Safety Belt Enforcement in Tennessee

Annual Report to the Tennessee General Assembly

Tennessee Department of Safety
Dave Mitchell, Commissioner
March 2009

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Introduction

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Annual Report to the Tennessee General Assembly
in Compliance with
Tennessee Code Annotated § 55-9-603

Executive Summary

This report contains a study conducted for the Tennessee General Assembly in compliance with *Tennessee Code Annotated* § 55-9-603 (k), to supply data collected for the previous five (5) years relating to violations of the Safety Belt Usage law. Chapter 893 of the "Public Acts of 2004" changed Tennessee's law relating to safety belt usage in passenger vehicles, from a "secondary" to a "primary" use law effective July 1, 2004. Included in the Public Act was a requirement for the Tennessee Department of Safety to file an annual report by March 1 of each year to the 104th, 105th, and 106th sessions of the General Assembly. The report is to "include the number of persons cited for violations of this section, their race, ethnicity, sex, age, and any other information the department deems relevant."

In compliance with this legislative directive, the Tennessee Department of Safety's Research, Planning & Development Division reviewed various data from the *Driver History, Trooper Ticket, and Crash Analysis Reporting System* databases. Since Tennessee does not have a statutory uniform citation law, statewide data is not available on the number of citations issued by all law enforcement agencies for traffic violations.

A review was conducted of all convictions reported to the Department's Financial Responsibility Division by court clerks, for fiscal years 2003-2004 through 2007-2008. Due to delays in reporting convictions to the Department, and posting convictions to the Driver History file, the data is more complete utilizing fiscal year (FY) information, rather than calendar year (CY) information for both statewide convictions and Tennessee Highway Patrol-issued citations. However, the safety belt convictions contained in the Driver History file include only those convictions reported to the Department of Safety by the court clerks.

Statewide safety belt convictions reported to the Department of Safety (all agencies) increased from 20,458 in FY 03-04 to 69,068 in FY 07-08, a 237.6% increase. In FY 07-08, those between the ages of 25-34 represented approximately 28.3% of all drivers convicted. White males were the most frequently convicted in all five years, and represented 56.1% of all drivers convicted and 77.8% of male drivers convicted in FY 07-08. After white males, black males received the most convictions, representing 12.4% of all drivers convicted and 17.2% of male drivers convicted in FY 07-08.

Of all drivers, males were the prominent sex convicted, accounting for 72.1% in FY 07-08 compared to 27.4% for females. White drivers were also the most often convicted of female drivers, representing 79% of females drivers convicted in FY 07-08. The next highest group was black females, representing 18% of female drivers convicted.

In FY 07-08, passengers convicted of safety belt violations represented only 4.2% of all safety belt convictions reported to the department. Generally over the five-year period, adult passengers followed nearly the same percentage distributions for sex and race.

Citations issued by commissioned officers of the Tennessee Highway Patrol were analyzed for fiscal years 2003-2004 through 2007-2008. Tennessee Highway Patrol citations issued for safety belt violations increased significantly from 29,023 in FY 03-04 to 51,655 in FY 05-06, a 78% increase. It was followed by a 15.7% decrease in FY 06-07, then an 18.7% decrease in FY 07-08. From FY 03-04 to FY 07-08, Trooper citations issued for these violations increased from 29,023 to 35,406, representing a 22% increase. Approximately 28.3% of ticketed drivers were between the ages of 25-34 representing the most frequently ticketed group throughout the five-year period.

In FY 07-08, of all male drivers, white males received 88.1% of Trooper safety belt citations. White males received 66.9% of the citations issued to all drivers. Black males were the next most frequently ticketed receiving 8.1% of citations issued to male drivers and 6.1% of citations issued to all drivers. Hispanic males received 2.9% of THP-issued citations for male drivers and 2.2% of citations for all drivers.

Convictions involving child restraint device (CRD) violations were also analyzed for this report. After decreasing from 3,638 in FY 03-04 to 3,434 in FY 04-05, CRD convictions increased to 5,536 in FY 05-06. They decreased to 4,898 in FY 06-07, and 4,803 in FY 07-08.

Unlike safety belt convictions reported, the majority of CRD convictions (59.3%) were received by females. White females were the predominant race and gender for both convictions involving children 3 and under, as well as those involving children ages 4-15. In FY 07-08, white females accounted for 30.7% of all CRD convictions. Black females received the next most convictions accounting for 24.0% of all convictions. White males were most frequently convicted among men, representing 22.8% of all convictions, with black males coming in second at 11.0%.

Citations issued by THP for CRD violations showed a small increase over the five-year period. These citations grew from 3,873 in FY 03-04 to a five-year high of 5,724 in FY 04-05. Since then CRD citations have decreased to 3,555 in FY 07-08, a reduction of 37.9%. Those between the ages of 20-29 were the most frequently ticketed group, accounting for 41.4% of all CRD citations.

As was the case with CRD convictions, females received the majority of CRD citations, ranging from a low of 55.1% in FY 05-06 to a high of 59.3% in FY 07-08. White females were 75.4% of the females ticketed during the five-year period. White males made up 73.0% of male drivers ticketed from FY 03-04 to FY 07-08.

The National Highway Traffic Safety Administration (NHTSA) funds Safety Restraint Usage Surveys each year in every State and U.S. Territory, through the various Governors' Highway Safety Offices. The results are analyzed and published by the National Center for Statistics and Analysis (NCSA). The NCSA established uniform survey criteria, and data analysis methodologies to ensure each state and territory's data were comparable.

In the October 2008 *Survey of Safety Belt And Motorcycle Helmet Usage In Tennessee* published by the University of Tennessee Center for Transportation Research, Tennessee's survey results indicated an overall increase of 1.3% from 2007 to 2008 (80.2% to 81.5%). Usage rates are expected to continue to increase as a result of targeted enforcement efforts and the implementation of the primary enforcement provision of the current law.

Ultimately, laws governing the use of seat belts are intended to help reduce fatalities and injuries on Tennessee roads. Therefore, traffic crash data has also been examined and submitted in this report. Caution must be used when reviewing crash data, since FY 07-08 data are not complete and considered preliminary due to delays in the receipt and processing of crash data. However, one fact is known: between July 1, 2003 and June 30, 2008, over 53% of vehicle occupants fatally injured in Tennessee traffic crashes, were still not restrained!

During the five-year period, police reported safety restraint usage by vehicle occupants in traffic crashes increased. In FY 03-04, police reported that 5.3% of vehicle occupants involved in traffic crashes were not restrained. This percentage decreased each year to 3.6% in FY 06-07 where it remained for FY 07-08. When comparing FY 03-04 to FY 07-08, the numbers indicate a reduction in the percentage of unrestrained motorists for all injury categories: No Injury = 3.6% to 2.2%; Possible Injury = 8.5% to 5.6%; Non-Incapacitating Injury = 16.9% to 14.8%; Incapacitating Injury = 28.2% to 25.1%; and, Fatal Injury = 56.2% to 53.0%.

Study results suggest that safety belt usage has risen significantly over the past five years, by approximately 11.3%, as the number of statewide convictions has also risen steadily. THP-issued citations have fluctuated but remained steady. In conviction and Trooper citation data, age, race, and sex appear to maintain stability in the proportion of each across the study period. There does not appear to be any signs of profiling in the enforcement of this law, based upon age, race, or sex.

Background

The Tennessee General Assembly passed Chapter 893 of the "Public Acts of 2004" that among other things, changed Tennessee's safety belt usage law from a "secondary" to a "primary" enforcement law. This change was effective July 1, 2004, and now allows law enforcement officers to stop a vehicle and issue a safety belt ticket to a driver or passenger in a passenger vehicle (up to 8,500 pounds gross vehicle weight rating). Previously, a vehicle had to be stopped and a citation issued for another offense before an officer could issue a ticket for a safety belt violation.

Also included in Chapter 893 was an addition to *Tennessee Code Annotated* § 55-9-603, known as subsection (k), that requires the Tennessee Department of Safety to file an annual report that contains safety belt ticket data for the previous five years. This report must contain safety belt ticket data that includes the age, race, sex, and other information on persons receiving such tickets.

The study and report presented here complies with this requirement, but extends beyond the basic information and data analysis. We also reviewed data from the National Highway Traffic Safety Administration's National Center for Statistics and Analysis, and Tennessee traffic crash data for the previous five years. Moreover, this report contains a section that examines convictions and citations for child restraint devices (CRDs) for the previous five years.

Scope and Approach

Tennessee does not have a statutorily mandated Uniform Traffic Citation program. This means that traffic tickets issued by local law enforcement officers are not reported to a central state database. The only statewide ticket information available is that of citations issued by the Tennessee Highway Patrol. The Trooper Ticket database contains information on each citation issued by State Troopers. Overall THP citation data for both seat belt and child restraint devices, including data involving age, race, and sex will be included for the five-year period as required in Chapter 893.

Due to the lack of a mandated Uniform Traffic Citation, the best source of data on convictions for safety belt violations comes from the Driver History database. It includes convictions, which originate from citations issued by all law enforcement agencies. When drivers are convicted of traffic offenses, court clerks are required to report convictions to the Department of Safety for posting on a driver's record.

The General Assembly authorized TDOS to include any other information deemed relevant to safety belt violations; therefore, this report will examine several other data sources. Information on surveys of safety belt usage rates as reported by NHTSA's National Center for Statistics and Analysis is included, allowing comparison of usage in Tennessee as compared to other states. Usage of safety belts by occupants of vehicles involved in traffic crashes as reported by law enforcement officers throughout the state is also included as is data on violations involving child restraint devices. Finally, all information contained in the report has been updated and revised with the most recent data available as of March 2009.

Convictions

Convictions Reported by Court Clerks to Tennessee Department of Safety

Safety Belt Convictions

Safety belt convictions reported by court clerks to the Department of Safety were analyzed to determine the numbers and percentages by occupant type, age, race, and sex.

Convictions Reported for Safety Belt Violations
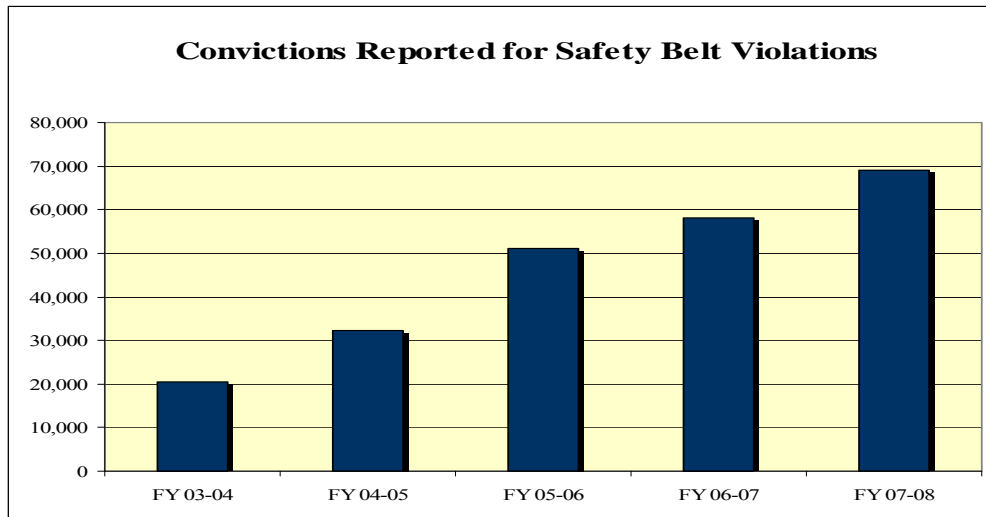
Person Type

In each fiscal year from FY 03-04 to FY 07-08, the overwhelming majority of safety belt convictions reported to the Driver History database were for drivers. For purposes of this report, the assumption was made that drivers were ticketed at rates comparable to the convictions. Over the past five fiscal years, approximately 95% of safety belt convictions were for drivers, with the percentage of convictions for passengers increasing from 3.4% in FY 03-04 to 4.2% in FY 07-08 (Table 1).

Age

Data regarding the age of drivers convicted of safety belt violations shows a relatively normal distribution over the five year period, as the majority of drivers (64.0%) convicted are between the ages of 21-44 years. There was a slight decrease in the percentage of drivers age 21-44 convicted from 65.0% in FY 03-04 to 63.7% in FY 07-08. Furthermore, drivers under age 25 also saw a decrease in their percentage of convictions while drivers 45 and over increased from 16.0% to 21.4% of drivers convicted between FY 03-04 and FY 07-08. Of drivers over 24, those between ages 25 and 34 accounted for the largest percentage (28.3%) of drivers convicted during the five-year period.

Convictions Reported for Safety Belt Violations By Age
FY 2007-2008
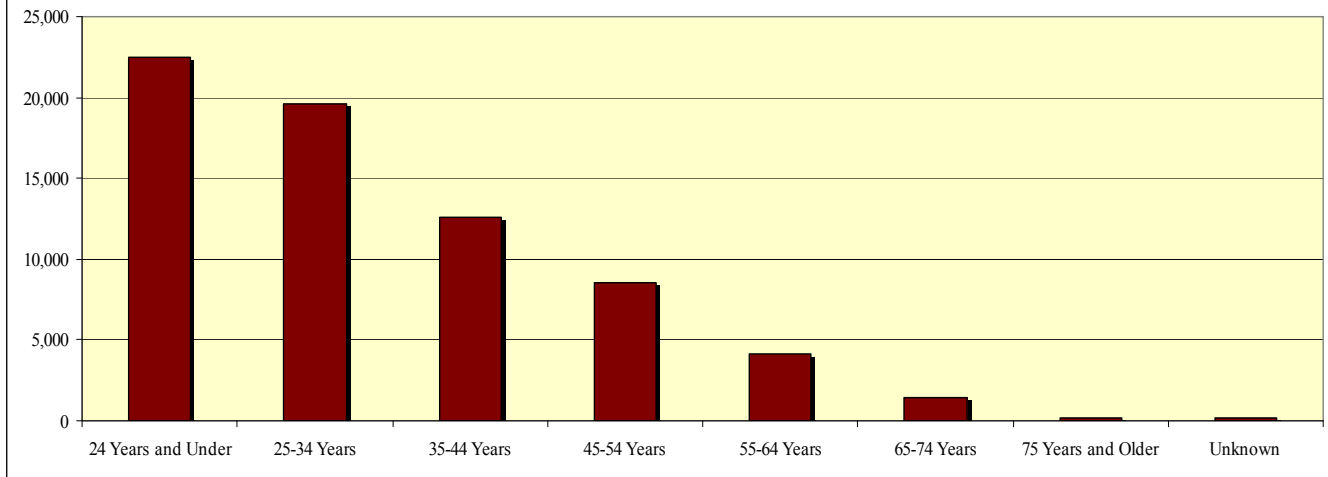
Convictions Reported for Safety Belt Violations By Person Type and Age
Table 1

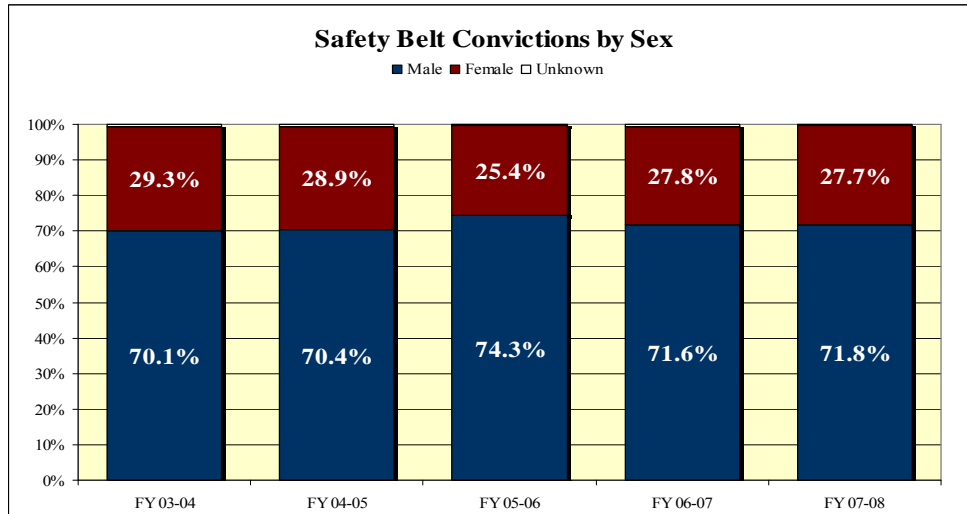|	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
Driver										
15 Years and Under	6	0.0%	16	0.1%	41	0.1%	17	0.0%	10	0.0%
16 Years	125	0.6%	382	1.2%	399	0.8%	239	0.4%	289	0.4%
17 Years	369	1.9%	671	2.2%	848	1.8%	714	1.3%	747	1.1%
18 Years	860	4.4%	1,853	6.0%	2,365	4.9%	1,931	3.5%	2,690	4.1%
19 Years	1,233	6.2%	1,928	6.3%	2,462	5.1%	2,769	5.0%	3,055	4.6%
20 Years	1,153	5.8%	1,785	5.8%	2,348	4.9%	2,715	4.9%	3,069	4.6%
21-24 Years	3,818	19.3%	5,805	18.9%	7,973	16.6%	9,638	17.3%	11,012	16.6%
25-34 Years	5,580	28.2%	8,221	26.8%	13,454	28.1%	16,133	28.9%	18,949	28.6%
35-44 Years	3,450	17.5%	5,244	17.1%	9,219	19.2%	10,480	18.8%	12,228	18.5%
45-54 Years	1,882	9.5%	3,002	9.8%	5,207	10.9%	6,725	12.1%	8,329	12.6%
55-64 Years	948	4.8%	1,307	4.3%	2,423	5.1%	3,154	5.7%	4,063	6.1%
65-74 Years	257	1.3%	374	1.2%	669	1.4%	993	1.8%	1,412	2.1%
75 Years and Older	75	0.4%	1	0.0%	345	0.7%	80	0.1%	176	0.3%
Unknown	0	0.0%	110	0.4%	148	0.3%	183	0.3%	161	0.2%
Total	**19,756**	**96.6%**	**30,699**	**95.5%**	**47,901**	**92.1%**	**55,771**	**96.1%**	**66,190**	**95.8%**
Passenger										
15 Years and Under	1	0.1%	6	0.4%	61	1.5%	4	0.2%	7	0.2%
16 Years	22	3.1%	112	7.7%	632	15.4%	112	5.0%	235	8.2%
17 Years	63	9.0%	171	11.8%	954	23.3%	275	12.3%	396	13.8%
18 Years	67	9.5%	112	7.7%	239	5.8%	284	12.7%	212	7.4%
19 Years	59	8.4%	105	7.3%	199	4.9%	144	6.4%	167	5.8%
20 Years	39	5.6%	82	5.7%	185	4.5%	121	5.4%	146	5.1%
21-24 Years	115	16.4%	253	17.5%	497	12.1%	370	16.6%	408	14.2%
25-34 Years	184	26.2%	297	20.5%	648	15.8%	424	19.0%	630	21.9%
35-44 Years	75	10.7%	174	12.0%	372	9.1%	284	12.7%	378	13.1%
45-54 Years	52	7.4%	93	6.4%	194	4.7%	146	6.5%	192	6.7%
55-64 Years	17	2.4%	34	2.4%	65	1.6%	50	2.2%	71	2.5%
65-74 Years	7	1.0%	6	0.4%	31	0.8%	17	0.8%	31	1.1%
75 Years and Older	1	0.1%	0	0.0%	10	0.2%	1	0.0%	3	0.1%
Unknown	0	0.0%	1	0.1%	15	0.4%	2	0.1%	2	0.1%
Total	**702**	**3.4%**	**1,446**	**4.5%**	**4,102**	**7.9%**	**2,234**	**3.9%**	**2,878**	**4.2%**
Overall Total	**20,458**		**32,145**		**52,003**		**58,005**		**69,068**	

Source: *TN Dept of Safety, Office of Research, Statistics, and Analysis, 09 Jan 2009*

Sex and Race

The majority of all convictions reported to the Department were males. In FY 07-08, males represented 72.1% of the drivers convicted, and 64.5% of the passengers. The chart below illustrates the percentage of males versus females for all convictions reported, both drivers and passengers. Conviction data indicating driver and passenger ethnicity and gender can be found in Table 2.

Safety Belt Convictions by Sex

■ Male ■ Female □ Unknown

	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08
Female	29.3%	28.9%	25.4%	27.8%	27.7%
Male	70.1%	70.4%	74.3%	71.6%	71.8%

White males were the predominant sex and race of both drivers and passengers convicted, and convicted females were also predominately white. Black males represented 14.6% of the male drivers convicted between FY 03-04 and FY 07-08, ranging from a low of 8.8% in FY 05-06 to a high of 17.2% in FY 07-08. Hispanic drivers represented 3.6% of male drivers convicted in the same period.

Percentage of Male Drivers Convicted of Safety Belt Violations by Race

■ Black ■ Hispanic □ White □ Other
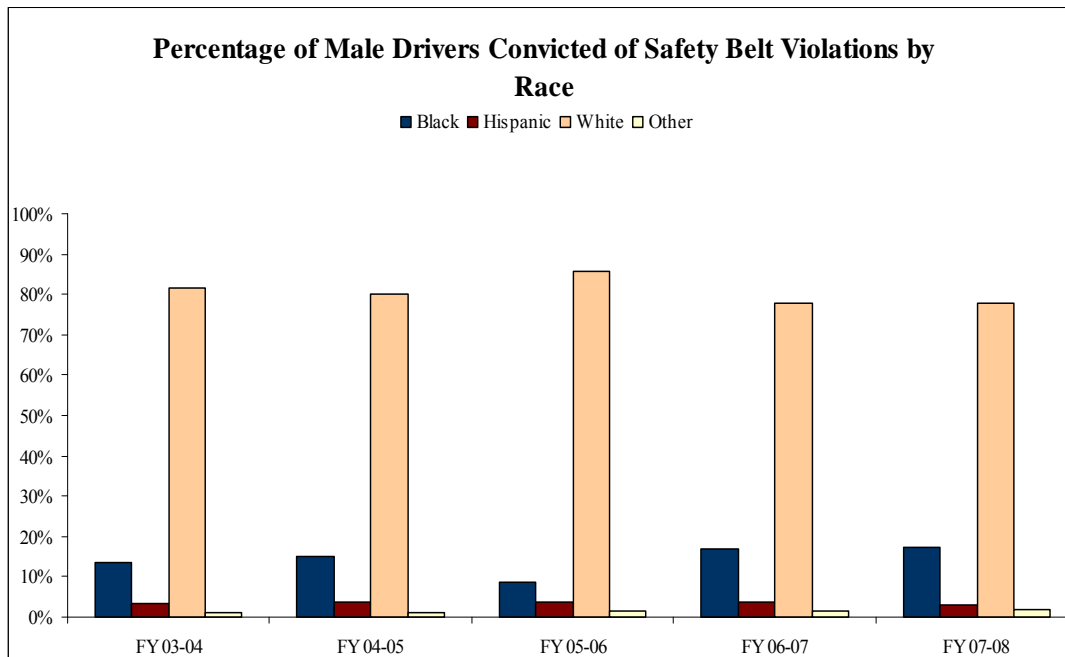
White drivers represented 82.6% of the female drivers convicted over the last five fiscal years, and black females, 14.9%. The percentages of white, black, and Hispanic females convicted of safety belt violations all remained relatively consistent for the five-year period.

