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EVALUATION OF KENTUCKY'S DRIVER LICENSE POINT SYSTEM

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16. Abstract

The objectives of this study were to: a) summarize the characteristics of drivers in Kentucky involved in traffic crashes and b) evaluate and recommend improvements to Kentucky's driver license point system. Comparisons of driving record were made by driver age and sex. The relationship between violations and traffic crashes was analyzed. The change in driving record after various interventions was investigated. Based on a review of the point systems used in other states and the analysis of the driver's license file, a revised point system was recommended for use in Kentucky.

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EXECUTIVE SUMMARY

The objectives of this study were to: a) summarize the characteristics of drivers in Kentucky involved in traffic crashes and b) evaluate and recommend improvements to Kentucky's driver license point system.

Two sources of information (involvement in traffic crashes and driving record) were used to compare driving record to age and sex. Several differences were found. For example, driver contributing factors occurring more often for males included unsafe speed and alcohol while factors occurring more often for females included failure to yield right of way and following too closely. Unsafe speed decreased as a factor with driver age while failure to yield right of way increased with age. Males had more traffic crashes per driver but females had a higher rate in terms of crashes per miles driven. Teenage drivers had the highest number of crashes per driver as well as crashes per miles driven.

The large majority of states use a point system similar to Kentucky's to identify high risk drivers. A comparison was made between the penalty assigned for various violations in Kentucky with other states which have a point system. Potential changes in Kentucky's point system were identified. These included violations which could be omitted or added as well as revising the number of points for some violations. Examples would be raising the number of points for reckless driving from four to six points, omitting changing drivers in a moving vehicle, and adding mandatory violations such as driving under the influence and assigning it points. Based on the review of the point systems used in other states and the analysis of the driver's license file, a revised point system was recommended for use in Kentucky.

The driver license file contains data for all licensed drivers for a five-year period. Entries from this file, giving such information as number and types of violations and number of various interventions, were summarized. The violation data showed that males had a higher number of violations than females with drivers 16 through 24 years of age having the highest of the various age categories. After 25 years of age, the number of violations decreased with age. Speeding under 16 mph over the speed limit was listed most often for all age categories with about 70 percent of all point violations related to some type of speed violation. Reckless driving and improper start occurred more often for younger drivers while failure to yield the right of way occurred more often for older drivers.

The number of points accumulated over a certain time period was compared to the number of traffic crashes over the same period. For five years of data, about 87 percent of drivers had not accumulated any points with the 0.8 percent of drivers with 12 or more points accounting for 2.2 percent of the crashes. Very strong relationships were found between points and crashes.

Drivers who had a driving record which made them eligible for an intervention were also found to have been involved in a large number of crashes and the number of crashes decreased substantially after the intervention. Larger reductions were found in violations for those drivers who attended a traffic school compared to those who did not enroll when eligible.

1.0 INTRODUCTION

Certain age categories of drivers, specifically the youngest and the oldest, have been identified as having traffic collision rates higher than the overall driving population. Various methods have been used to identify specific high risk drivers so that some type of remedial action could be implemented. A common method uses a point system to assign a certain number of points for specific violations. Such a point system is used in Kentucky. It has been several years since any detailed analysis was conducted relating to characteristics of Kentucky drivers or the point system currently used in Kentucky (1,2). There is a need to review the current point system to determine if any changes should be made which could more accurately identify high-risk drivers.

Periodic renewal of the driver license is an integral part of the driver licensing procedure. However, the frequency of renewal as well as the level of requirements varies among the states. Most states require a renewal every four years. Various types of retesting have been implemented in many states. A large number requires vision testing while some require written knowledge and road tests. The financial ramifications of a renewal program has led a number of states to reduce the extent and frequency of renewal testing and allow drivers with clean records to renew their license by mail.

Kentucky currently has a four-year renewal policy and no testing or examination requirements at the time of renewal. Development of a procedure to retest all or identified groups of drivers could impact the high percentage of motor vehicle collisions related to driver error as well as driver inadequacies related to knowledge and skill or physical problems.

A Safety Management System has been implemented in Kentucky with the overall goal of reducing the number and severity of traffic crashes. In addition, the "Drive Smart" Program administered by the Kentucky Transportation Cabinet has adopted many of the elements of a Safety Management System in an attempt to address traffic safety through a coordinated program involving the driver, the vehicle, and the roadway. With research indicating that approximately 85 percent of the factors contributing to traffic crashes are related to the driver, it is appropriate to develop programs to impact the driver. Any improvement in the methods used to identify high-risk drivers would be beneficial toward achieving the objective of reducing the number and severity of traffic crashes. The first step in this driver improvement process is proper identification of high-risk drivers which could be followed by rehabilitation in the form of training and education, retesting, or the placement of specific restrictions such as no nighttime driving.

The objectives of this study were to: a) summarize the characteristics of drivers in Kentucky involved in traffic crashes; b) evaluate and recommend improvements to Kentucky's driver license point system; c) use driver record information to identify drivers in need of retesting and rehabilitation; and d) recommend components of a retesting program and renewal practices for high risk drivers as well as the general driving population. This report addresses the characteristics of drivers and evaluation of the point system. The retesting issue is dealt with in another report.

2.0 PROCEDURE

Two major data bases were used in the analysis. Information relating to driver records was obtained from the driver license file maintained by the Division of Drivers Licensing. This file contains information about the driver such as age and sex and a detailed history of individual driving records such as violations issued and any remedial actions taken. The driver license file contains data for five years. Data were available for five years for each driver unless the driver had obtained a license for less than five years or had moved into or out of Kentucky during the five-year period.

The second data base related to traffic crash data. Traffic crash data were obtained from a computer file maintained by the Kentucky State Police of all reported crashes in the state. Data for a three-year period (1994-1996) were analyzed. The number and characteristics of crashes were summarized by driver age and sex.

The sources of information used to obtain data concerning the types of point systems used in other states were the 1997 editions of the MVR Book (Motor Services Guide) (3) and the MVR Decoder Guide from The Public Record Research Library (4). These documents give detailed information relating to violations and assigned points.

Primary sources which give information relating to license renewal and retesting of drivers are the U.S. Department of Transportation Driver License Administration Requirements and Fees (1996) (5), the American Automobile Association Digest of Motor Laws (1997) (6), and the State and Provincial Licensing Systems (Comparative Data 1995) from the National Highway Traffic Safety Administration (7). Detailed information relating to license renewal processes and types of retesting conducted across the country and medical review processes used were obtained and are included in the related report.

3.0 RESULTS

3.1 Analysis of Traffic Crash Data by Driver Age and Sex

Two separate types of analysis of the traffic crash file were used to compare driving record by age and sex. One analysis involved a comparison of traffic crash characteristics. This comparison was conducted for both all traffic crashes as well as only fatal crashes. The three-year period of 1994 through 1996 was used in the analysis. Comparisons were made of such variables as type of crash, contributing factors, severity, and time of day.

A comparison of the characteristics of all traffic crashes, by driver sex, is given in Table 1. Following is a summary of the relationships found.

Variable	Comparison
Crash Severity	Males had a higher percentage of fatal crashes.
Aid System	The percentage of crashes in rural areas was higher for males with females having a higher percentage in urban areas.
Directional Analysis	Females had a higher percentage of crashes at intersections (with the largest difference for angle collisions). The largest difference for non-intersection crashes was the higher percentage involving fixed objects for males.
Driver Seatbelt Usage	Females had a slightly higher reported usage percentage. It should be noted that usage is primarily reported by the driver and is much higher than the observed usage rate (54 percent in 1997 (8)).
Time of Day	Males had a higher percentage of crashes occurring between midnight and 6 a.m. with a higher percentage for females between noon and 6 p.m.
Day of Week	Males had a slightly higher percentage of crashes occurring on weekends.
Month	No major differences were found.

Number of Vehicles	Males had a substantially higher percentage of single vehicle crashes.
Land Use	The percentage in rural areas was higher for males with females having a higher percentage in business areas.
Road Surface Conditions	No substantial differences were noted.
Weather	No substantial differences were noted.
Road Character	Males had a higher percentage occurring on curves.
Light Condition	Males had a higher percentage of crashes occurring during darkness, especially with no lighting.
Speed Limit	Males had a higher percentage of crashes occurring on roads with a speed limit over 45 mph.
Type of Crash	Males had a higher percentage of crashes involving a fixed object or non-collision with a higher percentage for females involving a collision with a non-fixed object.
Contributing Factors	Driver factors occurring more for males included unsafe speed, alcohol, and falling asleep. Factors related more to females were failure to yield the right of way, following too closely, disregarding traffic control, and driver inattention.

A comparison of fatal traffic crash characteristics, by driver sex, is given in Table 2. Following is a summary of the relationships found.

Variable	Comparison
Aid System	The percentage for males was higher in rural areas with the largest difference on rural, local roadways.
Directional Analysis	Females had a higher percentage of fatal crashes at intersections which was the result of angle collisions. Considering non-intersection crashes, males had a higher percentage of fixed object, ran off road, and overturned in road crashes while females had a higher percentage of rear end, head on, sideswipe, and driveway related.

Driver Seatbelt Usage	Females had a higher percentage of reported usage. The percentage in fatal traffic crashes was significantly lower than for all accidents.
Time of Day	Males had a higher percentage of fatal crashes occurring from 6 p.m. to 6 a.m. with females having a higher percentage from 6 a.m. to 6 p.m.
Day of Week	Males had a higher percentage on weekends.
Month	The percentage involving males was slightly higher during the summer months of June through August with females having a slightly higher percentage in the winter months of December through February.
Number of Vehicles	Males had a substantially higher percentage of single vehicle fatal crashes.
Land Use	Males had a higher percentage of fatal crashes in rural areas and on limited access roadways with a higher percentage for females in business and residential areas.
Road Surface Condition	Females had a higher percentage on a wet or snow/ice covered pavement.
Weather	Females had a slightly higher percentage during inclement weather conditions.
Road Character	Males had a higher percentage occurring on a curve.
Light Condition	Males had a substantially higher percentage of fatal crashes occurring during darkness.
Speed Limit	Males had a higher percentage of fatal crashes on roads with higher speed limits.
Type of Crash	Females had a higher percentage involving a collision with another motor vehicle while males had a higher percentage involving a collision with a fixed object and a non-collision.

Contributing Factors	Driver factors occurring more often for males included unsafe speed and alcohol while the factors occurring more for females were failure to yield the right of way, following too closely, and improper turn.

A comparison of the characteristics of all traffic crashes, by driver age, is given in Table 3. Following is a summary of the relationships found.

Variable	Comparison
Severity	The percent of fatal crashes increased with age. The highest percentage of injury crashes involved teenage drivers.
Aid System	Teenage drivers had the highest percentage in rural areas with the oldest age categories having the highest percentage in urban areas.
Directional Analysis	The percent of crashes at intersections increased with age. Teenage drivers had the highest percentage of fixed object, ran off road, and overturned in road crashes.
Driver Seatbelt Usage	There were no major differences in reported usage rates. Note that these reported rates are much higher than the rates found in observation surveys.
Time of Day	The highest percentage between 6 p.m. and 6 a.m. was for drivers under 25 year of age.
Day of Week	Teenage drivers had the highest percentage of crashes occurring on weekends.
Month	No trends were noted by month.
Number of Vehicles	Young drivers had a much higher percentage of single vehicle crashes.
Land Use	Young drivers had the highest percentage of crashes in rural areas while older drivers had the highest percentage in business areas.
Road Surface Conditions	The oldest age category had the lowest percentage of crashes on wet or snow/ice covered pavements.

Weather	The oldest age category had the lowest percentage during inclement weather.
Road Character	The percentage of crashes occurring on curves decreased with age.
Light Condition	The percentage during darkness was highest for drivers under 25 years of age.
Speed Limit	Older drivers had a higher percentage on roads with a speed limit of 35 mph or less.
Type of Crash	Older drivers had a higher percentage involving a collision with another motor vehicle while younger drivers had a higher percentage involving collisions with a fixed object or non-collisions.
Contributing Factors	The largest differences found were that the percent of crashes involving unsafe speed decreased with age while the percentage involving failure to yield the right of way increased with age.

A comparison of the characteristics of fatal traffic crashes, by driver age, is given in Table 4. Following is a summary of the relationships found.

Variable	Comparison
Aid System	The major difference was the higher percentage on urban arterials for drivers 75 years or older.
Directional Analysis	Older drivers had the highest percentage at intersections with an especially high percentage of angle collisions for drivers 75 years or older. Non-intersection fixed object collisions were the most common type for younger drivers.
Driver Seatbelt Usage	Usage was lowest for drivers under 25 years of age.
Time of Day	Older drivers had a lower percentage during the midnight to 6 am time period.
Day of Week	Older drivers had a lower percentage on weekends.

Month	Teenage drivers had a lower percentage during the winter months of December through February.
Number of Vehicles	The percentage of single vehicle fatal crashes decreased with driver age.
Land Use	The youngest and oldest age categories had the lowest percentages on limited access highways. Teenagers had the highest percentage in rural areas. Drivers 75 years or older had the highest percentage in business areas.
Road Surface Conditions	Drivers 75 years or older had the highest percentage on dry pavement.
Weather	Drivers 75 years or older had the highest percentage during clear weather conditions.
Road Character	Teenage drivers had the highest percentage on curves.
Light Condition	Older drivers had a lower percentage during darkness.
Speed Limit	Drivers 75 years or older had the highest percentage of fatal crashes occurring on roadways with a speed limit of 45 mph or less.
Type of Crash	The percentage of fatal crashes involving a collision with another vehicle increased with age while the percentage involving a collision with a fixed object or non-collision decreased with age.
Contributing Factors	The most dramatic trends were the decrease in unsafe speed as a factor with age and the increase in failure to yield the right of way with age. Drivers 75 or older also had the highest percentage involving disregarding traffic control, improper turn, sickness, lost consciousness, driver inattention, and distraction.

Comparisons using all crashes and fatal crashes were also made using a combination of age and sex categories (Tables 5 and 6, respectively). Following is a summary of some of the relationships found.

Variable	Comparison
Severity	The highest percentage of fatal crashes was for males over 75 years old.
Aid System	Males, 25 to 49 years of age, had the highest percentage of fatal crashes on interstate highways while females over 75 years old had the highest percentage on urban arterials. Considering all crashes, teenage males had the highest percentage on rural local roadways.
Directional Analysis	Females over 75 years old had the highest percentage of crashes occurring at intersections (especially angle collisions). Teenage drivers, both male and female, had the highest percentages of fixed object and ran off road crashes.
Driver Seatbelt Usage	Reported usage was lowest for teenage males.
Time of Day	Teenage males had the highest percentage between midnight and 6 a.m.
Day of Week	The lowest percentage of weekend crashes involved drivers over 75 years of age.
Month	No major differences were found.
Number of Vehicles	The highest percentage of single vehicle crashes involved teenage males with the lowest percentage for females over 75 years of age.
Land Use	Teenage males had the highest percentage occurring in rural areas. Females over 75 years old had the highest percentage in business areas. Males between 25 and 49 years old had the highest percentage on limited access highways.
Road Surface Conditions	The lowest percentage for a roadway surface condition other than dry was for females over 75 years old.
Weather	The lowest percentage for a weather condition other than clear was for females over 75 years old.

Road Character	Teenage males had the highest percentage occurring at curves.
Light Condition	The highest percentage for non-daylight hours was for teenage males with the lowest percentage for females over 75 years of age.
Speed Limit	The highest percentage of crashes occurring on roadways with a speed limit over 55 mph was for males 25 to 49 years of age. The highest percentage on roadways with a speed limit of 35 mph or less was for females over 75 years of age.
Type of Crash	Teenage males had the highest percentage of non-collision crashes as well as collisions with various fixed objects such as a tree or earth embankment/rock cut/ditch. Male and female drivers over 75 years of age had the highest percentage of crashes involving another vehicle.
Contributing Factors	Teenage males had the highest percentage involving unsafe speed. Females over 75 years old had the highest percentage involving failure to yield the right-of-way and disregarding traffic control. The highest percentage involving alcohol was for males between 25 and 49 years of age.

The second type of analysis involved the calculation of traffic crash rates by driver age and sex. Two methods of exposure, number of drivers and miles driven, were used in calculating the rates. The resulting units were crashes per year per 1,000 drivers and crashes per million vehicle miles driven. Data used to calculate the rates included the number of licensed drivers in 1995, the number of traffic crashes by age and sex for 1994 through 1996, and an estimate of miles driven by driver age and sex obtained from a previous survey of Kentucky drivers (1). An alternative method of determining exposure called induced exposure may be used in future analysis.

Traffic crash rates, considering all crashes, by driver age and sex are given in Table 7. When comparing males and females, males had more crashes per driver but females had a higher rate in terms of crashes per miles driven. This is related to the higher annual number of miles driven by males. Teenage drivers had the highest number of crashes per driver as well as crashes per miles driven. The second highest rates for both crashes per driver and miles driven were for the 20 to 24 years of age category. The number of crashes per driver generally decreased

with age; however, the crashes per miles driven increased for older drivers with drivers 75 years or older having the third highest rate. The lowest rate of crashes per driver was for the 65 to 74 years category with the lowest rate of crashes per miles driven for the 45 to 54 years category.

