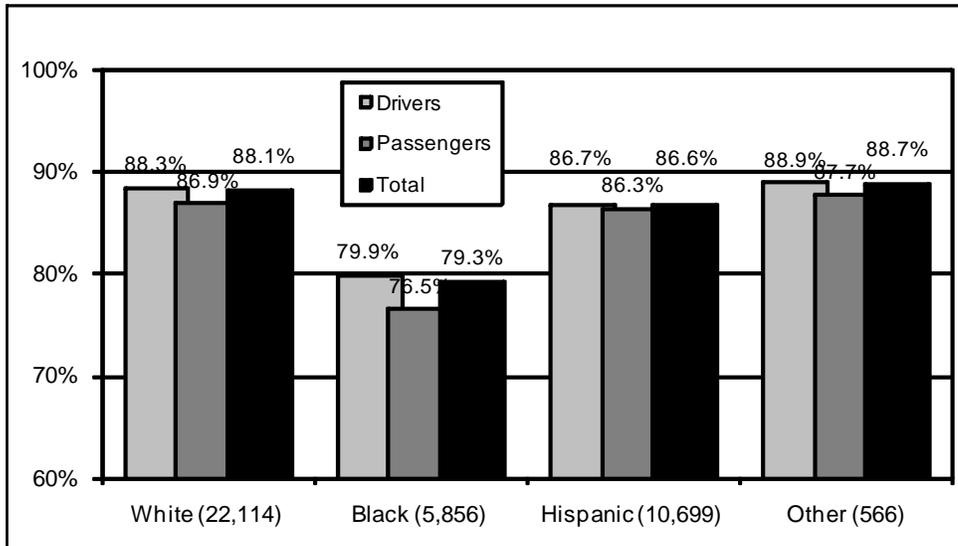
Figure 10. Observed Seat Belt Use Rate by Race and Seating Position

Belt use observations indicated that occupants age 60 and older wore their safety belt more often compared to occupants under age 60 (Figure 11).
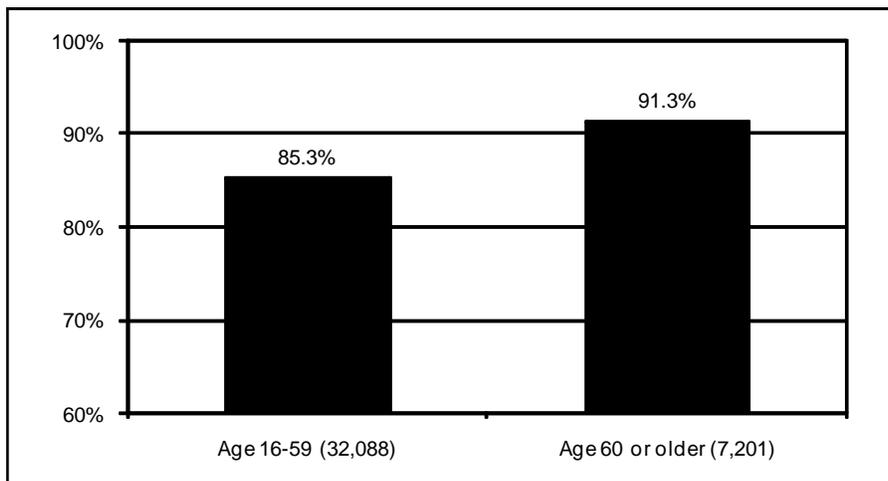
Figure 11. Observed Seat Belt Use Rate by Age Category

Results from the survey indicated lower belt use among occupants in pickup trucks (79.8 percent) when compared to other vehicle types (Figure 12). Front seat occupants in sport utility vehicles were most likely to be belted (88.6 percent), followed by occupants in vans (88.3

percent) and passenger cars (86.7 percent). Occupants in pickup trucks were mostly male (84.4 percent of occupants in pickup trucks were male), and as previously indicated, male occupants were less likely to be observed wearing a seat belt when compared to females.
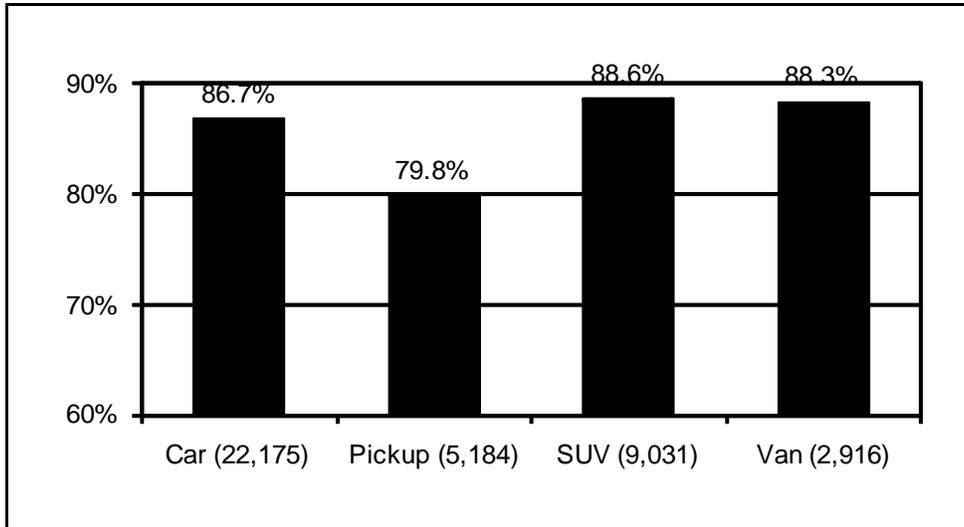
Figure 12. Observed Seat Belt Use Rate by Vehicle Type