Percentage of Female Drivers Convicted of Safety Belt Violations by Race

■ Black ■ Hispanic □ White □ Other
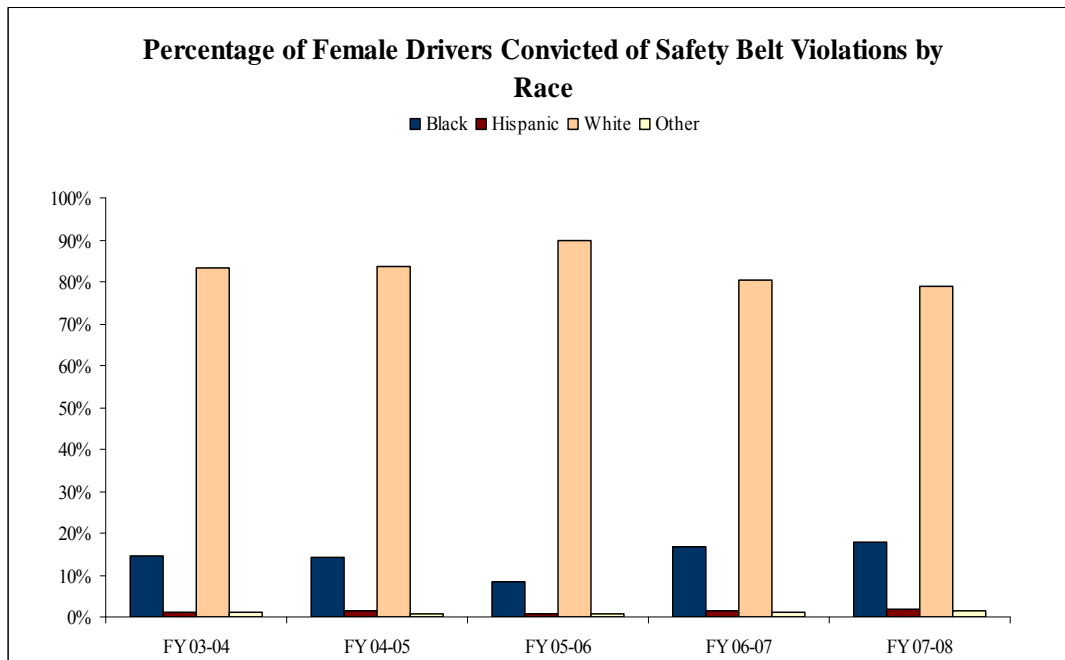
Safety Belt Convictions By Type, Sex, and Race

Table 2

	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
Drivers										
Female	**5,735**	**29.0%**	**8,816**	**28.7%**	**11,927**	**24.9%**	**15,353**	**27.5%**	**18,151**	**27.4%**
Asian	22	*0.4%*	26	*0.3%*	7	*0.1%*	46	*0.3%*	80	*0.4%*
Black	825	*14.4%*	1,253	*14.2%*	1,017	*8.5%*	2,590	*16.9%*	3,260	*18.0%*
Hispanic	70	*1.2%*	118	*1.3%*	68	*0.6%*	240	*1.6%*	305	*1.7%*
Indian	17	*0.3%*	13	*0.1%*	1	*0.0%*	24	*0.2%*	37	*0.2%*
White	4,777	*83.3%*	7,366	*83.6%*	10,737	*90.0%*	12,361	*80.5%*	14,333	*79.0%*
Other	24	*0.4%*	40	*0.5%*	97	*0.8%*	92	*0.6%*	136	*0.7%*
Male	**13,897**	**70.3%**	**21,691**	**70.7%**	**35,910**	**75.0%**	**40,139**	**72.0%**	**47,742**	**72.1%**
Asian	57	*0.4%*	118	*0.5%*	67	*0.2%*	209	*0.5%*	342	*0.7%*
Black	1,905	*13.7%*	3,227	*14.9%*	3,163	*8.8%*	6,766	*16.9%*	8,232	*17.2%*
Hispanic	487	*3.5%*	845	*3.9%*	1,409	*3.9%*	1,516	*3.8%*	1,478	*3.1%*
Indian	31	*0.2%*	43	*0.2%*	15	*0.0%*	68	*0.2%*	96	*0.2%*
White	11,329	*81.5%*	17,362	*80.0%*	30,777	*85.7%*	31,297	*78.0%*	37,137	*77.8%*
Other	88	*0.6%*	96	*0.4%*	479	*1.3%*	283	*0.7%*	457	*1.0%*
Unknown Sex	124	*0.6%*	192	*0.6%*	64	*0.1%*	279	*0.5%*	297	*0.4%*
Total Drivers	**19,756**	**96.6%**	**30,699**	**95.5%**	**47,901**	**92.1%**	**55,771**	**96.1%**	**66,190**	**95.8%**
Passengers										
Female	**255**	**36.3%**	**486**	**33.6%**	**1,288**	**31.4%**	**794**	**35.5%**	**1,008**	**35.0%**
Asian	1	*0.4%*	6	*1.2%*	1	*0.1%*	3	*0.4%*	6	*0.6%*
Black	22	*8.6%*	53	*10.9%*	91	*7.1%*	67	*8.4%*	75	*7.4%*
Hispanic	1	*0.4%*	4	*0.8%*	13	*1.0%*	9	*1.1%*	15	*1.5%*
Indian	1	*0.4%*	1	*0.2%*	0	*0.0%*	1	*0.1%*	2	*0.2%*
White	225	*88.2%*	419	*86.2%*	1,168	*90.7%*	713	*89.8%*	906	*89.9%*
Other	5	*2.0%*	3	*0.6%*	15	*1.2%*	1	*0.1%*	4	*0.4%*
Male	**445**	**63.4%**	**948**	**65.6%**	**2,810**	**68.5%**	**1,418**	**63.5%**	**1,856**	**64.5%**
Asian	3	*0.7%*	7	*0.7%*	3	*0.1%*	7	*0.5%*	3	*0.2%*
Black	50	*11.2%*	118	*12.4%*	202	*7.2%*	140	*9.9%*	183	*9.9%*
Hispanic	14	*3.1%*	54	*5.7%*	111	*4.0%*	45	*3.2%*	32	*1.7%*
Indian	1	*0.2%*	1	*0.1%*	0	*0.0%*	4	*0.3%*	2	*0.1%*
White	376	*84.5%*	761	*80.3%*	2,450	*87.2%*	1,209	*85.3%*	1,628	*87.7%*
Other	1	*0.2%*	7	*0.7%*	44	*1.6%*	13	*0.9%*	8	*0.4%*
Unknown Sex	2	*0.3%*	12	*0.8%*	4	*0.1%*	22	*1.0%*	14	*0.5%*
Total Passengers	**702**	**3.4%**	**1,446**	**4.5%**	**4,102**	**7.9%**	**2,234**	**3.9%**	**2,878**	**4.2%**
Total Convictions	**20,458**		**32,145**		**52,003**		**58,005**		**69,068**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 09 Jan 2009.
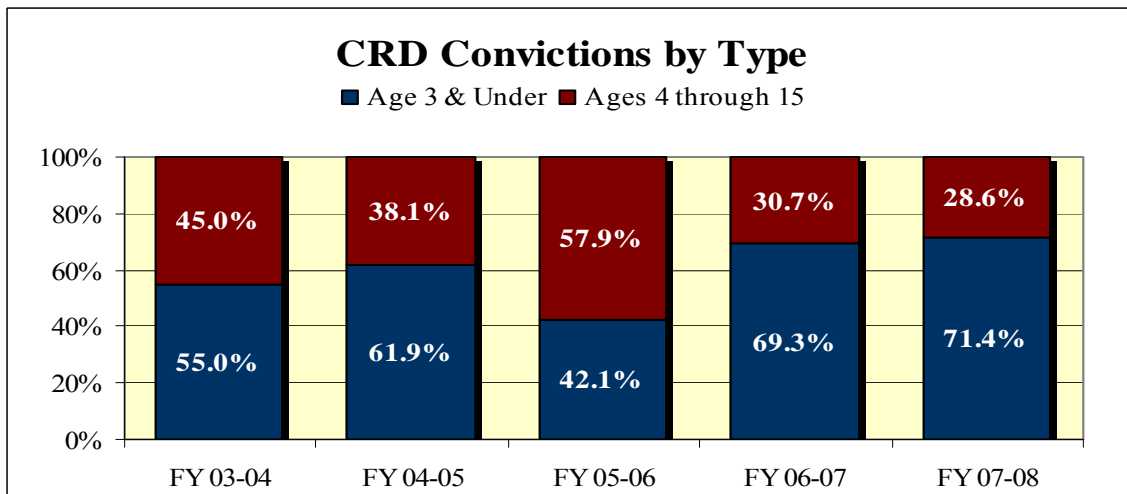
Child Restraint Convictions

Child restraint device (CRD) convictions reported by the court clerks to the Department of Safety were also analyzed to determine the numbers and percentages by age, race, and sex.

Child Restraint Device Convictions

FY	Convictions (approx.)
FY 03-04	~3,600
FY 04-05	~3,450
FY 05-06	~5,500
FY 06-07	~4,900
FY 07-08	~4,800
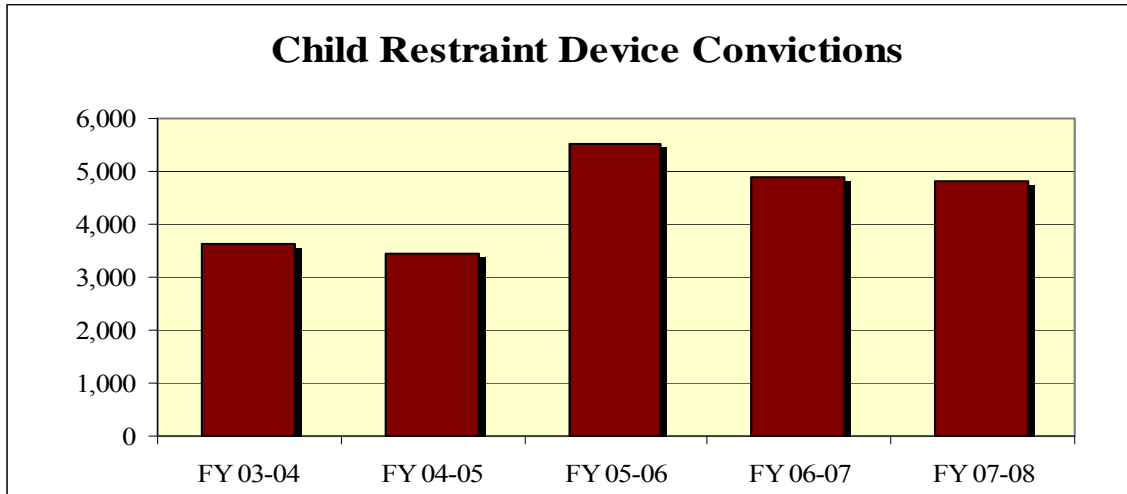
Type

Violations of CRD law (TCA § 55-9-602) are divided into two categories: (1) violations involving children three years of age and younger, and (2) violations involving children ages four through fifteen. Most years, more convictions were reported for violations involving children three years of age and younger, with the percentage of convictions of this type increasing from 55.0% in FY 03-04 to 71.4% in FY 07-08.

CRD Convictions by Type

■ Age 3 & Under ■ Ages 4 through 15

FY	Age 3 & Under	Ages 4 through 15
FY 03-04	55.0%	45.0%
FY 04-05	61.9%	38.1%
FY 05-06	42.1%	57.9%
FY 06-07	69.3%	30.7%
FY 07-08	71.4%	28.6%

Age

In the past five fiscal years, 69.2% of drivers convicted for CRD violations – ages 4 through 15 were between the ages 20 and 39, and 74.7% of drivers convicted for CRD violations – ages 3 and under also fell into this age group.

For drivers between the ages 20-39, convictions for CRD violations rose from 70.3% in FY 03-04 to 73.3% in FY 07-08. However, during this period, as percentage of all drivers convicted of CRD violations, 30 to 39 year old drivers fell from 30.2% to 29.3%. That these age groups represent the majority of convictions for CRD convictions is not surprising, as these are the ages during which most adults begin families, and would therefore be transporting children.
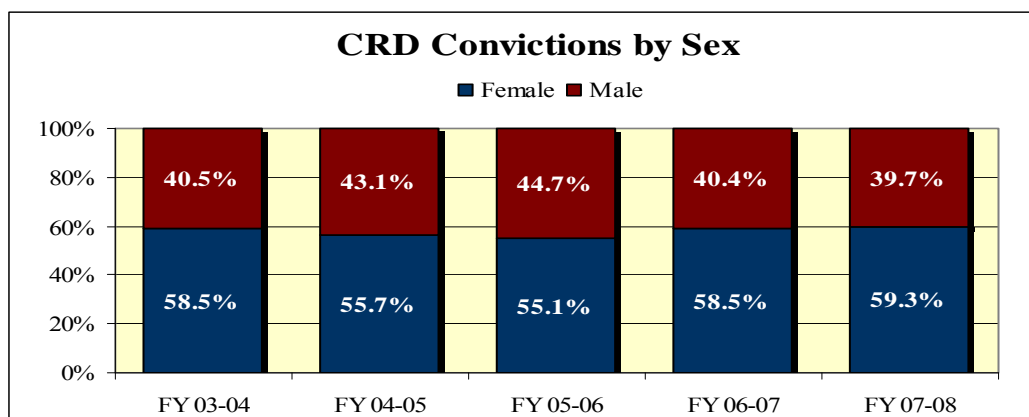
CRD Convictions - Age 3 and Under
FY 2007-2008

CRD Convictions - Ages 4 - 15
FY 2007-2008
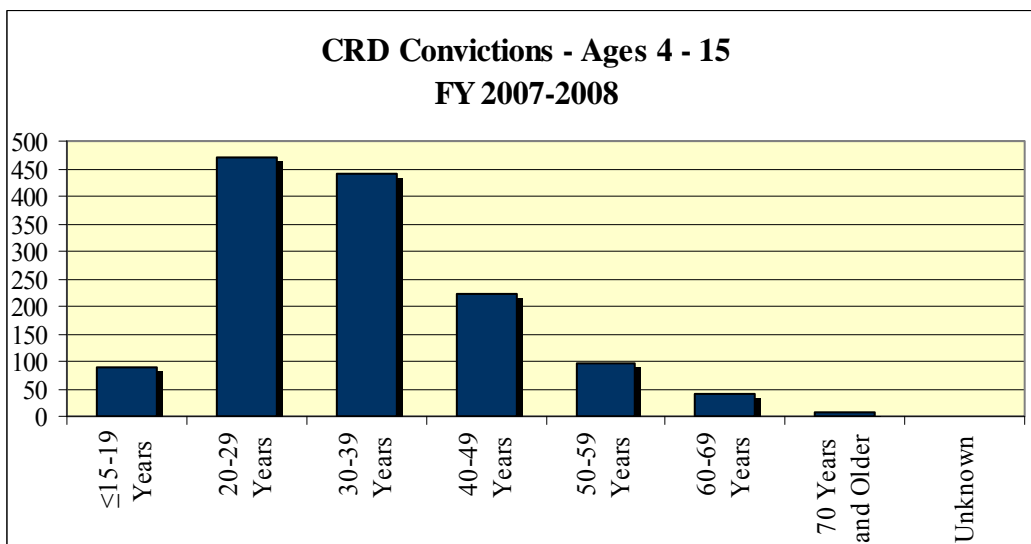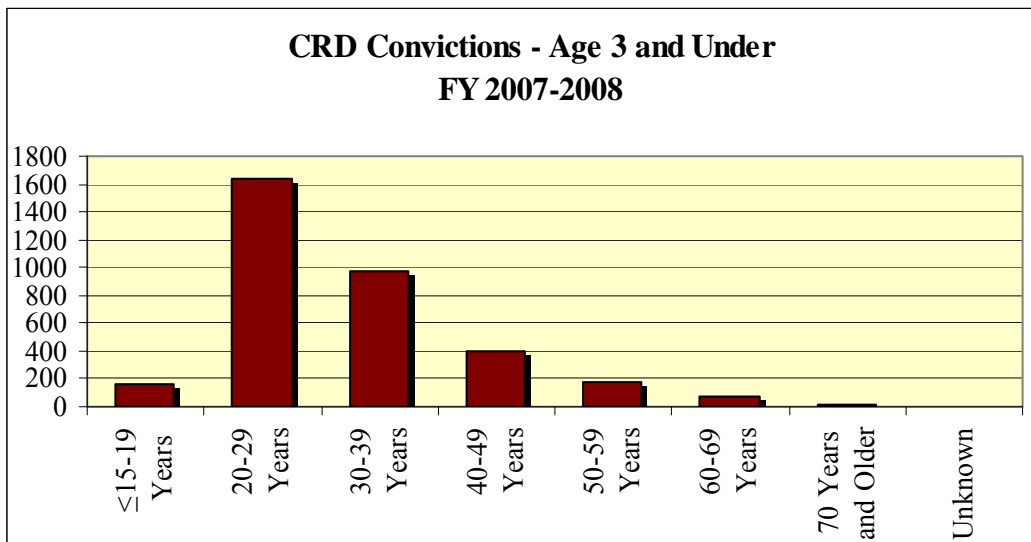
Child Restraint Device Convictions By Driver Age
Table 3

	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
CRD Convictions - Ages 4 through 15										
≤15-19 Years	130	8.0%	99	7.6%	286	8.9%	86	5.7%	90	6.6%
20-29 Years	512	31.3%	465	35.6%	1,169	36.4%	623	41.5%	471	34.3%
30-39 Years	590	36.1%	443	33.9%	1,067	33.3%	462	30.8%	440	32.1%
40-49 Years	254	15.5%	195	14.9%	436	13.6%	211	14.0%	223	16.3%
50-59 Years	101	6.2%	68	5.2%	162	5.1%	80	5.3%	98	7.1%
60-69 Years	42	2.6%	30	2.3%	58	1.8%	35	2.3%	42	3.1%
70+ Years	4	0.2%	5	0.4%	19	0.6%	5	0.3%	7	0.5%
Unknown	2	0.1%	2	0.2%	8	0.2%	0	0.0%	1	0.1%
Total	**1,635**	**45.0%**	**1,307**	**38.1%**	**3,205**	**57.9%**	**1,502**	**30.7%**	**1,372**	**28.6%**
CRD Convictions - Age 3 and Under										
≤15-19 Years	160	8.0%	149	7.0%	170	7.3%	263	7.7%	167	4.9%
20-29 Years	950	47.5%	1031	48.5%	1164	49.9%	1729	50.9%	1642	47.9%
30-39 Years	507	25.4%	562	26.4%	560	24.0%	810	23.9%	967	28.2%
40-49 Years	232	11.6%	260	12.2%	270	11.6%	388	11.4%	394	11.5%
50-59 Years	95	4.8%	91	4.3%	113	4.8%	133	3.9%	175	5.1%
60-69 Years	40	2.0%	27	1.3%	38	1.6%	59	1.7%	67	2.0%
70+ Years	11	0.6%	3	0.1%	8	0.3%	12	0.4%	16	0.5%
Unknown	5	0.3%	4	0.2%	8	0.3%	2	0.1%	3	0.1%
Total	**2,000**	**55.0%**	**2,127**	**61.9%**	**2,331**	**42.1%**	**3,396**	**69.3%**	**3,431**	**71.4%**
FY Total	**3,635**		**3,434**		**5,536**		**4,898**		**4,803**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 09 Jan 2009.

Sex and Race

Unlike safety belt convictions, the majority of all CRD convictions reported to the Department of Safety were females. In FY 07-08, females represented over 59% of all CRD convictions reported. The chart below illustrates the percentage of males versus females for all convictions reported.

CRD Convictions by Sex

■ Female ■ Male

	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08
Male	40.5%	43.1%	44.7%	40.4%	39.7%
Female	58.5%	55.7%	55.1%	58.5%	59.3%

Both male and female violators of the CRD laws were predominately white. As was reported with safety belt convictions, the percentage of both black and Hispanic drivers convicted for CRD violations has shown a slight increase over the five-year period.

Males Convicted of CRD Violations By Race

Black ■ Hispanic ■ White □ Other

Females Convicted Of CRD Violations By Race

Black ■ Hispanic ■ White □ Other
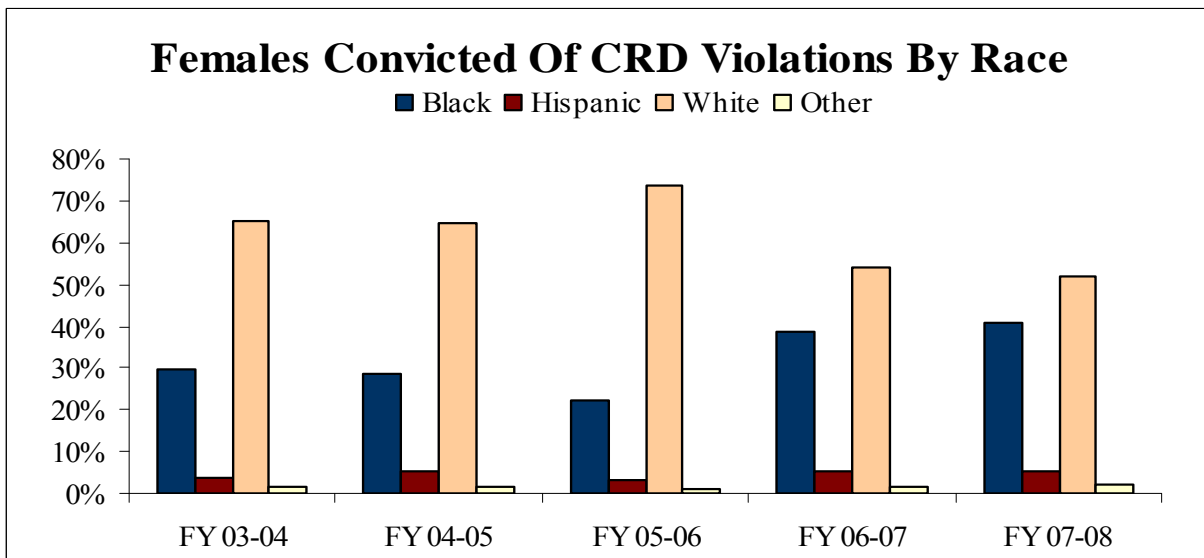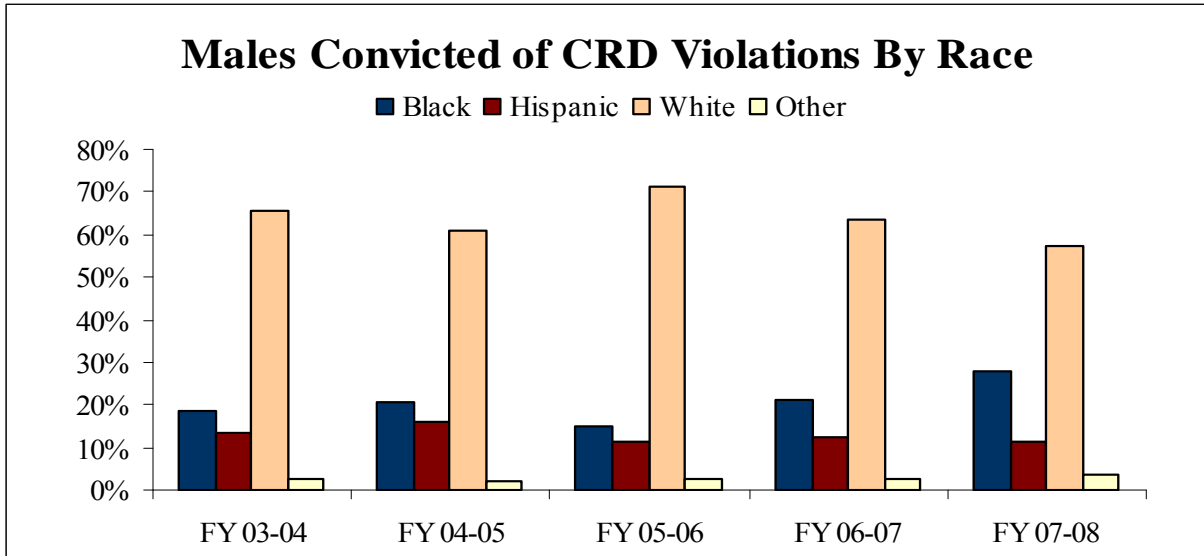
CRD Convictions Reported By Type, Sex, and Race
Table 4