Fatal crash rates by driver age and sex are given in Table 8. Males had more crashes per driver as well as a higher rate of fatal crashes per miles driven. Teenage drivers had the highest rate for both fatal crashes per driver as well as fatal crashes per miles driven. The second highest rate of crashes per driver was for the 20 to 25 years of age category with the second highest rate of crashes per miles driven for the 75 years or older category. The lowest rate for both methods of exposure was for the 45 to 54 years of age category.

3.2 Analysis of Point System

Use of a procedure of assigning points for various violations is a common method to identify high risk drivers. The point system attempts to measure the comprehensive driving behavior of a driver and that relationship to traffic crashes. Its objective is to protect the public from the negligent and habitual problem driver who violates traffic laws. It accomplishes this objective by identifying and monitoring problem drivers. The number of points assigned to the various violations should be related to the potential severity of that violation.

A review of the MVR information (3,4) shows that 39 states have some form of a point system. The typical number of points necessary for suspension is 12. This number is used by the majority of states, including Kentucky. For those states with 12 points necessary for suspension, the typical range in points for any given violation was from 2 to 7 points. The states were almost equally divided in retaining the points for either one or two years with a very few having a shorter or longer time period. Kentucky retains points for two years. There was a wide range in the number of violations assigned a point value. This number varied from under 10 to over 300 with an average of about 80. Kentucky currently has points assigned for 29 categories of violations.

A comparison was made between the penalty assigned to various violations in Kentucky with other states having a point system (Table 9). For each violation, the number of states having that violation is given. This total excluded Kentucky and four states with point systems where the number of points for suspension was not specified in the literature. The maximum number of states which could be included in the analysis for any given violation was 34. The percent of the points assigned for the specific violation, as a percentage of the total number of points necessary for suspension, was determined. This percentage for Kentucky was compared to the average, range, and standard deviation for all the states in which

the specific violation was listed. The violations considered were those currently used in Kentucky as well as several violations only used in other states.

The results of the analysis for each violation could be summarized into several categories describing how the violation may be used or not used in Kentucky's point system. These categories, along with the associated violations and points, follow:

- Violations included in Kentucky's current system which are also typically used in other states with similar level of points.

  Speeding up to 15 mph over the speed limit - 3 points
  Careless driving - 3 points
  Failure to dim headlights - 3 points
  Failure to illuminate headlights - 3 points
  Improper lane usage - 3 points
  Improper turn - 3 points
  Wrong way on 1-way street - 3 points
  Disregarding yield right-of-way sign - 3 points
  Disregard of stop sign - 3 points
  Failure to obey traffic control device - 3 points
  Driving too fast for conditions - 3 points
  Driving too slow for conditions - 3 points
  Driving on wrong side of road - 4 points
  Failure to yield right of way to pedestrians - 3 points
  Failure to give right of way to emergency vehicles - 4 points

Some of these violations, such as failure to dim or illuminate headlights and driving too fast or slow for conditions, could be combined.

Current legislation states that no points will be assigned for speeding 10 mph or less over the posted speed limit on a limited access highway. If this legislation is not changed and the point system related to speeding is not changed, it should only apply to highways with full access control. An analysis of traffic crash data in Kentucky shows that the rate for roadways with partial access control is much closer to that of highways with no access control than to those with full control of access (9). However, there is logic to not assign points for low levels of speeding on all types of roads. The range of speed over the speed limit associated with various number of points varies significantly from state to state. Many states do not assign points for speeding for speeds ranging from five to 15 mph over the speed limit. An alternative to the current 1-15 mph, 15-25 mph, and "over 25 mph" ranges would be 11-19 mph and "20 mph or more" with no points for 10 mph or less over the speed limit expanded from limited access highways to all roads.

- Violations included in Kentucky's current system which are also typically used in other states but where the points assigned could be changed.

  Following another vehicle too closely - decrease from 4 to 3 points
  (combine current three categories together)
  Improper passing - decrease from 5 to 4 points
  Fail to stop for school/church bus - decrease from 6 to 5 points
  Reckless driving - increase from 4 to 6 points

- Violations which could be omitted from Kentucky's current point system.

  Separate violations for speeding on limited access highway
  Changing drivers in a moving vehicle
  Improper use left lane/ limited access highway (which can be included with improper lane usage)
  Improper start
  Vehicle not under control
  Combination of two or more violations in one occurrence
  Commission of violation which involves an accident

- Violations which could be added to Kentucky's current point system (along with point value).

  Speeding 20 mph or more over speed limit - 6 points
  Failure to use seat belt/child restraint- 3 points (driver only for seat belt use)
  Mandatory violations such as:
  Attempting to elude police officer - 8 points
  Racing - 8 points
  Driving under influence - 8 points
  Driving while suspended - 6 points

The logic for having points associated with mandatory suspensions was to provide a deterrent for a longer time period than the suspension period. For example, a license could be suspended for 90 days for racing. At the end of this time period, no points associated with this violation is on the driving record. Points for mandatory violations provides a longer deterrent for a driver to avoid obtaining additional traffic violations. This is necessary because drivers who have mandatory violations would be considered higher risk.

3.3 Analysis of Drivers License File

The drivers license file which was analyzed contained the driving records of about 2.9 million drivers for the five-year period of 1993 through 1997. Depending on a specific individual's driving record, there could be several records for a driver. As a minimum, a driver would have a demographic data record and entry records for a license renewal and data purge. The records and entries were reviewed and those entries which would not be used in the analysis were eliminated. This reduced the size of the file and allowed all drivers to be included in the analysis. There were about 11.4 million records in the revised file used in the analysis.

Data for the following records were included for each driver. The number of records for any driver would vary depending on the driving history.

a. driver license demographic data,
b. entry data,
c. restrictions data,
d. CDL data,
e. accident data, and
f. permit data.

Each driver had demographic data which included information such as driver age and sex. The number of lines of entry data depended on the driving history. An entry record was included for each event in the driving history. The list of entry codes was reviewed, and those which would not be used in the analysis were eliminated. This was done to reduce the size of the file. Examples of entry codes included in the analysis were those for specific violations and various administrative actions.

3.3.1 Summary of Driving Records

The number of entries for various codes are summarized in Table 10. There are many codes listed in the file so they were divided into several general categories. The number of times a specific code, within a given category, was listed in the driver license file for the five-year period is given. This total is also subdivided into male and female categories.

An example of the information contained in Table 10 would be a summary of the point violations. The number of violations given is the number of violations for which points were assigned. In many instances, the driver was referred to traffic school with no record of a specific violation and no points were assigned. While there were almost 500,000 point violations recorded, there were also approximately

300,000 referrals to traffic school for other unspecified violations. The violation for "speeding under 16 mph over the limit" was listed most often with this violation representing about 40 percent of all of the recorded point violations. The second most common point violation was "speeding 16 to 25 mph over speed limit" with about 20 percent of all violations. About 70 percent of all point violations related to a speed violation, and this does not include almost 50,000 additional violations for speeding 10 mph or less on a limited access highway for which no points were assigned. The most common other point violations were "failure to obey traffic control device" with about 43,000 and "disregard of stop sign" and "reckless driving" with about 30,000 each. There was a substantial decrease to almost 6,000 for the next violation for improper passing. There were several point violations with a very small number of violations. The lowest numbers were 45 for "driving too slow for conditions" and 48 for "changing drivers in a moving vehicle."

3.3.2 Driving Record by Age and Sex

Various aspects of the driving record were analyzed by driver age and sex. The numbers of drivers in the file in the various age and sex categories were as follows.

	Number of Drivers		
Age Category (Years)	Male	Female	Total
16 through 19	95,314	91,036	186,350
20 through 24	137,199	127,952	265,151
25 through 34	304,743	289,094	593,837
35 through 44	318,288	311,519	629,807
45 through 54	253,466	246,510	499,976
55 through 64	162,793	157,448	320,241
65 through 74	117,685	116,557	234,242
Over 74	73,540	82,197	155,737
All	1,463,029	1,422,313	2,885,342

The relationship between point accumulation and driver age and sex is summarized in Table 11. The numbers of points per driver and per driver per year were higher for males than females by a factor of about 2.2. The age categories with the highest numbers of points per driver and per driver per year were 20 to 24 years of age, followed by 16 to 19 years of age, with the age category of over 74 having the lowest numbers. The ranking changed when miles driven was considered, as shown in the following listing.

Category (Age or Sex)	Points per 1,000,000 Miles Driven
16 through 19 years	28.5
20 through 24 years	27.8
25 through 34 years	15.1
35 through 44 years	9.2
45 through 54 years	6.6
55 through 64 years	5.1
65 through 74 years	3.7
Over 74 years	2.3
Male	12.0
Female	10.6

When miles driven was considered, the age categories of 16 through 19 and 20 through 24 years of age had the highest point accumulation rates. The rates decreased with age with drivers over 74 years of age having the lowest rate. Males had a slightly higher rate than females.

An analysis of the number of violations for which points are assigned, plus referral to a traffic school, versus age and sex is given in Table 12. Referral to a traffic school is associated with a point violation. The number of point violations per driver per year was highest for the 20 through 24 years of age category followed by the 16 to 19 years of age category. The rate decreased with age with the lowest for drivers over 74 years of age.

A comparison of the number of all violations or arrests to driver age and sex is given in Table 13. Violations and arrests include the point system violations plus referral to a traffic school along with alcohol related offenses and other offenses such as racing and attempting to elude. The order of the rates by age was the same as for points and point violations.

Following is a list of rates by driver age and sex considering miles driven. The highest rate was for the 16 through 19 years of age category with the rate for the 20 through 25 age category close to that for teenage drivers. This rate reduced substantially for drivers 25 through 34 years of age and continued to decrease with age. The rate for drivers over 74 years of age was only about five percent that of teenage drivers. The data in Table 13 showed the rate for males was over twice that for females. When miles driven is considered, the rate for males is still higher than for females but the difference is much less.

Category (Age or Sex)	Violations/Arrests per 1,000,000 Miles Driven
16 through 19 years	16.6
20 through 24 years	14.0
25 through 34 years	8.1
35 through 44 years	5.3
45 through 54 years	3.7
55 through 64 years	2.6
65 through 74 years	1.7
Over 74 years	0.9
Male	6.4
Female	6.0

The relationship between number of traffic crashes, given in the driver license file, and driver age and sex is given in Table 14. Only considering the numbers of drivers and crashes, the highest rate was for the 20 through 24 years and 16 through 19 years of age categories and the rate for males was higher than for females. The rates continued to decrease with driver age after age 25 with the lowest rate for the oldest age category. However, there were some changes in the ranking of rates when miles driven was considered, as shown in the following listing.

Category (Age or Sex)	Traffic Crashes per 1,000,000 Miles Driven
16 through 19 years	12.3
20 through 24 years	8.0
25 through 34 years	4.6
35 through 44 years	3.8
45 through 54 years	3.4
55 through 64 years	3.5
65 through 74 years	4.3
Over 74 years	5.4
Male	4.0
Female	6.1

When miles driven was considered, the highest rate was for the 16 to 19 years of age category followed by the 20 through 24 years and over 74 years of age categories. Females had a higher rate than males. The ordering of the rates was identical to that given in Table 7 which calculated rates by age and sex using data from the computerized traffic crash records.

The types of violations given to drivers, by driver age and sex, was investigated. The fifteen violations which occurred most often in the driver license

file are listed in Table 15 along with the ranking of each of these violations for various age and sex categories. Speeding under 16 mph over the speed limit was listed most often for all categories. Alcohol violations ranked between second and fourth except for teenage drivers where it ranked eighth in order of occurrence. Violations which occurred more often for younger drivers were reckless driving and improper start. A violation which ranked high for older drivers but occurred less often for younger drivers was failure to yield the right of way.

3.3.3 Relationship between Violations and Traffic Crashes

The number of points a driver accumulated over a certain time period was compared to the number of traffic crashes over the same period. The numbers of crashes per driver for drivers who accumulated specific numbers of points are given in Table 16 for drivers with five years of data in the driver license file. Approximately 82 percent of all drivers in the file had five years of data available for analysis. About 87 percent of the drivers had not accumulated any points during this period (83 percent for males and 91 percent for females). The 0.8 percent of drivers with 12 or more points accounted for 2.2 percent of the crashes. For males, 1.2 percent had 12 or more points with these drivers having 3.1 percent of the crashes involving a male driver. For females, 0.3 percent had 12 or more points with these drivers having 1.0 percent of the crashes involving a female driver. A direct relationship was found between points and crashes. Following are the equations and r-square values found using a linear regression (x is points per driver and y is crashes per driver).

Category (Age and Sex)	Equation	R-Square
All	$y = 0.0346 x + 0.2789$	0.97
Male	$y = 0.0336 x + 0.3061$	0.97
Female	$y = 0.0333 x + 0.2397$	0.98
20 through 24 years	$y = 0.0359 x + 0.4835$	0.97
25 through 34 years	$y = 0.0281 x + 0.3346$	0.97
35 through 44 years	$y = 0.0227 x + 0.2808$	0.96
45 through 54 years	$y = 0.0205 x + 0.2370$	0.94
55 through 64 years	$y = 0.0244 x + 0.2077$	0.93
Over 64 years	$y = 0.0371 x + 0.1708$	0.90
Male, 20 through 24 years	$y = 0.0331 x + 0.5290$	0.97
Female, over 54 years	$y = 0.0306 x + 0.1498$	0.97

As shown by the r-square values, the relationship between points and crashes was very strong for drivers with five years of information available on the driver license file. It is also shown that removing drivers which accumulate an excessive number of points will not dramatically lower the total number of crashes. For example,

removing all drivers with six or more points in the five years would affect 5.2 percent of all drivers and 10.8 percent of all crashes.

In order to compare data for teenage drivers, the relationships between traffic crashes and points for the two-year period of 1996 through 1997 was analyzed (Table 17). All drivers were included although a small number did not have a license for the entire period. About 94 percent of the drivers had not accumulated any points. Following are the equations and r-square values found using a linear regression (x is points per driver and y is crashes per driver).

Category (Age and Sex)	Equation	R-Square
All	$y = 0.0157 x + 0.0982$	0.94
Male	$y = 0.0156 x + 0.1061$	0.94
Female	$y = 0.0159 x + 0.0832$	0.97
16 through 19 years	$y = 0.0257 x + 0.1943$	0.78
20 through 24 years	$y = 0.0142 x + 0.1469$	0.92
25 through 34 years	$y = 0.0116 x + 0.1036$	0.94
35 through 44 years	$y = 0.0102 x + 0.0825$	0.96
Over 44 years	$y = 0.0049 x + 0.0810$	0.51
Male, 16 through 19 years	$y = 0.0228 x + 0.2129$	0.74
Female, over 44 years	$y = 0.0051 x + 0.0699$	0.37

The r-square values show that, when all drivers were considered, there was a very strong relationship between point accumulation and crashes using two years of data. The r-square values were low for the categories where there was a very small sample of drivers with high point accumulations in the two-year period.

The same type of analyses given in Tables 16 and 17, using total violations and arrests rather than points, are summarized in Tables 18 and 19. About 78 percent of the drivers had not accumulated any violations or arrests in the five-year period (72 percent for males and 84 percent for females). The 3.0 percent of drivers with three or more violations in five years accounted for 7.7 percent of the crashes. For males, 4.7 percent had three or more violations with these drivers accounting for 10.6 percent of crashes involving a male driver. For females, 1.3 percent had three or more violations with these drivers accounting for 3.7 percent of crashes involving a female driver. As with points and crashes, a direct relationship was found between violations and arrests. Following are the equations and r-square values found using a linear regression (x is violations/arrests per driver and y is crashes per driver) considering five years of data.

Category (Age and Sex)	Equation	R-Square
All	y = 0.1060x + 0.2676	0.97
Male	y = 0.1025x + 0.2833	0.98
Female	y = 0.1201x + 0.2278	0.99
20 through 24 years	y = 0.1218x + 0.4221	0.99
25 through 34 years	y = 0.0887x + 0.3131	0.97
35 through 44 years	y = 0.0707x + 0.2768	0.93
45 through 54 years	y = 0.0612x + 0.2449	0.89
55 through 64 years	y = 0.0818x + 0.2138	0.96
Over 64 years	y = 0.1202x + 0.2411	0.82
Male, 20 through 24 years	y = 0.1146x + 0.4561	0.99
Female, over 54 years	y = 0.1201x + 0.1520	0.98

The relationship between specific violations and crashes was investigated. There were six point violations, as shown in Table 10, which had a large number of records and then there was a substantial reduction in the sample size. The number included in this analysis was reduced since drivers who did not have five years of data were excluded. Following is a summary of the data for drivers with one or more of a specific violation.

