

FY 2005



Highway Safety

Annual Report

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Introduction

Crash Summary

Over the past seven years, North Carolina has experienced a fairly stable number of traffic fatalities and mileage death rate. The number of fatalities has been between 1,530 and 1,596 during each of the last seven years. At the same time, the fatality rate has dropped from 1.87 to 1.62, with the last three years showing steady but small decreases. Carolina has been fortunate to see a significant reduction in the number of injuries, dropping from 150,120 in 1998 to 134,354 in 2004. Alcohol-related fatalities have dropped from 469 in 1998 to 356 in 2004. An area of concern in North Carolina, as well as across the country, is the recent rise in motorcycle fatalities. The number of motorcycle fatalities in North Carolina has increased from 61 in 1997 to over 100 in each of the years, 2001, 2002, 2003 and 2004.

Accomplishments

North Carolina has experienced an increase in safety belt usage over the past six years from 81.7 percent in 1998 to 86.1 percent in 2004 and 86.7 percent in 2005. The 86.7 percent rate is an all time high for North Carolina. This increased safety belt usage rate has helped to stabilize the number of fatalities and the mileage death rate. It has also assisted in the significant drop in overall traffic injuries.

North Carolina has established an Executive Highway Safety Committee that brings together decision-makers from all major entities involved in traffic safety, or that can have an impact on traffic safety. During 2004, this group adopted the AASHTO goal of 1.0 fatalities per 100 million miles traveled goal. The Southeast NHTSA Region, NHTSA, and GHSA have also adopted this goal. The EHSC meets quarterly and addresses a wide variety of traffic safety issues. Subcommittees have been formed to address several key highway safety issues including occupant protection.

The Governor appointed a Task Force on Impaired Driving during 2004. This group met during late 2004 and early 2005 and developed recommendations on improvements to DWI processes and laws for the Governor's consideration. The final

report was presented to the Governor in early 2005. As a result of this task force, companion bills were drafted and presented in both Houses of the N.C. Legislature during the 2005 session. These bills are working their way through the legislative process and are expected to meet final approval during the 2006 session.

Challenges

The challenge for North Carolina in FY 2006 and beyond will be to reach the 1.0 fatality rate by 2008 as established by the Executive Committee for Highway Safety. This goal is worthy of striving for and will hopefully be accomplished. However, North Carolina's population, registered vehicles, and miles driven continue to climb and will put pressure on keeping the mileage death rate at a high level. Much work will be required by all those involved in highway safety to get the mileage death rate down to 1.0 per million miles traveled.

Impaired Driving Program Overview

Provide a general description of the alcohol program: objectives, noteworthy programs, results, future strategies.

North Carolina is very aggressive in the fight to rid the roadways of impaired drivers. The GHSP has developed a model program, "Booze It & Lose It", that has been in existence for 11 years. This program is modeled after the "Click It or Ticket" program that was developed in North Carolina. The "Booze It & Lose It" program focuses on highly visible nighttime impaired driving checkpoints. This program runs year round, thanks to six mobile breath alcohol testing units, or "BAT Mobiles" that allow law enforcement to provide enforcement tools for DWI checkpoints any day of the year.



The BAT Mobile program is administered by the Forensic Tests for Alcohol Branch. Five full-time BAT Mobile operators are scheduled for checkpoints and educational events throughout the state annually. The BAT

Mobiles are equipped with three breath testing instruments, checkpoint signs and cones, lights, DWI processing forms, cell phone, gun/evidence lockers, traffic vests, flashlights, officer work stations, and an office for the Magistrate. The BAT Mobiles are fully functional DWI processing centers.

The most intense periods of enforcement activities for the BAT Mobiles is during the GHSP's annual "Booze It & Lose It" campaigns. Typically, these campaigns run during the two weeks surrounding July Fourth holiday and the Thanksgiving to New Year time period. During 2005, in an effort to coordinate with the National Impaired Driving Campaign, the "Booze It and Lose It" summer campaign moved to the time period prior to, and including Labor Day.

The GHSP staffed the Governor's Task Force on Impaired Driving during FY 2004 and FY2005. This group was appointed by the Governor to develop recommendations that the Governor considered for improving the way North Carolina deals with impaired drivers. The Task Force submitted its' final recommendations to the Governor in early 2005. It is expected that these recommendations will lead to positive changes in the DWI processes and laws in North Carolina and ultimately in the reduction of impaired driving injuries and fatalities.

During FY 2005, the eight weeks of "Booze It & Lose It" in North Carolina consisted of 20,841 checkpoints and saturation patrols. These enforcement efforts yielded 9,041 DWI arrests and over 215,000 total traffic violations. Additionally, the officers arrested 198 fugitives, recovered 412 stolen vehicles, discovered 5,101 drug violations, and made a total of 13,635 criminal arrests.

North Carolina will continue to operate "Booze It & Lose It" campaigns in FY 2006 and beyond. During FY 2006, five statewide campaigns are scheduled. The first will be over the "Super Bowl" weekend in early February. The next crackdown will be over the national Fourth of July holiday period. This will be followed by a "Booze It & Lose It" coinciding with the National Enforcement Crackdown August 17 through September 3. Additionally another short campaign will be run during the weekend preceding Halloween and conclude Halloween night. Additionally, North Carolina will run the more traditional holiday campaign December 1, 2006 through January 2, 2007.

