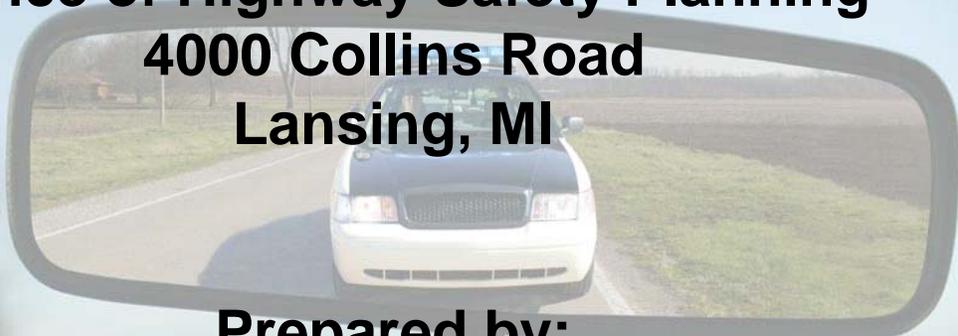


FINAL REPORT

Evaluation of the 2009 May *Click It or Ticket* Mobilization

Prepared for:
Office of Highway Safety Planning
4000 Collins Road
Lansing, MI



Prepared by:
Wayne State University
Transportation Research Group
Detroit, MI

CLICK IT OR TICKET.



Date: September 2009



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The opinions, findings, and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Michigan Office of Highway Safety and Planning, the U.S. Department of Transportation, or the National Highway Transportation Safety Administration. This report was prepared in cooperation with the Michigan Office of Highway Safety Planning and the U.S. Department of Transportation, and the National Highway Traffic Safety Administration.

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16. Abstract This study reports the results of the evaluation of the <i>Click It or Ticket</i> public awareness and enforcement mobilization of 2009. Two waves of observational surveys were conducted as a part of this study, statewide pre and post enforcement initiative. One hundred and ninety-two (192) intersection/ interchange sites were used for the statewide observational survey. All drivers and front-seat passengers were observed for safety belt use and categorized by vehicle type, vehicle use, gender, age and race. Prior to the enforcement campaign, statewide safety belt use was 97.1 percent and the use rate increased to 97.9 percent following the enforcement and public awareness campaign. Although the Click It or Ticket campaign improved safety belt usage, males and pick-up truck drivers continue to trail in the use of safety belts and should be targeted in future programs.			
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1.0 INTRODUCTION

Increasing the use of safety restraint systems, while driving or traveling as a passenger in an automobile, is one of the most effective and cost-effective ways of reducing injuries and fatalities on the nation's highways. Efforts have been made to increase the use of safety belts over three decades, yet according to the 2008 nationwide safety belt surveys, approximately 17 percent of the drivers and front-seat passengers do not buckle up in an automobile, a 1 percent gain in usage rate in 2008 compared to 2007 [1]. In Michigan, past statewide safety belt use studies indicate that the overall use by drivers and front-seat passengers has been increasing consistently from 2001 to 2008 with the exception of the usage rate in 2007 remaining about the same as year 2006. The past nine years' statewide safety restraint use experience is as follows:

2000	-	83.5%
2001	-	82.3%
2002	-	82.9%
2003	-	84.8%
2004	-	90.5%
2005	-	92.9%
2006	-	94.3%
2007	-	93.7%
2008	-	97.2%

The above data indicates that the safety belt use rate in Michigan is far ahead of the national average and is one of sixteen states and territories with reported safety belt use rates greater than 90 percent [2]. It is important to recognize that Michigan is a "primary law" state, which means a motorist can be stopped and cited for the sole reason of not wearing a safety belt while driving or riding as a front-seat passenger. In "secondary law" states, motorists must be stopped for another traffic-related offense in order to be ticketed for not wearing a safety belt. The "primary law" states averaged a safety belt use percentage of 88 percent as compared to the "secondary law" states, which only averaged 75 percent in 2008 [1].

The use of safety belts is the single most effective means of reducing fatal and non-fatal injuries in vehicular crashes. In 2008, 25,351 passenger vehicle occupants were killed in traffic crashes in the USA. For these fatalities, more than 55 percent of the occupants were unrestrained [3]. The National Highway Traffic Safety Administration (NHTSA) estimates that an 80 percent safety belt use rate can save more than 15,000 lives per year and an overall societal cost of 50 billion dollars in the country each year [4]. The NHTSA established that 241,789 lives have been saved between 1975 and 2007 due to the use of safety belts [5].

Currently, airbag systems are a part of standard equipment in all vehicles. Vehicles equipped with airbags need the occupants to be restrained by safety belts in order to be effective in saving lives and reducing injuries in the event of a severe crash. Safety belts protect vehicle occupants in the following ways:

- Reduces the chance of being in contact with the interior of the vehicle,
- Prevents the occupants from ejection, and
- Prevents occupants from being too close to the deployed airbags, thus avoiding severe injuries from the airbags, ejection from the vehicle and vehicle interior contacts.

Past research indicates that the use of safety belts reduces the risk of fatal injury for front seat occupants by approximately 45 percent for passenger vehicles and 60 percent for light trucks. Moreover, the use of safety belts reduces the risk of moderate to critical injury by 50 percent for occupants of passenger vehicles and 65 percent for the occupants of light trucks [5]. Therefore, a small increase in safety belt use often results in a large overall savings to society.

The non-use of safety belts is a behavioral issue, so programs targeted to change driver behavior related to the use of safety belts often leaves a long lasting impact on the affected drivers and thus, continues to increase the safety belt use rate in the driving population. Various safety belt use improvement programs are often targeted to specific areas within a state. Knowing the areas within a state that have lower safety belt use rates may assist the program coordinators in the Office of Highway Safety Planning (OHSP) to allocate enforcement funding to specific areas,

which may result in higher rates of safety belt use. There are, of course, statewide initiatives, which are expected to impact the entire state. The safety belt use data can be used for the following:

- To fulfill reporting requirements to NHTSA.
- To allocate statewide safety funding to specific program areas.
- To provide targeted funding to specific areas within the state where use rates are lower than the statewide average.
- To provide targeted programs for certain segments of the population.

In order to promote safety belt usage, the Office of Highway Safety Planning (OHSP) participates in a national safety belt/law enforcement mobilization program entitled, “Click It or Ticket”. This program is held around Memorial Day each year and involves an intense statewide publicity campaign and establishing special safety belt enforcement zones at selected locations in various counties of the state. The deployment of this mobilization over holiday periods is an effective way to reach a large number of drivers over a short period of time. Many people throughout the State of Michigan travel a long distance for recreational purposes during the holidays and may have different driving behavior as compared to their typical daily utilitarian commute. Many drivers may experience additional distractions, such as traveling with multiple passengers or towing large loads like boats, trailers or other heavy loads. This may alter their typical driving habits resulting in increased safety belt non-use and may also impact their perception of risk to hazardous situations. Additionally, during holiday periods more drivers on the road may be under the influence of alcohol, which places them and other road users at an even higher risk. This makes the use of safety belts extremely important in saving lives and reducing motorist injuries during the heightened risks associated with recreational travel.

For a two week period from May 19 to June 1, 2008, police officers from approximately 200 agencies patrolled more than 800 designated safety belt enforcement zones in 55 of Michigan’s 83 counties [6]. These police officers issued 8,279 citations for motorists who were

not properly buckled [6]. This is a decrease from the 18,436 citations that were issued during this period in 2007 [7].

1.1 Study Purpose and Objectives

The purpose of this study was to perform a ‘before’ and an ‘after’ enforcement observational survey and an annual observational survey for 192 intersections/interchanges to determine the percentage of drivers and front-seat passengers utilizing their safety belts.

The specific objectives of this study were as follows:

- Finalize the methodology for collecting data for a representative sample of sites throughout the State, which ensured reliable statewide statistics, in an economically feasible manner.
- Provide training to all staff conducting the observation surveys and conduct Quality Assurance/Quality Control (QA/QC) of the data collection efforts.
- Conduct “before” and “after” observational surveys of safety belt use during the *Click It or Ticket* mobilization.
- Summarize and cross-tabulate the observational data in a spreadsheet format indicating overall safety belt use, safety belt use by stratum, safety belt use by time of day and day of week, and safety belt use by demographic characteristics.
- Continue to track the changes in safety belt use and the effectiveness of the *Click It or Ticket* mobilization program. Generate necessary comparative data and statistical analyses to assess the relevancy of the 2009 observational data and results to previous observational results.

1.2 Study Area

The study area for the statewide observational survey included the counties that represented at least 85 percent of the population in the State of Michigan.

2.0 METHODOLOGY

In order to develop targeted public awareness programs to increase safety belt use, one must know the distribution of safety belt use rates in various parts of the state and among various demographic groups, in addition to knowing the overall safety belt use rate in the state. It is, however, important to capture the statewide use rate following the sampling strategy and data collection procedure recommended by NHTSA. WSU-TRG performed such observational surveys in the state as a part of this project.

The site selection methodology for this study followed the procedure used in the Direct Observation of Safety Belt Use in Michigan surveys for the years 2000 to 2008. The uniform criteria, as presented in the Federal Register and the National Highway Traffic Safety Administration documents, were also examined carefully to ensure adherence to the nationwide standard. The methodology for the evaluation of the May *Click It or Ticket* project is the same as used in the 2005, 2006, 2007 and 2008 evaluation, which followed NHTSA's guidelines, resulting in the selection of areas in the state to encompass 85 percent of the population. The methodology used including location selection which was completed in the 2004 Evaluation of the May *Click It or Ticket* is described in the following paragraphs.

NHTSA requires that the areas surveyed throughout the state encompass 85 percent of the population. The areas selected for the observation survey included 32 counties in the State of Michigan that represented 86.86 percent of the state's population, based upon 2004 U.S. Bureau of Census Data estimates as shown in Table 1. This sample of counties selected for the evaluation study fulfills NHTSA's requirements and includes most of the 55 counties targeted for organized enforcement zones in the May 2009 *Click It or Ticket* Campaign. The geographic locations of the counties included in the evaluation study are depicted in Figure 1.

A system for partitioning the candidate counties into various strata, based on vehicle miles traveled (VMT), was developed and is shown in Table 2. The number of observation sites for each stratum is also shown in Table 2. Forty-eight (48) sites were observed for Stratum 1, 50 sites for Stratum 2, 53 sites for Stratum 3, and 41 sites for Stratum 4. The use of 192 sites allows for a more precise estimate of safety belt use. A complete listing of the 192 sites is provided in Appendix I.

Table 1. Population Data for the Selected Counties in Michigan
[Source: U.S. Census Bureau 2004 Estimates]

Name of County	Population	Percent Population	Cumulative Percent Population Statewide for Michigan	County Ranking by Population
Wayne	2,016,202	19.94%	19.94%	1
Oakland	1,213,339	12.00%	31.94%	2
Macomb	822,660	8.13%	40.07%	3
Kent	593,898	5.87%	45.94%	4
Genesee	443,947	4.39%	50.33%	5
Washtenaw	339,191	3.35%	53.69%	6
Ingham	280,073	2.77%	56.46%	7
Ottawa	252,351	2.50%	58.95%	8
Kalamazoo	240,724	2.38%	61.33%	9
Saginaw	209,062	2.07%	63.40%	10
Livingston	177,538	1.76%	65.16%	11
Muskegon	174,401	1.72%	66.88%	12
St. Clair	170,916	1.69%	68.57%	13
Berrien	163,125	1.61%	70.18%	14
Jackson	162,973	1.61%	71.80%	15
Monroe	152,552	1.51%	73.30%	16
Calhoun	139,067	1.38%	74.68%	17
Allegan	112,477	1.11%	75.79%	18
Bay	109,480	1.08%	76.87%	19
Eaton	107,056	1.06%	77.93%	20
Lenawee	101,768	1.01%	78.94%	21
Lapeer	92,510	0.91%	79.85%	22
Midland	84,615	0.84%	80.69%	23
Grand Traverse	82,752	0.82%	81.51%	24
Van Buren	78,541	0.78%	82.29%	25
Shiawassee	73,125	0.72%	83.01%	26
Clinton	68,800	0.68%	83.69%	27
Marquette	64,874	0.64%	84.33%	28
Isabella	64,481	0.64%	84.97%	29
Ionia	64,378	0.64%	85.60%	30
Montcalm	63,627	0.63%	86.23%	31
St. Joseph	62,964	0.62%	86.86%	32
State of Michigan Total	10,112,620			