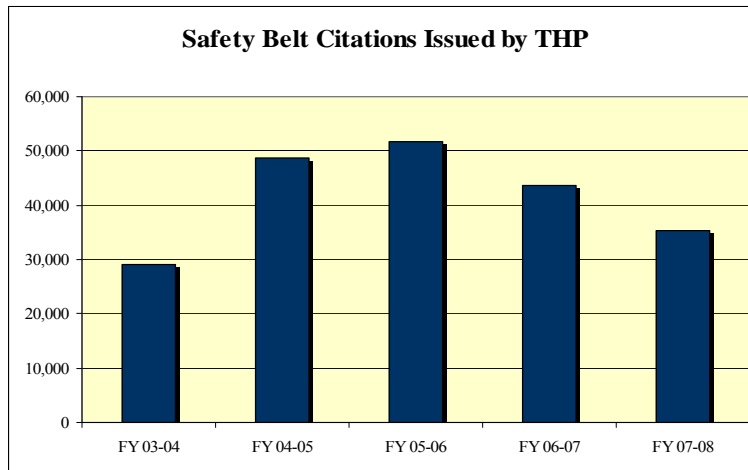|	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
CRD Convictions - Ages 4 through 15										
Female	**956**	**58.5%**	**713**	**54.6%**	**1,719**	**53.6%**	**828**	**55.1%**	**777**	**56.6%**
Black	212	*22.2%*	157	*22.0%*	320	*18.6%*	236	*28.5%*	207	*26.6%*
Hispanic	29	*3.0%*	29	*4.1%*	40	*2.3%*	45	*5.4%*	29	*3.7%*
White	701	*73.3%*	516	*72.4%*	1,346	*78.3%*	529	*63.9%*	534	*68.7%*
Other	14	*1.5%*	11	*1.5%*	13	*0.8%*	18	*2.2%*	7	*0.9%*
Male	**669**	**40.9%**	**581**	**44.5%**	**1,480**	**46.2%**	**664**	**44.2%**	**584**	**42.6%**
Black	92	*13.8%*	95	*16.4%*	179	*12.1%*	122	*18.4%*	108	*18.5%*
Hispanic	55	*8.2%*	61	*10.5%*	130	*8.8%*	103	*15.5%*	32	*5.5%*
White	500	*74.7%*	408	*70.2%*	1,127	*76.1%*	426	*64.2%*	430	*73.6%*
Other	22	*3.3%*	17	*2.9%*	44	*3.0%*	13	*2.0%*	14	*2.4%*
Unknown Sex	10	*0.6%*	13	*0.8%*	6	*0.4%*	10	*0.6%*	11	*0.7%*
Total	**1,635**	**44.9%**	**1,307**	**35.9%**	**3,205**	**88.1%**	**1,502**		**1,372**	**38.1%**
CRD Convictions - Age 3 and Under										
Female	**1,171**	**58.5%**	**1,200**	**56.4%**	**1,333**	**57.2%**	**2,038**	**60.0%**	**2,070**	**60.3%**
Black	415	*35.4%*	392	*32.7%*	353	*26.5%*	879	*43.1%*	948	*45.8%*
Hispanic	46	*3.9%*	73	*6.1%*	51	*3.8%*	104	*5.1%*	125	*6.0%*
White	687	*58.7%*	718	*59.8%*	907	*68.0%*	1,025	*50.3%*	940	*45.4%*
Other	23	*2.0%*	17	*1.4%*	22	*1.7%*	30	*1.5%*	57	*2.8%*
Male	**805**	**40.2%**	**900**	**42.3%**	**994**	**42.6%**	**1,317**	**38.8%**	**1,323**	**38.6%**
Black	180	*22.4%*	213	*23.7%*	193	*19.4%*	414	*31.4%*	421	*31.8%*
Hispanic	143	*17.8%*	174	*19.3%*	143	*14.4%*	214	*16.2%*	187	*14.1%*
White	466	*57.9%*	496	*55.1%*	631	*63.5%*	653	*49.6%*	664	*50.2%*
Other	16	*2.0%*	17	*1.9%*	27	*2.7%*	36	*2.7%*	51	*3.9%*
Unknown Sex	27	*1.3%*	27	*1.3%*	4	*0.2%*	41	*2.0%*	38	*1.9%*
Total	**2,003**	**55.1%**	**2,127**	**58.5%**	**2,331**	**64.1%**	**3,396**	**93.3%**	**3,431**	**95.2%**
Grand Total	**3,638**		**3,434**		**5,536**		**4,898**		**4,803**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 09 Jan 2009.

Citations

Citations Issued by the Tennessee Highway Patrol (THP)

THP-Issued Citations for Safety Belt Violations

The chart below illustrates the number of safety belt citations issued by the THP over the last five years. Over the last five fiscal years, there was a significant increase in the number of safety belt citations issued. This increase can be attributed to the new primary use law that became effective July 1, 2004.
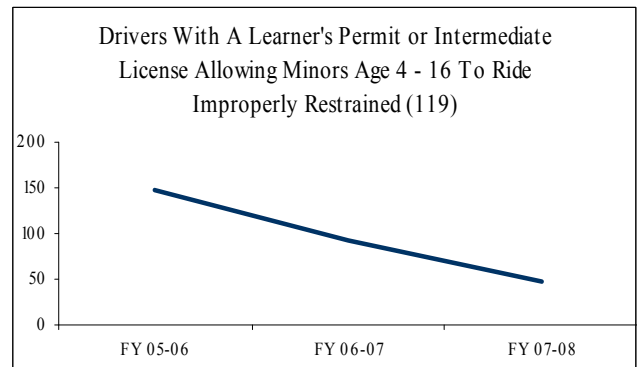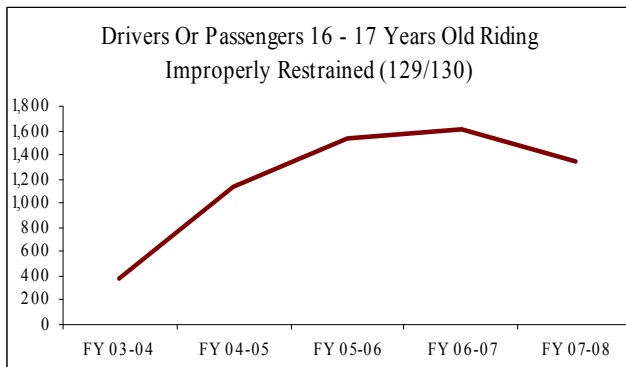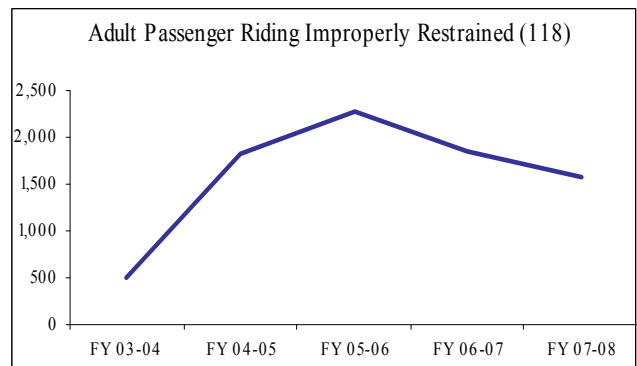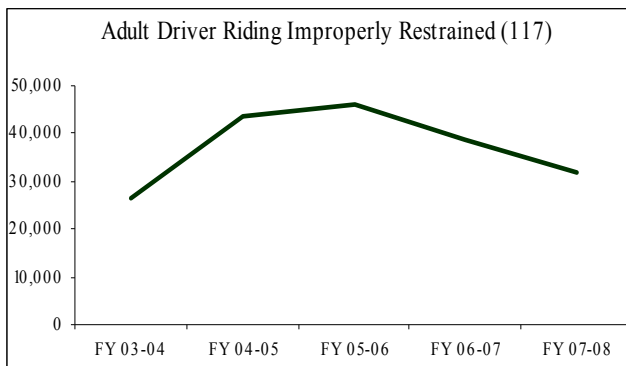

Safety Belt Citations Issued by THP

THP Citations Issued for Safety Belt Violations By Person Type and Age
Table 5

	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
Driver										
15 Years and Under	83	0.3%	80	0.2%	40	0.1%	29	0.1%	20	0.1%
16 Years	473	1.7%	554	1.2%	426	0.9%	342	0.9%	172	0.5%
17 Years	757	2.7%	1,106	2.4%	882	1.8%	619	1.5%	361	1.1%
18 Years	1,472	5.2%	2,366	5.2%	2,356	4.9%	1,946	4.9%	1,586	4.9%
19 Years	1,523	5.4%	2,529	5.6%	2,433	5.1%	2,069	5.2%	1,637	5.1%
20 Years	1,420	5.1%	2,223	4.9%	2,336	4.9%	1,893	4.7%	1,459	4.5%
21-24 Years	5,210	18.5%	7,907	17.4%	7,940	16.6%	6,503	16.3%	5,291	16.3%
25-34 Years	8,036	28.6%	12,689	27.9%	13,364	28.0%	11,217	28.1%	9,161	28.3%
35-44 Years	4,852	17.3%	8,217	18.1%	9,159	19.2%	7,654	19.1%	6,213	19.2%
45-54 Years	2,485	8.8%	4,742	10.4%	5,181	10.9%	4,718	11.8%	3,947	12.2%
55-64 Years	1,137	4.0%	1,974	4.3%	2,414	5.1%	2,069	5.2%	1,778	5.5%
65-74 Years	325	1.2%	612	1.3%	666	1.4%	592	1.5%	585	1.8%
75 Years and Older	160	0.6%	225	0.5%	276	0.6%	239	0.6%	165	0.5%
Unknown	162	0.6%	240	0.5%	219	0.5%	96	0.2%	35	0.1%
Total	**28,095**	**96.8%**	**45,464**	**93.5%**	**47,692**	**92.3%**	**39,986**	**91.9%**	**32,410**	**91.5%**
Passenger										
15 Years and Under	17	1.8%	53	1.7%	56	1.4%	65	1.8%	51	1.7%
16 Years	136	14.7%	503	15.9%	595	15.0%	636	18.0%	535	17.9%
17 Years	217	23.4%	651	20.6%	900	22.7%	891	25.2%	779	26.0%
18 Years	67	7.2%	217	6.9%	238	6.0%	190	5.4%	149	5.0%
19 Years	43	4.6%	148	4.7%	200	5.0%	146	4.1%	131	4.4%
20 Years	45	4.8%	152	4.8%	182	4.6%	115	3.2%	123	4.1%
21-24 Years	94	10.1%	398	12.6%	484	12.2%	389	11.0%	295	9.8%
25-34 Years	135	14.5%	468	14.8%	633	16.0%	523	14.8%	464	15.5%
35-44 Years	97	10.5%	299	9.5%	362	9.1%	329	9.3%	259	8.6%
45-54 Years	50	5.4%	168	5.3%	192	4.8%	159	4.5%	147	4.9%
55-64 Years	16	1.7%	58	1.8%	67	1.7%	55	1.6%	37	1.2%
65-74 Years	2	0.2%	13	0.4%	30	0.8%	22	0.6%	18	0.6%
75 Years and Older	2	0.2%	2	0.1%	4	0.1%	13	0.4%	8	0.3%
Unknown	7	0.8%	26	0.8%	20	0.5%	6	0.2%	0	0.0%
Total	**928**	**3.2%**	**3,156**	**6.5%**	**3,963**	**7.7%**	**3,539**	**8.1%**	**2,996**	**8.5%**
Overall Total	**29,023**		**48,620**		**51,655**		**43,525**		**35,406**	

Source: *TN Dept of Safety, Office of Research, Statistics, and Analysis, 05 Jan 2009*

Person Type

THP citations followed the statewide conviction pattern with the overwhelming majority issued to drivers. Over the five year period, drivers received almost 93% of all THP citations issued. However, when comparing FY 03-04 and FY 04-05, the percentage of citations issued to passengers more than doubled, from 3.2% to 6.5% and continued to increase, reaching 8.5% in FY 07-08. Again, this can be attributed to the new safety belt legislation which became effective July 1, 2004. The graphs below illustrate the trends for citations issued by THP over the past five years based on the type of safety belt violation.

Adult Driver Riding Improperly Restrained (117)

Adult Passenger Riding Improperly Restrained (118)

Drivers Or Passengers 16 - 17 Years Old Riding Improperly Restrained (129/130)

Drivers With A Learner's Permit or Intermediate License Allowing Minors Age 4 - 16 To Ride Improperly Restrained (119)
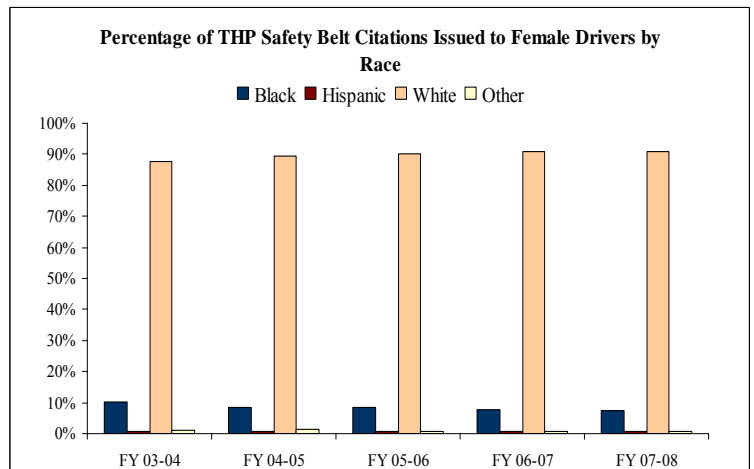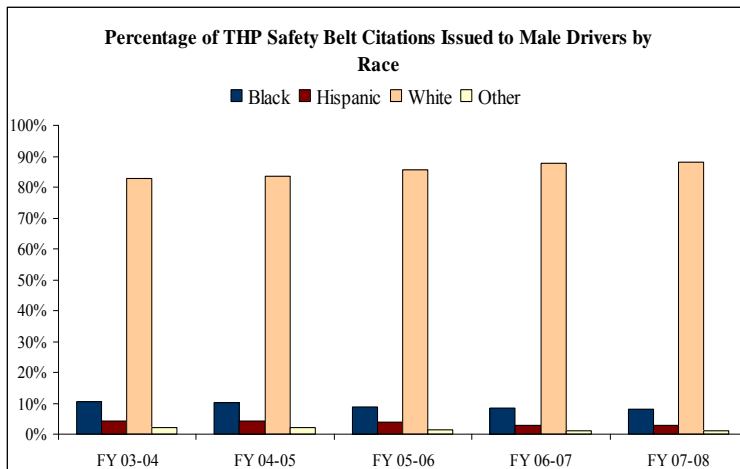
Age

Similar to the pattern of convictions in each of the last five years, over 63% of the drivers issued safety belt citations in FY 07-08 by THP were between the ages of 21-44. Drivers between the ages of 15-24 saw a 21% decrease in the number of citations issued by THP from 13,401 in FY 06-07 to 10,526 in FY 07-08, but remained the most cited group. Drivers between ages 25-34, the second most frequently ticketed age group, were issued over 28% of the citations during the fiscal year.

THP-Issued Safety Belt Citations By Age
FY 2007-2008
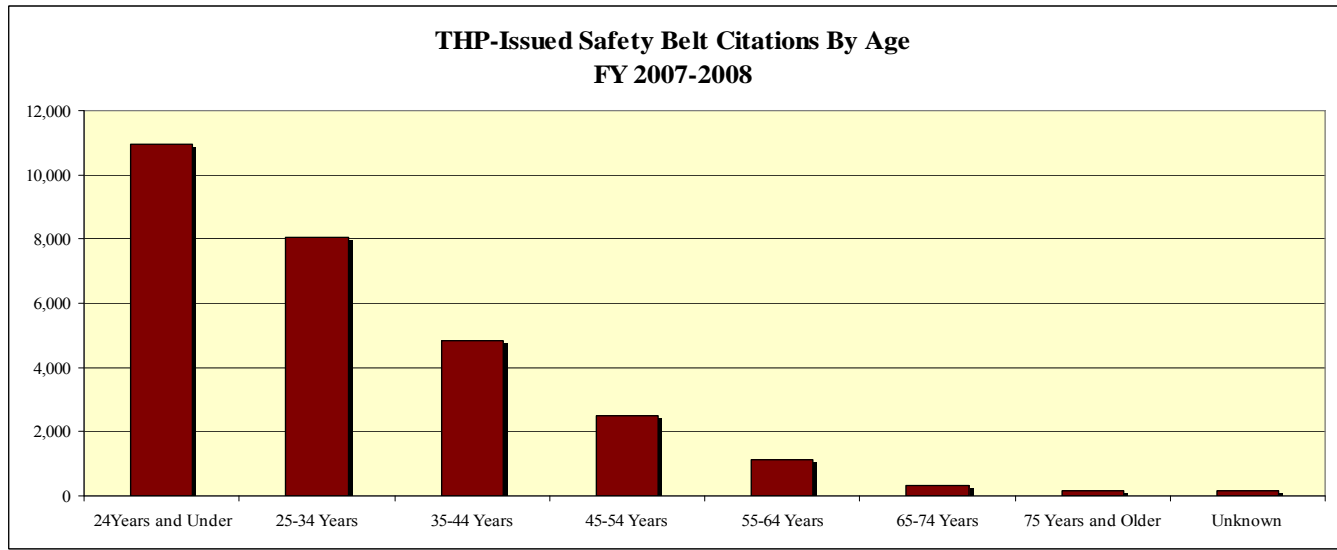
Sex and Race

Males accounted for 76% of the drivers ticketed, which is slightly higher than in the previous five years. Table 6 on the next page shows the numbers and percentages of THP citations for safety belt violations by type, sex, and race. Of the male drivers receiving citations from Troopers, white males received over 85% during the five-year period, black males received 9.2%, and Hispanic males received 3.7%. Of the female drivers receiving citations from Troopers, white females received 89.9% over the five-year period, black females received 8.4%, and Hispanic females received 0.7%.

Percentage of THP Safety Belt Citations Issued to Male Drivers by Race

Percentage of THP Safety Belt Citations Issued to Female Drivers by Race

THP-Issued Safety Belt Citations By Type, Sex, and Race
Table 6

	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
Drivers										
Female	**6,890**	**24.5%**	**11,162**	**24.6%**	**11,863**	**24.9%**	**9,938**	**24.9%**	**7,740**	**23.9%**
Asian	5	*0.1%*	9	*0.1%*	7	*0.1%*	8	*0.1%*	6	*0.1%*
Black	704	*10.2%*	944	*8.5%*	1,015	*8.6%*	757	*7.6%*	576	*7.4%*
Hispanic	56	*0.8%*	76	*0.7%*	65	*0.5%*	75	*0.8%*	59	*0.8%*
Indian	2	*0.0%*	3	*0.0%*	1	*0.0%*	1	*0.0%*	4	*0.1%*
White	6,050	*87.8%*	9,994	*89.5%*	10,679	*90.0%*	9,021	*90.8%*	7,044	*91.0%*
Other	73	*1.1%*	136	*1.2%*	96	*0.8%*	76	*0.8%*	51	*0.7%*
Male	**21,178**	**75.4%**	**34,268**	**75.4%**	**35,768**	**75.0%**	**30,016**	**75.1%**	**24,638**	**76.0%**
Asian	20	*0.1%*	51	*0.1%*	67	*0.2%*	36	*0.1%*	38	*0.2%*
Black	2,241	*10.6%*	3,486	*10.2%*	3,153	*8.8%*	2,514	*8.4%*	1,990	*8.1%*
Hispanic	907	*4.3%*	1,448	*4.2%*	1,393	*3.9%*	866	*2.9%*	715	*2.9%*
Indian	4	*0.0%*	12	*0.0%*	15	*0.0%*	10	*0.0%*	14	*0.1%*
White	17,573	*83.0%*	28,615	*83.5%*	30,663	*85.7%*	26,320	*87.7%*	21,696	*88.1%*
Other	433	*2.0%*	656	*1.9%*	477	*1.3%*	270	*0.9%*	185	*0.8%*
Unknown Sex	27		34		61		32		32	
Total Drivers	**28,095**		**45,464**		**47,692**		**39,986**		**32,410**	
Passengers										
Female	**286**	**30.8%**	**1,015**	**32.2%**	**1,252**	**31.6%**	**1,055**	**29.8%**	**885**	**29.5%**
Asian	0	*0.0%*	2	*0.2%*	1	*0.1%*	0	*0.0%*	0	*0.0%*
Black	26	*9.1%*	85	*8.4%*	87	*6.9%*	60	*5.7%*	33	*3.7%*
Hispanic	0	*0.0%*	10	*1.0%*	11	*0.9%*	6	*0.6%*	5	*0.6%*
Indian	0	*0.0%*	0	*0.0%*	0	*0.0%*	0	*0.0%*	0	*0.0%*
White	250	*87.4%*	898	*88.5%*	1,138	*90.9%*	980	*92.9%*	840	*94.9%*
Other	10	*3.5%*	20	*2.0%*	15	*1.2%*	9	*0.9%*	7	*0.8%*
Male	**642**	**69.2%**	**2,137**	**67.7%**	**2,707**	**68.3%**	**2,481**	**70.1%**	**2,108**	**70.4%**
Asian	2	*0.3%*	7	*0.3%*	3	*0.1%*	3	*0.1%*	1	*0.0%*
Black	48	*7.5%*	216	*10.1%*	197	*7.3%*	168	*6.8%*	118	*5.6%*
Hispanic	22	*3.4%*	110	*5.1%*	108	*4.0%*	82	*3.3%*	39	*1.9%*
Indian	0	*0.0%*	0	*0.0%*	0	*0.0%*	0	*0.0%*	1	*0.0%*
White	548	*85.4%*	1,755	*82.1%*	2,356	*87.0%*	2,207	*89.0%*	1,937	*91.9%*
Other	22	*3.4%*	49	*2.3%*	43	*1.6%*	21	*0.8%*	12	*0.6%*
Unknown Sex	0		4		4		3		3	
Total Passengers	**928**		**3,156**		**3,963**		**3,539**		**2,996**	
Total Citations	**29,023**		**48,620**		**51,655**		**43,525**		**35,406**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 06 Jan 2009.

THP-Issued Citations for Child Restraint Device (CRD) Violations

The graph below illustrates the number of CRD citations issued by the THP over the last five years. The graph shows that CRD citations issued by THP have steadily decreased since FY 04-05.
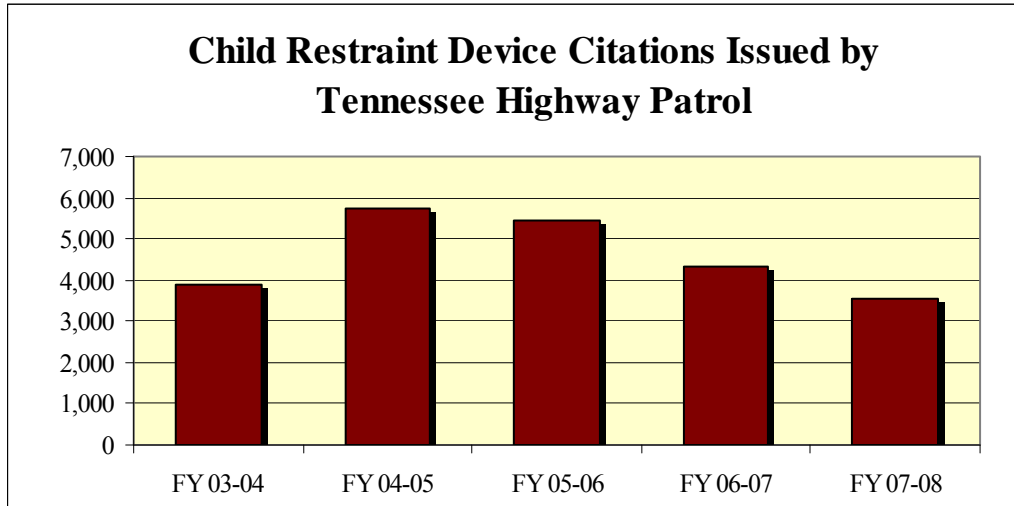
Child Restraint Device Citations Issued by Tennessee Highway Patrol

FY 03-04 | FY 04-05 | FY 05-06 | FY 06-07 | FY 07-08

Table 7 shows the number of THP citations issued by type (3 years of age and under/4-15 years of age) and guardian age.

