

# **Safety Belt Enforcement in Tennessee**

**Annual Report to the  
Tennessee General Assembly**

The logo for the Tennessee Department of Safety, featuring the text "TENNESSEE DEPARTMENT OF SAFETY" in a serif font, centered between two thick, black, horizontal bars that have a jagged, torn-edge appearance.

***TENNESSEE DEPARTMENT OF SAFETY***

**Dave Mitchell, Commissioner  
April 2008**



# Table of Contents

<b>Introduction</b>	<b>1</b>
<b>Convictions</b>	<b>7</b>
Safety Belts	9
Child Restraint Devices	15
<b>Citations</b>	<b>21</b>
Safety Belts	23
Child Restraint Devices	27
<b>Supplemental Information</b>	<b>31</b>
Observed Safety Belt Usage	33
Safety Belt Usage in Tennessee Traffic Crashes	34
<b>Attachments</b>	<b>37</b>
Tennessee Code Annotated § 55-9-602	39
Tennessee Code Annotated § 55-9-603	45
Traffic Safety Facts: Crash Stats, April 2007	51
Survey of Safety Belt and Motorcycle Helmet Usage in Tennessee	55
Tennessee Department of Health Population Projections	79



# **Introduction**



# **Safety Belt Enforcement in Tennessee 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 104<sup>th</sup>, 105<sup>th</sup>, and 106<sup>th</sup> 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 Section 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 2002-2003 through 2006-2007. 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. Traffic crash restraint usage by vehicle occupants is also based upon fiscal year data. However, given the significant delay in processing and keying crash reports, crash data contained in this report since 2005 is considered preliminary.

Statewide safety belt convictions reported to the Department of Safety (all agencies) increased from 22,299 in FY 02-03 to 58,004 in FY 06-07, a 160% increase. In FY 06-07, adult drivers between the ages of 25-34 represented approximately 28.0% of all those convicted. White adult males were the most frequently convicted in all five years, representing 56.3% of all adult drivers in this period and 78.0% of adult male drivers in FY 06-07. Black males were the next highest group convicted, representing 10.9% of all adult drivers and 16.9% of adult male drivers in FY 06-07.

Of all adult drivers, males were the prominent sex convicted, with 72% in FY 06-07 compared to 28% for females. White females were most often convicted of the female adult drivers, with 80.5% in FY 06-07. The next highest group was black females, representing 16.9% of adult female drivers.

In FY 06-07, adult passengers convicted of safety belt violations represented only 1.4% 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 2002-2003 through 2006-2007. Tennessee Highway Patrol citations issued for safety belt violations decreased from 29,900 in FY 02-03 to 29,023 in FY 03-04. In FY 04-05, there was a large increase to 48,620 and then another increase during FY 05-06 to 51,655. During FY 06-07, citations decreased to 43,525. From FY 02-03 to FY 06-07, Trooper citations issued for these violations increased 46%. Adult drivers between the ages of 25-34 were the most frequently ticketed group throughout the five-year period, averaging approximately 27%.

In FY 06-07, of all adult male drivers, white males received 87.7% of Trooper safety belt citations. Of all adult drivers, white males received 65.5% of these citations. Black males were the next highest group with an average of 8.4% of all male drivers and 6.3% of 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 steadily decreasing for four years, CRD convictions reported to the Department of Safety increased from 2,694 in FY 05-06 to 4,898 in FY 06-07.

Unlike safety belt convictions reported, the majority of CRD convictions were received by females, who made up 59.3%. 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 06-07, white females accounted for 31.8% of all CRD convictions. Black females were the next highest group with 22.8%. For males, white males represented 22.1% of all convictions, with black males coming in second at 10.8%.

Citations issued by THP for CRD violations showed a small increase over the five-year period. These citations grew from 4,100 in FY 02-03 to a five-year high of 5,724 in FY 04-05. Since then CRD citations have decreased to 4,303 in FY 06-07, a reduction of 25%. Adult drivers between the ages of 20-29 were the most frequently ticketed group, averaging approximately 41%.

As was the case with CRD convictions, females received the majority of CRD citations, ranging from 55.8% on FY 02-03 to 56.2% in FY 06-07. White females accounted for an average of 75.8% of the females ticketed during the five-year period. White males made up an average of 72.6% of male drivers ticketed from FY 02-03 to FY 06-07.

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 July 2007 *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 1.6% from 2006 to 2007 (78.6% to 80.2%). This is the first time Tennessee has crossed the 80% threshold for safety belt usage. 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 05-06 and FY 06-07 data are not complete. This is the result of a new crash database and process being implemented in late 2002, which has caused delays in keying data. However, one fact is known: over the last five years, over 59% 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 02-03, police reported that 6.0% of vehicle occupants involved in traffic crashes were not restrained. This percentage decreased each year from 6.0% in FY 02-03 to 4.2% in FY 05-06. However, the data for FY 06-07 is still preliminary and may not be all the crashes that occurred in Tennessee. When comparing FY 02-03 to FY 05-06, the numbers indicate a reduction in all injury categories for the percentage of unrestrained drivers: No Injury = 4.0% to 3.2%; Possible Injury = 9.5% to 8.4%; Non-Incapacitating Injury = 19.6% to 16.3%; Incapacitating Injury = 35.6% to 29.0%; and, Fatal Injury = 65.3% to 54.0%.

Study results suggest that safety belt usage has risen significantly over the past five years by approximately 10.5%, while the number of statewide convictions and 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 2008.

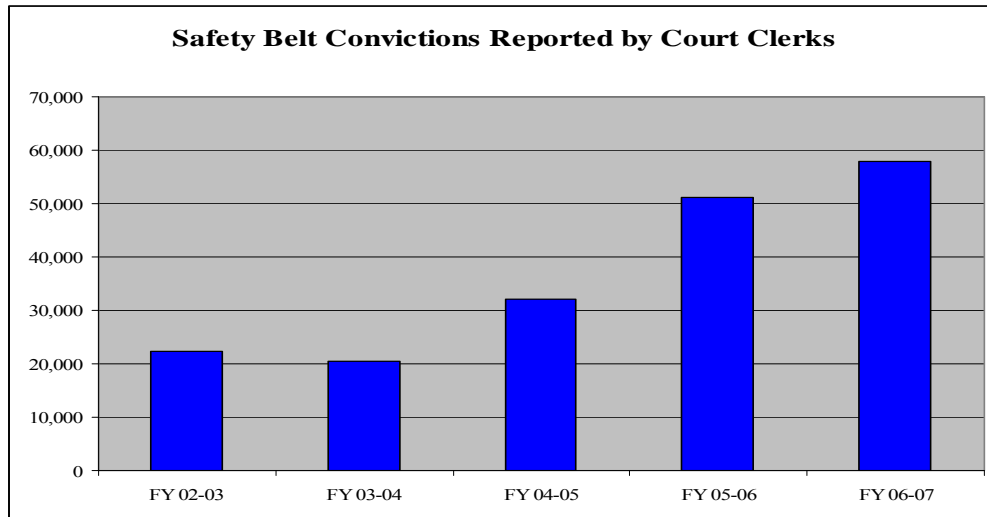
# Convictions



# 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.



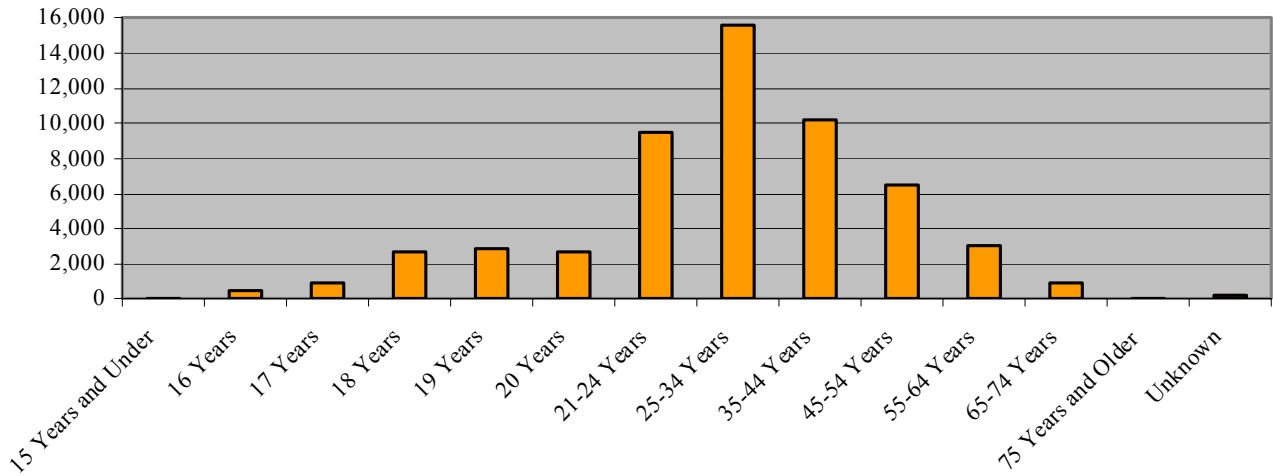
### *Person Type*

In each fiscal year from FY 02-03 to FY 06-07, 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 years, approximately 96% of safety belt convictions each year were for drivers, with the percentage of convictions for passengers increasing each year from 2.6% in FY 02-03 to 3.8% in FY 06-07 (Table 1).

### *Age*

Data regarding the age of drivers convicted of safety belt violations shows a relatively normal distribution in FY 06-07, with the majority of drivers (63.4%) convicted falling into the 21-44 years category. There was a slight decrease in the percentage of drivers age 21-44 convicted over the five-year period from 65.5% in FY 02-03 to 63.4% in FY 06-07. Furthermore, drivers between the ages of 15-24 also saw a decrease in convictions, falling from 38.3% in FY 02-03 to 34.4% in FY 06-07. Of adults age 25 and older, drivers between ages 25-34 represented the highest percentage of convictions with an average of approximately 27.9% over the five-year period.

### Safety Belt Convictions - Drivers Only FY 2006-2007



### Safety Belt Convictions Reported by Court Clerks

Table 1

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>Driver</b>										
15 Years and Under	8	0.04%	6	0.03%	16	0.05%	34	0.07%	35	0.06%
16 Years	148	0.68%	125	0.63%	382	1.24%	375	0.80%	456	0.82%
17 Years	449	2.07%	369	1.87%	671	2.19%	818	1.74%	927	1.66%
18 Years	843	3.88%	860	4.35%	1,853	6.04%	2,358	5.02%	2,672	4.79%
19 Years	1,307	6.02%	1,233	6.24%	1,928	6.28%	2,456	5.23%	2,902	5.20%
20 Years	1,293	5.95%	1,153	5.84%	1,785	5.81%	2,338	4.98%	2,681	4.81%
21-24 Years	4,273	19.67%	3,818	19.33%	5,805	19.33%	7,960	16.96%	9,526	17.08%
25-34 Years	6,277	28.89%	5,580	28.24%	8,221	26.78%	13,424	28.60%	15,625	28.02%
35-44 Years	3,685	16.96%	3,450	17.46%	5,244	17.08%	8,394	17.88%	10,221	18.33%
45-54 Years	2,093	9.63%	1,882	9.53%	3,002	9.78%	5,199	11.08%	6,503	11.66%
55-64 Years	945	4.35%	948	4.80%	1,307	4.26%	2,419	5.15%	3,044	5.46%
65-74 Years	325	1.50%	257	1.30%	374	1.22%	669	1.43%	928	1.66%
75 Years and Older	79	0.36%	75	0.38%	1	0.00%	344	0.73%	68	0.12%
Unknown	0	0.00%	0	0	110	0.36%	148	0.32%	183	0.33%
<b>Total</b>	<b>21,725</b>	<b>100%</b>	<b>19,756</b>	<b>100%</b>	<b>30,699</b>	<b>100%</b>	<b>46,936</b>	<b>100%</b>	<b>55,771</b>	<b>100%</b>
<b>Passenger</b>										
15 Years and Under	0	0.00%	1	0.14%	6	0.41%	67	1.57%	15	0.67%
16 Years	28	4.88%	22	3.13%	112	7.75%	656	15.38%	245	10.97%
17 Years	78	13.59%	63	8.97%	171	11.83%	984	23.08%	349	15.63%
18 Years	97	16.90%	67	9.54%	112	7.75%	246	5.77%	150	6.72%
19 Years	54	9.41%	59	8.40%	105	7.26%	205	4.81%	120	5.37%
20 Years	38	6.62%	39	5.56%	82	5.67%	196	4.60%	117	5.24%
21-24 Years	93	16.20%	115	16.38%	253	17.50%	513	12.03%	344	15.41%
25-34 Years	83	14.46%	184	26.21%	297	20.54%	678	15.90%	403	18.05%
35-44 Years	60	10.45%	75	10.68%	174	12.03%	391	9.17%	279	12.49%
45-54 Years	30	5.23%	52	7.41%	93	6.43%	202	4.74%	145	6.49%
55-64 Years	12	2.09%	17	2.42%	34	2.35%	69	1.62%	47	2.10%
65-74 Years	0	0.00%	7	1.00%	6	0.41%	10	0.23%	16	0.72%
75 Years and Older	1	0.17%	1	0.14%	0	0.00%	32	0.75%	1	0.04%
Unknown	0	0.00%	0	0.00%	1	0.07%	15	0.35%	2	0.09%
<b>Total</b>	<b>574</b>	<b>100%</b>	<b>702</b>	<b>100%</b>	<b>1,446</b>	<b>100%</b>	<b>4,264</b>	<b>100%</b>	<b>2,233</b>	<b>100%</b>
<b>Overall Total</b>	<b>22,299</b>		<b>20,458</b>		<b>32,145</b>		<b>51,200</b>		<b>58,004</b>	

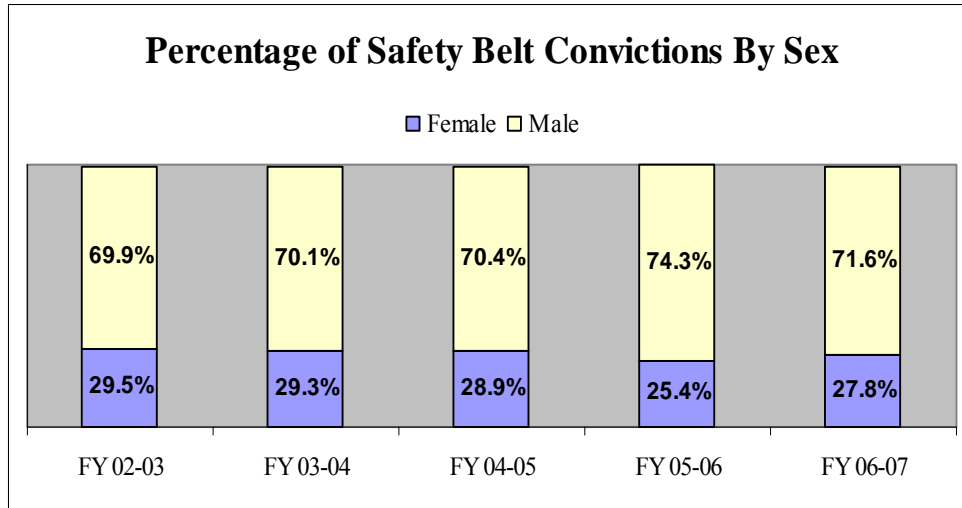
Source: FY 02-03 through FY 03-04 - Driver History File - January 11, 2005

FY 04-05 - Driver History File - March 28, 2006

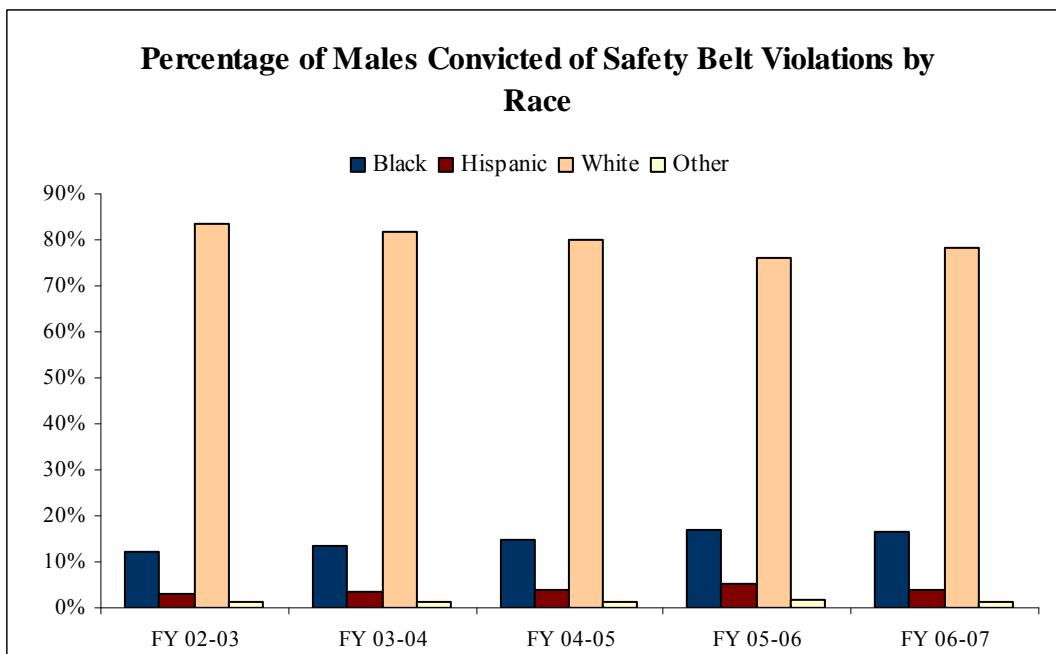
FY 05-06 - FY 06-07 - Driver History File - February 29, 2008

