June 2010
Seat Belt Use in Florida

Final Report

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Florida Department of Transportation

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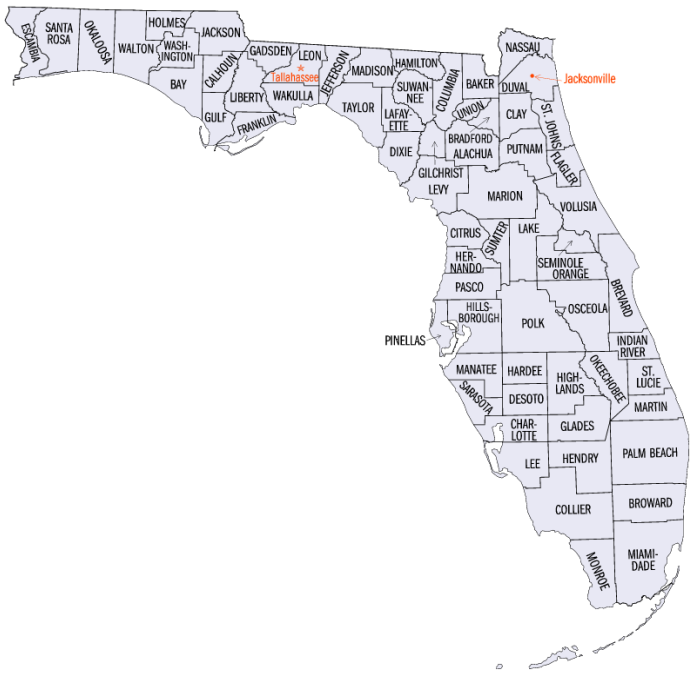

Prepared for:
Florida Department of Transportation

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Background

Annual statewide seatbelt surveys have been conducted in Florida since the early 1990s. Since 2006, these surveys have been conducted in accordance with a NHTSA-approved design developed by the Preusser Research Group (PRG). This design was used in conducting *pre-Click It or Ticket (pre-CIOT)* and *post-CIOT* surveys in 2007, 2008, and 2009, as well as in 2010. In addition, a third *post-primary law* survey was conducted in July of 2009. This report provides usage results for: 1) the June 2010 survey; 2) a comparison of the April and June 2010 surveys (pre- and post CIOT); and 3) trends from June 2008 through June 2010, a two-year period which included enactment of a primary law upgrade. A typical survey included observations of about 30,000 drivers and 6,000 front seat passengers at 151 randomly selected sites in 12 counties.

Usage Rates in June 2010: Overall and among Subgroups

Based on weighted survey data, the overall June 2010 use rate estimate was **87.4 percent** (relative standard error = 0.586%; 95% CI : 86.4% to 88.4%). This weighted belt use rate was nearly identical among drivers and passengers.

Raw (unweighted) data were used to examine differences between various subgroups. Based on such data, observed use was lowest in the Central part of the State (86.1%), followed by the North (87.6%) and the South (87.9%). With regard to *roadways,* the lowest usage was on local collectors (85.7%). Usage was highest on interstates (88.1%) and on principal arterials (87.4%), both of which typically have high traffic densities and higher rates of speed. There was little variation in usage by *day of week*, although Friday yielded a slightly lower rate (84.6%) than other days. With regard to *time of day*, there was slightly lower belt use during *non-rush-hour* periods (about 87%) than during rush hours (about 88%).

As is nearly always the case in statewide surveys, usage was lower among males (84.2%) than among females (90.7%), and this was particularly the case with regard to male passengers who were much less likely to be buckled than male drivers (79.9% and 84.8%, respectively). With regard to *race and ethnicity*, Blacks were least likely to buckle up (81.2%), followed by Hispanics (86.6%), Whites (89.2%), and "Other" occupants (94.1%). As with males, Black *passengers* were less likely to buckle up than Black drivers (76.6% and 82.2%, respectively). Finally, with regard to *vehicle type*, occupants of pickup trucks had the lowest usage rates (79.9%), followed by occupants of cars (87.7%), SUVs (89.2%) and vans (90.4%). As with males and Blacks, usage among pickup truck passengers was lower than among drivers (78.2% and 80.3%, respectively). Thus, among each of the lowest use groups (males, Blacks, and occupants of pickup trucks), passengers had the lowest rates of use. Finally, younger occupants (under 60 years of age) generally had lower usage rates (86.4%) than older occupants (91.6%).

Changes in Usage from April 2010 to June 2010 (pre-CIOT to post-CIOT)

Relative to the April 2010 baseline, this survey showed an increase of 3.1 percentage points from pre-CIOT (April) to post-CIOT (June). Both drivers and passengers increased their use rates associated with the mobilization. Although between-group differences remained after the mobilization, there were improvements noted among nearly all groups, but particularly among females (+4.1 points), younger occupants (+3.9 points), non-Whites (+5.9 to +6.4 points), and occupants of pickup trucks (+4 points). With the exception of females, these greater increases

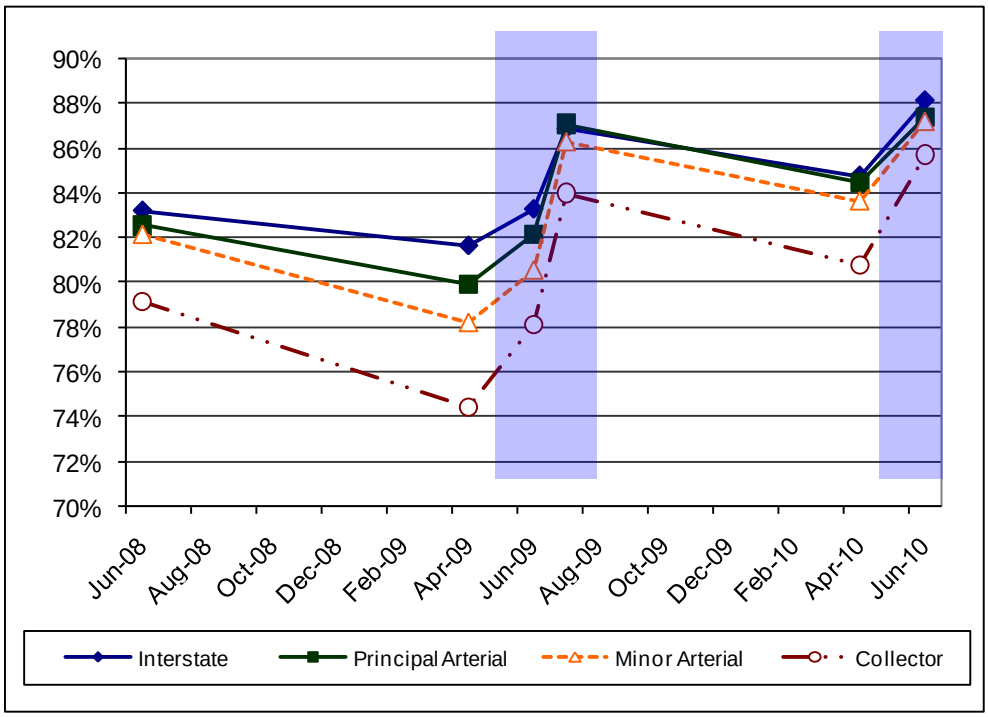
were generally found among the lowest use groups. These increases show that the 2010 CIOT mobilization made an impact; one which was generally greater among the lowest use groups.

Usage Trends from June 2008 through June 2010

Changes in usage from June 2008 through June 2010 allowed for an examination of impact over two CIOT mobilization periods and a primary-law upgrade (June 30, 2009). One of the CIOT mobilizations was conducted immediately prior to the law change; the second was conducted about one year after the law change.

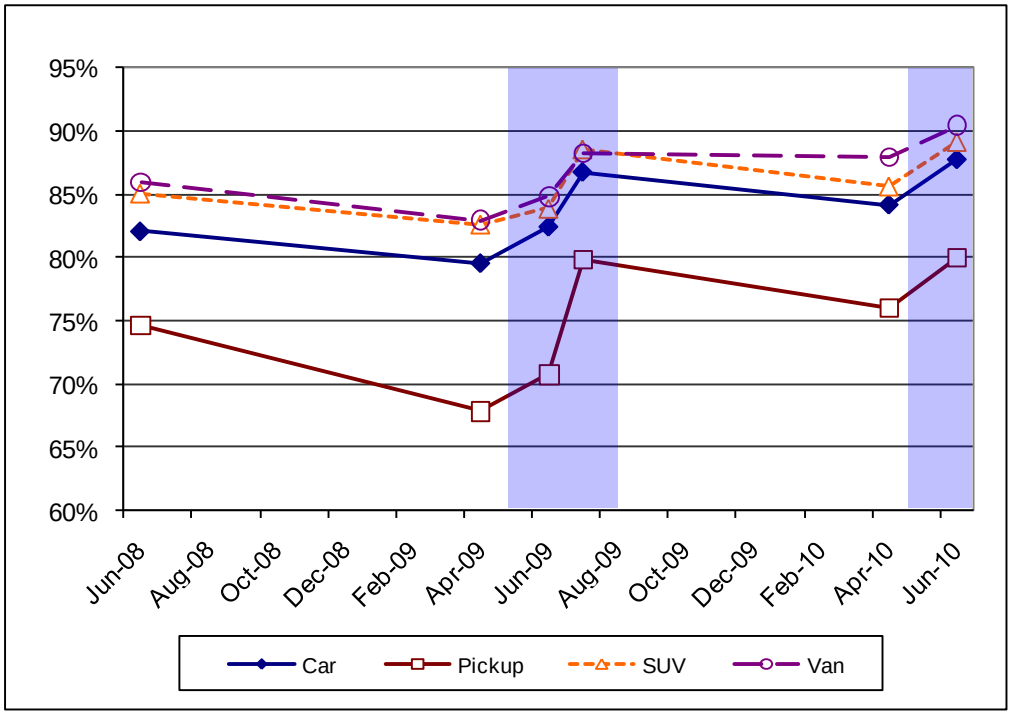
Overall Impact by Region. Looking at the overall impact, usage in the northern counties increased the most (+12 points), followed by the south (+9 points) and the central regions (+7 points). The large gain in north Florida was in part due to the fact that there was little decay from July 2009 (post-CIOT and post-law upgrade) to April 2010 (pre-CIOT). This may have been for the reason that, during this period, a rural demonstration program (RDP) was ongoing in the northern counties.

Changes in Usage by Roadway Type. Local *collectors* had the lowest usage baseline rates; the largest declines from one year (post-CIOT) to the next (pre-CIOT); *and* the largest increases associated with each CIOT mobilization. In addition, local collectors (and minor arterials) experienced the largest gains following the primary law upgrade (just under 6 points). Over the two-year period, collectors had a larger increase than any other roadway, thus decreasing the difference between lowest- and highest-use roads. *Interstate highways* and *primary art*erials consistently had the highest use rates; modest decay between mobilizations (-2 to -3 points); smaller gains associated with CIOT (+2 to +3 points); and slightly less gain associated with the law (+4 to +5 points).