Both drivers and passengers in pickup trucks were observed using a seat belt less often compared to occupants in the other vehicle types (Figure 13). Passengers in pickups were observed wearing a seat belt the least often (76.3 percent).
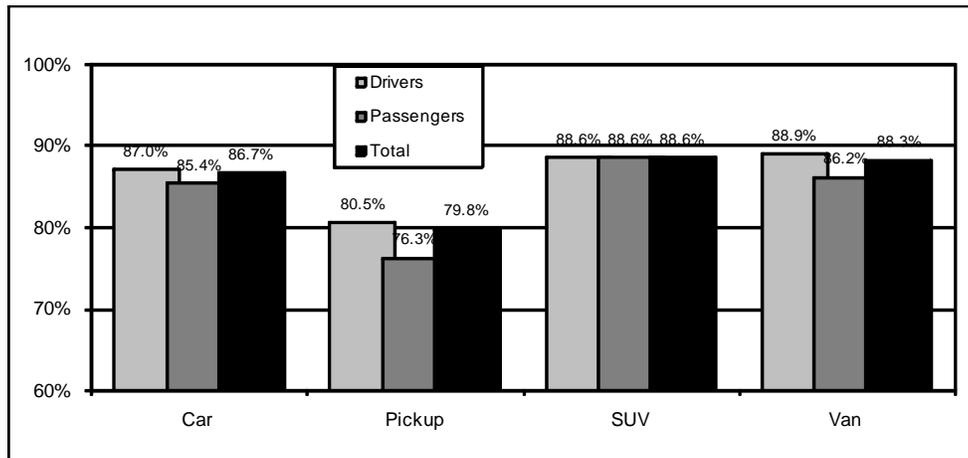
Figure 13. Observed Seat Belt Use Rate by Vehicle Type and Seating Position

Regional Information

Figure 14 shows total occupant belt use by county and is also grouped by region. Use rates shown in the graph are based on each county's raw data and are averaged per county. Belt usage typically measured higher among counties in the South region and lower in the North and Central regions. The county use rates presented in the Figure 14 should be interpreted with caution. The survey design was not intended to provide county-by-county belt use rates but rather a single statewide use rate. Observation sites were not sampled in such a way to reflect weighted estimates of county belt usage, but rather statewide representation.
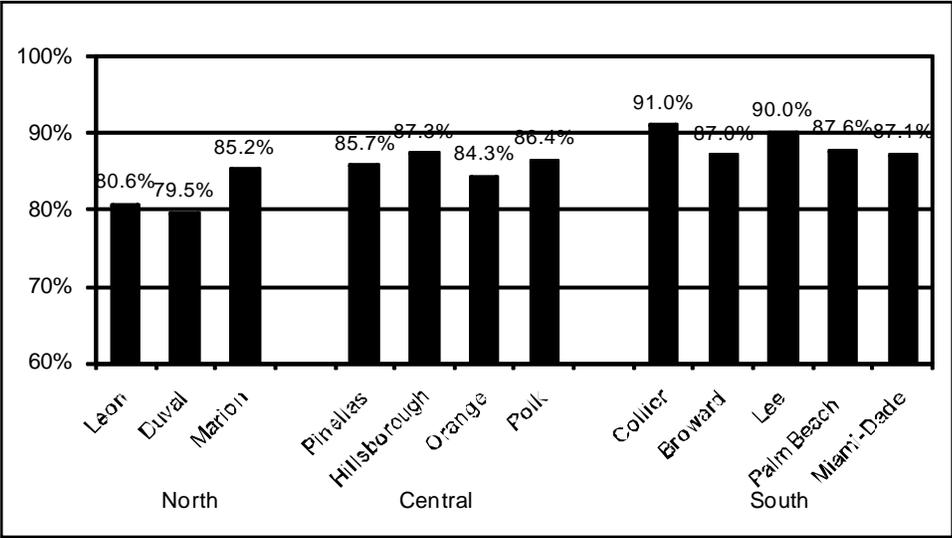
Figure 14. Observed Seat Belt Use Rate by County and Region

A closer examination of road type with respect to region of the State (Figure 15) found that belt use was typically higher on higher speed roadway types (Interstates and Principal Arterials) compared to lower speed roadways (Minor Arterials and Collectors).
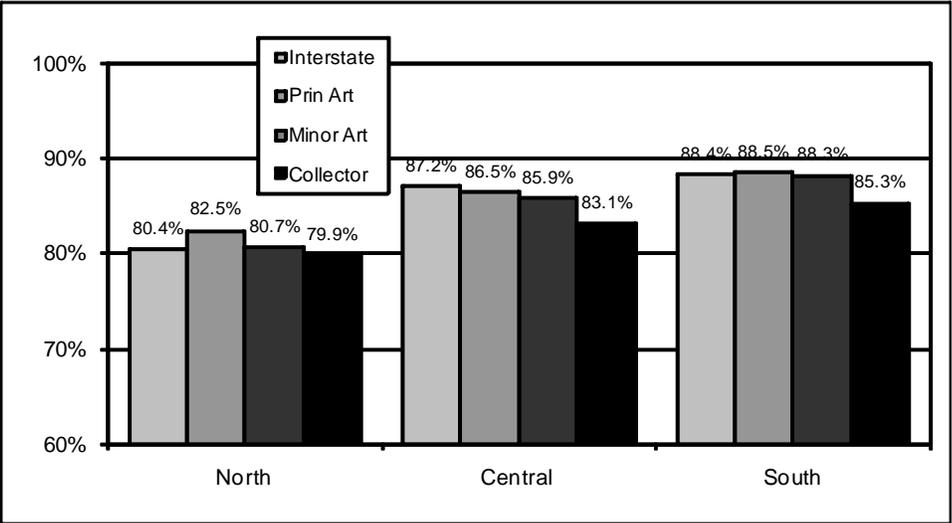
Figure 15. Observed Seat Belt Use Rate by Road Type and Region

- 19 -

The statewide survey also found a consistent pattern of lower observed belt use among occupants in pickup trucks regardless of region (Figure 16). Belt use among occupants in pickup trucks was at least 5 percentage points lower than the other vehicle types in each of the three regions.
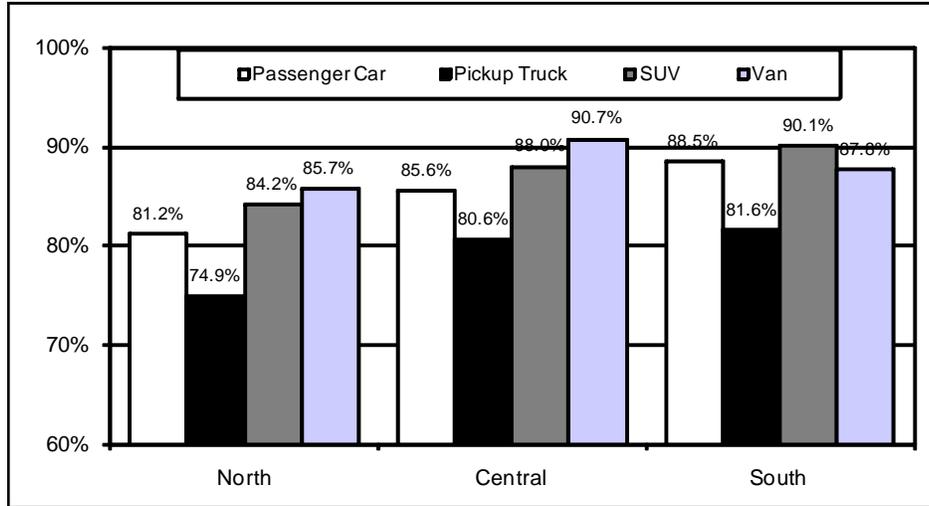
Figure 16. Observed Belt Use Rate by Vehicle Type and Region