## Sex and Race

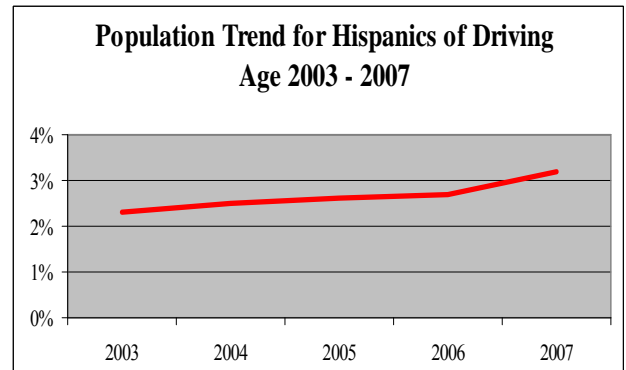
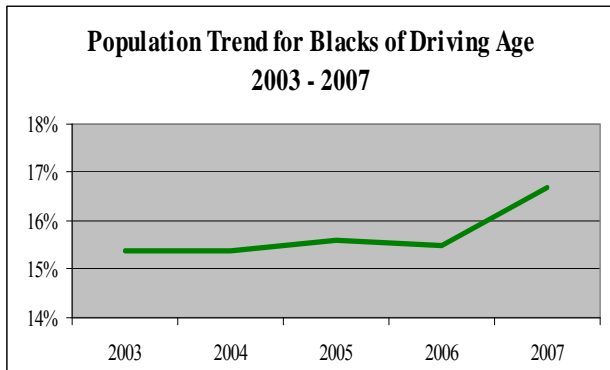
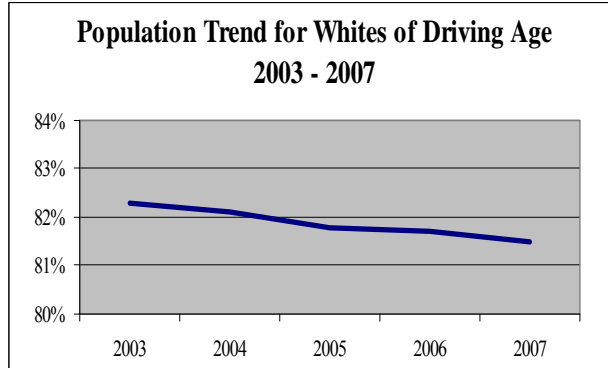
The majority of all convictions reported to the Department were males. In FY 06-07, males represented an average of 72% of the drivers convicted, and 63.4% of the passengers. The chart below illustrates the percentage of males versus females for all convictions reported, both drivers and passengers. Conviction data indicating driver and passenger ethnicity and gender can be found in Table 2.



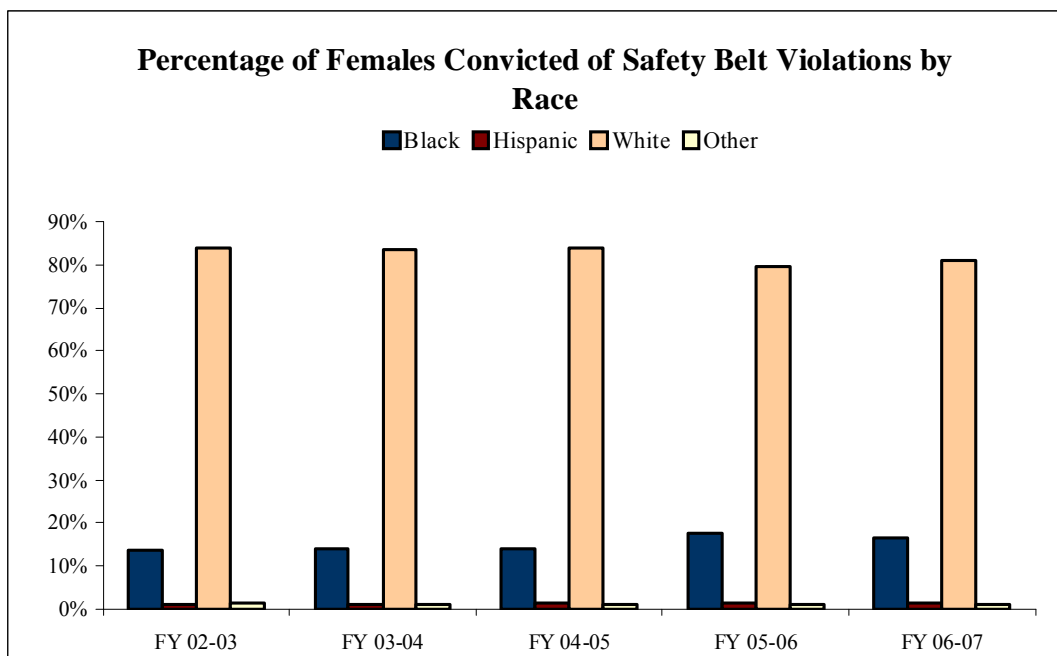
White males were the predominant sex and race of both drivers and passengers, and ticketed females were also predominately white. On average, black males represented 15.0% of the male drivers convicted each year, from a low of 12.3% in FY 02-03 to a high of 16.9% in FY 06-07. Hispanic males were the next group with a low of 3.1% in FY 02-03 increasing each year to a high of 5.0% in FY 05-06, and then dropping to 3.8% in FY 06-07.



These percentages may reflect the growing number of Hispanic and black males of driving age in the state of Tennessee. Population projections from the Tennessee Department of Health show that these two groups are rising as a percentage of the population, while the percentage of white males is decreasing slightly.



White females represented 82.3% of the female drivers convicted over the last five years, with black females averaging 15.1%. The percentages of white, black, and Hispanic females convicted of safety belt violations all remained relatively consistent for the five-year period.





**Safety Belt Convictions Reported By Court Clerks by Type, Sex, and Race**  
**Table 2**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>Drivers</b>										
<b>Female</b>	<b>6,390</b>	<b>29.4%</b>	<b>5,735</b>	<b>29.0%</b>	<b>8,816</b>	<b>28.7%</b>	<b>11,892</b>	<b>24.8%</b>	<b>15,353</b>	<b>27.5%</b>
Asian	17	0.3%	22	0.4%	26	0.3%	7	0.1%	46	0.3%
Black	877	13.7%	825	14.4%	1,253	14.2%	1,012	8.5%	2,590	16.9%
Hispanic	67	1.0%	70	1.2%	118	1.3%	102	0.9%	240	1.6%
Indian	13	0.2%	17	0.3%	13	0.1%	1	0.0%	23	0.1%
White	5,394	84.4%	4,777	83.3%	7,366	83.6%	10,676	89.8%	12,361	80.5%
Other	22	0.3%	24	0.4%	40	0.5%	94	0.8%	93	0.6%
<b>Male</b>	<b>15,201</b>	<b>70.0%</b>	<b>13,897</b>	<b>70.3%</b>	<b>21,691</b>	<b>70.7%</b>	<b>35,882</b>	<b>74.9%</b>	<b>40,138</b>	<b>72.0%</b>
Asian	62	0.4%	57	0.4%	118	0.5%	67	0.2%	209	0.5%
Black	1,870	12.3%	1,905	13.7%	3,227	14.9%	3,157	8.8%	6,766	16.9%
Hispanic	469	3.1%	487	3.5%	845	3.9%	1,406	3.9%	1,516	3.8%
Indian	29	0.2%	31	0.2%	43	0.2%	15	0.0%	68	0.2%
White	12,683	83.4%	11,329	81.5%	17,362	80.0%	30,764	85.7%	31,297	78.0%
Other	88	0.6%	88	0.6%	96	0.4%	473	0.6%	282	0.7%
Unknown Sex	134		124		192		127		279	
<b>Total</b>	<b>21,725</b>		<b>19,756</b>		<b>30,699</b>		<b>47,901</b>		<b>55,770</b>	
<b>Passengers</b>										
<b>Female</b>	<b>192</b>	<b>33.4%</b>	<b>255</b>	<b>36.3%</b>	<b>486</b>	<b>33.6%</b>	<b>1,356</b>	<b>31.6%</b>	<b>794</b>	<b>35.6%</b>
Asian	1	0.5%	1	0.4%	6	1.2%	1	0.1%	3	0.4%
Black	23	12.0%	22	8.6%	53	10.9%	96	7.1%	67	8.4%
Hispanic	3	1.6%	1	0.4%	4	0.8%	14	1.0%	9	1.1%
Indian	0	0.0%	1	0.4%	1	0.2%	0	0.0%	1	0.1%
White	162	84.4%	225	88.2%	419	86.2%	1,230	90.7%	713	89.8%
Other	3	1.6%	5	2.0%	3	0.6%	15	1.1%	1	0.1%
<b>Male</b>	<b>376</b>	<b>65.5%</b>	<b>445</b>	<b>63.4%</b>	<b>948</b>	<b>65.6%</b>	<b>2,905</b>	<b>67.8%</b>	<b>1,415</b>	<b>63.4%</b>
Asian	5	1.3%	3	0.7%	7	0.7%	3	0.1%	7	0.5%
Black	32	8.5%	50	11.2%	118	12.4%	208	7.2%	140	9.9%
Hispanic	12	3.2%	14	3.1%	54	5.7%	115	4.0%	45	3.2%
Indian	2	0.5%	1	0.2%	1	0.1%	0	0.0%	4	0.3%
White	324	86.2%	376	84.5%	761	80.3%	2,534	87.2%	1,206	85.2%
Other	1	0.3%	1	0.2%	7	0.7%	45	1.5%	13	0.9%
Unknown Sex	6		2		12		26		22	
<b>Total</b>	<b>574</b>		<b>702</b>		<b>1,446</b>		<b>4,287</b>		<b>2,231</b>	

Source: FY 01-02 through FY 03-04 - Driver History File - January 11, 2005

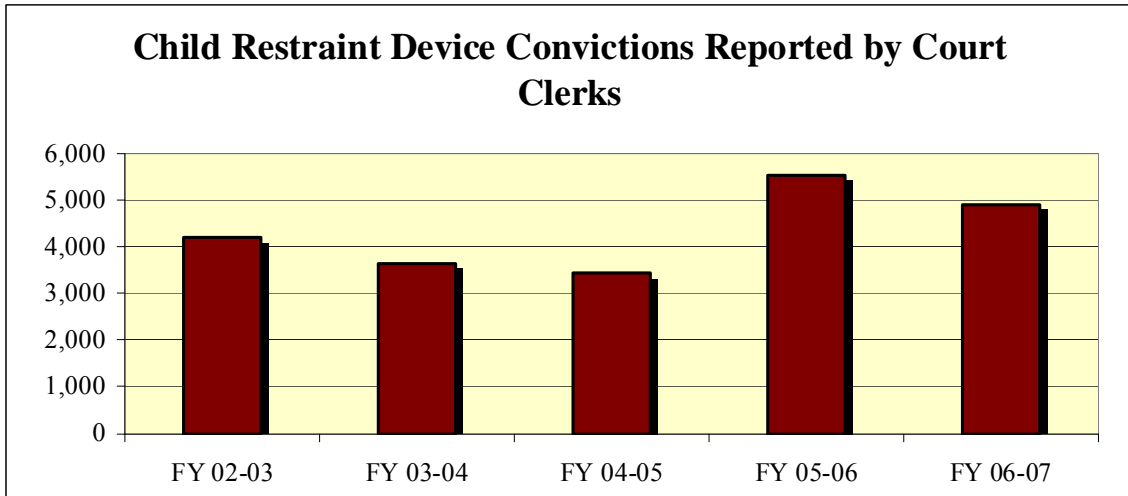
FY 04-05 - Driver History File - March 28, 2006

FY 05-06 - FY 06-07 - Driver History File - February 29, 2008



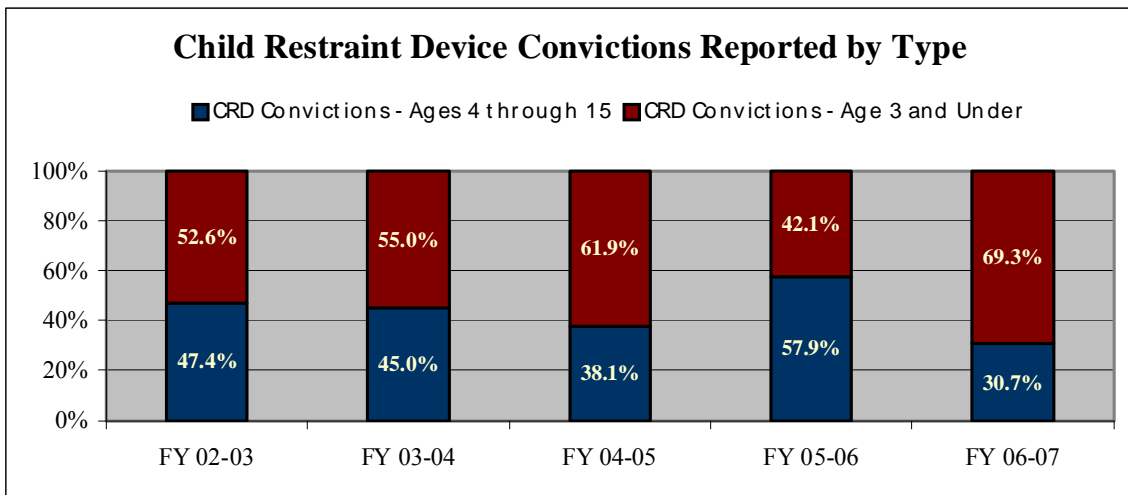
## Child Restraint Convictions

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.



### *Type*

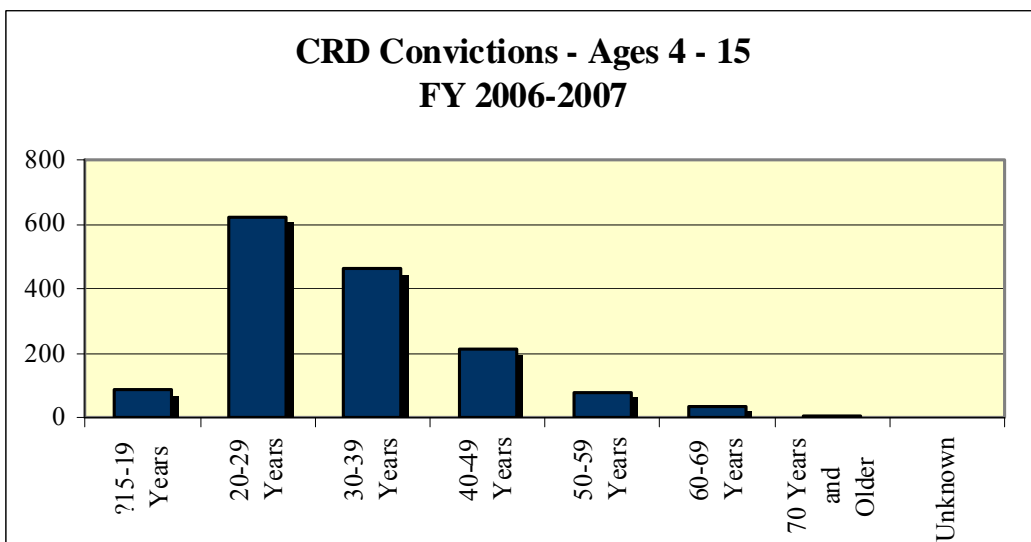
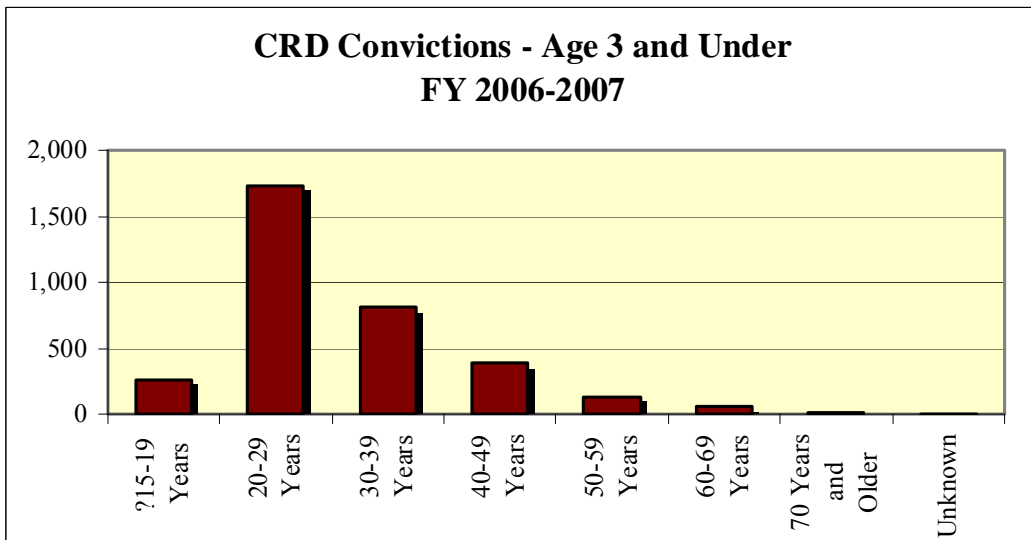
Violations of CRD law (TCA § 55-9-602) are divided into two categories: (1) violations involving children three years of age and younger, and (2) violations involving children ages four through fifteen. In each year, more convictions were reported for violations involving children three years of age and younger, with the percentage of convictions for this group increasing from 52.6% in FY 02-03 to 69.3% in FY 06-07.