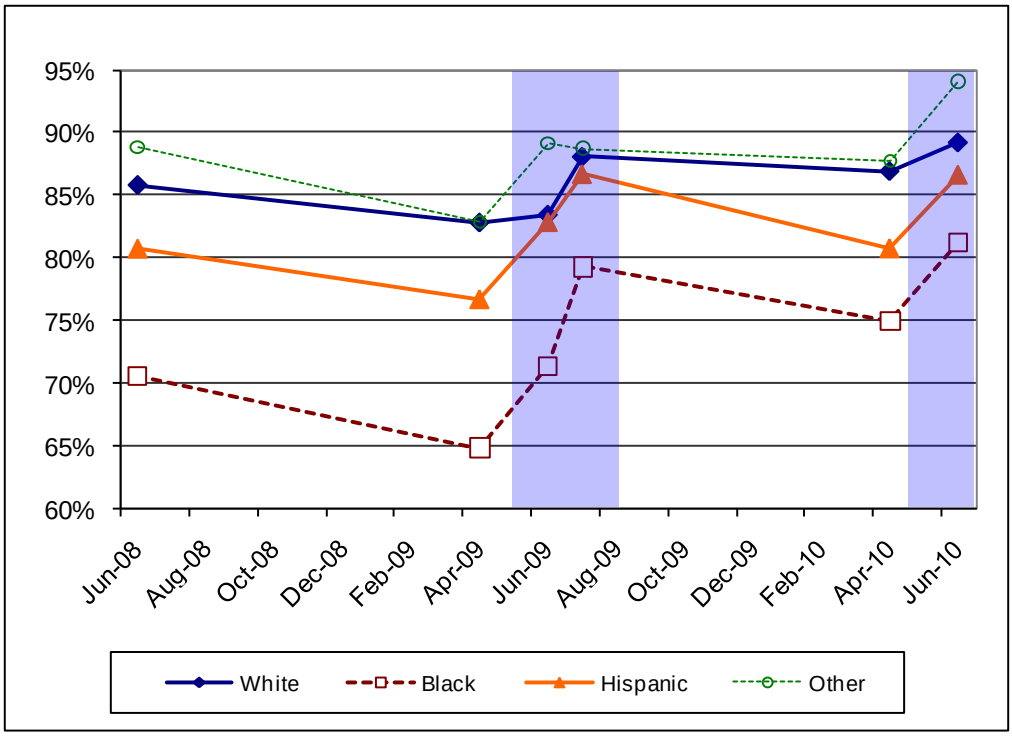
Changes in Usage by Roadway Type: June 2008 through June 2010

*Changes in Usage by Vehicle Type***.** As with local roads, usage in pickup trucks was lowest at baseline (June 2008; 74.6%); declined the most prior to the 2009 CIOT (-6.8 points); increased the most following the 2009 primary law (+9.1 points); declined the most prior to the 2010 CIOT; and then increased (slightly) more than any other group following the 2010 CIOT. The overall CIOT-plus-law gain was 12 points in pickup trucks, more than for any other group. Usage among occupants of cars, SUVs, and vans averaged about 84 percent in June 2008; declined by just under 3 points prior to the 2009 CIOT; increased by about 2 points with the 2009 CIOT and by another 5 points with the law change (+6.2 points combined); usage then declined modestly between CIOT periods (-2 points) and increased modestly again after the 2010 CIOT (+3.2 points). Thus, usage among this *non-pickup group* was higher at all times; declined less during non-intervention periods; and increased less during interventions.

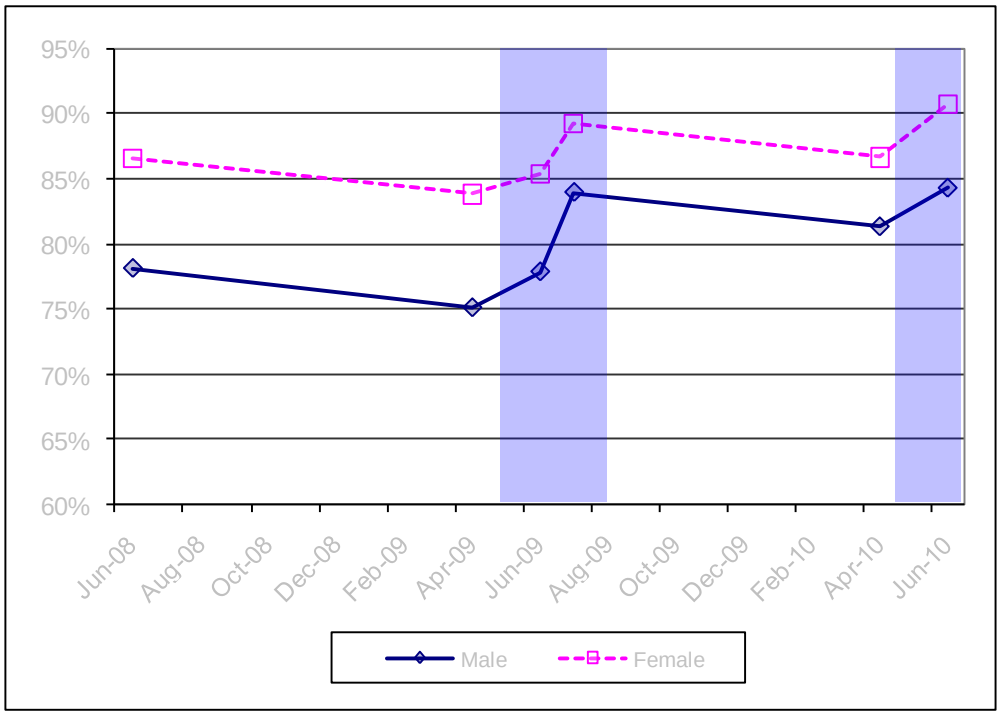


Changes in Usage by Vehicle Type: June 2008 through June 2010

Changes in Usage by Race/Ethnicity. Black occupants began with a usage rate of about 70 percent, about 10 points lower than among Hispanic occupants, the next lowest use group. As with Hispanics, there was little decline among Blacks from 2008 to the 2009 pre-CIOT period; usage among Blacks then increased more than among any other group associated with the law change (+8 points); declined slightly less than among Hispanics prior to the 2010 CIOT; then increased more than among Whites in conjunction with the 2010 CIOT mobilization. The patterns of the two lowest use groups (Blacks and Hispanics) were relatively similar to each other; much like the patterns described for local roads, and occupants of pickup trucks (i.e., low initial rates; substantial decay in use between interventions; and generally greater increases associated with interventions). Among Whites, there were higher baseline rates, generally less decay between interventions, and less impact associated with interventions. The CIOT appeared to have more of an impact on Blacks and Hispanics (a much smaller proportion of all occupants) than on Whites.



Change in Usage by Race and Ethnicity: 2008-2010



Changes in Usage among Females and Males: 2008-2010

Changes in Usage by Gender. As a final comparison, males began with a baseline rate (78.1%) that was 8.5 percentage points lower than that of females (86.6%). This difference narrowed to 5.4 percentage points immediately after the law change, then increased to about 6.5 points after the 2010 mobilization. Usage increases associated with the 2009 CIOT and the law change were greater among males (+8.8 points) than among females (+5.5 points); there was a slight decay (-2.7 points) among both groups prior to the 2010 mobilization; then there was a slightly *greater* increase among *females* (+4 points) than among males (+3 points).

In summary. The combination of the 2009 CIOT and the primary law change had a large and significant impact on usage in 2009, resulting in greater increases among lowest usage groups. Generally, the gains experienced by the lowest use groups decayed over time, until the 2010 mobilization, when there were additional gains. By June 2010, there were smaller differences between the lowest-use groups and other groups than there was the case in 2008 or in April of 2009. Clearly, the CIOT mobilization had an impact in seatbelt use in each year, and the move to primary in 2009 had a slightly greater impact.

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I. Introduction

This report documents Florida's annual Statewide Seat Belt Use Survey. The survey was conducted in April and in June of 2010 by Preusser Research Group, Inc. (PRG), under the direction of the Florida Department of Transportation (FDOT) and under contract with Tallahassee Community College.

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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. FDOT's occupant protection program requires administration of a statewide survey of seat belt use that must adhere to Federal Register Guidelines. Florida's first statewide survey certified under these Guidelines was completed in 1999 and surveys have been completed every year since. The survey covered by this report was conducted in June 2010 and it provides a statewide representative estimate of seat belt use in Florida in June 2010. This estimate is comparable to the first estimate submitted to the National Highway Traffic Safety Administration (NHTSA) in 1999 and, as a representative survey conducted under Federal Guidelines, it is comparable to all statewide surveys conducted thereafter.

In spring of 2006, FDOT contracted with PRG to redesign the State's seat belt survey methodology, conduct observations, and provide an estimate of statewide usage for the State of Florida for year 2006. Florida had an approved sampling plan in place since 1999 that was based on 351 sites across 13 counties.[1] That plan was modified using a new sample of counties and a smaller number of sites. In spite of the smaller number of sites in the 2006 design (151 versus 351), it met all Federal requirements (specified under the 1998 TEA-21 Sample Design Requirements), and provided an overall belt use estimate with less variability than that specified in the guidelines while reducing costs to the State. The design developed by PRG in 2006 was used in conducting *pre-Click It or Ticket (pre-CIOT)* and *post-CIOT* surveys in 2007, 2008, and 2009, as well as in 2010. In addition to these surveys, an additional *post-primary law* survey was conducted in July 0f 2009. In order to show change over time, this report adds a *Trends* section that shows changes in usage, regionally and among various subgroups, from one year prior to the new law (2008) through one year after the law change (2010).

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

II. Survey Methodology

A. 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.

1. 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.

2. 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]

		Road Segments		Traffic Volume	
County	Region	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 Principal 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**

3. 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.

4. 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.)

$$p_{ij} = \sum_{k=1}^{n_{ij}} p_{ijk} / n_{ij} \qquad (1)$$

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:

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

where $\hat{\sigma}_{\hat{p}}$ = standard deviation (standard error) of the estimated statewide seat belt use proportion $\hat{p}$ (equivalent to *p* in the notation of formulas 1-3), *n* = the number of sites, i.e., 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.

B. Observations

1. 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.

2. Scheduling

Observations were conducted over an eight day period (from a Friday to a Friday, inclusive) 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.

3. 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.

4. 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.

5. 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.

C. 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.

III. Overview of Florida Statewide Usage: 1993 through 2009

Figure 1 shows the results of Florida statewide surveys conducted from 1993 through 2009. There were no sustained increases in Florida's statewide use rate during the 1990s. After 2000, however, there were substantial increases that were likely associated with the implementation of highly visible efforts to enforce Florida's adult seat belt law and possibly associated with the change in survey methodology beginning in 2006. More recent changes associated with 2009 and 2010 CIOT mobilizations and a 2009 change in the seat belt law are described in a subsequent section of this report.

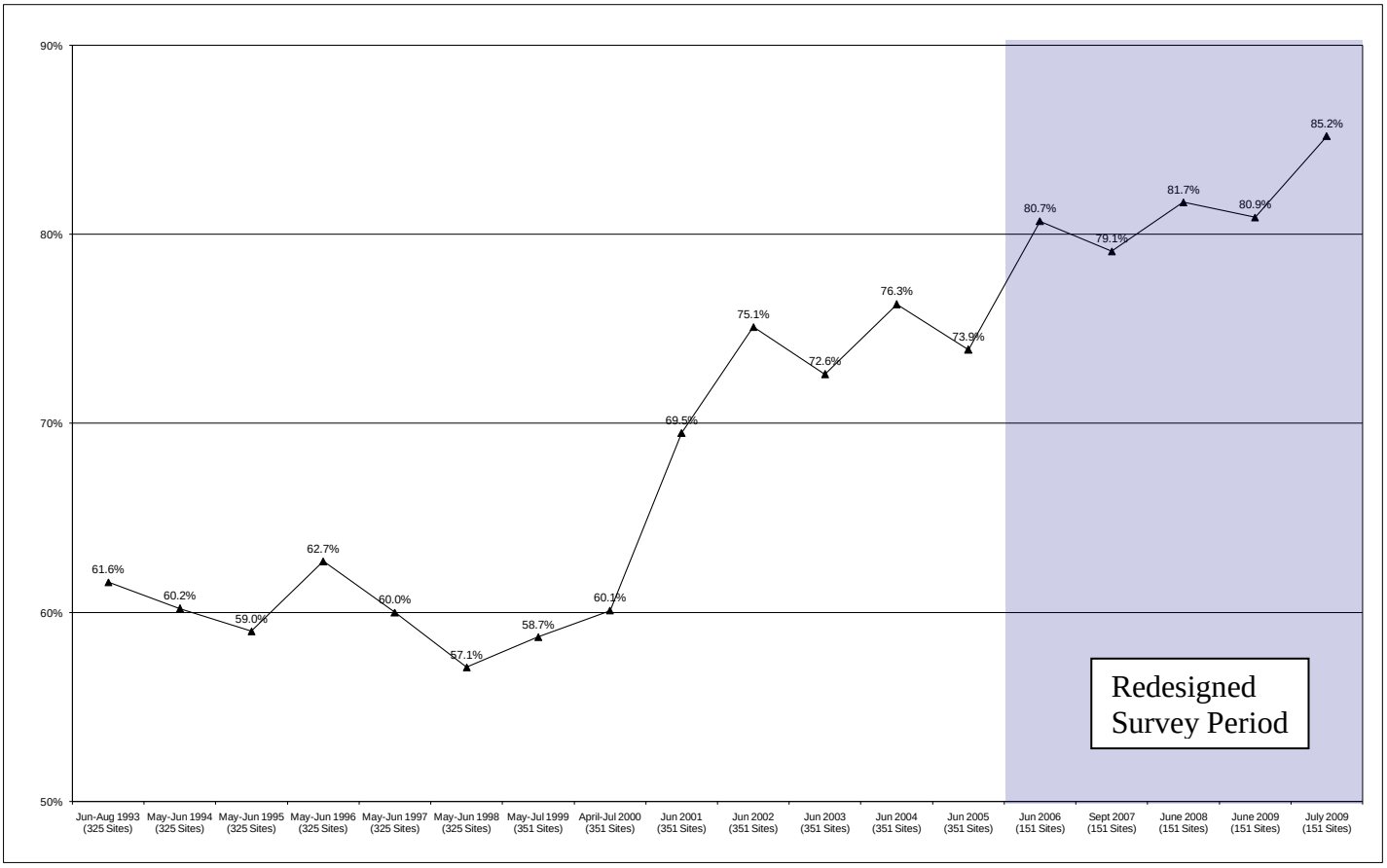

Figure 1. Florida Statewide Observational Survey of Belt Use Results; 1993 – June 2009