## THP-Issued Child Restraint Device Citations By Age
Table 7

	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
CRD Citations - Ages 4 through 15										
≤15-19 Years	171	8.6%	304	9.5%	286	9.0%	216	8.7%	143	7.0%
20-29 Years	662	33.2%	1,120	35.0%	1,154	36.3%	858	34.6%	730	35.9%
30-39 Years	687	34.5%	1,085	33.9%	1,067	33.6%	830	33.5%	699	34.3%
40-49 Years	289	14.5%	438	13.7%	427	13.4%	350	14.1%	274	13.5%
50-59 Years	111	5.6%	157	4.9%	158	5.0%	137	5.5%	125	6.1%
60-69 Years	43	2.2%	66	2.1%	58	1.8%	70	2.8%	49	2.4%
70 Years and	28	1.4%	24	0.8%	17	0.5%	19	0.8%	14	0.7%
Unknown	2	0.1%	3	0.1%	8	0.3%	1	0.0%	1	0.0%
Total	**1,993**	**51.5%**	**3,197**	**55.9%**	**3,175**	**58.1%**	**2,481**	**57.7%**	**2,035**	**57.2%**
CRD Citations - Age 3 and Under										
≤15-19 Years	141	7.5%	174	6.9%	166	7.3%	151	8.3%	76	5.0%
20-29 Years	946	50.3%	1227	48.6%	1136	49.7%	896	49.2%	768	50.5%
30-39 Years	478	25.4%	670	26.5%	552	24.1%	471	25.9%	414	27.2%
40-49 Years	188	10.0%	311	12.3%	268	11.7%	197	10.8%	150	9.9%
50-59 Years	65	3.5%	88	3.5%	112	4.9%	74	4.1%	73	4.8%
60-69 Years	36	1.9%	22	0.9%	38	1.7%	16	0.9%	25	1.6%
70 Years and	26	1.4%	28	1.1%	8	0.3%	16	0.9%	12	0.8%
Unknown	0	0.0%	7	0.3%	8	0.3%	1	0.1%	2	0.1%
Total	**1,880**	**48.5%**	**2,527**	**44.1%**	**2,288**	**41.9%**	**1,822**	**42.3%**	**1,520**	**42.8%**
FY Total	**3,873**		**5,724**		**5,463**		**4,303**		**3,555**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 06 Jan 2009.

Type

Unlike convictions reported by court clerks, CRD citations issued by THP were nearly split in half by type, with citations involving children ages 4-15 as a slight majority of the citations issued in FY 06-07. The graph below illustrates the trends for citations issued by THP over the past five years based on the type of CRD violation.

THP-Issued CRD Citations by Type

CRD Citations - Ages 4 through 15 — CRD Citations - Age 3 and Under

Age
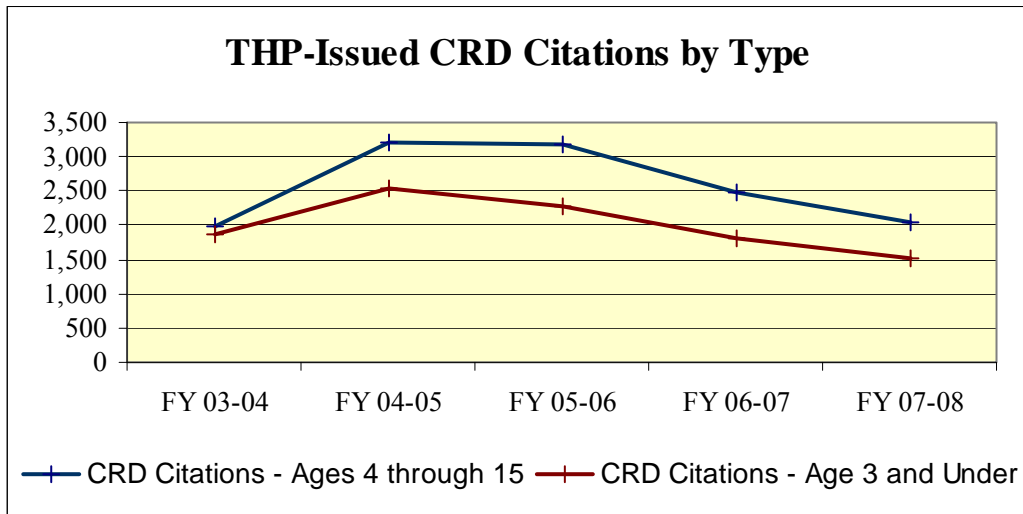
Similar to the pattern of convictions, over the last five years, 72% of the drivers issued CRD citations by THP were between the ages of 20-39. This is plausible, as this age group is the most likely to have children of an age to require use of child restraint devices. During the same period, drivers age 20-29 comprised almost half of the citations issued involving children age 3 and under.

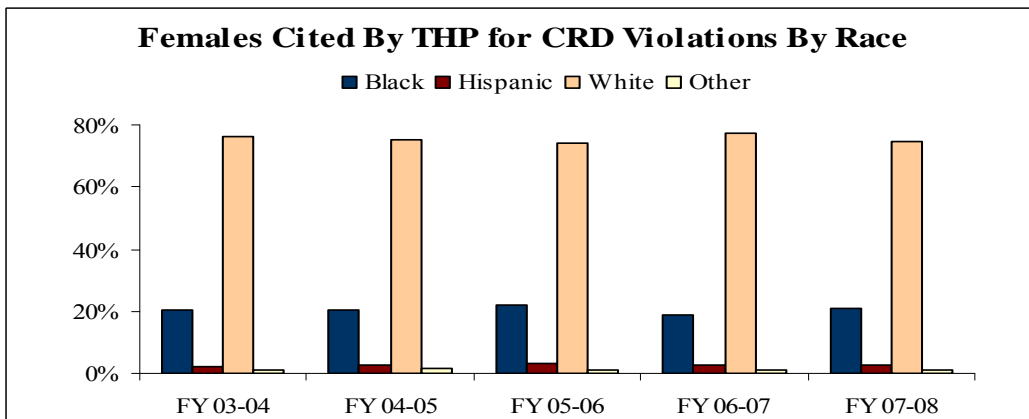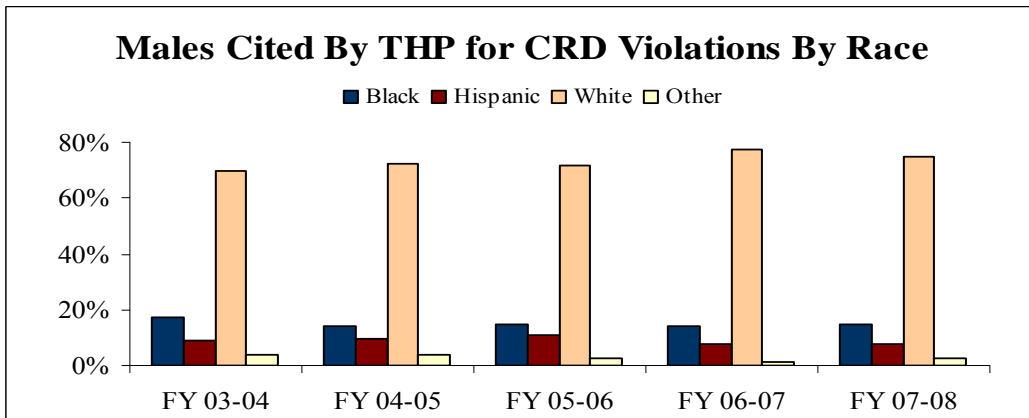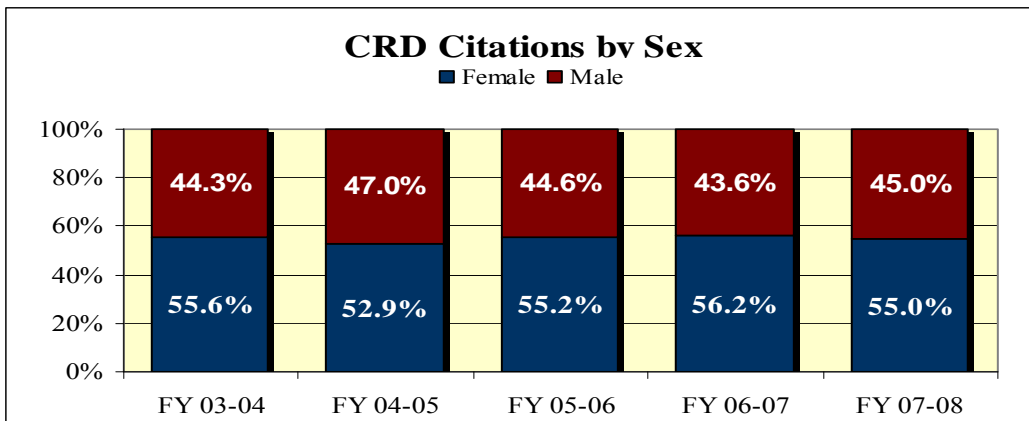**CRD Citations - Age 3 and Under**
FY 2007-2008
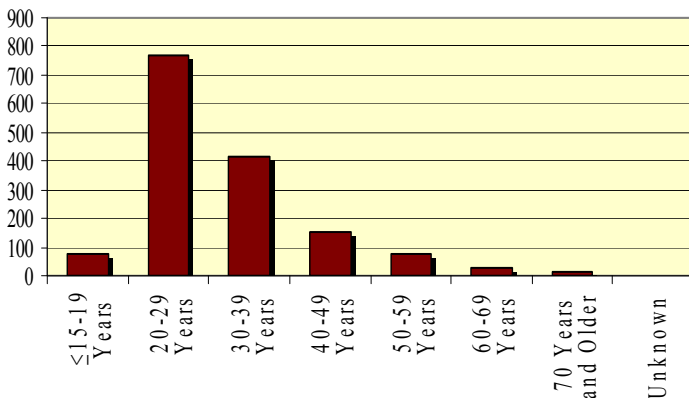
CRD Citations - Ages 4 - 15
FY 2007-2008
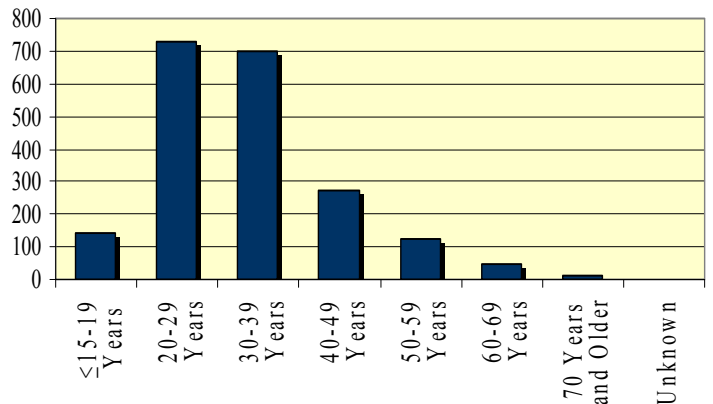
Sex and Race

Following a pattern similar to CRD convictions, THP issued slightly more citations to females than males for violations involving child restraints. In FY 07-08, females represented 55% of all CRD citations issued. The first graph below illustrates the percentage of males versus females for all citations issued. Of females ticketed, white females accounted for 75.4% over the five-year period, black females about 21%, and Hispanic females 2.7%. The percentages of drivers cited for CRD violations has remained relatively constant among racial and gender categories. Table 8 on the next page shows citations issued by type, sex, and race.

CRD Citations by Sex

Female ■ Male ■

	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08
Male	44.3%	47.0%	44.6%	43.6%	45.0%
Female	55.6%	52.9%	55.2%	56.2%	55.0%

Males Cited By THP for CRD Violations By Race

■ Black ■ Hispanic □ White □ Other

Females Cited By THP for CRD Violations By Race

■ Black ■ Hispanic □ White □ Other

THP-Issued CRD Citations By Type, Sex, and Race
Table 8

|	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08	
CRD Citations - Ages 4 through 15										
Female	**1,078**	**54.1%**	**1,713**	**53.6%**	**1,709**	**53.8%**	**1,363**	**54.9%**	**1,109**	**54.5%**
Asian	0	*0.0%*	2	*0.1%*	3	*0.2%*	2	*0.1%*	2	*0.2%*
Black	170	*15.8%*	262	*15.3%*	316	*18.5%*	222	*16.3%*	180	*16.2%*
Hispanic	23	*2.1%*	34	*2.0%*	41	*2.4%*	34	*2.5%*	29	*2.6%*
Indian	0	*0.0%*	0	*0.0%*	0	*0.0%*	0	*0.0%*	0	*0.0%*
White	872	*80.9%*	1,392	*81.3%*	1,339	*78.3%*	1,093	*80.2%*	885	*79.8%*
Other	13	*1.2%*	23	*1.3%*	10	*0.6%*	12	*0.9%*	13	*1.2%*
Male	**914**	**45.9%**	**1,482**	**46.4%**	**1,460**	**46.0%**	**1,117**	**45.0%**	**924**	**45.4%**
Asian	5	*0.5%*	4	*0.3%*	9	*0.6%*	2	*0.2%*	8	*0.9%*
Black	124	*13.6%*	186	*12.6%*	172	*11.8%*	124	*11.1%*	97	*10.5%*
Hispanic	50	*5.5%*	97	*6.5%*	130	*8.9%*	63	*5.6%*	60	*6.5%*
Indian	1	*0.1%*	0	*0.0%*	0	*0.0%*	1	*0.1%*	0	*0.0%*
White	705	*77.1%*	1,149	*77.5%*	1,116	*76.4%*	912	*81.6%*	750	*81.2%*
Other	29	*3.2%*	46	*3.1%*	33	*2.3%*	15	*1.3%*	9	*1.0%*
Unknown Sex	1	0.1%	2	0.1%	6	0.3%	1	0.1%	2	0.1%
Total	**1,993**	**51.5%**	**3,197**	**82.5%**	**3,175**	**82.0%**	**2,481**		**2,035**	52.5%
CRD Citations - Age 3 and Under										
Female	**1,076**	**57.2%**	**1,314**	**52.0%**	**1,309**	**57.2%**	**1,057**	**58.0%**	**845**	**55.6%**
Asian	3	*0.3%*	0	*0.0%*	1	*0.1%*	1	*0.1%*	3	*0.4%*
Black	274	*25.5%*	357	*27.2%*	345	*26.4%*	231	*21.9%*	233	*27.6%*
Hispanic	23	*2.1%*	44	*3.3%*	51	*3.9%*	37	*3.5%*	25	*3.0%*
Indian	0	*0.0%*	1	*0.1%*	1	*0.1%*	0	*0.0%*	0	*0.0%*
White	765	*71.1%*	885	*67.4%*	891	*68.1%*	783	*74.1%*	577	*68.3%*
Other	11	*1.0%*	27	*2.1%*	20	*1.5%*	5	*0.5%*	7	*0.8%*
Male	**801**	**42.6%**	**1,211**	**47.9%**	**976**	**42.7%**	**761**	**41.8%**	**674**	**44.3%**
Asian	5	*0.6%*	5	*0.4%*	4	*0.4%*	1	*0.1%*	3	*0.4%*
Black	177	*22.1%*	198	*16.4%*	189	*19.4%*	135	*17.7%*	139	*20.6%*
Hispanic	107	*13.4%*	165	*13.6%*	134	*13.7%*	79	*10.4%*	65	*9.6%*
Indian	1	*0.1%*	1	*0.1%*	0	*0.0%*	1	*0.1%*	0	*0.0%*
White	488	*60.9%*	795	*65.6%*	626	*64.1%*	537	*70.6%*	451	*66.9%*
Other	23	*2.9%*	47	*3.9%*	23	*2.4%*	8	*1.1%*	16	*2.4%*
Unknown Sex	3	0.2%	2	0.1%	3	0.2%	4	0.2%	1	0.1%
Total	**1,880**	**48.5%**	**2,527**	**65.2%**	**2,288**	**59.1%**	**1,822**	**47.0%**	**1,520**	**39.2%**
Grand Total	**3,873**		**5,724**		**5,463**		**4,303**		**3,555**	

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 06 Jan 2009.
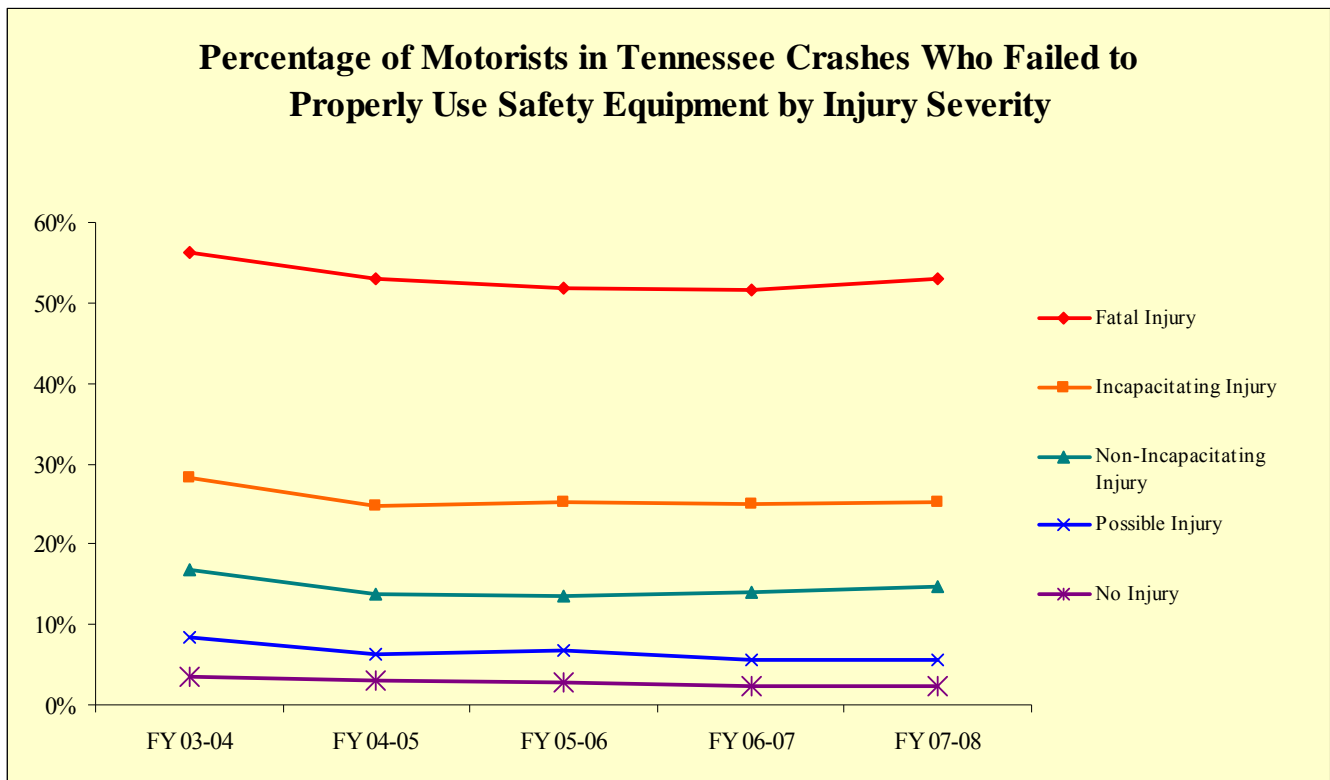
Supplemental Information

Safety Belt Surveys

The National Highway Traffic Safety Administration commissions and funds standardized safety belt usage surveys each year in every State and U.S. Territory through the various Governors' Highway Safety Offices. In Tennessee, the University of Tennessee's Center for Transportation Research conducts the survey and publishes its findings in *Survey of Safety Belt and Motorcycle Helmet Usage In Tennessee*. Results of the surveys are analyzed by the National Center for Statistics and Analysis, and then published in the U.S. Department of Transportation's "Traffic Safety Facts – Crash Stats."

The chart below shows the survey results for Tennessee for calendar years 2004 through 2008. As a result of the primary enforcement provision that went into effect July 1, 2004, there has been an increase in the usage rate from 74.4% in 2005 to 81.5% in 2008, and this trend is expected to continue. Copies of the above-referenced publications can be found as attachments.

Tennessee Safety Belt Usage Rates

Year	Rate
2004	72.0%
2005	74.4%
2006	78.6%
2007	80.2%
2008	81.5%
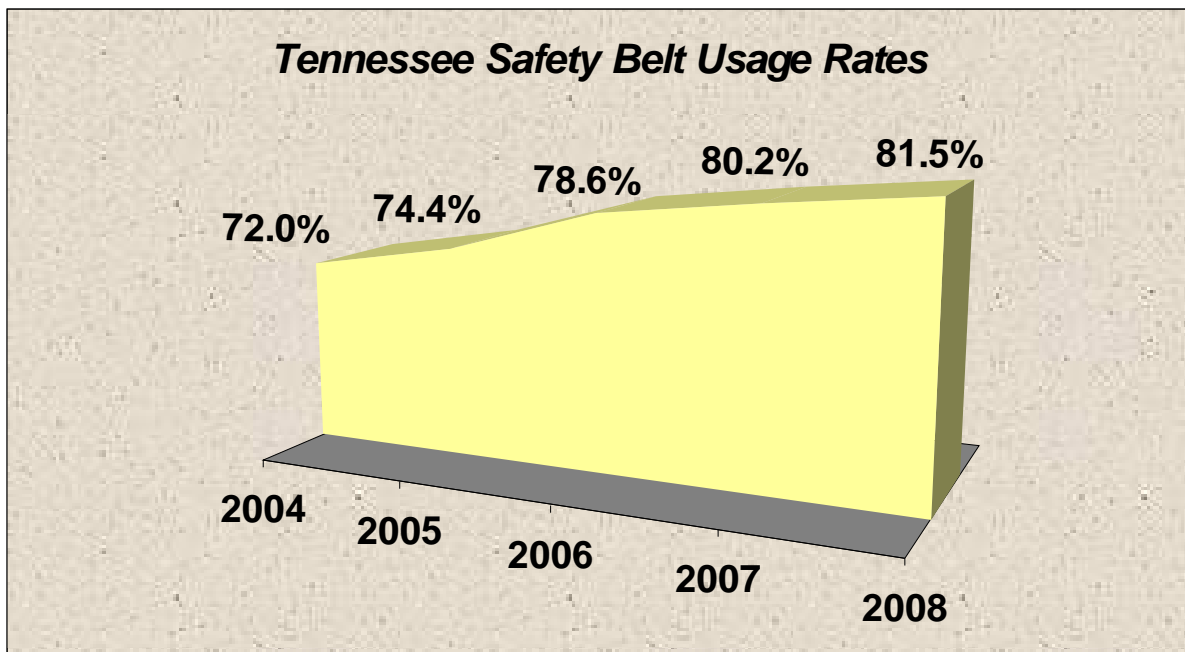
Tennessee Traffic Crashes

During the five-year period, police reported safety restraint usage by vehicle occupants in traffic crashes increased. In FY 03-04, police reported that 5.3% of vehicle occupants involved in traffic crashes were not restrained. This percentage decreased significantly over the years to 3.6% in FY 07-08. When comparing FY 03-04 to FY 07-08, the numbers indicate a significant reduction in all injury categories for the percentage of unrestrained drivers: No Injury = 3.6% to 2.2%; Possible Injury = 8.5% to 5.7%; Non-Incapacitating Injury = 16.9% to 15.6%; Incapacitating Injury = 28.2% to 25.1%; and, Fatal Injury = 56.2% to 53.0%. Overall, over the past five years the statistics show a continuing increase in safety restraint usage by vehicle occupants involved in traffic crashes (Table 9).