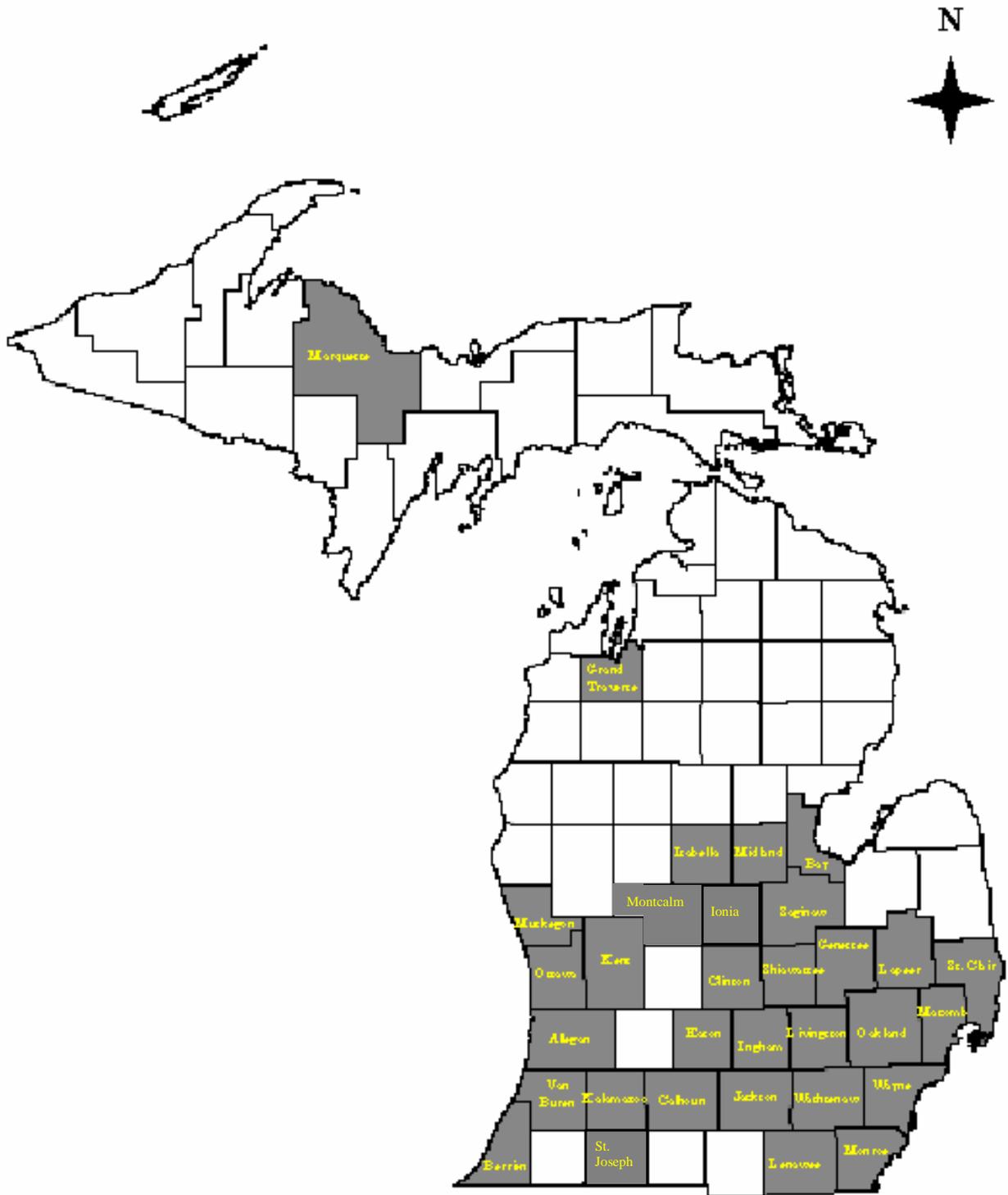


Figure 1. 32-County Statewide Sample for the Direct Observation Safety Belt Surveys

Table 2. 2004 Vehicle Miles of Travel by Stratum
[Source: Michigan Department of Transportation]

	VMT (2004) (in Thousands)	Total VMT (in Thousands)	Percent of Total VMT	Number of Sites
Stratum 1				
Ingham	2,589,095	22,048,241	25.06%	48
Kalamazoo	2,603,446			
Oakland	13,113,695			
Washtenaw	3,742,005			
Total Stratum 1 VMT				
Stratum 2				
Allegan	1,234,491	23,439,396	26.64%	50
Bay	1,325,042			
Eaton	1,189,516			
Grand Traverse	806,758			
Jackson	1,723,634			
Kent	5,773,450			
Livingston	1,954,324			
Macomb	6,527,891			
Midland	827,006			
Ottawa	2,077,284			
Total Stratum 2 VMT				
Stratum 3				
Berrien	2,180,694	23,930,076	27.19%	53
Calhoun	1,731,659			
Clinton	1,140,428			
Genesee	4,731,531			
Ionia	714,959			
Isabella	587,432			
Lapeer	892,081			
Lenawee	898,211			
Marquette	629,897			
Monroe	2,143,438			
Montcalm	589,027			
Muskegon	1,447,105			
Saginaw	2,259,369			
Shiawassee	779,541			
St. Clair	1,624,723			
St. Joseph	579,553			
Van Buren	1,000,428			
Total Stratum 3 VMT				
Stratum 4				
Wayne	18,575,126	18,575,126	21.11%	41
Total Stratum 4 VMT				
Total Strata VMT		87,992,839	100%	192

The locations of the 192 observation sites were randomly selected from candidate intersections and limited access highway interchanges. The sites were randomly chosen in the 2005 Evaluation of May *Click It or Ticket* using a method that ensured an equal probability for each location in each stratum being selected as a candidate study location. For the selection of the candidate locations, large scale (3/8 inch = 1 mile) road maps were obtained for each county. A computerized grid was overlaid on each county map at 0.5-mile intervals in the horizontal and vertical directions of the map. These squares represented a square area of 0.25 square miles. For the selection of the intersections, each grid on the county map was assigned two numbers representing an X and Y coordinate and was also assigned a number by stratum. For each stratum, a random number was chosen between one and the number of grids covering the stratum. Then two additional random numbers were selected representing the X and Y coordinates of the selected grid. Random coordinates were chosen until an intersection was found located in the grid coordinates. This process was repeated until the required number of intersection observation sites were selected for all four strata. In addition, alternative secondary intersections were also selected for each primary intersection. Secondary intersections were selected within a 16 square mile area from the primary intersection location. For the selection of observation sites along limited access highways, exit ramps were selected. This was done by sequentially numbering all the exit ramps on limited access highways located within each stata. Random numbers were then selected between one and the number of ramps to determine which exit ramps would be considered as candidate observation locations. An alternate exit ramp was also selected for each candidate observation location.

Upon the selection of the sites, the direction of traffic flow, day of the week and time of day at each observation location was determined through a similar random sampling method ensuring equal probability. For each intersection randomly selected, the direction of traffic flow for observation was also randomly selected. Random numbers between one and four were assigned for each primary and secondary intersection's direction of traffic movement. The selected random numbers represented "1" for eastbound, "2" for southbound, "3" for westbound and "4" for northbound. This process allowed a random selection of the direction of traffic flow as well as the roadway for inclusion in the observation study. In order to minimize the travel time and distance required to conduct this study, the observation sites were clustered into geographic

regions upon final selection without compromising the randomness of the data. Due to ongoing construction work at one of the selected 192 observation locations, namely, I-96 and Kensington in Livingston County falling under Stratum 2, it had to be replaced by an alternate location (Grand River and Kensington) for the Pre-CIOT observational survey. The rest of the 191 observational locations remained the same.

3.0 OBSERVATIONAL STUDY DATA COLLECTION

For each selected observation site, a minimum of 50 vehicles were observed in at least a 50-minute time frame. If 50 observations were not completed in 50 minutes, the observer stayed longer at the same location and collected safety belt use data until 50 observations were captured at that site. These observations were appropriately reweighted, as explained in the Data Analysis Section of this report. The data collected for the 192 observation sites provided an accurate representation for each day of the week and each hour of the day for the safety belt use characteristics of the state.

Only non-moving vehicles were observed at each site, due to the difficulty of accurately observing the safety belt use data while the target vehicle is moving. This included vehicles stopped at a stop sign or at a red light of a traffic signal. Since it is not possible to accurately observe all vehicles passing the observation site, while collecting the safety belt use data, a 10-minute traffic count of all vehicles passing the observation point was the basis for estimating the number of vehicles passing the observation site per unit of time. This data introduced a weighting factor for each observation site. The 10-minute count was collected in two 5-minute intervals; five minutes prior to the observational period and five minutes following the observational period.

Data collection for the “before” enforcement mobilization program occurred between April 27, 2009 and May 10, 2009. Data collection for the “after” enforcement mobilization program occurred between May 31, 2009 and June 13, 2009.

The driver of each vehicle and the passenger in the front right seat of the vehicle were observed for safety belt use, non-use and misuse. The driver belt observational categories included, Not

Belted, Belted, Shoulder Belt Behind Back, and Should Belt Under Arm. The passenger belt categories were the same as the driver belt categories and also included the observation of child seats when present in the front passenger seat. In the surveys, both the driver and front-seat passenger were separately identified based upon their gender, estimated age and race. The driver age categories included 16-29, 30-59, and 60 and over. The passenger age categories included 0-3, 4-15, 16-29, 30-59, and 60 and over. The driver and passenger races were categorized as Caucasian, African American, Asian or Pacific Islander, Hispanic, and Native American. The vehicles were categorized into four groups: Passenger Vehicles, Sport Utility Vehicles, Vans or Minivans, and Pick-up Trucks. The vehicles were also identified as being Commercial or Non-commercial vehicles.

The data collected in the field was recorded and returned to the office; observations were manually recorded on survey forms and returned back to the office within 24 hours of the data collection. This manual method was chosen due to concerns with computer screen visibility in sunlight or rainy conditions. The WSU-TRG believes that the manual method also increases the accuracy and data verification at the time of data entry.

4.0 OBSERVER TRAINING

Members of the WSU-TRG permanent staff participated in the data collection for this project. Each of these staff members has or is pursuing an engineering degree and has been trained in general traffic data collection methods and procedures. For this project, each data collector received specific training composed of a day-long workshop, technical assistance, and field data collection exercises. Each member of the data collection team participated in a week long reliability and repeatability study to reach a 95 percent or greater reliability and repeatability in their field data collection tests prior to being deployed for the data collection for this project. The repeatability of a measurement depends on the within-subject standard deviation, which can be calculated using a sample of closely repeated measurements. The repeatability coefficient is simply the within-subject standard deviation adjusted by a probability-based factor and is an estimate of the maximum difference likely to occur between two successive measurements on the same subjects. Reliability concerns the extent to which repeated measurements by the same method on the same subject produce the same result.

The reliability and repeatability study was performed at the intersections of Cass Avenue and Warren Avenue and Warren Avenue and Woodward Avenue, near the Wayne State University campus in Detroit, Michigan. These intersections represented a typical moderately high volume intersection that could be challenging for observational data collection. For a period of eight days, the entire group, consisting of 16 observers were randomly divided into four equal groups and assigned to collect safety belt observational data independently. The two opposite directions of traffic flow were observed at each of the intersection, one by each group. Although the four observers in a group were observing the same traffic flow direction, they did not interact or consult and did not necessarily observe the same vehicles. They were located physically apart to ensure the independence of their data collection.

The data was then summarized and compared among the four observers in each group to determine the accuracy of their observations. Accuracy for each data collection entity was calculated greater than 95 percent. This training was given to the data collectors prior to the first wave of field data collection. Upon completion of the training for the data collection, each member of the team received a training manual composed of the information received during the training session, the schedule of data collection and all necessary field supplies.

Two field supervisors monitored the performance of the field observers. In order to establish a baseline reference of 'expected' safety belt use rates, preliminary observation data from previous studies was obtained for each stratum. The field data collectors submitted their observation data on a daily basis and it was immediately entered and compiled on computer spreadsheets at our WSU campus office. Comparisons were then made between the observed rates and the 'expected' safety belt use rates during the first statewide survey in order to identify any unexpected deviations in the data. Deviations were not found to be substantially different than anticipated.

5.0 DATA ANALYSIS

The data collected in the field was entered to form the database by a team member and verified for accuracy. Rates for safety belt use were determined for each survey stratum, county, location, etc., as well as the statewide average. A 95 percent confidence interval for the estimate of safety belt use was determined in order to meet the NHTSA guidelines.

5.1 Weighted Safety Belt Use Calculations

The weighting by the number of vehicles observed with the total possible number of vehicles passing the observation point has been performed as described in the following calculations. First the number of vehicles observed at each intersection is divided by the length of the observation time and then multiplied by a standard 50-minute observational period, to obtain the total number of vehicles that passed the observation point in a standard 50-minute period. The number of vehicles observed in the 10-minute volume count was then multiplied by 5 to represent the total number of vehicles available for observation. The total number of vehicles was then divided by the adjusted number of vehicles observed passing the observation point. The resulting factor was the volume weighting factor for that particular intersection. The total number of drivers and passengers belted and not belted were then multiplied by the weighting factor to obtain the total number of weighted drivers and passengers that were belted and not belted. The weighted overall safety belt use rate by stratum was then determined by dividing the total number of belted drivers and passengers by the total number of drivers and passengers. The following calculations further describe the procedure outlined above.