IV. June 2010 Florida Statewide Survey Results

A. Number of Observations by County and by Region

Observers recorded belt use information on 30,837 drivers and 6,436 outboard front seat passengers observed across the 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	**5,766**	**1,259**	**7,025**
Duval County	3,364	751	4,115
Leon County	1,333	261	1,594
Marion County	1,069	247	1,316
Central Region	**9,507**	**1,873**	**11,380**
Hillsborough County	3,151	753	3,904
Orange County	2,520	518	3,038
Pinellas County	2,450	365	2,815
Polk County	1,386	237	1,623
South Region	**15,564**	**3,214**	**18,778**
Broward County	4,770	934	5,704
Collier County	722	173	895
Dade County	5,670	1,044	6,714
Lee County	1,113	377	1,490
Palm Beach County	3,289	686	3,975
Statewide Total	**30,837**	**6,346**	**37,183**

B. June 2010 Weighted Statewide Usage Rate

Focusing first on the June 2010 statewide survey results, the overall belt use rate, for drivers and passengers combined, was **87.4 percent** (relative standard error = 0.586%; 95% CI : 86.4% to 88.4%). The weighted belt use rate was nearly identical among drivers and passengers.

Table 6. Weighted Statewide Seat Belt Use Rate for Florida

	June 2010 (N=37,183)
June 2010 Statewide Use Rate	87.4%

C. June 2010 Results by Subgroup – (Based on Raw Data Counts)

1. Roadway Type

Belt use differed by roadway type. As shown in Figure 2, belt use was highest on *interstates* (88.1%) and *principal arterials* (87.4%); both of which typically have higher traffic densities and higher rates of speed. The lowest rates of usage were observed on *collectors* (85.7 %), roadways usually found within city limits. This pattern of results has been similar from year to year.

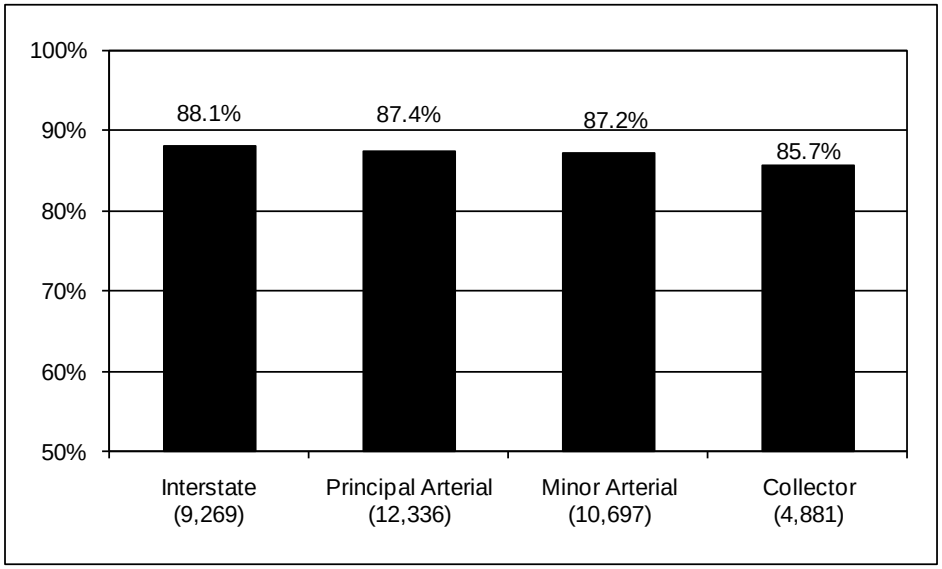

Figure 2. Observed Belt Use Rate by Roadway Type

2. Day of Week and Time of Day

The June 2010 survey results showed little variation in belt usage when comparing days of week (Figure 3), although Friday yielded the lowest usage, compared to the other days of week. Figure 4 shows slightly higher belt usage during morning and afternoon rush hours, but rates were relatively the same throughout the day.

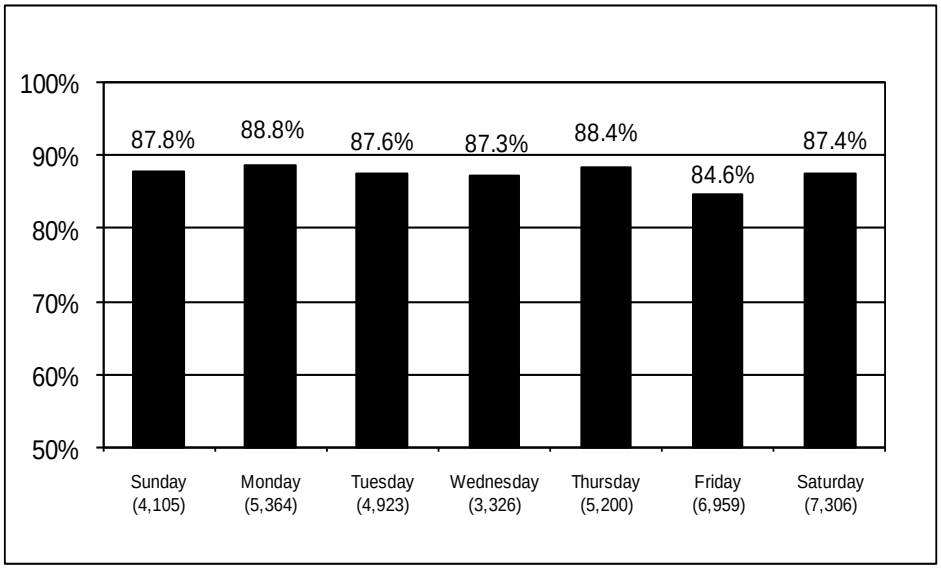

Figure 3. Observed Seat Belt Use Rate by Day of Week

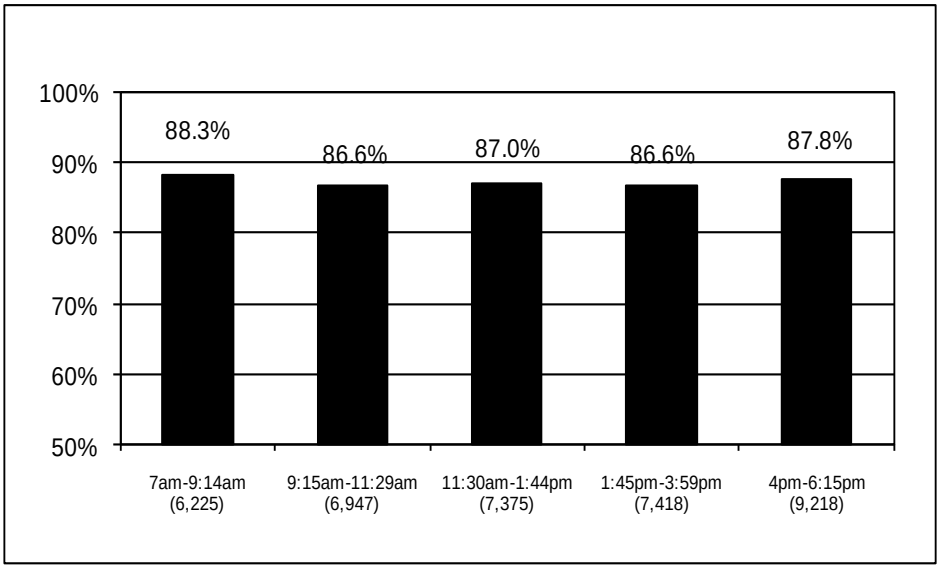

Figure 4. Observed Seat Belt Use Rate by Time of Day

6. 3. Gender

As is nearly always the case in statewide surveys, these results indicated that belt usage was lower among male occupants than among female occupants (Figure 5). Over 9 of 10 females were belted in the survey.

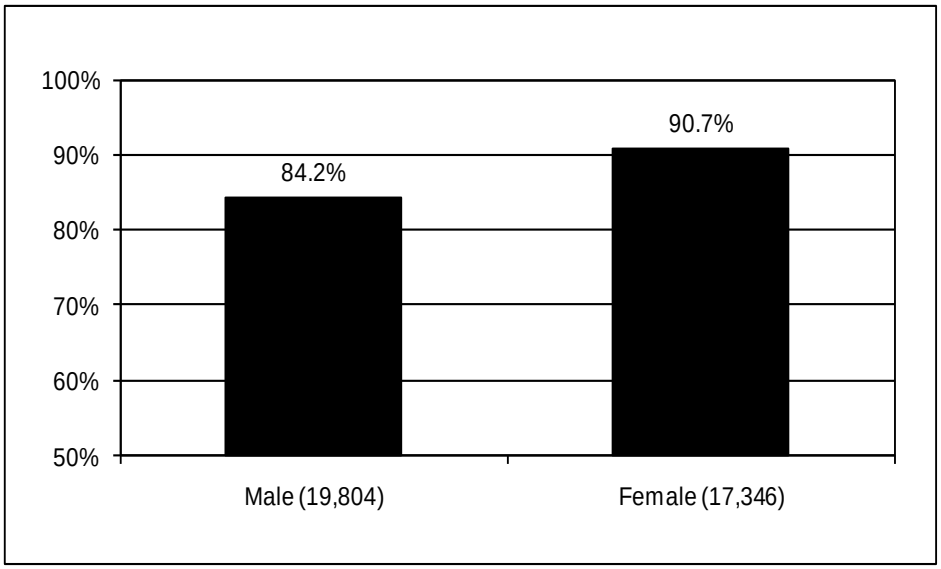

Figure 5. Observed Seat Belt Use Rate by Gender

4. Gender and Role (Driver versus Passenger)

Among males, Figure 6 shows that passengers were less likely to be belted than drivers (79.9 % vs. 84.8%, respectively). Less discrepancy (1.1 point) was found among female drivers and passengers (89.9% vs. 91.0%).

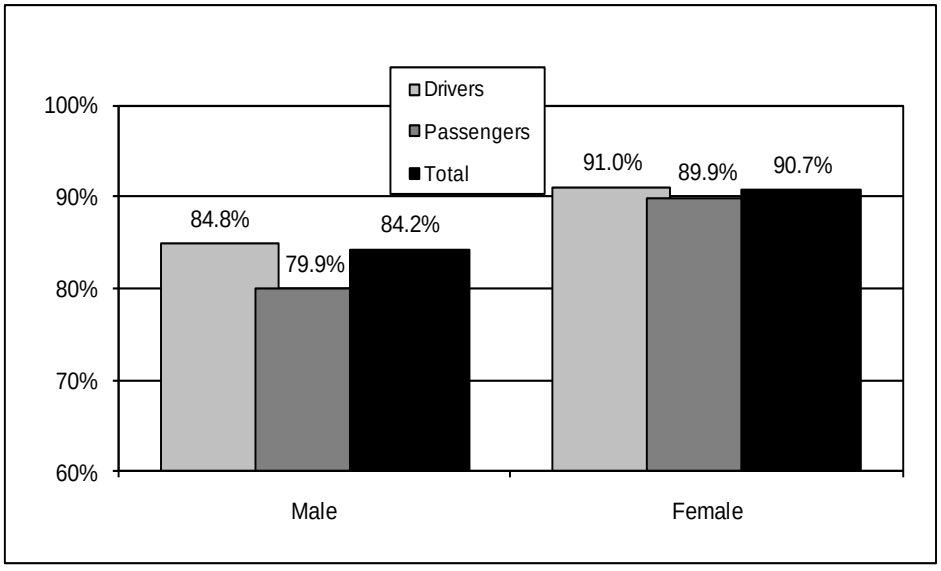

Figure 6. Observed Seat Belt Use Rate by Gender and Seating Position

5. Race and Ethnicity

Figure 7 shows occupant belt use by race/ethnicity. It shows that the lowest observed usage was among Blacks (81.2%), followed by Hispanics (86.6%), Whites (89.2%) and "Other" (94.1%).