Figure 17 shows the consistency in lower belt use of males when compared to females on a regional level.
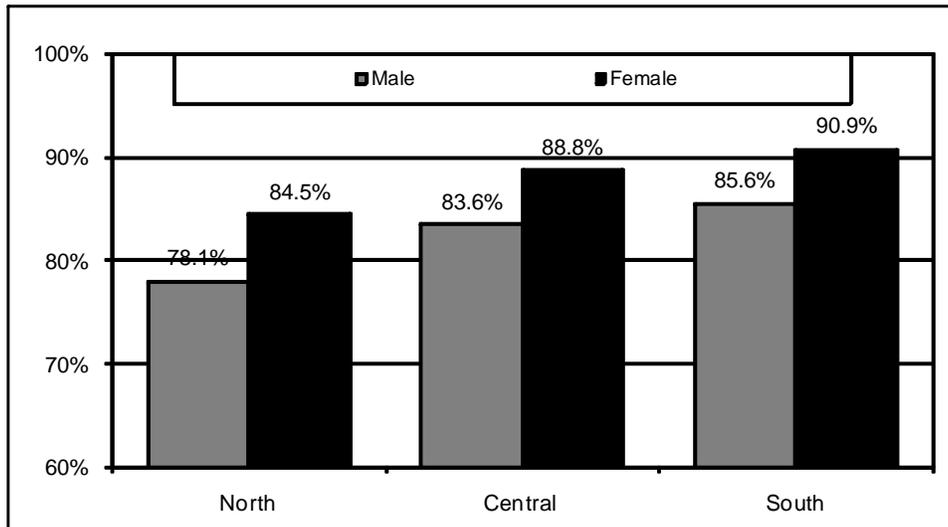
Figure 17. Observed Belt Use Rate by Gender of Occupant and Region

Figure 18 indicates disparities in belt use among race categories across all regions in the State with the black occupants consistently measuring lower than other races or ethnicities. Black occupant belt usage measured below 80 percent in both the North and Central regions.
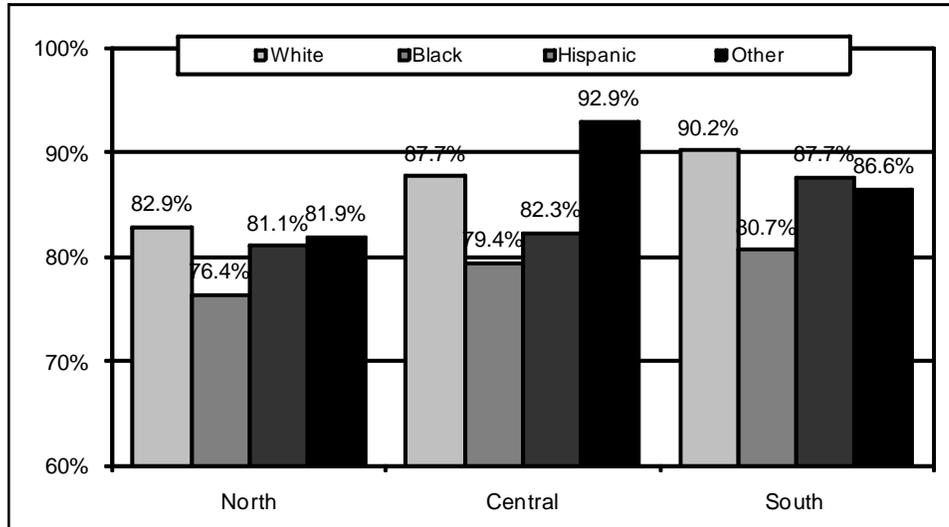
Figure 18. Observed Belt Use Rate by Race of Occupant and Region

Appendix A. 43 Least Populous Florida Counties

| Location	Region	2004 Population		
		N	Percent	Cum Pct
Top 24 Counties		**14,933,060**	**85.84%**	**85.84%**
Clay County	North	164,394	0.94%	86.78%
Bay County	North	157,949	0.91%	87.69%
Charlotte County	Central	157,134	0.90%	88.59%
St Johns County	North	152,473	0.88%	89.47%
Hernando County	Central	150,370	0.86%	90.33%
Santa Rosa County	North	138,276	0.79%	91.13%
Martin County	Central	137,956	0.79%	91.92%
Citrus County	North	130,465	0.75%	92.67%
Indian River County	Central	124,114	0.71%	93.38%
Highlands County	Central	93,127	0.54%	93.92%
Monroe County	South	78,284	0.45%	94.37%
Putnam County	North	72,511	0.42%	94.79%
Flagler County	North	69,005	0.40%	95.18%
Nassau County	North	63,157	0.36%	95.55%
Columbia County	North	61,889	0.36%	95.90%
Sumter County	North	60,705	0.35%	96.25%
Walton County	North	48,477	0.28%	96.53%
Jackson County	North	47,692	0.27%	96.80%
Gadsden County	North	46,107	0.27%	97.07%
Okeechobee County	South	38,988	0.22%	97.29%
Hendry County	South	38,163	0.22%	97.51%
Suwannee County	North	37,681	0.22%	97.73%
Levy County	North	37,330	0.21%	97.94%
DeSoto County	Central	34,892	0.20%	98.14%
Hardee County	Central	27,987	0.16%	98.30%
Bradford County	North	27,622	0.16%	98.46%
Wakulla County	North	27,179	0.16%	98.62%
Baker County	North	24,019	0.14%	98.76%
Washington County	North	21,940	0.13%	98.88%
Taylor County	North	19,291	0.11%	98.99%
Madison County	North	19,093	0.11%	99.10%
Holmes County	North	19,011	0.11%	99.21%
Gilchrist County	North	16,024	0.09%	99.31%
Union County	North	14,673	0.08%	99.39%
Jefferson County	North	14,502	0.08%	99.47%
Dixie County	North	14,294	0.08%	99.56%
Hamilton County	North	14,184	0.08%	99.64%
Gulf County	North	13,816	0.08%	99.72%
Calhoun County	North	13,185	0.08%	99.79%
Glades County	Central	11,131	0.06%	99.86%
Franklin County	North	10,123	0.06%	99.91%
Lafayette County	North	7,482	0.04%	99.96%
Liberty County	North	7,406	0.04%	100.00%
Florida State Total		**17,397,161**	100.00%	100.00%

Appendix B. Seat Belt Observation Instructions

These instructions describe procedures for observing seat belts, including where to stand at an intersection, what to look for, and coding the optical-scan coding sheet. Please keep these instructions handy for quick review.