Violation Type	Number	Percent with a Violation	Crashes per Driver
Speeding, under 16 mph	145,341	6.1	0.48
Speeding, 16-25 mph	81,307	3.4	0.52
Failure to Obey TCD	35,623	1.5	0.53
Speeding, 11-15 mph, LA	34,763	1.5	0.50
Disregard Stop Sign	23,708	1.0	0.55
Reckless Driving	21,900	0.9	0.65
Improper Passing	4,798	0.2	0.54
Improper Start	2,842	0.1	0.72
Careless Driving	3,506	0.1	0.63
Failure to Yield Right of Way	2,958	0.1	0.51
Speeding, 26 mph or More	2,108	0.1	0.66

There were 64,457 driving with a first offense for DUI. This was 2.7 percent of all drivers with 0.47 crashes per driver.

The relationship between violations per driver and crashes per driver was obtained for the six point violations with the largest number of records. The following data show some strong relationships were found (x is violations per driver and y is crashes per driver).

Violation Type	Equation	R-Square
Speeding, under 16 mph	y = 0.1652 x + 0.2740	0.99
Speeding, 16-25 mph	y = 0.1868 x + 0.2927	0.98
Failure to Obey TCD	y = 0.2920 x + 0.2470	1.00
Speeding, 11-15 mph, LA	y = 0.1138 x + 0.3339	0.71
Disregard Stop Sign	y = 0.2239 x + 0.2955	0.98
Reckless Driving	y = 0.2886 x + 0.2876	0.99

3.3.4 Change in Driving Record after Various Interventions

The changes in the number of various violation codes and crashes received before and after specific interventions were determined. The types of interventions considered included completing the traffic school, suspension, probation, personal letter, hearing, excessive points suspension, and medical suspension. Results of the analysis are shown in Table 20. Data for drivers having two years of data after the intervention were compared to drivers having two years of data before. The average number of violations and crashes per driver were compared before and after the intervention.

There were dramatic reductions in violations after the intervention. This would be expected since the drivers typically would have had to accumulate a number of violations to have started an intervention process. Drivers who completed traffic school were compared to those who did not enroll when eligible. A larger reduction in violations was found for those drivers who attended the traffic school. Drivers who had a driving record which made them eligible for an intervention were also found to have accumulated a large number of crashes and the number of crashes decreased substantially after the intervention.

4.0 SUMMARY

4.1 Driving Record by Age and Sex

Two types of analyses (involvement in traffic crashes and driving record) were used to compare driving record by age and sex. Several differences were found. For example, driver contributing factors occurring more often for males included unsafe speed and alcohol while factors occurring more often for females include failure to yield the right of way and following too closely. Unsafe speed decreased as a factor with driver age while failure to yield the right of way increased with age. Males had more traffic crashes per driver but females had a higher rate in terms of crashes per miles driven. Teenage drivers had the highest number of crashes per driver as well as crashes per miles driven.

4.2 Analysis of Point System

The large majority of states use a point system similar to the one used in Kentucky to identify high-risk drivers. The general methodology used is similar to other states. A comparison was made between the penalty assigned to various violations in Kentucky with other states having a point system. Potential changes in points currently assigned in Kentucky's point system were identified. These included violations which could be omitted or added as well as violations for which the number of points currently assigned could be revised. Examples would be raising the number of points for reckless driving from four to six points and omitting the changing drivers in a moving vehicle violation.

The points assigned to various violations should be associated with their relative severity. This is a basis for increasing the points for reckless driving from four to six. Another change would involved adding points for violations which have mandatory suspensions such as driving under the influence and racing. Adding points for mandatory violations would provide a long term deterrent.

4.3 Analysis of Drivers License File

The driver license file contains data on all licensed drivers for a five-year period. Entries from this file, giving such information as number and types of violations and number of various interventions, were summarized. The violation data showed that males had a higher number per driver than females with drivers 16 through 24 years of age having the highest of the age categories. After 25 years of age, the number of violations per driver decreased with age. Speeding under 16 mph over the limit was listed most often for all age categories with about 70 percent of all point violations related to a speed violation. Reckless driving and improper start occurred more often for younger drivers while failure to yield the right of way occurred more often for older drivers.

A direct relationship was found between point accumulation and traffic crashes. However, removing all drivers with a large number of points would only have a minimal effect on the number of crashes. Dramatic reductions in violations and crashes were noted after various interventions. This shows the benefit of identifying high-risk drivers through a point system with the subsequent intervention.

5.0 RECOMMENDATIONS

KRS 186.400(1) authorizes the Transportation Cabinet to promulgate administrative regulations for the enforcement of motor vehicle laws and driver licensing. An administrative regulation (601 KAR 13:025) was developed to

establish a driver license point system for the treatment of a driver who violates a traffic law. The point system measures the comprehensive driving behavior of a driver and that relationship to traffic crashes. Its objective is to protect the public from the negligent and habitual problem driver who violates traffic laws. It accomplishes this objective by identifying and monitoring problem drivers.

The number of points assigned to the various violations should be related to the potential severity of that violation. A weakness in the current system is the failure to include points for some of the most serious violations such as DUI. Assigning points for mandatory suspensions would provide a long term deterrent for those serious violations. Points for mandatory violations have been used in numerous states. For example, 18 states were found to assign points for DUI. Data show that adding points for mandatory violations would only affect less that five percent of all drivers. The effectiveness of the various interventions shows the benefit of assigning points for mandatory suspensions for drivers in that high risk group. Based on the review of the point systems used in other states and the analysis of the driver's license file, the following revised point system is recommended.

MOVING VIOLATION	POINTS
Speeding 11-19 mph over speed limit	3
Speeding 20 mph or more over speed limit	6
Careless driving	3
Failure to dim or illuminate headlights	3
Following another vehicle too closely	3
Improper lane usage	3
Improper turn	3
Wrong way on 1-way street	3
Disregarding right-of-way sign (stop or yield)	3
Failure to obey traffic control device	3
Driving too fast or too slow for traffic conditions	3
Failure to yield right of way to pedestrians	3
Failure to use seat belt/child restraint	3
Improper passing	4
Driving on wrong side of road	4
Failure to give right of way to emergency vehicles	4
Fail to stop for school/church bus	5
Reckless driving	6
Improper driving	3

MANDATORY VIOLATION

Driving while suspended	4
No liability insurance	3
No operators license	3
Attempting to elude police officer	6
Racing	6
Driving under influence/refusal	6
Other mandatory violations (leaving the scene, perjury, fraudulent use of license)	6

The Transportation Cabinet should consider not requiring a hearing for the violations of racing, eluding, and speeding 26 mph or more over the speed limit. Points will be assigned for these violations under the revised system and a warning letter will be sent for these violations. The hearing process could be limited to those drivers accumulating 12 or more points in two years.

Currently KRS.570 (5) does not allow points for speeding violations from other states to be added to the driver's record. This statute does not apply to other violations or to a commercial driver's license. Speeding violations are the most common violation and a direct relationship has been found between speeding violations and traffic crashes. Therefore, this exception should be eliminated.

6.0 REFERENCES

1. Agent, K.R.; "Characteristics of Kentucky Drivers," Kentucky Department of Transportation, Division of Research, Report 489, January 1978.

2. Agent, K.R.; "Identification and Rehabilitation of High-Risk Driver," University of Kentucky, Transportation Research Program Report UKTRP-81-10, July 1981.

3. "The MVR Book, Motor Services Guide," Public Record Research Library, 1997.

4. "The MVR Decoder Digest," Public Record Research Library, 1997.

5. U.S. Department of Transportation, Federal Highway Administration (1996). Driver License: Administration Requirements and Fees. Washington, D.C.: Government Printing Office.

6. American Automobile Association (1997). Digest of Motor Laws. Heathrow, FL.

7. "State and Provincial Licensing Systems, Comparative 1995," National Highway Traffic Safety Administration, 1995.

8. Agent, K.R.; "1997 Safety Belt Usage Survey and Evaluation of Effectiveness in Kentucky," Report KTC-97-17, September 1997.

9. Agent, K.R. and Pigman, J.G.; "Analysis of Traffic Accident Data in Kentucky (1992-1996)," Report KTC-97-18, September 1997.

TABLE 1. COMPARISON OF ALL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996)

		PERCENT OF TOTAL	
VARIABLE	CATEGORY	MALE DRIVERS	FEMALE DRIVERS
Severity	Fatal	0.63	0.37
	Injury	27.7	29.2
Aid System	Rural		
	Interstate	2.5	1.6
	Arterial	10.3	9.2
	Collector	17.5	15.7
	Local	9.6	8.5
	Urban		
	Interstate-Expressway	5.2	4.7
	Arterial	34.4	38.5
	Collector	4.8	5.4
	Local	15.7	16.5
Directional Analysis	Intersection		
	Angle	17.6	20.8
	Rear end	11.0	12.5
	Opposing left turn	1.1	1.1
	Fixed object	1.1	0.69
	Same direction sideswipe	3.0	3.1
	Bicycle	0.18	0.20
	Pedestrian	0.20	0.16
	All	37.4	41.9
	Non-Intersection		
	Rear end	18.8	20.6
	Head on	0.66	0.59
	Same direction sideswipe	6.3	6.1
	Driveway related	1.0	1.2
	Parked vehicle	4.0	3.1
	Pedestrian	0.50	0.42
	Fixed object	8.4	6.0
	Ran off road	4.9	3.9
	Overturned in road	0.92	0.42
	Bicycle	0.19	0.19
	Animal	2.7	2.0
	Bridge	0.15	0.10
	Interchange ramp	0.08	0.08
	Train	0.06	0.03
Driver Seatbelt Usage	Yes	85.8	88.3
Time of Day	Midnight - 5:59 am	7.0	4.2
	6:00 am - 11:59 am	25.3	26.6
	Noon - 5:59 pm	45.9	50.0
	6:00 pm - 11:59 pm	21.7	19.2
Day of Week	Mon - Fri	76.3	78.2
	Sat - Sun	23.7	21.8

TABLE 1. COMPARISON OF ALL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Month	Dec - Feb	24.3	23.5
	March - May	24.8	24.9
	June - August	24.6	24.6
	Sept - Nov	26.3	27.0
Number of Vehicles	One	20.8	15.1
	Two	72.3	76.9
	More than two	6.9	8.0
Land Use	Rural	30.0	25.1
	Business	34.1	38.6
	Industrial	0.71	0.64
	Residential	17.8	18.9
	School	1.3	1.7
	Park	0.17	0.13
	Private Property	0.2	0.2
	Limited Access	4.5	3.6
Road Surface Conditions	Dry	71.8	71.8
	Wet	22.2	22.9
	Snow/Ice	5.5	4.9
	Slush	0.22	0.19
	Muddy	0.08	0.04
Weather	Clear	59.2	59.0
	Raining	15.7	16.3
	Snowing	3.2	2.9
	Fog/Smog/Smoke	0.78	0.60
	Sleet/Hail	0.55	0.50
	Cloudy	20.4	20.6
Road Character	Straight & Level	60.4	62.6
	Straight & Grade	17.5	17.7
	Straight & Hillcrest	3.8	3.7
	Curve & Level	8.3	7.1
	Curve & Grade	8.2	7.2
	Curve & Hillcrest	1.5	1.4
Light Condition	Daylight	73.0	78.5
	Dawn	1.6	1.5
	Dusk	2.6	2.5
	Darkness-lighted/on	10.6	9.3
	Darkness-lighted/off	0.75	0.58
	Darkness-not lighted	11.1	7.3
Speed Limit (mph)	35 or less	47.4	51.3
	40 to 45	17.7	19.5
	50 to 55	28.1	24.0
	Over 55	3.8	2.5

TABLE 1. COMPARISON OF ALL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Type Collision 1st event			
	Collision with Non-fixed object		
	Other Vehicle	79.0	84.7
	Pedestrian	7.9	9.5
	Bicycle	1.7	1.9
	Animal	1.9	2.2
	Train	6.6	7.6
	Deer	0.02	0.02
	Collision with Fixed object		
	Utility pole	0.58	0.59
	Guard rail	1.1	0.50
	Crash cushion	0.03	0.02
	Sign post	0.52	0.38
	Tree	1.9	1.3
	Building/wall	0.26	0.20
	Curbing	0.36	0.38
	Fence	0.29	0.21
	Bridge	3.0	3.1
	Culvert/head wall	0.51	0.38
	Median/barrier	0.39	0.32
	Snow embankment	0.05	0.03
	Earth embankment/rock cut/ditch	3.9	3.2
	Fire hydrant	0.11	0.07
	Guardrail end treatment	0.21	0.17
	Other fixed objects	0.88	0.58
	Non-collision		
	Overturned	0.96	0.43
	Fire/explosion	0.19	0.10
	Submersion	0.01	0.01
	Ran off roadway	1.4	1.1
	Other	0.68	0.42

TABLE 1. COMPARISON OF ALL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Contributing Factors (Percent of all crashes in which listed as factor)			
Human			
	Unsafe speed	8.1	6.0
	Failure to yield right of way	17.3	19.9
	Following too closely	6.4	7.3
	Inproper passing	1.4	1.3
	Disregard traffic control	3.6	4.0
	Improper turn	2.7	2.7
	Alcohol involvement	5.3	2.3
	Sick	0.16	0.14
	Fell asleep	1.3	0.75
	Lost consciousness	0.27	0.22
	Driver inattention	34.5	37.5
	Distraction	2.1	2.3
	Physical Disability	0.23	0.21
Vehicular			
	Defective brakes	1.5	1.4
	Lighting defective	0.05	0.22
	Steering defective	0.29	0.20
	Tire problem	0.79	0.59
	Tow hitch defective	0.13	0.03
	Load problem	0.36	0.16
Environmental			
	Animal action	3.1	2.3
	Glare	0.88	1.0
	View obstruction	3.6	3.9
	Debris in roadway	0.64	0.54
	Improper/non-working traffic control	0.13	0.14
	Defective shoulder	0.19	0.14
	Hole/bump	0.14	0.11
	Road construction	0.51	0.45
	Improperly parked vehicle	0.28	0.23
	Fixed object	0.17	0.15
	Slippery surface	12.6	12.8
	Water pooling	0.95	0.98
	Total Number of Traffic Crashes	286,803	209,072

TABLE 2. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Aid System	Rural		
	Interstate	5.9	5.4
	Arterial	50.2	53.9
	Collector	13.7	11.6
	Local	9.3	5.9
	Urban		
	Interstate-Expressway	13.4	14.7
	Arterial	5.5	5.5
	Collector	0.22	0.52
	Local	1.6	2.4
Directional Analysis	Intersection		
	Angle	10.7	15.6
	Rear end	0.88	0.90
	Opposing left turn	0.33	0.52
	Fixed object	0.22	0.00
	Same direction sideswipe	0.22	0.52
	Bicycle	0.11	0.13
	Pedestrian	0.93	0.13
	All	14.9	19.6
	Non-Intersection		
	Rear end	4.3	5.0
	Head on	8.9	10.6
	Same direction sideswipe	2.0	2.7
	Opposing Direction sideswipe	11.8	15.5
	Driveway related	2.1	3.4
	Parked vehicle	1.0	0.64
	Pedestrian	5.8	5.8
	Fixed object	22.8	18.4
	Ran off road	13.8	7.1
	Overturned in road	3.8	2.3
	Parking lot	0.05	0.00
	Bicycle	0.38	0.64
	Animal	0.27	0.26
	Bridge	0.00	0.00
	Interchange ramp	0.00	0.00
	Train	0.55	0.39
Driver Seatbelt Usage	Yes	46.4	58.3
Time of Day	Midnight - 5:59 am	17.5	8.9
	6:00 am - 11:59 am	20.6	25.5
	Noon - 5:59 pm	32.9	42.5
	6:00 pm - 11:59 pm	28.9	23.1
Day of Week	Mon - Fri	68.8	73.1
	Sat - Sun	31.2	26.9
Month	Dec - Feb	22.0	24.1
	March - May	24.4	25.8
	June - August	25.7	21.9
	Sept- Nov	27.9	28.2

TABLE 2. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Number of Vehicles	One	48.8	34.1
	Two	43.2	53.2
	More than two	8.0	12.6
Land Use	Rural	69.1	66.0
	Business	12.3	15.2
	Industrial	0.60	0.52
	Residential	9.2	11.5
	School	0.55	0.64
	Park	0.16	0.13
	Private Property	0.44	0.13
	Limited Access	7.2	5.7
Road Surface Conditions	Dry	78.4	75.1
	Wet	18.0	20.2
	Snow/Ice	3.3	4.4
	Slush	0.11	0.13
	Muddy	0.00	0.13
Weather	Clear	62.5	60.0
	Raining	12.0	13.5
	Snowing	2.1	2.2
	Fog/Smog/Smoke	2.6	1.3
	Sleet/Hail	0.55	1.3
	Cloudy	20.0	21.8
Road Character	Straight & Level	38.6	42.8
	Straight & Grade	18.5	20.6
	Straight & Hillcrest	4.2	5.5
	Curve & Level	17.7	12.0
	Curve & Grade	17.6	16.2
	Curve & Hillcrest	3.0	2.7
Light Condition	Daylight	53.4	66.2
	Dawn	2.6	3.1
	Dusk	2.5	2.8
	Darkness-lighted/on	7.0	5.4
	Darkness-lighted/off	0.99	0.64
	Darkness-not lighted	33.0	21.6
Speed Limit (mph)	35 or less	14.2	13.5
	40 to 45	8.6	12.5
	50 to 55	65.8	64.3
	Over 55	9.2	7.9