Due to the backlog of DWI cases in ever-growing Wake County, the Governor's Highway Safety Program joined with the Wake County District Attorney's office to create a DWI Processing Court. The pilot program worked to significantly reduce the number of DWI's that remain in the judicial system one year after issuance and increase the success rate of prosecuting complex DWI's. The pilot program raised DWI conviction rates in Wake County from 15 percent to 70 percent.



Occupant Protection – Program Overview

Provide a general description of the occupant protection program: objectives, noteworthy programs, results, future strategies.

North Carolina entered its' 12th year of "Click It or Ticket" during 2005. The state pioneered "Click It or Ticket" in 1993 as a statewide safety belt enforcement effort and the program is now active in most states across the nation. During 2005, North Carolina continued to press forward with "Click It or Ticket", with law enforcement still strongly behind the program.

During 2005, North Carolina participated in the NHTSA Southeast Region "Buckle Up in Your Truck" campaign, preceding the "Click It or Ticket" mobilization. The "Buckle Up in Your Truck" occurred for two weeks prior to the national mobilization. The North Carolina "Click It or Ticket" mobilization lasted for three weeks focusing on the increased enforcement for the period encompassing Memorial Day.

Results for the 2005 "Click It or Ticket" mobilization were once again impressive. A total of 10,452 checkpoints and patrols were conducted, resulting in 23,803 safety belt citations and 2,265 child passenger safety violations. In addition to the occupant protection violations, over 3,300 DWI arrests were made, 31,251 speeding citations issued, 173 stolen vehicles recovered, 2,245 drug charges, over 5,700 total criminal violations discovered, and 43 fugitives were apprehended.



“R U Buckled?” is a new partnership between the Governor’s Highway Safety Program and 53 North Carolina high schools created to reduce the number of teenage injuries and fatalities on our roadways. This program requires all drivers and passengers to buckle their safety belts before leaving school parking lots or risk losing parking privileges at school. The future goal of this program is to have the program in every high school in the state.

R U BUCKLED?



Paid Media Report

Describe how the paid media funds were used and an assessment on the effectiveness of the public service messages. Base the assessment on data collected on paid advertising and on non-paid public service announcements.

The GHSP participated in four paid media programs in FY 2004. The GHSP will continue a third year of funding with the Carolina Hurricanes in 2006. The second year of this planned campaign was not run due to the lockout of the National Hockey League (NHL). The buckle-up awareness campaign features a Jumbotron safety belt message from Director Darrell Jernigan and a local law enforcement officer. The campaign will also include several in-venue promotions and parking lot signage, encouraging fans to buckle up.

North Carolina also participated in the May 2005 "Click It or Ticket" campaign through ad placement and buys through the NHTSA contractor, Tombras. This campaign was aimed at the pick-up truck drivers in the state and was a coordinated effort through NHTSA Southeast Region. Cooperating in this effort was Lowes Motor Speedway and the NASCAR Craftsman Truck series. This effort provided buys in select target markets in the state where safety belt usage was below the statewide average.

A third paid media effort was conducted with two outdoor concert venues, Alltel Pavilion and Verizon Amphitheater. Signage was provided with "Booze It & Lose It" message encouraging patrons to not drive after drinking. A designated driver program was established and promoted at all events at both venues.

A fourth paid media effort was conducted with the University of North Carolina at Chapel Hill during their football season. This included signage and messages during their home football games with announcements being made over the PA system in the stadium during the games.

As always, North Carolina relied heavily on earned media to spread the messages of "Click It or Ticket" and "Booze It & Lose It". Press events and media tours were held for each mobilization and crackdown. Numerous radio, television and print media stories were also featured during each enforcement period.

The overall outcome of the "Click It or Ticket" portion of the paid media campaign was a statewide usage rate of 86.7 percent. This rate set an all-time record high, beating the previous mark set in 2003 and duplicated in 2004.

Noteworthy Practices

Project Title

North Carolina Executive Highway Safety Committee

Target Group

Upper level decision makers from across North Carolina that can have an impact on traffic safety

Program Area

Overall Traffic Safety

Problem Statement

Many traffic safety efforts are implemented on a fragmented basis across the state, as well as, some extremely coordinated statewide campaigns. However, significant, long-lasting gains have not been experienced on a statewide basis.

Objectives/Strategies

Executive Committee for Highway Safety (ECHS): Comprised of 23 representatives from top management of selected disciplines involved in highway safety who control the current and potentially available resources for utilization in safety efforts.

Meets on a quarterly basis.

Responsible for the overall direction and administration of all SHSP activities.

Responsible for defining high priority issues.

Coordinate the Department's many safety efforts with an emphasis on efficiency of resources and the prioritization of programs.

Identify, prioritize, promote and support all emphasis areas in the AASHTO Plan as well as emphasis areas not included in the AASHTO Plan for the coordinated highway safety effort to save lives and reduce injuries.

Review and approve all actions submitted by the Working Groups and appropriate funds for implementation.

Establish statewide highway safety goals and objectives.

Review proposed highway safety legislation.

Create mechanisms to foster multidisciplinary flows of communication.

Results

To date, the Executive Committee for Highway Safety has met eight times and has made significant progress. The AASHTO goal of 1.0 mileage death rate has been adopted by the group as a goal to reach by 2008. Additionally, the Committee has established subcommittees on Lane Departures, Speed, Keeping Drivers Alert & Increasing Driver Safety Awareness, Increasing Safety Belt Usage, Ensuring Drivers are Licensed & Fully Competent, Curbing Aggressive Driving, Motorcycles and Public Information. These working groups have developed strategies for improvement in each topic area and brought the strategies before the Committee for a vote on whether to adopt the strategy or not. The initial results of this first year can be seen in the attached "Implementation Guide" revised October 2005.