1.   Observation Sites

Our statewide sample of randomly selected controlled roads and freeway exits includes 151 observation sites across 12 counties.

This is the first time that this specific design and list of observation sites has been used. You will be the first person to actually visit the sites. It will be up to you to find a suitable location for observation or, if the road is in some way compromised (closed or under construction) so that normal traffic can't occur, disqualify the site and move to the next alternate.

You will be given a general map of the road segment on which you are to observe (together with time for observation and direction of traffic to observe). When you get to the general location, your first task is to find a specific location for observing. The general map will show the length of road, or identify possible highway exit ramps, on which observations can be made. Select a spot where you can observe safely, without risk to yourself or to traffic (e.g., by being a distraction or by impeding their view), and where you can readily observe drivers and outboard front seat passengers.

It is recommended that you first look for a place where traffic must slow naturally, for a traffic control (stop signs are better than traffic signals) or a sharp curve on an expressway exit ramp.

When you have selected the exact location for observing, show the location on your general map and then make a detailed "site map" – a drawing that shows where to stand, the traffic flow you're observing, the names of the intersecting roadways, nearby buildings, etc.

2.   Observation Days and Times

You will receive a schedule that has assigned observation locations with day of week and time of day. You must adhere to this schedule if at all possible. (Observe in poor weather as long as you can stay dry (enough) and your ability to make accurate judgments is not compromised.)

Each day is comprised of five, daylight time periods:

       7:00 – 9:15 a.m.
       9:15 – 11:30 a.m.
       11:30 – 1:45 p.m.
       1:45 – 4:00 p.m.
       4:00 – 6:15 p.m.

You need to observe for one hour at each site. The observation hour should be continuous and should fall entirely within the observation period. Use the extra time in the observation periods to move between sites, locate and document your observation positions, eat lunch, etc.

3.   List of Sites

In your packet of materials is your list of observation sites, together with maps, descriptive information (road names, cross streets, direction of travel to observe, etc.) and schedule.

4.   What to Do if a Site is Unusable/Inaccessible

Alternate sites with the same information are also provided. If you determine that the primary site cannot be used, you must select an alternate site. The alternate MUST be:

- The first site in your set of alternates that "matches," i.e.:
    - In the same county.
    - Of the same Roadway Type (there are 4 types; in decreasing size and traffic volume, they are: Interstate/Expressway, Other Principal Arterial, Minor Arterial, and Collector).

If you must move to an alternate site, indicate on the general map for the primary site why you can't use it, go to the alternate, pick an appropriate observation spot, document it, etc.

5.   Which Roadway and Direction to Observe

It is important to recognize that one can<u>not</u> simply choose to observe traffic on either of the intersecting roadways at an intersection. The roadway and direction to observe are clearly indicated on the general site map. You must observe traffic on this roadway traveling in the direction indicated. If the roadway is a freeway/expressway/interstate, you are to code motorists who were traveling in the direction indicated as they leave this roadway via an exit.

6.   Which Vehicles to Observe

a. Code passenger cars, vans, jeeps, 4-wheel pickup trucks, and sport utility vehicles (SUVs). **Exclude** commercial vehicles (any vehicle with a sign on the outside), government vehicles, large buses, and heavy trucks. Sometimes, a government vehicle may not have any distinct markings but will have government plates. Do not code these vehicles. An "unmarked" vehicle such as a pickup truck full of tools and equipment in the rear should be coded even if the occupants are wearing uniforms.

b. You will have selected an observation point where you expect you will be able to code nearly every qualified vehicle. If you are near a stop-sign-controlled intersection (or a

roundabout, or some other location where all traffic is slowed), this is realistic. If you are near a signal-controlled intersection, you may find that free-flowing traffic on the green signal is moving too fast. In that case, go to step (c). The goal is to have very, very few "unsure".

c. If you need to observe traffic stopped/slowed by a red light, begin observations with the **second** vehicle in a line of vehicles stopped at the traffic signal. Code restraint use by occupants of the second vehicle, then code the third vehicle in line, etc. Continue until the vehicles begin to move too rapidly with the green signal.

d. On surface streets with multiple lanes of through traffic, code traffic from all through lanes. For signal-controlled intersections, begin with the second vehicle in the near lane, then the second in the next lane, etc., to the third in the near lane, etc. For the next red signal, begin with the lane you left off at on the preceding signal phase. If the level of traffic is too high to code all lanes, observe each lane exclusively for an equal length of time, broken into 10 or 15 minute periods (with each lane observed for the same number of periods).

e. In the case of freeway exits, find a location controlled by a sharp turn, a stop sign, or a traffic signal so that you can observe nearly all vehicles that slow down. If possible, do not choose a location that depends on vehicles slowing because they can't merge smoothly, since that would bias your selection to that category of drivers.

7.   **Heavy Traffic Conditions**

Heavy traffic conditions should not affect observations at signaled intersections. For example, at a red light, you should begin with the second vehicle in the near through lane and code the occupant and vehicle characteristics. You should then proceed to the second vehicle in the next lane, etc., then the third vehicle in the near through lane, and so on until traffic begins to move (you can walk alongside the line of vehicles). It is likely that, in heavy traffic conditions, there will be more cars stopped than you can code before traffic begins to move.

At freeway exits, it is possible that, in heavy traffic conditions, there is an "unending" line of vehicles slowing/stopped before entering the flow of traffic. In this situation, begin with the second vehicle in line (vehicle "A"). Code the pertinent information for vehicle "A" and mark it on the coding sheet. One or more cars may have passed while you are completing the coding for vehicle "A". At the moment coding for vehicle "A" is complete, look up and fix your gaze on the next slowed/stopped vehicle. Do **not** code that vehicle, but code the one behind it. Continue in this fashion throughout the coding period for that observation site.