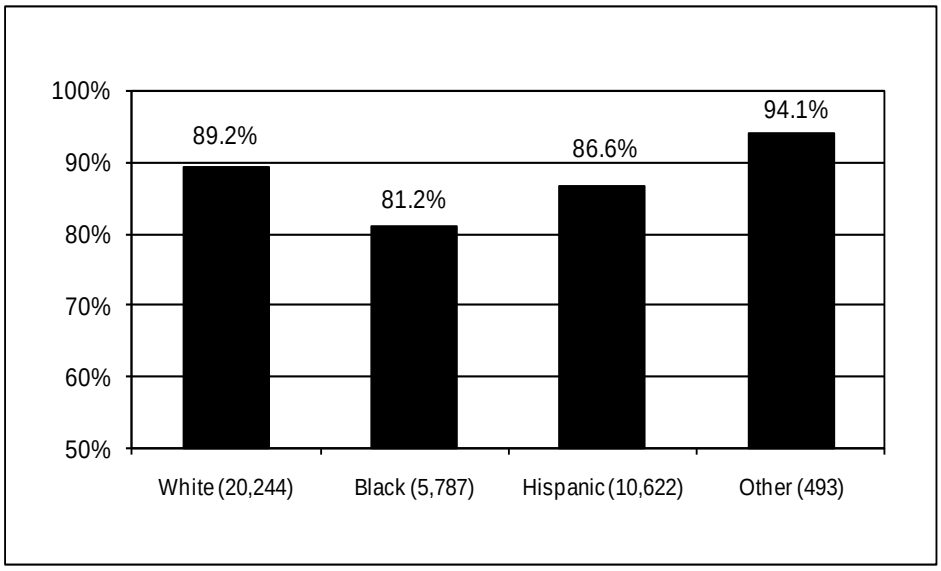

Figure 7. Observed Seat Belt Use by Race/Ethnicity of Occupant

6. Race/Ethnicity and Gender

The pattern of belt use results among race/ethnicity categories was similar for male and female occupants (see Figures 8 and 9), with male usage lower than female usage for each racial/ethnic category.

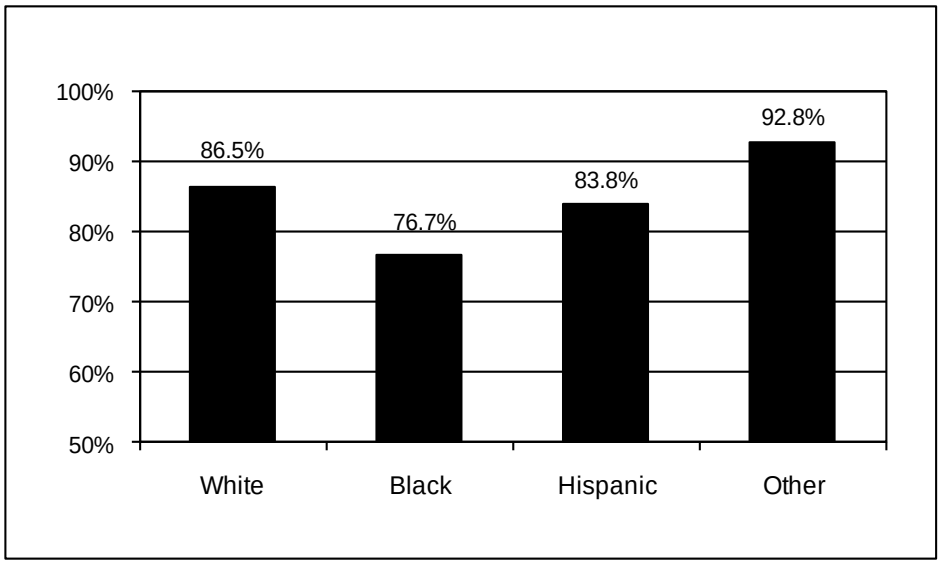

Figure 8. Observed Seat Belt Use Rate for Male Occupants by Race

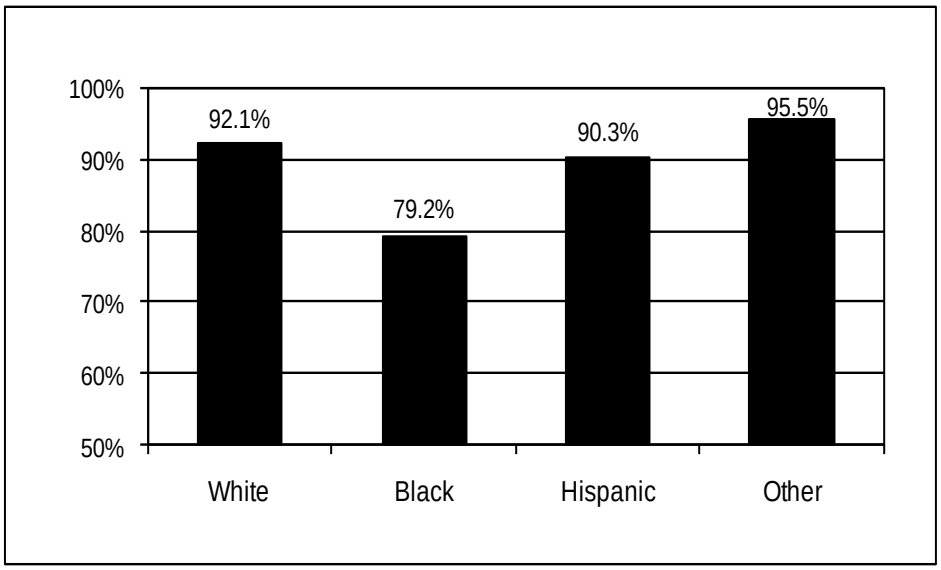

Figure 9. Observed Seat Belt Use Rate for Female Occupants by Race

7. Race/Ethnicity and Role

The survey results generally showed only slight differences between drivers and passengers among the four race/ethnic categories. Figure 10 shows that, among Whites, usage was nearly identical for drivers and passengers; among Blacks, usage was significantly higher among drivers (82.2%) than among passengers (76.6%); among Hispanics, belt use was very similar among drivers and passengers; and among "Others," usage was slightly higher among drivers than among passengers. Thus, driver use was slightly higher than passenger use across most categories, but particularly among Blacks.

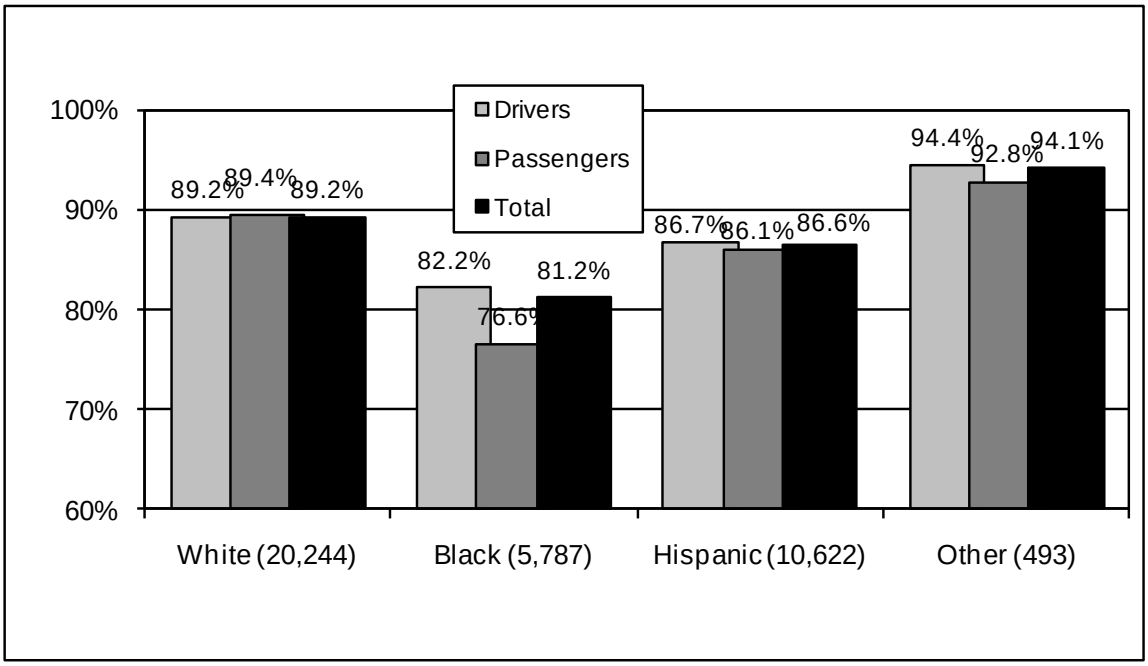

Figure 10. Observed Seat Belt Use Rate by Race and Seating Position

8. Younger versus Older Occupants

Figure 11 shows that older occupants, age 60 and older, wore their safety belt more often than younger occupants, under age 60 (91.6% and 86.4%, respectively).

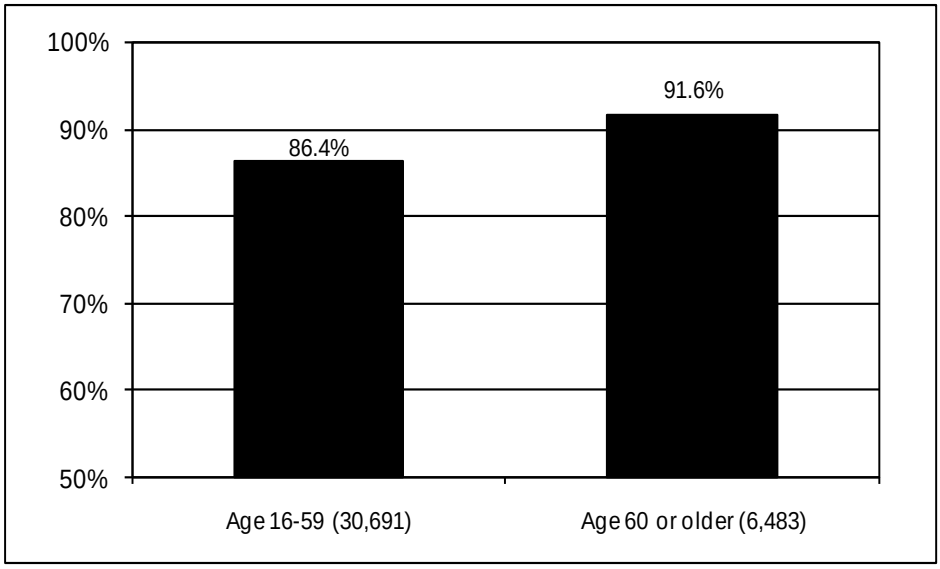

Figure 11. Observed Seat Belt Use Rate by Age Category

9. Vehicle Type

With regard to vehicle type, these recent survey results showed substantially lower belt use among occupants in pickup trucks (79.9%) than among occupants in other vehicle types, which ranged from 87.7 percent in cars to 90.4 percent in vans (see Figure 12). Nearly 83 percent of occupants in pickup trucks were males and this likely contributed to the low usage rate since males had consistently lower usage than females.