Percentage of Motorists in Tennessee Crashes Who Failed to Properly Use Safety Equipment by Injury Severity

Safety Equipment Usage by Motorists in Tennessee Traffic Crashes by Injury Severity[1,2]
Table 9

Safety Equipment Used?[3]	FY 03-04		FY 04-05		FY 05-06		FY 06-07		FY 07-08		Total	
	No Injury											
No	12,241	3.6%	11,040	3.1%	9,827	2.9%	7,771	2.2%	7,310	2.2%	48,189	2.8%
Yes	307,347	89.9%	323,158	90.9%	313,212	91.0%	314,105	90.7%	297,730	90.5%	1,555,552	90.6%
	Possible Injury											
No	3,862	8.5%	2,992	6.3%	3,087	6.7%	2,556	5.7%	2,390	5.6%	14,887	6.6%
Yes	38,141	83.7%	40,947	86.7%	40,124	87.0%	39,379	88.0%	38,136	89.4%	196,727	86.9%
	Non-Incapacitating Injury											
No	4,119	16.9%	3,091	13.8%	2,883	13.6%	2,826	14.1%	2,753	14.8%	15,672	14.7%
Yes	18,104	74.1%	17,301	77.0%	16,582	78.2%	15,741	78.5%	14,716	79.2%	82,444	77.3%
	Incapacitating Injury											
No	2,044	28.2%	1,673	24.7%	1,629	25.3%	1,585	24.9%	1,495	25.1%	8,426	25.7%
Yes	4,314	59.4%	4,137	61.0%	3,992	62.0%	4,075	64.0%	3,944	66.2%	20,462	62.4%
	Fatal Injury											
No	644	56.2%	646	52.9%	609	51.8%	572	51.5%	502	53.0%	2,973	53.1%
Yes	392	34.2%	474	38.8%	490	41.7%	464	41.8%	393	41.5%	2,213	39.5%
	All Motor Vehicle Occupants											
No	23,045	5.3%	19,578	4.4%	18,167	4.2%	15,447	3.6%	14,485	3.6%	90,722	4.2%
Yes	370,770	85.9%	389,037	87.3%	376,915	87.1%	374,632	87.7%	355,645	89.0%	1,866,999	87.4%

[1]"Safety Equipment" includes motorcycle helmets.

[2]Occupants whose safety equipment use was unknown are not included in the counts, but are included in the denominators of the percentages.

[3]"No" includes vehicle occupants whose safety equipment was not used or was used improperly or whose helmet was not USDOT approved.

Source: TN Dept of Safety, Office of Research, Statistics, and Analysis, 26 Feb 2009.

The statistics presented in this report may reflect the growing number of Hispanic and black persons of driving age (15 years old and over) in Tennessee. Population projections from the U. S. Census Bureau show that these two groups are rising as a percentage of the population, while the percentage of white persons is decreasing.
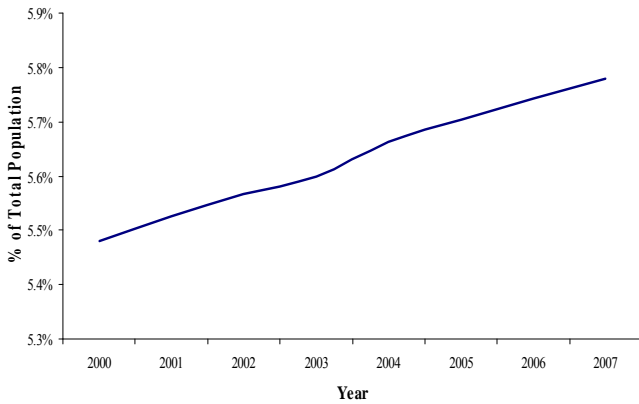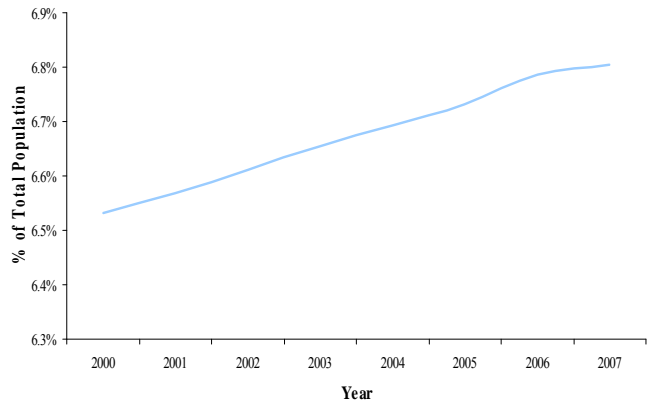
White Males (Non - Hispanic)
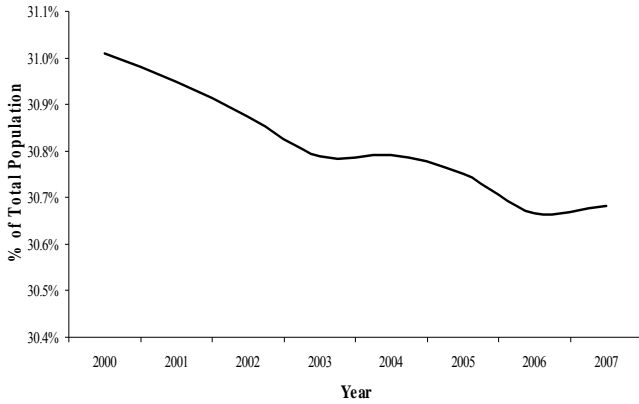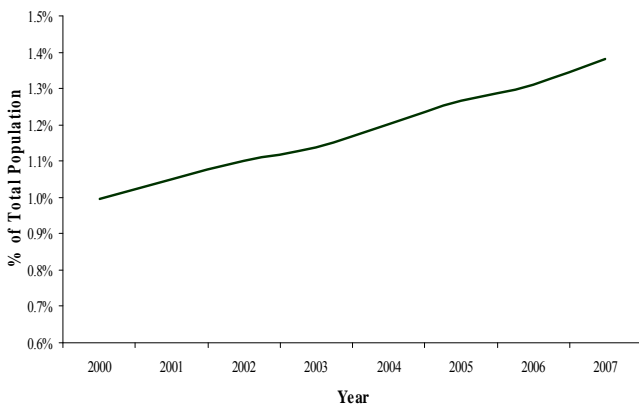

White Females (Non - Hispanic)
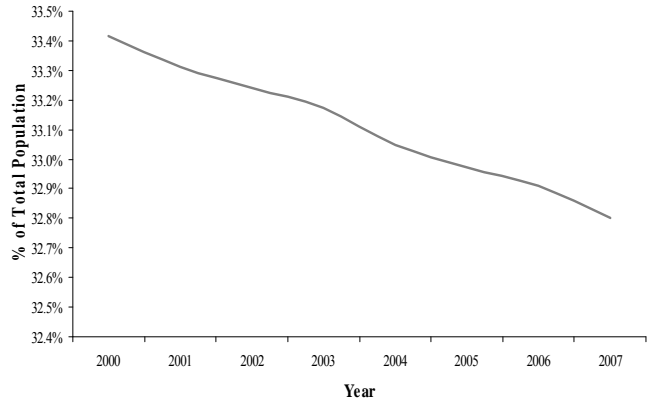
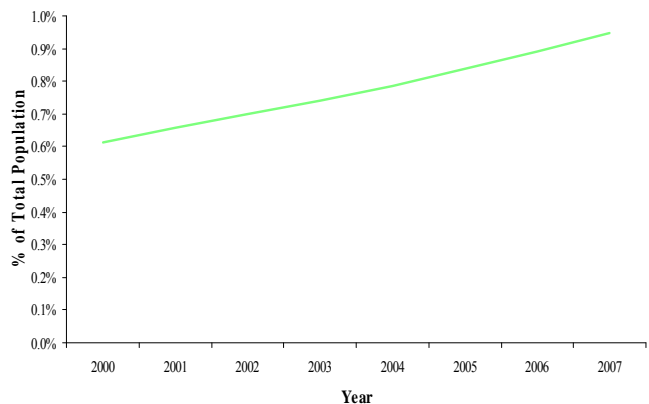Black Males (Non - Hispanic)

Black Females (Non - Hispanic)

Hispanic Males

Hispanic Females

Attachments

<u>Attachment 1</u>

Tennessee Code Annotated § 55-9-602

Child Passenger Restraint Systems—Violations—Penalties

(a) (1) Any person transporting any child, under one (1) year of age, or any child, weighing twenty pounds (20 lbs.) or less, in a motor vehicle upon a road, street or highway of Tennessee is responsible for the protection of the child and properly using a child passenger restraint system in a rear facing position, meeting federal motor vehicle safety standards in the rear seat if available or according to the child safety restraint system or vehicle manufacturer's instructions.

(2) Notwithstanding the provisions of § 55-9-603, any person transporting any child, one (1) through three (3) years of age weighing greater than twenty pounds (20 lbs.), in a motor vehicle upon a road, street or highway of Tennessee is responsible for the protection of the child and properly using a child passenger restraint system in a forward facing position, meeting federal motor vehicle safety standards in the rear seat if available or according to the child safety restraint system or vehicle manufacturer's instructions.

(3) Notwithstanding the provisions of § 55-9-603, any person transporting any child, four (4) through eight (8) years of age and measuring less than four feet, nine inches (4′ 9″) in height, in a passenger motor vehicle upon a road, street or highway of Tennessee is responsible for the protection of the child and properly using a belt positioning booster seat system, meeting federal motor vehicle safety standards in the rear seat if available or according to the child safety restraint system or vehicle manufacturer's instructions.

(4) (A) If a child is not capable of being safely transported in a conventional child passenger restraint system as provided for in this subsection (a), a specially modified, professionally manufactured restraint system meeting the intent of this subsection (a) shall be in use; provided, however, that the provisions of this subdivision (a)(4) shall not be satisfied by use of the vehicle's standard lap or shoulder safety belts independent of any other child passenger restraint system. A motor vehicle operator who is transporting a child in a specially modified, professionally manufactured child passenger restraint system shall possess a copy of the physician's signed prescription that authorizes the professional manufacture of the specially modified child passenger restraint system.

(B) A person shall not be charged with a violation of this subsection (a) if such person presents a copy of the physician's prescription in compliance with the provisions of this subdivision (a)(4) to the arresting officer at the time of the alleged violation.

(C) A person charged with a violation of this subsection (a) may, on or before the court date, submit a copy of the physician's prescription and evidence of possession of a specially modified, professionally manufactured child passenger restraint system to the court. If the court is satisfied that compliance was in effect at the time of the violation, the charge for violating the provisions of this subsection (a) may be dismissed.

(b) All passenger vehicle rental agencies doing business in the state of Tennessee shall make available at a reasonable rate to those renting such vehicles an approved restraint as described in subsection (a).

(c) (1) A violation of this section is a Class C misdemeanor.

(2) In addition to or in lieu of the penalty imposed under subdivision (c)(1), persons found guilty of a first offense of violating this section may be required to attend a court approved offenders' class designed to educate offenders on the hazards of not properly transporting children in motor vehicles. A fee may be charged for such classes sufficient to defray all costs of providing such classes.

(d) Any incorporated municipality may by ordinance adopt by reference any of the provisions of this section, it being the legislative intent to promote the protection of children wherever and whenever possible.

(e) Prior to the initial discharge of any newborn child from a health care institution offering obstetrical services, such institution shall inform the parent that use of a child passenger restraint system is required by law. Further, the health care institution shall distribute to the parent related information provided by the department of safety.

(f) (1) There is established within the general fund a revolving special account to be known as the child safety fund, hereinafter referred to as the "fund."

(2) All fines imposed by this section shall be sent by the clerk of the court to the state treasurer for deposit in the fund.

(3) Any unencumbered funds and any unexpended balance of this fund remaining at the end of any fiscal year shall not revert to the general fund, but shall be carried forward until expended in accordance with the provisions of this section and § 55-9-610.

(4) Interest accruing on investments and deposits of the fund shall be returned to the fund and remain a part of the fund.

(5) Disbursements from, investments of and deposits to the fund shall be administered and invested pursuant to the provisions of title 9, chapter 4, part 5.

(6) The state treasurer may deduct reasonable service charges from the fund pursuant to procedures established by the state treasurer and the commissioner of finance and administration.

(7) The department of health is authorized, pursuant to duly promulgated rules and regulations, to determine equitable distribution of the moneys in the fund to those entities that are best suited for child passenger safety system distribution. Funds distributed pursuant to the provisions of this section shall only be used for the purchase of child passenger safety systems to be loaned or given to the parent or guardian.

(g) (1) (A) Notwithstanding the provisions of § 55-9-603, any person transporting any child, nine (9) through twelve (12) years of age, or any child through twelve (12) years of age, measuring four feet, nine inches (4′ 9″) or more in height, in a passenger motor vehicle upon a road, street or highway of Tennessee is responsible for the protection of the child and properly using a seat belt system meeting federal motor vehicle safety standards. It is recommended that any such child be placed in the rear seat if available.

(B) Notwithstanding the provisions of § 55-9-603, any person transporting any child, thirteen

(13) through fifteen (15) years of age, in a passenger motor vehicle upon a road, street or highway of Tennessee is responsible for the protection of the child and properly using a passenger restraint system, including safety belts, meeting federal motor vehicle safety standards.

(2) A person charged with a violation of this subsection (g) may, in lieu of appearance in court, submit a fine of fifty dollars ($50.00) to the clerk of the court which has jurisdiction of such offense within the county in which the offense charged is alleged to have been committed.

(3) No litigation tax levied pursuant to the provisions of title 67, chapter 4, part 6, shall be imposed or assessed against anyone convicted of a violation of this subsection (g), nor shall any clerk's fee or court costs, including but not limited to any statutory fees of officers, be imposed or assessed against anyone convicted of a violation of this subsection (g).

(4) (A) Notwithstanding any provision of subsection (f) to the contrary, the revenue generated by ten dollars ($10.00) of the fifty dollar ($50.00) fine under subdivision (g)(2) for a person's first conviction under this subsection (g), shall be deposited in the state general fund without being designated for any specific purpose. The remaining forty dollars ($40.00) of such fifty dollar ($50.00) fine for a person's first conviction under this subsection (g) shall be deposited to the child safety fund in accordance with subsection (f).

(B) The revenue generated from such person's second or subsequent conviction under this subsection (g) shall be deposited to the child safety fund in accordance with subsection (f).

(5) Notwithstanding any provision of law to the contrary, no more than one (1) citation may be issued for a violation of this subsection (g) per vehicle per occasion. If the driver is neither a parent nor legal guardian of the child and the child's parent or legal guardian is present in the vehicle, the parent or legal guardian is responsible for ensuring that the provisions of this subsection (g) are complied with. If no parent or legal guardian is present at the time of the violation, the driver is solely responsible for compliance with this subsection (g).

(h) As used in this section, unless specified otherwise, "passenger motor vehicle" means any motor vehicle with a manufacturer's gross vehicle weight rating of ten thousand pounds (10,000 lbs.) or less, that is not used as a public or livery conveyance for passengers. "Passenger motor vehicle" does not apply to motor vehicles which are not required by federal law to be equipped with safety belts.

(i) A person who has successfully met the minimum required training standards for installation of child restraint devices established by the national highway traffic safety administration of the United States department of transportation, who in good faith installs or inspects the installation of a child restraint device shall not be liable for any damages resulting from any act or omission related to such installation or inspection unless such act or omission was the result of the person's gross negligence or willful misconduct.

(j) Notwithstanding any provisions of this part to the contrary, for any child transported by child care agencies licensed by the department of human services pursuant to title 71, chapter 3, part 5 and transported pursuant to the rules and regulations of such department, such rules and regulations shall remain effective until the department amends such rules and regulations; provided, however, that the department shall either promulgate rules consistent with the provisions of this part or promulgate rules exceeding, based on applicable federal regulations or standards, the provisions of this part no later than January 1, 2007.

(k) (1) The failure to use a child restraint system shall not be admissible into evidence in a civil action; provided, however, that evidence of a failure to use a child restraint system, as required by this section, may be admitted in a civil action as to the causal relationship between noncompliance and the injuries alleged, if the following conditions have been satisfied:

(A) The plaintiff has filed a products liability claim;

(B) The defendant alleging noncompliance with this section shall raise this defense in its answer or timely amendment thereto in accordance with the rules of civil procedure; and

(C) Each defendant seeking to offer evidence alleging noncompliance with this section has the burden of proving noncompliance with this section, that compliance with this section would have reduced injuries and the extent of the reduction of such injuries.

(2) Upon request of any party, the trial judge shall hold a hearing out of the presence of the jury as to the admissibility of such evidence in accordance with the provisions of this subsection (k) and the Tennessee Rules of Evidence.

(3) Notwithstanding any provision of this subsection (k) to the contrary, if a party to the civil action is not the parent or legal guardian, then evidence of a failure to use a child restraint system, as required by this section, may be admitted in such action as to the causal relationship between noncompliance and the injuries alleged.

[Acts 1963, ch. 102, §§ 1, 2; 1977, ch. 114, §§ 1, 2; T.C.A., § 59-930; Acts 1981, ch. 86, §§ 1, 2; 1985, ch. 183, § 1; T.C.A., § 55-9-214; Acts 1986, ch. 866, §§ 2, 3; 1989, ch. 564, §§ 2-6, 9; 1989, ch. 591, § 113; 1995, ch. 112, §§ 1, 2; 2000, ch. 945, § 1; 2001, ch. 463, §§ 1, 2; 2003, ch. 299, §§ 1-9; 2004, ch. 809, § 1; 2005, ch. 55, §§ 1, 2.]

Tennessee Code Annotated § 55-9-603

Use of Safety Belts In Passenger Vehicles—Violations—Penalties

(a) (1) No person shall operate a passenger motor vehicle on any highway, as defined § 55-8-101(22), in this state unless such person and all passengers four (4) years of age or older are restrained by a safety belt at all times the vehicle is in forward motion.

(2) No person four (4) years of age or older shall be a passenger in a passenger motor vehicle on any highway, as defined in § 55-8-101(22), in this state, unless such person is restrained by a safety belt at all times the vehicle is in forward motion.

(b) (1) The provisions of this section shall apply only to the operator and all passengers occupying the front seat of a passenger motor vehicle.

(2) If the vehicle is equipped with a rear seat which is capable of folding, the provisions of this section shall only apply to front seat passengers and the operator if the back seat is in the fold down position.

(c) As used in this section, unless specified otherwise, "passenger car" or "passenger motor vehicle" means any motor vehicle with a manufacturer's gross vehicle weight rating of eight thousand five hundred pounds (8,500 lbs.) or less, that is not used as a public or livery conveyance for passengers. "Passenger car" or "passenger motor vehicle" does not apply to motor vehicles which are not required by federal law to be equipped with safety belts.

(d) (1) A violation of this section is a Class C misdemeanor. All proceeds from the fines imposed by this subsection (d) shall be deposited in the state general fund and designated for the exclusive use of the division of vocational rehabilitation to assist eligible handicapped individuals as defined in § 49-11-602

(3) who have been severely injured in motor vehicle accidents.

(2) A person charged with a violation of this section may, in lieu of appearance in court, submit a fine of ten dollars ($10.00) for a first violation, and twenty dollars ($20.00) on second and subsequent violations to the clerk of the court which has jurisdiction of such offense within the county in which the offense charged is alleged to have been committed.

(3) (A) Notwithstanding subdivision (d)(2) to the contrary, a person charged with a violation of subsection (i) may, in lieu of appearance in court, submit a fine of twenty dollars ($20.00) to the clerk of the court which has jurisdiction of such offense within the county in which the offense charged is alleged to have been committed.

(B) Notwithstanding any provision of subdivision (d)(1) to the contrary, the revenue generated by ten dollars ($10.00) of the twenty dollar ($20.00) fine under subdivision (d)(3)(A) for a person's first conviction under subsection (i) shall be deposited in the state general fund without being designated for any specific purpose. The remaining ten dollars ($10.00) of such twenty dollar ($20.00) fine for such person's first conviction under subsection (i) shall be deposited in the state general fund and designated for the exclusive use of the division of vocational rehabilitation in accordance with subdivision (d)(1).

(C) The revenue generated from such person's second or subsequent conviction under subsection

(i) shall be deposited in the state general fund and designated for the exclusive use of the division of vocational rehabilitation in accordance with subdivision (d)(1).

(e) No clerk's fee nor court costs, including, but not limited to, any statutory fees of officers, shall be imposed or assessed against anyone convicted of a violation of this section. No litigation tax levied pursuant to the provisions of title 67, chapter 4, part 6, shall be imposed or assessed against anyone convicted of a violation of this section.

(f) (1) A law enforcement officer observing a violation of this section shall issue a citation to the violator, but shall not arrest or take into custody any person solely for a violation of this section.

(2) The department of safety shall not report any convictions under this section except for law enforcement or governmental purposes.

(g) In no event shall a violation of this section be assigned a point value for suspension or revocation of a license by the department of safety, nor shall such violation be construed as any other offense under the provisions of this title.

(h) This section does not apply to:

(1) A passenger or operator with a physically disabling condition whose physical disability would prevent appropriate restraint in such safety seat or safety belt; provided, that such condition is duly certified in writing by a physician who shall state the nature of the handicap, as well as the reason such restraint is inappropriate;

(2) A passenger motor vehicle operated by a rural letter carrier of the United States postal service while performing the duties of a rural letter carrier;

(3) Salespersons or mechanics employed by an automobile dealer who, in the course of their employment, test-drive a motor vehicle, if such dealership customarily test-drives fifty (50) or more motor vehicles a day, and if such test-drives occur within one (1) mile of the location of the dealership;

(4) Utility workers, water, gas and electric meter readers in the course of their employment;

(5) A newspaper delivery motor carrier service while performing the duties of a newspaper delivery motor carrier service; provided, that this exemption shall only apply from the time of the actual first delivery to the customer until the last actual delivery to the customer;

(6) A vehicle in use in a parade if operated at less than fifteen miles per hour (15 mph);

(7) A vehicle in use in a hayride if operated at less than fifteen miles per hour (15 mph); or

(8) A vehicle crossing a highway from one field to another if operated at less than fifteen miles per hour (15 mph).

(i) (1) Notwithstanding any provision of this section to the contrary, no person between sixteen (16) years of age and up to and through the age of seventeen (17) years of age, shall operate a passenger motor vehicle, or be a passenger therein, unless such person is restrained by a safety belt at all times the vehicle is in forward motion.

(2) Notwithstanding subdivision (b)(1), the provisions of this subsection (i) shall apply to all occupants between sixteen (16) years of age and eighteen (18) years of age occupying any seat in a passenger motor vehicle.

(3) Notwithstanding subdivision (f)(1), a law enforcement officer observing a violation of this subsection (i) shall issue a citation to the violator, but shall not arrest or take into custody any person solely for a violation of this subsection (i).

(j) Notwithstanding the provisions of subsection (b), no person with a learner permit or an intermediate driver license shall operate a passenger motor vehicle in this state unless such person and all passengers between the ages of four (4) and seventeen (17) years of age are restrained by a safety belt at all times the vehicle is in forward motion.