One of the greatest benefits to date is the improved communications among agencies with a stake in traffic safety. Many leaders involved in the Committee are learning that there are many issues outside of their specialty area that have an impact on overall traffic safety and need to be considered as part of the big picture.

Cost

Unknown.

Funding Source(s)

State funds.

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**Susan Coward (Vice-Chair)
Deputy Secretary
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**Debbie Barbour, P.E.
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**Ken Bumgarner
Retired Chief of Police
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**Fletcher Clay
Colonel
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**Peg Dorer
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**Mike Yaniero
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Looking to the Future

Significant Challenges to be addressed

- Speeding continues to be an area that is over-represented in traffic crashes in North Carolina. The NC GHSP has developed an enforcement campaign titled “No Need 2 Speed” to address this issue, but implementation will be dependent on overcoming several hurdles. A major challenge will be in the courts, after citations are issued. The District Attorneys will have to be convinced not to reduce charges that are issued during the campaign and in carefully selected enforcement areas. Enforcement areas will be based on speed-related crash zones.



- Safety belt usage above the mid-80 percent range is difficult to achieve. North Carolina must get both pickup truck and van drivers and occupants buckled up in greater numbers to achieve a 90 percent statewide safety belt usage rate. Additionally, teenage drivers and passengers continue to buckle up below the statewide average.
- Motorcycle helmet usage continues to be high in North Carolina. However, there is growing pressure from outside groups and motorcycle groups in North Carolina for repeal of the mandatory helmet law, or a very relaxed law. Additionally, many of the current helmets being worn are not legal helmets approved by US DOT.

- Hispanic persons continue to be over-represented in traffic crashes and traffic crash fatalities. GHSP has consolidated all Hispanic focused grants into one statewide coalition for better coordination. The group is known as the Governor's Hispanic Highway Safety Program, or Nuestra Seguridad.



Training, technical assistance, expertise and other resources necessary for success

- North Carolina will need financial resources to address the issues of speeding and safety belt usage. Additionally, educational efforts will be necessary. District Attorneys need to be aware of the toll speeding is creating in traffic crashes, thus, providing more punishment for violators. A concentrated enforcement campaign will be necessary to address the safety belt usage rates in pickup trucks and vans.
- North Carolina needs assistance from the federal level to educate legislators about the effectiveness of motorcycle helmets and the negative impact that other states have experienced as a result of a repeal, or downgrade of a mandatory helmet usage law.

IMPLEMENTATION GUIDE

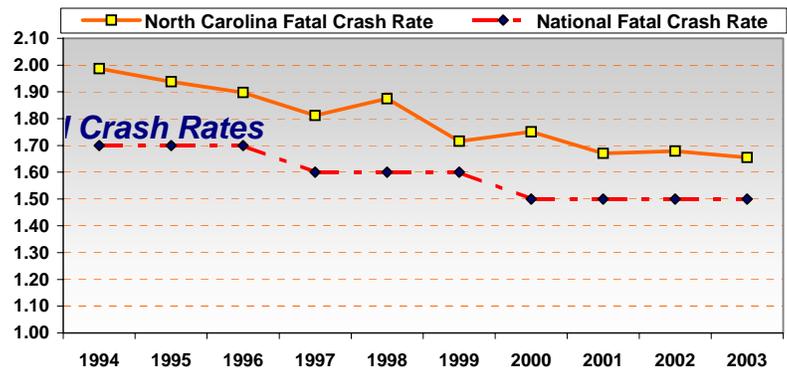
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Executive Summary

While major strides and enhancements have been made in the areas of highway safety within North Carolina, there is still much room for improvement. In the past ten (10) years, over 15,000 people have lost their lives on North Carolina highways due to traffic crashes. In 2003, there were 231,247 reported traffic crashes that resulted in 1,552 persons killed and over 134,742 injuries on our highways.

North Carolina's safety leaders all envision a future where traffic related deaths and injury rates continue to decline. During the last ten (10) years, the State's fatal crash rate (number of crashes per 100 million vehicle miles traveled) has shown a steady decrease, but this has been primarily due to the nearly 45% increase in vehicle miles traveled. Unfortunately, the number of annual fatalities has remained fairly constant and shown only slight decreases in recent years. Safety leaders must strive to achieve sustainable ways of significantly reducing the actual number of fatalities and injuries to the citizens and visitors of this state.



Moderate reductions in North Carolina's highway death toll can be continued through current programs, but a more concentrated effort will prevent many more crashes and injuries and save a significant number of lives and dollars. In 2003, the "crash tax" or cost of traffic related crashes, fatalities and injuries was over \$1,100 per person in the state.

To address this epidemic and in an effort to coordinate the many safety initiatives both within and outside of the Department of Transportation with an emphasis on efficiency of resources and the prioritization of programs, the North Carolina Executive Committee for Highway Safety (ECHS) was established, empowered and activated. The ECHS is a 23 member group comprised of representatives from top management of selected disciplines involved in highway safety who control the current and potentially available resources for utilization in safety efforts. The Committee has endorsed and adopted the American Association of State Highway and Transportation Officials' (AASHTO) Strategic Highway Safety Plan (SHSP) as its working plan with the understanding that this is a dynamic document subject to modifications as necessary to address North Carolina's needs.