TABLE 2. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Type Collision 1st event			
	Collision with Non-fixed object		
	Other Vehicle	50.1	64.2
	Pedestrian	6.8	5.9
	Bicycle	0.49	0.77
	Animal	0.22	0.26
	Train	0.55	0.39
	Deer	0.27	0.00
	Collision with Fixed object		
	Utility pole	2.5	1.80
	Guard rail	1.9	1.7
	Crash cushion	0.06	0.00
	Sign post	1.1	0.52
	Tree	9.0	8.4
	Building/wall	0.27	0.00
	Curbing	0.44	0.00
	Fence	1.3	1.0
	Bridge	1.7	0.64
	Culvert/head wall	1.9	1.9
	Median/barrier	0.49	0.39
	Snow embankment	0.0	0.13
	Earth embankment/rock cut/ditch	10.7	4.9
	Fire hydrant	0.00	0.00
	Guardrail end treatment	0.77	0.90
	Other fixed objects	1.3	1.0
	Non-collision		
	Overturned	3.7	2.3
	Fire/explosion	0.0	0.00
	Submersion	0.16	0.13
	Ran off roadway	3.2	1.8
	Other	0.99	0.64

TABLE 2. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL MALE DRIVERS	PERCENT OF TOTAL FEMALE DRIVERS
Contributing Factors (Percent of all crashes in which listed as factor)			
Human			
	Unsafe speed	26.6	19.5
	Failure to yield right of way	18.8	25.6
	Following too closely	0.33	0.52
	Inproper passing	2.3	2.1
	Disregard traffic control	5.3	5.7
	Improper turn	0.49	0.64
	Alcohol involvement	22.5	10.7
	Sick	0.38	0.26
	Fell asleep	0.33	3.5
	Lost consciousness	0.93	0.90
	Driver inattention	19.4	28.0
	Distraction	1.4	2.6
	Physical Disability	0.38	0.77
Vehicular			
	Defective brakes	1.0	0.52
	Lighting defective	0.88	0.26
	Steering defective	0.55	0.26
	Tire problem	2.3	2.7
	Tow hitch defective	0.05	0.00
	Load problem	0.22	0.26
Environmental			
	Animal action	0.49	0.77
	Glare	0.82	1.2
	View obstruction	3.6	4.1
	Debris in roadway	0.33	1.2
	Improper/non-working traffic control	0.00	0.00
	Defective shoulder	0.16	0.77
	Hole/bump	0.55	0.39
	Road construction	0.05	0.26
	Improperly parked vehicle	0.22	0.13
	Fixed object	0.16	0.13
	Slippery surface	10.8	13.9
	Water pooling	1.3	1.4
	Total Number of Fatal Crashes	1,819	776

TABLE 3. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996)

		PERCENT OF TOTAL				
		DRIVER AGE (YEARS)				
VARIABLE	CATEGORY	16-19	20-24	25-49	50-74	75 or older
Severity	Fatal	0.49	0.51	0.52	0.57	0.94
	Injury	31.1	28.8	27.7	27.0	28.0
Aid System	Rural					
	Interstate	1.0	2.0	2.3	2.5	1.2
	Arterial	9.4	9.6	10.0	10.4	10.2
	Collector	20.2	16.2	16.3	15.0	14.3
	Local	11.9	8.6	8.5	7.4	6.9
	Urban					
	Interstate-Expressway	3.2	5.3	5.5	5.0	2.2
	Arterial	33.8	37.3	36.5	38.9	42.1
	Collector	5.1	5.1	5.0	5.1	6.0
	Local	15.4	15.9	15.8	15.8	17.1
Directional Analysis	Intersection					
	Angle	18.4	19.1	18.4	22.6	32.0
	Rear end	9.6	11.8	12.1	12.2	9.4
	Opposing left turn	1.1	1.1	1.1	1.2	1.1
	Fixed object	1.1	0.92	0.93	0.47	0.46
	Same direction sideswipe	2.7	3.0	3.2	3.5	7.1
	Bicycle	0.10	0.16	0.19	0.18	0.16
	Pedestrian	0.13	0.13	0.19	0.17	0.09
	All Intersections	37.7	39.3	36.5	43.6	52.0
	Non-Intersection					
	Rear end	19.7	20.5	20.1	20.5	14.9
	Head on	0.68	0.70	0.68	0.56	0.42
	Same direction sideswipe	5.4	6.4	6.4	7.2	7.1
	Driveway related	1.1	1.2	1.1	1.3	1.6
	Parked vehicle	2.9	2.8	3.4	3.5	5.3
	Pedestrian	0.38	0.35	0.45	0.41	0.46
	Fixed object	10.0	7.7	6.7	3.7	3.1
	Ran off road	6.7	4.6	3.9	2.2	1.5
	Overturned in road	0.87	0.71	0.68	0.37	0.0
	Bicycle	0.13	0.16	0.18	0.18	0.15
	Animal	1.1	1.8	2.9	2.1	0.42
	Bridge	0.12	0.13	0.13	0.10	0.05
	Interchange ramp	0.04	0.06	0.08	0.08	0.02
	Train	0.02	0.02	0.05	0.05	0.05
Driver Seatbelt Usage	Yes	85.1	85.4	87.0	87.8	86.7
Time of Day	Midnight - 5:59 am	6.3	7.8	5.8	3.0	1.4
	6:00 am - 11:59 am	19.0	22.9	27.0	29.8	31.8
	Noon - 5:59 pm	47.1	46.2	47.1	52.0	57.6
	6:00 pm - 11:59 pm	27.6	23.1	20.1	15.2	9.2
Day of Week	Mon - Fri	74.5	75.7	77.8	78.7	78.4
	Sat - Sun	25.5	24.3	22.2	21.3	21.6

TABLE 3. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

		PERCENT OF TOTAL				
		DRIVER AGE (YEARS)				
VARIABLE	CATEGORY	16-19	20-24	25-49	50-74	75 or older
Month	Dec - Feb	22.3	24.0	24.5	23.7	22.1
	March - May	24.9	25.1	24.8	24.9	25.3
	June - August	25.8	25.0	24.3	24.6	24.8
	Sept - Nov	27.0	25.9	26.4	26.9	27.8
Number of Vehicles	One	21.7	17.8	17.6	10.7	6.8
	Two	70.3	73.4	74.9	80.5	85.8
	More than two	7.9	8.8	7.5	8.8	7.4
Land Use	Rural	31.6	27.4	27.8	24.2	19.6
	Business	33.8	36.2	35.8	40.3	46.3
	Industrial	0.56	0.67	0.76	0.68	0.45
	Residential	21.3	18.2	17.4	17.1	19.6
	School	2.3	1.8	1.3	1.2	0.97
	Park	0.20	0.15	0.14	0.12	0.17
	Private Property	0.14	0.18	0.20	0.15	0.15
	Limited Access	2.5	4.2	4.5	4.4	2.1
Road Surface Conditions	Dry	70.5	71.0	71.3	74.1	79.9
	Wet	24.6	22.8	22.4	21.4	18.0
	Snow/Ice	4.4	5.7	5.8	4.1	1.7
	Slush	0.18	0.21	0.23	0.17	0.14
	Muddy	0.06	0.07	0.07	0.04	0.02
Weather	Clear	58.7	58.5	58.6	60.8	65.3
	Raining	17.6	16.2	15.9	15.2	12.9
	Snowing	2.6	3.2	3.3	2.5	1.2
	Fog/Smog/Smoke	0.74	0.72	0.75	0.53	0.23
	Sleet/Hail	0.39	0.54	0.59	0.45	0.24
	Cloudy	19.8	20.7	20.7	20.4	19.9
Road Character	Straight & Level	57.2	61.2	61.8	65.0	68.5
	Straight & Grade	17.2	17.5	17.6	17.8	18.0
	Straight & Hillcrest	4.3	3.6	3.7	3.6	3.6
	Curve & Level	9.7	8.0	7.5	6.1	4.7
	Curve & Grade	9.3	7.8	7.7	6.2	4.2
	Curve & Hillcrest	2.0	1.5	1.4	1.1	0.83
Light Condition	Daylight	70.0	71.6	75.4	82.9	91.1
	Dawn	1.2	1.5	1.8	1.3	0.62
	Dusk	3.0	2.7	2.5	2.2	1.5
	Darkness-lighted/on	12.4	12.7	9.9	7.1	4.1
	Darkness-lighted/off	0.81	0.81	0.69	0.43	0.21
	Darkness-not lighted	12.3	10.3	9.4	5.7	2.4
Speed Limit (mph)	35 or less	48.5	49.0	48.3	50.7	57.8
	40 to 45	18.9	18.9	18.6	19.3	18.7
	50 to 55	27.7	26.3	26.8	23.7	19.1
	Over 55	1.7	3.1	3.6	3.7	1.7

TABLE 3. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL DRIVER AGE (YEARS) 16-19	20-24	25-49	50-74	75 or older
Type Accident 1st event						
Collision with Non-fixed object						
	Other Vehicle	78.1	82.0	82.2	89.1	93.0
	Pedestrian	0.52	0.48	0.63	0.58	0.55
	Bicycle	0.23	0.32	0.37	0.35	0.30
	Animal	0.25	0.32	0.43	0.28	0.06
	Train	0.02	0.02	0.05	0.05	0.05
	Deer	0.88	1.5	2.5	1.8	0.36
Collision with Fixed object						
	Utility pole	1.7	1.4	1.20	0.53	0.52
	Guard rail	1.1	1.1	1.0	0.61	0.32
	Crash cushion	0.02	0.03	0.03	0.02	0.01
	Sign post	0.57	0.46	0.43	0.25	0.32
	Tree	2.6	1.7	1.4	0.72	0.66
	Building/wall	0.25	0.22	0.19	0.13	0.20
	Curbing	0.44	0.37	0.27	0.16	0.19
	Fence	1.8	1.1	0.89	0.45	0.36
	Bridge	0.25	0.28	0.28	0.20	0.12
	Culvert/head wall	0.67	0.47	0.40	0.23	0.19
	Median/barrier	0.31	0.42	0.37	0.20	0.14
	Snow embankment	0.04	0.04	0.05	0.03	0.01
	Earth embankment/rock cut/ditch	5.4	3.7	3.1	1.7	1.1
	Fire hydrant	0.10	0.09	0.09	0.05	0.04
	Guardrail end treatment	0.20	0.20	0.19	0.12	0.03
	Other fixed objects	0.95	0.67	0.72	0.41	0.38
Non-collision						
	Overturned	0.88	0.74	0.71	0.39	0.11
	Fire/explosion	0.08	0.14	0.18	0.11	0.04
	Submersion	0.02	0.01	0.01	0.01	0.00
	Ran off roadway	1.8	1.3	1.2	0.65	0.48
	Other	0.50	0.48	0.60	0.40	0.24

TABLE 3. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL DRIVER AGE (YEARS) 16-19	20-24	25-49	50-74	75 or older
Contributing Factors (Percent of all accidents in which listed as factor)						
Human						
	Unsafe speed	11.5	8.6	6.4	4.5	2.7
	Failure to yield right of way	18.5	18.7	17.8	21.5	31.0
	Following too closely	7.0	7.4	7.0	6.7	4.6
	Inproper passing	1.4	1.4	1.4	1.4	1.2
	Disregard traffic control	3.3	3.8	3.7	4.6	5.6
	Improper turn	2.2	2.7	2.7	3.1	3.3
	Alcohol involvement	2.6	4.6	4.8	2.6	0.73
	Sick	0.08	0.10	0.15	0.20	0.33
	Fell asleep	1.2	1.4	0.96	0.86	0.69
	Lost consciousness	0.15	0.14	0.22	0.36	0.55
	Driver inattention	37.8	35.3	34.9	38.0	41.6
	Distraction	2.5	2.1	2.1	1.9	1.8
	Physical Disability	0.14	0.17	0.21	0.29	0.75
Vehicular						
	Defective brakes	1.7	1.6	1.5	1.3	0.86
	Lighting defective	0.32	0.33	0.27	0.27	0.12
	Steering defective	0.37	0.24	0.24	0.14	0.10
	Tire problem	0.97	0.77	0.66	0.47	0.27
	Tow hitch defective	0.03	0.05	0.11	0.13	0.05
	Load problem	0.11	0.21	0.34	0.35	0.13
Environmental						
	Animal action	2.3	2.4	3.1	2.1	0.58
	Glare	0.85	0.87	0.92	1.1	1.8
	View obstruction	4.0	3.8	3.7	3.8	3.7
	Debris in roadway	0.48	0.59	0.62	0.54	0.28
	Improper/non-working traffic control	0.14	0.13	0.14	0.15	0.16
	Defective shoulder	0.21	0.15	0.15	0.13	0.07
	Hole/bump	0.14	0.13	0.13	0.10	0.03
	Road construction	0.35	0.45	0.53	0.60	0.47
	Improperly parked vehicle	0.21	0.23	0.26	0.25	0.30
	Fixed object	0.14	0.16	0.17	0.16	0.14
	Slippery surface	14.4	13.6	12.9	10.5	6.0
	Water pooling	1.2	1.1	0.91	0.72	0.38
	Total Number of Accidents	84,878	86,735	247,922	98,705	17,707

TABLE 4. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996)

VARIABLE	CATEGORY	PERCENT OF TOTAL DRIVER AGE (YEARS) 16-19	20-24	25-49	50-74	75 or older
Aid System	Rural					
	Interstate	3.1	5.2	6.3	7.1	3.6
	Arterial	46.0	53.3	51.9	56.8	47.3
	Collector	16.7	10.9	10.4	10.7	8.4
	Local	9.2	6.1	8.2	5.2	8.4
	Urban					
	Interstate-Expressway	12.6	14.7	14.1	12.8	17.4
	Arterial	6.0	5.4	5.3	4.8	12.0
	Collector	0.24	0.00	0.23	0.36	0.60
	Local	0.97	2.5	1.8	2.0	1.2
Directional Analysis	Intersection					
	Angle	10.4	11.3	11.2	17.1	28.7
	Rear end	0.72	0.45	0.93	1.1	3.6
	Opposing left turn	0.72	1.4	0.77	1.4	1.8
	Fixed object	0.00	0.00	0.31	0.00	0.00
	Same direction sideswipe	0.00	0.23	0.31	0.18	0.00
	Bicycle	0.72	0.68	0.00	0.00	0.00
	Pedestrian	4.8	5.0	1.0	0.36	0.00
	All intersection accidents	15.9	15.0	15.6	20.8	32.9
	Non-Intersection					
	Rear end	4.1	4.1	5.4	6.6	3.6
	Head on	8.7	12.0	10.0	12.5	6.6
	Same direction sideswipe	2.2	1.6	2.5	0.18	1.8
	Opposing Direction sideswipe	16.2	12.5	14.3	15.7	8.4
	Driveway related	1.4	2.5	2.6	3.4	4.8
	Parked vehicle	0.72	0.91	1.1	0.53	1.8
	Pedestrian	4.8	5.0	6.2	4.4	1.8
	Fixed object	23.7	22.0	19.3	13.5	19.8
	Ran off road	13.3	11.3	10.7	8.0	7.8
	Overturned in road	3.9	3.9	2.7	2.5	3.0
	Parking lot	0.00	0.00	0.00	0.18	0.00
	Bicycle	0.48	0.68	0.39	0.36	0.00
	Animal	0.24	0.23	0.15	0.71	0.00
	Bridge	0.00	0.00	0.00	0.00	0.00
	Interchange ramp	0.00	0.00	0.00	0.00	0.00
	Train	0.72	0.23	0.39	0.36	0.60
Driver Seatbelt Usage	Yes	46.3	45.3	50.1	56.5	60.2
Time of Day	Midnight - 5:59 am	16.9	22.4	16.2	6.4	1.8
	6:00 am - 11:59 am	15.9	20.4	19.7	33.3	31.1
	Noon - 5:59 pm	34.5	29.9	34.1	42.7	53.9
	6:00 pm - 11:59 pm	32.6	27.2	30.1	17.6	13.2
Day of Week	Mon - Fri	68.6	66.9	67.9	76.0	74.9
	Sat - Sun	31.4	33.1	32.1	24.0	25.1
Month	Dec - Feb	18.8	22.9	23.3	22.2	23.4
	March - May	26.6	21.1	24.3	28.1	26.9
	June - August	28.0	28.1	23.8	19.8	19.2
	Sept- Nov	26.6	27.9	28.7	29.9	30.5