8.   **How Long to Observe**

Remain at each intersection/exit for 60 minutes. A fixed observation period translates to high volume roadways contributing more observation data than low volume roadways.

9. **Whom to Observe**

   a. **Front seat drivers and outboard passengers**. If there are more than two occupants in the front seat, only observe the driver and the passenger (regardless of age) closest to the passenger-side door. Thus, if there are three occupants in the front seat, the observer would ignore the middle occupant. (If the outboard front passenger is less than 16 years old, code only the driver.)

   b. Code **adults only**, ones judged age 16 or older.

   c. Each coding sheet contains room for 25 vehicles.

   d. At the top of each coding sheet is a place for indicating the site code, date, day of week, time of day. At the bottom of the sheet is a place to indicate page number and how many pages of site data there are. Make sure this is filled in accurately and completely for each coding sheet. For "location code", both write in the site number. THE LOCATION CODE IS EXTREMELY IMPORTANT.

   e. Please place the coding forms in order in envelopes to return to PRG-South. Keep all the coding sheets for a county in one envelope. Within a county, try to place the coding sheets in order from lowest to highest intersection number. For each intersection, place the pages in order (e.g., 1 of 6, 2 of 6, 3 of 6, etc.).

10. **Codes**

   a. **Location** (**L**): Indicates whether the vehicle occupant is the driver (D), or front seat outboard passenger (F)

   b. **Restraint** (**R**)

      1. Seat belts: For those 16 years and older, simply code if the occupant is (Y) or is not (N) wearing a seat belt. Code based on the shoulder belt. If the shoulder belt is visible in use, code Y. If the person is adequately visible and no shoulder belt use is seen, code N. If you can not see the person clearly enough to determine whether or not a shoulder belt is visible, code U (uncertain). In general, try to avoid the U code.

   c. **Sex** (**S**): Note the gender of the person being observed, male (M) or female (F).

   d. **Age** (A): Note the age range of the person being observed.

Y = 16-59
O = 60 years or older

e. **Race**: (**R**) Note the race of the person being observed.

W = White
B = Black
H = Hispanic
O = Other
U = Unsure

f. **Vehicle** (**V**): Indicate the type of vehicle in which the person is riding.

C = Car
V = Van, minivan or other like vehicle
T = Truck
S = Sport Utility Vehicle

12. Returning Materials After Completing Observations

Make sure to return all materials back to PRG-South:

a. Completed coding forms
b. Unused coding forms (only after the last survey)
c. Site maps (with any changes noted – only after the last survey)
d. Maps (with any changes noted – only after the last survey)
e. List of intersections (with any changes noted – only after the last survey)

13. General Tips

Conducting seat belt observations is not particularly hard work, but it is tedious work. Conditions are often hot and humid. Observers must make a special effort to maintain the quality of the observations. Here are some tips and recommendations based on years of conducting these observations.

1. Dress for the work. A hat, sunscreen and sun glasses are essential. If you don't have the complexion that will allow several hours in the sun, you should wear long pants and long-sleeved shirts. The discomfort that comes with the heat is much more bearable (and considerably shorter) than a severe sunburn.

2. Wear an orange safety vest at all times. Drivers are wary of people hanging around corners peering into cars, especially if they have kids in the car. The vest gives you an "official" air that may put drivers at ease. Still, don't be insulted by windows going up, doors locking, etc.

3. Keep the identification letter from DOT handy. Police officers and others will probably not be aware of the project. If anyone asks what is being done, show them the letter.

4. Be thoroughly familiar with all the procedures in this manual. Just one person consistently making the same mistakes can bias the results. The point of this research is to get an accurate reading of seat belt usage so education campaigns can be developed for low usage groups. Accurate information is of paramount importance.

5. Each observer is ultimately responsible for his/her work, as well as safety. Remember, observation requires that you stand close to traffic. Stay alert and be ready to react.

Appendix C. Florida Seat Belt Observation Form

SITE NUMBER:_____   SITE:_____

NOTES:_____

DATE: _____ - _____ - _____   DAY OF WEEK: _____

DIRECTION OF TRAFFIC FLOW (Circle one): N   S   E   W

WEATHER CONDITIONS
1 Clear / Sunny   4 Fog
2 Light Rain   5 Wet But Not
3 Cloudy   Raining

START TIME:_____ (Observation period will last exactly 60 minutes)

	VEHICLE		DRIVER				PASSENGER			
Veh. #	**Vehicle** C = car T = truck S = suv V = van	**Sex** M = male F = female U = unsure	**Age** Y = 16-59 O = 60 or older U = unknown	**Race** W = White B = Black H = Hispanic O = Other U = unsure	**Use** Y = yes N = no U = unsure	**Sex** M = male F = female U = unsure	**Age** Y = 16-59 O = 60 or older U = unknown	**Race** W = White B = Black H = Hispanic O = Other U = unsure	**Use** Y = yes N = no U = unsure
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