## Age

In the past five fiscal years, an average of 69% of drivers convicted for CRD violations – ages 4 through 15 were between the ages 20 and 39, and an average of 74.6% 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 02-03 to 74% in FY 06-07. There was a marked decrease, however, in the percentage of drivers age 30-39 convicted over the five-year period from 30.8% in FY 02-03 to 26% in FY 06-07. That this age group represents the majority of convictions for CRD convictions is not surprising, as this is the age group during which most adults begin families, and would therefore be transporting children.



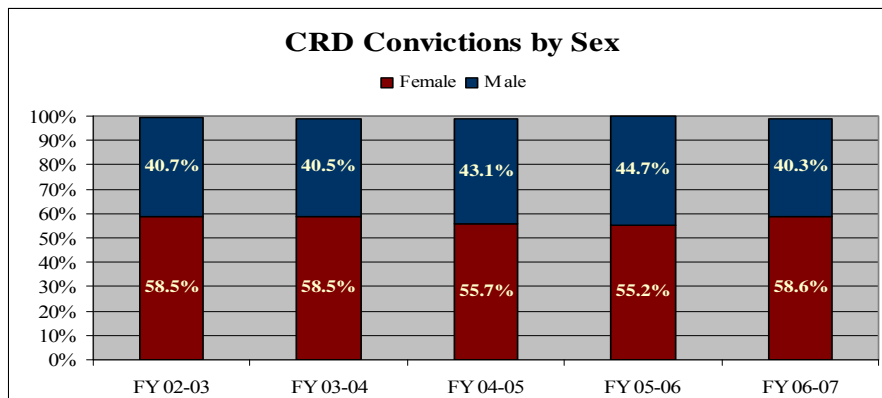
**Child Restraint Device Convictions Reported by Driver Age**  
**Table 3**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY06-07	
<b>CRD Convictions - Ages 4 through 15</b>										
≤15-19 Years	130	6.54%	130	7.95%	99	7.57%	286	8.93%	86	5.73%
20-29 Years	623	31.32%	512	31.31%	465	35.58%	1,165	36.39%	623	41.48%
30-39 Years	714	35.90%	590	36.09%	443	33.89%	1,067	33.33%	462	30.76%
40-49 Years	331	16.64%	254	15.54%	195	14.92%	436	13.62%	211	14.05%
50-59 Years	116	5.83%	101	6.18%	68	5.20%	162	5.06%	80	5.33%
60-69 Years	63	3.17%	42	2.57%	30	2.30%	58	1.81%	35	2.33%
70 Years and Older	8	0.40%	4	0.24%	5	0.38%	19	0.59%	5	0.33%
Unknown	4	0.20%	2	0.12%	2	0.15%	8	0.25%	0	0.00%
<b>Total</b>	<b>1,989</b>	<b>47.42%</b>	<b>1,635</b>	<b>44.98%</b>	<b>1,307</b>	<b>38.06%</b>	<b>3,201</b>	<b>57.86%</b>	<b>1,502</b>	<b>30.67%</b>
<b>CRD Convictions - Age 3 and Under</b>										
≤15-19 Years	157	7.12%	160	8.00%	149	7.01%	170	7.29%	263	7.74%
20-29 Years	1,036	46.98%	950	47.50%	1,031	48.47%	1,164	49.94%	1,729	50.91%
30-39 Years	577	26.17%	507	25.35%	562	26.42%	560	24.02%	810	23.85%
40-49 Years	287	13.02%	232	11.60%	260	12.22%	270	11.58%	388	11.43%
50-59 Years	99	4.49%	95	4.75%	91	4.28%	113	4.85%	133	3.92%
60-69 Years	44	2.00%	40	2.00%	27	1.27%	38	1.63%	59	1.74%
70 Years and Older	3	0.14%	11	0.55%	3	0.14%	8	0.34%	12	0.35%
Unknown	2	0.09%	5	0.25%	4	0.19%	8	0.34%	2	0.06%
<b>Total</b>	<b>2,205</b>	<b>52.58%</b>	<b>2,000</b>	<b>55.02%</b>	<b>2,127</b>	<b>61.94%</b>	<b>2,331</b>	<b>42.14%</b>	<b>3,396</b>	<b>69.33%</b>
<b>FY Total</b>	<b>4,194</b>		<b>3,635</b>		<b>3,434</b>		<b>5,532</b>		<b>4,898</b>	

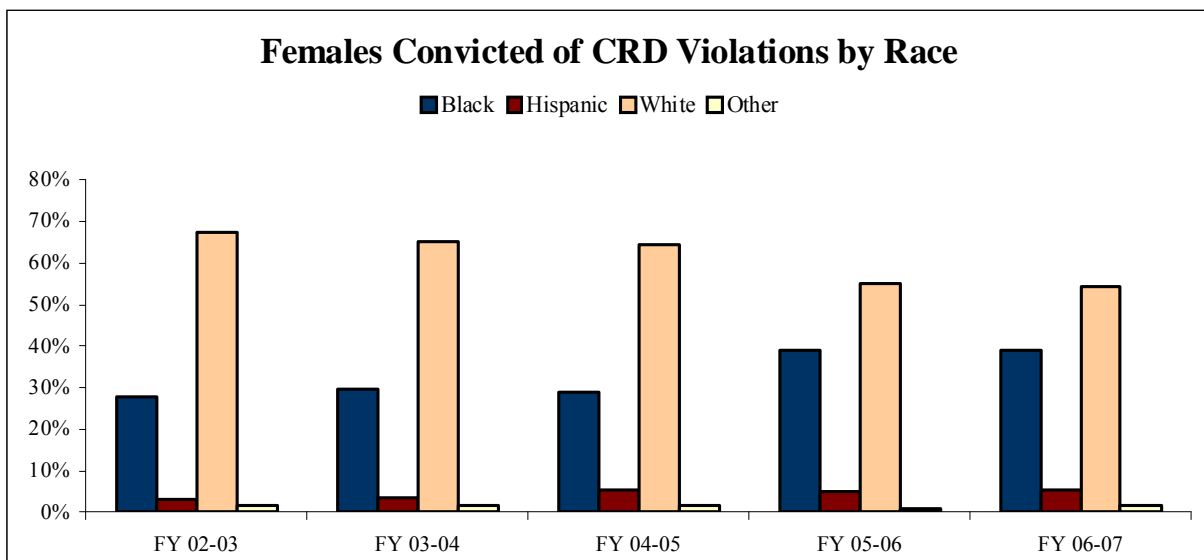
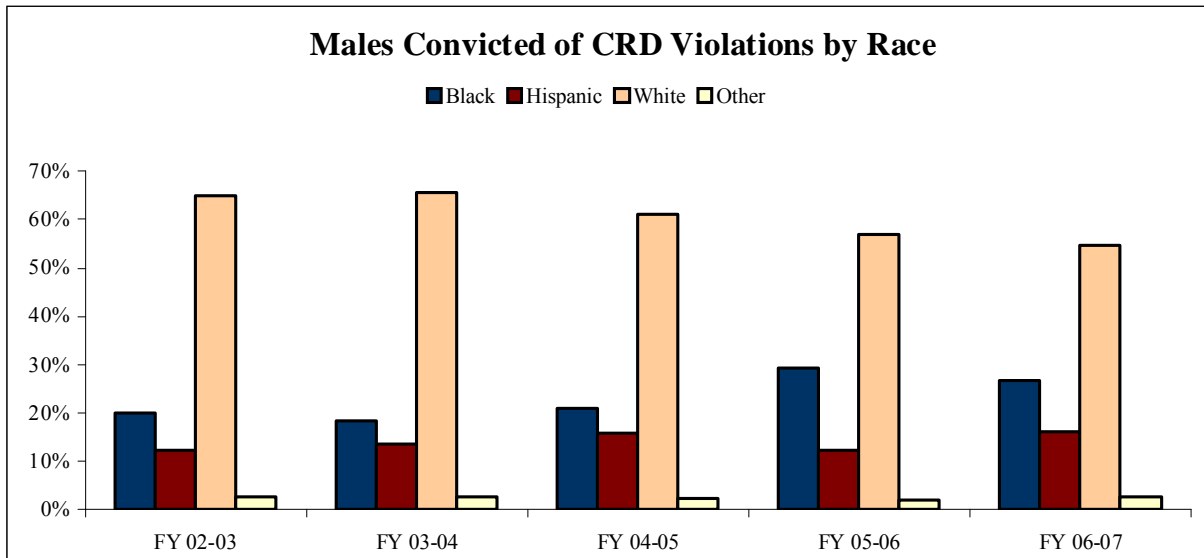
Source: Driver History February 29, 2008

### Sex and Race

Unlike safety belt convictions, the majority of all CRD convictions reported to the Department of Safety were females. In FY 06-07, females represented nearly 59% of all CRD convictions reported. The chart below illustrates the percentage of males versus females for all convictions reported.



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.



**CRD Convictions Reported by Type, Sex, and Race**  
**Table 4**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>CRD Convictions - Ages 4-15</b>										
<b>Female</b>	<b>1,158</b>	<b>58.2%</b>	<b>956</b>	<b>58.5%</b>	<b>713</b>	<b>54.6%</b>	<b>1,719</b>	<b>53.8%</b>	<b>827</b>	<b>55.5%</b>
<i>Black</i>	234	20.2%	212	22.2%	157	22.0%	320	18.6%	236	28.5%
<i>Hispanic</i>	30	2.6%	29	3.0%	29	4.1%	40	2.3%	45	5.4%
<i>White</i>	876	75.6%	701	73.3%	516	72.4%	1,345	78.2%	529	64.0%
<i>Other</i>	18	1.6%	14	1.5%	11	1.5%	14	0.8%	17	2.1%
<b>Male</b>	<b>824</b>	<b>41.4%</b>	<b>669</b>	<b>40.9%</b>	<b>581</b>	<b>44.5%</b>	<b>1,474</b>	<b>46.2%</b>	<b>654</b>	<b>43.9%</b>
<i>Black</i>	124	15.0%	92	13.8%	95	16.4%	179	12.1%	112	17.1%
<i>Hispanic</i>	68	8.3%	55	8.2%	61	10.5%	129	8.8%	103	15.7%
<i>White</i>	610	74.0%	500	74.7%	408	70.2%	1,125	76.3%	426	65.1%
<i>Other</i>	22	2.7%	22	3.3%	17	2.9%	41	2.8%	13	2.0%
Unknown Sex	7		10		13		0		10	
<b>Total</b>	<b>1,989</b>		<b>1,635</b>		<b>1,307</b>		<b>3,193</b>		<b>1,491</b>	
<b>CRD Convictions - Age 3 and Under</b>										
<b>Female</b>	<b>1,297</b>	<b>58.8%</b>	<b>1,171</b>	<b>58.5%</b>	<b>1,200</b>	<b>56.4%</b>	<b>1,330</b>	<b>57.1%</b>	<b>2,039</b>	<b>60.0%</b>
<i>Black</i>	453	34.9%	415	35.4%	392	32.7%	353	26.5%	879	43.1%
<i>Hispanic</i>	48	3.7%	46	3.9%	73	6.1%	51	3.8%	104	5.1%
<i>White</i>	775	59.8%	687	58.7%	718	59.8%	907	68.2%	1,025	50.3%
<i>Other</i>	21	1.6%	23	2.0%	17	1.4%	19	1.4%	31	1.5%
<b>Male</b>	<b>885</b>	<b>40.1%</b>	<b>805</b>	<b>40.2%</b>	<b>900</b>	<b>42.3%</b>	<b>994</b>	<b>42.7%</b>	<b>1,317</b>	<b>38.8%</b>
<i>Black</i>	216	24.4%	180	22.4%	213	23.7%	193	19.4%	414	31.4%
<i>Hispanic</i>	144	16.3%	143	17.8%	174	19.3%	143	14.4%	214	16.2%
<i>White</i>	501	56.6%	466	57.9%	496	55.1%	631	63.5%	653	49.6%
<i>Other</i>	24	2.7%	16	2.0%	17	1.9%	27	2.7%	36	2.7%
Unknown Sex	23		27		27		4		40	
<b>Total</b>	<b>2,205</b>		<b>2,003</b>		<b>2,127</b>		<b>2,328</b>		<b>3,396</b>	