TABLE 4. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

		PERCENT OF TOTAL				
		DRIVER AGE (YEARS)				
VARIABLE	CATEGORY	16-19	20-24	25-49	50-74	75 or older
Number of Vehicles	One	47.3	43.8	40.9	30.4	31.1
	Two	43.5	44.7	49.1	54.8	58.1
	More than two	9.2	11.6	10.0	14.8	10.8
Land Use	Rural	73.9	67.1	68.5	65.8	60.5
	Business	9.7	14.1	13.0	13.9	23.4
	Industrial	0.72	0.45	0.54	0.89	0.60
	Residential	10.1	10.2	9.6	9.8	8.4
	School	0.72	0.00	0.46	0.89	1.2
	Park	0.00	0.00	0.15	0.18	0.60
	Private Property	0.24	0.23	0.31	0.18	1.8
	Limited Access	4.6	7.5	7.0	8.0	2.4
Road Surface Conditions	Dry	76.8	78.2	76.9	76.5	83.2
	Wet	20.3	17.5	18.9	19.0	13.8
	Snow/Ice	2.4	3.9	3.9	4.4	3.0
	Slush	0.48	0.23	0.08	0.00	0.00
	Muddy	0.00	0.23	0.00	0.00	0.00
Weather	Clear	60.4	61.9	60.4	61.7	69.5
	Raining	12.3	12.9	11.7	13.9	7.8
	Snowing	1.9	2.3	2.6	2.8	0.60
	Fog/Smog/Smoke	2.2	2.7	2.9	2.1	0.60
	Sleet/Hail	0.97	0.91	0.46	1.1	1.8
	Cloudy	22.2	19.3	21.6	18.3	19.8
Road Character	Straight & Level	31.9	39.0	40.6	44.3	55.1
	Straight & Grade	18.6	18.6	18.3	20.8	20.4
	Straight & Hillcrest	5.1	5.2	4.6	5.0	2.4
	Curve & Level	21.7	17.5	14.9	11.6	10.2
	Curve & Grade	19.6	16.1	17.9	15.7	8.4
	Curve & Hillcrest	2.9	3.2	3.4	2.1	3.0
Light Condition	Daylight	52.4	48.5	53.0	71.9	85.0
	Dawn	2.4	3.9	2.6	3.7	1.2
	Dusk	3.9	2.9	2.6	2.7	1.2
	Darkness-lighted/on	6.5	7.9	8.2	3.4	1.8
	Darkness-lighted/off	1.7	0.23	0.93	0.53	0.60
	Darkness-not lighted	33.1	36.5	32.3	17.6	7.8
Speed Limit (mph)	35 or less	14.0	12.5	13.8	13.2	19.8
	40 to 45	10.4	9.3	9.6	9.8	15.0
	50 to 55	67.9	68.0	65.5	65.1	58.1
	Over 55	5.3	8.8	9.1	10.9	4.2

TABLE 4. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

		PERCENT OF TOTAL				
		DRIVER AGE (YEARS)				
VARIABLE	CATEGORY	16-19	20-24	25-49	50-74	75 or older
Type Collision 1st event						
Collision with Non-fixed object						
	Other Vehicle	51.0	55.3	57.8	68.5	68.3
	Pedestrian	5.3	5.2	7.2	4.8	1.8
	Bicycle	1.2	0.68	0.39	0.36	0.00
	Animal	0.24	0.23	0.15	0.53	0.00
	Train	0.72	0.23	0.39	0.36	0.60
	Deer	0.00	0.00	0.00	0.18	0.00
Collision with Fixed object						
	Utility pole	2.4	2.5	2.4	0.89	1.8
	Guard rail	0.72	1.8	2.0	1.2	2.4
	Crash cushion	0.00	0.00	0.08	0.00	0.00
	Sign post	0.5	0.68	1.2	0.71	0.00
	Tree	12.6	9.5	7.3	4.6	6.6
	Building/wall	0.24	0.00	0.15	0.00	1.2
	Curbing	0.00	0.23	0.39	0.36	0.00
	Fence	1.4	0.68	0.93	1.4	0.00
	Bridge	1.7	1.1	0.93	1.6	2.4
	Culvert/head wall	2.4	2.3	1.5	1.2	1.8
	Median/barrier	0.00	0.68	0.46	0.18	0.60
	Snow embankment	0.00	0.00	0.08	0.00	0.00
	Earth embankment/rock cut/ditch	10.6	9.1	8.0	6.6	3.6
	Fire hydrant	0.00	0.00	0.00	0.00	0.00
	Guardrail end treatment	0.97	1.6	0.54	0.53	0.00
	Other fixed objects	0.72	0.68	1.4	0.71	2.4
Non-collision						
	Overturned	3.9	3.6	2.6	2.5	2.4
	Fire/explosion	0.00	0.00	0.00	0.00	0.00
	Submersion	0.00	0.00	0.23	0.18	0.00
	Ran off roadway	2.4	2.5	2.9	1.4	3.6
	Other	0.97	0.91	0.77	0.89	0.00

TABLE 4. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVERS AGE (1994-1996) (continued)

		PERCENT OF TOTAL				
		DRIVER AGE (YEARS)				
VARIABLE	CATEGORY	16-19	20-24	25-49	50-74	75 or older
Contributing Factors (Percent of all accidents in which listed as factor)						
Human						
	Unsafe speed	36.2	31.3	24.3	17.3	4.8
	Failure to yield right of way	19.3	19.0	21.0	28.1	35.9
	Following too closely	0.00	0.23	0.31	0.89	0.60
	Inproper passing	3.9	3.2	2.0	2.3	0.60
	Disregard traffic control	5.6	5.7	5.6	5.7	8.4
	Improper turn	0.24	0.45	0.54	0.53	1.2
	Alcohol involvement	10.9	23.8	23.7	10.9	5.4
	Sick	0.00	0.23	0.23	0.71	1.2
	Fell asleep	5.3	5.7	4.4	2.5	2.4
	Lost consciousness	0.00	0.23	0.62	2.3	3.6
	Driver inattention	19.8	17.2	20.7	26.0	30.5
	Distraction	2.7	2.3	1.6	1.2	3.0
	Physical Disability	0.48	0.00	0.23	1.2	0.00
Vehicular						
	Defective brakes	1.2	1.1	0.93	0.71	0.60
	Lighting defective	0.48	0.68	1.0	0.71	0.00
	Steering defective	0.24	0.00	0.54	0.53	0.60
	Tire problem	2.4	2.0	2.8	1.6	1.2
	Tow hitch defective	0.24	0.00	0.00	0.00	0.00
	Load problem	0.48	0.45	0.08	0.36	0.00
Environmental						
	Animal action	0.48	0.91	0.39	1.1	0.00
	Glare	0.48	0.23	1.2	1.4	2.4
	View obstruction	4.1	3.4	3.9	4.8	2.4
	Debris in roadway	0.48	0.68	0.54	0.71	0.00
	Improper/non-working traffic control	0.00	0.00	0.00	0.00	0.00
	Defective shoulder	0.48	0.68	0.31	0.18	0.00
	Hole/bump	1.4	0.91	0.23	0.36	0.00
	Road construction	0.24	0.00	0.08	0.00	0.60
	Improperly parked vehicle	0.00	0.00	0.23	0.36	0.00
	Fixed object	0.00	0.00	0.23	0.00	0.60
	Slippery surface	13.3	11.3	12.1	12.8	9.6
	Water pooling	1.7	1.6	1.1	1.6	0.60
	Total Number of Fatal Crashes	414	441	1,294	562	167

TABLE 5. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Severity	Fatal	0.55	0.63	1.0	0.37	0.33	0.79
	Injury	30.3	26.8	28.5	32.1	29.1	27.3
Aid System	Rural						
	Interstate	1.0	2.7	1.5	0.92	1.5	0.72
	Arterial	9.5	10.4	11.5	9.1	9.0	8.2
	Collector	7.0	4.8	3.7	6.2	14.9	11.3
	Local	12.8	8.4	7.3	10.3	8.0	6.2
	Urban						
	Interstate-Expressway	3.0	6.1	2.6	3.4	5.1	1.5
	Arterial	32.6	36.0	40.0	36.3	39.6	45.5
	Collector	5.0	4.7	5.3	15.8	16.6	7.1
	Local	15.3	15.3	15.7	15.5	16.3	19.5
Directional Analysis	Intersection						
	Angle	17.0	17.6	29.8	20.6	20.3	35.8
	Rear end	10.9	11.4	9.8	11.6	13.8	8.9
	Opposing left turn	1.1	1.6	0.97	2.3	1.1	2.9
	Fixed object	1.1	1.0	0.47	0.86	0.58	0.44
	Same direction sideswipe	2.7	3.2	3.5	2.6	3.3	3.6
	Bicycle	0.10	0.15	0.17	0.11	0.19	0.13
	Pedestrian	0.14	0.18	0.11	0.10	0.15	0.06
	All	36.2	38.3	48.9	40.3	42.7	54.6
	Non-Intersection						
	Rear end	19.9	20.5	16.0	20.8	22.2	13.2
	Head on	0.78	0.74	0.39	0.52	0.65	0.47
	Same direction sideswipe	5.4	6.8	7.4	5.5	6.2	6.8
	Driveway related	1.0	1.0	1.7	1.2	1.2	1.4
	Parked vehicle	3.0	3.4	5.0	2.5	0.91	5.8
	Pedestrian	0.39	0.43	0.48	0.34	0.36	0.41
	Fixed object	10.6	6.6	3.2	8.2	4.9	2.8
	Ran off road	6.7	3.7	1.7	6.1	3.1	1.0
	Overturned in road	0.93	0.79	0.18	0.69	0.34	0.03
	Bicycle	0.13	0.15	0.16	0.11	0.17	0.13
	Animal	1.2	2.8	0.59	0.97	2.1	0.15
	Bridge	0.10	0.14	0.05	0.16	0.08	0.04
	Interchange ramp	0.04	0.10	0.03	0.05	0.09	0.00
	Train	0.03	0.05	0.07	0.01	0.03	0.01
Driver Seatbelt Usage	Yes	83.6	86.1	85.5	87.5	88.9	88.6
Time of Day	Midnight - 5:59 am	7.1	6.6	1.6	4.9	3.7	1.2
	6:00 am - 11:59 am	18.1	26.7	33.0	20.0	28.0	30.0
	Noon - 5:59 pm	46.3	45.9	55.2	48.7	50.2	61.5
	6:00 pm - 11:59 pm	28.5	20.8	10.2	26.4	18.0	7.3
Day of Week	Mon - Fri	73.8	77.2	78.2	75.9	79.4	78.7
	Sat - Sun	26.2	22.8	21.8	24.1	20.6	21.3

TABLE 5. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Month	Dec - Feb	22.8	24.8	22.7	21.5	23.9	21.2
	March - May	24.7	24.7	25.4	25.3	24.8	25.1
	June - August	25.9	24.4	24.2	25.5	24.3	25.7
	Sept - Nov	26.7	26.1	27.7	27.7	27.0	28.1
Number of Vehicles	One	22.6	17.4	7.5	18.5	12.9	5.5
	Two	69.1	74.4	84.6	72.7	77.8	87.7
	More than two	8.3	8.2	7.8	8.8	9.4	6.8
Land Use	Rural	33.3	28.8	23.1	28.1	24.1	13.9
	Business	32.1	34.8	44.5	37.0	39.5	49.4
	Industrial	0.57	0.84	0.51	0.55	0.68	0.37
	Residential	21.5	16.5	17.8	21.0	18.2	22.3
	School	2.3	1.1	0.94	2.8	1.6	1.0
	Park	0.22	0.15	0.21	0.18	0.13	0.10
	Private Property	0.17	0.22	0.17	0.09	0.15	0.12
	Limited Access	2.4	5.1	2.4	2.6	3.7	1.6
Road Surface Conditions	Dry	70.3	71.4	78.6	71.1	71.2	82.2
	Wet	24.7	22.1	18.9	24.5	23.1	16.6
	Snow/Ice	4.6	6.0	2.1	4.0	5.3	1.0
	Slush	0.21	0.25	0.14	0.14	0.18	0.13
	Muddy	0.05	0.08	0.04	0.08	0.04	0.00
Weather	Clear	58.6	58.8	64.4	58.9	58.3	67.0
	Raining	17.6	15.6	13.5	17.6	16.5	12.0
	Snowing	2.7	0.95	1.4	2.5	3.0	0.91
	Fog/Smog/Smoke	0.75	0.80	0.32	0.68	0.59	0.07
	Sleet/Hail	0.40	0.58	0.26	0.35	0.54	0.18
	Cloudy	19.7	20.7	20.0	19.7	20.9	19.7
Road Character	Straight & Level	56.1	61.2	67.2	59.5	63.2	70.7
	Straight & Grade	17.1	17.6	18.2	17.5	17.8	17.6
	Straight & Hillcrest	4.4	3.6	3.7	4.1	3.7	3.4
	Curve & Level	10.3	7.7	5.0	8.4	6.8	4.2
	Curve & Grade	9.7	7.8	4.8	8.4	7.0	3.3
	Curve & Hillcrest	2.0	1.4	0.90	1.8	1.3	0.70
Light Condition	Daylight	68.3	73.9	89.6	72.7	79.8	92.9
	Dawn	1.2	1.8	0.71	1.1	1.6	0.46
	Dusk	3.1	2.5	1.5	2.8	2.4	1.5
	Darkness-lighted/on	12.6	10.5	4.5	12.5	8.6	3.4
	Darkness-lighted/off	0.84	0.73	0.24	0.74	0.55	0.15
	Darkness-not lighted	13.6	10.2	3.0	9.8	6.7	1.3
Speed Limit (mph)	35 or less	47.9	46.8	53.7	50.1	51.2	64.7
	40 to 45	18.5	18.3	19.1	20.0	20.2	18.1
	50 to 55	28.7	28.0	22.3	25.3	23.7	13.6
	Over 55	1.7	4.1	2.1	1.6	2.4	1.1

TABLE 5. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Type Collision 1st event							
Collision with Non-fixed object							
	Other Vehicle	77.3	82.3	92.2	81.4	87.0	94.4
	Pedestrian	0.53	0.61	0.59	0.45	0.51	0.47
	Bicycle	0.23	0.29	0.33	0.22	0.37	0.26
	Animal	0.25	0.46	0.07	0.23	0.26	0.03
	Train	0.03	0.05	0.07	0.01	0.03	0.01
	Deer	0.92	2.4	0.52	0.74	1.9	0.10
Collision with Fixed object							
	Utility pole	1.9	1.2	0.56	1.2	0.77	0.44
	Guard rail	0.99	0.97	0.33	1.1	0.78	0.31
	Crash cushion	0.01	0.04	0.02	0.03	0.02	0.00
	Sign post	0.61	0.43	0.35	0.46	0.31	0.25
	Tree	2.8	1.4	0.71	2.0	1.1	0.56
	Building/wall	0.27	0.21	0.19	0.21	0.10	0.21
	Curbing	0.48	0.26	0.20	0.34	0.19	0.16
	Fence	1.9	0.88	0.36	1.4	0.66	0.34
	Bridge	0.25	0.31	0.12	0.21	0.16	0.12
	Culvert/head wall	0.71	0.40	0.15	0.54	0.29	0.25
	Median/barrier	0.29	0.35	0.18	0.32	0.28	0.06
	Snow embankment	0.04	0.05	0.01	0.03	0.03	0.01
	Earth embankment/rock cut/ditch	5.5	2.9	1.3	4.9	2.5	0.76
	Fire hydrant	0.10	0.10	0.04	0.09	0.06	0.04
	Guardrail end treatment	0.18	0.18	0.01	0.21	0.14	0.06
	Other fixed objects	1.0	0.74	0.36	0.73	0.49	0.41
Non-collision							
	Overturned	0.94	0.84	0.17	0.72	0.34	0.00
	Fire/explosion	0.08	0.20	0.05	0.07	0.11	0.01
	Submersion	0.01	0.01	0.00	0.02	0.01	0.00
	Ran off roadway	1.8	1.1	0.53	1.7	0.89	0.37
	Other	0.54	0.63	0.24	0.39	0.40	0.23