Montcalm County, Condensary and Crystal,

Survey length = 60 minutes

Number of vehicles observed in 60 minutes = 52 vehicles

10-minute volume count = 16 vehicles

Standard 50-minute observational frequency (Adjusted number of vehicles) =

$$\frac{\text{Number of Vehicles Observed}}{\text{Survey Length}} \times 50 \text{ minutes} = \frac{52 \text{ vehicles}}{60 \text{ minutes}} \times 50 \text{ minutes} = 43 \text{ vehicles in 50 minutes}$$

Total number of vehicles available for observation = 10-minute vehicle count x 5 =

$$16 \text{ vehicles} \times 5 \text{ intervals} = 80 \text{ vehicles in 50 minutes}$$

$$\text{Intersection volume weighting factor} = \frac{\text{Total Number of Vehicles}}{\text{Adjusted Number of Vehicles}} = \frac{80}{43} = 1.86$$

The variance for each stratum was determined by following Cochran's equation [8] as follows:

$$Variance_j = \frac{n_j}{n_j - 1} \sum_{i=1}^{n_j} \left[\left(\frac{g_{ij}}{\sum_{i=1}^{n_j} g_{ij}} \right)^2 (r_i - r_j)^2 \right]$$

Where,

n_j = number of observation locations stratum j

g_{ij} = number of observations at location i in stratum j

r_i = safety belt use rate for location i in stratum j

r_j = overall safety belt use rate for stratum j

5.2 Overall Statewide Safety Belt Use Calculations

The weighted safety belt use rate was calculated by summing up the strata safety belt use rates, each multiplied by a vehicle miles of travel weighting factor for that stratum, divided by the sum of the vehicle miles of travel weighting factor. The 2007 vehicle miles of travel from the Michigan Department of Transportation, as shown in Table 3 were used for these calculations. The four vehicle miles of travel totals were compared and Stratum 2 had the highest total, 25,061,023 thousand, and was assigned a weight factor of 1.0. The other three strata's weight factors were determined by dividing the vehicle miles of travel for that stratum by Stratum 2's vehicle miles of travel. Stratum 1 was assigned a weight factor equal to 0.92 (23,086,414 VMT divided by 25,061,023 VMT). Stratum 3 was assigned a weight factor equal to 0.95 (23,729,277 VMT divided by 25,061,023 VMT). Stratum 4 was assigned a weight factor equal to 0.76 (19,073,265 VMT divided by 25,061,023 VMT). The total weight factors for all four strata equaled 3.63.

The overall statewide variance was calculated using the following formula:

$$Variance_{TOTAL} = \frac{\sum_{j=1}^4 (w_j^2 Var_j)}{(\sum_{j=1}^4 w_j)^2}$$

Where, w_j = VMT weight factor for stratum j

Table 3. 2007 Vehicle Miles of Travel by Stratum
[Source: Michigan Department of Transportation]

	VMT (2007) (in Thousands)	Total VMT (in Thousands)
Stratum 1		
Ingham	2,494,064	
Kalamazoo	2,564,465	
Oakland	13,540,869	
Washtenaw	4,487,016	
Total Stratum 1 VMT		
Stratum 2		
Allegan	1,330,974	
Bay	1,330,963	
Eaton	1,203,856	
Grand Traverse	787,144	
Jackson	1,609,129	
Kent	6,135,116	
Livingston	2,963,444	
Macomb	6,651,527	
Midland	785,140	
Ottawa	2,263,730	
Total Stratum 2 VMT		
Stratum 3		
Berrien	2,020,124	
Calhoun	1,715,670	
Clinton	1,149,469	
Genesee	4,485,028	
Ionia	759,332	
Isabella	625,192	
Lapeer	968,690	
Lenawee	889,013	
Marquette	623,229	
Monroe	2,043,921	
Montcalm	592,459	
Muskegon	1,676,712	
Saginaw	2,181,136	
Shiawassee	811,526	
St. Clair	1,629,161	
St. Joseph	577,146	
Van Buren	981,469	
Total Stratum 3 VMT		23,729,277
Stratum 4		
Wayne	19,073,265	
Total Stratum 4 VMT		
Total Strata VMT		90,949,979

The 95 percent confidence interval is equal to the weighted safety belt use rate plus/minus 1.96 (for the Z-test at alpha = 0.05) multiplied by the square root of the stratum's or statewide variance expressed as a percent. The standard error is equal to the square root of the variance. The relative error must be less than five percent according to NHTSA guidelines and is equal to the standard error divided by the weighted statewide safety belt use rate.

The data was also analyzed and compared with studies from previous years to assess the progress of the safety belt campaign in the State of Michigan.

6.0 RESULTS AND CONCLUSIONS

6.1 Statewide Observational Surveys

The observational survey for the pre-enforcement statewide sample was performed between Monday, April 27th and Sunday, May 10th of 2009. During this observation period, a total of 17,872 occupants were observed at 192 sites randomly selected to represent statewide safety belt use. In comparison with the 2008 sample, 5,270 fewer occupants were observed during the 2009 pre-enforcement survey.

The observational survey for the post-enforcement statewide sample was performed between Sunday, May 31st and Saturday, June 13th of 2009. During this observation period, 22,021 occupants were observed at the same 192 sites. In comparison with the 2008 sample, there were 846 fewer occupants observed during the 2009 post-enforcement survey.

The overall weighted statewide safety belt use rates are shown in Table 4. The overall weighted statewide safety belt use rates were calculated based upon the procedure described in the "Overall Statewide Safety Belt Use Calculations" section in the Data Analysis section of the report. The weighted percent of safety belt use referenced in the summary tables has been

calculated per the “Weighted Safety Belt Use Calculations” as detailed in the Data Analysis section of this report.

Table 4. Statewide Weighted Safety Belt Use Rate for Drivers and Front-Seat Passengers

Observational Wave	Safety Belt Use Rate	Standard Error	Relative Error
Pre-Enforcement	97.1% ± 0.30%	0.15%	0.16%
Post-Enforcement	97.9% ± 0.22%	0.11%	0.11%

The findings for the statewide observational surveys for the strata are shown in Table 5. Additional breakdowns of the safety belt use rates and standard error at a county level are provided in Appendix II. Complete details of the observations on an intersection level are provided in Appendix III.

Table 5. Weighted Safety Belt Use Rate for Drivers and Front-Seat Passengers by Stratum

Stratum	Pre-Enforcement Safety Belt Use Rate		Post-Enforcement Safety Belt Use Rate	
	Safety Belt Usage Rate*	Standard Error	Safety Belt Usage Rate*	Standard Error
Stratum 1	97.5% ± 0.53%	0.27%	98.1% ± 0.33%	0.17%
Stratum 2	97.6% ± 0.49%	0.25%	98.7% ± 0.32%	0.16%
Stratum 3	97.1% ± 0.54%	0.28%	98.0% ± 0.38%	0.19%
Stratum 4	95.9% ± 0.85%	0.43%	96.5% ± 0.70%	0.36%

* Weighted Safety Belt Usage ± 95% Confidence Band

Table 6 summarizes the descriptive statistics regarding the observational surveys for the vehicles, in terms of day of the week and time of the day for each of the statewide observational surveys.

Table 6. Statewide Descriptive Statistics

Day of the Week	Pre-Enforcement				Post-Enforcement			
	No. of Sites Observed	Percent of Sites in Day of Week	Actual Total No. of Observations (Vehicles)	Percent of Observations in Day of Week (Vehicles)	No. of Sites Observed	Percent of Sites in Day of Week	Actual Total No. of Observations (Vehicles)	Percent of Observations in Day of Week (Vehicles)
Sunday	25	13.0%	1,857	12.7%	25	13.0%	2,004	11.3%
Monday	28	14.6%	2,127	14.6%	28	14.6%	2,722	15.3%
Tuesday	25	13.0%	1,799	12.3%	25	13.0%	2,629	14.8%
Wednesday	31	16.1%	2,427	16.7%	31	16.1%	3,513	19.7%
Thursday	30	15.6%	2,375	16.3%	29	15.1%	3,093	17.4%
Friday	26	13.5%	2,053	14.1%	27	14.1%	1,820	10.2%
Saturday	27	14.1%	1,936	13.3%	27	14.1%	2,009	11.3%
Total	192	100.0%	14,574	100%	192	100.0%	17,790	100.0%
Time of the Day	Pre-Enforcement				Post-Enforcement			
	No. of Sites Observed	Percent of Sites in Time of Day	Actual Total No. of Observations (Vehicles)	Percent of Observations in Time of Day (Vehicles)	No. of Sites Observed	Percent of Sites in Time of Day	Actual Total No. of Observations (Vehicles)	Percent of Observations in Time of Day (Vehicles)
7 am - 8 am	4	2.1%	343	2.4%	1	0.5%	61	0.3%
8 am - 9 am	9	4.7%	738	5.1%	12	6.3%	1,247	7.0%
9 am - 10 am	15	7.8%	1,093	7.5%	18	9.4%	1,640	9.2%
10 am - 11 am	13	6.8%	875	6.0%	20	10.4%	1,964	11.0%
11 am - 12 pm	22	11.5%	1,764	12.1%	17	8.9%	1,342	7.5%
12 pm - 1 pm	24	12.5%	1,736	11.9%	21	10.9%	2,025	11.4%
1 pm - 2 pm	24	12.5%	1,808	12.4%	24	12.5%	2,018	11.3%
2 pm - 3 pm	24	12.5%	1,869	12.8%	17	8.9%	1,588	8.9%
3 pm - 4 pm	18	9.4%	1,341	9.2%	23	12.0%	2,136	12.0%
4 pm - 5 pm	17	8.9%	1,268	8.7%	15	7.8%	1,427	8.0%
5 pm - 6 pm	15	7.8%	1,187	8.1%	18	9.4%	1,744	9.8%
6 pm - 7 pm	7	3.6%	552	3.8%	6	3.1%	598	3.4%
Total	192	100.0%	14,574	100.0%	192	100.0%	17,790	100.0%

The safety belt use rate can be described for the statewide surveys by the overall use rate, by stratum, by vehicle type and by various demographics. Table 7 summarizes pre and post-enforcement safety belt use rates for the statewide survey by driver, front-seat passenger and total observations. As shown in Table 7, driver safety belt use increased by 0.8 percent and front-seat passenger safety belt use increased by 0.4 percent. The amount of safety belt misuse between the two surveys amounts to a very small percentage of overall use. It should be noted that the weighted safety belt use rates provided in Table 5 and Tables 7 through 18 vary from those provided in Table 4. The overall statewide weighted safety belt use percentages provided in Table 4 are calculated by weighting the safety belt use rates by VMT by stratum (as described in Section 5.2, Overall Statewide Safety Belt Use Calculations). The weighted safety belt use rates provided in Table 5 and Tables 7 through 18 are calculated by utilizing the intersection weighting factors (as described in Section 5.1, Weighted Safety Belt Use Calculations). As the data presented in Table 5 and Tables 7 through 18 are not subdivided by county or strata, the overall state weighted safety belt use rates utilizing the VMT calculation are not applicable.

Table 7. Statewide Safety Belt Use Summary

Driver Belt Use	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers Only)	Weighted Total # of Obs. (Drivers Only)	Weighted % of SBU (Drivers Only)	Actual Total # of Obs. (Drivers Only)	Weighted Total # of Obs. (Drivers Only)	Weighted % of SBU (Drivers Only)
Not Belted	412	2,135	2.7%	387	1,513	2.3%
Belted	14,121	76,595	96.9%	17,389	65,660	97.7%
Belted Behind Back	28	225	0.3%	4	16	0.02%
Belted Under Arm	13	66	0.1%	10	33	0.05%
Total	14,574	79,021	100.0%	17,790	67,222	100.0%

Table 7. Statewide Safety Belt Use Summary (Continued)

Passenger Belt Use	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Passengers Only)	Weighted Total # of Obs. (Passengers Only)	Weighted % of SBU (Passengers Only)	Actual Total # of Obs. (Passengers Only)	Weighted Total # of Obs. (Passengers Only)	Weighted % of SBU (Passengers Only)
Not Belted	49	269	1.5%	61	265	1.7%
Child Seat	6	28	0.2%	4	17	0.1%
Belted	3,219	16,990	97.4%	4,153	15,509	97.8%
Belted Behind Back	17	85	0.5%	1	8	0.1%
Belted Under Arm	7	68	0.4%	12	54	0.3%
Total	3,298	17,440	100.0%	4,231	15,853	100.0%
Total Belt Use	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Not Belted	461	2,404	2.5%	448	1,778	2.1%
Child Seat	6	28	0.0%	4	17	0.02%
Belted	17,340	93,585	97.0%	21,542	81,169	97.7%
Belted Behind Back	45	310	0.3%	5	24	0.03%
Belted Under Arm	20	134	0.1%	22	87	0.1%
Total	17,872	96,461	100.0%	22,021	83,075	100.0%

Table 8 summarizes the statewide driver and front-seat passenger safety belt use rates for pre and post-enforcement campaigns by stratum and county. In Table 8, the counties are listed by stratum. All four Strata experienced an increase in safety belt use, with Stratum 2 experiencing the highest improvement of 1.1 percent. Because of the relatively low number of sites and/or observations in many counties, the safety belt use rates listed may not be fully representative of

each county. The use rates indicated are the weighted average of the observations taken in each county.