Source: Driver History File – February 29, 2008





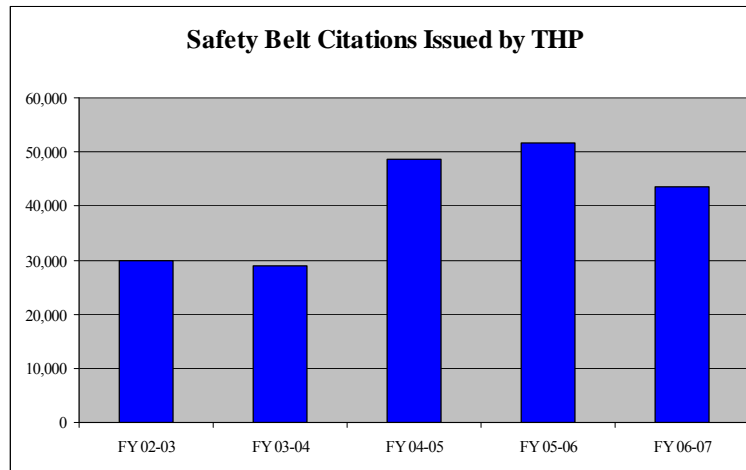
# Citations



# 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.



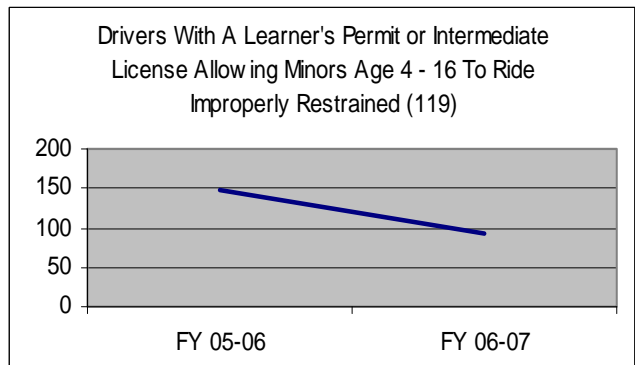
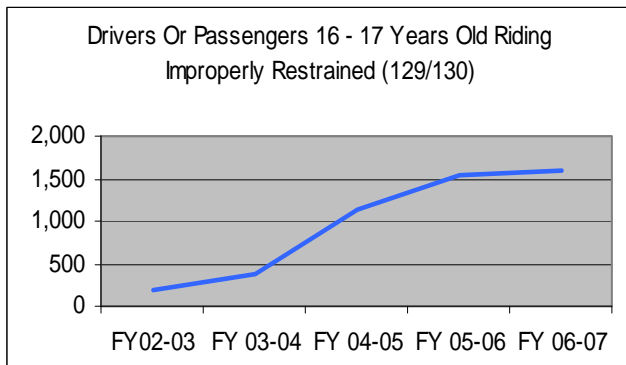
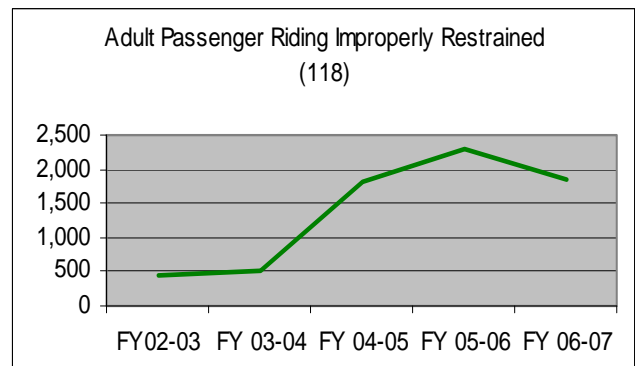
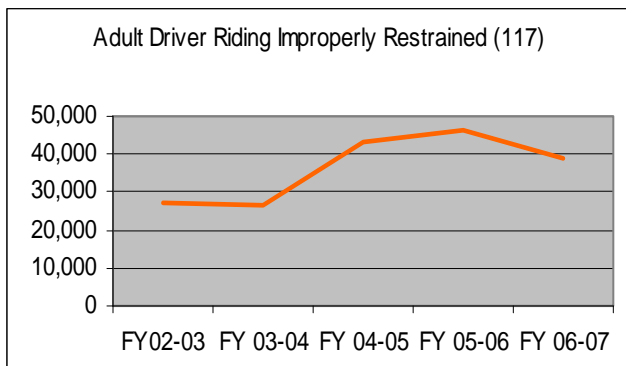
**THP Citations Issued for Safety Belt Violations By Person Type and Age**  
**Table 5**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>Driver</b>										
15 Years and Under	88	0.3%	83	0.3%	80	0.2%	40	0.1%	29	0.1%
16 Years	525	1.8%	473	1.7%	554	1.2%	426	0.9%	342	0.9%
17 Years	972	3.3%	757	2.7%	1,106	2.4%	882	1.8%	619	1.5%
18 Years	1,495	5.1%	1,472	5.2%	2,366	5.2%	2,356	4.9%	1,946	4.9%
19 Years	1,573	5.4%	1,523	5.4%	2,529	5.6%	2,433	5.1%	2,069	5.2%
20 Years	1,643	5.6%	1,420	5.1%	2,223	4.9%	2,336	4.9%	1,893	4.7%
21-24 Years	5,305	18.2%	5,210	18.5%	7,907	17.4%	7,940	16.6%	6,503	16.3%
25-34 Years	8,186	28.1%	8,036	28.6%	12,689	27.9%	13,364	28.0%	11,217	28.1%
35-44 Years	4,975	17.0%	4,852	17.3%	8,217	18.1%	9,159	19.2%	7,654	19.1%
45-54 Years	2,637	9.0%	2,485	8.8%	4,742	10.4%	5,181	10.9%	4,718	11.8%
55-64 Years	1,151	3.9%	1,137	4.0%	1,974	4.3%	2,414	5.1%	2,069	5.2%
65-74 Years	387	1.3%	325	1.2%	612	1.3%	666	1.4%	592	1.5%
75 Years and Older	141	0.5%	160	0.6%	225	0.5%	276	0.6%	239	0.6%
Unknown	103	0.4%	162	0.6%	240	0.5%	219	0.5%	96	0.2%
<b>Total</b>	<b>29,181</b>		<b>28,095</b>		<b>45,464</b>		<b>47,692</b>		<b>39,986</b>	
<b>Passenger</b>										
15 Years and Under	9	1.3%	17	1.8%	53	1.7%	56	1.4%	65	1.8%
16 Years	107	14.9%	136	14.7%	503	15.9%	595	15.0%	636	18.0%
17 Years	137	19.1%	217	23.4%	651	20.6%	900	22.7%	891	25.2%
18 Years	58	8.1%	67	7.2%	217	6.9%	238	6.0%	190	5.4%
19 Years	47	6.5%	43	4.6%	148	4.7%	200	5.0%	146	4.1%
20 Years	37	5.1%	45	4.8%	152	4.8%	182	4.6%	115	3.2%
21-24 Years	89	12.4%	94	10.1%	398	12.6%	484	12.2%	389	11.0%
25-34 Years	95	13.2%	135	14.5%	468	14.8%	633	16.0%	523	14.8%
35-44 Years	75	10.4%	97	10.5%	299	9.5%	362	9.1%	329	9.3%
45-54 Years	47	6.5%	50	5.4%	168	5.3%	192	4.8%	159	4.5%
55-64 Years	15	2.1%	16	1.7%	58	1.8%	67	1.7%	55	1.6%
65-74 Years	1	0.1%	2	0.2%	13	0.4%	30	0.8%	22	0.6%
75 Years and Older	0	0.0%	2	0.2%	2	0.1%	4	0.1%	13	0.4%
Unknown	2	0.3%	7	0.8%	26	0.8%	20	0.5%	6	0.2%
<b>Total</b>	<b>719</b>		<b>928</b>		<b>3,156</b>		<b>3,963</b>		<b>3,539</b>	
<b>Overall Total</b>	<b>29,900</b>		<b>29,023</b>		<b>48,620</b>		<b>51,655</b>		<b>43,525</b>	

Source: Trooper Ticket File 28 Feb 2008.

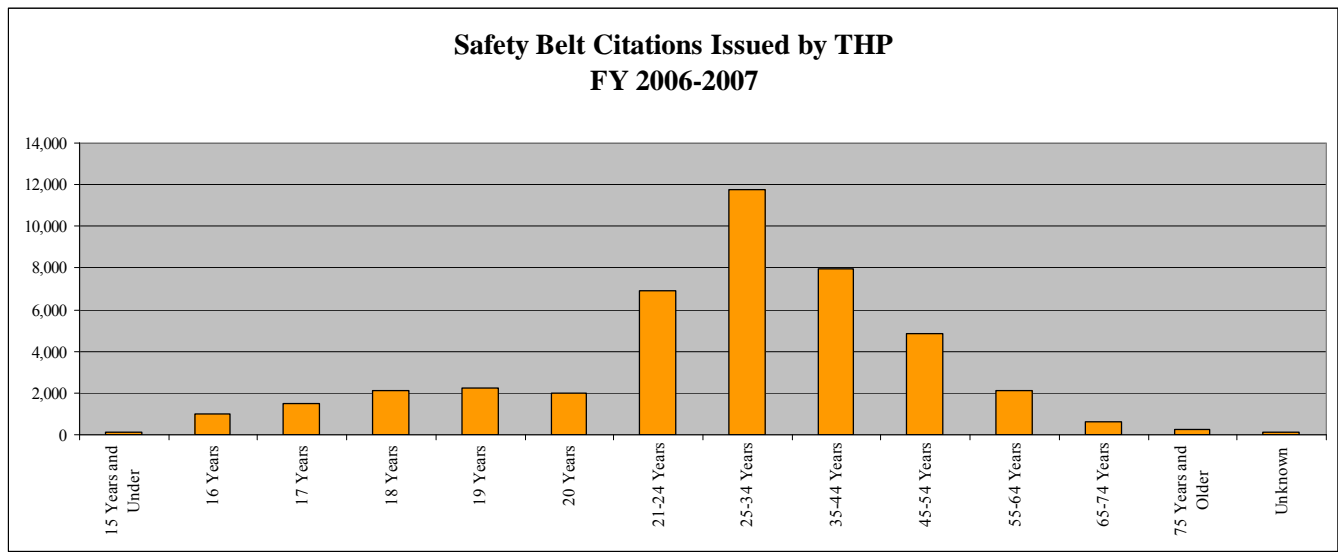
## Person Type

THP citations followed the statewide conviction pattern with the overwhelming majority issued to drivers. Over the five year period, drivers received almost of 94% 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 8.1% in FY 06-07. 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.



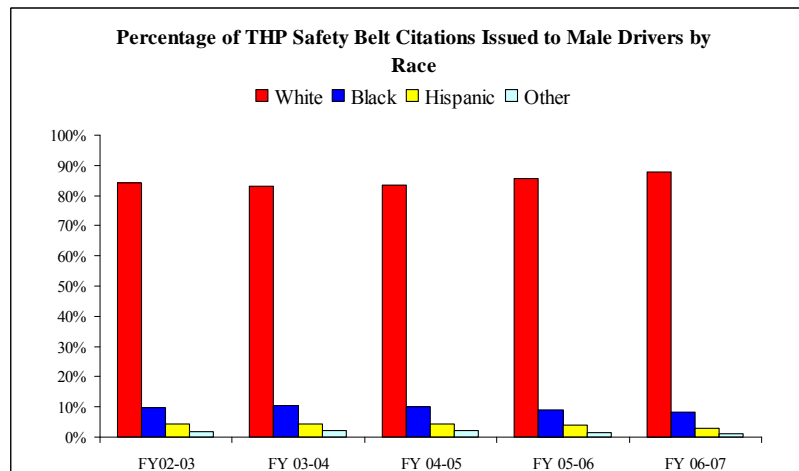
## Age

Similar to the pattern of convictions in each of the last five years, over 63% of the drivers issued safety belt citations in FY 06-07 by THP were between the ages of 21-44. Drivers between the ages of 15-24 saw an 18% decrease in the number of citations issued by THP from 16,413 in FY 05-06 to 13,401 in FY 06-07. Of drivers age 25 and older, those between ages 25-34 were issued over 28% of the citations, more than any other age group.



## Sex and Race

Males accounted for more than 70% of the drivers ticketed, increasing slightly from 74.9% in FY 02-03 to 75.1% in FY 06-07. 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 almost 85% over the five-year period, black males received 9.4%, and Hispanic males received 3.9%. Of the female drivers receiving citations from Troopers, white females received 89.6% over the five-year period, black females received 8.6%, and Hispanic females received 0.7%.



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

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>Drivers</b>										
<b>Female</b>	<b>7,305</b>	<b>25.0%</b>	<b>6,890</b>	<b>24.5%</b>	<b>11,162</b>	<b>24.6%</b>	<b>11,863</b>	<b>24.9%</b>	<b>9,938</b>	<b>24.9%</b>
<i>Asian</i>	16	0.2%	5	0.1%	9	0.1%	7	0.1%	8	0.1%
<i>Black</i>	677	9.3%	704	10.2%	944	8.5%	1,015	8.6%	757	7.6%
<i>Hispanic</i>	58	0.8%	56	0.8%	76	0.7%	65	0.5%	75	0.8%
<i>Indian</i>	4	0.1%	2	0.0%	3	0.0%	1	0.0%	1	0.0%
<i>White</i>	6,463	88.5%	6,050	87.8%	9,994	89.5%	10,679	90.0%	9,021	90.8%
<i>Other</i>	87	1.2%	73	1.1%	136	1.2%	96	0.8%	76	0.8%
<b>Male</b>	<b>21,859</b>	<b>74.9%</b>	<b>21,178</b>	<b>75.4%</b>	<b>34,268</b>	<b>75.4%</b>	<b>35,768</b>	<b>75.0%</b>	<b>30,016</b>	<b>75.1%</b>
<i>Asian</i>	63	0.3%	20	0.1%	51	0.1%	67	0.2%	36	0.1%
<i>Black</i>	2,103	9.6%	2,241	10.6%	3,486	10.2%	3,153	8.8%	2,514	8.4%
<i>Hispanic</i>	906	4.1%	907	4.3%	1,448	4.2%	1,393	3.9%	866	2.9%
<i>Indian</i>	5	0.0%	4	0.0%	12	0.0%	15	0.0%	10	0.0%
<i>White</i>	18,430	84.3%	17,573	83.0%	28,615	83.5%	30,663	85.7%	26,320	87.7%
<i>Other</i>	352	1.6%	433	2.0%	656	1.9%	477	1.3%	270	0.9%
Unknown Sex	17		27		34		61		32	
<b>Total Drivers</b>	<b>29,181</b>		<b>28,095</b>		<b>45,464</b>		<b>47,692</b>		<b>39,986</b>	
<b>Passengers</b>										
<b>Female</b>	<b>224</b>	<b>31.2%</b>	<b>286</b>	<b>30.8%</b>	<b>1,015</b>	<b>32.2%</b>	<b>1,252</b>	<b>31.6%</b>	<b>1,055</b>	<b>29.8%</b>
<i>Asian</i>	4	1.8%	0	0.0%	2	0.2%	1	0.1%	0	0.0%
<i>Black</i>	16	7.1%	26	9.1%	85	8.4%	87	6.9%	60	5.7%
<i>Hispanic</i>	3	1.3%	0	0.0%	10	1.0%	11	0.9%	6	0.6%
<i>Indian</i>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<i>White</i>	195	87.1%	250	87.4%	898	88.5%	1,138	90.9%	980	92.9%
<i>Other</i>	6	2.7%	10	3.5%	20	2.0%	15	1.2%	9	0.9%
<b>Male</b>	<b>495</b>	<b>68.8%</b>	<b>642</b>	<b>69.2%</b>	<b>2,137</b>	<b>67.7%</b>	<b>2,707</b>	<b>68.3%</b>	<b>2,481</b>	<b>70.1%</b>
<i>Asian</i>	12	2.4%	2	0.3%	7	0.3%	3	0.1%	3	0.1%
<i>Black</i>	31	6.3%	48	7.5%	216	10.1%	197	7.3%	168	6.8%
<i>Hispanic</i>	24	4.8%	22	3.4%	110	5.1%	108	4.0%	82	3.3%
<i>Indian</i>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<i>White</i>	417	84.2%	548	85.4%	1,755	82.1%	2,356	87.0%	2,207	89.0%
<i>Other</i>	11	2.2%	22	3.4%	49	2.3%	43	1.6%	21	0.8%
Unknown Sex	0		0		4		4		3	
<b>Total Passengers</b>	<b>719</b>		<b>928</b>		<b>3,156</b>		<b>3,963</b>		<b>3,539</b>	
<b>Total Citations</b>	<b>29,900</b>		<b>29,023</b>		<b>48,620</b>		<b>51,655</b>		<b>43,525</b>	

Source: Trooper Ticket File 28 Feb 2008

## 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.

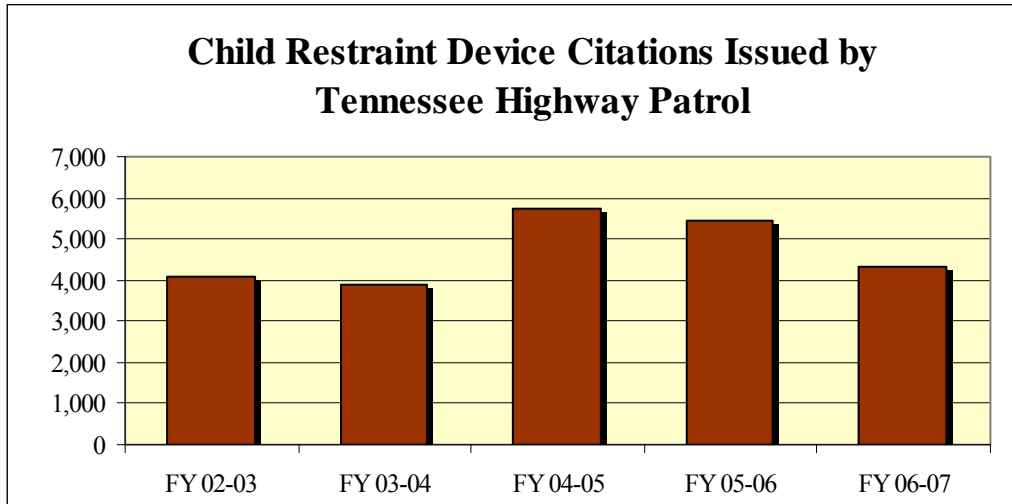


Table 7 shows the number of THP citations issued by type (3 years of age and under/4-15 years of age) and age.