TABLE 5. COMPARISON OF TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

VARIABLE	CATEGORY	PERCENT OF TOTAL					
		MALE			FEMALE		
		16-19	25-49	Over 75	16-19	25-49	Over 75
Contributing Factors (Percent of all crashes in which listed as factor)							
Human							
	Unsafe speed	13.3	6.8	3.1	8.4	5.5	2.0
	Failure to yield right of way	17.3	17.2	30.0	20.5	19.4	32.8
	Following too closely	7.0	7.0	4.6	7.5	8.0	4.5
	Inproper passing	1.6	1.5	1.3	1.2	1.3	0.97
	Disregard traffic control	3.1	3.7	5.6	3.4	3.9	5.8
	Improper turn	2.1	2.9	3.3	2.3	2.7	3.2
	Alcohol involvement	3.3	6.0	0.96	1.6	2.7	0.34
	Sick	0.09	0.14	0.43	0.06	0.14	0.15
	Fell asleep	1.5	0.53	0.80	0.75	0.65	0.48
	Lost consciousness	0.15	1.2	0.59	0.15	0.21	0.48
	Driver inattention	37.4	34.0	41.5	39.3	37.5	41.7
	Distraction	2.4	2.0	1.8	2.5	2.2	1.7
	Physical Disability	0.14	0.21	0.88	0.14	0.20	0.54
Vehicular							
	Defective brakes	1.9	1.5	0.81	1.4	1.4	0.92
	Lighting defective	0.37	0.31	0.12	0.24	0.21	0.12
	Steering defective	0.39	0.25	0.11	0.31	0.19	0.09
	Tire problem	1.1	0.14	0.34	0.72	0.54	0.15
	Tow hitch defective	0.03	0.15	0.05	0.02	0.11	0.04
	Load problem	0.13	0.45	0.18	0.07	0.18	0.04
Environmental							
	Animal action	2.30	3.1	0.77	2.0	2.3	0.28
	Glare	0.82	0.87	1.7	0.90	1.0	1.8
	View obstruction	3.9	3.6	3.7	4.4	3.9	3.6
	Debris in roadway	0.47	0.65	0.28	0.48	0.52	0.26
	Improper/non-working traffic control	0.13	0.14	0.14	0.16	0.14	0.19
	Defective shoulder	0.19	0.17	0.08	0.23	0.11	0.06
	Hole/bump	0.15	0.13	0.02	0.11	0.10	0.06
	Road construction	0.35	0.60	0.52	0.35	0.47	0.40
	Improperly parked vehicle	0.22	0.27	0.30	0.18	0.21	0.31
	Fixed object	0.15	0.18	0.12	0.13	0.14	0.18
	Slippery surface	14.7	12.6	6.8	13.8	13.0	4.6
	Water pooling	1.2	0.86	0.43	1.2		0.29
	Total Number of Traffic Crashes	52,640	162,054	11,037	35,522	119,835	6,811

TABLE 6. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Aid System	Rural						
	Interstate	2.1	6.7	3.5	5.3	5.8	3.7
	Arterial	50.7	50.9	48.2	45.8	55.6	44.4
	Collector	5.6	9.9	10.5	16.8	10.3	5.6
	Local	9.4	8.6	9.6	8.4	5.5	5.6
	Urban						
	Interstate-Expressway	10.8	14.6	15.8	16.8	10.5	20.4
	Arterial	6.9	5.2	10.5	3.8	5.5	16.7
	Collector	0.35	0.10	0.88	0.00	0.50	0.00
	Local	0.00	1.8	0.88	3.1	2.3	1.9
Directional Analysis	Intersection						
	Angle	9.4	11.4	26.3	13.0	11.8	33.3
	Rear end	1.7	0.98	4.4	0.00	1.0	3.7
	Opposing left turn	0.69	0.88	0.00	0.76	0.50	0.00
	Fixed object	0.00	0.39	0.00	0.00	0.00	0.00
	Same direction sideswipe	0.00	0.29	0.00	0.00	0.80	0.00
	Bicycle	0.70	0.00	0.00	0.76	0.00	0.00
	Pedestrian	0.70	1.2	0.00	0.00	0.30	0.00
	All Intersections	13.5	16.4	33.3	16.0	15.5	37.0
	Non-Intersection						
	Rear end	3.8	6.1	5.3	4.6	4.5	0.00
	Head on	8.7	10.0	7.0	8.4	11.5	5.6
	Same direction sideswipe	2.1	2.9	1.8	3.1	0.80	1.9
	Driveway related	1.0	2.0	4.4	2.3	4.0	5.6
	Parked vehicle	0.70	1.3	1.8	0.76	0.25	1.9
	Pedestrian	4.5	5.8	2.6	5.3	6.0	0.00
	Fixed object	22.9	18.3	21.1	24.4	16.0	16.7
	Ran off road	15.3	11.0	7.9	8.4	7.0	7.4
	Overturned in road	4.2	2.5	3.5	3.1	2.3	1.9
	Bicycle	0.70	0.20	0.00	0.00	0.75	0.00
	Animal	0.35	0.20	0.00	0.00	0.25	0.00
	Bridge	0.00	0.00	0.00	0.00	0.00	0.00
	Interchange ramp	0.00	0.00	0.00	0.00	0.00	0.00
	Train	0.70	0.39	0.88	0.76	0.25	0.00
Driver Seatbelt Usage	Yes	42.7	46.8	59.0	54.8	59.8	61.2
Time of Day	Midnight - 5:59 am	18.1	17.8	1.8	13.7	8.5	1.9
	6:00 am - 11:59 am	14.9	18.3	29.8	17.6	24.6	35.2
	Noon - 5:59 pm	31.3	32.3	55.3	42.0	42.4	50.0
	6:00 pm - 11:59 pm	35.8	31.5	13.2	26.7	24.6	13.0
Day of Week	Mon - Fri	68.8	67.8	77.2	69.5	71.2	70.4
	Sat - Sun	31.3	32.2	22.8	30.5	28.8	29.6

TABLE 6. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Month	Dec - Feb	19.1	23.3	20.2	19.1	23.6	29.6
	March - May	25.7	24.2	27.2	29.0	24.8	25.9
	June - August	29.2	23.9	21.9	24.4	22.8	14.8
	Sept - Nov	26.0	28.6	30.7	27.5	27.6	29.6
Number of Vehicles	One	48.6	39.9	34.2	42.7	30.6	24.1
	Two	41.7	49.6	57.9	47.3	54.4	59.3
	More than two	9.7	10.6	7.9	9.9	15.0	16.7
Land Use	Rural	74.7	68.4	63.2	71.0	67.4	53.7
	Business	10.4	12.9	18.4	9.2	13.3	33.3
	Industrial	0.70	0.59	0.00	0.76	0.25	1.9
	Residential	8.3	9.2	9.6	14.5	11.8	5.6
	School	1.0	0.49	0.88	0.00	0.75	1.9
	Park	0.00	0.10	0.88	0.00	0.25	0.00
	Private Property	0.35	0.39	2.6	0.00	0.00	0.00
	Limited Access	4.5	7.3	2.6	4.6	6.3	1.9
Road Surface Conditions	Dry	77.8	78.1	80.7	74.0	71.9	88.9
	Wet	19.4	18.2	15.8	22.9	22.8	9.3
	Snow/Ice	2.1	3.3	3.5	3.1	5.3	1.9
	Slush	0.70	0.10	0.00	0.00	0.00	0.00
	Muddy	0.00	0.00	0.00	0.00	0.00	0.00
Weather	Clear	60.1	61.9	66.7	61.1	54.9	75.9
	Raining	12.2	11.5	7.9	13.7	15.5	7.4
	Snowing	2.4	2.4	0.00	0.76	3.0	1.9
	Fog/Smog/Smoke	2.8	3.1	0.88	0.76	1.3	0.00
	Sleet/Hail	0.70	0.39	2.6	1.5	0.50	0.00
	Cloudy	21.9	20.3	21.9	22.1	24.8	14.8
Road Character	Straight & Level	30.9	40.6	52.6	33.6	39.8	61.1
	Straight & Grade	19.8	17.3	21.9	16.0	22.8	16.7
	Straight & Hillcrest	4.2	4.5	1.8	6.9	5.3	3.4
	Curve & Level	23.3	15.9	10.5	19.8	11.8	9.3
	Curve & Grade	19.4	18.2	8.8	19.1	17.3	7.4
	Curve & Hillcrest	2.1	3.1	3.5	4.6	3.0	1.9
Light Condition	Daylight	47.6	50.6	83.3	62.6	64.4	88.9
	Dawn	2.1	2.4	0.88	3.1	3.3	1.9
	Dusk	4.2	2.7	1.8	3.1	2.0	0.00
	Darkness-lighted/on	6.9	8.0	1.8	5.3	7.8	1.9
	Darkness-lighted/off	1.4	0.98	0.88	2.3	0.50	0.00
	Darkness-not lighted	37.8	34.7	7.9	23.7	21.8	7.4
Speed Limit (mph)	35 or less	12.5	14.2	20.2	16.8	11.8	20.4
	40 to 45	10.8	8.9	12.3	9.9	12.5	20.4
	50 to 55	71.2	64.9	59.6	61.1	66.7	53.7
	Over 55	4.2	9.7	4.4	6.1	8.3	3.7

TABLE 6. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Type Collision 1st event							
Collision with Non-fixed object							
	Other Vehicle	50.0	59.0	64.9	55.0	66.9	75.9
	Pedestrian	5.2	7.0	2.6	5.3	6.3	0.00
	Bicycle	1.4	0.20	0.00	0.76	0.75	0.00
	Animal	0.35	0.20	0.00	0.00	0.25	0.00
	Train	0.70	0.39	0.88	0.76	0.25	0.00
	Deer	0.00	0.00	0.00	0.00	0.00	0.00
Collision with Fixed object							
	Utility pole	2.1	2.4	2.6	3.1	1.8	0.00
	Guard rail	0.70	1.7	1.8	0.76	2.3	3.7
	Crash cushion	0.00	0.10	0.00	0.00	0.00	0.00
	Sign post	0.70	1.2	0.00	0.00	0.75	0.00
	Tree	12.5	0.20	7.0	12.2	6.8	5.6
	Building/wall	0.35	0.20	1.8	0.00	0.00	0.00
	Curbing	0.00	0.49	0.00	0.00	0.00	0.00
	Fence	0.70	1.1	0.00	3.1	0.25	0.00
	Bridge	2.4	0.88	2.6	0.00	0.75	1.9
	Culvert/head wall	1.4	1.4	1.8	4.6	1.3	1.9
	Median/barrier	0.00	0.49	0.00	0.00	0.50	1.9
	Snow embankment	0.00	0.00	0.00	0.00	0.25	0.00
	Earth embankment/rock cut/ditch	12.5	8.2	3.5	6.1	4.8	3.7
	Fire hydrant	0.00	0.00	0.00	0.00	0.00	0.00
	Guardrail end treatment	0.70	0.59	0.00	1.5	0.25	0.00
	Other fixed objects	1.0	1.4	2.6	0.00	1.0	1.9
Non-collision							
	Overturned	4.2	2.4	3.5	3.1	2.5	0.00
	Fire/explosion	0.00	0.00	0.00	0.00	0.00	0.00
	Submersion	0.00	0.20	0.00	0.00	0.25	0.00
	Ran off roadway	2.8	2.9	3.5	1.5	1.80	3.7
	Other	0.35	0.88	0.00	2.3	0.25	0.00

TABLE 6. COMPARISON OF FATAL TRAFFIC CRASH CHARACTERISTICS BY DRIVER AGE AND DRIVER SEX (1994-1996) (continued)

		PERCENT OF TOTAL					
		MALE			FEMALE		
VARIABLE	CATEGORY	16-19	25-49	Over 75	16-19	25-49	Over 75
Contributing Factors (Percent of all crashes in which listed as factor)							
Human							
	Unsafe speed	40.6	24.9	2.6	26.7	20.6	9.3
	Failure to yield right of way	18.4	21.0	36.0	22.1	25.3	37.0
	Following too closely	0.00	0.29	0.88	0.00	0.25	0.00
	Inproper passing	4.9	2.4	0.88	2.3	1.5	0.00
	Disregard traffic control	5.9	6.6	7.0	4.6	3.5	11.1
	Improper turn	0.00	0.69	0.88	0.76	0.50	1.9
	Alcohol involvement	13.2	26.2	5.3	5.3	14.0	5.6
	Sick	0.00	0.20	1.8	0.00	0.25	0.00
	Fell asleep	5.6	4.4	3.5	4.6	4.0	0.00
	Lost consciousness	0.00	0.49	4.4	0.00	0.75	1.9
	Driver inattention	18.8	19.6	27.2	22.1	25.8	37.0
	Distraction	2.1	1.4	4.4	3.8	2.5	0.00
	Physical Disability	0.00	0.20	0.88	0.76	0.75	1.9
Vehicular							
	Defective brakes	1.4	1.1	0.88	0.76	0.50	0.00
	Lighting defective	0.70	1.3	0.00	0.00	0.25	0.00
	Steering defective	0.35	0.49	0.88	0.00	0.50	0.00
	Tire problem	2.8	2.4	1.8	1.5	4.0	0.00
	Tow hitch defective	0.35	0.00	0.00	0.00	0.00	0.00
	Load problem	0.35	0.10	0.00	0.76	0.00	0.00
Environmental							
	Animal action	0.35	0.29	0.00	0.76	0.75	0.00
	Glare	0.70	1.1	0.88	0.00	1.3	5.6
	View obstruction	3.8	4.0	2.6	4.6	3.0	1.9
	Debris in roadway	0.00	0.39	0.00	1.5	1.0	0.00
	Improper/non-working traffic control	0.00	0.00	0.00	0.00	0.00	0.00
	Defective shoulder	0.00	0.10	0.00	1.5	0.75	0.00
	Hole/bump	1.0	0.20	0.00	2.3	0.25	0.00
	Road construction	0.35	0.00	0.00	0.00	0.25	1.9
	Improperly parked vehicle	0.00	0.29	0.00	0.00	0.00	0.00
	Fixed object	0.00	0.29	0.88	0.00	0.25	0.00
	Slippery surface	11.1	11.4	10.5	17.6	15.0	7.4
	Water pooling	1.4	1.0	0.88	2.3	1.8	0.00
	Total Number of Fatal Crashes	288	1,021	114	131	399	54

TABLE 7. TRAFFIC CRASH RATES BY DRIVER AGE AND SEX

AGE	NUMBER OF DRIVERS (1995)	NUMBER OF TRAFFIC CRASHES 1994	1995	1996	TOTAL	C/YR/1,000 DR*	C/MVM**
16-19	167,902	29,269	31,009	31,882	92,160	183.0	21.0
20-24	246,517	30,783	31,108	31,518	93,409	126.3	9.0
25-34	536,724	49,930	50,275	53,269	153,474	95.3	6.0
35-44	556,329	39,583	40,510	43,533	123,626	74.1	5.0
45-54	434,758	24,038	25,687	27,860	77,585	59.5	4.5
55-64	288,109	14,319	14,845	15,578	44,742	51.8	4.7
65-74	220,719	10,258	10,462	10,706	31,426	47.5	5.8
75 or older	116,193	5,802	5,904	6,344	18,050	51.8	7.7
All Male	1,289,171	124,559	127,381	133,318	385,258	99.6	5.9
All Female	1,286,079	83,109	86,040	91,116	260,265	67.5	8.4

* Traffic crashes per year per 1,000 drivers.
** Traffic crashes per million vehicle miles.

TABLE 8. FATAL TRAFFIC CRASH RATES BY DRIVER AGE AND SEX

AGE	NUMBER OF DRIVERS (1995)	NUMBER OF TRAFFIC CRASHES 1994	1995	1996	TOTAL	C/YR/10,000 DR*	C/MVM**
16-19	167,902	121	154	153	428	8.50	0.098
20-24	246,517	170	143	150	463	6.26	0.044
25-34	536,724	247	242	241	730	4.53	0.029
35-44	556,329	200	210	224	634	3.80	0.026
45-54	434,758	109	146	134	389	2.98	0.023
55-64	288,109	84	90	91	265	3.07	0.028
65-74	220,719	56	71	58	185	2.79	0.034
75 or older	116,193	60	55	55	170	4.88	0.073
All Male	1,289,171	777	815	822	2,414	6.24	0.037
All Female	1,286,079	281	308	294	883	2.29	0.029

* Traffic crashes per year per 10,000 drivers.
** Traffic crashes per million vehicle miles.