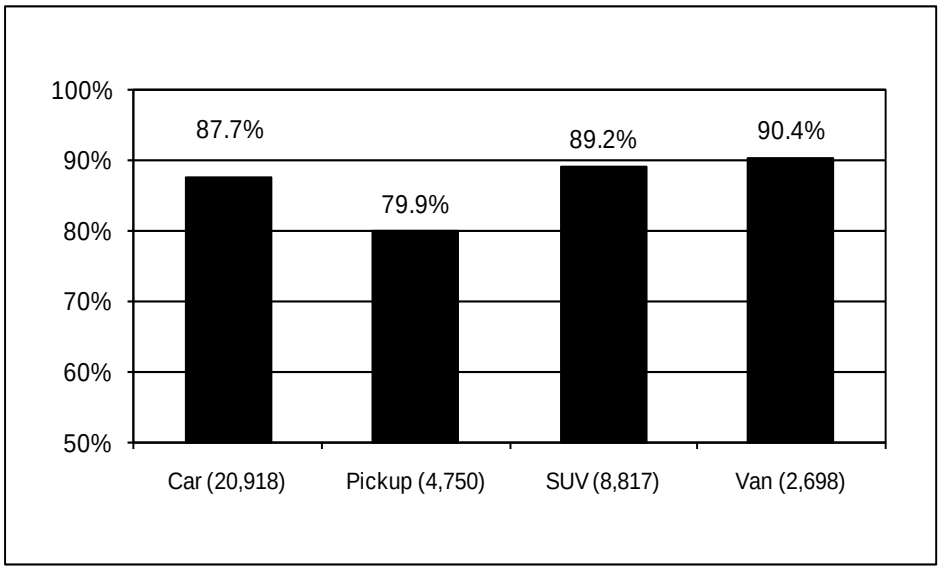

Figure 12. Observed Seat Belt Use Rate by Vehicle Type

10. Vehicle Type and Role

Both drivers and passengers in pickup trucks were observed using a seat belt less often than occupants in other vehicle types (Figure 13). In each vehicle type, passengers had lower usage rates than drivers. Passengers in pickups had the lowest usage rate (78.2%) of any group.

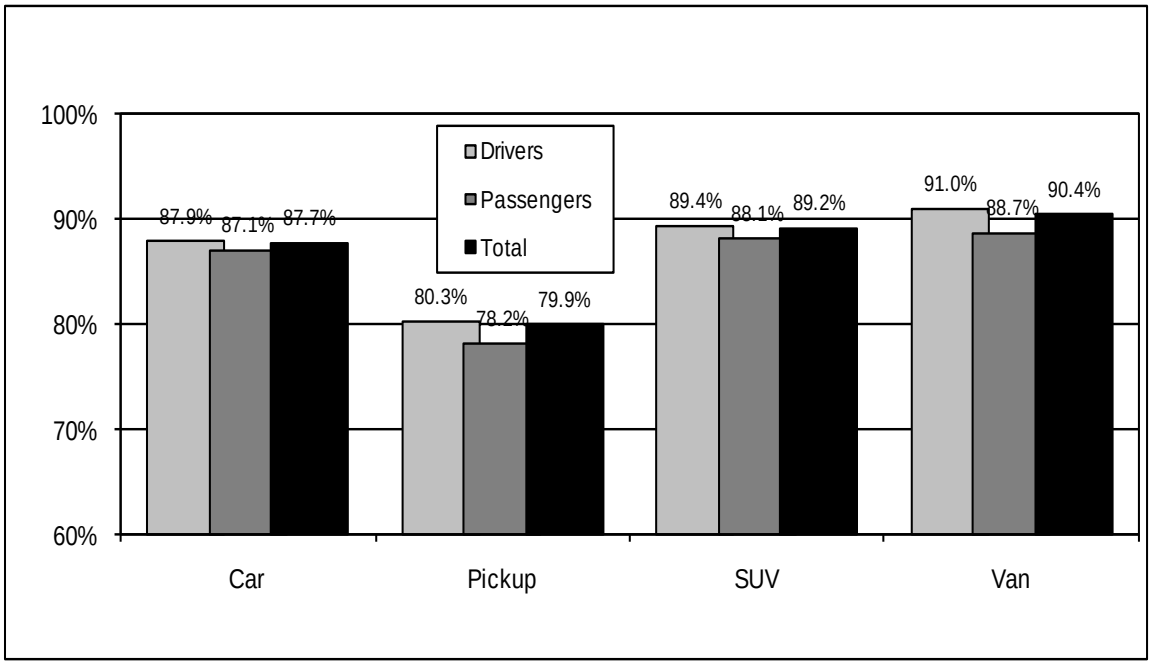

Figure 13. Observed Seat Belt Use Rate by Vehicle Type and Seating Position

D. June 2010 Usage Rates by Region (and by Various Subgroups)

1. Usage by County and by Region

Looking more closely at various regions of the State, Figure 14 shows total occupant belt use by county within three regions of the State. The county averages shown in Figure 14, as well as the regional averages shown in Figure 15 should be interpreted with caution. The survey was not designed to provide county-by-county or region-by-region belt use rates. Rather, it was designed to provide a representative *statewide* estimate.

Use rates shown in the graph are based on county averages using raw data. On average, belt usage was higher in the southern part of the State than in the northern and central counties sampled. The simple averages of the county rates *within each region* were 86.6% in the north, 86.3% in the central area, and 89.8% in the south.

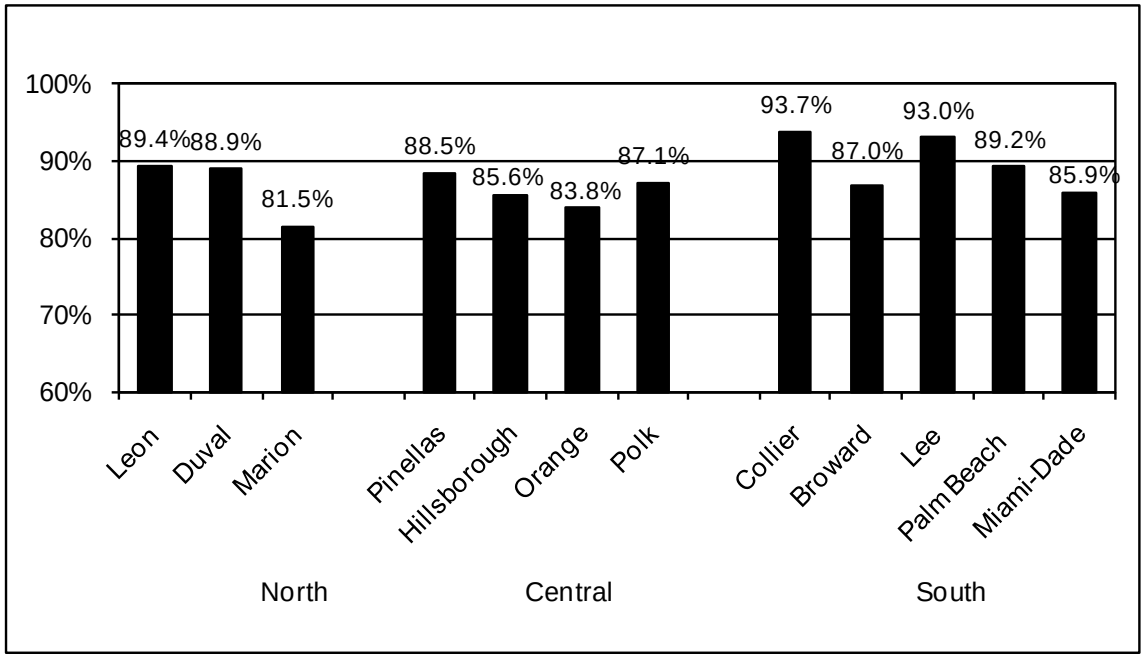

Figure 14. Observed Seat Belt Use Rate by County and Region

Figure 15 shows a slightly different calculation of use by region of the State. The rates in this figure were calculated without separation by county. In other words, the usage rate for each region was calculated by dividing the total number of occupants buckled up in a particular region, divided by the total number observed in that region. Thus, if one county had substantially more observations than another, its data weighed more heavily in the regional rate. Using this approach, usage in the northern and southern regions of the State (87.6% and 87.9%, respectively) appeared to be slightly higher than usage in the central region (86.1%).

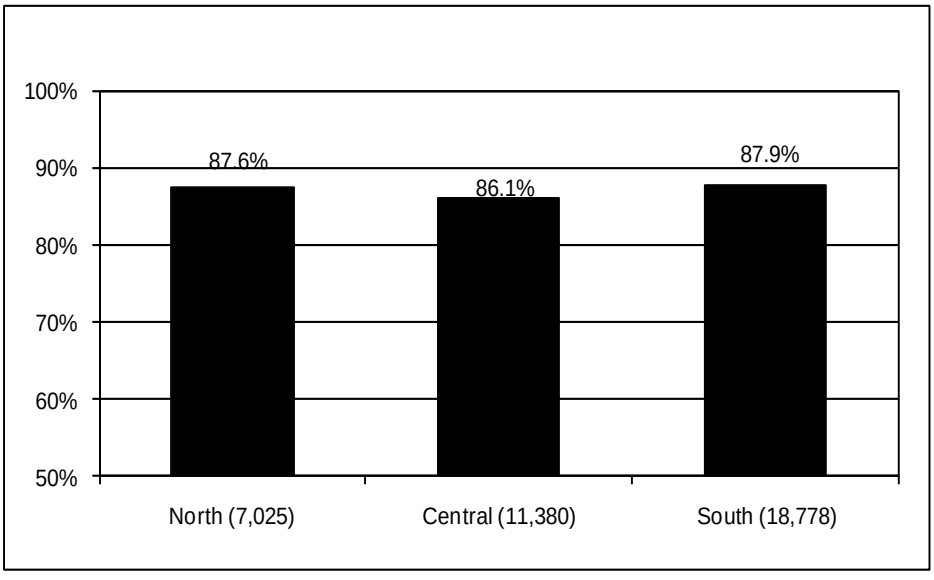

Figure 15. Observed Seat Belt Use Rate by Region

2. Usage by Roadway Type and by Region

Looking at roadway type and region, Figure 16 shows that usage in the central and southern areas of the State was typically highest on interstates, with generally decreasing use on more local roadways. This was not the case in the northern region, where usage was highest on the local collectors. This may be a function of variability associated with a small number of observations on local roadways in the north.

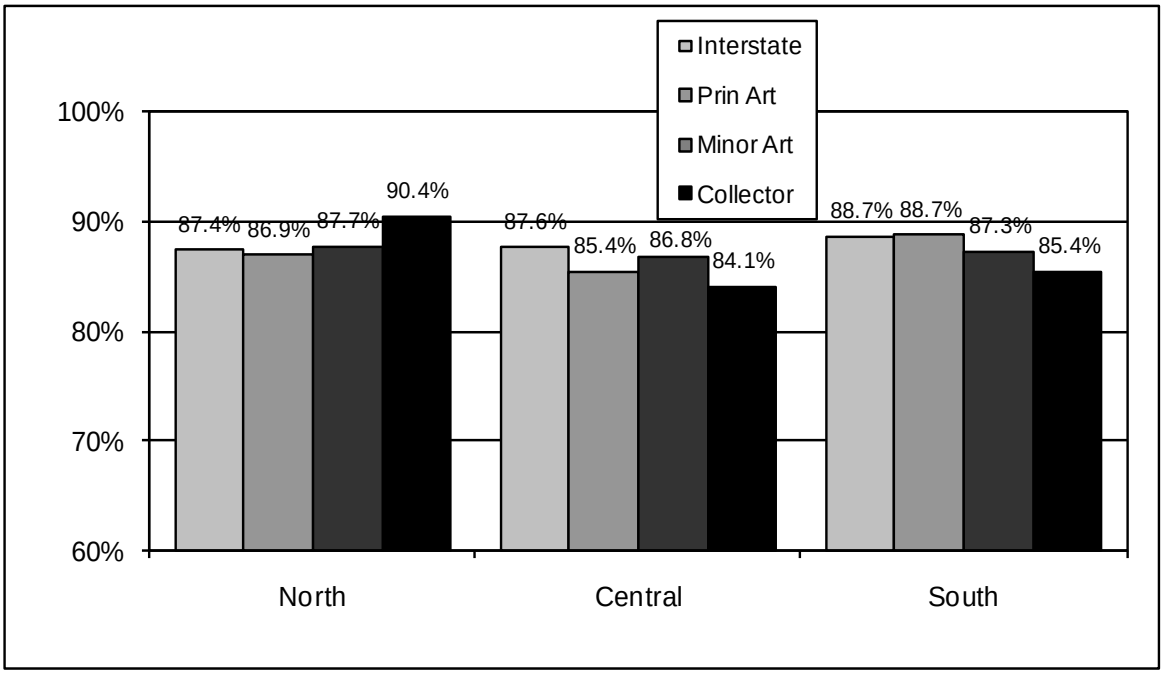

Figure 16. Observed Seat Belt Use Rate by Road Type and Region

3. Usage by Vehicle Type and by Region

The June 2010 statewide survey found a consistent pattern of lower observed belt use among occupants of pickup trucks, compared with occupants of other vehicles -- regardless of region (see Figure 17). Belt use among occupants in pickup trucks was at least 5 percentage points lower than among occupants of any other vehicle type. In the north and central areas, usage among occupants of pickup trucks was, on average, more than 8 points lower than among occupants of other vehicles. In the south, it was more than 10 points lower. Occupants of SUVs and vans had the highest usage rates in all three regions.