Table 8. Statewide Safety Belt Use Rates by Stratum and County

Stratum 1	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Ingham County	1,421	7,550	98.3%	2,156	6,049	98.3%
Kalamazoo County	960	4,711	97.9%	1,441	3,024	98.4%
Oakland County	1,176	12,761	97.3%	2,002	11,710	98.0%
Washtenaw County	1,006	5,709	97.3%	1,742	4,626	98.1%
Total	4,563	30,731	97.6%	7,341	25,409	98.1%
Stratum 2	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Allegan County	411	1,517	98.0%	293	900	98.4%
Bay County	393	959	97.4%	305	752	97.3%
Eaton County	780	1,516	95.7%	654	1,948	98.1%
Grand Traverse County	179	1,068	100.0%	180	1,513	98.4%
Jackson County	428	1,865	99.1%	442	1,196	99.7%
Kent County	788	3,573	97.3%	624	2,307	99.2%
Livingston County	515	3,451	97.2%	428	1,757	98.2%
Macomb County	743	4,693	98.0%	659	4,491	99.2%
Midland County	468	854	96.1%	349	845	98.3%
Ottawa County	156	367	97.0%	146	328	99.4%
Total	4,861	19,863	97.6%	4,080	16,037	98.7%

Table 8. Statewide Safety Belt Use Rates by Stratum and County (Continued)

Stratum 3	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Berrien County	283	895	97.0%	211	940	98.4%
Calhoun County	297	2,015	99.5%	308	1,142	99.0%
Clinton County	438	1,136	98.5%	384	857	99.2%
Genessee County	478	1,613	96.9%	448	1,745	97.4%
Ionia County	186	598	96.2%	167	565	98.4%
Isabella County	90	192	97.9%	90	184	97.8%
Lapeer County	161	638	96.4%	154	734	97.8%
Lenawee County	272	780	93.9%	247	939	98.1%
Marquette County	228	386	96.1%	159	267	96.3%
Monroe County	611	3,321	96.8%	406	2,185	96.6%
Montcalm County	241	740	96.0%	245	624	96.6%
Muskegon County	246	561	96.8%	222	536	98.5%
Saginaw County	94	253	94.5%	61	62	95.2%
St. Clair County	240	1,038	98.0%	240	1,184	99.2%
St. Joseph County	246	1,560	98.3%	160	840	98.2%
Shiawassee County	210	423	96.2%	188	326	98.8%
Van Buren County	423	1,740	97.0%	316	1,324	99.0%
Total	4,744	17,889	97.2%	4,006	14,454	98.1%
Stratum 4	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Wayne County	3,704	27,978	96.0%	6,594	27,175	96.6%

Tables 9 through 13 summarize occupant safety belt use for drivers and front-seat passengers by vehicle type for the day of the week, time of the day, gender, age and race for the statewide survey.

Table 9. All Vehicles Statewide Summary

Day of the Week	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Sunday	2,530	10,668	97.6%	2,569	6,825	97.9%
Monday	2,490	13,719	95.8%	3,335	13,872	96.4%
Tuesday	2,243	8,761	97.0%	3,177	7,419	97.5%
Wednesday	2,882	23,767	97.1%	4,330	21,231	97.8%
Thursday	2,815	16,835	96.6%	3,695	14,334	97.6%
Friday	2,472	12,750	97.4%	2,297	11,402	98.9%
Saturday	2,440	9,961	98.4%	2,618	7,992	98.6%
Total	17,872	96,461	97.0%	22,021	83,075	97.7%
Time of the Day	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
7 am - 8 am	423	2,452	98.0%	80	374	98.7%
8 am - 9 am	892	4,054	97.5%	1,512	5,487	97.7%
9 am - 10 am	1,313	5,582	96.8%	1,993	6,499	97.5%
10 am - 11 am	1,103	5,742	98.5%	2,388	6,675	98.2%
11 am - 12 pm	2,126	11,734	97.3%	1,680	5,223	97.4%
12 pm - 1 pm	2,119	11,280	97.3%	2,493	8,365	97.9%
1 pm - 2 pm	2,249	10,414	96.7%	2,471	9,115	98.1%
2 pm - 3 pm	2,304	14,811	97.1%	1,970	6,689	98.1%
3 pm - 4 pm	1,634	7,047	96.9%	2,701	10,169	97.7%
4 pm - 5 pm	1,562	10,253	97.7%	1,802	10,128	97.3%
5 pm - 6 pm	1,447	9,423	95.2%	2,186	9,650	97.5%
6 pm - 7 pm	700	3,669	96.8%	745	4,701	97.7%
Total	17,872	96,461	97.0%	22,021	83,075	97.7%

Table 9. All Vehicles Statewide Summary (Continued)

Vehicle Type	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Passenger Cars	8,629	49,044	97.3%	10,422	40,470	97.8%
Vans/Minivans	2,361	12,338	97.8%	3,132	12,009	98.0%
Sport Utility	3,863	20,970	97.8%	4,880	18,510	98.2%
Pick-Up Trucks	3,019	14,109	94.5%	3,587	12,086	96.5%
Total	17,872	96,461	97.0%	22,021	83,075	97.7%
Gender	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Male	9,368	50,721	96.3%	11,961	44,246	97.0%
Female	8,504	45,740	97.9%	10,060	38,829	98.6%
Total	17,872	96,461	97.0%	22,021	83,075	97.7%
Age	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
0-3	6	28	96.4%	6	25	100.0%
4-15	159	794	95.6%	246	895	95.6%
16-29	3,960	22,310	96.3%	4,860	19,357	97.3%
30-59	11,493	62,310	97.1%	13,743	51,710	97.7%
60+	2,254	11,019	98.5%	3,166	11,088	98.5%
Total	17,872	96,461	97.0%	22,021	83,075	97.7%
Race	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Caucasian	15,925	79,942	97.4%	18,985	67,864	98.1%
African American	1,639	14,124	95.2%	2,678	13,603	95.9%
Asian or Pacific Islander	228	1,811	98.5%	279	1,256	98.6%
Hispanic	80	584	95.2%	79	352	95.5%
Native American	0	0	N/A	0	0	N/A
Total	17,872	96,461	97.0%	22,021	83,075	97.7%

Table 10. Passenger Cars Statewide Summary

Day of the Week	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Sunday	1,161	5,010	97.4%	1,183	3,214	98.6%
Monday	1,231	7,199	96.4%	1,641	6,889	95.5%
Tuesday	1,110	4,638	97.3%	1,371	3,278	98.0%
Wednesday	1,378	12,418	97.6%	2,073	10,702	97.7%
Thursday	1,496	9,224	96.7%	1,796	7,137	98.0%
Friday	1,076	5,494	98.1%	1,060	5,144	99.5%
Saturday	1,177	5,061	97.9%	1,298	4,106	98.5%
Total	8,629	49,044	97.3%	10,422	40,470	97.8%
Time of the Day	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
7 am - 8 am	234	1,328	98.8%	31	145	100.0%
8 am - 9 am	426	1,904	98.3%	728	2,722	97.6%
9 am - 10 am	661	2,947	97.7%	966	3,284	97.1%
10 am - 11 am	596	3,410	99.1%	1,056	3,066	98.5%
11 am - 12 pm	953	5,538	97.9%	774	2,334	96.5%
12 pm - 1 pm	970	5,557	97.3%	1,134	3,862	98.5%
1 pm - 2 pm	1,035	5,120	96.4%	1,167	4,356	97.8%
2 pm - 3 pm	1,169	7,757	97.6%	922	3,070	98.5%
3 pm - 4 pm	774	3,382	96.5%	1,304	4,977	98.7%
4 pm - 5 pm	780	5,550	97.4%	860	5,075	97.2%
5 pm - 6 pm	708	4,840	95.5%	1,070	4,830	97.7%
6 pm - 7 pm	323	1,711	96.7%	410	2,749	96.7%
Total	8,629	49,044	97.3%	10,422	40,470	97.8%

Table 10. Passenger Cars Statewide Summary (Continued)

Gender	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Male	4,198	24,373	96.8%	5,268	20,255	97.1%
Female	4,431	24,671	97.8%	5,154	20,215	98.5%
Total	8,629	49,044	97.3%	10,422	40,470	97.8%
Age	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
0-3	4	9	88.9%	3	10	100.0%
4-15	67	387	96.4%	98	361	97.2%
16-29	2,552	14,842	96.3%	3,016	12,071	97.3%
30-59	4,760	27,514	97.5%	5,621	22,009	97.7%
60+	1,246	6,292	98.7%	1,684	6,019	98.9%
Total	8,629	49,044	97.3%	10,422	40,470	97.8%
Race	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Caucasian	7,452	39,210	97.7%	8,601	31,234	98.2%
African American	987	8,315	95.3%	1,635	8,394	96.1%
Asian or Pacific Islander	153	1,208	98.7%	158	707	98.4%
Hispanic	37	311	94.9%	28	135	96.3%
Native American	0	0	0.0%	0	0	0.0%
Total	8,629	49,044	97.3%	10,422	40,470	97.8%

Table 11. Sport Utility Vehicles Statewide Summary

Day of the Week	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Sunday	561	2,491	98.4%	551	1,410	98.8%
Monday	463	2,552	96.1%	660	2,891	97.6%
Tuesday	479	1,839	98.3%	651	1,576	98.4%
Wednesday	666	5,538	97.6%	1,023	4,943	98.3%
Thursday	581	3,373	97.1%	878	3,325	97.4%
Friday	532	2,924	98.6%	520	2,610	98.3%
Saturday	581	2,253	98.9%	597	1,755	99.3%
Total	3,863	20,970	97.8%	4,880	18,510	98.2%
Time of the Day	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
7 am - 8 am	69	412	100.0%	18	84	100.0%
8 am - 9 am	185	927	99.6%	341	1,229	98.3%
9 am - 10 am	288	1,216	97.0%	420	1,341	98.0%
10 am - 11 am	185	896	99.4%	574	1,547	99.1%
11 am - 12 pm	462	2,547	98.3%	347	1,195	97.3%
12 pm - 1 pm	471	2,481	98.4%	573	2,091	97.2%
1 pm - 2 pm	476	2,193	97.4%	559	2,076	99.2%
2 pm - 3 pm	512	3,229	97.4%	451	1,620	98.3%
3 pm - 4 pm	375	1,641	97.3%	573	2,112	97.6%
4 pm - 5 pm	377	2,427	97.9%	409	2,267	99.0%
5 pm - 6 pm	289	2,023	95.5%	476	2,046	97.1%
6 pm - 7 pm	174	978	98.7%	139	902	98.6%
Total	3,863	20,970	97.8%	4,880	18,510	98.2%

Table 11. Sport Utility Vehicles Statewide Summary (Continued)

Gender	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Male	1,716	9,537	97.3%	2,298	8,642	97.3%
Female	2,147	11,433	98.1%	2,582	9,868	98.9%
Total	3,863	20,970	97.8%	4,880	18,510	98.2%
Age	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
0-3	0	0	0.0%	0	0	0.0%
4-15	37	183	95.6%	74	286	94.4%
16-29	683	3,719	97.0%	847	3,367	98.0%
30-59	2,785	15,433	97.8%	3,394	12,790	98.1%
60+	358	1,635	99.0%	565	2,067	99.0%
Total	3,863	20,970	97.8%	4,880	18,510	98.2%
Race	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Caucasian	3,489	17,629	98.0%	4,261	15,555	98.4%
African American	314	2,911	96.4%	534	2,581	96.4%
Asian or Pacific Islander	43	339	96.5%	65	290	98.6%
Hispanic	17	91	100.0%	20	84	96.4%
Native American	0	0	0.0%	0	0	0.0%
Total	3,863	20,970	97.8%	4,880	18,510	98.2%

Table 12. Vans/Minivans Statewide Summary

Day of the Week	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Sunday	294	1,202	97.6%	346	1,033	97.5%
Monday	312	1,710	96.7%	509	2,128	97.4%
Tuesday	302	1,184	97.1%	430	1,013	97.8%
Wednesday	411	2,942	97.7%	620	3,071	97.9%
Thursday	386	2,341	97.7%	524	2,046	98.4%
Friday	327	1,621	97.8%	317	1,589	98.4%
Saturday	329	1,338	99.9%	386	1,129	99.3%
Total	2,361	12,338	97.8%	3,132	12,009	98.0%
Time of the Day	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
7 am - 8 am	64	386	99.0%	14	66	92.4%
8 am - 9 am	122	567	98.9%	201	700	98.7%
9 am - 10 am	165	715	95.2%	310	1,019	98.7%
10 am - 11 am	151	692	98.8%	337	951	99.5%
11 am - 12 pm	332	1,794	97.7%	259	877	99.4%
12 pm - 1 pm	302	1,549	98.5%	353	1,101	99.0%
1 pm - 2 pm	291	1,304	98.2%	344	1,380	98.3%
2 pm - 3 pm	300	1,816	98.8%	302	1,074	98.7%
3 pm - 4 pm	209	950	96.3%	400	1,651	97.2%
4 pm - 5 pm	165	1,063	97.9%	239	1,385	95.1%
5 pm - 6 pm	170	1,081	96.0%	282	1,199	97.2%
6 pm - 7 pm	90	421	96.4%	91	606	99.8%
Total	2,361	12,338	97.8%	3,132	12,009	98.0%

Table 12. Vans/Minivans Statewide Summary (Continued)

Gender	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Male	1,085	5,682	97.4%	1,543	5,979	97.9%
Female	1,276	6,656	98.1%	1,589	6,030	98.1%
Total	2,361	12,338	97.8%	3,132	12,009	98.0%
Age	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
0-3	2	19	100.0%	2	8	100.0%
4-15	27	129	93.8%	47	164	95.1%
16-29	278	1,549	97.9%	414	1,746	96.6%
30-59	1,714	8,974	97.6%	2,218	8,512	98.3%
60+	340	1,667	98.9%	451	1,579	98.4%
Total	2,361	12,338	97.8%	3,132	12,009	98.0%
Race	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Caucasian	2,097	10,197	98.1%	2,740	9,965	98.6%
African American	215	1,740	95.9%	327	1,754	95.2%
Asian or Pacific Islander	31	260	100.0%	52	229	98.7%
Hispanic	18	141	93.6%	13	61	95.1%
Native American	0	0	0.0%	0	0	0.0%
Total	2,361	12,338	97.8%	3,132	12,009	98.0%