(k) The department of safety shall file a report by March 1 of each year to the 104th, 105th, and 106th general assembly on data collected for the prior five (5) years by the department relating to violations of this section. Such data shall include the number of persons cited for violations of this section, their race, ethnicity, sex, age, and any other information the department deems relevant.

[Acts 1986, ch. 866, §§ 3, 4, 7, 8, 11; 1989, ch. 591, § 113; 1994, ch. 661, §§ 2, 4; 2000, ch. 700, § 3; 2000, ch. 945, §§ 2-4; 2004, ch. 893, §§ 1-5.]

<u>Attachment 3</u>

**Traffic Safety Facts:
Crash Stats
May 2008**

Seat Belt Use in 2007 – Use Rates in the States And Territories

In 2007, seat belt use in the United States ranged from 63.8 percent in New Hampshire to 97.6 percent in Hawaii. These seat belt use rates are reported to the National Highway Traffic Safety Administration by States and Territories in response to grant requirements under 23 U.S.C. §§ 402, 406.

The 2007 State and Territory surveys also found the following:

- Twelve States and Territories achieved use rates of 90 percent or higher — Hawaii, Washington, Oregon, California, Michigan, Maryland, Puerto Rico, Texas, New Mexico, New Jersey, Iowa, and Illinois.

- Jurisdictions with primary belt-enforcement laws continue to exhibit generally higher use rates than those with secondary laws or no belt law. Kentucky strengthened its belt law to a primary enforcement law, effective July 2006, with citations issued beginning in January 2007. This State saw a jump in use from 67.2 percent in 2006 to 71.8 percent in 2007. Maine's primary enforcement seat belt law took effect on September 17, 2007, but citations were issued beginning April 1, 2008.

Seat belt use rates in the States, U.S. Territories, the District of Columbia, and nationwide from 2001-2007 are listed in the following table. Rates in jurisdictions with primary belt enforcement during the calendar year of the survey are shaded in the table. However, the law might not have taken effect when the survey was conducted. The 2003 rate for New Hampshire was not reported by the State.

National Seat Belt Use Rate

Seat belt use nationwide was 82 percent in 2007, as measured by NHTSA's National Occupant Protection Use Survey (NOPUS). NOPUS provides NHTSA's official measure of nationwide use because it is the only probability-based observational survey of seat belt use in the United States. Additionally, NOPUS does not employ sampling frame exemptions allowed of the States and Territories in 23 CFR Part 1340 (namely, the omission of up to 15 percent of low-population areas and the permission to observe data solely in vehicles stopped at stop signs or stoplights), and so provides a more accurate measure of nationwide use than would be obtained by combining the use rates from the States and Territories.

Table: Seat Belt Use in States, U.S. Territories, and Nationwide, 2001-2007

State or U.S. Territory	2001	2002	2003	2004	2005	2006	2007	Conversion Rate* 2006-2007
Alabama	79.4%	78.7%	77.4%	80.0%	81.8%	82.9%	82.3%	-4%
Alaska	62.6%	65.8%	78.9%	76.7%	78.4%	83.2%	82.4%	-5%
Arizona	74.4%	73.7%	86.2%	95.3%	94.2%	78.9%	80.9%	9%
Arkansas	54.5%	63.7%	62.8%	64.2%	68.3%	69.3%	69.9%	2%
California	91.1%	91.1%	91.2%	90.4%	92.5%	93.4%	94.6%	18%
Colorado	72.1%	73.2%	77.7%	79.3%	79.2%	80.3%	81.1%	4%
Connecticut	78.0%	78.0%	78.0%	82.9%	81.6%	83.5%	85.8%	14%
Delaware	67.3%	71.2%	74.9%	82.3%	83.8%	86.1%	86.6%	4%
Dist. Of Columbia	83.6%	84.6%	84.9%	87.1%	88.8%	85.4%	87.1%	12%

State or U.S. Territory	2001	2002	2003	2004	2005	2006	2007	Conversion Rate* 2006-2007
Florida	69.5%	75.1%	72.6%	76.3%	73.9%	80.7%	79.1%	-8%
Georgia	79.0%	77.0%	84.5%	86.7%	89.9%	90.0%	89.0%	-10%
Hawaii	82.5%	90.4%	91.8%	95.1%	95.3%	92.5%	97.6%	68%
Idaho	60.4%	62.9%	71.7%	74.0%	76.0%	79.8%	78.5%	-6%
Illinois	71.4%	73.8%	80.1%	83.0%	86.0%	87.8%	90.1%	19%
Indiana	67.4%	72.2%	82.3%	83.4%	81.2%	84.3%	87.9%	23%
Iowa	80.9%	82.4%	86.8%	86.4%	87.1%	89.6%	91.3%	16%
Kansas	60.8%	61.3%	63.6%	68.3%	69.0%	73.5%	75.0%	6%
Kentucky	61.9%	62.0%	65.5%	66.0%	66.7%	67.2%	71.8%	14%
Louisiana	68.1%	68.6%	73.8%	75.0%	77.7%	74.8%	75.2%	2%
Maine	NA	NA	NA	72.3%	75.8%	77.2%	79.8%	11%
Maryland	82.9%	85.8%	87.9%	89.0%	91.1%	91.1%	93.1%	22%
Massachusetts	56.0%	51.0%	61.7%	63.3%	64.8%	66.9%	68.7%	5%
Michigan	82.3%	82.9%	84.8%	90.5%	92.9%	94.3%	93.7%	-11%
Minnesota	73.9%	80.1%	79.4%	82.1%	83.9%	83.3%	87.8%	27%
Mississippi	61.6%	62.0%	62.2%	63.2%	60.8%	73.6%	71.8%	-7%
Missouri	67.9%	69.4%	72.9%	75.9%	77.4%	75.2%	77.2%	8%
Montana	76.3%	78.4%	79.5%	80.9%	80.0%	79.0%	79.6%	3%
Nebraska	70.2%	69.7%	76.1%	79.2%	79.2%	76.0%	78.7%	11%
Nevada	74.5%	74.9%	78.7%	86.6%	94.8%	91.2%	92.2%	11%
New Hampshire	NA	NA	49.6%	NA	NA	63.5%	63.8%	1%
New Jersey	77.6%	80.5%	81.2%	82.0%	86.0%	90.0%	91.4%	14%
New Mexico	87.8%	87.6%	87.2%	89.7%	89.5%	89.6%	91.5%	18%
New York	80.3%	82.8%	84.6%	85.0%	85.0%	83.0%	83.5%	3%
North Carolina	82.7%	84.1%	86.1%	86.1%	86.7%	88.5%	88.8%	3%
North Dakota	57.9%	63.4%	63.7%	67.4%	76.3%	79.0%	82.2%	15%
Ohio	66.9%	70.3%	74.7%	74.1%	78.7%	81.7%	81.6%	-1%
Oklahoma	67.9%	70.1%	76.7%	80.3%	83.1%	83.7%	83.1%	-4%
Oregon	87.5%	88.2%	90.4%	92.6%	93.3%	94.1%	95.3%	20%

State or U.S. Territory	2001	2002	2003	2004	2005	2006	2007	Conversion Rate* 2006-2007
Pennsylvania	70.5%	75.7%	79.0%	81.8%	83.3%	86.3%	86.7%	3%
Rhode Island	63.2%	70.8%	74.2%	76.2%	74.7%	74.0%	79.1%	20%
South Carolina	69.6%	66.3%	72.8%	65.7%	69.7%	72.5%	74.5%	7%
South Dakota	63.3%	64.0%	69.9%	69.4%	68.8%	71.3%	73.0%	6%
Tennessee	68.3%	66.7%	68.5%	72.0%	74.4%	78.6%	80.2%	7%
Texas	76.1%	81.1%	84.3%	83.2%	89.9%	90.4%	91.8%	15%
Utah	77.8%	80.1%	85.2%	85.7%	86.9%	88.6%	86.8%	-16%
Vermont	67.4%	84.9%	82.4%	79.9%	84.7%	82.4%	87.1%	27%
Virginia	72.3%	70.4%	74.6%	79.9%	80.4%	78.7%	79.9%	6%
Washington	82.6%	92.6%	94.8%	94.2%	95.2%	96.3%	96.4%	3%
West Virginia	52.3%	71.6%	73.6%	75.8%	84.9%	88.5%	89.6%	10%
Wisconsin	68.7%	66.1%	69.8%	72.4%	73.3%	75.4%	75.3%	0%
Wyoming	NA	66.6%	NA	70.1%	NA	63.5%	72.2%	24%
Nationwide	73%	75%	79%	80%	82%	81%	82%	7%
Puerto Rico	83.1%	90.5%	87.1%	90.1%	92.5%	92.7%	92.1%	-8%
American Samoa							NA	
Guam							81%	
Northern Mariana Islands							80%	
U.S. Virgin Islands						80.2%	NA	

Notes: Rates in jurisdictions with primary belt enforcement during the calendar year of the survey are shaded.

NA: No rate reported.

*The "conversion rate" is the percentage reduction in belt nonuse. Negative conversion rates reflect a decrease in the estimated use rates.

Survey of Safety Belt and Motorcycle Helmet Usage In Tennessee
2008

SURVEY OF SAFETY BELT AND MOTORCYCLE HELMET USAGE IN TENNESSEE

FISCAL YEAR 2008 FINAL REPORT

Prepared by:

**The University of Tennessee
Center for Transportation Research**

Matthew A. Cate, P.E.
Research Associate III

October 3, 2008

SURVEY OF SAFETY BELT AND MOTORCYCLE HELMET USAGE IN TENNESSEE

FISCAL YEAR 2008 FINAL REPORT

Since 1986, the University of Tennessee Center for Transportation Research has conducted a statewide survey once each year during which both safety belt and motorcycle helmet use data are gathered simultaneously. The sample design, data collection techniques, and estimation procedures for the surveys were developed in accordance with the National Highway Traffic Safety Administration's (NHTSA's) "Guidelines for State Observational Surveys of Safety Belt and Motorcycle Helmet Use," published in the June 29, 1992, Federal Register with the guideline revisions agreed upon at the June 1998 Region IV Workshop on Safety Belt Use Surveys held in Atlanta. Detailed information on the sample design (including site selection), survey conduct (including data collection), and statistical procedures for estimation can be found in the August 2008 report "Documentation of Tennessee Observational Surveys of Safety Belt and Motorcycle Helmet Use" and are summarized below.

The 2008 observational surveys mark the first major revisions to Tennessee's methodology since 1999. As a result of this process, the number of observation sites has dropped from 440 to 160 while maintaining an acceptable level of uncertainty. Individual observation sites are now weighted by their individual vehicle miles of travel (VMT) levels and the total VMT of the site's functional class in each county. The new survey methodology also makes a number of small refinements, including removal of the minimum 500 vehicles per day threshold, stretching observation periods from 40 to 45 minutes, and allowing observers to record the belt use of vehicles in all travel lanes for low-volume roadways. A complete description of Tennessee's new safety belt survey methodology may been seen in Appendix 1.

Survey Design

A multi-stage area probability sampling approach is utilized for the survey. In the first stage, an appropriate number of primary sampling units is randomly selected. The primary sampling unit for the Tennessee survey is the "county," and 16 counties are selected for inclusion in the survey.

In the second stage, sampling of individual route segments in each of the counties is performed. All route segments in a county identified in the Tennessee Roadway Information Management System (TRIMS) data files, excluding the rare local road segments included in the database, make up the target population. The qualifying route segments from each of the survey counties are stratified into four groupings using TRIMS functional classification data. For each county, segments are randomly chosen from each of these four strata, with probability of selection proportional to the segment's annual Vehicle Miles Traveled (VMT). At the same time, the direction of travel for belt use observations is also randomly determined. The number of segments chosen from each stratum is generally proportional to the county's estimated annual VMT in each stratum. This assures that the final sample is representative of the traffic mix in the county across the roadway functional types.

A total of 160 roadway segments comprise the sample. This number is large enough to provide a broad sampling of State road conditions and has been shown in other States to provide belt use estimates well within NHTSA's required level of precision. Forty percent of these sample sites are allocated to the state's four largest counties (64 sites, 16 per county). The remaining 60 percent are evenly divided among the 12 smaller counties in the survey (96 sites, 8 per county).

An observation site is a homogeneous segment of roadway, generally between 0.5 to 5 miles in length. A typical segment is about 1 mile in length. Observers record the belt use/nonuse of outboard front-seat occupants of all passenger vehicles in the travel direction of record for a period of 45 minutes. Data are collected during all daylight hours, generally from 8:00 am to 6:00 pm, and on all days of the week. Vehicles counted include all passenger cars, pickup trucks, vans, and sport utility vehicles. Since motorcycle traffic volumes are relatively low, all motorcycle traffic visible from the observation site, regardless of direction or lane of travel, is counted for the motorcycle helmet use survey. The helmet use/nonuse of both motorcycle drivers and passengers is recorded.

The percentages of belt use and helmet use at each site, based on the number using belts or helmets divided by the total number of observed occupants or riders, is computed and reported. These percentages then are combined using weighting formulas to yield statewide estimates of safety belt and motorcycle helmet use. Estimates of one standard error are calculated for the estimated statewide usage rates, and these statistics are used to construct a 95 percent confidence interval for the belt use estimate and helmet use estimate, respectively. A complete description of the methods used in this survey of seatbelt usage may be seen in Appendix 1 of this report.

2008 Tennessee Seatbelt Survey Results

In 2008 the Tennessee highway safety community has continued several important vehicle occupant protection initiatives. The Tennessee Governor's Highway Safety Office (GHSO) has partnered with the National Highway Traffic Safety Administration (NHTSA), the Tennessee Department of Safety (TDOS), local law enforcement agencies, and numerous other public and private entities in order to increase seatbelt usage across the state of Tennessee. Chief among these initiatives is the eighth consecutive year of the Click It or Ticket initiative. This high visibility education and enforcement campaign, combined with the 2004 enactment of a statewide primary enforcement seatbelt law, has produced an increase in Tennessee's observed seatbelt usage rate in seven of eight years since its implementation in 2001. Other safety campaigns such as Booze It and Lose It, Buckle Up in Your Truck, Hands Across the Border, and 100 Days of Summer Heat have also contributed to continuing progress in safety belt usage.

For 2008, the final statistically-adjusted statewide seatbelt usage rate is 81.49%. By comparison, the final usage rate for 2007 was 80.20%. Within this year's results, many

historical trends continue. Despite significant gains in recent years, pickup trucks continue to have the lowest usage rate of any vehicle type. For 2008, pickup trucks occupants were observed to have a seatbelt usage rate of 75.15%, up from 72.27% in 2007. The next lowest rate by vehicle type was 78.31% for SUVs. Cars and vans returned usage rates of 84.48% and 83.87%, respectively. Table 1 shows the final adjusted usage rates by vehicle type and county, as well as the final statewide usage rate of 81.49% (± 0.72%) for all vehicle types. The observed statewide motorcycle helmet usage in 2008 was 100.00%. Table 2 shows the motorcycle helmet usage by county. To further illustrate the recent progress brought about in increasing seatbelt usage across the state of Tennessee by both the Click-It-Or-Ticket campaign and passage of a primary seatbelt enforcement law, Table 3 shows annual usage rates for all vehicles, passenger cars, pickup trucks, vans, and sport utility vehicles since 2000.

Future Seatbelt Surveys

For the first time in many years, Tennessee's 2009 seatbelt survey will return to the same sites and counties used in the previous year. This approach will remove the variability between various counties and survey sites, allowing for a true "apples to apples" comparison of results from 2008 to 2009. Also in Federal Fiscal Year 2009, GHSO will partner with NHTSA on a rural demonstration project designed to increase safety belt usage in rural areas where rates have typically lagged behind those of larger urban areas. This effort will include collection of baseline data in November 2008. Post-campaign data will be collected in November 2008, June and November 2009, and June 2010. While this new rural belt usage data will not be directly incorporated into the official statewide survey, these results will allow for a more complete understanding of safety belt usage across the state.

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Table 1: Final Summary of 2008 Tennessee Safety Belt Use
Statewide Observational Survey Results

County	No. of Sites	Passenger Cars	Vans	SUVs	Cars + Vans + SUVs	Pickup Trucks	All Vehicles
Davidson	16	85.74%	85.23%	76.98%	84.86%	79.70%	83.53%
Hamilton	16	87.55%	88.69%	81.36%	87.08%	75.50%	84.95%
Knox	16	81.83%	83.34%	76.70%	81.28%	68.32%	78.60%
Shelby	16	86.87%	87.54%	80.69%	86.29%	73.71%	83.79%
Blount	8	81.67%	79.66%	58.72%	79.72%	77.77%	78.93%
Bradley	8	85.09%	80.34%	79.42%	82.96%	73.45%	80.95%
Fayette	8	87.27%	86.18%	81.64%	85.83%	73.14%	81.47%
Franklin	8	80.64%	79.68%	80.65%	80.09%	65.30%	76.60%
Jefferson	8	79.69%	82.04%	70.77%	79.26%	73.33%	77.97%
Montgomery	8	88.62%	88.35%	88.39%	88.38%	83.62%	86.94%
Rutherford	8	85.40%	87.37%	84.50%	85.22%	85.99%	85.36%
Sevier	8	77.72%	74.49%	72.35%	75.66%	66.21%	72.77%
Sullivan	8	81.73%	77.10%	78.34%	79.88%	70.64%	77.78%
Tipton	8	83.12%	88.87%	64.15%	82.85%	71.00%	78.56%
Williamson	8	87.53%	79.01%	81.70%	84.94%	79.38%	83.67%
Wilson	8	85.00%	84.28%	86.88%	84.89%	84.17%	84.68%
Statewide Totals	**160**	**84.48%**	**83.87%**	**78.31%**	**83.53%**	**75.15%**	**81.49%**

Adjusted Usage Rates

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Table 2: Final Summary of 2008 Tennessee Motorcycle Helmet Use
Statewide Observational Survey Results

County	No. of Sites	Helmeted Riders	Total Riders Observed	% Helmet Use
Davidson	16	38	38	100.00%
Hamilton	16	74	74	100.00%
Knox	16	104	104	100.00%
Shelby	16	35	35	100.00%
Blount	8	28	28	100.00%
Bradley	8	43	43	100.00%
Fayette	8	21	21	100.00%
Franklin	8	9	9	100.00%
Jefferson	8	34	34	100.00%
Montgomery	8	16	16	100.00%
Rutherford	8	5	5	100.00%
Sevier	8	46	46	100.00%
Sullivan	8	56	56	100.00%
Tipton	8	10	10	100.00%
Williamson	8	48	48	100.00%
Wilson	8	23	23	100.00%
Statewide Totals	160	590	590	100.00%

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Table 3: Tennessee Seatbelt Usage, 2000-2008

Survey Year	Passenger Cars	Pickup Trucks	Vans	Sport Utility Vehicles	All Vehicles
2000	64.2%	39.3%	68.5%	73.0%	59.0%
2001	73.5%	53.9%	70.4%	75.9%	68.3%
2002	71.0%	53.0%	71.8%	73.6%	66.7%
2003	72.5%	55.0%	71.3%	75.4%	68.4%
2004	76.1%	57.5%	75.7%	77.3%	72.0%
2005	78.2%	62.6%	77.3%	79.5%	74.4%
2006	82.1%	69.4%	80.0%	82.0%	78.6%
2007	83.3%	72.3%	80.8%	82.7%	80.2%
2008	84.5%	75.1%	83.9%	78.3%	81.5%
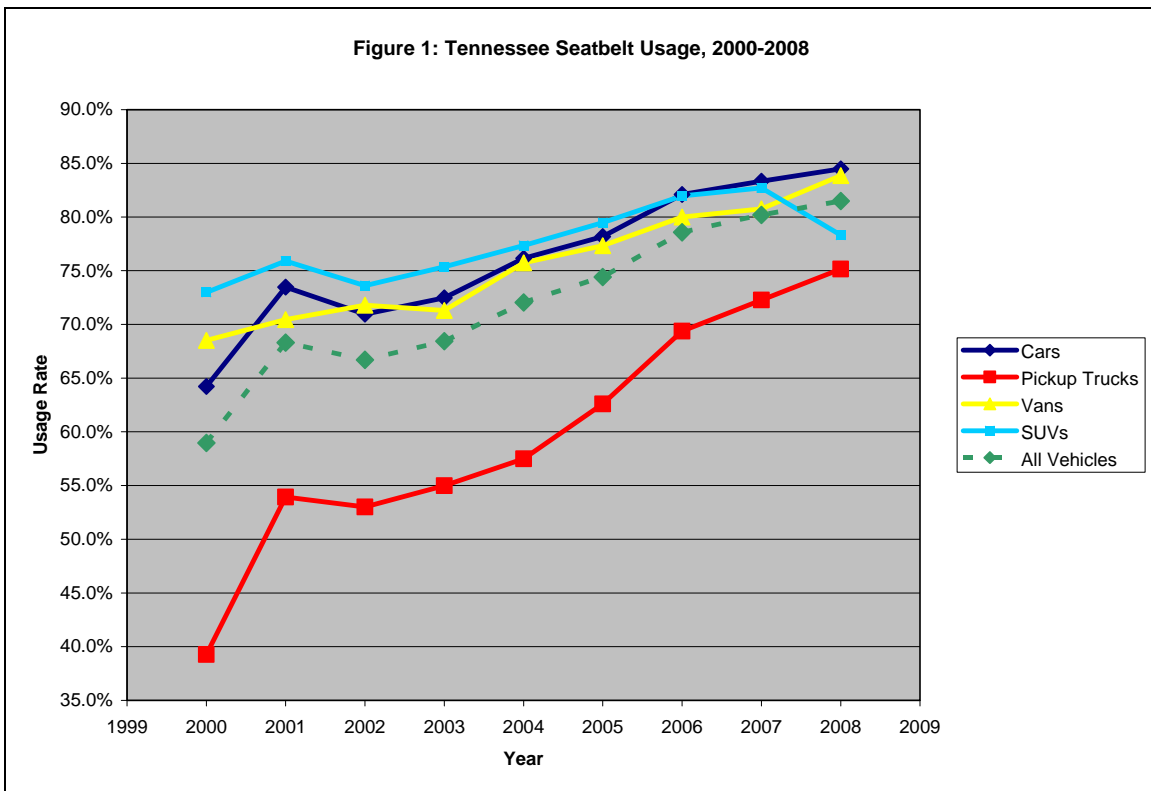
Figure 1: Tennessee Seatbelt Usage, 2000-2008

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Appendix 1: Survey Methodology

DOCUMENTATION OF TENNESSEE OBSERVATIONAL SURVEYS OF SAFETY BELT AND MOTORCYLE HELMET USE

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Submitted for Approval:
April 11, 2008

Revised:
August 14, 2008

Approved by NHTSA:
August 26, 2008

Executive Summary

The University of Tennessee Center for Transportation Research conducts a statewide survey once each year in early summer, at which time both safety belt and motorcycle helmet use data are gathered simultaneously. In recent years, the survey followed a sample design, data collection techniques, and estimation procedures developed in accordance with NHTSA "Guidelines for State Observational Surveys of Safety Belt and Motorcycle Helmet Use," published in the June 29, 1992, Federal Register with revisions agreed upon at the June 1998 Region IV Workshop on Safety Belt Use Surveys held in Atlanta. To begin with 2008 surveys, a new design is proposed. It follows the basic elements of the previous approach but proposes to meet NHTSA performance criteria with a smaller sample of observation sites, 160 rather than 440.

A multi-stage area probability sampling approach is proposed for the survey. In the first stage, an appropriate number of primary sampling units is randomly selected. The primary sampling unit for the Tennessee survey is the "county," and 16 counties are selected for inclusion in the survey.