The Committee has also adopted the AASHTO goal of a fatal rate of 1.0 fatalities per 100 Million Vehicle Miles Traveled (MVMT) by 2008. If present trends in the number of vehicle miles traveled continue, this ambitious goal will still require a reduction of over 500 fatalities per year. While North Carolina's fatal rate has continued to progress towards the national average, there is still a ways to go to

reach the 1.0 by 2008 and present trends alone, will not achieve the necessary number of lives saved by the deadline.

Implementation of the strategies and directives of the Executive Committee for Highway Safety and the AASHTO Strategic Highway Safety Plan are viewed as the key mechanism to reach this goal and thereby significantly reduce the annual number of fatalities and deaths on our highways.

Preface

In developing, managing and implementing a comprehensive highway safety plan, North Carolina has chosen a different route from the majority of other states. Other states have invested large amounts of resources, both money and personnel, in developing a plan or an outline of what the needs are and how to best meet these needs. While many of these plans look promising on paper (and make for good presentations), few of them have actually sustained and progressed to the implementation and evaluation stages.

North Carolina however, has identified the needs based upon the AASHTO Strategic Highway Safety Plan, verified these utilizing statewide crash data and actual engineering investigations and countermeasure recommendations and then prioritized these needs. The top priorities are actually being addressed and strategies are being developed and implemented on an on-going basis. This data driven, engineering process is documented in the remainder of this Implementation and Progress Guide.

North Carolina's Implementation and Progress Guide is unique in it serves as a ***dynamic resource*** that will document the progress of North Carolina's highway safety efforts. This tool will be continually updated and available on-line in an electronic format (<http://www.ncdot.org/doh/preconstruct/traffic/echs/>). This guide documents North Carolina's comprehensive highway safety plan and the development, implementation and progress of it's Executive Committee for Highway Safety and the myriad of safety partners committed to saving lives.

N.C.'s Executive Committee for Highway Safety

The Need for an Executive Committee for Highway Safety

Motor vehicle crashes are a serious national health, economic and social issue. According to the American Association of State Highway Transportation Officials (AASHTO), it is estimated that out of every 84 children born this year, one will die violently in a highway crash and as many as 50 more will be injured in a crash during their lifetime....some more than once.

Enhancing highway safety is critical to the health and well being of the citizens of North Carolina and those who travel and conduct business on its streets and highways. Without the continued substantial improvement in highway safety, traffic crashes will continue to be a leading cause of death and injury for a large segment of the population, as well as a major socio-economic drain of the resources of government and the people of this State.

Thousands of people are injured and killed on North Carolina's highways each year. In 2003, there were 231,247 reported traffic crashes that resulted in 1,552 fatalities and another 134,742 injuries. This translates into one death or injury every 3.9 minutes. Below is a summary of North Carolina crash statistics.

- ◆ One traffic crash every 2.3 minutes.
- ◆ One property damage crash every 3.6 minutes.
- ◆ One speed related injury or fatality every 17.6 minutes.
- ◆ One alcohol related injury or fatality every 54.7 minutes.
- ◆ One driver killed or injured every 6 minutes.
- ◆ One passenger killed or injured every 12 minutes.
- ◆ One driver age 19 or under involved in a crash every 23.6 minutes.

Individually, the losses are devastating; collectively, the economic cost is nearly \$9.5 billion dollars per year or over \$26 million dollars each day. Figures 1, 2 and 3 show North Carolina's ten year crash, fatal and injury trends.

Total Crashes

FIGURE 1 – 1994-2003 North Carolina Highway Crashes

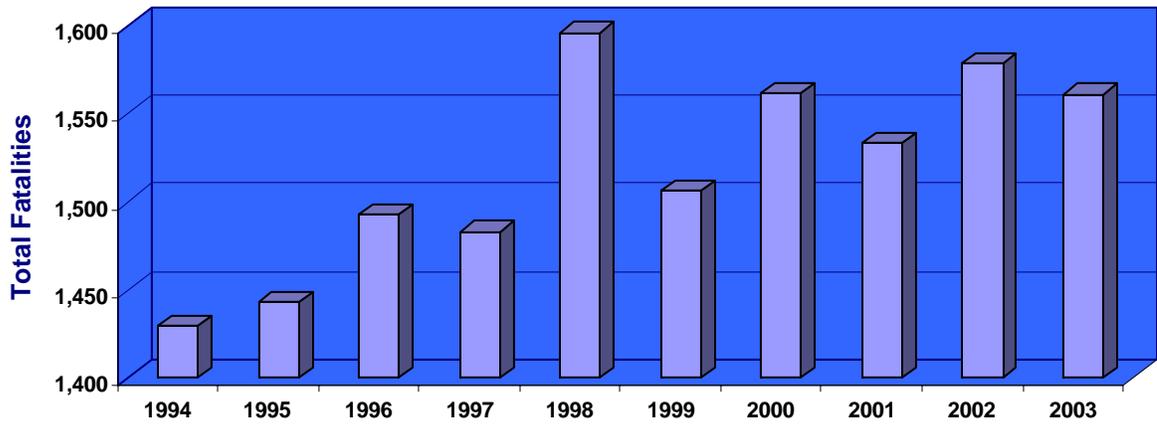
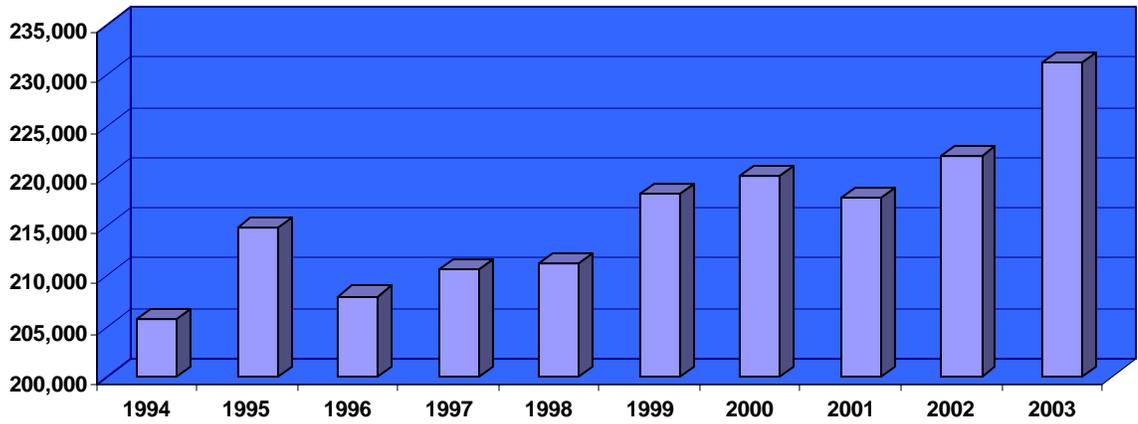