Table 13. Pick-up Trucks Statewide Summary

Day of the Week	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
Sunday	514	1,965	96.9%	489	1,168	95.1%
Monday	484	2,258	92.7%	525	1,964	96.5%
Tuesday	352	1,100	93.3%	725	1,552	95.7%
Wednesday	427	2,869	93.9%	614	2,515	97.1%
Thursday	352	1,897	93.6%	497	1,826	95.0%
Friday	537	2,711	94.5%	400	2,059	98.5%
Saturday	353	1,309	98.1%	337	1,002	97.2%
Total	3,019	14,109	94.5%	3,587	12,086	96.5%
Time of the Day	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)	Actual Total # of Obs. (Vehicles)	Weighted Total # of Obs. (Vehicles)	Weighted % of SBU (Vehicles)
7 am - 8 am	56	326	91.1%	17	79	100.0%
8 am - 9 am	159	656	90.9%	242	836	96.3%
9 am - 10 am	199	704	94.2%	297	855	97.2%
10 am - 11 am	171	744	94.5%	421	1,111	95.0%
11 am - 12 pm	379	1,855	94.1%	300	817	97.9%
12 pm - 1 pm	376	1,693	94.4%	433	1,311	96.1%
1 pm - 2 pm	447	1,797	95.5%	401	1,303	97.5%
2 pm - 3 pm	323	2,009	93.1%	295	925	95.5%
3 pm - 4 pm	276	1,074	98.0%	424	1,429	94.8%
4 pm - 5 pm	240	1,213	98.4%	294	1,401	96.6%
5 pm - 6 pm	280	1,479	93.1%	358	1,575	97.6%
6 pm - 7 pm	113	559	93.9%	105	444	98.9%
Total	3,019	14,109	94.5%	3,587	12,086	96.5%

Table 13. Pick-up Trucks Statewide Summary (Continued)

Gender	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Male	2,369	11,129	93.7%	2,852	9,370	95.8%
Female	650	2,980	97.6%	735	2,716	99.2%
Total	3,019	14,109	94.5%	3,587	12,086	96.5%
Age	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
0-3	0	0	0.0%	1	7	100.0%
4-15	28	95	94.7%	27	84	94.0%
16-29	447	2,200	93.6%	583	2,173	96.9%
30-59	2,234	10,389	94.4%	2,510	8,399	96.5%
60+	310	1,425	96.8%	466	1,423	96.1%
Total	3,019	14,109	94.5%	3,587	12,086	96.5%
Race	Pre-Enforcement			Post-Enforcement		
	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)	Actual Total # of Obs. (Drivers & Passengers)	Weighted Total # of Obs. (Drivers & Passengers)	Weighted % of SBU (Drivers & Passengers)
Caucasian	2,887	12,906	95.0%	3,383	11,110	96.7%
African American	123	1,158	89.8%	182	874	95.1%
Asian or Pacific Islander	1	4	100.0%	4	30	100.0%
Hispanic	8	41	92.7%	18	72	93.1%
Native American	0	0	0.0%	0	0	0.0%
Total	3,019	14,109	94.5%	3,587	12,086	96.5%

Overall, the occupants of sport utility vehicles continue to have the highest safety belt use rate of 98.2 percent during the post-enforcement survey. Occupants of sport utility vehicles were observed to have the same usage rate as occupants of Van/Minivan during the pre-enforcement survey, of 97.8 percent. The highest safety belt use rate in Vans/Minivans of 98.0 percent was recorded during the 2009 post-enforcement survey, an increase in usage of 1.3 percent from the 2008 usage rate of 96.7 percent. Pick-up truck drivers and passengers had the lowest overall safety belt use rate of 94.5 percent during the pre-enforcement survey and 96.5 percent during the post-enforcement survey, a 2.3 percent increase from 94.2 percent recorded in 2008. The passenger car occupant usage rate during the pre and post-enforcement survey was found to be 97.3 percent and 97.8 percent, respectively.

The safety belt use rates varied among the different days of the week and by time of day with Friday and Saturday exhibiting the highest safety belt usage rates and the mid-morning and early afternoon periods having slightly higher usage rates. Again, female occupants had higher use rates than their male counterparts by 1.6 percent during both the pre and post-enforcement survey. The safety belt use percentages increased for occupants of all ages between the pre- and post-enforcement surveys, except for the 4-15 year-old age group, which experienced a 0.2 percent decrease in use after enforcement. Safety belt usage rate of occupants over the age of 60 years increased from 97.0 percent in 2008 to 98.5 percent in 2009. The safety belt use rate for occupants 30 to 59 years of age increased from 96.7 percent in 2008 to 97.7 percent in 2009 for the post-enforcement survey. In general, Caucasian and Asian or Pacific Islander occupants had slightly higher safety belt use rates than African American and Hispanic occupants.

Tables 14 through 18 summarize occupant safety belt use rates by vehicle type, subclassified by gender and age. Male pick-up truck occupants continue to have the lowest safety belt usage rate of 95.8 percent.

Table 14. All Vehicles Statewide Demographic Summary

Demographic Data			All Vehicles Safety Belt Use by Drivers and Passengers						
Gender	Age	Race	Statewide Pre-Enforcement			Statewide Post-Enforcement			
			Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	
Male	0-3	Caucasian	2	4	75.0%	1	1	100.0%	
		African American	2	11	100.0%	1	2	100.0%	
		Total	4	15	93.3%	2	3	100.0%	
	4-15	Caucasian	89	392	96.7%	99	334	94.6%	
		African American	8	72	86.1%	15	73	95.9%	
		Asian or Pacific Islander	0	0	N/A	2	5	100.0%	
		Hispanic	2	14	100.0%	1	4	100.0%	
		Total	99	478	95.2%	117	416	95.0%	
	16-29	Caucasian	1,580	8,299	95.9%	1,942	7,182	96.9%	
		African American	200	1,757	92.7%	374	1,803	92.0%	
		Asian or Pacific Islander	29	260	95.0%	38	171	98.2%	
		Hispanic	6	52	82.7%	10	43	95.3%	
		Total	1,815	10,368	95.2%	2364	9,199	95.9%	
	30-59	Caucasian	5,553	28,149	96.7%	6,592	23,111	97.5%	
		African American	544	4,598	93.7%	982	4,892	95.5%	
		Asian or Pacific Islander	80	644	98.9%	113	509	98.2%	
		Hispanic	41	318	96.9%	44	199	93.0%	
		Total	6,218	33,709	96.3%	7731	28,711	97.2%	
	60+	Caucasian	1,193	5,826	98.2%	1,671	5,561	98.0%	
		African American	34	296	95.6%	62	287	95.1%	
		Asian or Pacific Islander	4	21	100.0%	13	63	100.0%	
		Hispanic	1	8	100.0%	1	6	100.0%	
		Total	1,232	6,151	98.1%	1747	5,917	97.9%	
	TOTAL			9,368	50,721	96.3%	11,961	44,246	97.0%

Table 14. All Vehicles Statewide Demographic Summary (Continued)

Demographic Data			All Vehicles Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Female	0-3	Caucasian	1	2	0.0%	2	14	100.0%
		African American	0	0	N/A	2	8	100.0%
		Hispanic	1	11	100.0%	0	0	N/A
		Total	2	13	100.0%	4	22	100.0%
	4-15	Caucasian	53	270	98.1%	112	417	96.2%
		African American	6	39	100.0%	14	51	96.1%
		Asian or Pacific Islander	1	7	0.0%	1	3	100.0%
		Hispanic	0	0	N/A	2	8	100.0%
		Total	60	316	96.2%	129	479	96.2%
	16-29	Caucasian	1,815	9,162	97.7%	2,062	7,916	98.8%
		African American	276	2,371	95.0%	385	2,042	97.6%
		Asian or Pacific Islander	43	327	99.7%	47	194	99.0%
		Hispanic	11	82	93.9%	2	6	100.0%
		Total	2,145	11,942	97.2%	2,496	10,158	98.6%
	30-59	Caucasian	4,645	23,204	98.1%	5,152	18,622	98.7%
		African American	544	4,778	97.5%	784	4,024	97.3%
		Asian or Pacific Islander	68	520	100.0%	59	277	98.6%
		Hispanic	18	99	96.0%	17	76	100.0%
		Total	5,275	28,601	98.0%	6,012	22,999	98.5%
	60+	Caucasian	994	4,634	99.1%	1,352	4,699	99.4%
		African American	25	202	98.5%	59	422	97.2%
		Asian or Pacific Islander	3	32	100.0%	6	34	100.0%
		Hispanic	0	0	N/A	2	10	100.0%
		Total	1,022	4,868	99.0%	1,419	5,171	99.1%
TOTAL			8,504	45,740	97.9%	10,060	38,829	98.6%

Table 15. Passenger Cars Statewide Demographic Summary

Demographic Data			Passenger Cars Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Male	0-3	Caucasian	2	4	75.0%	0	0	N/A
		African American	1	3	100.0%	1	2	100.0%
		Total	3	7	85.7%	1	2	100.0%
	4-15	Caucasian	37	195	97.9%	37	119	97.5%
		African American	3	36	94.4%	9	50	96.0%
		Asian or Pacific Islander	0	0	N/A	2	5	100.0%
		Total	40	231	97.4%	48	174	97.1%
	16-29	Caucasian	948	5,046	96.2%	1,112	3,998	97.3%
		African American	145	1,320	92.8%	268	1,319	91.3%
		Asian or Pacific Islander	22	192	99.5%	23	104	98.1%
		Hispanic	4	36	83.3%	4	21	100.0%
		Total	1,119	6,594	95.6%	1,407	5,442	95.9%
	30-59	Caucasian	2,013	11,062	97.6%	2,349	8,627	97.8%
		African American	287	2,376	94.1%	540	2,726	96.0%
		Asian or Pacific Islander	59	473	98.5%	63	283	98.2%
		Hispanic	23	204	95.1%	15	78	93.6%
		Total	2,382	14,115	97.0%	2,967	11,714	97.3%
	60+	Caucasian	627	3,218	98.6%	809	2,747	98.7%
		African American	26	204	95.1%	33	163	95.7%
		Asian or Pacific Islander	1	4	100.0%	3	13	100.0%
Total		654	3,426	98.4%	845	2,923	98.6%	
TOTAL			4,198	24,373	96.8%	5,268	20,255	97.1%

Table 15. Passenger Cars Statewide Demographic Summary (Continued)

Demographic Data			Passenger Cars Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Female	0-3	Caucasian	1	2	100.0%	0	0	N/A
		African American	0	0	N/A	2	8	100.0%
		Total	1	2	100.0%	2	8	100.0%
	4-15	Caucasian	22	119	99.2%	45	165	97.0%
		African American	4	30	100.0%	4	19	100.0%
		Asian or Pacific Islander	1	7	0.0%	1	3	100.0%
		Total	27	156	94.9%	50	187	97.3%
	16-29	Caucasian	1,195	6,246	97.5%	1,291	4,965	98.7%
		African American	206	1,753	94.6%	281	1,497	97.9%
		Asian or Pacific Islander	28	212	99.5%	36	163	98.8%
		Hispanic	4	37	100.0%	1	4	100.0%
		Total	1,433	8,248	96.9%	1,609	6,629	98.5%
	30-59	Caucasian	2,031	10,596	97.9%	2,157	7,763	98.5%
		African American	301	2,462	98.2%	461	2,377	97.4%
		Asian or Pacific Islander	40	307	100.0%	28	123	98.4%
		Hispanic	6	34	100.0%	8	32	100.0%
		Total	2,378	13,399	98.0%	2,654	10,295	98.2%
	60+	Caucasian	576	2,722	99.0%	801	2,850	99.2%
		African American	14	131	100.0%	36	233	98.7%
		Asian or Pacific Islander	2	13	100.0%	2	13	100.0%
		Total	592	2,866	99.0%	839	3,096	99.2%
TOTAL		4,431	24,671	97.8%	5,154	20,215	98.5%	

Table 16. Sport Utility Vehicles Statewide Demographic Summary

Demographic Data			Sport Utility Vehicles Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Male	0-3	Total	0	0	N/A	0	0	N/A
	4-15	Caucasian	20	94	94.7%	30	106	91.5%
		African American	1	4	100.0%	3	12	100.0%
		Hispanic	1	7	100.0%	1	4	100.0%
		Total	22	105	95.2%	34	122	92.6%
	16-29	Caucasian	236	1,250	95.2%	282	1,167	96.8%
		African American	28	248	97.2%	54	236	94.5%
		Asian or Pacific Islander	5	36	66.7%	8	33	97.0%
		Hispanic	0	0	N/A	3	11	90.9%
		Total	269	1,534	94.9%	347	1,447	96.4%
	30-59	Caucasian	1,134	6,010	98.1%	1,410	4,998	97.9%
		African American	106	932	94.4%	190	917	95.3%
		Asian or Pacific Islander	11	101	100.0%	26	109	97.2%
		Hispanic	10	58	100.0%	9	36	94.4%
		Total	1,261	7,101	97.7%	1,635	6,060	97.4%
	60+	Caucasian	159	768	99.3%	264	935	98.7%
		African American	3	17	100.0%	11	43	90.7%
		Asian or Pacific Islander	2	12	100.0%	7	35	100.0%
		Total	164	797	99.4%	282	1,013	98.4%
	TOTAL			1,716	9,537	97.3%	2,298	8,642