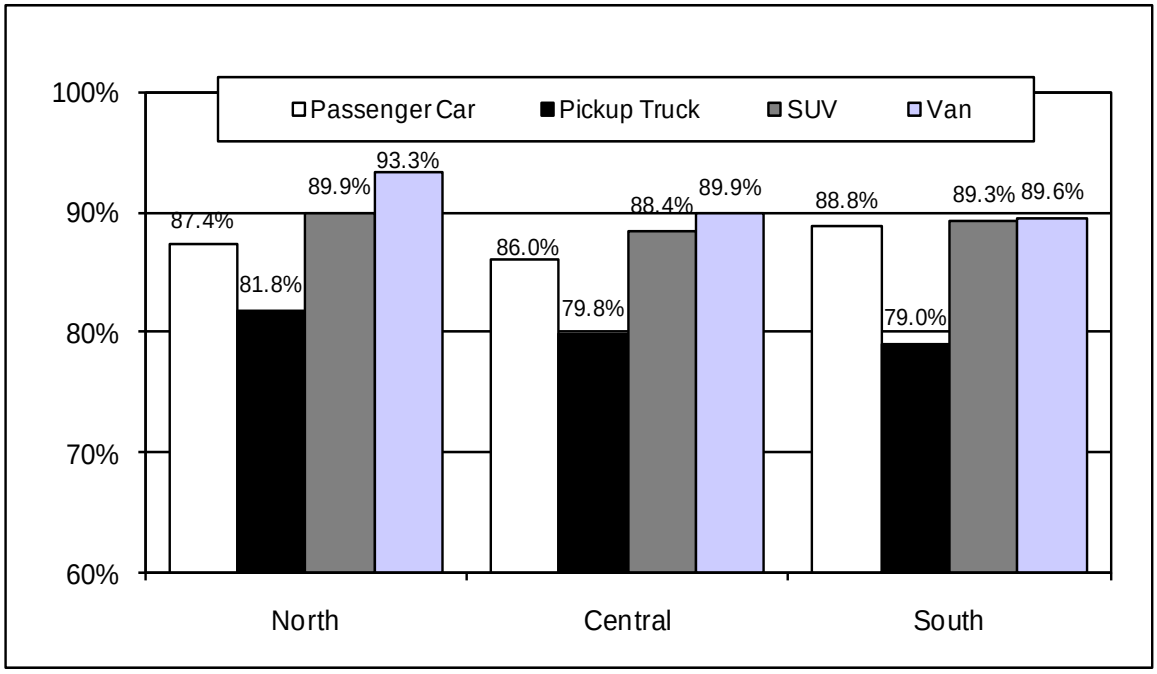

Figure 17. Observed Belt Use Rate by Vehicle Type and Region

4. Usage by Gender and by Region

Similarly, Figure 18 shows lower belt use among males than among females in all three regions of the State.

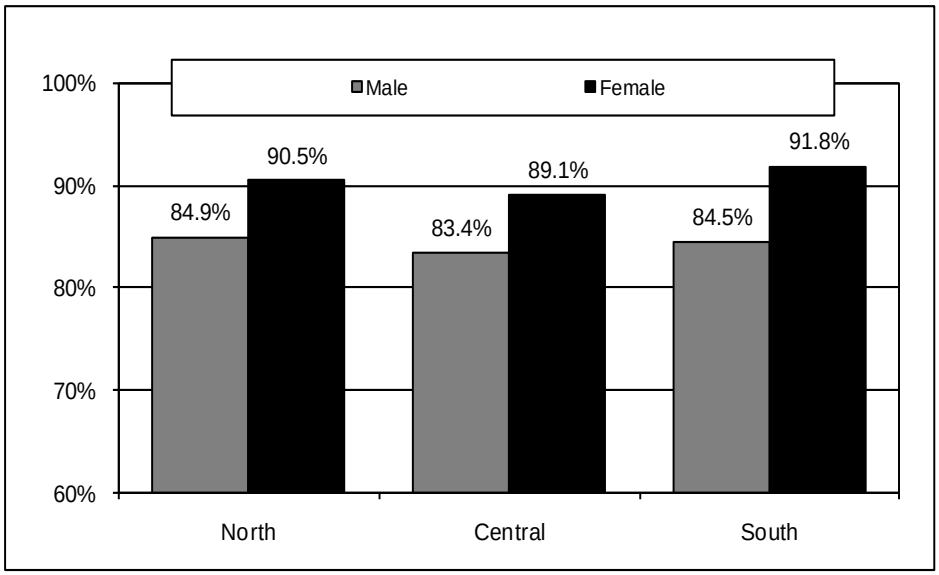

Figure 18. Observed Belt Use Rate by Gender of Occupant and Region

5. Usage by Race/Ethnicity and by Region

Finally, Figure 19 shows that the "Other" category of race/ethnicity had the highest usage in all three regions, followed by Whites. In the central and southern regions, Hispanics had higher usage rates than Blacks, with the lowest rates. In the north, however, Blacks and Hispanics had nearly identical (low) rates.

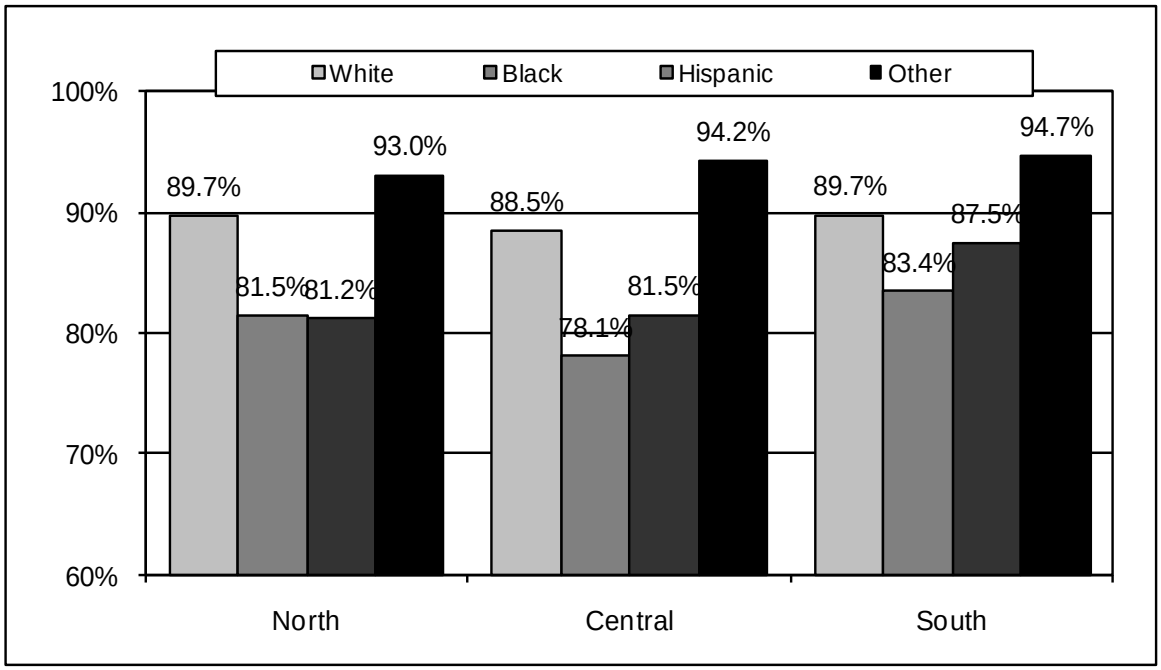

Figure 19. Observed Belt Use Rate by Race of Occupant and Region

E. Comparisons with the April 2010 Baseline Survey

PRG conducted a baseline statewide survey just prior to CIOT in April 2010. Results from the June post-CIOT survey were compared with this April pre-CIOT survey to examine the effects of the 2010 CIOT program under the new primary law environment. Table 7 displays the weighted and unweighted use rates results of each survey.

1. Change in Overall Usage (Weighted Estimate)

The weighted results indicate an overall increase of 3.1 percentage points between pre- to post-CIOT rates.

2. Change in Subgroup Estimates (Raw Data)

The breakdown of the unweighted (raw) data counts shows that both drivers and passengers increased their use rate following the mobilization. Improvement was nearly identical among drivers and passengers (+3.4 points and +3.5 points, respectively).

Table 7. Safety Belt Use Rate Pre-Post 2010

Weighted	**Pre-CIOT April 2010**		**Post-CIOT June 2010**		Pre to Post Difference
	Percent Use	N	Percent Use	N	
Statewide, All Occupants	84.3%	41,813	87.4%	37,183	**+3.1**
Unweighted	**Pre-CIOT April 2010**		**Post-CIOT June 2010**		Pre to Post Difference
	Percent Use	N	Percent Use	N	
Occupant Type					
Driver	84.0	34,315	87.4	30,837	+3.4
Passenger	82.9	7,498	86.4	6,346	+3.5

Table 8 provides further information on changes in usage among other subgroups, based on raw data counts. Although between-group differences remained, the data in Table 8 suggest that there were improvements among all subgroups, but particularly among Blacks, Hispanics, and "Others." An examination of occupant belt use *by vehicle type* showed increases among all categories, with the most notable being the 4.0 percentage point increase among pickup truck occupants (the lowest use group). Even with that increase, however, occupant use rates in pickup trucks lag behind the use rates of occupants in other vehicle types. Similarly, increases were greater among younger occupants (a lower use group) than among older occupants (a higher use group). Interestingly, this pattern was reversed with regard to gender. Here, increases were greater among females (the higher use group) than among males (the lower use group).

Table 8. Changes in Seat Belt Use Rates by Gender, Age, Race, and Vehicle Type (unweighted data)

	Pre-CIOT April 2010		**Post-CIOT June 2010**		Pre to Post Difference
	Percent Use	N	Percent Use	N	
Sex					
Male	81.3	22,078	84.2	19,804	+2.9
Female	86.6	19,723	90.7	17,346	+4.1
Age					
16-59	82.5	34,277	86.4	30,691	+3.9
60 or older	89.8	7,520	91.6	6,483	+1.8
Race/Ethnicity					
White	86.9	25,809	89.2	20,244	+2.3
Black	75.0	5,988	81.2	5,787	+6.2
Hispanic	80.7	9,510	86.6	10,622	+5.9
Other	87.7	472	94.1	493	+6.4
Vehicle Type					
Car	84.2	23.361	87.7	20,918	+3.5
Truck	75.9	5,053	79.9	4,750	+4.0
SUV	85.6	10,191	89.2	8,817	+3.6
Van	87.9	3,208	90.4	2,698	+2.5

The data presented in Table 9 concern location and daily travel characteristics. Nearly all the data presented demonstrate increases in usage from pre-CIOT (April) to post-CIOT (June). Increases were measured across all regions (i.e., North, Central, and South). Further breakdowns show that while the North region had one county (Marion) where no increase was measured, increases in belt use were measured in all of the remaining 11 counties observed, with increases ranging from 0.8 points (in Hillsborough County) to 7.0 points (in Lee County).