FLORIDA SEAT BELT SURVEY

FORM 2007

Page:_____ of_____

C-1

Appendix D. Florida Site List

County	Observation Site	Type	Description	Day of Week	Time of Day
BROWARD	1001	Interstate # 1	I-75 Westbound @ Exit 21	Monday	9:15-11:30
BROWARD	1002	Interstate # 2	FL Turnpike Southbound @ Exit 62	Monday	1:45-4:00
BROWARD	1003	Interstate # 3	I-95 Northbound @ Exit 21	Friday	11:30-1:45
BROWARD	1004	Interstate # 4	I-595 Westbound @ Exit 5	Thursday	4:00-6:15
BROWARD	1005	Interstate # 5	I-95 Eastbound @ Exit 25	Friday	1:45-4:00
BROWARD	1006	Interstate # 6	I-95 Northbound @ Exit 22	Wednesday	9:15-11:30
BROWARD	1007	Principal Artery # 1	Sunrise Blvd. Westbound @ NW 11th	Friday	9:15-11:30
BROWARD	1008	Principal Artery # 2	University Drive Northbound @ Wiles Road	Thursday	7:00-9:15
BROWARD	1009	Principal Artery # 3	Pompano Parkway Northbound @ Gateway Drive	Thursday	9:15-11:30
BROWARD	1010	Principal Artery # 4	Griffin Road Eastbound @ SW 87th Avenue	Friday	4:00-6:15
BROWARD	1011	Principal Artery # 5	University Drive Southbound @ SW 30th	Friday	4:00-6:15
BROWARD	1012	Minor Artery # 1	Bonaventure Blvd Northbound @ Lakeview Drive	Friday	9:15-11:30
BROWARD	1013	Minor Artery # 2	NOB Hill Road @ Oakland Park Blvd.	Wednesday	4:00-6:15
BROWARD	1014	Minor Artery # 3	Palm Ave @ Miramar Pkwy	Wednesday	11:30-1:45
BROWARD	1015	Minor Artery # 4	Coral Springs Drive Northbound @ Coral Club Drive	Monday	7:00-9:15
BROWARD	1016	Collector # 1	Westview Drive Westbound @ Coral Springs Drive	Monday	4:00-6:15
BROWARD	1017	Collector # 2	Banks Rd. Southbound @ West Copans Road	Thursday	11:30-1:45
BROWARD	1018	Collector # 3	NE 18 th Avenue @ NE 6th Street	Wednesday	1:45-4:00
COLLIER	1101	Interstate # 1	Alligator Alley (I-75) Eastbound @ Exit 80	Monday	4:00-6:15
COLLIER	1102	Interstate # 2	SR 93 / I-75 Northbound @ Exit 111	Tuesday	9:15-11:30
COLLIER	1103	Principal Artery # 1	Tamiami Trail Eastbound @ Manatee Road	Tuesday	4:00-6:15
COLLIER	1104	Principal Artery # 2	Tamiami Trail Northbound @ Broward Street	Monday	7:00-9:15
COLLIER	1105	Minor Artery # 1	Livingston Road Southbound @ Pine Ridge Road	Tuesday	11:30-1:45
COLLIER	1106	Minor Artery # 2	Airport Road Southbound @ Poinciana Drive	Tuesday	7:00-9:15
COLLIER	1107	Collector # 1	Radio Rd Eastbound @ Livingston Road	Monday	1:45-4:00
COLLIER	1108	Collector # 2	Golden Gate Blvd Westbound @ Everglades Blvd	Monday	11:30-1:45
DUVAL	1201	Interstate # 1	I-95 Southbound @ Exit 355/SR 122	Monday	9:15-11:30
DUVAL	1202	Interstate # 2	SR/8 I-10 Westbound @ Exit 355	Saturday	11:30-1:45
DUVAL	1203	Interstate # 3	J.Turner Butler Blvd Eastbound @ Southside Blvd	Monday	11:30-1:45
DUVAL	1204	Interstate # 4	I-295 Southbound @ Exit 12	Monday	4:00-6:15

County	Observation Site	Type	Description	Day of Week	Time of Day
DUVAL	1205	Interstate # 5	I-10 Eastbound @ Exit 360	Tuesday	1:45-4:00
DUVAL	1206	Principal Artery # 1	Blanding Blvd Southbound @ Collins	Saturday	1:45-4:00
DUVAL	1207	Principal Artery # 2	Roosevelt Blvd Northbound @ Yorktown Avenue	Saturday	4:00-6:15
DUVAL	1208	Principal Artery # 3	Philips Hwy Northbound @ Shad	Monday	7:00-9:15
DUVAL	1209	Minor Artery # 1	San Jose Blvd Northbound @ University Blvd.	Monday	1:45-4:00
DUVAL	1210	Minor Artery # 2	Cassat Ave. @ Normandy	Tuesday	9:15-11:30
DUVAL	1211	Minor Artery # 3	103rd St Westbound @ Jammes	Tuesday	11:30-1:45
DUVAL	1212	Collector # 1	Lorretto Rd Eastbound @ Chariot Ln	Tuesday	7:00-9:15
DUVAL	1213	Collector # 2	Ocean St Southbound @ 1st St	Tuesday	4:00-6:15
DUVAL	1214	Collector # 3	Old St Augustine Rd Southbound @ Hood Landing Rd	Saturday	7:00-9:15
HILLSBOROUGH	1301	Interstate # 1	Lee Roy Selmon Expwy Southbound @ Exit 8	Saturday	1:45-4:00
HILLSBOROUGH	1302	Interstate # 2	I - 75 Northbound @ Exit 246	Saturday	11:30-1:45
HILLSBOROUGH	1303	Interstate # 3	Veterans Expressway Northbound @ Exit 3	Saturday	9:15-11:30
HILLSBOROUGH	1304	Interstate # 4	I - 275 Eastbound @ Exit 40B	Saturday	11:30-1:45
HILLSBOROUGH	1305	Interstate # 5	Lee Roy Selmon Expwy Eastbound @ Exit 4	Saturday	1:45-4:00
HILLSBOROUGH	1306	Principal Artery # 1	N Nebraska Ave/US 41 Northbound @ Whitaker	Sunday	9:15-11:30
HILLSBOROUGH	1307	Principal Artery # 2	Dale Mabry Hwy N Southbound @ Hamilton	Saturday	7:00-9:15
HILLSBOROUGH	1308	Principal Artery # 3	Burdinzs Drive Eastbound @ MLK	Sunday	1:45-4:00
HILLSBOROUGH	1309	Principal Artery # 4	E Brandon Blvd Westbound @ Valrico Rd	Saturday	4:00-6:15
HILLSBOROUGH	1310	Minor Artery # 1	N Florida Ave Northbound @ W 122nd	Friday	11:30-1:45
HILLSBOROUGH	1311	Minor Artery # 2	Temple Terrace @ N 78th St	Friday	9:15-11:30
HILLSBOROUGH	1312	Minor Artery # 3	Van Dyke Rd Westbound @ Dale Mabry	Friday	4:00-6:15
HILLSBOROUGH	1313	Minor Artery # 4	W Linebaugh Ave Eastbound @ Mullins City Way	Sunday	4:00-6:15
HILLSBOROUGH	1314	Collector # 1	Habana Ave Northbound @ Silver Lake Ave	Friday	1:45-4:00
HILLSBOROUGH	1315	Collector # 2	E Lake Ave Eastbound @ N 43rd St	Sunday	7:00-9:15
HILLSBOROUGH	1316	Collector # 3	E Yukon St Eastbound @ N Renfren Place	Friday	4:00-6:15
LEE	1401	Interstate # 1	SR 93/I-75 Southbound @ Exit 143	Saturday	7:00-9:15
LEE	1402	Interstate # 2	SR 93/I-75 Southbound @ Exit 123	Friday	9:15-11:30
LEE	1403	Principal Artery # 1	Cleveland Ave Northbound @ South St	Sunday	7:00-9:15
LEE	1404	Principal Artery # 2	Tamiami Trail Southbound @ Crown Lake Blvd	Friday	4:00-6:15
LEE	1405	Principal Artery # 3	Tamiami Trail Northbound @ Timberwilde Drive	Friday	7:00-9:15
LEE	1406	Minor Artery # 1	Lee Blvd/Joel Blvd Eastbound @ Westgate Road	Saturday	1:45-4:00
LEE	1407	Minor Artery # 2	Hancock Bridge Pkwy Westbound @ Cultural Park Blvd	Sunday	4:00-6:15
LEE	1408	Minor Artery # 3	Ortiz Ave Southbound @ MLK Blvd	Sunday	9:15-10:30