Table 16. Sport Utility Vehicles Statewide Demographic Summary (Continued)

Demographic Data			Sport Utility Vehicles Safety Belt Use by Drivers and Passengers						
			Statewide Pre-Enforcement			Statewide Post-Enforcement			
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	
Female	0-3	Total	0	0	N/A	0	0	N/A	
	4-15	Caucasian	14	74	95.9%	31	134	96.3%	
		African American	1	4	100.0%	8	26	92.3%	
		Hispanic	0	0	N/A	1	4	100.0%	
		Total	15	78	96.2%	40	164	95.7%	
	16-29	Caucasian	367	1,778	98.9%	427	1,553	99.5%	
		African American	37	350	96.6%	67	352	97.7%	
		Asian or Pacific Islander	8	54	100.0%	6	15	100.0%	
		Hispanic	2	3	100.0%	0	0	N/A	
		Total	414	2,185	98.6%	500	1,920	99.2%	
	30-59	Caucasian	1,374	6,883	98.0%	1,553	5,744	98.9%	
		African American	130	1,309	97.5%	185	878	97.9%	
		Asian or Pacific Islander	16	117	100.0%	15	79	100.0%	
		Hispanic	4	23	100.0%	6	29	100.0%	
		Total	1,524	8,332	98.0%	1,759	6,730	98.8%	
	60+	Caucasian	185	772	98.8%	264	918	100.0%	
		African American	8	47	95.7%	16	117	95.7%	
		Asian or Pacific Islander	1	19	100.0%	3	19	100.0%	
		Total	194	838	98.7%	283	1,054	99.5%	
	TOTAL			2,147	11,433	98.1%	2,582	9,868	98.9%

Table 17. Vans/Minivans Statewide Demographic Summary

Demographic Data			Van/Minivan Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Male	0-3	Caucasian	0	0	N/A	1	1	100.0%
		African American	1	8	100.0%	0	0	N/A
		Total	1	8	100.0%	1	1	100.0%
	4-15	Caucasian	13	46	100.0%	14	62	95.2%
		African American	3	22	63.6%	3	11	90.9%
		Total	16	68	88.2%	17	73	94.5%
	16-29	Caucasian	94	517	99.6%	152	609	96.9%
		African American	14	95	97.9%	29	156	92.3%
		Asian or Pacific Islander	2	32	100.0%	6	29	100.0%
		Hispanic	1	13	100.0%	2	7	85.7%
		Total	111	657	99.4%	189	801	96.0%
	30-59	Caucasian	706	3,473	96.8%	942	3,444	98.8%
		African American	74	548	97.1%	136	731	95.8%
		Asian or Pacific Islander	10	70	100.0%	21	92	98.9%
		Hispanic	4	40	100.0%	5	29	93.1%
		Total	794	4,131	96.9%	1,104	4,296	98.3%
	60+	Caucasian	160	781	98.8%	218	743	98.5%
		African American	2	32	93.8%	11	50	96.0%
		Asian or Pacific Islander	1	5	100.0%	3	15	100.0%
		Total	163	818	98.7%	232	808	98.4%
	TOTAL		1,085	5,682	97.4%	1,543	5,979	97.9%

Table 17. Vans/Minivans Statewide Demographic Summary (Continued)

Demographic Data			Van/Minivan Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Female	0-3	Caucasian	0	0	N/A	1	7	100.0%
		Hispanic	1	11	100.0%	0	0	N/A
		Total	1	11	100.0%	1	7	100.0%
	4-15	Caucasian	10	56	100.0%	27	81	95.1%
		African American	1	5	100.0%	2	6	100.0%
		Hispanic	0	0	N/A	1	4	100.0%
		Total	11	61	100.0%	30	91	95.6%
	16-29	Caucasian	133	605	96.2%	193	798	97.5%
		African American	22	184	99.5%	26	129	93.8%
		Asian or Pacific Islander	7	61	100.0%	5	16	100.0%
		Hispanic	5	42	88.1%	1	2	100.0%
		Total	167	892	96.7%	225	945	97.0%
	30-59	Caucasian	807	3,894	98.8%	981	3,520	98.9%
		African American	95	822	95.0%	114	606	95.4%
		Asian or Pacific Islander	11	92	100.0%	16	75	97.3%
		Hispanic	7	35	88.6%	3	15	100.0%
		Total	920	4,843	98.1%	1,114	4,216	98.4%
	60+	Caucasian	174	825	99.2%	211	700	98.7%
		African American	3	24	95.8%	6	65	95.4%
		Asian or Pacific Islander	0	0	N/A	1	2	100.0%
		Hispanic	0	0	N/A	1	4	100.0%
		Total	177	849	99.1%	219	771	98.4%
	TOTAL		1,276	6,656	98.1%	1,589	6,030	98.1%

Table 18. Pick-up Trucks Statewide Demographic Summary

Demographic Data			Pickup Trucks Safety Belt Use by Drivers and Passengers					
			Statewide Pre-Enforcement			Statewide Post-Enforcement		
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU
Male	0-3	Total	0	0	N/A	0	0	N/A
	4-15	Caucasian	19	57	93.0%	18	47	93.6%
		African American	1	10	100.0%	0	0	N/A
		Hispanic	1	7	100.0%	0	0	N/A
		Total	21	74	94.6%	18	47	93.6%
	16-29	Caucasian	302	1,486	94.0%	396	1,408	95.7%
		African American	13	94	73.4%	23	92	94.6%
		Asian or Pacific Islander	0	0	N/A	1	5	100.0%
		Hispanic	1	3	0.0%	1	4	100.0%
		Total	316	1,583	92.6%	421	1,509	95.6%
	30-59	Caucasian	1,700	7,604	94.1%	1,891	6,042	96.2%
		African American	77	742	89.1%	116	518	93.2%
		Asian or Pacific Islander	0	0	N/A	3	25	100.0%
		Hispanic	4	16	100.0%	15	56	91.1%
		Total	1,781	8,362	93.6%	2,025	6,641	95.9%
	60+	Caucasian	247	1,059	95.8%	380	1,136	95.4%
		African American	3	43	97.7%	7	31	96.8%
		Hispanic	1	8	100.0%	1	6	100.0%
		Total	251	1,110	95.9%	388	1,173	95.5%
	TOTAL		2,369	11,129	93.7%	2,852	9,370	95.8%

Table 18. Pick-up Trucks Statewide Demographic Summary (Continued)

Demographic Data			Pickup Trucks Safety Belt Use by Drivers and Passengers						
			Statewide Pre-Enforcement			Statewide Post-Enforcement			
Gender	Age	Race	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	Actual Total # of Obs.	Weighted Total # of Obs.	Weighted % of SBU	
Female	0-3	Caucasian	0	0	N/A	1	7	100.0%	
		Total	0	0	N/A	1	7	100.0%	
	4-15	Caucasian	7	21	95.2%	9	37	94.6%	
		Total	7	21	95.2%	9	37	94.6%	
	16-29	Caucasian	120	533	97.7%	151	600	100.0%	
		African American	11	84	86.9%	11	64	98.4%	
		Total	131	617	96.3%	162	664	99.8%	
	30-59	Caucasian	433	1,831	97.4%	461	1,595	98.9%	
		African American	18	185	100.0%	24	163	99.4%	
		Asian or Pacific Islander	1	4	100.0%	0	0	N/A	
		Hispanic	1	7	100.0%	0	0	N/A	
		Total	453	2,027	97.6%	485	1,758	99.0%	
	60+	Caucasian	59	315	100.0%	76	238	99.2%	
		African American	0	0	N/A	1	6	100.0%	
		Hispanic	0	0	N/A	1	6	100.0%	
		Total	59	315	100.0%	78	250	99.2%	
	TOTAL			650	2,980	97.6%	735	2,716	99.2%

6.2 Program Comparisons

Table 19 summarizes the findings of the 2005 through 2009 safety belt use observational surveys for the *Click It or Ticket* Mobilization. It can be seen that the actual number of observations decreased in the 2009 statewide pre-enforcement wave while for the post-enforcement wave the actual number of observations remained about the same as the previous year. The number of weighted observations was greater for all observational waves in 2009 as compared to 2005 through 2008. The 2009 statewide pre and post-enforcement observational surveys showed an improvement in the use rate over the same observation periods in 2008 and all previous years.

Table 19. Comparison of Statewide Results from 2005 through 2009

Observational Survey	Pre-Enforcement					Post-Enforcement				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
No. of Sites	192	192	192	192	192	192	192	192	192	192
Actual No. of Observations	19,382	18,262	19,913	23,142	17,872	16,981	20,472	24,553	22,867	22,021
Weighted No. of Observations	36,021	64,401	70,842	79,462	96,461	36,842	63,821	65,872	75,205	83,075
Safety Belt Use Percent	89.4%	89.9%	93.0%	92.6%	97.2%	92.9%	94.0%	93.3%	96.2%	97.9%

Based upon the safety belt use rate trends shown in Figure 2, continued efforts in the media and enforcement may reduce the variation between the annual *Click It or Ticket* Enforcement campaigns. Continued monitoring of the media and enforcement efforts will ensure adequate behavioral modifications are maintained throughout the year.

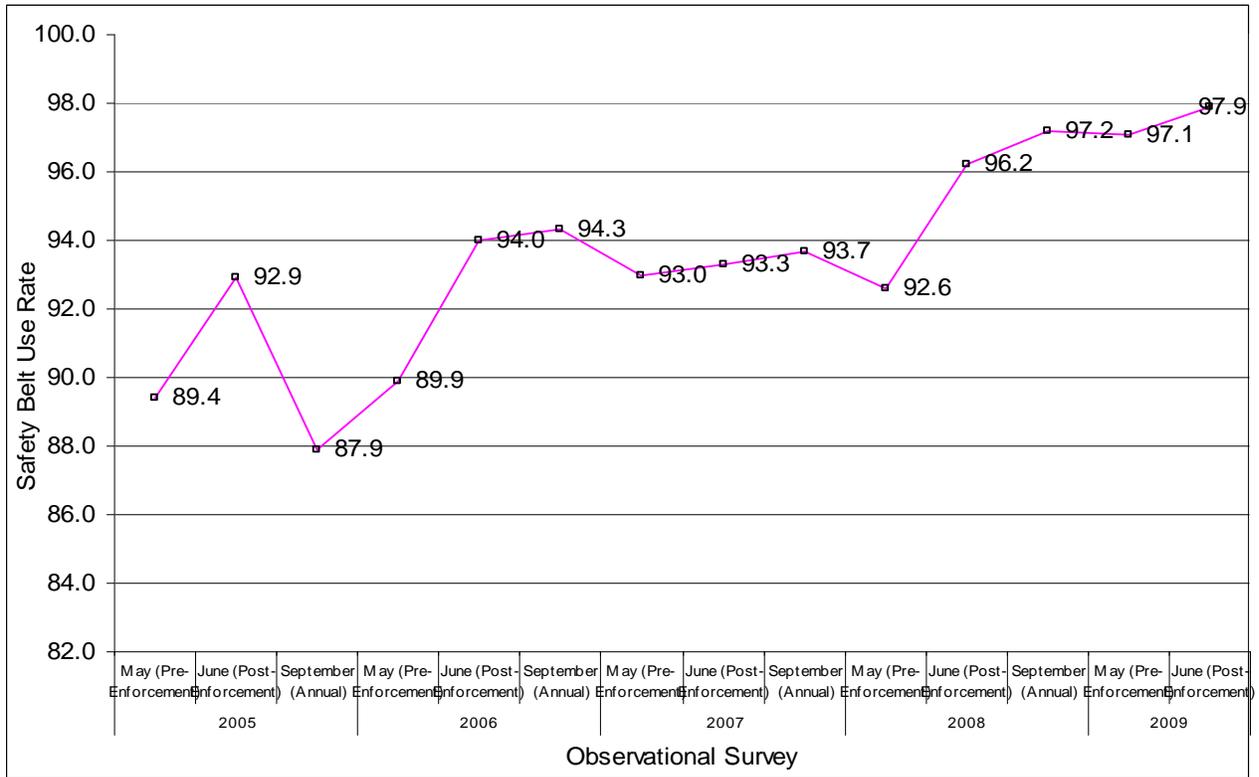


Figure 2. 2005 Through 2009 Safety Belt Use Rate Trends

6.3 Program Enhancements

As shown in the findings from the various observational surveys, males and pick-up drivers should be targeted in future *Click It or Ticket* campaigns. Continuing programs in urban areas should impact African American and Hispanic occupants while reaching a substantial portion of the state's population. This would indicate that continuing programs in urban centers may improve safety belt use rates.

With the current success rate of the *Click It or Ticket* campaign, the future potential of improving the safety belt use rate may yield a lower rate of increase. Future programs may focus on targeted areas where the safety belt use rates are still relatively low.

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7. Michigan State Police, "Officers Issue 18,000 Safety Belt Citations During *Click It or Ticket*," News Release, June 11, 2007.
8. Cochran, G., Sampling Techniques, 3rd Edition, John Wiley and Sons, Inc., Canada, 1977.