Table 9. Changes in Seat Belt Use Rates by Region, County, Road Type, and Day of Week (unweighted data)

	Pre-CIOT April 2010		**Post-CIOT June 2010**		Pre to Post Difference
	Percent Use	N	Percent Use	N	
Region and County					
North	**85.4**	**6,719**	**87.6**	**7,025**	**+2.2**
Duval County	86.4	3,947	88.9	4,115	+2.5
Leon County	85.7	1,543	89.4	1,534	+3.7
Marion County	81.7	1,199	81.5	1,316	-0.1
Central	**84.2**	**13,624**	**86.1**	**11,380**	**+1.9**
Hillsborough County	84.8	4,101	85.6	3,904	+0.8
Orange County	81.5	3,038	83.8	3,038	+2.4
Pinellas County	85.0	4,150	88.5	2,815	+3.5
Polk County	85.6	2,335	87.1	1,623	+1.6
South	**83.0**	**21,470**	**87.9**	**18,778**	**+4.9**
Broward County	81.6	5,949	87.0	5,704	+5.4
Collier County	91.1	2,112	93.7	895	+2.6
Lee County	87.2	3,439	93.0	1,490	+5.8
Miami-Dade County	78.9	6,113	85.9	6,714	+7.0
Palm Beach County	83.6	3,856	89.2	3,975	+5.6
Roadway Type					
Interstate	84.7	9,462	88.1	9,269	+3.4
Principal Arterial	84.5	14,712	87.4	12,336	+2.9
Minor Arterial	83.6	12,168	87.2	10,697	+3.6
Collector	80.8	5,471	85.7	4,881	+4.9
Day of Week					
Monday	84.1	5,063	88.8	5,364	+4.7
Tuesday	84.8	6,563	87.6	4,923	+2.8
Wednesday	83.9	5,071	87.3	3,326	+3.4
Thursday	84.0	5,345	88.4	5,200	+4.4
Friday	82.6	8,111	84.6	6,959	+2.0
Saturday	83.6	7,695	87.4	7,306	+3.8
Sunday	84.5	3,965	87.8	4,105	+3.3

Increases were measured on all *road types*, with the highest point increases among the more local roads (with lower baseline rates). Examining belt use by *day of week* showed improvement on all days, surpassing 87 percent on all days except Friday.

In summary, the 2010 CIOT Mobilization achieved its goal of increasing belt use under the relatively new primary law environment, in spite of large gains seen in 2009. Improvement was measured across nearly all subgroups, although between-group differences remained even after

the 2010 CIOT. These trends and between-group differences will be examined in more detail in the next section.

F. Changes in Usage from June 2008 through June 2010

Important changes have taken place since the 2009 report on Florida's statewide usage was prepared. There have been activities aimed at increasing seat belt use in the State's 23 most northern counties and, on June 30, a primary seat belt law went into effect. This section examines changes in usage related to these events, particularly the primary law upgrade and May CIOT mobilizations.[3]

1. Changes in Usage by Region (North, Central, and South).

Figure 20 shows changes in usage in the mostly rural, northern part of the State (3 counties), in the central part of the State (4 counties) and in the southern part of the State (5 counties). Each trendline represents an unweighted average of the rates of all counties surveyed in that region (i.e., counties with more sites or more observations are not given additional weight). This figure shows a typical decline in usage from post-CIOT (June 2008) to pre-CIOT (April 2009), with an average decline of about 3 percentage points across the three regions (all counties counting equally within each regional average and all regions counting equally in the overall average). This decline from one mobilization to another was followed by about a 2-point gain associated with the May 2009 CIOT and by another 5-point gain associated with the implementation of the new law. Thus, there was an overall 7- point gain associated with the CIOT/law upgrade combination. A possible slight (average) decline of about 1-point was measured at the pre-CIOT period in 2010, followed by an (average) increase of about 3 points associated with the May 2010 CIOT. Thus, each mobilization continues to have an impact but, in 2010, the impact was from about a 6-point higher baseline level than in 2009.

Looking at the regional changes separately, the greatest impact of the 2009 CIOT/law upgrade combination may have been in south Florida (+8 points), followed by north Florida (+7 points) and central Florida (+6 points). These are slight differences, however, and they were calculated using regional averages in which the use rate of each (observed) county within each region was counted equally, rather than weighted by the number of observations within the counties.

If we look at the *overall impact* on usage from *April 2009* (the pre-CIOT baseline), through *June 2010* (the most recent post-CIOT rate), usage in the northern region appears to have increased the most (+12 points), followed by the southern region (+9 points) and the central region (+7 points). The large gain in north Florida was in part due to the fact that there was no decline from July 2009 (post-CIOT and law upgrade) to April 2010 (pre-CIOT). During this period, the rural demonstration program (RDP) was ongoing in the northern 36 counties.[4]

[3] A more comprehensive analysis and discussion of the impact of the primary law, in conjunction with annual CIOT mobilizations can be found in a Case Study report on this subject, which was funded by NHTSA.

[4] Because "region" was not a factor in the site selection process for Florida's statewide survey, regional rates should be viewed as *indices of usage that can be used to estimate change* (rather than representative rates for the region as a whole). However, because there were a substantial number of observations within each county, within each region, these rates should provide reasonably stable indices of change.

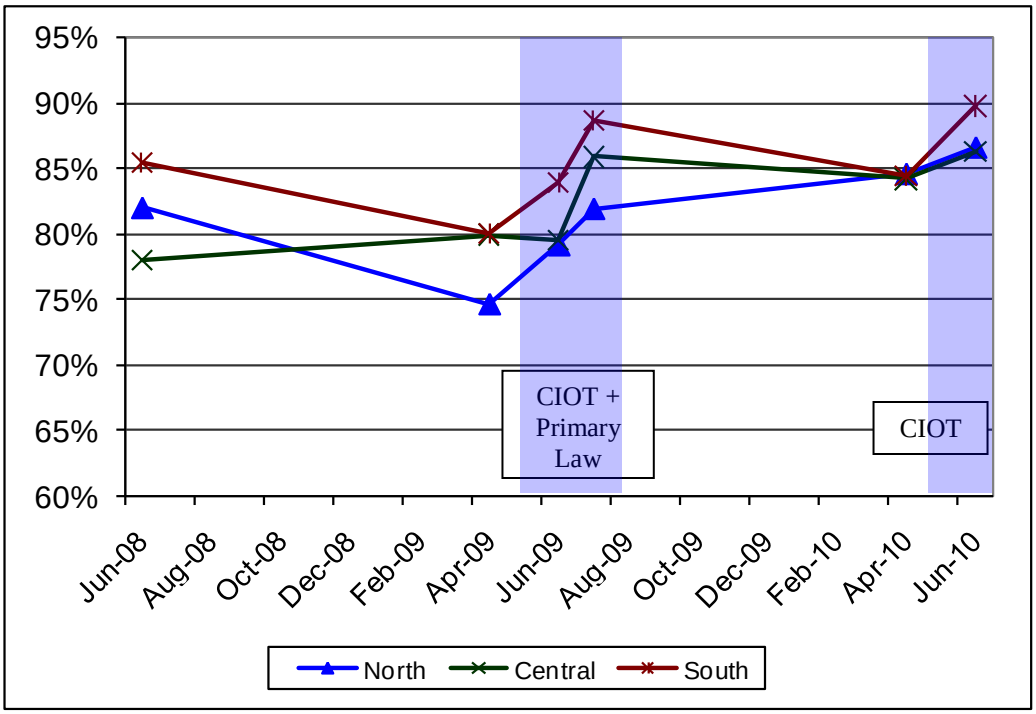

Figure 20. Regional Trends in Seat Belt Use in Florida: 2008 – 2010

2. Changes in Usage by Roadway Type

Figure 21 shows trends in usage by *roadway type*. The first thing that is apparent from Figure 21 is that collectors (local roadways) not only have the lowest usage baseline rates; they also have the largest declines from post-CIOT in one year to pre-CIOT in the next year and the largest increases associated with CIOT. With regard to the additional effect associated with the primary law upgrade, use on collectors responded with the highest increase (+5.9 points), along with minor arterials (+5.8 points). Also, collectors had the greatest overall increase from April 2009 (pre-2009 CIOT) to June 2010 (post 2010 CIOT). In summary, local collector in Florida roads had lower belt use at all times and they had more variability (i.e., a greater response to CIOT and to the primary law and more decay from one CIOT period to another).

Interstate highways and primary arterials consistently had the highest usage rates, nearly identical to each other under all conditions; they experienced modest decay between mobilization periods (-2 to -3 points); had relatively smaller gains associated with mobilizations (+2 to +3 points); and had a more modest gain associated with the primary law (+4 to +5 points).

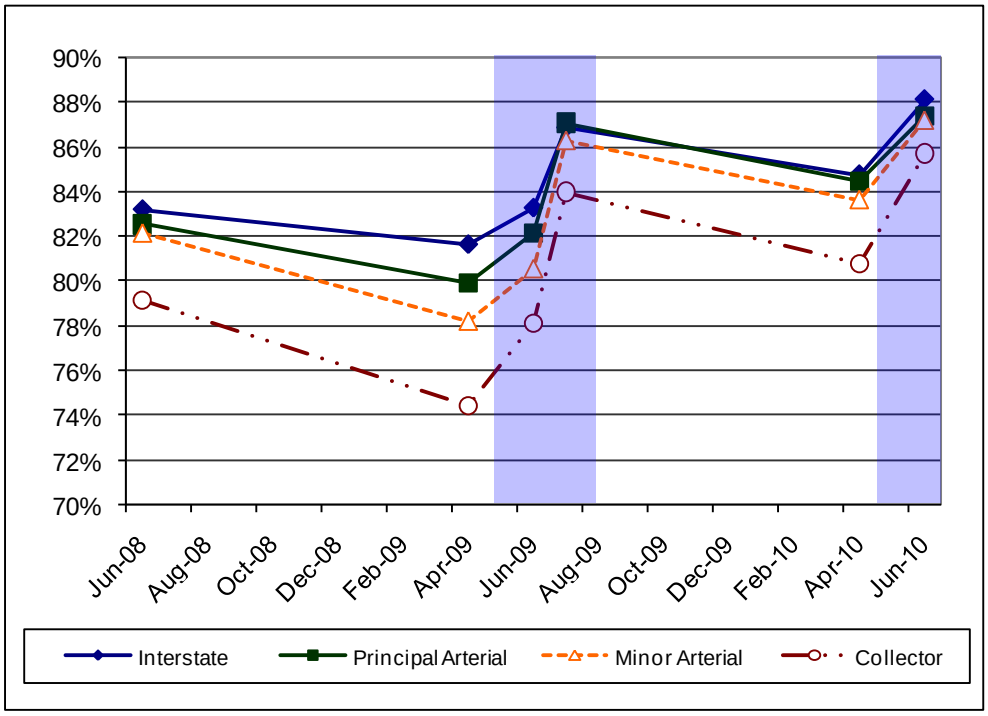

Figure 21. Changes in Usage by Roadway Type: June 2008 through June 2010

3. Changes in Usage by Vehicle Type

Moving from the environment to the vehicle, Figure 22 shows trends in usage associated with occupants in various vehicle types. As was the case with more local roadways, the lowest usage rates are consistently associated with a single group – in this case, occupants of pickup trucks. As with occupants on local roads, usage among occupants in pickup trucks was lowest in June 2008 (74.6%); declined the most prior to the 2009 CIOT (-6.8 points); increased the most following the 2009 law change (+9.1 points); declined the most prior to the 2010 CIOT; and increased (slightly) more than any other group associated with the 2010 CIOT. Although usage in pickup trucks did not increase more in cars following the 2009 CIOT (+2.9 points for both), the overall CIOT + law change gain was 12 percentage points in pickup trucks, substantially more than for any other group. In summary, as with usage on local roads, usage among occupants of pickup trucks is lower than for other groups; responds more to enforcement and law interventions; and declines more when no intervention is in place.

Usage among the other vehicle groups (i.e., cars, SUVs, and vans) can generally be described as a group. Usage in June 2008 averaged about 84 percent. It then declined by just under 3 points prior to the 2009 CIOT; increased by about 2 points with the 2009 CIOT plus about 5 points with the law change (+6.2 points combined); declined modestly between CIOT periods (-2 points); and increased modestly again with the 2010 CIOT (+3.2 points). Thus, usage among this *non-pickup* group is higher at all times; declines less during non-intervention periods; and increases less (but still significantly) during intervention periods.