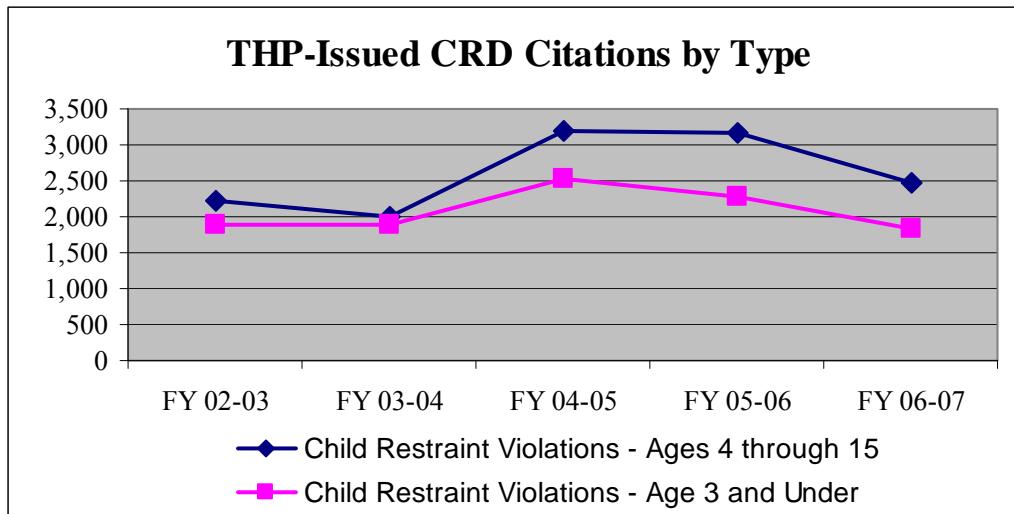
**THP-Issued Child Restraint Device Citations**  
**Table 7**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>CRD Citations - Ages 4 through 15</b>										
≤15-19 Years	174	7.87%	171	8.58%	304	9.51%	286	9.01%	216	8.71%
20-29 Years	693	31.33%	662	33.22%	1,120	35.03%	1,154	36.35%	858	34.58%
30-39 Years	791	35.76%	687	34.47%	1,085	33.94%	1,067	33.61%	830	33.45%
40-49 Years	312	14.10%	289	14.50%	438	13.70%	427	13.45%	350	14.11%
50-59 Years	156	7.05%	111	5.57%	157	4.91%	158	4.98%	137	5.52%
60-69 Years	68	3.07%	43	2.16%	66	2.06%	58	1.83%	70	2.82%
70 Years and Older	17	0.77%	28	1.40%	24	0.75%	17	0.54%	19	0.77%
Unknown	1	0.05%	2	0.10%	3	0.09%	8	0.25%	1	0.04%
<b>Total</b>	<b>2,212</b>	<b>53.95%</b>	<b>1,993</b>	<b>51.46%</b>	<b>3,197</b>	<b>55.85%</b>	<b>3,175</b>	<b>58.12%</b>	<b>2,481</b>	<b>57.66%</b>
<b>CRD Citations - Age 3 and Under</b>										
≤15-19 Years	140	7.42%	141	7.50%	174	6.89%	166	7.26%	151	8.29%
20-29 Years	907	48.04%	946	50.32%	1,227	48.56%	1,136	49.65%	896	49.18%
30-39 Years	480	25.42%	478	25.43%	670	26.51%	552	24.13%	471	25.85%
40-49 Years	216	11.44%	188	10.00%	311	12.31%	268	11.71%	197	10.81%
50-59 Years	87	4.61%	65	3.46%	88	3.48%	112	4.90%	74	4.06%
60-69 Years	44	2.33%	36	1.91%	22	0.87%	38	1.66%	16	0.88%
70 Years and Older	12	0.64%	26	1.38%	28	1.11%	8	0.35%	16	0.88%
Unknown	2	0.11%	0	0.00%	7	0.28%	8	0.35%	1	0.05%
<b>Total</b>	<b>1,888</b>	<b>46.05%</b>	<b>1,880</b>	<b>48.54%</b>	<b>2,527</b>	<b>44.15%</b>	<b>2,288</b>	<b>41.88%</b>	<b>1,822</b>	<b>42.34%</b>
<b>FY Total</b>	<b>4,100</b>		<b>3,873</b>		<b>5,724</b>		<b>5,463</b>		<b>4,303</b>	

Source: Trooper Ticket File 28 Feb 2008.

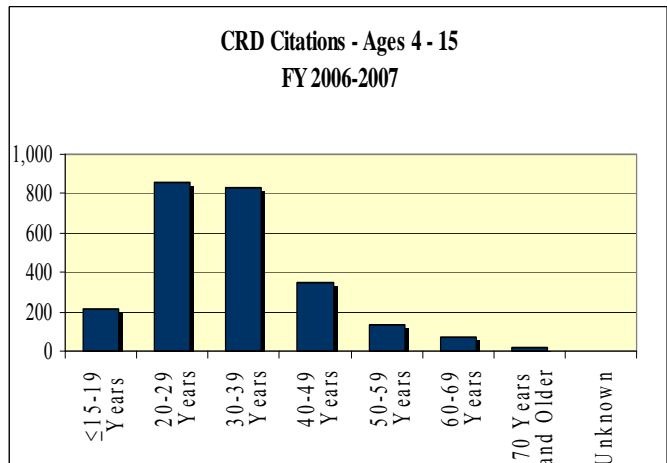
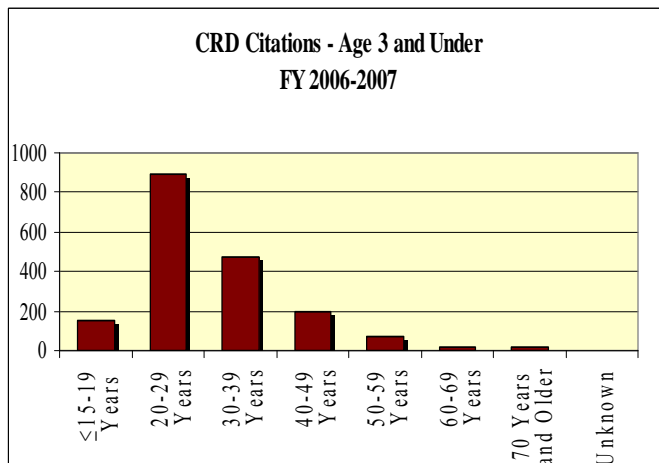
## Type

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.



## Age

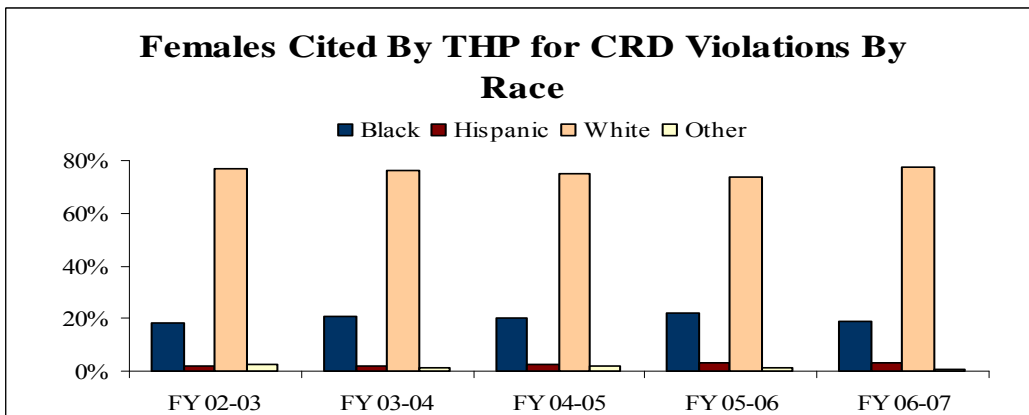
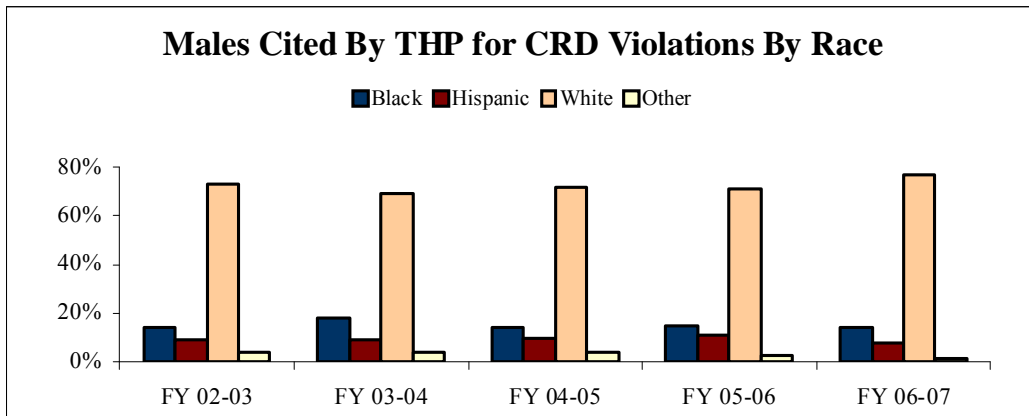
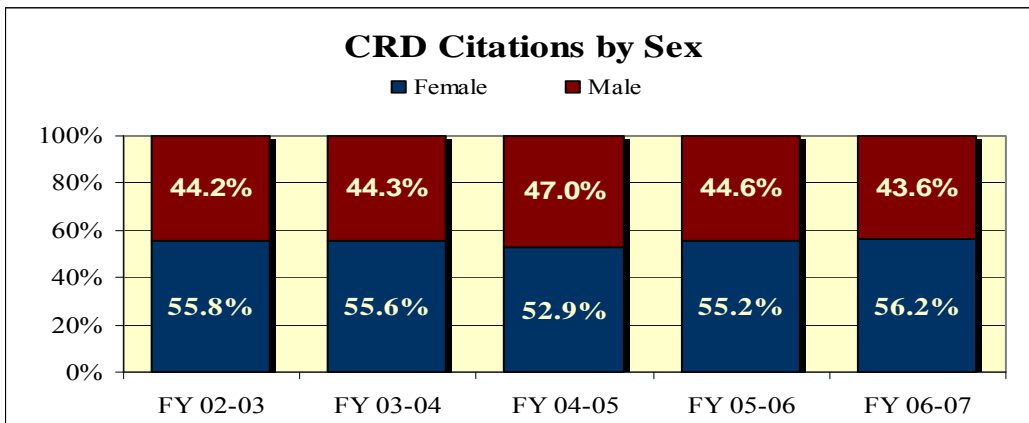
Similar to the pattern of convictions, over the last five years, 71% of the drivers issued CRD citations by THP were between the ages of 20-39. This is plausible, as this age group is the most likely to have children of an age to require use of child restraint devices. Drivers age 20-29 comprised almost half of the citations issued involving children age 3 and under.





## 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 06-07, females represented a little over 56% of all CRD citations issued. The first graph below illustrates the percentage of males vs. females for all citations issued. Of females ticketed, white females accounted for an annual average of 75.9% over the five-year period, black females about 20%, and Hispanic females 2.6%. 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.



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

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07	
<b>CRD Citations - Ages 4 through 15</b>										
<b>Female</b>	<b>1,222</b>	<b>55.2%</b>	<b>1,078</b>	<b>54.1%</b>	<b>1,713</b>	<b>53.6%</b>	<b>1,709</b>	<b>53.8%</b>	<b>1,363</b>	<b>54.9%</b>
Asian	2	0.2%	0	0.0%	2	0.1%	3	0.2%	2	0.1%
Black	159	13.0%	170	15.8%	262	15.3%	316	18.5%	222	16.3%
Hispanic	21	1.7%	23	2.1%	34	2.0%	41	2.4%	34	2.5%
Indian	2	0.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
White	1,014	83.0%	872	80.9%	1,392	81.3%	1,339	78.3%	1,093	80.2%
Other	24	2.0%	13	1.2%	23	1.3%	10	0.6%	12	0.9%
<b>Male</b>	<b>990</b>	<b>44.8%</b>	<b>914</b>	<b>45.9%</b>	<b>1,482</b>	<b>46.4%</b>	<b>1,460</b>	<b>46.0%</b>	<b>1,117</b>	<b>45.0%</b>
Asian	11	1.1%	5	0.5%	4	0.3%	9	0.6%	2	0.2%
Black	107	10.8%	124	13.6%	186	12.6%	172	11.8%	124	11.1%
Hispanic	50	5.1%	50	5.5%	97	6.5%	130	8.9%	63	5.6%
Indian	3	0.3%	1	0.1%	0	0.0%	0	0.0%	1	0.1%
White	798	80.6%	705	77.1%	1,149	77.5%	1,116	76.4%	912	81.6%
Other	21	2.1%	29	3.2%	46	3.1%	33	2.3%	15	1.3%
Unknown Sex	0		1		2		6		1	
<b>Total</b>	<b>2,212</b>		<b>1,993</b>		<b>3,197</b>		<b>3,175</b>		<b>2,481</b>	
<b>CRD Citations - Age 3 and Under</b>										
<b>Female</b>	<b>1,065</b>	<b>56.4%</b>	<b>1,076</b>	<b>57.2%</b>	<b>1,314</b>	<b>52.0%</b>	<b>1,309</b>	<b>57.2%</b>	<b>1,057</b>	<b>58.0%</b>
Asian	3	0.3%	3	0.3%	0	0.0%	1	0.1%	1	0.1%
Black	262	24.6%	274	25.5%	357	27.2%	345	26.4%	231	21.9%
Hispanic	28	2.6%	23	2.1%	44	3.3%	51	3.9%	37	3.5%
Indian	2	0.2%	0	0.0%	1	0.1%	1	0.1%	0	0.0%
White	746	70.0%	765	71.1%	885	67.4%	891	68.1%	783	74.1%
Other	24	2.3%	11	1.0%	27	2.1%	20	1.5%	5	0.5%
<b>Male</b>	<b>822</b>	<b>43.5%</b>	<b>801</b>	<b>42.6%</b>	<b>1,211</b>	<b>47.9%</b>	<b>976</b>	<b>42.7%</b>	<b>761</b>	<b>41.8%</b>
Asian	4	0.5%	5	0.6%	5	0.4%	4	0.4%	1	0.1%
Black	151	18.4%	177	22.1%	198	16.4%	189	19.4%	135	17.7%
Hispanic	113	13.7%	107	13.4%	165	13.6%	134	13.7%	79	10.4%
Indian	0	0.0%	1	0.1%	1	0.1%	0	0.0%	1	0.1%
White	525	63.9%	488	60.9%	795	65.6%	626	64.1%	537	70.6%
Other	29	3.5%	23	2.9%	47	3.9%	23	2.4%	8	1.1%
Unknown Sex	1		3		2		3		4	
<b>Total</b>	<b>1,888</b>		<b>1,880</b>		<b>2,527</b>		<b>2,288</b>		<b>1,822</b>	
<b>Grand Total</b>	<b>4,100</b>		<b>3,873</b>		<b>5,724</b>		<b>5,463</b>		<b>4,303</b>	

Source: Trooper Ticket File 28 Feb 2008.

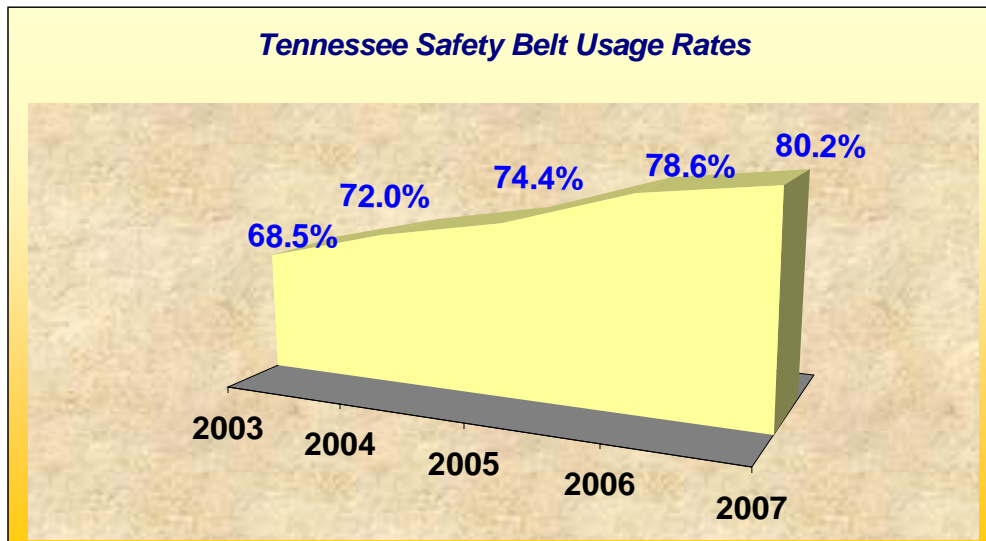
# **Supplemental Information**



## Safety Belt Surveys

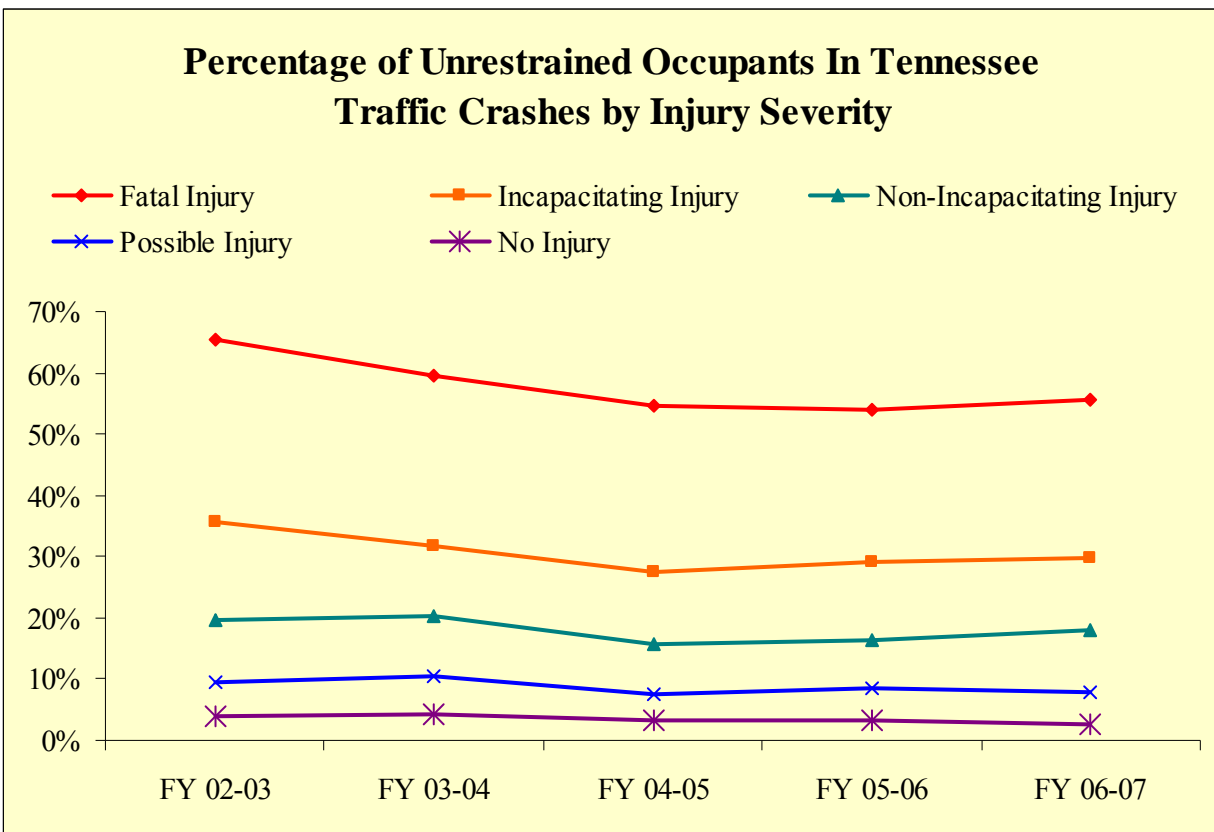
The National Highway Traffic Safety Administration commissions and funds standardized safety belt usage surveys each year in every State and U.S. Territory through the various Governors' Highway Safety Offices. In Tennessee, the University of Tennessee's Center for Transportation Research conducts the 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 2003 through 2007. 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 80.2% in 2007, and this trend is expected to continue. Copies of the above-referenced publications can be found as attachments.