TABLE 9. COMPARISON OF PENALTY ASSIGNED TO VARIOUS VIOLATIONS IN KENTUCKY WITH OTHER STATES

VIOLATION	NUMBER OF STATES WITH VIOLATION*	PERCENT OF TOTAL POINTS NECESSARY FOR SUSPENSION				
		OTHER STATES				
		KENTUCKY	AVERAGE	RANGE LOW	RANGE HIGH	STANDARD DEVIATION
SPEEDING						
1-15 mph	21	25	20	8	25	8.0
16-25 mph	21	50	35	17	25	17.0
over 25	21	100	54	100	100	23.0
DUI	18	NA**	61	30	100	34.0
RECKLESS DRIVING	26	33	51	25	100	28.0
CARELESS DRIVING	16	25	29	10	100	20.0
FAILURE TO OBEY TCD	32	25	27	8	100	17.0
FOLLOWING TO CLOSE	26	33	27	8	100	18.0
HEADLIGHTS (FAILURE TO DIM OR TURN ON)	15	25	19	8	25	10.0
CHANGING DRIVERS IN VEHICLE WHILE MOVING	0	33	NA	NA	NA	NA
SAFETY BELT/SAFETY SEAT	6	NA	22	8	27	9.0
RACING	21	NA	46	13	100	27.0
ATTEMPTING TO ELUDE AN OFFICER	8	NA	55	8	100	23.0
IMPROPER TURN	27	25	22	8	67	13.0
IMPROPER START	5	25	17	8	25	6.0
IMPROPER LANE USAGE	14	25	25	10	100	16.0
IMPROPER PASSING	29	42	26	8	67	16.0
FAILURE TO STOP FOR A SCHOOL/ CHURCH BUS	25	50	39	10	100	23.0
DRIVING TO SLOW FOR CONDITIONS	15	25	20	8	33	10.0
DRIVING TO FAST FOR CONDITIONS	18	25	24	8	67	14.0
DRIVING ON WRONG SIDE OF THE ROAD	22	33	30	17	100	19.0
WRONG WAY ON ONE WAY STREET	17	25	23	8	50	13.0
IMPROPER USE OF LEFT LANE	17	25	26	8	100	17.0
DISREGARD OF STOP SIGN	31	25	26	8	100	17.0
VEHICLE NOT UNDER CONTROL	6	33	21	17	33	7.0

TABLE 9. COMPARISON OF PENALTY ASSIGNED TO VARIOUS VIOLATIONS IN KENTUCKY WITH OTHER STATES (continued)

VIOLATION	NUMBER OF STATES WITH VIOLATION*	PERCENT OF TOTAL POINTS NECESSARY FOR SUSPENSION				
		KENTUCKY	OTHER STATES			
			AVERAGE	RANGE		STANDARD DEVIATION
				LOW	HIGH	
FAILURE TO YIELD RIGHT-OF-WAY TO PEDESTRIAN	19	25	29	17	100	18.0
DISREGARDING YIELD RIGHT-OF-WAY SIGN	33	25	29	8	100	21.0
NO LIABILITY INSURANCE	2	NA	27	21	33	6.0
IMPROPER DRIVING	13	25	27	10	100	18.0
FAILURE TO GIVE RIGHT--OF-WAY TO EMERG. VEH.	22	33	28	8	100	20.0
FOLLOWING A TRUCK, BUS, OR HEAVY EQUIP. TO CLOSE	6	33.3	16	8	33	8.0
FOLLOWING AN EMERGENCY VEHICLE TO CLOSE	9	25	19	8	36	8.0
COMMISSION OF A MOVING HAZ. VIOLATION WITH ACCIDENT	1	50	50	NA	50	7.0
2 OR MORE VIOLATIONS AT ONE TIME	0	50	NA	NA	NA	NA
DRIVING WHILE LICENSED REV-OKED OR SUSPENDED	11	NA	41	8	100	20.0
FAILURE TO REPORT ACC./ LEAVING THE SCENE OF ACC.	13	NA	53	17	100	27.0
IMPROPER EQUIPMENT	10	NA	26	8	100	16.0
IMPROPER LOAD	2	NA	21	17	25	5.0
FAILURE TO STOP FOR R.R. CROSSING	16	NA	25	8	100	18.0
CROSSING FIRE HOSE	9	NA	18	8.3	25	7.0
COASTING (GEARS DIS-ENGAGED)	7	NA	25	18.2	33.3	9.0
CROSSING SOLID OR DOUBLE LINES	5	NA	22	16.7	25	7.0
DRIVER'S VISION OBSCURED	3	NA	20	16.7	25	5.0
IMPROPER BACKING	7	NA	17	10	25	6.0
FAILURE TO PAY TOLL	1	NA	25	25	25	4.0

* Excludes Kentucky and four states with point systems where the number of points for suspension was not specified. The maximum number would be 34.

** No data

TABLE 10. NUMBER OF ENTRIES FOR VARIOUS CODES*

CATEGORY	CODE DESCRIPTION	NUMBER MALE	NUMBER FEMALE	NUMBER TOTAL
Point Violation	Speeding - under 16 mph	127,671	66,019	193,690
	Speeding - 16-25 mph	71,008	33,969	104,977
	Failure to Obey Traffic Control Devic	30,237	13,131	43,368
	Speeding 11-15 mph Over on LA	29,043	12,657	41,700
	Disregard of Stop Sign	20,480	10,042	30,522
	Reckless Driving	25,767	4,217	29,984
	Improper Passing	4,632	1,133	5,765
	Improper Start	4,370	197	4,567
	Careless Driving	3,686	816	4,502
	Improper Driving	3,109	737	3,846
	Failure to Yield Right of Way	2,487	1,086	3,573
	Improper Turn	2,436	849	3,285
	Multiple Offenses/ Convictions	2,618	526	3,144
	Improper Lane Usage	2,159	351	2,510
	Following too Closely	1,706	494	2,200
	Traffic Violation Results in Accident	1,448	455	1,903
	Failure to Illuminate Headlights	1,079	341	1,420
	Speeding 15 mph Over/ CMV	1,069	10	1,079
	Failure to Dim Headlights	568	209	777
	Driving too Fast for Conditions	599	145	744
	Failure to Stop for a School Bus	406	317	723
	Driving on Wrong Side of Road	453	111	564
	Wrong Way on 1-Way Street	377	121	498
	Fail to Yield to Emergency Vehicle	141	46	187
	Vehicle Not Under Control	152	32	184
	Improper Use of Left Lane	108	40	148
	Fail to Yield to Pedestrian	82	34	116
	Changing Driver in Moving Vehicle	34	14	48
	Driving too Slow for Conditions	35	10	45
Alcohol Violation	All DUI	99,987	17,943	117,930
	Alcohol Treatment Prog. Completion	73,425	14,481	87,906
	DUI - First Offense	60,864	13,326	74,190
	DUI - Second Offense	26,210	3,408	29,618
	Driving While Susp. on DUI	14,191	1,389	15,580
	Pretrial Suspension Termination/ DU	8,904	1,289	10,193
	DUI - Third Offense	8,607	799	9,406
	DUI - Fourth Subsequent Offense	2,048	107	2,155
	DUI - Under 18	905	122	1,027
	DUI - 1st Off. Ct. Order	763	103	866
	DUI - .02-.09	389	60	449
	Refused Chemical Test/ 1st Off.	351	45	396
	DUI - CMV	271	18	289
	DUI - 2nd Off. Ct. Order	169	18	187
	DUI - Not Motor Vehicle	64	1	65
	DUI - 3rd Off. Ct. Order	32	0	32
	Refused Chemical Test/ 2nd Off.	4	0	4

TABLE 10. NUMBER OF ENTRIES FOR VARIOUS CODES* (continued)

CATEGORY	CODE DESCRIPTION	NUMBER MALE	FEMALE	TOTAL
Other Violation	No Liability Insurance in Force	74,294	31,045	105,339
	Speeding 1-10 mph over/ LA	33,228	15,439	48,667
	Speed 15 or More CMV/ Out of State	3,399	52	3,451
	Eluding Police Officer/ CV	2,905	152	3,057
	Speeding - 26 or more	2,430	472	2,902
	Leaving Accident Scene/ H & R	2,245	421	2,666
	Operating With No License or Permit	1,237	335	1,572
	Racing	177	14	191
	3rd Reckless Driving/ Conviction	72	2	74
	Fail to Stop-Accident	57	11	68
	Violated Provisions of Hardship Lic.	23	3	26
	Limited Acc.-Speeding Under 16 mp	20	5	25
Suspension	Suspension Order Issued	311,127	71,962	383,089
	Driving While Suspended	27,152	3,952	31,104
	KRS 159.051 (Svn Rec'd)	10,169	5,331	15,500
	Susp. Order Issued/ KRS 159.051	10,166	5,331	15,497
	Pre-Trial Susp. on DUI	12,397	1,761	14,158
	Out of State	8,025	1,417	9,442
	Pre-Trial Susp. on RCT	5,602	1,011	6,613
	Suspension Order Issued/ Traf. Sch.	4,268	2,163	6,431
	No Liability Insurance	3,011	1,857	4,868
	Excessive Points	2,898	514	3,412
	Eluding Police Officer	2,372	115	2,487
	Speeding Over 25 mph	1,260	191	1,451
	Pre-Trial	605	98	703
	Administrative	103	66	169
	Racing	74	6	80
	Fail to Stop at Accident	42	11	53
	False Application	7	2	9
Probation	Placed on Probation	11,143	2,803	13,946
	Traffic School Enrollment/ Probation	10,952	2,755	13,707
	Completed Traffic School/ Probation	10,275	2,581	12,856
	Probation Violation/ Abstract	1,656	252	1,908
	Probation Viol. Failed to Complete Traffic School	395	83	478
Medical Review Board	Notice to Request Hrg. Sent/ MRB	2,083	1,534	3,617
	Periodic Med. Request/ Annual	1,723	1,680	3,403
	Intrastate Medical Update Rec'd	2,900	104	3,004
	Suspension	1,749	1,131	2,880
	Intrastate Medical Waiver Granted	1,688	66	1,754
	Periodic Med. Request/ Quarterly	460	435	895
	Periodic Med. Request/ Biennial	359	349	708
	MRB/ Opthalmology Exam Req.	325	193	518
	MRB/ Road Test Required	305	206	511
	Periodic Visual Request/ Annual	195	120	315
	Hearing Requested/ MRB	162	67	229
	Hardship License Reissued	108	33	141
	Federal Vision Waiver Issued	107	4	111
	Intrastate Medical Waiver Denied	22	1	23

TABLE 10. NUMBER OF ENTRIES FOR VARIOUS CODES* (continued)

CATEGORY	CODE DESCRIPTION	NUMBER MALE	FEMALE	TOTAL
Medical Review Board	Periodic Visual Request/ Bi-Annual	9	3	12
	Medical Waiver Denial Overturned	6	0	6
	Medical Waiver Denial Upheld	2	0	2
Graduated License	High School Driver Training Compltd	9,003	9,306	18,309
	Grad. License Course Enrolled	7,873	7,729	15,602
	Failed to Attend Course	397	312	709
Traffic School	Referral to Traffic School by Court	185,756	116,030	301,786
	Traffic School Enrollment/ Court Ref.	184,424	114,990	299,414
	Completed Traffic School/ Court Ref	180,359	112,220	292,579
	Traffic School Susp. Rescinded	27,712	15,635	43,347
	Failed to Enroll In Traffic School	18,857	10,816	29,673
	Failed to Complete Traffic School	11,253	5,055	16,308
	Failed to Enroll/ Court Ref.	3,010	1,660	4,670
	Referred to STS/ Diversion Program	1,916	794	2,710
	Completed STS/ Diversion Program	1,885	772	2,657
	Enrolled STS/ Diversion Program	1,878	774	2,652
	Failed to Complete STS/ Court Ref.	1,263	511	1,774
Miscellaneous Activity	Points Violation Warning	53,649	22,303	75,952
	Personal Letter Sent	17,227	7,220	24,447
	Hardship License Issued	19,522	4,288	23,810
	Discretionary Hearing Scheduled	14,005	3,299	17,304
	Habitual Violator Conviction	6,743	575	7,318
	Fail to Appear for Hearing	5,012	960	5,972
	School Academic Sufficiency	3,173	1,560	4,733
	Motorcycle Test Not Taken	3,056	148	3,204
	Driver Eligibility Letter Sent	1,655	512	2,167
	Driving Privilidge Restored	700	165	865
	2 Serious Violation in 3 yr. Period	739	6	745
	Habitual Violator Dismissed	291	27	318
	3 Serious Violation in 3 yr. Period	149	3	152
	Motorcycle Test Failed	100	4	104
	Operator Test Failed	21	10	31
Commercial Driver	Commercial Drivers License Added	27,286	4,257	31,543
	CDL Vol. Surr.	11,696	1,598	13,294
	Upgrade CDL Issued	3,643	248	3,891
	Grad. License Course Non-Attend	751	713	1,464
	Farm Services Restricted CDL	535	5	540
	CDL Test Not Taken	69	0	69
	CDL Disqualified/ Driving While Susp	65	1	66
	CDL Test Reinstated	25	0	25
	False Affidavit Suspension/ CDL	18	0	18
	Priviledge Disqual-Oper CMV No Lic	12	1	13

TABLE 10. NUMBER OF ENTRIES FOR VARIOUS CODES* (continued)

CATEGORY	CODE DESCRIPTION	NUMBER MALE	NUMBER FEMALE	NUMBER TOTAL
Commercial Driver	CDL Disqualified/ .04 to .09	11	0	11
Permit	Original Permit Issued	150,858	151,452	302,310
	Renewal Permit Issued	65,719	137,717	203,436
	Motorcycle Permit Renewed	40,154	2,743	42,897
	Original Class A Permit Issued	23,492	1,332	24,824
	Original Class B Permit Issued	15,805	3,982	19,787
	Original Motorcycle Permit Issued	4,976	183	5,159
	Renewal Class A Permit Issued	4,457	379	4,836
	Instruction Permit Received	3,043	1,681	4,724
	Renewal Class B Permit Issued	2,390	304	2,694
	Original Class C Permit Issued	930	653	1,583
	Duplicate Class A Permit Issued	850	66	916
	Permit Surrendered to Another State	314	282	596
	Duplicate Class B Permit Issued	281	39	320
	Permit Voluntary Surrendered	66	61	127
	Renewal Class C Permit Issued	60	35	95
License	Original License Issued	390,887	288,453	679,340
	Lic. Surrendered From Another State	124,398	114,810	239,208
	Driver's License Received	87,082	19,664	106,746
	License Surrender to Another State	13,243	10,653	23,896
	License Cancellation Letter Sent	1,375	853	2,228
	Moped License Issued	136	18	154
	License Retained by District Court	108	15	123
	Original Motorcyle License Issued	75	5	80

* Number of times a given code was listed in the driver license file for the five year period of 1993 through 1997.

Table 11. RELATIONSHIP BETWEEN POINT ACCUMULATION AND DRIVER AGE AND SEX

	POINTS*			POINTS/DRIVER			POINTS/DRIVER/YEAR		
AGE (YEARS)	MALE	FEMALE	ALL	MALE	FEMALE	ALL	MALE	FEMALE	ALL
16-19	64,746	21,696	86,442	0.679	0.238	0.464	0.361	0.128	0.248
20-24	311,998	108,211	420,209	2.274	0.846	1.585	0.565	0.209	0.393
25-34	421,031	183,307	604,338	1.382	0.634	1.018	0.330	0.147	0.239
35-44	250,920	136,298	387,218	0.788	0.438	0.615	0.177	0.095	0.136
45-54	135,364	69,355	204,719	0.534	0.281	0.409	0.115	0.059	0.087
55-65	60,177	25,233	85,410	0.370	0.160	0.267	0.078	0.033	0.056
65-74	25,290	9,603	34,893	0.215	0.082	0.149	0.044	0.017	0.031
Over 74	8,311	3,605	11,916	0.113	0.044	0.077	0.023	0.009	0.016
All	1,277,837	557,308	1,835,145	0.873	0.392	0.636	0.222	0.089	0.153

* Total points on driver record. Does not consider number of drivers or years on driving record.

TABLE 12..RELATIONSHIP BETWEEN TOTAL NUMBER OF POINT VIOLATIONS AND DRIVER AGE AND SEX*

	POINT VIOLATIONS			VIOLATIONS/DRIVER			VIOLATIONS/DRIVER/YEAR		
AGE (YEARS)	MALE	FEMALE	ALL	MALE	FEMALE	ALL	MALE	FEMALE	ALL
16-19	33,255	14,263	47,518	0.349	0.157	0.255	0.185	0.084	0.136
20-24	134,694	58,435	193,129	0.982	0.457	0.728	0.244	0.113	0.180
25-34	181,462	91,301	272,763	0.595	0.316	0.459	0.142	0.073	0.108
35-44	109,612	65,068	174,680	0.344	0.209	0.277	0.077	0.045	0.061
45-54	60,126	33,967	94,093	0.237	0.138	0.188	0.051	0.029	0.040
55-65	25,353	11,469	36,822	0.156	0.073	0.115	0.033	0.015	0.024
65-74	9,639	3,844	13,483	0.082	0.033	0.058	0.017	0.007	0.012
Over 74	2,823	1,236	4,059	0.038	0.015	0.026	0.008	0.003	0.005
All	556,964	279,583	836,547	0.381	0.197	0.290	0.097	0.045	0.070

* Codes for violations which are included in the current point system are counted as well as the code for referral to traffic school by the court which would typically be related to a point system violation.

TABLE 13. RELATIONSHIP BETWEEN TOTAL NUMBER OF VIOLATIONS/ ARRESTS AND DRIVER AGE AND SEX*

	TOTAL VIOLATIONS/ARRESTS			TOTAL VIOL. & ARRESTS/DRIVER			TOTAL VIOL. & ARRESTS/DRIVER/YEAR		
AGE (YEARS)	MALE	FEMALE	ALL	MALE	FEMALE	ALL	MALE	FEMALE	ALL
16-19	35,833	14,676	50,509	0.376	0.161	0.271	0.200	0.086	0.145
20-24	150,731	60,805	211,536	1.099	0.475	0.798	0.273	0.117	0.198
25-34	225,229	98,783	324,012	0.739	0.342	0.546	0.177	0.079	0.128
35-44	148,834	72,613	221,447	0.468	0.233	0.352	0.105	0.051	0.078
45-54	77,846	36,336	114,182	0.307	0.147	0.228	0.066	0.031	0.049
55-65	31,438	11,957	43,395	0.193	0.076	0.136	0.041	0.016	0.028
65-74	11,614	3,979	15,593	0.099	0.034	0.067	0.020	0.007	0.015
Over 74	3,162	1,249	4,411	0.043	0.015	0.028	0.009	0.003	0.006
All	684,687	300,398	985,085	0.468	0.211	0.341	0.119	0.048	0.082

* Violations/arrests include point system violations plus DUI, racing, and attempting to elude.