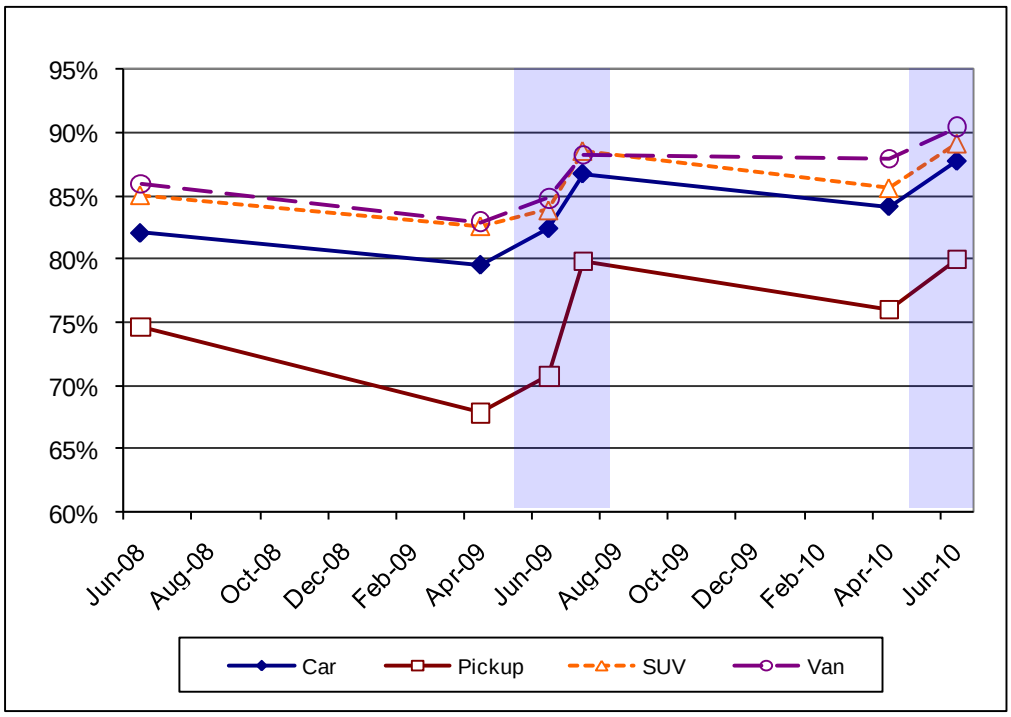

Figure 22. Changes in Use by Vehicle Type: June 2008 through June 2010

4. Changes in Usage by Race/Ethnicity

Figure 23 shows trends in usage by race and ethnicity, from just after the 2008 CIOT to just after the 2010 CIOT, with the 2009 CIOT and law change in between. As with the prior comparisons, one group has substantially lower usage than all other groups. Black occupants begin with a belt use rate of about 70 percent (about 10 points lower than among Hispanics). Usage among Blacks changed very little from 2008 to the 2009 pre-CIOT period (as with Hispanics); increased more than among any other group in response to the law change (+8 points); declined substantially (slightly less than among Hispanics) prior to the 2010 CIOT; and, as among Hispanics, usage increased more among Blacks than among Whites in conjunction with the 2010 CIOT mobilization. Thus, among the two lowest use groups (Blacks and Hispanics), changes in usage are very similar to those for local roads, and occupants of pickup trucks -- low initial rates, substantial decay in use between interventions, and generally greater increases associated with interventions. Among Whites, on the other hand, there were higher initial rates, generally less decay between interventions, and less impact associated with interventions.

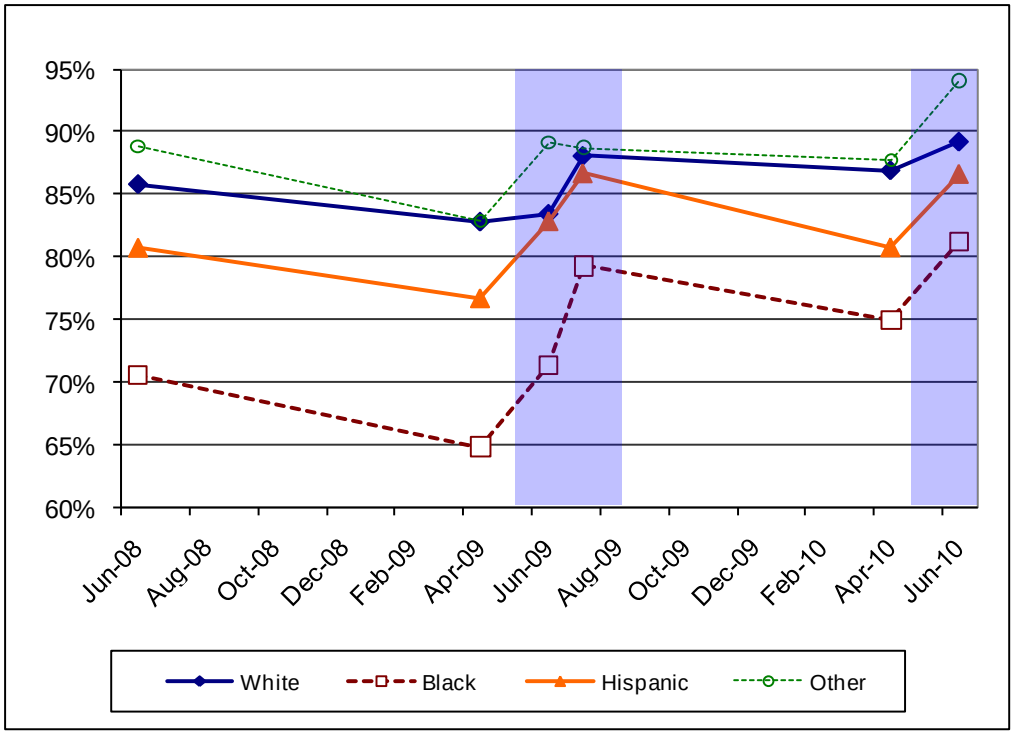

Figure 23. Change in Use by Race and Ethnicity: 2008-2010

5. Changes in Usage by Gender

As a final comparison, Figure 24 shows changes in seat belt use among males and females. This figure provides what has now become a familiar pattern, with at least one group (in this case, males) having substantially lower usage rates throughout the period than another group (females). Males started out with a usage rate (78.1%) that was 8.5 percentage points lower than that of females (86.6%). This difference narrowed to 5.4 percentage points immediately after the law change, increasing slightly to about 6.5 points difference after the 2010 CIOT mobilization. In between usage increases associated with the 2009 CIOT and the law change were greater among males (+8.8 points) than among females (+5.5 points); there was a slight decay among both groups (about 2.7 points) until the 2010 mobilization, when there was a slightly greater increase among females (about 4 points) than among males (about 3 points).

6. Changes in Usage among Other Subgroups

Changes in usage in other categories, such as by day of week, weekends versus weekdays, and by time of day (depicted in Figure 25) were examined. Although similar patterns in terms of decay between mobilization periods and substantial increases associated with both CIOT and the law change were evident, substantial differences between the subgroups themselves were not. Changes during the week were nearly identical to changes during the weekend and changes during morning, mid-day, and evening were nearly identical. No late night observations were made.

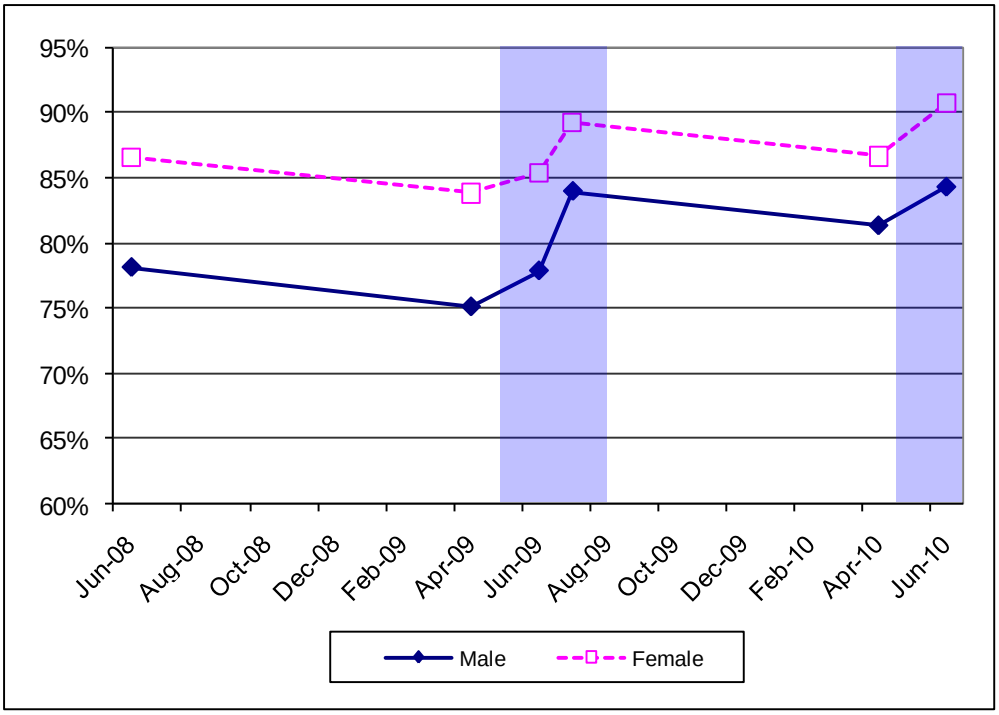

Figure 24. Changes in Usage among Females and Males: 2008-2010

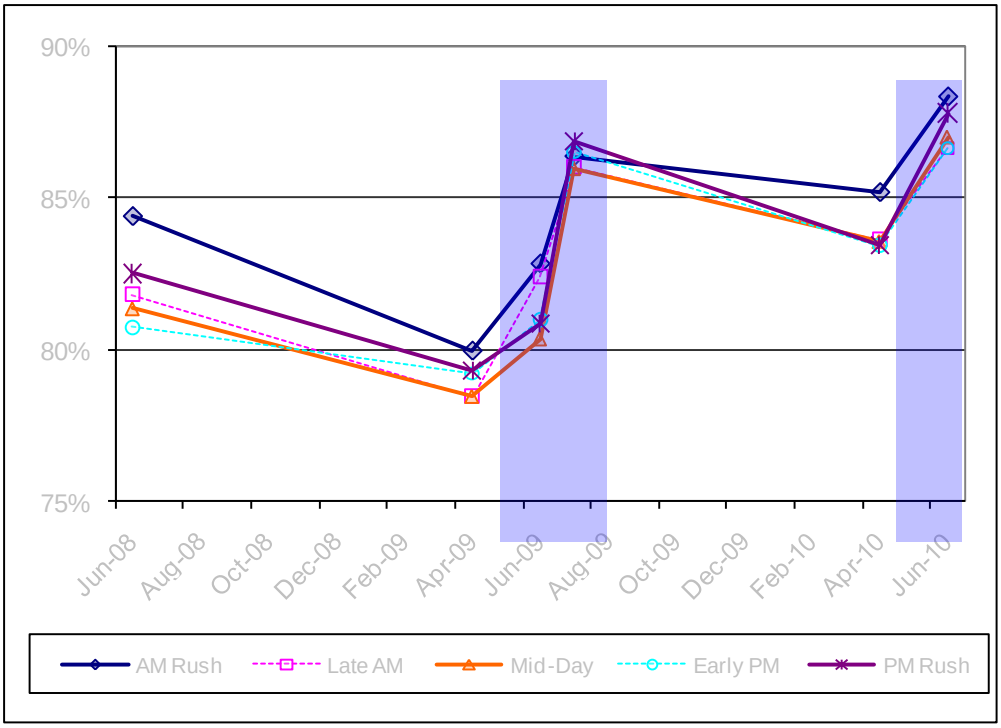

Figure 25. Changes in Usage across times of day: 2008-2010

In summary. The combination of the 2009 CIOT and the primary law change had a large and significant impact on usage in 2009, resulting in greater increases among lowest usage groups (i.e., occupants on local roadways, in pickup trucks, minority occupants, and males). Generally, the gains experienced by the lowest use groups decayed over time until the 2010 mobilization, when there were additional gains. In the end (June 2010), there were fewer differences between low use groups and other comparison groups than there were in 2008 or in April of 2009. Clearly, the CIOT mobilization had an impact each year in that it resulted in significant increases in usage from baseline to post-CIOT levels.

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 cannot 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
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FLORIDA SEAT BELT SURVEY
FORM 2007

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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