In the second stage, sampling of individual route segments in each of the counties is performed. All route segments in a county identified in the Tennessee Roadway Information Management System (TRIMS) data files, excluding the rare local road segments included in the database, make up the target population. The qualifying route segments from each of the survey counties are stratified into four groupings using TRIMS functional classification data. For each county, segments will be randomly chosen from each of these four strata, with probability of selection proportional to the segment's annual Vehicle Miles Traveled (VMT). At the same time, the direction of travel for belt use observations will also be randomly determined. The number of segments chosen from each stratum will be generally proportional to the county's estimated annual VMT in each stratum. This will assure that the final sample is representative of the traffic mix in the county across the roadway functional types.

A total of 160 roadway segments will comprise the sample. This number is large enough to provide a broad sampling of State road conditions and has been shown in other States to provide belt use estimates well within NHTSA's required level of precision (should the measured precision fail to meet requirements, we will modify the overall design or sampling procedures as needed and as approved by NHTSA). Forty percent of these sample sites will be allocated to the state's four largest counties (64 sites, 16 per county). The remaining 60 percent will be evenly divided among the 12 smaller counties in the survey (96 sites, 8 per county).

An observation site is a homogeneous segment of roadway, generally between 0.5 to 5 miles in length. A typical segment is about 1 mile in length. Observers record the belt use/nonuse of outboard front-seat occupants of all passenger vehicles in the travel direction of record for a period of 45 minutes. Data are collected during all daylight hours, generally from 8:00 am to 6:00 pm, and on all days of the week. Vehicles to be counted include all passenger cars, pickup trucks, vans, and sport utility vehicles. Since motorcycle traffic volumes are relatively low, all motorcycle traffic visible from the observation site, regardless of direction or lane of travel, will

be counted for the motorcycle helmet use survey. The helmet use/nonuse of both motorcycle drivers and passengers is recorded.

The percentages of belt use and helmet use at each site, based on the number using belts or helmets divided by the total number of observed occupants or riders, will be computed and reported. These percentages then will be combined using weighting formulas to yield statewide estimates of safety belt and motorcycle helmet use. Estimates of one standard error are calculated for the estimated statewide usage rates, and these statistics are used to construct a 95 percent confidence interval for the belt use estimate and helmet use estimate, respectively.

Introduction

Following is a detailed description of the methodology proposed for use for 2008 and subsequent years in the State of Tennessee observational surveys of safety belt and motorcycle helmet use. The sample design, data collection techniques, and estimation procedures for the surveys have been developed in accordance with NHTSA "Guidelines for State Observational Surveys of Safety Belt and Motorcycle Helmet Use," published in the June 29, 1992, Federal Register and revised at the June 1998 Region IV Workshop on Safety Belt Use Surveys held in Atlanta. The number of sites in this proposed plan has been reduced from the previous plan based on experiences in other States, which has shown that belt use estimates based on approximately 120-150 sites can be well within NHTSA's required level of precision. Under the Tennessee plan, a statewide survey is conducted once each year in the summer, at which time both safety belt and motorcycle helmet use data are gathered simultaneously. This annual survey is designed and is currently administered, analyzed, and documented by the University of Tennessee Center for Transportation Research. The primary contact person at the Center is Mr. Matthew Cate (865/974-5255, mcate@utk.edu).

The sampling procedures described herein utilize current data from the Tennessee Roadway Information Management System (TRIMS) compiled by the Tennessee Department of Transportation (TDOT), and the U.S. Census Bureau. The TRIMS files include estimates of Average Daily Traffic (ADT) and Vehicle Miles of Travel (VMT) for each road segment and by road class and county, and the Census Bureau provides current population estimates by county.

The TRIMS files also provide a "population" of observation sites for the surveys. TRIMS contains data on the entire 91,000-mile road system in Tennessee, including Interstate Highways and Expressways, Principal and Minor Arterials, Major and Minor Collectors, and a small sample of Local Roads. As part of these data, each roadway is broken down into several "control-sections," or segments, which vary from less than a mile to a few miles in length. These route segments tend to be homogeneous with regard to traffic volumes, land use, function, speeds, etc. Segment beginning and ending termini, road functional classification, location of intersecting roadways, and an ADT estimate are recorded in the TRIMS files for each control-section.

Sample Design

A multi-stage area probability sampling approach is proposed for the survey. In the first stage, an appropriate number of primary sampling units is randomly selected. The primary sampling unit for the Tennessee survey is the county. Tennessee has a total of 95 counties; however, the least populated counties which collectively comprise approximately 15 percent of the State's population are excluded from the sampling process (county population is the measure of sampling unit size for the purpose of defining the initial set of sampling units to be considered). Table 1 shows a listing of Tennessee's 95 counties ranked using July 1, 2006, U.S. Census Bureau estimates, the most recent available, from most to least populated. The 45 counties which have been included in the sampling population as per the above criterion are identified in Table 1, as well as the 50 least populated counties which have been excluded from the sampling population.

From the sampling population, a sample of 16 counties will be selected. The number of counties (16) in the survey sample is based on the fact that Tennessee has a total of 45 counties in its sampling unit population. According to NHTSA guidelines to this number of sampling units, 16 is an appropriate number to achieve the desired level of accuracy in belt use estimation. The 16-county sample is chosen using a two-step procedure. First, the four largest counties (Shelby, Davidson, Knox and Hamilton), which comprise approximately 37 percent of the state's population, are automatically placed into the 16-county sample. Then, 12 additional counties are selected from the remaining 41 counties to complete the survey sample, with probability for selection proportional to the population of the county. "Population weighting" is used together with random number generation to select the 12 smaller counties into the 16-county sample; the selection is done <u>without replacement</u>. The population values used for selection are Census estimates for July 1, 2006, the most current ones available. A random sample selected using this methodology and proposed for use in the new survey design is shown in Table 1 with the 16 counties in bold type. Additionally, these 16 counties are shown on a map of Tennessee in Figure 1.
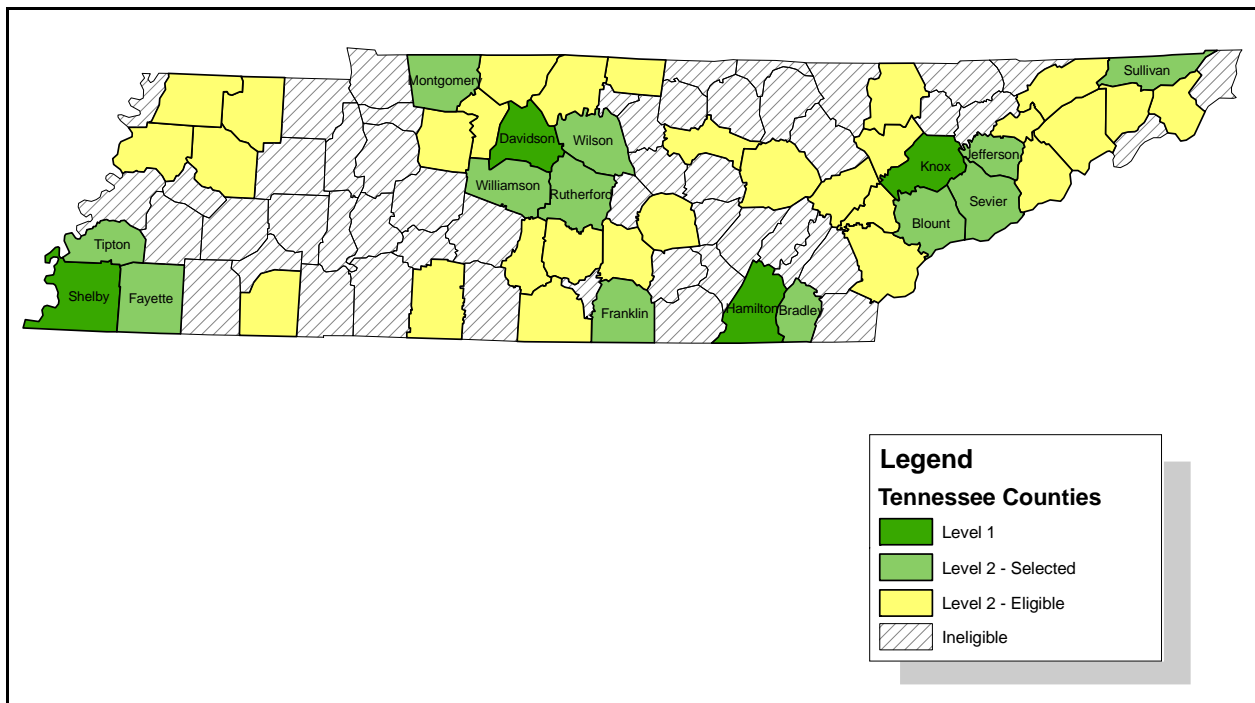
Figure 1: Tennessee Counties Selected for Inclusion in 2008 Safety Belt Observational Survey

Once the 16 survey counties have been chosen, second stage sampling of individual route segments in each of the counties will be performed. The qualifying route segments comprising the sampling population are identified from the TRIMS files. All route segments except the very small number of local roads in the TRIMS files are eligible for selection (of the 22,401 segments in the files, just 206 are local road segments, less than 1% of all segments; they contribute less

Table 1: 2006 Census Population

County	Population	% Total	Cumulative % Total
Shelby	**911,438**	**15.09%**	**15.09%**
Davidson	**578,698**	**9.58%**	**24.68%**
Knox	**411,967**	**6.82%**	**31.50%**
Hamilton	**312,905**	**5.18%**	**36.68%**
Rutherford	**228,829**	**3.79%**	**40.47%**
Williamson	**160,781**	**2.66%**	**43.13%**
Sullivan	**153,239**	**2.54%**	**45.67%**
Sumner	149,416	2.47%	48.14%
Montgomery	**147,114**	**2.44%**	**50.58%**
Blount	**118,186**	**1.96%**	**52.54%**
Washington	114,316	1.89%	54.43%
Wilson	**104,035**	**1.72%**	**56.15%**
Marshall	95,894	1.59%	57.74%
Bradley	**93,538**	**1.55%**	**59.29%**
Sevier	**81,382**	**1.35%**	**60.64%**
Mcnairy	78,309	1.30%	61.93%
Anderson	73,579	1.22%	63.15%
Putnam	68,284	1.13%	64.28%
Greene	65,945	1.09%	65.37%
Robertson	62,187	1.03%	66.40%
Hamblen	61,026	1.01%	67.42%
Carter	59,157	0.98%	68.39%
Tipton	**57,380**	**0.95%**	**69.34%**
Hawkins	56,850	0.94%	70.29%
Roane	53,293	0.88%	71.17%
Cumberland	52,344	0.87%	72.04%
Macon	52,020	0.86%	72.90%
Coffee	51,625	0.85%	73.75%
Jefferson	**49,372**	**0.82%**	**74.57%**
Gibson	48,461	0.80%	75.37%
Dickson	46,583	0.77%	76.14%
Loudon	44,566	0.74%	76.88%
Monroe	44,163	0.73%	77.61%
Bedford	43,413	0.72%	78.33%
Franklin	**41,319**	**0.68%**	**79.02%**
Lawrence	40,934	0.68%	79.69%
Campbell	40,848	0.68%	80.37%
Warren	40,016	0.66%	81.03%
Cheatham	39,018	0.65%	81.68%
Dyer	37,886	0.63%	82.31%
Fayette	**36,102**	**0.60%**	**82.90%**
Cocke	35,220	0.58%	83.49%
Weakley	33,357	0.55%	84.04%
Lincoln	32,728	0.54%	84.58%
Obion	32,184	0.53%	85.11%
Henry	*31,837*	*0.53%*	*85.64%*
Claiborne	*31,347*	*0.52%*	*86.16%*
Rhea	*30,347*	*0.50%*	*86.66%*

Table 1 Continued: 2006 Census Population

County	Population	% Total	Cumulative % Total
Giles	*29,269*	*0.48%*	*87.15%*
Carroll	*29,096*	*0.48%*	*87.63%*
Mcminn	*28,884*	*0.48%*	*88.11%*
Hardeman	*28,176*	*0.47%*	*88.57%*
Maury	*27,942*	*0.46%*	*89.04%*
Henderson	*26,750*	*0.44%*	*89.48%*
Lauderdale	*26,732*	*0.44%*	*89.92%*
Hardin	*26,089*	*0.43%*	*90.36%*
Madison	*25,722*	*0.43%*	*90.78%*
White	*24,482*	*0.41%*	*91.19%*
Hickman	*23,812*	*0.39%*	*91.58%*
Grainger	*22,453*	*0.37%*	*91.95%*
Scott	*21,926*	*0.36%*	*92.32%*
Marion	*21,726*	*0.36%*	*92.68%*
Overton	*20,740*	*0.34%*	*93.02%*
Morgan	*20,108*	*0.33%*	*93.35%*
Haywood	*19,405*	*0.32%*	*93.67%*
Union	*19,086*	*0.32%*	*93.99%*
Smith	*18,753*	*0.31%*	*94.30%*
Humphreys	*18,394*	*0.30%*	*94.60%*
Dekalb	*18,360*	*0.30%*	*94.91%*
Johnson	*18,043*	*0.30%*	*95.21%*
Unicoi	*17,663*	*0.29%*	*95.50%*
Fentress	*17,480*	*0.29%*	*95.79%*
Wayne	*16,828*	*0.28%*	*96.07%*
Benton	*16,378*	*0.27%*	*96.34%*
Chester	*16,043*	*0.27%*	*96.60%*
Polk	*15,939*	*0.26%*	*96.87%*
Grundy	*14,499*	*0.24%*	*97.11%*
Crockett	*14,392*	*0.24%*	*97.35%*
Cannon	*13,448*	*0.22%*	*97.57%*
Bledsoe	*13,030*	*0.22%*	*97.79%*
Sequatchie	*13,002*	*0.22%*	*98.00%*
Stewart	*12,998*	*0.22%*	*98.22%*
Meigs	*11,698*	*0.19%*	*98.41%*
Lewis	*11,588*	*0.19%*	*98.60%*
Decatur	*11,426*	*0.19%*	*98.79%*
Jackson	*10,918*	*0.18%*	*98.97%*
Houston	*8,076*	*0.13%*	*99.11%*
Clay	*8,055*	*0.13%*	*99.24%*
Trousdale	*7,811*	*0.13%*	*99.37%*
Perry	*7,653*	*0.13%*	*99.50%*
Lake	*7,406*	*0.12%*	*99.62%*
Hancock	*6,713*	*0.11%*	*99.73%*
Moore	*6,070*	*0.10%*	*99.83%*
Van Buren	*5,448*	*0.09%*	*99.92%*
Pickett	*4,855*	*0.08%*	*100.00%*
Tennessee	6,038,803		

than 0.3% of the total VMT). The qualifying route segments from the 16 counties collectively constitute the set of observation sites from which the survey sites are then selected. The qualifying route segments from the 45 counties collectively will constitute the "target population" of observation sites.

The qualifying route segments from each of the survey counties are stratified into the following four groupings using TRIMS functional classification data:

1. All Interstates, Freeways or Expressways;
2. Other Principal Arterials;
3. Minor Arterials; and,
4. Collectors.

For a given county, segments will be randomly chosen from each of these four strata. The number of segments chosen from each stratum will be generally proportional to the county's estimated annual VMT in each stratum though providing a minimum of two sites in each stratum-county. The proportional allocation of the segments across the various roadway groupings assures that the final sample is representative of the urban and rural mix in the county, as well as the mix of roadway functional types. The proposed allocation of sites, for the 16 counties identified in Table 1, is shown in Table 2.

In order to achieve the required level of precision, a total of 160 roadway segments will comprise the sample. In safety belt observation designs for other States, this number has yielded results well within NHTSA's reliability requirement of 5% relative error. Should the measurement for safety belt use not meet this standard, however, additional observations will be conducted as recommended by NHTSA in order to achieve the necessary reliability.

Forty percent of these sample sites (64 sites) will be allocated to the state's four largest counties, with each of these counties receiving one-fourth of this total number, or 16 sites. The remaining 60 percent (96 sites) will evenly divided among the 12 smaller counties in the survey, i.e., eight sample sites per county. In addition, one alternate site per county per roadway classification will be identified (this represents an additional 80 sites which can be used as substitute sites in the event that a primary site is unusable, e.g., closed for road work). The sample sites within each stratum are to be selected without replacement.

Table 2: Proposed Site Allocation by County and Road Class Stratum

County	Sites Allocated	County VMT (excl. local)	Road Class Stratum	Road Class VMT	Number of Sites if Allocated by VMT	Adjusted Number of Sites
Shelby	16	21,707,688	1	7,411,421	5.46	6
			2	6,110,646	4.50	4
			3	6,441,313	4.75	4
			4	1,744,308	1.29	2
Davidson	16	18,528,430	1	10,249,296	8.85	6
			2	3,581,238	3.09	4
			3	3,616,214	3.12	4
			4	1,081,682	0.93	2
Knox	16	11,318,599	1	5,584,194	7.89	6
			2	2,721,922	3.85	4
			3	1,872,610	2.65	4
			4	1,139,873	1.61	2
Hamilton	16	8,930,615	1	3,984,258	7.14	6
			2	2,088,215	3.74	4
			3	2,333,200	4.18	4
			4	524,942	0.94	2
Rutherford	8	6,231,299	1	2,381,636	3.06	2
			2	1,632,711	2.10	2
			3	1,330,927	1.71	2
			4	886,025	1.14	2
Williamson	8	4,849,437	1	1,858,847	3.07	2
			2	1,017,887	1.68	2
			3	1,177,728	1.94	2
			4	794,975	1.31	2
Sullivan	8	3,816,581	1	1,152,546	2.42	2
			2	1,338,460	2.81	2
			3	960,607	2.01	2
			4	364,968	0.77	2
Montgomery	8	3,189,595	1	725,244	1.82	2
			2	1,073,206	2.69	2
			3	998,797	2.51	2
			4	392,348	0.98	2
Blount	8	2,375,406	1	85,741	0.29	2
			2	1,269,771	4.28	2
			3	520,081	1.75	2
			4	499,813	1.68	2
Wilson	8	3,663,739	1	1,620,422	3.54	2
			2	882,859	1.93	2
			3	619,552	1.35	2
			4	540,906	1.18	2
Bradley	8	2,504,115	1	1,061,431	3.39	2
			2	566,935	1.81	2
			3	560,284	1.79	2
			4	315,465	1.01	2
Sevier	8	2,709,465	1	305,523	0.90	2
			2	1,175,787	3.47	2
			3	673,271	1.99	2
			4	554,884	1.64	2
Tipton	8	981,522	1	0	0.00	0
			2	478,988	3.90	3
			3	214,826	1.75	2
			4	287,708	2.34	3
Jefferson	8	2,137,837	1	1,204,100	4.51	2
			2	171,320	0.64	2
			3	418,907	1.57	2
			4	343,510	1.29	2
Franklin	8	834,019	1	0	0.00	0
			2	379,252	3.64	3
			3	163,419	1.57	2
			4	291,348	2.79	3
Fayette	8	1,543,165	1	565,778	2.93	2
			2	409,204	2.12	2
			3	306,157	1.59	2
			4	262,026	1.36	2
Totals	160	95,321,512	1	38,190,437	55.26	44
			2	24,898,401	46.25	42
			3	22,207,893	36.22	40
			4	10,024,781	22.26	34

Data Collection

An observation site is a homogeneous segment of roadway, generally ranging in length from 0.5 to 5 miles. A typical segment is approximately 1 mile in length (the longer segments tend to be in rural areas where there are few intersections or driveways). For each observation site, at the time the site is initially selected a direction of travel will be randomly selected to be the travel direction of record. Proceeding in this direction from the beginning point of the segment, the observer is instructed to position himself or herself at the first intersection (preferably the first controlled intersection) within the segment.

The observer is to find a safe spot to stand just beyond the edge of the roadway at or very near the intersection. From this vantage point the observer records the belt use/nonuse of occupants of all passenger vehicles in the travel direction of record. If there are multiple through lanes in the travel direction of record, the first preference is to record all vehicles in all through lanes. If traffic is too heavy, then observers will split the observation time into a number of periods equal to the number of through lanes and then record belt use for one through lane at a time, beginning with the outermost lane. In the rare event that traffic is too heavy to count every vehicle in the survey lane, observers are instructed to identify a point down the road such that, when they complete recording data for the current vehicle, they can look up and select the next vehicle passing the point in that lane as the next one for observing.

Vehicles included in the survey data shall include all passenger cars, pickup trucks, vans, and sport utility vehicles. The shoulder belt use/nonuse of all front seat, outboard occupants of passenger vehicles is recorded. Children in child restraint seats are <u>not</u> counted, but children not in such devices are counted, and if they are wearing a shoulder belt, they are counted as "belted." Since motorcycle traffic volumes are relatively low, all motorcycle traffic visible from the observation site, regardless of direction or lane of travel, is counted for the motorcycle helmet use survey. The helmet use and nonuse of both motorcycle drivers and any passengers are recorded.

The observation period at each site is 45 minutes. There are eight observation periods per day, scheduled to begin at the following times: 8:00 am; 9:15 am; 10:30 am; 11:45 am; 1:00 pm; 2:15 pm; 3:30 pm; and 4:45 pm. Actual observation time periods will begin at these times or as close as practical to these times, i.e., as soon the observer can get positioned at the site. Observers are instructed to commence counting with the first vehicle which arrives at the site after the time period begins, and to cease counting at the precise end of the 45-minute time period.

Data are collected during all daylight hours from 8:00 am to 6:00 pm and on all days of the week. When observation time periods are assigned to individual sites, the sites are first clustered according to travel time proximity. Those sites within a reasonable driving range, i.e., approximately 25 minutes, are grouped together. A cluster is then randomly assigned to a day or days of the week. Then, the sites within the cluster are randomly assigned to the consecutive observation time periods within that day or days, balancing within and between clusters time of day for sites by road functional class strata. It is expected that the sites within a county will make up a cluster (or two clusters, for the certain-selection counties). Clusters will be assigned days of the week to balance the type of county (e.g., urban/rural, part of the state) across weekdays and weekends.

If an observation site cannot be surveyed because of construction activities, safety concerns, or another legitimate reason, the site is abandoned. The observer is instructed to travel to the next alternative site of the same function-class stratum, observe at that site as quickly as possible, then go to the next assigned site and resume the survey as scheduled, staying as close as possible to the scheduled order and time of sites. As noted previously, alternate sites are selected during the initial sampling process.

The surveys will continue during mild inclement weather. In the event of severe inclement weather, the surveys are discontinued until such time as the weather eases. Then, the surveys are resumed according to the original schedule. After the remaining sites in a cluster have been surveyed, the observer returns to the missed site(s), and he/she surveys the site(s) beginning in the next consecutive time period.

Estimation

Calculation of Overall Safety Belt Usage Rate

Safety belt use rates will be calculated using formulas based on the proportion of the state's total VMT (excluding local-road VMT) "represented" by the site. Safety belt use rate calculations will follow a four-step process.

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

$$p_{i(j)k} = \sum_{l=1}^{n_{i(j)k}} p_{i(j)kl} / n_{i(j)k} \tag{1}$$

where $i(j)$ = county i within category j (where category 1 = the 4 certain-selection counties and category 2 = the 12 random-selection counties), k = road functional category stratum, l = site within stratum and county, $n_{i(j)k}$ = number of sites within the stratum-county combination, and $p_{i(j)kl}$ = the observed safety belt use rate at site $i(j)kl$ = $B_{i(j)kl}/O_{i(j)kl}$, where $B_{i(j)kl}$ = total number of belted occupants (drivers and outboard front-seat passengers) observed at the site and $O_{i(j)kl}$ = total number of occupants whose belt use was observed at the site.

Second, a county-by-county safety belt use rate, $p_{i(j)}$, will be obtained by combining county-stratum safety belt use rates across strata within counties, weighted by the class's relative contribution to total county VMT:

$$p_{i(j)} = \frac{\sum_k VMT_{i(j)k} \, p_{i(j)k}}{\sum_k VMT_{i(j)k}} \tag{2}$$

where $VMT_{i(j)k}$ = VMT of all roads in stratum k in county $i(j)$, and $p_{i(j)k}$ = safety belt use rate for stratum k in county $i(j)$.