## Tennessee Traffic Crashes

During the five-year period, police reported safety restraint usage by vehicle occupants in traffic crashes increased. In FY 02-03, police reported that 6.0% of vehicle occupants involved in traffic crashes were not restrained. This percentage decreased significantly over the years to 4.2% in FY 06-07. When comparing FY 02-03 to FY 06-07, the numbers indicate a significant reduction in all injury categories for the percentage of unrestrained drivers: No Injury = 4.0% to 2.5%; Possible Injury = 9.5% to 7.9%; Non-Incapacitating Injury = 19.6% to 17.9%; Incapacitating Injury = 35.6% to 29.6%; and, Fatal Injury = 65.3% to 55.6%. 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).



**Vehicle Occupant Restraint Usage in Traffic Crashes By Injury Severity**  
**Table 9**

	FY 02-03		FY 03-04		FY 04-05		FY 05-06		FY 06-07		Total	
<b>No Injury</b>												
<i>No Restraint</i>	11,851	4.0%	11,183	4.2%	13,242	3.4%	12,097	3.2%	8,345	2.5%	56,718	3.4%
<i>Restraint</i>	284,473	96.0%	257,781	95.8%	380,816	96.6%	370,822	96.8%	320,535	97.5%	1,614,427	96.6%
<b>Possible Injury</b>												
<i>No Restraint</i>	3,372	9.5%	3,720	10.6%	3,756	7.6%	4,047	8.4%	2,704	7.9%	14,789	8.5%
<i>Restraint</i>	32,005	90.5%	31,451	89.4%	45,884	92.4%	44,265	91.6%	31,357	92.1%	160,088	91.5%
<b>Non-Incapacitating Injury</b>												
<i>No Restraint</i>	3,583	19.6%	4,084	20.4%	3,778	15.9%	3,648	16.3%	2,951	17.9%	14,930	17.4%
<i>Restraint</i>	14,680	80.4%	15,898	79.6%	20,040	84.1%	18,750	83.7%	13,544	82.1%	70,903	82.6%
<b>Incapacitating Injury</b>												
<i>No Restraint</i>	1,827	35.6%	1,984	31.8%	2,007	27.3%	2,037	29.0%	1,608	29.6%	7,813	30.8%
<i>Restraint</i>	3,309	64.4%	4,262	68.2%	5,341	72.7%	4,981	71.0%	3,818	70.4%	17,572	69.2%
<b>Fatal Injury</b>												
<i>No Restraint</i>	558	65.3%	532	59.4%	675	54.7%	651	54.0%	649	55.6%	2,551	59.3%
<i>Restraint</i>	296	34.7%	364	40.6%	558	45.3%	555	46.0%	519	44.4%	1,748	40.7%
<b>Total</b>												
<i>No Restraint</i>	21,191	6.0%	21,503	6.5%	23,458	4.9%	22,480	4.9%	16,257	4.2%	96,801	4.9%
<i>Restraint</i>	334,763	94.0%	309,756	93.5%	452,639	95.1%	439,373	95.1%	369,773	95.8%	1,864,738	95.1%

*Source: TN Dept of Safety Crash Reporting System, 10 Mar 2008.*





# **Attachments**



**Attachment 1**

**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.]



**Attachment 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.]



**Attachment 3**

**Traffic Safety Facts:  
Crash Stats  
April 2007**





# Traffic Safety Facts

## Crash•Stats



DOT HS 810 690

A Brief Statistical Summary

April 2007 (Revised Data)

### Seat Belt Use in 2006 — Use Rates in the States and Territories

In 2006, seat belt use in the United States ranged from 63.5 percent in New Hampshire and Wyoming to 96.3 percent in Washington. These results are from probability-based observational surveys conducted by 50 States and U.S. Territories in accordance with criteria established by the National Highway Traffic Safety Administration to ensure reliable results. Compliance with the criteria is verified annually by NHTSA's National Center for Statistics and Analysis.

The 2006 surveys also found the following:

- Eleven States and Territories achieved use rates of 90 percent or higher — Washington, Michigan, Oregon, California, Puerto Rico, Hawaii, Nevada, Maryland, Texas, Georgia, and New Jersey.
- Jurisdictions with stronger belt enforcement laws continue to exhibit generally higher use rates than those with weaker laws. Mississippi strengthened its belt law to a “primary” enforcement law, effective May 2006. This State saw a jump in use from 60.8 percent in 2005 to 73.6 percent in 2006. Alaska and Kentucky also passed primary laws that took effect in 2006.

Seat belt use rates in the States, U.S. Territories, the District of Columbia, and nationwide from 2000-2006 are listed in the following table. States provided the 2006 seat belt use rates in response to grant requirements under 23 U.S.C. §§ 402, 406. The agency has continued the use of uniform survey

criteria developed under the Transportation Equity Act for the 21<sup>st</sup> Century (available at 23 CFR Part 1340) in order to determine the acceptability of a State's survey process and submitted seat belt use rates. 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. It was obtained by Preusser Research Group using methods compliant with 23 CFR Part 1340.

#### National Seat Belt Use Rate

Seat belt use nationwide was 81 percent in 2006, 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 Section 157 (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, 2000-2006**

State or U.S. Territory	2000	2001	2002	2003	2004	2005	2006	Reduction in Nonuse 2005-2006
Alabama	70.6%	79.4%	78.7%	77.4%	80.0%	81.8%	82.9%	6%
Alaska	61.0%	62.6%	65.8%	78.9%	76.7%	78.4%	83.2%	22%
Arizona	75.2%	74.4%	73.7%	86.2%	95.3%	94.2%	78.9%	-264%
Arkansas	52.4%	54.5%	63.7%	62.8%	64.2%	68.3%	69.3%	3%
California	88.9%	91.1%	91.1%	91.2%	90.4%	92.5%	93.4%	12%
Colorado	65.1%	72.1%	73.2%	77.7%	79.3%	79.2%	80.3%	5%
Connecticut	76.3%	78.0%	78.0%	78.0%	82.9%	81.6%	83.5%	10%
Delaware	66.1%	67.3%	71.2%	74.9%	82.3%	83.8%	86.1%	14%
Dist. Of Columbia	82.6%	83.6%	84.6%	84.9%	87.1%	88.8%	85.4%	-30%
Florida	64.8%	69.5%	75.1%	72.6%	76.3%	73.9%	80.7%	26%
Georgia	73.6%	79.0%	77.0%	84.5%	86.7%	89.9%	90.0%	1%
Hawaii	80.4%	82.5%	90.4%	91.8%	95.1%	95.3%	92.5%	-60%
Idaho	58.6%	60.4%	62.9%	71.7%	74.0%	76.0%	79.8%	16%
Illinois	70.2%	71.4%	73.8%	80.1%	83.0%	86.0%	87.8%	13%
Indiana	62.1%	67.4%	72.2%	82.3%	83.4%	81.2%	84.3%	16%
Iowa	78.0%	80.9%	82.4%	86.8%	86.4%	87.1%	89.6%	19%
Kansas	61.6%	60.8%	61.3%	63.6%	68.3%	69.0%	73.5%	15%
Kentucky	60.0%	61.9%	62.0%	65.5%	66.0%	66.7%	67.2%	2%
Louisiana	68.2%	68.1%	68.6%	73.8%	75.0%	77.7%	74.8%	-13%
Maine	NA	NA	NA	NA	72.3%	75.8%	77.2%	6%
Maryland	85.0%	82.9%	85.8%	87.9%	89.0%	91.1%	91.1%	0%
Massachusetts	50.0%	56.0%	51.0%	61.7%	63.3%	64.8%	66.9%	6%
Michigan	83.5%	82.3%	82.9%	84.8%	90.5%	92.9%	94.3%	20%
Minnesota	73.4%	73.9%	80.1%	79.4%	82.1%	83.9%	83.3%	-4%
Mississippi	50.4%	61.6%	62.0%	62.2%	63.2%	60.8%	73.6%	33%
Missouri	67.7%	67.9%	69.4%	72.9%	75.9%	77.4%	75.2%	-10%
Montana	75.6%	76.3%	78.4%	79.5%	80.9%	80.0%	79.0%	-5%
Nebraska	70.5%	70.2%	69.7%	76.1%	79.2%	79.2%	76.0%	-15%
Nevada	78.5%	74.5%	74.9%	78.7%	86.6%	94.8%	91.2%	-69%
New Hampshire	NA	NA	NA	49.6%	NA	NA	63.5%	NA
New Jersey	74.2%	77.6%	80.5%	81.2%	82.0%	86.0%	90.0%	29%
New Mexico	86.6%	87.8%	87.6%	87.2%	89.7%	89.5%	89.6%	1%
New York	77.3%	80.3%	82.8%	84.6%	85.0%	85.0%	83.0%	-13%
North Carolina	80.5%	82.7%	84.1%	86.1%	86.1%	86.7%	88.5%	14%
North Dakota	47.7%	57.9%	63.4%	63.7%	67.4%	76.3%	79.0%	11%
Ohio	65.3%	66.9%	70.3%	74.7%	74.1%	78.7%	81.7%	14%
Oklahoma	67.5%	67.9%	70.1%	76.7%	80.3%	83.1%	83.7%	4%
Oregon	83.6%	87.5%	88.2%	90.4%	92.6%	93.3%	94.1%	12%
Pennsylvania	70.7%	70.5%	75.7%	79.0%	81.8%	83.3%	86.3%	18%
Rhode Island	64.4%	63.2%	70.8%	74.2%	76.2%	74.7%	74.0%	-3%
South Carolina	73.9%	69.6%	66.3%	72.8%	65.7%	69.7%	72.5%	9%
South Dakota	53.4%	63.3%	64.0%	69.9%	69.4%	68.8%	71.3%	8%
Tennessee	59.0%	68.3%	66.7%	68.5%	72.0%	74.4%	78.6%	16%
Texas	76.6%	76.1%	81.1%	84.3%	83.2%	89.9%	90.4%	5%
Utah	75.7%	77.8%	80.1%	85.2%	85.7%	86.9%	88.6%	13%
Vermont	61.6%	67.4%	84.9%	82.4%	79.9%	84.7%	82.4%	-15%
Virginia	69.9%	72.3%	70.4%	74.6%	79.9%	80.4%	78.7%	-9%
Washington	81.6%	82.6%	92.6%	94.8%	94.2%	95.2%	96.3%	23%
West Virginia	49.8%	52.3%	71.6%	73.6%	75.8%	84.9%	88.5%	24%
Wisconsin	65.4%	68.7%	66.1%	69.8%	72.4%	73.3%	75.4%	8%
Wyoming	66.8%	NA	66.6%	NA	70.1%	NA	63.5%	NA
Nationwide	71%	73%	75%	79%	80%	82%	81%	-6%
Puerto Rico	87.0%	83.1%	90.5%	87.1%	90.1%	92.5%	92.7%	3%

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

For questions regarding the above reported data, contact Donna Glassbrenner at 202-366-3962, or Jianqiang Ye at 202-366-3603. This issue of Crash•Stats and other general information on highway traffic safety may be accessed online at [www-nrd.nhtsa.dot.gov/departments/nrd-30/nca/AvailInf.html](http://www-nrd.nhtsa.dot.gov/departments/nrd-30/nca/AvailInf.html)

**Attachment 4**

**Survey of Safety Belt and Motorcycle Helmet Usage In  
Tennessee  
2007**



# SURVEY OF SAFETY BELT AND MOTORCYCLE HELMET USAGE IN TENNESSEE

FISCAL YEAR 2007 FINAL REPORT



Prepared by:



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

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

September 18, 2007

# **SURVEY OF SAFETY BELT AND MOTORCYCLE HELMET USAGE IN TENNESSEE**

## **FISCAL YEAR 2007 FINAL REPORT**

**MATTHEW A. CATE**

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 April 2007 report "Documentation of Tennessee Observational Surveys of Safety Belt and Motorcycle Helmet Use" and are summarized below.

### **Survey Design**

A multi-stage area probability sampling approach is used in the survey. In the first stage, an appropriate number of primary sampling units are randomly selected. The primary sampling unit for the Tennessee survey is the "county" and 16 counties were 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 with an average daily traffic (ADT) of 500 or more make-up the "target" population and are identified from the Tennessee Roadway Information Management System (TRIMS) files. The qualifying route segments from each of the survey counties are stratified into six groupings using TRIMS functional classification data. For a given county, segments are randomly chosen from each of these six strata. The number of segments chosen from each stratum is proportional to the county's estimated annual vehicle miles of travel (VMT) in each stratum. 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.

As per NHTSA guidelines and to achieve the required level of precision, a total of 440 roadway segments comprise the target sample. This number is based on NHTSA guidelines for "second stage sample size." Forty percent of these sample sites (176 sites) are allocated to the state's 4 largest counties, with each of these counties receiving one-fourth of this total number, or 44 sites. The remaining 60 percent (264 sites) are evenly divided among the 12 smaller counties in the survey, i.e., 22 sample sites per county.

An observational 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.

Observers record the belt use/nonuse of occupants of “qualifying” vehicles in the travel direction of record for a period of 40 minutes. Data are collected during all daylight hours, generally from 8:00am to 6:00pm, and on all days of the week. For the purpose of the Tennessee surveys, “qualifying” vehicles include all passenger cars, pick-up trucks, vans, and sport utility vehicles that are not exempted from the Tennessee seatbelt law. Exempted vehicles are: mail carriers; vehicles registered for “farm use,” and vehicles operated by persons with medical exemptions.

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 any passengers is recorded.

After the raw data have been used to determine observed percentages of belt and helmet use, “adjusted” percentages, weighted by each site’s final probability of selection, are computed and reported. These weighted percentages then are combined 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.

## **2007 Tennessee Seatbelt Survey Results**

In 2007 the highway safety community has continued several important vehicle occupant protection initiatives. The Tennessee Governor’s Highway Safety Office has partnered with the National Highway Traffic Safety Administration, the Tennessee Department of Safety, 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 seventh 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 every year 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 2007, the final statistically-adjusted statewide seatbelt usage rate is 80.20%. By comparison, the final usage rate for 2006 was 78.57%. 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 2007, pickup trucks occupants were observed to have a seatbelt usage rate of 72.27%, up from 69.37% in 2006. The next lowest rate by vehicle type was 80.76% for vans. Cars and sport utility vehicles returned usage rates of 83.33% and 82.72%, respectively. Unadjusted seatbelt usage estimates for each category of vehicle by county are shown in Table 1. Table 2

shows the final adjusted usage rates by vehicle type and county, as well as the final statewide usage rate of 80.20% ( $\pm 1.29\%$ ) for all vehicle types. The statewide motorcycle helmet usage in 2007 was 99.43% ( $\pm 0.56\%$ ). Table 3 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 4 shows annual usage rates for all vehicles, passenger cars, pickup trucks, vans, and sport utility vehicles since 2000.