FIGURE 2 – 1994-2003 North Carolina Highway Fatalities

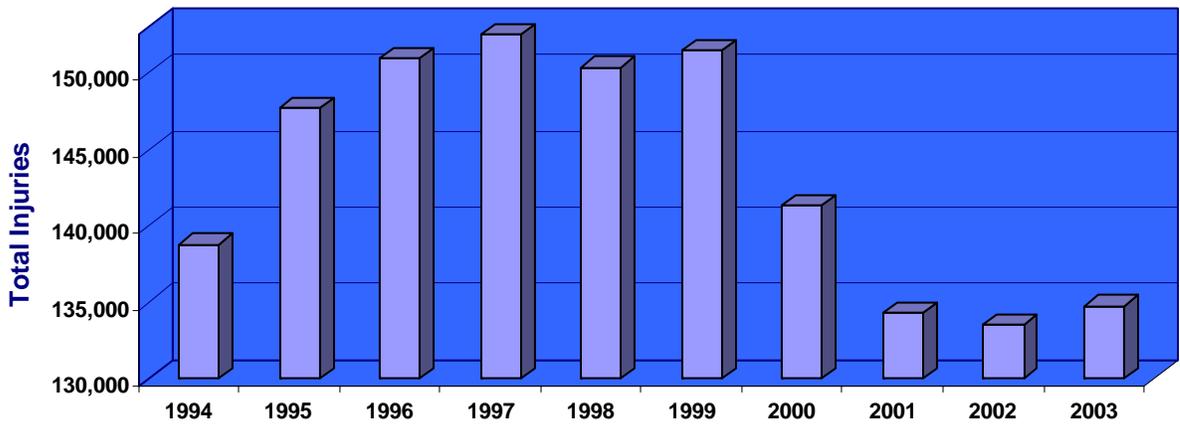
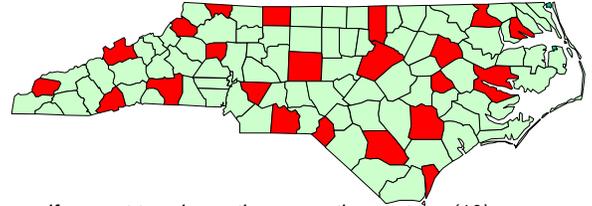


FIGURE 3 – 1994-2003 North Carolina Highway Injuries

North Carolina's Safety Picture

The task of addressing highway safety within North Carolina is monumental. North Carolina's population has increased over 21% in the last ten (10) years while the number of estimated vehicle miles traveled (VMT) have increased over 44%. In 2003, there were over 8.3 million people in the state and the VMT reached over 937 million, dispersed over nearly 100,000 miles of state and local maintained roads.



If current trends continue over the next ten (10) years, the number of motorists on North Carolina Highways that will be killed or injured in a motor vehicle crash will be equivalent to every man, woman and child in the 22 counties indicated in red on the above map.

The fatal crash rate in the state over the past 20 years has been on a steady decline (from 3.0 in 1984 to 1.66 in 2003), however, over the past several years, the trend has begun to flatten out. In 2003, there was a 1.3% decrease in the number of fatalities, but a 4.2% increase in the total number of collisions.

North Carolina has built a solid reputation of being a national leader in the area of highway safety and many of the model safety programs that are now utilized across the nation were initially developed and implemented within the state. In essence, North Carolina has always been (and continues to be) on the forefront of highway safety. Listed below are examples of some of the major safety initiatives within the State. For more detail on each, refer to Appendix A.

- ◆ Comprehensive Traffic Safety Reviews
- ◆ Traffic Safety Analysis
- ◆ School Safety Initiative
- ◆ Road Safety Audits
- ◆ Rumble Strips
- ◆ North Carolina Moving Ahead (NCMA)
- ◆ Highway Safety Improvement Program
- ◆ Median Barrier
- ◆ Booze It And Loose It
- ◆ Click It or Ticket
- ◆ Roadside Safety Devices Brochure
- ◆ Fatal Slip Distribution
- ◆ Electronic Reporting
- ◆ TEAAS Development
- ◆ Traffic Crash Facts Report
- ◆ SMARTZONE Technologies

As illustrated, there has already been many major efforts made to improve highway safety within North Carolina, however, current crash data shows that there is still much left to be done. Table 1 summarizes motor vehicle crash data and characteristics about the population and transportation system for North Carolina for the past ten years.