In the third step, category-weighted safety belt use rates will be obtained by combining and weighting the rates from the sampled counties in each category by their VMT values and probabilities of being selected:

$$p_j = \frac{\sum_i VMT_{i(j)} W_{i(j)} \, p_{i(j)}}{\sum_i VMT_{i(j)} W_{i(j)}} \tag{3}$$

where $VMT_{i(j)}$ = total VMT for county i in region j and $W_{i(j)}$ = the inverse of the probability of the

county's selection: $W_{i(1)}$ = 1 for the certainty counties and $W_{i(2)} = \dfrac{\sum_{l=1}^{41} Pop_{l(2)}}{12 * Pop_{i(2)}}$ where 41 = the

number of high population counties in category 2, 12 = the number of those counties to be selected, and $Pop_{l(2)}$ are 2006 Census county population estimates.

Finally, the statewide belt use proportion will be calculated by combining the category proportions weighted by their proportion of statewide (45-county) VMT:

$$p = \frac{\sum_{j=1}^{2} VMT_j p_j}{\sum_{j=1}^{2} VMT_j} \qquad (4)$$

The result will be a weighted combination of the individual site safety belt use rates. Estimates of subgroups of occupants, such as male drivers, female passengers, male drivers of pickup trucks, etc., will be calculated in the same way.

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

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

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

where $\hat{\sigma}_{\hat{p}}$ = standard deviation (standard error) of the estimated statewide safety belt use proportion $\hat{p}$ (equivalent to p in the notation of formulas 1-4), n = the number of sites, i.e., 160, and $\hat{p}_i$ = the estimated statewide belt use proportion with site i excluded from the calculation.

The relative error rate, i.e., $\hat{\sigma}_{\hat{p}} / \hat{p}$, will also be calculated, as will the 95% confidence interval, i.e., $\hat{p} \pm 1.96 \hat{\sigma}_{\hat{p}}$. These values will be reported for the overall statewide seatbelt use rate. Should the calculated relative error rate fail to meet NHTSA's 5% criterion, additional data observations, or other remedies agreeable to NHTSA, will be undertaken to achieve the necessary reliability.

Calculation of Overall Motorcycle Helmet Usage Rate and Standard Error of the Usage Rate

Motorcycle helmet use rates will be calculated using a three-step process. The process proposed is different than that to be used for safety belt use calculations because one of the two weighting factors, VMT, is primarily a passenger vehicle and truck measure. Because there is no comparable motorcycle VMT measure, we propose using simple averages up to the level of county helmet use. County values will then be combined using the population factors used for calculating safety belt use rates.

First, a county-by-county helmet use rate, $m_{i(j)}$, will be obtained by dividing the number of helmet-wearing riders observed across all sites in the county by the total number of riders observed:

$$m_{i(j)} = \sum_{k,l} H_{i(j)kl} / \sum_{k,l} R_{i(j)k} \qquad \text{(M1)}$$

where $H_{i(j)kl}$ = the number of helmeted riders observed at site l in stratum k in county $i(j)$, and $R_{i(j)kl}$ = the total number of riders observed at site l in stratum k in county $i(j)$.

In the second step, category-weighted helmet use rates will be obtained by combining the rates from the sampled counties in each category by their probabilities of being selected:

$$m_j = \frac{\sum_i U_{i(j)} m_{i(j)}}{\sum_i U_{i(j)}} \qquad \text{(M2)}$$

where $U_{i(j)}$ = the inverse of the probability of the county's selection: $U_{i(1)} = 1$ for the certainty counties and $U_{i(2)} = \dfrac{\sum_{l=1}^{41} Pop_{l(2)}}{12 * Pop_{i(2)}}$ where 41 = the number of high population counties in category 2 and 12 = the number of those counties selected.

Finally, the statewide helmet proportion will be calculated by combining the category proportions weighted by their proportion of statewide population:

$$m = \frac{\sum_{j=1}^{2} U_j m_j}{\sum_{j=1}^{2} U_j} \qquad \text{(M3)}$$

where U_j = the proportion of the State's population in category j. Estimates of subgroups of riders, such as male drivers, female passengers, etc., will be calculated in the same way.

Standard error of estimate values will be calculated using a jackknife procedure analagous to that used in the safety belt use calculations, as will relative error rates.

Attachment 5

Tennessee Department of Health Population Projections

Hispanic Population Estimates and Projections, Tennessee Counties and the State, 2000-2010

Tennessee
SEX- Total

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	14,097	14,952	15,883	16,858	18,001	19,229	19,945	20,582	21,249	21,920	22,606
5 to 9	10,466	11,618	12,868	14,342	15,948	17,751	18,665	19,570	20,573	21,669	22,870
10 to 14	8,487	9,087	9,743	10,474	11,277	12,169	13,476	14,938	16,579	18,417	20,512
15 to 19	11,862	12,048	12,238	12,516	12,831	13,220	13,808	14,400	15,062	15,762	16,537
20 to 24	17,779	17,819	17,840	17,994	18,220	18,528	18,295	18,049	17,844	17,687	17,555
25 to 29	16,299	17,621	19,010	20,637	22,487	24,571	24,525	24,486	24,492	24,574	24,712
30 to 34	12,422	13,594	14,873	16,348	18,041	19,950	21,545	23,257	25,179	27,291	29,633
35 to 39	9,510	10,248	11,046	11,963	13,033	14,212	15,569	17,067	18,726	20,589	22,659
40 to 44	7,095	7,622	8,196	8,856	9,603	10,494	11,327	12,258	13,278	14,408	15,641
45 to 49	5,017	5,478	6,006	6,564	7,201	7,919	8,625	9,299	10,052	10,886	11,813
50 to 54	3,593	3,886	4,231	4,609	5,029	5,522	6,027	6,554	7,136	7,787	8,524
55 to 59	2,328	2,528	2,777	3,070	3,390	3,773	4,098	4,425	4,786	5,203	5,693
60 to 64	1,590	1,693	1,834	1,982	2,153	2,372	2,594	2,836	3,125	3,433	3,809
65 to 69	1,110	1,159	1,236	1,330	1,428	1,556	1,654	1,774	1,913	2,081	2,286
70 to 74	873	880	915	933	964	1,020	1,058	1,135	1,220	1,304	1,417
75 to 79	593	610	646	667	693	737	737	775	795	817	860
80 to 84	381	372	382	413	413	432	449	470	491	512	546
85 PLUS	336	334	335	351	347	355	360	373	390	398	409
ALL AGES	123,838	131,549	140,059	149,907	161,059	173,810	182,757	192,248	202,890	214,738	228,082

Taken from "Tennessee Population Projections, 2000-2010" published online at
http://health.state.tn.us/statistics/PdfFiles/HispanicPopProj_0703Full.pdf
by Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics 2008.

Population Estimates and Projections, Tennessee Counties and the State, 2000-2010

Tennessee
RACE/SEX- Total

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	374,880	378,327	381,613	384,765	389,449	394,582	398,283	400,744	403,306	405,883	408,513
5 to 9	395,813	393,527	391,027	388,933	385,874	383,595	387,526	391,359	395,254	399,293	403,411
10 to 14	395,155	397,011	398,652	400,636	401,523	403,127	402,927	402,615	402,449	402,445	402,598
15 to 19	395,184	398,420	400,536	403,367	407,051	411,948	418,221	422,058	426,040	430,127	434,389
20 to 24	386,345	389,568	391,729	394,776	398,730	403,989	408,582	411,171	413,874	416,770	419,842
25 to 29	403,829	402,014	398,907	396,608	395,120	394,720	399,630	403,051	406,654	410,534	414,658
30 to 34	412,072	412,662	411,842	411,830	412,595	414,365	414,786	413,184	411,735	410,450	409,320
35 to 39	453,327	446,437	438,185	430,827	424,418	419,309	422,206	422,763	423,455	424,276	425,240
40 to 44	449,200	451,187	451,756	453,096	455,355	458,915	454,506	447,360	440,455	433,784	427,349
45 to 49	412,704	423,151	432,042	439,488	446,752	454,825	461,441	463,206	465,073	467,084	469,225
50 to 54	374,212	384,146	392,868	400,354	407,796	416,089	427,871	435,364	443,130	451,155	459,483
55 to 59	293,942	308,635	322,803	336,333	350,289	365,429	376,190	383,509	391,153	399,087	407,442
60 to 64	239,309	248,687	257,434	265,401	273,591	282,324	297,362	310,309	323,916	338,213	353,277
65 to 69	204,571	208,295	211,438	215,556	219,581	225,129	233,204	240,971	249,069	257,487	266,258
70 to 74	178,281	178,437	178,148	178,702	178,995	180,503	184,069	187,274	190,555	193,966	197,538
75 to 79	144,848	144,937	144,664	145,029	145,266	146,399	146,835	147,023	147,277	147,569	147,925
80 to 84	94,146	96,400	98,491	101,081	103,658	106,897	107,295	107,512	107,787	108,086	108,420
85 plus	81,465	84,302	85,874	87,624	89,686	93,790	97,702	100,570	103,556	106,594	109,766
ALL AGES	5,689,283	5,746,143	5,788,009	5,834,406	5,885,729	5,955,935	6,038,636	6,090,043	6,144,738	6,202,803	6,264,654

Tennessee
RACE/SEX- White Male

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	147,493	148,711	149,876	150,936	152,567	154,390	155,670	156,418	157,159	157,927	158,710
5 to 9	154,242	153,563	152,720	152,064	151,043	150,266	151,599	153,006	154,439	155,885	157,351
10 to 14	156,247	156,580	156,748	157,098	157,047	157,230	157,321	157,509	157,702	157,971	158,249
15 to 19	158,316	159,810	160,793	162,003	163,541	165,624	168,131	169,295	170,502	171,736	173,005
20 to 24	154,846	156,328	157,367	158,737	160,488	162,825	164,647	165,320	166,039	166,816	167,637
25 to 29	164,644	163,839	162,443	161,341	160,549	160,232	162,311	163,539	164,848	166,269	167,784
30 to 34	169,721	169,997	169,637	169,542	169,766	170,436	170,588	169,616	168,708	167,854	167,036
35 to 39	185,080	182,897	180,076	177,553	175,359	173,725	174,969	174,980	175,011	175,081	175,156
40 to 44	183,195	184,443	185,080	185,974	187,201	188,998	187,805	185,190	182,631	180,136	177,706
45 to 49	169,651	173,586	176,777	179,353	181,842	184,656	187,407	188,246	189,102	190,006	190,942
50 to 54	159,120	162,145	164,525	166,292	167,949	169,877	174,259	176,907	179,639	182,455	185,357
55 to 59	126,339	132,298	137,940	143,263	148,741	154,663	158,036	159,890	161,804	163,756	165,788
60 to 64	101,210	105,283	109,041	112,464	115,995	119,755	125,757	130,884	136,230	141,814	147,676
65 to 69	83,423	85,352	86,999	89,085	91,094	93,766	97,285	100,635	104,127	107,743	111,502
70 to 74	69,372	69,702	69,833	70,269	70,635	71,458	73,195	74,748	76,343	78,007	79,716
75 to 79	51,473	51,916	52,163	52,678	53,164	53,956	54,312	54,550	54,816	55,087	55,388
80 to 84	29,334	30,231	31,080	32,097	33,121	34,362	34,745	35,065	35,399	35,759	36,133
85 plus	19,127	19,845	20,259	20,691	21,223	22,254	23,335	24,149	24,981	25,852	26,763
ALL AGES	2,282,833	2,306,526	2,323,357	2,341,440	2,361,325	2,388,473	2,421,372	2,439,947	2,459,480	2,480,154	2,501,899

Source: Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics   2008 Revision (2/08)

Population Estimates and Projections, Tennessee Counties and the State, 2000-2010

Tennessee
RACE/SEX- White Female

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	138,892	140,072	141,213	142,287	143,866	145,654	146,884	147,555	148,255	148,969	149,686
5 to 9	145,339	144,724	143,947	143,319	142,390	141,662	142,897	144,199	145,505	146,847	148,178
10 to 14	147,369	147,665	147,789	148,054	148,012	148,138	148,306	148,541	148,803	149,090	149,401
15 to 19	149,159	150,328	151,070	152,050	153,349	155,163	157,722	158,975	160,281	161,603	162,959
20 to 24	148,620	149,957	150,887	152,121	153,693	155,779	157,750	158,605	159,502	160,467	161,486
25 to 29	158,498	157,586	156,147	154,968	154,086	153,650	155,777	157,014	158,332	159,732	161,221
30 to 34	164,715	164,837	164,321	164,102	164,156	164,654	164,664	163,509	162,386	161,321	160,294
35 to 39	186,149	182,868	179,023	175,516	172,385	169,839	170,959	170,737	170,534	170,349	170,201
40 to 44	185,883	186,853	187,192	187,829	188,845	190,430	188,207	184,493	180,891	177,387	173,964
45 to 49	173,690	177,544	180,679	183,161	185,591	188,297	190,832	191,394	191,994	192,619	193,295
50 to 54	162,641	166,063	168,835	170,980	173,096	175,477	179,865	182,495	185,190	187,957	190,808
55 to 59	132,014	138,111	143,857	149,270	154,814	160,824	164,671	167,004	169,409	171,869	174,392
60 to 64	109,619	113,724	117,498	120,878	124,367	128,080	134,409	139,749	145,319	151,148	157,225
65 to 69	97,218	98,767	99,980	101,650	103,249	105,553	109,248	112,716	116,311	120,059	123,939
70 to 74	89,038	88,850	88,388	88,355	88,184	88,613	90,143	91,437	92,763	94,136	95,557
75 to 79	78,349	78,096	77,624	77,474	77,244	77,487	77,499	77,317	77,169	77,051	76,950
80 to 84	54,857	56,175	57,335	58,784	60,232	62,051	62,075	61,943	61,830	61,735	61,651
85 plus	52,499	54,494	55,651	56,903	58,369	61,160	63,753	65,610	67,514	69,481	71,512
ALL AGES	2,374,549	2,396,714	2,411,436	2,427,701	2,445,928	2,472,511	2,505,661	2,523,293	2,541,988	2,561,820	2,582,719

Tennessee
RACE/SEX- Black Male

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	41,636	41,955	42,222	42,476	42,934	43,365	43,796	44,182	44,587	44,981	45,383
5 to 9	46,099	45,378	44,689	44,020	43,188	42,513	42,968	43,294	43,629	43,993	44,366
10 to 14	43,715	44,274	44,865	45,474	45,876	46,410	45,932	45,307	44,719	44,149	43,610
15 to 19	40,920	41,232	41,434	41,758	42,156	42,629	43,164	43,786	44,431	45,097	45,794
20 to 24	36,047	36,277	36,414	36,631	36,913	37,276	37,683	38,200	38,742	39,295	39,879
25 to 29	34,079	33,891	33,605	33,412	33,300	33,259	33,600	34,032	34,465	34,927	35,411
30 to 34	32,255	32,286	32,225	32,248	32,320	32,431	32,410	32,477	32,567	32,665	32,785
35 to 39	34,377	33,637	32,806	32,071	31,416	30,804	30,977	31,212	31,474	31,756	32,045
40 to 44	33,499	33,358	33,107	32,931	32,832	32,788	32,228	31,727	31,247	30,783	30,335
45 to 49	29,163	30,181	31,163	32,035	32,889	33,813	34,307	34,393	34,486	34,595	34,713
50 to 54	22,223	23,645	25,086	26,521	27,978	29,547	30,737	31,580	32,457	33,380	34,328
55 to 59	14,423	15,536	16,684	17,849	19,076	20,402	21,822	23,047	24,354	25,746	27,218
60 to 64	11,120	11,613	12,104	12,566	13,031	13,539	14,648	15,656	16,746	17,930	19,206
65 to 69	9,187	9,298	9,403	9,540	9,688	9,904	10,253	10,635	11,035	11,450	11,893
70 to 74	7,397	7,389	7,385	7,416	7,436	7,501	7,631	7,763	7,893	8,027	8,176
75 to 79	5,286	5,242	5,208	5,196	5,171	5,184	5,196	5,224	5,255	5,288	5,324
80 to 84	3,154	3,151	3,159	3,192	3,220	3,266	3,255	3,252	3,251	3,253	3,254
85 plus	2,627	2,613	2,572	2,530	2,502	2,523	2,560	2,583	2,599	2,619	2,651
ALL AGES	447,207	450,956	454,131	457,866	461,926	467,154	473,167	478,350	483,937	489,934	496,371

2008 Revision (2/08)

Population Estimates and Projections, Tennessee Counties and the State, 2000-2010

Tennessee
RACE/SEX- Black Female

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	40,494	40,868	41,191	41,515	42,023	42,516	42,945	43,332	43,729	44,129	44,533
5 to 9	44,352	43,758	43,199	42,641	41,936	41,363	41,879	42,283	42,691	43,114	43,557
10 to 14	42,229	42,727	43,261	43,789	44,130	44,609	44,255	43,756	43,287	42,833	42,411
15 to 19	40,324	40,596	40,783	41,070	41,451	41,896	42,377	42,963	43,560	44,176	44,817
20 to 24	39,428	39,378	39,212	39,164	39,192	39,272	39,717	40,277	40,852	41,455	42,084
25 to 29	38,026	37,985	37,859	37,854	37,932	38,060	38,181	38,422	38,664	38,920	39,188
30 to 34	37,455	37,234	36,927	36,716	36,584	36,472	36,626	36,908	37,207	37,516	37,851
35 to 39	40,363	39,413	38,380	37,457	36,641	35,880	35,831	35,878	35,946	36,027	36,130
40 to 44	39,891	39,579	39,178	38,868	38,637	38,452	37,736	37,100	36,486	35,888	35,323
45 to 49	34,326	35,640	36,879	38,027	39,130	40,333	40,821	40,803	40,790	40,794	40,804
50 to 54	25,579	27,320	29,097	30,865	32,671	34,626	36,105	37,164	38,279	39,428	40,632
55 to 59	17,949	19,191	20,467	21,745	23,060	24,473	26,245	27,813	29,477	31,228	33,104
60 to 64	15,103	15,623	16,129	16,572	17,000	17,455	18,743	19,882	21,110	22,407	23,801
65 to 69	13,258	13,292	13,325	13,407	13,496	13,655	13,996	14,365	14,748	15,144	15,553
70 to 74	11,461	11,435	11,391	11,411	11,415	11,497	11,571	11,660	11,752	11,842	11,953
75 to 79	9,198	9,109	9,039	8,991	8,944	8,958	8,982	9,005	9,042	9,080	9,124
80 to 84	6,483	6,519	6,574	6,645	6,705	6,818	6,807	6,791	6,782	6,775	6,780
85 plus	6,975	7,109	7,142	7,233	7,317	7,559	7,757	7,920	8,102	8,277	8,461
ALL AGES	502,894	506,776	510,033	513,970	518,264	523,894	530,574	536,322	542,504	549,033	556,106

Tennessee
RACE/SEX- Other Male

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	3,154	3,345	3,561	3,790	4,061	4,376	4,556	4,710	4,885	5,053	5,229
5 to 9	2,989	3,135	3,296	3,477	3,662	3,864	4,078	4,291	4,512	4,759	5,031
10 to 14	2,810	2,916	3,044	3,173	3,307	3,473	3,635	3,805	3,992	4,190	4,409
15 to 19	3,322	3,305	3,296	3,308	3,327	3,360	3,473	3,599	3,734	3,877	4,050
20 to 24	3,849	3,963	4,070	4,198	4,359	4,551	4,513	4,490	4,463	4,452	4,446
25 to 29	4,390	4,449	4,514	4,599	4,712	4,838	4,957	5,098	5,241	5,410	5,587
30 to 34	3,979	4,165	4,376	4,614	4,881	5,173	5,241	5,326	5,419	5,532	5,663
35 to 39	3,652	3,785	3,928	4,097	4,288	4,512	4,709	4,946	5,215	5,500	5,819
40 to 44	3,108	3,256	3,419	3,610	3,837	4,069	4,216	4,378	4,558	4,760	4,975
45 to 49	2,611	2,772	2,950	3,125	3,326	3,540	3,757	3,949	4,162	4,397	4,654
50 to 54	2,160	2,296	2,440	2,584	2,746	2,940	3,115	3,278	3,457	3,647	3,866
55 to 59	1,605	1,722	1,866	2,017	2,170	2,364	2,509	2,649	2,792	2,947	3,130
60 to 64	1,104	1,198	1,301	1,430	1,560	1,704	1,831	1,964	2,115	2,276	2,457
65 to 69	651	707	791	860	963	1,070	1,152	1,246	1,351	1,469	1,601
70 to 74	444	460	494	543	569	608	659	732	804	890	989
75 to 79	211	224	242	271	292	317	326	358	387	408	431
80 to 84	107	109	117	125	132	142	145	158	193	202	214
85 plus	89	88	88	90	91	92	94	94	111	111	113
ALL AGES	40,235	41,895	43,793	45,911	48,283	50,993	52,966	55,071	57,391	59,880	62,664

Source: Tennessee Department of Health, Office of Policy, Planning and Assessment, Division of Health Statistics   2008 Revision (2/08)

Population Estimates and Projections,
Tennessee Counties and the State,
2000-2010

Tennessee
RACE/SEX- Other Female

AGE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0 to 4	3,211	3,376	3,550	3,761	3,998	4,281	4,432	4,547	4,691	4,824	4,972
5 to 9	2,792	2,969	3,176	3,412	3,655	3,927	4,105	4,286	4,478	4,695	4,928
10 to 14	2,785	2,849	2,945	3,048	3,151	3,267	3,478	3,697	3,946	4,212	4,518
15 to 19	3,143	3,149	3,160	3,178	3,227	3,276	3,354	3,440	3,532	3,638	3,764
20 to 24	3,555	3,665	3,779	3,925	4,085	4,286	4,272	4,279	4,276	4,285	4,310
25 to 29	4,192	4,264	4,339	4,434	4,541	4,681	4,804	4,946	5,104	5,276	5,467
30 to 34	3,947	4,143	4,356	4,608	4,888	5,199	5,257	5,348	5,448	5,562	5,691
35 to 39	3,706	3,837	3,972	4,133	4,329	4,549	4,761	5,010	5,275	5,563	5,889
40 to 44	3,624	3,698	3,780	3,884	4,003	4,178	4,314	4,472	4,642	4,830	5,046
45 to 49	3,263	3,428	3,594	3,787	3,974	4,186	4,317	4,421	4,539	4,673	4,817
50 to 54	2,489	2,677	2,885	3,112	3,356	3,622	3,790	3,940	4,108	4,288	4,492
55 to 59	1,612	1,777	1,989	2,189	2,428	2,703	2,907	3,106	3,317	3,541	3,810
60 to 64	1,153	1,246	1,361	1,491	1,638	1,791	1,974	2,174	2,396	2,638	2,912
65 to 69	834	879	940	1,014	1,091	1,181	1,270	1,374	1,497	1,622	1,770
70 to 74	569	601	657	708	756	826	870	934	1,000	1,064	1,147
75 to 79	331	350	388	419	451	497	520	569	608	655	708
80 to 84	211	215	226	238	248	258	268	303	332	362	388
85 plus	148	153	162	177	184	202	203	214	249	254	266
ALL AGES	41,565	43,276	45,259	47,518	50,003	52,910	54,896	57,060	59,438	61,982	64,895

Taken from "Tennessee Population Projections, 2000-2010" published online at
http://health.state.tn.us/statistics/PdfFiles/PopProj_2000-2010Full.pdf   by Tennessee Department of
Health, Office of Policy, Planning and Assessment, Division of Health Statistics 2008.

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