County	Observation Site	Type	Description	Day of Week	Time of Day
LEE	1409	Collector # 1	Perwinkle Way Westbound @ Palm Ridge Rd	Friday	1:45-4:00
LEE	1410	Collector # 2	Ford St Southbound @ Hanson St	Saturday	4:00-6:15
LEON	1501	Interstate # 1	I-10 Westbound @ Exit 217	Friday	7:00-9:15
LEON	1502	Principal Artery # 1	Apalachee Pkwy SR20/27 Westbound @ Kings Dr	Friday	11:30-1:45
LEON	1503	Principal Artery # 2	S Monroe St Southbound @ W College Ave	Wednesday	4:00-6:15
LEON	1504	Minor Artery # 1	US 90/Mahan Dr Southbound @ Buck Lake Rd	Wednesday	1:45-4:00
LEON	1505	Minor Artery # 2	US 90 W Westbound @ Blairstone	Thursday	9:15-11:30
LEON	1506	Collector # 1	Springhill Rd Eastbound @ Lonnie Gray Rd	Thursday	11:30-1:45
MARION	1601	Interstate # 1	I-75 Northbound @ Exit 350	Sunday	1:45-4:00
MARION	1602	Interstate # 2	I-75 Southbound @ Exit 341	Wednesday	9:15-11:30
MARION	1603	Principal Artery # 1	US 301 Southbound @ Hwy 318	Thursday	4:00-6:15
MARION	1604	Principal Artery # 2	Pine Ave Northbound @ NW 35th St	Wednesday	1:45-4:00
MARION	1605	Principal Artery #3	NW.10th St Westbound @ 27th	Sunday	9:15-11:30
MARION	1606	Minor Artery # 1	Maricamp Rd Westbound @ SE 38th St	Thursday	7:00-9:15
MARION	1607	Minor Artery # 2	CR 484 Eastbound @ Marion Oak Course	Sunday	4:00 -6:15
MARION	1608	Collector # 1	SE Hwy 42 Eastbound @ SE 254th Ave	Wednesday	11:30-1:45
MARION	1609	Collector # 2	CR 315 Southbound @ SR 40	Sunday	7:00-9:15
MIAMI-DADE	1701	Interstate # 1	SW 112 Ave Southbound @ FL Turnpike	Monday	1:45-4:00
MIAMI-DADE	1702	Interstate # 2	H.E.F.T./821 Northbound @ Exit 34	Tuesday	11:30-1:45
MIAMI-DADE	1703	Interstate # 3	Don Shula Expwy Northbound @ SW 88	Monday	7:00-9:15
MIAMI-DADE	1704	Interstate # 4	South Dade Expwy Westbound @ SW 104th St	Sunday	4:00-6:15
MIAMI-DADE	1705	Interstate # 5	Palmetto Expwy Southbound @ NW36th	Saturday	11:30-1:45
MIAMI-DADE	1706	Interstate # 6	Dolphin Expressway Westbound @ NW72nd Ave	Tuesday	1:45-4:00
MIAMI-DADE	1707	Principal Artery # 1	SE 6th Ave Northbound @ Dixie Hwy (Hwy 1)	Sunday	7:00-9:15
MIAMI-DADE	1708	Principal Artery # 2	Bird Rd Westbound @ Ponce de Leon Blvd	Saturday	1:45-4:00
MIAMI-DADE	1709	Principal Artery # 3	N Kendall Dr Eastbound @ SW 90 Ave	Saturday	9:15-11:30
MIAMI-DADE	1710	Principal Artery # 4	Collins Ave Northbound @ 73rd	Saturday	4:00-6:15
MIAMI-DADE	1711	Principal Artery # 5	South Dixie Hwy Northbound @ 144th	Monday	11:30-1:45
MIAMI-DADE	1712	Minor Artery # 1	SW 56 St Eastbound @ 87th SW	Friday	9:15-11:30
MIAMI-DADE	1713	Minor Artery # 2	SW 117 Ave Northbound @ SW 40th	Monday	4:00-6:15
MIAMI-DADE	1714	Minor Artery # 3	Sunset Dr Southbound @ 142nd Ave	Sunday	1:45-4:15
MIAMI-DADE	1715	Minor Artery # 4	W 68 St Westbound @ W 17 Ct	Friday	4:00-6:15
MIAMI-DADE	1716	Minor Artery # 5	NW 7 Ave Southbound @ NW 151st	Tuesday	4:00-6:15
MIAMI-DADE	1717	Collector # 1	NW N River Dr Northbound @ NW 4th St	Friday	1:45-4:00