Table 1
North Carolina Summary of Traffic Demographics and Fatalities 1994 - 2003

Year	Population (Thousands)	Licensed Drivers (Thousands)	Registered Vehicles (Thousands)	Vehicle Miles Traveled (100 Million)	Traffic Fatalities	Fatality Rate	Alcohol Involved Fatalities	Percent Alcohol Involved
1994	6,950	4,984	6,176	719.24	1429	1.99	314	21.97%
1995	7,063	5,139	6,315	744.47	1443	1.94	392	27.17%

1996	7,194	5,502	6,420	786.14	1492	1.90	460	30.83%
1997	7,323	5,781	6,596	818.33	1483	1.81	462	31.15%
1998	7,431	5,368	6,838	851.52	1596	1.87	469	29.39%
1999	7,546	5,758	7,068	877.69	1506	1.72	407	27.03%
2000	7,651	5,937	6,875	892.46	1563	1.75	465	29.75%
2001	8,049	6,092	6,967	915.71	1530	1.67	371	24.25%
2002	8,188	6,161	7,142	936.86	1573	1.68	379	24.09%
2003	8,308	6,292	7,257	937.63	1552	1.66	380	24.48%
% Change								
1994-2003	19.53%	26.23%	17.50%	30.36%	8.61%	-16.69%	21.02%	
% Change								
2001-2003	3.11%	3.18%	3.99%	2.34%	1.42%	-0.94%	2.37%	

Source: 1994 – 2003 North Carolina Traffic Crash Facts

Formation of the Executive Committee for Highway Safety

The North Carolina Department of Transportation (NCDOT) and other state and local agencies within North Carolina have put forth many successful ventures to identify and address highway safety. Collectively these efforts have yielded positive benefits. However, it was recognized that if all of the key stakeholders in highway safety worked together collaboratively instead of individually, efforts and resources could be better utilized to address the growing challenge of reducing fatalities and injuries on our highways.

In July 2002, it was decided that the time had come to approach highway safety from a more systematic and collaborative perspective. Unlike some of the more traditional programs around the country, North Carolina's efforts were started and built from the ground up with a solid safety information foundation. The Traffic Safety Systems Management Unit which is part of the Traffic Engineering and Safety Systems Branch began discussing the best approach to a collective effort in addressing highway safety. Once the plan had been formulated, it was discussed with the State Traffic Engineer, then the Director of Pre-construction, the State Highway Administrator and finally the Secretary of the Department. Along the way, minor revisions were made to the general plan which consisted primarily of forming a cohesive group of leaders in traffic safety. After the plan had received final approval, the next step was to decide who the appropriate members would be. It was decided that the group size should be limited and that the membership should be comprised of representatives from top management of selected disciplines involved in highway safety who control the current and potentially available resources for utilization in safety efforts. After the list of recommended safety champions was formed, individual meetings were held with the prospective members to discuss the overall vision, the intent and the charge of the Committee. Acceptance of all members was readily obtained and in April 2003, the first meeting of North Carolina's Executive Committee of Highway Safety (ECHS) was held. The following is a list of committee member position levels and their corresponding agencies that are represented on the ECHS.

North Carolina's Executive Committee for Highway Safety

Committee Chair Deputy Secretary - Transit N.C. Department of Transportation	Committee Co-Chair Deputy Secretary – Intergovernmental Affairs N.C. Department of Transportation
Director Safety & Loss Control N.C. Department of Transportation	Director – Preconstruction N.C. Department of Transportation
Director N.C. Conference of District Attorneys	Chairman - Board of Transportation N.C. Department of Transportation
State Traffic Safety Engineer N.C. Department of Transportation	Director Governor's Highway Safety Program
State Traffic Engineer N.C. Department of Transportation	Director - Hispanic/Latino Affairs State of North Carolina; Office of The Governor
Director - Public Information Office N.C. Department of Transportation	Director N.C. Office of Emergency Medical Services
State Highway Administrator N.C. Department of Transportation	Division Administrator Federal Highway Administration
Chief Engineer - Operations N.C. Department of Transportation	Director of Transportation City of Greensboro
Manager – Program Development Branch N.C. Department of Transportation	Commissioner N.C. Department of Insurance
Colonel N.C. State Highway Patrol	Director UNC Highway Safety Research Center
Director Eastern Carolina Injury Prevention Program	Commissioner NCDOT - Division of Motor Vehicles
Chief of Police Jacksonville Police Department	

The Executive Committee for Highway Safety (ECHS) represents North Carolina's comprehensive strategic plan to enhance highway safety that was assembled collaboratively by major stakeholders in the highway safety arena. The energy generated and knowledge of the multi-disciplined team members has provided many opportunities for innovative strategies. Representatives from different agencies are teamed up to find solutions to a common goal. A key "facilitator" works closely with all of the working groups through meetings and discussions with members. This central point of reference provides assistance eliminating road blocks, suggests champions for strategy involvement and ensures elimination of redundant strategies.

Most previous highway safety plans focused more on specific programs and projects than on broad strategies and typically were oriented more towards meeting federal requirements (in the pursuit of federal highway safety funds) than on meeting the State's needs.

At the initial meeting, members of the Executive Committee developed mission and vision statements aimed at effectively describing what the committee was and what the core objectives were. These are as follows.