TABLE 14. RELATIONSHIP BETWEEN NUMBER OF TRAFFIC CRASHES AND DRIVER AGE AND SEX.

AGE (YEARS)	TOTAL CRASHES			CRASHES/ DRIVER			CRASHES/ DRIVER/ YEAR		
	MALE	FEMALE	ALL	MALE	FEMALE	ALL	MALE	FEMALE	ALL
16-19	21,512	15,916	37,428	0.226	0.175	0.201	0.120	0.094	0.107
20-24	71,976	48,701	120,677	0.525	0.381	0.455	0.130	0.094	0.113
25-34	106,959	77,248	184,207	0.351	0.267	0.310	0.084	0.062	0.073
35-44	88,897	70,275	159,172	0.279	0.226	0.253	0.063	0.049	0.056
45-54	60,140	44,298	104,438	0.237	0.180	0.209	0.051	0.038	0.044
55-65	35,834	23,953	59,787	0.220	0.152	0.187	0.046	0.032	0.039
65-74	24,377	15,687	40,064	0.207	0.135	0.171	0.043	0.028	0.035
Over 74	16,176	11,643	27,819	0.220	0.142	0.179	0.045	0.029	0.036
All	425,871	307,721	733,592	0.291	0.216	0.254	0.074	0.049	0.061

Table 15. RANKING OF OCCURRENCE OF MAJOR VIOLATIONS BY DRIVER AGE AND SEX.

	Ranking										
				Driver Category							
				Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Violation	All	Male	Female	16-19	20-24	25-34	34-45	45-54	55-64	65-74	>74
Speeding < 16 mph	1	1	1	1	1	1	1	1	1	1	1
DUI	2	2	3	8	3	2	2	2	2	2	4
Speeding 16-25 mph	3	3	2	2	2	3	3	3	3	3	2
Speeding 1-10 mph/LA	4	4	4	6	6	4	4	4	4	5	8
Failure to Obey TCD	5	5	5	5	5	6	6	6	6	4	3
Speeding 11-15 mph	6	6	6	7	8	5	5	5	5	6	7
Stop Sign	7	8	7	3	7	8	7	7	7	7	5
Reckeless Driving	8	7	8	4	4	7	8	8	8	8	9
Improper Passing	9	9	9	11	10	9	9	9	9	10	12
Improper Start	10	10	20	9	9	11	19	25	25	27	28
Careless Driving	11	11	12	18	11	10	11	14	13	15	13
Improper Driving	12	12	13	13	14	12	10	13	14	13	16
Failure to Yield ROW	13	14	10	15	15	14	14	12	10	9	6
Improper Turn	14	15	11	18	16	16	12	10	11	12	11
Multiple	15	13	14	14	13	15	15	17	17	18	18

TABLE 16. COMPARISON BETWEEN TRAFFIC CRASHES AND POINT ACCUMULATION (DRIVERS WITH FIVE YEARS OF DATA).

Category	Points	Drivers	Points/Driver	Crashes	Crashes/Driver	Percent No Points	Percent 12 or More Points
All	0	2,074,394	0	491,848	0.24	87.2	0.77
	3 - 5	182,161	3.1	76,298	0.42		
	6 - 8	80,488	6.1	39,228	0.49		
	9 - 11	24,438	9.2	15,293	0.63		
	12 or more	18,368	14.7	14,006	0.76		
Male	0	1,006,349	0	268,371	0.27	83.3	1.20
	3 - 5	116,257	3.1	51,369	0.44		
	6 - 8	52,915	6.1	27,236	0.51		
	9 - 11	18,063	9.2	11,712	0.65		
	12 or more	14,499	14.9	11,343	0.78		
Female	0	1,068,045	0	223,477	0.21	91.1	0.33
	3 - 5	65,904	3.1	24,929	0.38		
	6 - 8	27,573	6.0	11,992	0.43		
	9 - 11	6,375	9.1	3,581	0.56		
	12 or more	3,869	14.0	2,663	0.69		
20 - 24 Years	0	108,544	0	47,489	0.44	69.4	3.71
	3 - 5	23,131	3.1	14,340	0.62		
	6 - 8	13,333	6.1	9,495	0.71		
	9 - 11	5,573	9.2	4,782	0.86		
	12 or more	5,809	15.4	5,801	1.00		
25 - 34 Years	0	400,918	0	120,610	0.30	79.1	1.49
	3 - 5	59,468	3.1	26,920	0.45		
	6 - 8	29,108	6.1	14,904	0.51		
	9 - 11	9,834	9.2	6,098	0.62		
	12 or more	7,543	14.6	5,398	0.72		
35 - 44 Years	0	491,732	0	121,619	0.25	86.4	0.56
	3 - 5	48,694	3.1	18,528	0.38		
	6 - 8	20,018	6.1	8,493	0.42		
	9 - 11	5,230	9.1	2,650	0.51		
	12 or more	3,197	14.1	1,855	0.58		
45 - 54 Years	0	421,978	0	86,554	0.21	90.5	0.26
	3 - 5	29,508	3.1	9,451	0.32		
	6 - 8	10,985	6.0	3,913	0.36		
	9 - 11	2,370	9.1	1,099	0.46		
	12 or more	1,206	13.7	592	0.49		
55 - 64 Years	0	283,695	0	52,303	0.18	93.7	0.14
	3 - 5	13,222	3.1	4,171	0.32		
	6 - 8	4,578	6.0	1,526	0.33		
	9 - 11	919	9.1	432	0.47		
	12 or more	428	13.4	218	0.51		
Over 64	0	367,058	0	63,069	0.17	97.1	0.04
	3 - 5	8,032	5.1	2,811	0.35		
	6 - 8	2,397	10.7	844	0.35		
	9 - 11	486	32.7	208	0.43		
	12 or more	157	84.5	113	0.72		
Male 20 - 24	0	48,910	0.0	23754	0.49	59.6	5.82
	3 - 5	14,868	3.2	9631	0.65		
	6 - 8	9,192	6.2	6854	0.75		
	9 - 11	4,272	9.3	3765	0.88		
	12 or more	4,777	15.6	4840	1.01		
Female > 54	0	333,342	0.0	47815	0.14	97.3	0.03
	3 - 5	6,637	3.0	1887	0.28		
	6 - 8	2,155	6.0	643	0.30		
	9 - 11	305	9.1	129	0.42		
	12 or more	119	12.7	65	0.55		

TABLE 17. COMPARISON BETWEEN TRAFFIC CRASHES AND POINT ACCUMULATION (1996 - 1997 DATA).

Category	Points	Drivers	Points/Driver	Crashes	Crashes/Driver	Percent No Points	Percent 12 or More Points
All	0	2,706,309	0	208,480	0.08	93.8	0.16
	3 - 5	118,100	3.1	19,239	0.16		
	6 - 8	47,302	6.1	8,836	0.19		
	9 - 11	8,901	9.1	2,399	0.27		
	12 or more	4,729	14.1	1,436	0.30		
Male	0	1,342,414	0	114,739	0.09	91.8	0.26
	3 - 5	78,439	3.1	13,398	0.17		
	6 - 8	31,673	6.1	6,168	0.19		
	9 - 11	6,701	9.2	1,863	0.28		
	12 or more	3,801	14.2	1,167	0.31		
Female	0	1,363,895	0	93,741	0.07	95.9	0.07
	3 - 5	39,661	3.1	5,841	0.15		
	6 - 8	15,629	6.0	2,668	0.17		
	9 - 11	2,200	9.1	536	0.24		
	12 or more	928	13.6	269	0.29		
16 - 19 Years	0	171,439	0.0	20,397	0.12	92.0	0.40
	3 - 5	9,052	3.1	2,907	0.32		
	6 - 8	4,042	6.1	1,487	0.37		
	9 - 11	1,071	9.2	547	0.51		
	12 or more	746	14.4	347	0.47		
20 - 24 Years	0	226,153	0.0	27,965	0.12	85.3	0.68
	3 - 5	23,178	3.1	4,967	0.21		
	6 - 8	11,053	6.1	2,682	0.24		
	9 - 11	2,964	9.2	880	0.30		
	12 or more	1,803	14.4	586	0.33		
25 - 34 Years	0	540,066	0.0	48,339	0.09	90.9	0.22
	3 - 5	35,095	3.1	5,294	0.15		
	6 - 8	14,638	6.0	2,501	0.17		
	9 - 11	2,716	9.1	615	0.23		
	12 or more	1,322	13.9	336	0.25		
35 - 44 Years	0	592,211	0.0	44,543	0.08	94.0	0.09
	3 - 5	26,095	3.1	3,423	0.13		
	6 - 8	9,575	6.0	1,276	0.13		
	9 - 11	1,335	9.1	230	0.17		
	12 or more	591	13.8	134	0.23		
Over 44	0	1,176,440	0.0	67,236	0.06	97.2	0.02
	3 - 5	24,680	3.1	2,648	0.11		
	6 - 8	7,994	6.0	890	0.11		
	9 - 11	815	9.1	127	0.16		
	12 or more	267	13.3	33	0.12		
Male 16 - 19	0	84,615	0.0	10,867	0.13	88.8	0.66
	3 - 5	6,321	3.2	2,081	0.33		
	6 - 8	2,888	6.1	1,105	0.38		
	9 - 11	859	9.2	440	0.51		
	12 or more	631	14.6	295	0.47		
Female > 44	0	591,850	0.0	28,416	0.05	98.2	0.01
	3 - 5	8,004	3.0	729	0.09		
	6 - 8	2,611	6.0	250	0.10		
	9 - 11	185	9.1	31	0.17		
	12 or more	62	13.2	6	0.10		

TABLE 18. COMPARISON BETWEEN TRAFFIC CRASHES AND TOTAL NUMBER OF VIOLATIONS/ARRESTS (DRIVERS WITH FIVE YEARS OF DATA).

Category	Violations/Arrests	Drivers	Crashes	Crashes/Driver	Percent No Violations/Arrests	Percent 3 or More Violations/Arrests
All	0	1,857,804	401,805	0.22	78.1	3.03
	1	342,104	130,474	0.38		
	2	107,818	55,133	0.51		
	3	41,440	25,719	0.62		
	4	17,291	12,245	0.71		
	5 or more	13,392	11,297	0.84		
Male	0	869,461	210,432	0.24	72.0	4.73
	1	206,453	81,353	0.39		
	2	75,016	38,957	0.52		
	3	31,537	19,658	0.62		
	4	14,082	9,948	0.71		
	5 or more	11,534	9,683	0.84		
Female	0	988,343	191,373	0.19	84.3	1.28
	1	135,651	49,121	0.36		
	2	32,802	16,176	0.49		
	3	9,903	6,061	0.61		
	4	3,209	2,297	0.72		
	5 or more	1,858	1,614	0.87		
20 - 24 Years	0	80,290	30,446	0.38	51.3	11.66
	1	39,040	21,766	0.56		
	2	18,823	13,074	0.69		
	3	9,393	7,723	0.82		
	4	4,592	4,155	0.90		
	5 or more	4,252	4,743	1.12		
25 - 34 Years	0	328,769	88,958	0.27	64.9	5.89
	1	107,122	44,116	0.41		
	2	41,114	21,175	0.52		
	3	17,008	10,288	0.60		
	4	7,332	5,048	0.69		
	5 or more	5,526	4,345	0.79		
35 - 44 Years	0	429,963	98,633	0.23	75.6	2.74
	1	95,590	33,489	0.35		
	2	27,758	12,311	0.44		
	3	9,489	5,078	0.54		
	4	3,544	2,051	0.58		
	5 or more	2,527	1,583	0.63		
45 - 54 Years	0	386,470	74,845	0.19	82.9	1.29
	1	60,007	18,332	0.31		
	2	13,537	5,523	0.41		
	3	3,879	1,767	0.46		
	4	1,333	698	0.52		
	5 or more	821	444	0.54		
55 - 64 Years	0	270,324	47,880	0.18	89.3	0.61
	1	25,997	7,807	0.30		
	2	4,686	2,066	0.44		
	3	1,242	560	0.45		
	4	390	203	0.52		
	5 or more	203	134	0.66		
Over 64	0	361,641	60,925	0.17	95.6	0.13
	1	14,177	4,855	0.34		
	2	1,806	904	0.50		
	3	376	252	0.67		
	4	83	74	0.89		
	5 or more	47	35	0.74		
Male 20 - 24	0	32,847	13549	0.41	40.0	17.61
	1	22,003	12922	0.59		
	2	12,723	9048	0.71		
	3	7,049	5827	0.83		
	4	3,712	3383	0.91		
	5 or more	3,685	4115	1.12		
Female > 54	0	327,966	46175	0.14	95.7	0.09
	1	12,865	3596	0.28		
	2	1,415	612	0.43		
	3	249	113	0.45		
	4	45	30	0.67		
	5 or more	18	14	0.78		

TABLE 19. COMPARISON BETWEEN TRAFFIC CRASHES AND TOTAL NUMBER OF VIOLATIONS/ ARRESTS (1996 - 1997 DATA).

Category	Violations/ Arrests	Drivers	Crashes	Crashes/Driver	Percent No Violations/Arrests	Percent 3 or more Violations/Arrests
All	0	2,543,004	181,387	0.07	88.1	0.66
	1	269,747	41,485	0.15		
	2	53,587	11,955	0.22		
	3	13,423	3,711	0.28		
	4	3,856	1,212	0.31		
	5 or more	1,724	640	0.37		
Male	0	1,237,668	96,864	0.08	84.6	1.06
	1	170,887	27,146	0.16		
	2	39,023	8,811	0.23		
	3	10,674	2,942	0.28		
	4	3,245	1,009	0.31		
	5 or more	1,531	563	0.37		
Female	0	1,305,336	84,523	0.06	91.8	0.25
	1	98,860	14,339	0.15		
	2	14,564	3,144	0.22		
	3	2,749	769	0.28		
	4	611	203	0.33		
	5 or more	193	77	0.40		
16 - 19 Years	0	155,832	15,955	0.10	83.6	1.34
	1	22,356	6,272	0.28		
	2	5,668	2,231	0.39		
	3	1,693	818	0.48		
	4	528	258	0.49		
	5 or more	273	151	0.55		
20 - 24 Years	0	196,217	21,813	0.11	74.0	2.30
	1	48,793	9,562	0.20		
	2	14,038	3,748	0.27		
	3	4,177	1,260	0.30		
	4	1,321	460	0.35		
	5 or more	605	237	0.39		
25 - 34 Years	0	490,846	40,675	0.08	82.7	0.99
	1	79,856	11,631	0.15		
	2	17,282	3,319	0.19		
	3	4,232	1,003	0.24		
	4	1,126	294	0.26		
	5 or more	495	163	0.33		
35 - 44 Years	0	554,050	39,376	0.07	88.0	0.49
	1	62,410	7,885	0.13		
	2	10,267	1,696	0.17		
	3	2,182	429	0.20		
	4	646	159	0.25		
	5 or more	252	61	0.24		
Over 44	0	1,146,059	63,568	0.06	94.7	0.12
	1	56,332	6,135	0.11		
	2	6,332	961	0.15		
	3	1,139	201	0.18		
	4	235	41	0.17		
	5 or more	99	28	0.28		
Male 16 - 19	0	74,878	8,023	0.11	78.6	2.18
	1	14,210	4,083	0.29		
	2	4,152	1,664	0.40		
	3	1,356	650	0.48		
	4	459	225	0.49		
	5 or more	259	143	0.55		
Female > 44	0	582,268	27,431	0.05	96.6	0.04
	1	18,732	1,751	0.09		
	2	1,475	208	0.14		
	3	201	38	0.19		
	4	27	2	0.07		
	5 or more	9	2	0.22		

TABLE 20. DRIVING RECORD BEFORE AND AFTER VARIOUS INTERVENTIONS

CATEGORY	VIOLATIONS/DRIVER* TWO YEARS BEFORE	VIOLATIONS/DRIVER* TWO YEARS AFTER	CRASHES/DRIVER** TWO YEARS BEFORE	CRASHES/DRIVER** TWO YEARS AFTER
Completed Traffic School	1.36	0.30	0.23	0.14
Fail Enroll Traffic School	1.48	0.44	0.27	0.14
Suspension Ordered	1.33	0.59	0.26	0.06
Placed on Probation	3.48	0.53	0.40	0.17
Personal Letter	1.04	0.44	0.21	0.11
Completed Hearing	3.26	0.56	0.38	0.16
Excessive Points Suspension	4.30	0.81	0.45	0.11
Medical Suspension	0.26	0.09	0.28	0.02

*In 1996 and 1997 the average was 0.15 violations per driver.

**In 1996 and 1997 the average was 0.08 crashes per driver.