County	Observation Site	Type	Description	Day of Week	Time of Day
MIAMI-DADE	1718	Collector # 2	SW 216 St Eastbound @ 147th	Sunday	9:15-11:30
MIAMI-DADE	1719	Collector # 3	NW 82 Ave Southbound @ 25th	Tuesday	9:15-11:30
ORANGE	1801	Interstate # 1	SR-400/I-4 Eastbound @ Exit 88	Friday	7:00-9:15
ORANGE	1802	Interstate # 2	East-West Expressway/SR408 Westbound @ I-4 Interchange to S Mills	Monday	9:15-11:30
ORANGE	1803	Interstate # 3	SR-400/I-4 Eastbound @ Exit 71	Tuesday	4:00-6:15
ORANGE	1804	Interstate # 4	Central FL Greenway Northbound @ Exit 27 to Lee Vista Blv	Tuesday	1:45-4:00
ORANGE	1805	Principal Artery # 1	Semoran Blvd Northbound @ Stonewall Jackson Road	Friday	11:30-1:45
ORANGE	1806	Principal Artery # 2	John Young Pkwy Northbound @ Americana	Saturday	11:30-1:45
ORANGE	1807	Principal Artery # 3	John Young Pkwy Northbound @ Crystal Creek	Friday	1:45-4:00
ORANGE	1808	Principal Artery # 4	Orange Blossom Trail Southbound @ Skyview	Monday	7:00-9:15
ORANGE	1809	Minor Artery # 1	Silver Star Rd Westbound @ Powers Drive	Saturday	1:45-4:00
ORANGE	1810	Minor Artery # 2	Sandlake Rd Eastbound @ Mandarin Drive	Monday	1:45-4:00
ORANGE	1811	Minor Artery # 3	Hoffner Rd Eastbound @ Conway Road	Saturday	4:00-6:15
ORANGE	1812	Minor Artery # 4	Conroy-Americana Rd Eastbound @ Cypress Woods	Tuesday	9:15-11:30
ORANGE	1813	Collector # 1	Beggs Rd Westbound @ Hiawassee	Tuesday	7:00-9:15
ORANGE	1814	Collector # 2	Fern Creek Ave Northbound @ Michigan St	Saturday	7:00-9:15
ORANGE	1815	Collector # 3	Plymouth-Sorrento Rd Southbound @ Kelly Park Road	Friday	9:15-11:30
PALM BEACH	1901	Interstate # 1	I-95 Northbound @ Exit 64	Thursday	9:15-11:30
PALM BEACH	1902	Interstate # 2	I-95 Southbound @ Exit 44	Sunday	11:30-1:45
PALM BEACH	1903	Interstate # 3	Florida's Turnpike Northbound @ Exit 81	Sunday	4:00-6:15
PALM BEACH	1904	Interstate # 4	I-95 Northbound @ Exit 59	Saturday	1:45-4:00
PALM BEACH	1905	Principal Artery # 1	Okeechobee Blvd Eastbound @ Riverwalk Blvd	Friday	1:45-4:00
PALM BEACH	1906	Principal Artery # 2	SR-7 Northbound @ Fairgrounds Rd	Sunday	7:00-9:15
PALM BEACH	1907	Principal Artery # 3	West Atlantic Ave Westbound @ SW 27th Ave	Thursday	7:00-9:15
PALM BEACH	1908	Principal Artery # 4	Glades Rd Eastbound @ Boca Grove Blvd	Thursday	4:00-6:15
PALM BEACH	1909	Minor Artery # 1	Old Dixie Hwy Northbound @ Spanish River Blvd	Friday	9:15-11:30
PALM BEACH	1910	Minor Artery # 2	Forest Hill Blvd Eastbound @ Hunter Dr	Sunday	9:15-11:30
PALM BEACH	1911	Minor Artery # 3	Australian Ave Southbound @ Banyan	Saturday	11:30-1:45
PALM BEACH	1912	Minor Artery # 4	E Main St Northbound @ Grassy Waters Hotel	Saturday	7:00-9:15
PALM BEACH	1913	Collector # 1	Parker Ave Southbound @ Southern Blvd	Friday	11:30-1:45
PALM BEACH	1914	Collector # 2	South Shore Westbound @ Big Blue Tr	Thursday	11:30-1:45
PALM BEACH	1915	Collector # 3	E Canal St So. Eastbound @ NE 7th St	Friday	4:00-6:15
PINELLAS	2001	Interstate # 1	I - 275 Northbound @ 54th Ave	Wednesday	4:00-6:15
PINELLAS	2002	Interstate # 2	Skyway Causeway Northbound @ Exit 16	Thursday	1:45-4:00

County	Observation Site	Type	Description	Day of Week	Time of Day
PINELLAS	2003	Interstate # 3	I - 275 Eastbound @ Exit 21	Thursday	9:15-11:30
PINELLAS	2004	Principal Artery # 1	McMullen-Booth Rd Southbound @ Sunset Point Rd	Wednesday	11:30-1:45
PINELLAS	2005	Principal Artery # 2	S Ft Harrison Ave Southbound @ Lake View	Wednesday	11:30-1:45
PINELLAS	2006	Principal Artery # 3	Seminole Blvd Northbound @ 98th Terrace N	Wednesday	7:00-9:15
PINELLAS	2007	Minor Artery # 1	1st Ave So. Eastbound @ 64th St. So.	Thursday	7:00-9:15
PINELLAS	2008	Minor Artery # 2	Starkey Rd Northbound @ East Bay Drive	Wednesday	1:45-4:00
PINELLAS	2009	Minor Artery # 3	Park St N Southbound @ Tyrone Blvd	Thursday	1:45-4:00
PINELLAS	2010	Minor Artery # 4	Drew St Northbound @ Ft. Harrison	Wednesday	7:00-9:15
PINELLAS	2011	Collector # 1	Walsingham Rd Westbound @ 137th St	Thursday	11:30-1:45
PINELLAS	2012	Collector # 2	58th St S Northbound @ 11th Street	Thursday	11:30-1:45
POLK	2101	Interstate # 1	I-4 Westbound @ W Memorial off ramp	Tuesday	4:00-6:15
POLK	2102	Interstate # 2	I-4 Westbound @ Exit 31	Tuesday	9:15-11:30
POLK	2103	Principal Artery # 1	Van Fleet Westbound @ N. Wilson Ave	Tuesday	1:45-4:00
POLK	2104	Principal Artery # 2	US 92 Westbound @ US 17	Tuesday	1:45-4:00
POLK	2105	Principal Artery # 3	US 17 Northbound @ Pembroke Rd	Tuesday	4:00-6:15
POLK	2106	Minor Artery # 1	S Florida Ave @ Ariana St	Tuesday	7:00-9:15
POLK	2107	Minor Artery # 2	Lucerne Pk Rd Eastbound @ Old Lucerne Pk Rd	Tuesday	11:30-1:45
POLK	2108	Collector # 1	N Scenic Hwy (SR17/alt 27) Southbound @ Mtn Lake Cutoff	Tuesday	9:15-11:30
POLK	2109	Collector # 2	Overlook Dr Eastbound @ Carl Floyd Rd	Tuesday	7:00-9:15