VISION

North Carolina has a multi-disciplinary, multi-agency approach to research, planning, design, construction, maintenance, operation and evaluation of transportation systems, which results in reduced fatalities, injuries and economic losses, related to crashes. In addition, there is a coordinated effort to address emerging safety issues.

MISSION

Establish highway safety goals and objectives and prioritize, implement and evaluate coordinated, multi-disciplinary policies and programs to reduce fatalities, injuries and economic losses related to crashes.

ECHS Goal

More than 1,500 people have lost their lives on North Carolina's highways each of the past five years. The ultimate goal of the ECHS is to develop and implement short and long term, sustainable strategies that will reduce the number of fatalities and injuries on our highways. The Committee's immediate goal is to develop and implement these strategies in a manner that will not only allow North Carolina to meet, but rather exceed the adopted national goal of 1.0 fatalities per 100 MVM traveled by the year 2008. Although this is an achievable goal, it will not be an easy task to accomplish. Even if the vehicle miles traveled continues to increase as they historically have, in order to achieve the 1.0 fatality rate, North Carolina will have to reduce our overall fatalities by **more than 500 per year.**

Duties of the Executive Committee

As previously mentioned, the Executive Committee is comprised of top level agency and department heads from various State and local agencies. These safety champions are key policy and funding business decision makers in the highway safety arena. As such, many of the primary duties of the Committee are centered on administering, managing and guiding North Carolina's comprehensive highway safety efforts. Some of the more essential Committee duties are as follows:

- u Meet formally on a quarterly basis.
- u Coordination of the State's many safety efforts with an emphasis on efficiency of resources and the prioritization of programs.
- u Create mechanisms to foster multidisciplinary flows of communication.
- u Identify, prioritize, promote and support all emphasis areas in the AASHTO Plan as well as emphasis areas not included in the AASHTO Strategic Highway Safety Plan (SHSP) for the coordinated highway safety effort to save lives and reduce injuries.
- u Monitor and manage the operations of North Carolina's Strategic Highway Safety Plan.

- υ Responsible for the overall direction and administration of all SHSP activities.
- υ Responsible for defining high priority issues.
- υ Establish statewide highway safety goals and objectives.
- υ Establish innovative highway safety programs and activities.
- υ Review and approve all actions submitted by the Working Groups and ensure that the approved strategies are assigned to the correct “host” agency for implementation.
- υ Provide the necessary support (resources, policy, legislation, etc.) needed for full implementation of approved strategies.
- υ Review and propose recommended highway safety legislation.
- υ Collect, analyze, and distribute information related to highway safety.

North Carolina’s Strategic Highway Safety Plan

One of the initial decisions that the Executive Committee made, was the need to have a solid working plan by which to guide the direction of the Committee and its efforts. In 1997, the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee for Highway Traffic Safety, along with the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA) and the Transportation Research Board Committee on Transportation Safety assembled a group of national safety experts in driver, vehicle and highway issues from various organizations. The specific purpose of this group was to develop a strategic plan that would impact the nation’s present and predicted statistics on vehicle-related deaths and injuries. The end result was the AASHTO Strategic Highway Safety Plan (SHSP) which focuses on 22 key emphasis areas and contains strategies designed to improve each area’s major problem areas or to advance effective practices by means that are both cost-effective and acceptable to a significant majority of Americans.

The AASHTO SHSP divides the 22 key emphasis areas into six major categories: *Drivers, Special Users, Vehicles, Highways, Emergency Medical Services and Management*. A review of the key emphasis areas shows that with a few exceptions, all of these are directly applicable to North Carolina’s needs as revealed by preliminary analysis of historical crash data. Although some of the identified emphasis areas

AASHTO SHSP Key Emphasis

PART 1: DRIVERS

1. Instituting Graduated Licensing for Young Drivers
2. Ensuring Drivers are Licensed and Fully Competent
3. Sustaining Proficiency in Older Drivers
4. Curbing Aggressive Driving
5. Reducing Impaired Driving
6. Keeping Drivers Alert
7. Increasing Driver Safety Awareness
8. Increasing Seat Belt Usage

PART 2: SPECIAL USERS

9. Making Walking and Street Crossing Safer
10. Ensuring Safer Bicycle Travel

PART 3: VEHICLES

11. Improving Motorcycle Safety and Increasing Motorcycle Awareness
12. Making Truck Travel Safer
13. Increasing Safety Enhancements in Vehicles

PART 4: HIGHWAYS

14. Reducing Vehicle-Train Crashes
15. Keeping Vehicles on the Roadway
16. Minimizing the Consequences of Leaving the Road
17. Improving the Design and Operation of Highway Intersections
18. Reducing Head-On and Across Median Crashes
19. Designing Safer Work Zones

PART 5: EMERGENCY MEDICAL SERVICES

20. Enhancing Emergency Medical Capabilities to Increase Survivability

PART 6: MANAGEMENT

21. Improving Information and Decision Support Systems
22. Creating More Effective Processes and Safety Management Systems

may be more prevalent issues in North Carolina than others and other safety issues may not be addressed in part or whole, the AASHTO SHSP correlates closely with most of North Carolina's crash data. Therefore, since the AASHTO SHSP and North Carolina's needs meshed so closely, it was recommended that North Carolina formally adopt the AASHTO Strategic Highway Safety Plan. The Committee noted that all strategies in the AASHTO plan may not be applicable to NC's needs and that NC may have needs that are not specifically addressed within the AASHTO plan. It was therefore decided that this would be a dynamic document that would be modified as needed as the ECHS progressed. The AASHTO SHSP was adopted by the committee at their initial meeting in April 2003.