**APPENDIX I – COMPLETE LISTING OF THE OBSERVATIONAL
SITES IN MICHIGAN**

STRATUM 1	
County	Observation Locations
Ingham County	1. Barnes and Eden
	2. Cavanaugh and Pennsylvania
	3. Hagadorn and Lake Lansing
	4. Haslett and Zimmer
	5. Holt and M-52
	6. I-496 and Dunkel
	7. M-106 and M-52
	8. M-43 and M-52
	9. M-43 and Putnam
	10. Michigan and Waverly
	11. Onondaga and Rossman Rd
	12. Tihart and Cornell
	13. US-127 and Saginaw
	14. US-127 and Cedar St
Kalamazoo County	1. 8 th and Q Ave
	2. 8 th and U Ave
	3. G and Riverview
	4. G Ave and 33rd
	5. H Ave and Sprinkle
	6. M-43 and 9th
	7. M-43 and M-89
	8. M-89 and 34th
	9. Sprinkle and Centre
	10. Sprinkle and Zylman
Oakland County	1. 14 Mile and Main
	2. 9 Mile and Taft
	3. Clarkton and Baldwin
	4. Dixie and Davisburg
	5. Grand River and Taft
	6. Holly and Grange Hall
	7. I-696 and Orchard Lake
	8. I-696 and Woodward
	9. I-75 and Sashabaw
	10. M-10 and 8 Mile
	11. Northwestern and Middlebelt
	12. Snell and Rochester
	13. Walton and Lapeer

Washtenaw County	1.	Ann Arbor and S Main St
	2.	Austin and Schneider
	3.	Dixboro and North Territorial
	4.	Geddes and Earheart
	5.	I-94 and Huron
	6.	I-94 and S State St
	7.	Jackson and I-94
	8.	Miller and N Maple
	9.	Mooreville and Stoney Creek
	10.	Saline Milan and Mooreville
	11.	Zeeb and North Territorial
STRATUM 2		
County	Observation Locations	
Allegan County	1.	30th and 128th
	2.	M-89 and Main
	3.	M-89 and US-131
	4.	US-131 and 135th
Bay County	1.	Adams and Kochville
	2.	M-61 and Standish
	3.	Munger and M-15
	4.	Pinconning and I-75
Eaton County	1.	Battle Creek and Ainger
	2.	I-96 and Nash
	3.	Kalamo and Battle Creek
	4.	M-43 and Canal
	5.	M-43 and M-50
	6.	Nixon and Willow
	7.	Royston and Island Hwy
	8.	Washington and Lawrence
Grand Traverse County	1.	M-72 and US-31
Jackson County	1.	Michigan and US-127
	2.	Michigan and Lake
	3.	Rosehill and Elm
	4.	US-127 and Page
	5.	Wolf Lake and Cady
Kent County	1.	14 Mile and Harvard
	2.	4 Mile and Walker
	3.	Myers Lake and 17 Mile
	4.	Sparta and Ball Creek
	5.	US 131 and 10 Mile
	6.	US 131 and 84th
	7.	US-131 and 68th
	8.	Wabasis and 10 Mile

Livingston County	1. Grand River and Pleasant Valley
	2. Grand River and Kensington
	3. M-36 and Dexter
	4. M-36 and M-106
	5. Old US-23 and M-59
	6. US-23 and Clyde
Macomb County	1. 22 Mile and Heydenreich
	2. 23 Mile and Van Dyke
	3. 27 Mile and Romeo Plank
	4. 34 Mile and Van Dyke
	5. I-696 and Groesbeck
	6. Jefferson and Martin
	7. Moravian and Harrington
Midland County	1. Badour and Pine River
	2. Coleman and Redstone
	3. Curtis and Lake Sanford
	4. M-20 and Homer
	5. Redstone and 11 Mile
Ottawa County	1. 104th and Polk
	2. Lake Michigan and US-31
STRATUM 3	
County	Observation Locations
Berrien	1. I-94 and M-139
	2. Lakeside and Union pier
	3. Nickerson and Pipestone
Calhoun	1. 15 Mile and Michigan Ave
	2. Beckley Rd and Capital Ave
	3. Evanston and Michigan
	4. I-94 and Capital Ave
Clinton	1. Clark and Upton
	2. Hyde and Welling
	3. M-21 and Lowell
	4. M-21 and Shepardsville
	5. Main and Westphalia
Genesee	1. Flushing and Bellenger
	2. Grand Blanc and Duffield
	3. I-475 and Court
	4. M-57 and Vassar
	5. Mt. Morris and I-75
	6. N Elms and Beacher

Ionia	1. Bridge and State
	2. Cross and Main
Isabella	1. Winn and Blanchard
Lapeer	1. M-24 and Coulter Rd
	2. Otter Lake and Klam
Lenawee	1. Clinton Macon and Tecumseh
	2. M-50 and Pentecost Hwy
	3. US-12 and Brooklyn
Marquette	1. M-95 and CR-LLK
	2. Washigton and McClellan
Monroe	1. Ann Arbor and Tecumseh
	2. Dunbar and Hull
	3. Ostrander and Plank
	4. Telegraph and Seventh
	5. US-23 and Plank
	6. US-23 and US-223
Montcalm	1. Condensary and Crystal
	2. M-91 and Sidney
	3. Sidney and Crystal
Muskegon	1. Ravenna Hts. And Blackmer
	2. Ravenna Hts. And Maple Rd
	3. Ravenna Hts. and Moorland
Saginaw	1. Fergus and Bishop
Shiawasee	1. I-69 and M-52
	2. Juddville and Chipman
	3. M-52 and Grand River
St. Clair	1. I-69 and Riley Centre Rd
	2. M-19 and Lambs Rd
	3. M-29 and Perch
St. Joesph	1. Banker and Klinger
	2. US-131 and Millard
Van Buren	1. CR-380 and CR-681
	2. CR-681 and CR-384
	3. I-196 and Phoenix
	4. M-51 and CR-352

STRATUM 4	
County	Observation Locations
Wayne County	1. 8 Mile and Grand River
	2. 8 Mile and Randolph
	3. Ecorse and Haggerty
	4. Ecorse and Monroe
	5. Eureka and Middlebelt
	6. Eureka and Telegraph
	7. Farmington and Plymouth
	8. Ford and Sheldon
	9. Geddes and Canton Center
	10. Goddard and Fort
	11. Grand River and Schaefer
	12. Greenfield and 9 Mile
	13. Greenfield and M-10
	14. Greenfield and Plymouth
	15. Huron River and Haggerty
	16. Huron River and Waltz
	17. I-75 and Southfield
	18. I-94 and Harper
	19. I-96 and Livernois
	20. Jefferson and Randolph
	21. McNichols and Evergreen
	22. Michigan and Greenfield
	23. Middlebelt and I-96
	24. Northline and I-75
	25. Outer Drive and Rotunda
	26. Palmer and Lilley
	27. Rawsonville and Textile
	28. Sumpter and Main
	29. Sumpter and Oakville Waltz
	30. Telegraph and Northline
	31. Van Dyke and McNichols
	32. Van Horn and Inkster
	33. Vandyke and 7-Mile
	34. Vernier and Lake Shore
	35. Vernier and Mack
	36. Waltz and Willow
	37. Warren and Southfield
	38. Wayne and Annapolis
	39. Wayne and Wick
	40. Willis and Rawsonville
	41. Woodward and Warren

APPENDIX II – STATEWIDE SAFETY BELT USE RATES BY COUNTY

Stratum and County	Pre-Enforcement Safety Belt Use Rate		Post-Enforcement Safety Belt Use Rate	
	Safety Belt Usage Rate*	Standard Error	Safety Belt Usage Rate*	Standard Error
Stratum 1				
Ingham County	98.2% ± 0.64%	0.32%	98.3% ± 0.48%	0.25%
Kalamazoo County	97.7% ± 0.69%	0.35%	98.4% ± 0.68%	0.35%
Oakland County	97.3% ± 1.11%	0.57%	97.9% ± 0.62%	0.32%
Washtenaw County	97.2% ± 1.07%	0.55%	98.1% ± 0.60%	0.31%
Stratum 2				
Allegan County	97.9% ± 0.90%	0.46%	98.4% ± 1.34%	0.68%
Bay County	97.4% ± 0.30%	0.15%	97.3% ± 1.08%	0.55%
Eaton County	95.6% ± 1.06%	0.54%	98.1% ± 0.56%	0.28%
Grand Traverse County	100%	N/A**	98.41%	NA**
Jackson County	99.1% ± 0.54%	0.28%	99.7% ± 0.50%	0.26%
Kent County	97.3% ± 1.40%	0.72%	99.2% ± 0.75%	0.38%
Livingston County	97.2% ± 0.56%	0.28%	98.2% ± 0.68%	0.35%
Macomb County	97.9% ± 0.82%	0.42%	99.2% ± 0.69%	0.35%
Midland County	96.1% ± 0.41%	0.21%	98.3% ± 0.90%	0.46%
Ottawa County	97.0% ± 4.78%	2.44%	99.4% ± 1.11%	0.57%
Stratum 3				
Berrien County	97.0% ± 0.84%	0.43%	98.4% ± 1.03%	0.53%
Calhoun County	99.5% ± 0.81%	0.41%	99.0% ± 0.49%	0.25%
Clinton County	98.5% ± 0.99%	0.51%	99.2% ± 0.62%	0.32%
Genesee County	96.9% ± 1.01%	0.52%	97.4% ± 0.50%	0.25%
Ionia County	96.1% ± 2.04%	1.04%	98.4% ± 0.48%	0.24%
Isabella County	97.9%	N/A	97.8%	N/A
Lapeer County	96.4% ± 0.85%	0.43%	97.8% ± 0.49%	0.25%
Lenawee County	93.8% ± 0.92%	0.47%	98.1% ± 0.39%	0.20%
Marquette County	96.1% ± 5.90%	3.01%	96.2% ± 0.96%	0.49%
Monroe County	96.8% ± 0.80%	0.41%	96.6% ± 1.36%	0.69%
Montcalm County	95.9% ± 3.37%	1.72%	96.6% ± 1.69%	0.86%
Muskegon County	96.8% ± 0.12%	0.06%	98.5% ± 0.06%	0.03%
Saginaw County	94.5%	N/A	95.2	N/A
Shiawassee County	96.2% ± 0.79%	0.41%	98.8% ± 0.79%	0.41%
St.Clair County	97.9% ± 0.85%	0.43%	99.2% ± 0.83%	0.42%
St.Joseph County	98.3% ± 0.01%	0.00%	98.2% ± 1.02%	0.52%
Van Buren County	96.9% ± 1.24%	0.63%	99.0% ± 0.77%	0.39%
Stratum 4				
Wayne County	95.9% ± 0.85%	0.44%	96.6% ± 0.71%	0.36%

* Weighted Safety Belt Usage ± 95% Confidence Band

** Only one location in Grand Traverse County is included in the sample.

APPENDIX III – STATEWIDE SAFETY BELT USAGE BY INTERSECTION

All Vehicles Safety Belt Use by Drivers and Passengers								
Stratum, County and Intersection	Statewide Pre-Enforcement				Statewide Post-Enforcement			
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Stratum 1								
<i>Ingham County</i>								
Barnes and Eden	101	102	359	363	117	119	149	152
Cavanaugh and Pennsylvania	123	124	1565	1578	168	172	605	620
Hagadorn and Lake Lansing	120	125	347	362	181	185	773	790
Haslett and Zimmer	71	74	159	165	166	169	380	387
Holt and M-52	79	80	153	155	125	125	174	174
I-496 and Dunkel	105	107	529	539	143	143	358	358
M-106 and M-52	104	106	694	708	173	176	399	406
M-43 and M-52	75	75	113	113	129	129	292	292
M-43 and Putnam	89	92	655	676	183	186	743	755
Michigan and Waverly	140	140	570	570	160	163	656	668
Onondaga and Rossman Rd	94	95	230	232	140	144	133	137
Tihart and Cornell	63	64	106	108	124	124	211	211
US-127 and Saginaw	129	132	1424	1457	173	178	882	907
US-127 and Cedar St	103	105	514	524	141	143	189	192
Total	1396	1421	7418	7550	2123	2156	5944	6049
<i>Kalamazoo County</i>								
8 th and Q Ave	72	75	356	371	129	130	201	203
8 th and U Ave	71	73	158	162	119	120	124	125
G Ave and 33rd	105	107	569	580	146	147	191	192
G and Riverview	91	93	315	322	137	139	251	255
H Ave and Sprinkle	84	87	355	368	152	154	191	194
M-43 and 9th	139	142	1014	1036	185	190	723	743
M-43 and M-89	129	130	858	865	156	157	547	551
M-89 and 34th	103	106	502	517	137	139	153	155
Sprinkle and Centre	61	63	176	182	129	131	276	280
Sprinkle and Zylman	82	84	301	308	131	134	319	326
Total	937	960	4604	4711	1421	1441	2976	3024
<i>Oakland County</i>								
14 Mile and Main	93	99	870	926	163	167	753	771
9 Mile and Taft	67	68	207	210	162	163	273	275