**Table 1: Final Summary of 2007 Tennessee Safety Belt Use  
 Statewide Observational Survey Results**  
 July 2, 2007

		<b>RAW DATA</b>														
County	No. of Sites	Passenger Cars			Pickups			Vans			Sports Utilities			All Vehicles		
		Total Occupants Observed	% Belt Use	Total Occupants Observed	% Belt Use	Total Occupants Observed	% Belt Use	Total Occupants Observed	% Belt Use	Total Occupants Observed	% Belt Use	Total Occupants Observed	% Belt Use			
Davidson	44	6,329	85.54%	3,034	73.01%	1,496	77.61%	2,920	84.21%	13,779	81.64%					
Hamilton	44	4,853	86.46%	3,125	76.45%	1,503	84.76%	2,480	83.51%	11,961	83.02%					
Knox	44	5,680	83.56%	3,305	73.65%	2,040	83.09%	3,095	83.81%	14,120	81.23%					
Shelby	44	5,109	85.71%	2,247	77.04%	1,124	82.21%	2,570	84.28%	11,050	83.26%					
Blount	22	1,657	82.62%	830	70.12%	394	85.79%	806	83.37%	3,687	80.31%					
Franklin	22	936	74.47%	677	63.66%	372	76.88%	574	74.04%	2,559	71.86%					
Jefferson	22	2,173	83.39%	1,339	75.21%	556	82.01%	1,114	85.19%	5,182	81.51%					
Loudon	22	1,316	81.61%	952	67.86%	469	79.96%	730	80.41%	3,467	77.36%					
Monroe	22	1,065	85.45%	897	74.69%	339	82.60%	455	83.74%	2,756	81.31%					
Montgomery	22	2,682	82.81%	1,748	73.00%	729	77.91%	1,135	83.52%	6,294	79.65%					
Obion	22	1,091	79.93%	895	69.61%	282	75.18%	460	81.52%	2,728	76.32%					
Sumner	22	1,148	85.89%	967	70.01%	377	79.58%	509	83.50%	3,001	79.57%					
Tipton	22	574	80.84%	416	63.22%	89	77.53%	224	81.70%	1,303	75.13%					
Warren	22	698	78.51%	726	67.08%	166	77.11%	381	76.38%	1,971	73.77%					
Washington	22	2,320	84.31%	1,004	74.30%	578	81.66%	1,104	81.79%	5,006	81.44%					
Williamson	22	2,863	85.33%	1,545	70.29%	817	79.56%	1,882	84.38%	7,107	81.15%					
<b>Statewide Totals</b>	<b>440</b>	<b>40,494</b>	<b>84.18%</b>	<b>23,707</b>	<b>72.82%</b>	<b>11,331</b>	<b>81.09%</b>	<b>20,439</b>	<b>83.26%</b>	<b>95,971</b>	<b>80.81%</b>					

**Table 2: Final Summary of 2007 Tennessee Safety Belt Use  
 Statewide Observational Survey Results**

July 2, 2007

County	No. of Sites	ADJUSTED DATA												
		Passenger Cars			Pickups			Vans			Sports Utilities			All Vehicles
		Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	Total Adjusted Occupants Observed <sup>a</sup>	% Belt Use (Weighted Data) <sup>b</sup>	
Davidson	44	27,912	85.64%	13,078	73.52%	6,686	77.20%	12,674	84.06%	60,350	81.75%			
Hamilton	44	21,716	87.29%	13,884	77.32%	6,870	84.43%	10,988	83.73%	53,458	83.60%			
Knox	44	17,636	84.20%	10,466	74.75%	6,614	83.84%	10,106	84.23%	44,822	81.96%			
Shelby	44	24,896	86.32%	10,870	77.30%	5,414	82.58%	12,368	84.44%	53,548	83.71%			
Blount	22	5,448	83.16%	2,700	69.91%	1,384	85.65%	2,722	83.91%	12,254	80.81%			
Franklin	22	2,454	66.06%	1,734	62.67%	891	77.14%	1,385	74.44%	6,252	69.96%			
Jefferson	22	6,900	83.33%	4,158	76.32%	1,848	81.86%	3,304	84.20%	16,210	81.52%			
Loudon	22	3,420	81.59%	2,574	67.94%	1,340	80.40%	1,946	80.71%	9,280	77.45%			
Monroe	22	2,130	85.78%	1,794	72.96%	678	81.83%	910	84.30%	5,512	81.28%			
Montgomery	22	7,792	82.99%	4,729	72.93%	2,072	78.33%	3,214	83.52%	17,807	79.86%			
Obion	22	3,260	80.81%	2,792	69.32%	848	74.64%	1,464	81.70%	8,364	76.50%			
Sumner	22	2,936	86.10%	2,296	69.70%	962	80.45%	1,322	84.05%	7,516	80.13%			
Tipton	22	1,433	83.53%	964	64.02%	216	76.06%	529	80.88%	3,142	76.71%			
Warren	22	1,850	77.56%	1,858	70.15%	464	73.93%	994	76.61%	5,166	74.46%			
Washington	22	7,114	85.15%	2,902	75.04%	1,772	81.84%	3,284	81.82%	15,072	82.08%			
Williamson	22	6,318	85.63%	3,400	71.42%	1,810	80.40%	4,140	85.01%	15,668	81.82%			
<b>Statewide Totals</b>	<b>440</b>	<b>143,215</b>	<b>83.33%</b>	<b>80,199</b>	<b>72.27%</b>	<b>39,869</b>	<b>80.76%</b>	<b>71,350</b>	<b>82.72%</b>	<b>334,421</b>	<b>80.20%</b>			
<b>95% Confidence Interval</b>			<b>(± 1.71%)</b>		<b>(± 1.61%)</b>		<b>(± 1.23%)</b>		<b>(± 1.10%)</b>		<b>(± 1.29%)</b>			

<sup>a</sup> Total occupants observed adjusted based on the number of lanes per section.

<sup>b</sup> County Estimates Weighted to reflect distribution of roadway type within county, statewide estimate also weighted based on proportional populations of surveyed counties.

**Table 3: Final Summary of 2007 Tennessee Motorcycle Helmet Use**  
**Statewide Observational Survey Results**  
**July 2, 2007**

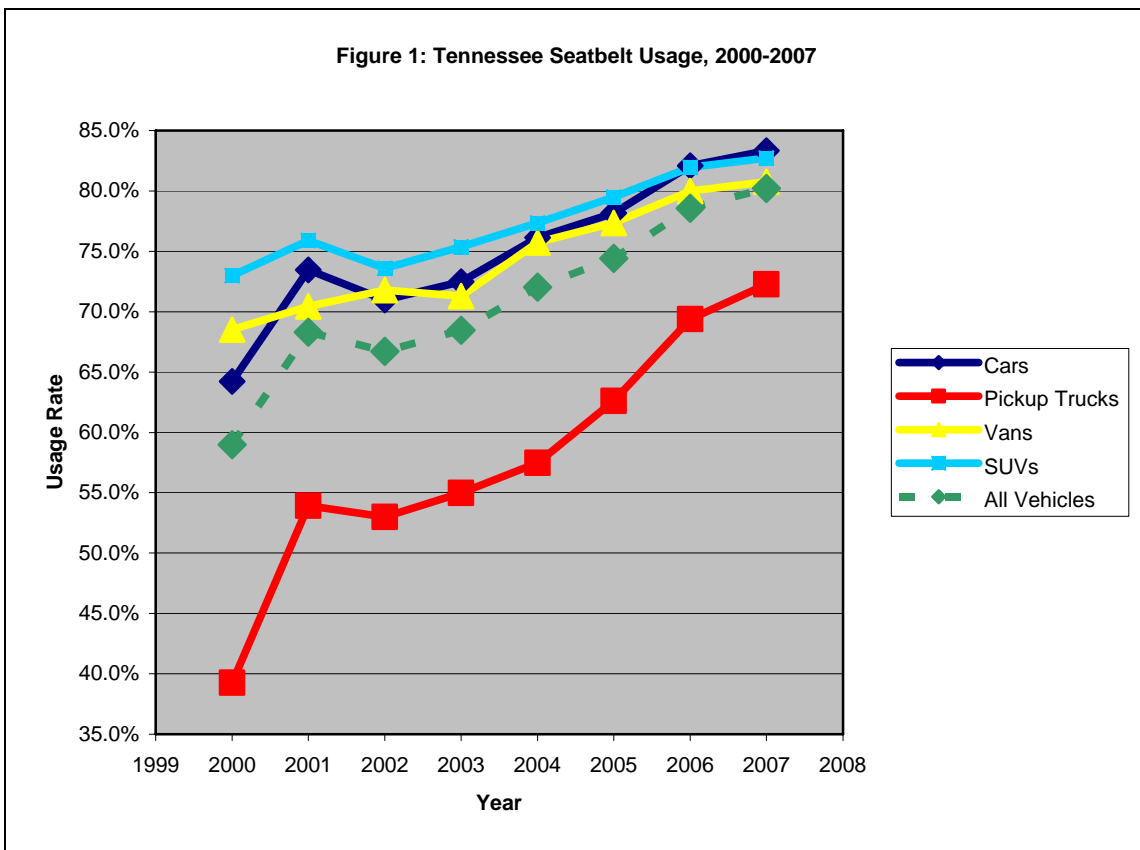
County	No. of Sites	Total Occupants Observed	% Helmet Use (Raw Data)	% Helmet Use (Weighted Data) <sup>a</sup>
Davidson	44	46	100.00%	100.00%
Hamilton	44	78	100.00%	100.00%
Knox	44	82	100.00%	100.00%
Shelby	44	76	98.68%	98.38%
Blount	22	59	100.00%	100.00%
Jefferson	22	36	100.00%	100.00%
Franklin	22	25	100.00%	100.00%
Loudon	22	20	100.00%	100.00%
Monroe	22	78	98.72%	99.09%
Tipton	22	7	100.00%	100.00%
Montgomery	22	29	100.00%	100.00%
Warren	22	15	100.00%	100.00%
Washington	22	33	100.00%	100.00%
Obion	22	47	97.87%	97.59%
Sumner	22	14	100.00%	100.00%
Williamson	22	27	100.00%	100.00%
Statewide Totals	440	672	99.55%	99.43% (± 0.56%) <sup>b</sup>

<sup>a</sup> County Estimates Weighted to reflect distribution of roadway type within county; statewide estimate also weighted based on proportional populations of surveyed counties.

<sup>b</sup> 95 percent confidence interval

**Table 4:** Tennessee Seatbelt Usage, 2000-2007

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%



**Figure 1:** Tennessee Seatbelt Usage, 2000-2007

## **Appendix 1: Survey Methodology**

**Exhibit 1**

**DOCUMENTATION OF TENNESSEE  
OBSERVATIONAL SURVEYS OF  
SAFETY BELT AND MOTORCYCLE HELMET USE**

Project Agency:  
University of Tennessee

Prepared by:  
Dr. Stephen H. Richards  
Executive Director  
Center for Transportation Research

Dr. Tommy Wright  
Adjunct Associate Professor of Statistics  
Department of Statistics

Matthew Cate  
Senior Research Associate  
Center for Transportation Research

revised  
April 18, 2007

## **Executive Summary**

University of Tennessee Transportation Center conducts a statewide survey once each year in late summer, at which time 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 NHTSA “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.

A multi-stage area probability sampling approach is used in 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 were 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 with an ADT of 500 or more make-up the “target” population and are identified from the TRIMS files. The qualifying route segments from each of the survey counties are stratified into 6 groupings using TRIMS functional classification data. For a given county, segments are randomly chosen from each of these six strata. The number of segments chosen from each stratum is proportional to the county’s estimated annual VMT in each stratum. 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.

As per NHTSA guidelines and to achieve the required level of precision, a total of 440 roadway segments comprise the sample. This number is based on NHTSA guidelines for “second stage sample size.” Forty percent of these sample sites (176 sites) are allocated to the state’s 4 largest counties, with each of these counties receiving one-fourth (44) of this total number, or 44

sites. The remaining 60 percent (264 sites) are evenly divided among the 12 smaller counties in the survey, i.e., 22 sample sites per county.

An observational 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. Observers record the belt use/nonuse of occupants of “qualifying” vehicles in the travel direction of record for period of 40 minutes. Data are collected during all daylight hours, generally from 8:00am to 6:00pm, and on all days of the week. For the purpose of the Tennessee surveys, “qualifying” vehicles include all passenger automobiles (passenger cars, pick-up trucks, vans, and sport utility vehicles) which are not exempted from the Tennessee law. Exempted vehicles are: mail carriers; vehicles registered for “farm use,” and vehicles operated by persons with medical exemptions.

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 any passengers is recorded.

After the raw data has been used to determine observed percentages of belt use and helmet, “adjusted” percentages, weighted by each site’s final probability of selection, are computed and reported. These weighted percentages then are combined 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 employed 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 were 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 the guideline revisions agreed upon at the June 1998 Region IV Workshop on Safety Belt Use Surveys held in Atlanta. 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](mailto:mcate@utk.edu) ).

The sampling procedures described herein utilize data from the Tennessee Roadway Information Management System compiled by the Tennessee Department of Transportation (TDOT), and from the Tennessee Statistical Abstract published annually by the University of Tennessee Center for Business and Economic Research. The TRIMS files include estimates of Average Daily Traffic (ADT) and Vehicle Miles of Travel by road class and county. The Tennessee Statistical Abstract presents population data by county as well as county road mileage by functional roadway classification.

The TRIMS files also provide a ‘population’ of observational sites for the surveys. TRIMS contains data on the entire 84,000-mile road system in Tennessee, including Interstate Highways and Expressways, Principal and Minor Arterials, Major and Minor Collectors, and Local Roads. As part of these data, each roadway is broken down into several “control-sections,” 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, 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 used in 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 current Census data from least to most populous. The 47 counties which have been included in the sampling population as per the above criterion are identified in Table 1, as well as the 48 least populated counties which have been excluded from the sampling population.

From the sampling population, a sample of 16 counties is selected. The number of counties (16) in the survey sample is based on the fact that Tennessee has a total of 47 counties in its sampling unit population. Applying 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 4 largest counties (Shelby, Davidson, Knox and Hamilton) comprising approximately 40 percent of the state’s population are automatically placed into the 16 county sample. Then, 12 additional counties are selected from the remaining 43 county population 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 with replacement.

**Table 1: 2000 Census Population**

<b>County</b>	<b>Population</b>	<b>% Total</b>	<b>Cumulative % Total</b>
Pickett	4,945	0.1%	0.1%
Van Buren	5,508	0.1%	0.2%
Moore	5,740	0.1%	0.3%
Hancock	6,786	0.1%	0.4%
Trousdale	7,259	0.1%	0.5%
Perry	7,631	0.1%	0.7%
Lake	7,954	0.1%	0.8%
Clay	7,976	0.1%	0.9%
Houston	8,088	0.1%	1.1%
Jackson	10,984	0.2%	1.3%
Meigs	11,086	0.2%	1.5%
Lewis	11,367	0.2%	1.7%
Sequatchie	11,370	0.2%	1.9%
Decatur	11,731	0.2%	2.1%
Bledsoe	12,367	0.2%	2.3%
Stewart	12,370	0.2%	2.5%
Cannon	12,826	0.2%	2.7%
Grundy	14,332	0.3%	3.0%
Crockett	14,532	0.3%	3.2%
Chester	15,540	0.3%	3.5%
Polk	16,050	0.3%	3.8%
Benton	16,537	0.3%	4.1%
Fentress	16,625	0.3%	4.4%
Wayne	16,842	0.3%	4.7%
DeKalb	17,423	0.3%	5.0%
Johnson	17,499	0.3%	5.3%
Unicoi	17,667	0.3%	5.6%
Smith	17,712	0.3%	5.9%
Union	17,808	0.3%	6.2%
Humphreys	17,929	0.3%	6.5%
Morgan	19,757	0.3%	6.9%
Haywood	19,797	0.3%	7.2%
Overton	20,118	0.4%	7.6%
Macon	20,386	0.4%	8.0%
Grainger	20,659	0.4%	8.3%
Scott	21,127	0.4%	8.7%
Hickman	22,295	0.4%	9.1%
White	23,102	0.4%	9.5%
McNairy	24,653	0.4%	9.9%
Henderson	25,522	0.4%	10.4%
Hardin	25,578	0.4%	10.8%
Marshall	26,767	0.5%	11.3%
Lauderdale	27,101	0.5%	11.8%
Marion	27,776	0.5%	12.3%
Hardeman	28,105	0.5%	12.7%
Rhea	28,400	0.5%	13.2%
Fayette	28,806	0.5%	13.8%
Giles	29,447	0.5%	14.3%

**Table 1 Continued: 2000 Census Population**

<b>County</b>	<b>Population</b>	<b>% Total</b>	<b>Cumulative % Total</b>
Carroll	29,475	0.5%	14.8%
Claiborne	29,862	0.5%	15.3%
Henry	31,115	0.5%	15.9%
Lincoln	31,340	0.6%	16.4%
Obion	32,450	0.6%	17.0%
Cocke	33,565	0.6%	17.6%
Weakley	34,895	0.6%	18.2%
Cheatham	35,912	0.6%	18.8%
Dyer	37,279	0.7%	19.5%
Bedford	37,586	0.7%	20.1%
Warren	38,276	0.7%	20.8%
Monroe	38,961	0.7%	21.5%
Loudon	39,086	0.7%	22.2%
Franklin	39,270	0.7%	22.9%
Campbell	39,854	0.7%	23.6%
Lawrence	39,926	0.7%	24.3%
Dickson	43,156	0.8%	25.0%
Jefferson	44,294	0.8%	25.8%
Cumberland	46,802	0.8%	26.6%
Coffee	48,014	0.8%	27.5%
Gibson	48,152	0.8%	28.3%
McMinn	49,015	0.9%	29.2%
Tipton	51,271	0.9%	30.1%
Roane	51,910	0.9%	31.0%
Hawkins	53,563	0.9%	31.9%
Robertson	54,433	1.0%	32.9%
Carter	56,742	1.0%	33.9%
Hamblen	58,128	1.0%	34.9%
Putnam	62,315	1.1%	36.0%
Greene	62,909	1.1%	37.1%
Maury	69,498	1.2%	38.3%
Sevier	71,170	1.3%	39.6%
Anderson	71,330	1.3%	40.8%
Bradley	87,965	1.5%	42.4%
Wilson	88,809	1.6%	43.9%
Madison	91,837	1.6%	45.6%
Blount	105,823	1.9%	47.4%
Washington	107,198	1.9%	49.3%
Williamson	126,638	2.2%	51.5%
Sumner	130,449	2.3%	53.8%
Montgomery	134,768	2.4%	56.2%
Sullivan	153,048	2.7%	58.9%
Rutherford	182,023	3.2%	62.1%
Hamilton	307,896	5.4%	67.5%
Knox	382,032	6.7%	74.2%
Davidson	569,891	10.0%	84.2%
Shelby	897,472	15.8%	100.0%
Tennessee	5,689,283		

Once the 16 survey counties have been chosen, second stage sampling of individual route segments in each of the counties is performed. The qualifying route segments comprising the sampling population are identified from the TRIMS files. All route segments in a county with an ADT of 500 vehicles per day (vpd) or more make-up the route segment population. (In the interest of efficiency and cost, very low volume segments with daily traffic volumes less than 500 vpd have been excluded from consideration.) The qualifying route segments from the 16 counties collectively constitute the set of observational sites from which the survey sites are then selected. The qualifying route segments from the 47 counties collectively constitute the “target population” of observational sites.

The qualifying route segments from each of the survey counties are stratified into the following 6 groupings using TRIMS functional classification data:

1. Urban Interstate, Freeway or Expressway;
2. Rural Interstate;
3. Urban Other Principal or Minor Arterial;
4. Rural Other Principal or Minor Arterial;
5. Urban Major or Minor Collector/Local; and,
6. Rural Major or Minor Collector/Local.

For a given county, segments are randomly chosen from each of these six strata. The number of segments chosen from each stratum is proportional to the county’s estimated annual VMT in each stratum. 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.

As per NHTSA guidelines and to achieve the required level of precision, a total of 440 roadway segments comprise the sample. This number is based on NHTSA guidelines for “second stage sample size.” Forty percent of these sample sites (176 sites) are allocated to the state’s 4 largest counties, with each of these counties receiving one-fourth (44) of this total number, or 44 sites. The remaining 60 percent (264 sites) are evenly divided among the 12 smaller counties in the survey, i.e., 22 sample sites per county. In addition, one alternate site per county per roadway classification will be identified. (This represents an additional 96 sites which can be used as

substitute sites in the event that a primary site is unusable, e.g. it is closed for roadwork.) The sample sites within each stratum are selected with replacement.

## **Data Collection**

An observational 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 and/or driveways.) At each observational site, a direction of travel is randomly selected (by the equivalent of a coin toss) 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 finds 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 “qualifying” vehicles in the travel direction of record. If there are multiple lanes in the travel direction of record, only vehicles traveling in the outermost lane are sampled. In the rare event that traffic is too heavy to count every vehicle in the survey lane, observers are instructed to count every second or third vehicle, whichever is appropriate.

For the purpose of the Tennessee surveys, “qualifying” vehicles include all passenger vehicles (passenger cars, pick-up trucks, vans, and sport utility vehicles) which are not exempted from the Tennessee law. Exempted vehicles are: mail carriers; vehicles registered for “farm use,” and vehicles operated by persons with medical exemptions. It will be possible through visual observation to identify and not survey vehicles in the first two exempted categories (mail carriers and registered farm vehicles). Vehicles in the third category (driver physically unable to wear belt) will not be recognizable, and therefore these vehicles will be included in the survey sample. (The numbers of such vehicles is very small and their inclusion in the sample is expected to be insignificant.)

The shoulder belt use/nonuse of all front seat, outboard occupants of “qualifying” vehicles is recorded, including children. Children four years of age and younger are counted, and

if they are wearing a shoulder belt or are restrained in a proper child restraint device, 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 40 minutes. Observation periods are scheduled to begin at the following times: 8:00am; 9:00am; 10:00am; 11:00am; 12:00 noon; 1:00pm; 2:00pm; 3:00pm; 4:00pm; and 5:00pm. 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 40-minute time period.

Data are collected during all daylight hours, generally from 8:00am to 6:00pm, and on all days of the week. In assigning observation time periods to individual sites, the sites are first clustered according to travel time proximity. Those sites within a reasonable driving distance, 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.

If an observation site cannot be surveyed because of construction activities, safety concerns, or some other legitimate reason, the site is abandoned. The observer is instructed to travel to the next assigned site and resume the survey at the appropriate time. Then, after all the sites within the cluster are completed, the observer travels to a pre-selected alternate site (with the same characteristics as the abandoned site), and he/she surveys this site beginning in the next available time period. 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

Based on the data collected, appropriate statistical computations are performed to estimate the percentage of seatbelt and helmet use for each county and for the state as whole. After the raw data have been used to determine observed percentages of belt use and helmet, “adjusted” percentages, weighted by each site’s final probability of selection, are computed and reported. These weighted percentages then are combined 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.

### Site Dependent Adjustments

For each site in the survey, the number of belted and un-belted passengers observed for each class of vehicles are counted. In addition, the observed number of helmeted and non-helmeted motorcycle riders are recorded. Because data are collected only on the outermost lane for seatbelt use, the observed seatbelt use data are adjusted to reflect the number of lanes at each site. Consequently, for each site, the number of belted,  $B_{jlcks}$ , and un-belted,  $U_{jlcks}$ , passengers is given by:

$$B_{jlcks} = n \times b_{jlcks} \text{ and}$$

$$U_{jlcks} = n \times u_{jlcks}$$

Where s = the site identifier

k = roadway functional class

c = county identifier

l = identifies the county level (described later in the section on statewide weighting)

j = the vehicle type (i.e. passenger car, pick-up truck, van/mini-van or sport utility)

b = number of observed belted passengers

u = number of observed un-belted passengers



n = number of lanes in the outbound direction

Since data for helmet use are collected for all lanes of travel on all approaches, an adjustment for the number of lanes at a site is not applied to helmet use data.

The next step is to weight the observed belt and helmet use counts proportional to the number of roadway segments within a county.

### County Wide Weighting

*County wide weighting is conducted for each vehicle type observed. Because the procedures for each type of vehicle are exactly the same and for purposes of simplification, the remainder of this discussion will illustrate the procedure for weighting passenger cars.*

For each county, the roadway segments can be classified into 6 functional categories:

1. Urban Interstate, Freeway or Expressway;
2. Rural Interstate;
3. Urban Other Principal or Minor Arterial;
4. Rural Other Principal or Minor Arterial;
5. Urban Major or Minor Collector/Local; and,
6. Rural Major or Minor Collector/Local.

Belt use data are collected for a sample of roadway segments within a county. To estimate the county wide use, the observed data are weighted to reflect the probability of being included in the survey. Consequently for a given county, the average number of observed belted,  $\bar{B}_{jlk}$ , and total users,  $\bar{T}_{jlk}$ , is given by:

$$\bar{B}_{jlk} = \frac{\sum_{l=1}^S B_{jlks}}{S} \text{ and}$$
$$\bar{T}_{jlk} = \frac{\sum_{s=1}^S T_{jlks}}{S} = \frac{\sum_{s=1}^S B_{jlks} + U_{jlks}}{S}$$

Where S = the number of sites in a given class

s = the site identifier

k = roadway functional class

c = county identifier

l = identifies the county level (described later in the section on statewide weighting)

j = the vehicle type (i.e. passenger car, pick-up truck, van/mini-van or sport utility)

B = number of observed belted passengers adjusted for the number of lanes

U = number of observed un-belted passengers adjusted for the number of lanes

The usage for the entire county is calculated by multiplying the average number of observed belted,  $\bar{B}_{jlc k}$ , and total users,  $\bar{T}_{jlc k}$ , by the number of segments in a given class for a given county,  $m_{ck}$ :

$$\hat{B}_{jlc} = \sum_{k=1}^6 m_{ck} \times \bar{B}_{jlc k} \text{ and}$$

$$\hat{T}_{jlc} = \sum_{k=1}^6 m_{ck} \times \bar{T}_{jlc k}$$

Thus if we had the following distribution of roadway segments:

Class	Number in	
	County	Sample
1	5	5
2	44	6
3	25	1
4	0	0
5	26	8
6	78	2

Then for class 2,

$$\bar{B}_{jlc2} = \frac{B_{jlc21} + B_{jlc22} + B_{jlc23} + B_{jlc24} + B_{jlc25} + B_{jlc26}}{6}$$

and for the county,

$$\hat{B}_{jlc} = 5 \times \bar{B}_{jlc1} + 44 \times \bar{B}_{jlc2} + 25 \times \bar{B}_{jlc3} + 0 \times \bar{B}_{jlc4} + 26 \times \bar{B}_{jlc5} + 78 \times \bar{B}_{jlc6}$$

With the estimation of  $\hat{B}_{jlc}$  and  $\hat{T}_{jlc}$ , the weighted seatbelt usage for a particular vehicle type in a given county is defined as:

$$\hat{X}_{jlc} = \frac{\hat{B}_{jlc}}{\hat{T}_{jlc}}$$

Given county wide estimates of seatbelt use, statewide estimates are calculated based on the probability of the county being selected for the survey.

### State Wide Weighting

The probability of a county being selected for inclusion in the survey is based on 2000 census population. The 4 most populated counties are automatically included and 12 more counties are selected from the remaining counties (43) which account for 85% of the state of Tennessee's population. Therefore, two strata of counties can be created – Level 1 for the 4 most populated counties and Level 2 for the remaining 43. Level 1 has only four counties and all four

counties are surveyed so the entire population is known. Consequently, the population mean and variance are known. Meanwhile, for Level 2 only a sample of counties is used so the population statistics are estimated with the sample statistics.

**Level 1 Counties**

Shelby  
Davidson  
Knox  
Hamilton

**Level 2 Counties**

Anderson	Coffee	Henry	Montgomery	Tipton
Bedford	Cumberland	Jefferson	Obion	Warren
Blount	Dickson	Lawrence	Putnam	Washington
Bradley	Dyer	Lincoln	Roane	Weakley
Campbell	Franklin	Loudon	Robertson	Williamson
Carter	Gibson	Madison	Rutherford	Wilson
Cheatham	Greene	Maury	Sevier	
Claiborne	Hamblen	McMinn	Sullivan	
Cocke	Hawkins	Monroe	Sumner	

Given seatbelt use estimates for the level 1 and 2 counties, a statewide usage rate can be estimated for a given vehicle type, j. For the level 1, the estimates of belt use are given by:

$$\hat{B}_{j1} = \hat{B}_{j11} + \hat{B}_{j12} + \hat{B}_{j13} + \hat{B}_{j14} \text{ and}$$

$$\hat{T}_{j1} = \hat{T}_{j11} + \hat{T}_{j12} + \hat{T}_{j13} + \hat{T}_{j14}.$$

However, only 12 Level 2 counties are included in the survey, so county wide estimates are adjusted to approximate the Level 2 wide usage:

$$\hat{B}_{j2} = \sum_{c=1}^{12} \frac{\hat{B}_{j2c}}{z_c} \text{ and}$$

$$\hat{T}_{j2} = \sum_{c=1}^{12} \frac{\hat{T}_{j2c}}{z_c}$$

where  $z_c \equiv$  probability of being chosen , or

$$z_c = \frac{\text{population}_c}{\sum_{c=1}^{c=43} \text{population}_c}$$

Thus the statewide usage is estimated by the sum of the usage in the level 1 and 2 counties, or

$$\hat{B}_j = \hat{B}_{j1} + \hat{B}_{j2} \text{ and}$$

$$\hat{T}_j = \hat{T}_{j1} + \hat{T}_{j2} \text{ so that}$$

$$\hat{X}_j = \frac{\hat{B}_j}{\hat{T}_j}$$

### Variance of Statewide Estimates

The variance for the statewide estimate of belt usage is given by:

$$\begin{aligned} \sigma_{\hat{X}_j}^2 &= \sigma_{\frac{\hat{B}_j}{\hat{T}_j}}^2 \\ &= \sigma_{\frac{\hat{B}_{j1} + \hat{B}_{j2}}{\hat{T}_{j1} + \hat{T}_{j2}}}^2 \\ &= \frac{1}{(\hat{T}_{j1} + \hat{T}_{j2})^2} \left\{ \sigma_{\hat{B}_{j1}}^2 + \sigma_{\hat{B}_{j2}}^2 + \left( \frac{\hat{B}_{j1} + \hat{B}_{j2}}{\hat{T}_{j1} + \hat{T}_{j2}} \right)^2 (\sigma_{\hat{T}_{j1}}^2 + \sigma_{\hat{T}_{j2}}^2) - 2 \frac{\hat{B}_{j1} + \hat{B}_{j2}}{\hat{T}_{j1} + \hat{T}_{j2}} (\sigma_{\hat{B}_{j1}, \hat{T}_{j1}}^2 + \sigma_{\hat{B}_{j2}, \hat{T}_{j2}}^2) \right\} \\ &= \frac{1}{\hat{T}_j^2} \left\{ \sigma_{\hat{B}_{j1}}^2 + \sigma_{\hat{B}_{j2}}^2 + \hat{X}_j^2 (\sigma_{\hat{T}_{j1}}^2 + \sigma_{\hat{T}_{j2}}^2) - 2 \hat{X}_j (\sigma_{\hat{B}_{j1}, \hat{T}_{j1}}^2 + \sigma_{\hat{B}_{j2}, \hat{T}_{j2}}^2) \right\} \end{aligned}$$

The variance of the belted passengers and total passengers for Levels 1 and 2 are given by:

$$\begin{aligned} \sigma_{\hat{B}_{j1}}^2 &= \frac{\sum_{c=1}^4 \left( \hat{B}_{j1c} - \frac{\hat{B}_{j1}}{4} \right)^2}{4(4-1)} \quad \text{and} \quad \sigma_{\hat{B}_{j2}}^2 = \frac{\sum_{c=1}^{12} \left( \frac{\hat{B}_{j2c}}{z_c} - \hat{B}_{j2} \right)^2}{12(12-1)} \\ \sigma_{\hat{T}_{j1}}^2 &= \frac{\sum_{c=1}^4 \left( \hat{T}_{j1c} - \frac{\hat{T}_{j1}}{4} \right)^2}{4(4-1)} \quad \text{and} \quad \sigma_{\hat{T}_{j2}}^2 = \frac{\sum_{c=1}^{12} \left( \frac{\hat{T}_{j2c}}{z_c} - \hat{T}_{j2} \right)^2}{12(12-1)} \end{aligned}$$

meanwhile the covariances are given by

$$\begin{aligned} \sigma_{\hat{B}_{j1}, \hat{T}_{j1}}^2 &= \frac{\sum_{c=1}^4 \left( \hat{B}_{j1c} - \frac{\hat{B}_{j1}}{4} \right) \left( \hat{T}_{j1c} - \frac{\hat{T}_{j1}}{4} \right)}{4(4-1)} \quad \text{and} \\ \sigma_{\hat{B}_{j2}, \hat{T}_{j2}}^2 &= \frac{\sum_{c=1}^{12} \left( \frac{\hat{B}_{j2c}}{z_c} - \hat{B}_{j2} \right) \left( \frac{\hat{T}_{j2c}}{z_c} - \hat{T}_{j2} \right)}{12(12-1)} \end{aligned}$$

### Confidence intervals

With estimates of the statewide safety belt usage and its variance, the 95% confidence interval is given by

$$C.I. = \hat{X}_j \mp 1.96 \sqrt{\sigma_{\hat{X}_j}^2}$$

**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](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



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	173,544	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

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](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.

Prepared By:

Tennessee Department of Safety  
Research, Planning, and Development  
Division  
Menzler-Nix Building, 1150 Foster Avenue  
Nashville, TN 37243