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Clarkton and Baldwin	98	99	693	700	127	131	309	319
Dixie and Davisburg	86	91	350	370	144	147	310	316
Grand River and Taft	86	88	748	766	137	142	434	450
Holly and Grange Hall	104	108	617	641	157	161	482	494
I-696 and Orchard Lake	94	95	1804	1823	157	160	1608	1638
I-696 and Woodward	75	76	2408	2440	149	151	2202	2232
I-75 and Sashabaw	84	84	280	280	150	151	750	755
M-10 and 8 Mile	104	107	2538	2611	152	157	2327	2403
Northwestern and Middlebelt	78	81	614	638	151	153	1113	1127
Snell and Rochester	89	91	424	434	147	149	413	419
Walton and Lapeer	83	89	860	922	166	170	499	511
Total	1141	1176	12413	12761	1962	2002	11473	11710
<i>Washtenaw County</i>								
Ann Arbor and S Main St.	135	141	1029	1075	169	172	625	636
Austin and Schneider	70	71	126	128	125	128	119	122
Dixboro and North Territorial	71	71	184	184	132	132	119	119
Geddes and Earheart	90	92	332	339	206	208	420	424
I-94 and Huron	123	128	1216	1266	154	158	647	663
I-94 and S State St	98	100	774	790	186	192	679	701
Jackson and I-94	89	90	797	806	169	173	815	834
Miller and N Maple	76	76	205	205	142	143	654	659
Mooreville and Stoney Creek	90	94	580	605	164	166	179	181
Saline Milan and Mooreville	61	63	83	85	131	134	118	121
Zeeb and North Territorial	80	80	226	226	134	136	164	166
Total	983	1006	5552	5709	1712	1742	4539	4626

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Stratum 2								
<i>Allegan County</i>								
30th and 128th	84	86	231	237	72	73	143	145
M-89 and Main	88	91	361	373	72	72	228	228
M-89 and US-131	111	112	313	316	75	76	201	204
US-131 and 135th	120	122	581	591	70	72	314	323
Total	403	411	1486	1517	289	293	886	900
<i>Bay County</i>								
Adams and Kochville	109	112	237	244	65	67	241	248
M-61 and Standish	89	91	152	155	75	77	135	139
Munger and M-15	107	110	366	376	84	85	180	182
Pinconning and I-75	78	80	179	184	73	76	176	183
Total	383	393	934	959	297	305	732	752
<i>Eaton County</i>								
Battle Creek and Ainger	79	84	86	91	74	76	119	123
I-96 and Nash	92	95	140	145	69	70	102	103
Kalamo and Battle Creek	97	105	85	92	67	69	121	125
M-43 and Canal	90	93	322	334	94	95	402	406
M-43 and M-50	99	104	142	149	94	96	189	193
Nixon and Willow	65	67	69	71	81	83	188	193
Royston and Island Hwy	104	111	201	215	74	75	245	248
Washington and Lawrence	117	121	405	419	88	90	545	557
Total	743	780	1450	1516	641	654	1911	1948
<i>Grand Traverse County</i>								
M-72 and US-31	179	179	1068	1068	177	180	1489	1513
Total	179	179	1068	1068	177	180	1489	1513
<i>Jackson County</i>								
Michigan and US-127	87	88	557	563	85	85	341	341
Michigan and Lake	93	94	330	334	96	96	264	264
Rosehill and Elm	73	73	483	483	81	82	128	130
US-127 and Page	93	94	355	359	88	88	289	289

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Wolf Lake and Cady	78	79	124	126	90	91	170	172
Total	424	428	1849	1865	440	442	1192	1196
<i>Kent County</i>								
14 Mile and Harvard	106	108	659	671	82	82	410	410
4 Mile and Walker	80	83	179	185	71	71	193	193
Myers Lake and 17 Mile	68	70	99	102	70	71	70	71
Sparta and Ball Creek	101	106	604	634	89	91	392	401
US 131 and 10 Mile	106	107	400	404	79	80	369	374
US 131 and 84th	89	89	462	462	79	80	270	273
US-131 and 68th	146	152	974	1014	86	86	518	518
Wabasis and 10 Mile	72	73	100	101	63	63	67	67
Total	768	788	3477	3573	619	624	2289	2307
<i>Livingston County</i>								
Grand River and Pleasant Valley	85	87	332	340	67	69	197	203
Grand River and Kensington	69	71	273	281	66	68	182	188
M-36 and Dexter	76	78	299	307	65	66	376	382
M-36 and M-106	68	68	153	153	66	67	150	152
Old US-23 and M-59	124	128	1965	2029	82	83	657	665
US-23 and Clyde	81	83	333	341	73	75	163	167
Total	503	515	3355	3451	419	428	1725	1757
<i>Macomb County</i>								
22 Mile and Heydenreich	108	112	411	426	98	99	382	386
23 Mile and Van Dyke	128	131	1615	1653	88	89	1523	1540
27 Mile and Romeo Plank	78	80	225	231	90	91	262	265
34 Mile and Van Dyke	91	93	478	489	89	89	519	519

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I-696 and Groesbeck	108	109	1338	1350	91	91	1347	1347
Jefferson and Martin	121	125	344	356	101	104	291	300
Moravian and Harrington	92	93	186	188	93	96	130	134
Total	726	743	4597	4693	650	659	4454	4491
<i>Midland County</i>								
Badour and Pine River	84	87	152	157	66	67	151	153
Coleman and Redstone	72	75	185	193	64	65	199	202
Curtis and Lake Sanford	61	64	149	156	71	71	149	149
M-20 and Homer	104	108	134	139	78	80	205	210
Redstone and 11 Mile	129	134	201	209	64	66	127	131
Total	450	468	821	854	343	349	831	845
<i>Ottawa County</i>								
104th and Polk	59	63	142	151	73	74	173	175
Lake Michigan and US-31	92	93	214	216	72	72	153	153
Total	151	156	356	367	145	146	326	328
Stratum 3								
<i>Berrien County</i>								
I-94 and M-139	139	143	581	598	70	71	674	684
Lakeside and Union Pier	68	69	114	116	68	68	144	144
Nickerson and Pipestone	68	71	173	181	69	72	107	112
Total	275	283	868	895	207	211	925	940
<i>Calhoun County</i>								
15 Mile and Michigan Ave	73	74	138	140	64	64	101	101
Beckley Rd and Capital Ave	67	67	1251	1251	80	80	147	147

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Evanston and Michigan	86	87	344	348	83	84	659	667
I-94 and Capital Ave	68	69	272	276	79	80	224	227
Total	294	297	2005	2015	306	308	1131	1142
<i>Clinton County</i>								
Clark and Upton	76	77	126	128	74	75	130	132
Hyde and Welling	65	66	114	116	76	76	146	146
M-21 and Lowell	67	67	238	238	71	72	131	133
M-21 and Shepardsville	132	134	427	433	82	83	264	267
Main and Westphalia	91	94	214	221	78	78	179	179
Total	431	438	1119	1136	381	384	850	857
<i>Genesee County</i>								
Flushing and Bellenger	91	95	551	575	91	94	500	516
Grand Blanc and Duffield	61	61	84	84	67	67	95	95
I-475 and Court	73	75	464	477	76	78	429	440
M-57 and Vassar	61	61	96	96	61	62	167	170
Mt. Morris and I-75	91	94	169	175	73	75	241	248
N Elms and Beacher	89	92	199	206	70	72	268	276
Total	466	478	1563	1613	438	448	1700	1745
<i>Ionia County</i>								
Bridge and State	116	120	481	497	71	72	414	420
Cross and Main	62	66	94	101	93	95	142	145
Total	178	186	575	598	164	167	556	565
<i>Isabella County</i>								
Winn and Blanchard	88	90	188	192	88	90	180	184
Total	88	90	188	192	88	90	180	184
<i>Lapeer County</i>								
M-24 and Coulter Rd	89	92	466	482	82	84	541	554
Otter Lake and Klam	66	69	149	156	69	70	177	180
Total	155	161	615	638	151	154	718	734

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<i>Lenawee County</i>								
Clinton Macon and Tecumseh	77	83	156	168	84	86	207	212
M-50 and Pentecost Hwy	105	111	252	266	95	97	448	457
US-12 and Brooklyn	73	78	324	346	63	64	266	270
Total	255	272	732	780	242	247	921	939
<i>Marquette County</i>								
M-95 and Cr-LLK	88	89	199	201	63	66	111	116
Washington and McClellan	129	139	172	185	90	93	146	151
Total	217	228	371	386	153	159	257	267
<i>Monroe County</i>								
Ann Arbor and Tecumseh	106	109	751	772	62	65	462	484
Dunbar and Hull	84	89	302	320	66	69	226	236
Ostrander and Plank	83	87	116	121	63	66	122	128
Telegraph and Seventh	118	121	1079	1106	65	66	591	600
US-23 and Plank	93	96	186	192	65	66	125	127
US-23 and US-223	105	109	781	810	71	74	585	610
Total	589	611	3215	3321	392	406	2111	2185
<i>Montcalm County</i>								
Condensary and Crystal	52	55	96	102	65	67	209	215
M-91 and Sidney	105	107	342	348	88	93	211	222
Sidney and Crystal	74	79	272	290	83	85	183	187
Total	231	241	710	740	236	245	603	624
<i>Muskegon County</i>								
Ravenna Hts. And Blackmer	87	90	212	219	77	78	202	205
Ravenna Hts. And Maple Rd	88	91	217	224	69	70	191	194
Ravenna Hts. and Moorland	63	65	114	118	73	74	135	137
Total	238	246	543	561	219	222	528	536
<i>Saginaw County</i>								
Fergus and Bishop	89	94	239	253	58	61	59	62
Total	89	94	239	253	58	61	59	62

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<i>St. Clair County</i>								
I-69 and Riley Centre Rd	71	72	142	144	64	65	72	73
M-19 and Lambs Rd	84	85	196	198	85	85	405	405
M-29 and Perch	81	83	679	696	89	90	698	706
Total	236	240	1017	1038	238	240	1175	1184
<i>St. Joseph County</i>								
Banker and Klinger	71	72	112	114	64	64	123	123
US-131 and Millard	171	174	1421	1446	94	96	702	717
Total	242	246	1533	1560	158	160	825	840
<i>Shiawassee County</i>								
I-69 and M-52	58	61	129	135	65	65	62	62
Juddville and Chipman	69	71	79	81	56	57	81	82
M-52 and Grand River	75	78	199	207	65	66	179	182
Total	202	210	407	423	186	188	322	326
<i>Van Buren County</i>								
CR-380 and CR-681	78	82	156	164	74	74	216	216
CR-681 and CR-384	70	73	155	162	71	73	173	178
I-196 and Phoenix	168	172	1097	1123	90	91	707	715
M-51 and CR-352	92	96	279	291	78	78	215	215
Total	408	423	1687	1740	313	316	1311	1324
Stratum 4								
<i>Wayne County</i>								
8 Mile and Grand River	110	116	1023	1078	150	154	753	773
8 Mile and Randolph	67	69	503	518	146	150	501	514
Ecorse and Haggerty	108	111	649	667	141	144	322	329
Ecorse and Monroe	105	111	512	542	144	148	239	246
Eureka and Middlebelt	83	85	603	618	192	201	1131	1184

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Eureka and Telegraph	78	80	987	1012	135	138	633	647
Farmington and Plymouth	71	76	939	1005	149	158	703	745
Ford and Sheldon	89	91	890	910	179	180	1438	1446
Geddes and Canton Center	81	83	467	479	143	145	328	333
Goddard and Fort	86	89	963	996	146	154	1153	1216
Grand River and Schaefer	76	80	412	434	135	142	540	568
Greenfield and 9 Mile	93	95	831	849	182	185	1068	1086
Greenfield and M-10	98	100	700	714	179	184	801	823
Greenfield and Plymouth	74	84	744	844	124	129	800	832
Huron River and Haggerty	72	74	288	296	154	157	259	264
Huron River and Waltz	84	87	228	236	144	149	301	311
I-75 and Southfield	95	98	1156	1193	161	168	1404	1465
I-94 and Harper	94	95	810	819	153	154	325	327
I-96 and Livernois	90	93	596	616	157	174	749	831
Jefferson and Randolph	102	104	1678	1710	182	188	1588	1641
McNichols and Evergreen	76	80	298	314	124	131	285	301
Michigan and Greenfield	70	75	759	813	153	157	818	839
Middlebelt and I-96	84	89	1243	1317	131	137	657	687
Northline and I-75	101	103	1215	1239	167	171	991	1015
Outer Drive and Rotunda	94	99	748	788	154	156	730	740
Palmer and Lilley	71	73	253	260	148	149	376	379
Rawsonville and Textile	75	76	237	240	146	150	210	216

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Sumpter and Main	88	90	336	344	168	172	435	445
Sumpter and Oakville Waltz	72	74	73	75	133	139	100	105
Telegraph and Northline	64	70	553	605	182	189	836	868
Van Dyke and McNichols	110	113	739	759	177	181	524	536
Van Horn and Inkster	87	89	194	198	169	178	169	178
Vandyke and 7 Mile	102	108	403	427	184	189	369	379
Vernier and Lake Shore	84	87	437	453	167	170	447	455
Vernier and Mack	82	84	648	664	159	162	687	700
Waltz and Willow	78	80	87	89	124	131	123	130
Warren and Southfield	115	124	1077	1161	160	174	879	956
Wayne and Annapolis	109	112	754	775	156	160	809	830
Wayne and Wick	87	89	385	394	161	163	188	190
Willis and Rawsonville	78	80	119	122	141	148	405	425
Woodward and Warren	82	88	1309	1405	178	185	1173	1220
Total	3565	3704	26846	27978	6378	6594	26247	27175