Data Driven Business Decisions

Once the Committee adopted the AASHTO SHSP as its working guide, the next task was to decide which key emphasis areas needed to be addressed first. A key initial decision made by the Committee was to make sure that their actions were data and/or information driven. The Committee wanted to ensure that resources were misdirected to issues that were only perceived to be problem areas. The Traffic Safety Unit of the Department of Transportation performed analyses on each of the 22 key emphasis areas (where applicable) using North Carolina crash data. Once the analyses were completed, the results were presented to the committee members and each member was asked to discuss the data with their staff and rank their top five priorities. After the individual member rankings were completed, they were weighted and compiled and a composite prioritized list was developed and approved by the Committee.

FINAL SCORES/RANKINGS		
Final Ranking	Item #	Total Score
	Key Emphasis Area	
1	15 Keeping Vehicles on the Roadway	85
2	2 Ensuring Drivers are Licensed and Fully Competent	88
3	4 Curbing Aggressive Driving	92
4	8 Increasing Seat Belt Usage and Improving Airbag Effectiveness	92
5	5 Reducing Impaired Driving	93
6	16 Minimizing the Consequences of Leaving the Road	94
7	17 Improving the Design and Operation of Highway Intersections	96
8	18 Reducing Head-On and Across Median Crashes	101
9	7 Increasing Driver Safety Awareness	102
10	12 Making Truck Travel Safer	105
11	19 Designing Safer Work Zones	106
12	6 Keeping Drivers Alert	107
13	11 Improving Motorcycle Safety and Increasing Motorcycle Awareness	107
14	3 Sustaining Proficiency in Older Drivers	110
15	9 Making Walking and Street Crossing Easier	110
16	10 Ensuring Safer Bicycle Travel	112
17	1 Instituting Graduated Licensing for Young Drivers	113
18	14 Reducing Vehicle-Train Crashes	114
19	20 Enhancing Emergency Medical Capabilities to Increase Survivability	114

Due to many factors, primarily resources, the Committee members decided that it would not be feasible to address all nineteen key emphasis areas at once and that the initial focus should be concentrated on three to five areas. The ranked list was utilized to determine which areas would be investigated first. After reviewing the list and prior to selecting the initial areas of focus, several key decisions were made.

First, the Committee grouped AASHTO SHSP key emphasis areas #15 - Keeping Vehicles on the Roadway, #16 – Minimizing the Consequences of Leaving the Road and #18 -Reducing Head-On and Across Median Crashes into one collective group called “Lane Departure Crashes.”

Next a Speed Working Group was established. Since speed was a contributing factor in so many of the various emphasis areas, the decision was made to have a dedicated working group for this issue. This would allow the issue of speed to be addressed as a whole instead of in pieces through the work of other working groups.

For emphasis area #8 - Increasing Seat Belt Usage, it was decided to remove the “Improving Airbag Effectiveness” portion from this item since at the state level, we can have little to no impact on this. It was also discussed that while the “Click It or Ticket” campaign has been highly successful in our state, that there may need to be a change in or an additional emphasis placed on this, since NC’s belt usage rate seems to have leveled off over the past several years and many of our fatalities and injuries still involved unrestrained occupants.

For emphasis area #5 - Reducing Impaired Driving, it was noted that the Governor’s Task Force on DWI was being formed and therefore the Committee should follow the lead of and support the efforts of this group.

At the conclusion of the third meeting of the Executive Committee in January 2004, the initial six areas of focus (1. Lane Departure, 2. Ensuring Drivers are Fully Licensed, 3. Curbing Aggressive Driving, 4. Increasing Safety Belt Use 5. Keeping Drivers Alert and 6. Speed) had been decided and were assigned to individual Working Groups.

Working Groups

Once the initial areas of focus were determined, the Committee next assigned each selected key emphasis area to a different working group. The working groups are comprised of individuals from various areas of expertise deemed relevant to addressing the assigned issue, similar to the composition of the Committee itself. In general, working groups consist of representatives from state, federal and local agencies as well as selected interest groups where applicable. Most of the actual work (at the technical level), in terms of the NC SHSP is conducted within these groups. Participants within these work groups are responsible for defining safety issues and proposing solutions in the form of strategies back to the Committee for approval and implementation.

As of October 2005, there are ten different functioning working groups under the guidance of the ECHS. These are as follows:

- υ Lane Departure
- υ Ensuring Drivers are Fully Licensed
- υ Curbing Aggressive Driving
- υ Increasing Safety Belt Usage
- υ Keeping Drivers Alert
- υ Speed
- υ Intersection Safety
- υ Older Drivers
- υ Motorcycles
- υ Public Information

Current Emphasis Areas

The following section of this Implementation and Progress Guide will be dynamic and will expand as North Carolina advances with the efforts of the Executive Committee for Highway Safety. Listed below is a brief overview of each key emphasis area being addressed by the Committee, some general statistical information and a list of current strategies with a brief description and status for each one. The full strategy can be found on the Executive Committee for Highway Safety web site at: <http://www.ncdot.org/doh/preconstruct/traffic/echs/>.

Lane Departure

IN GENERAL

As previously mentioned, the Committee organized several of the AASHTO key emphases areas into a collective group under Lane Departure Crashes. For our purposes, this includes the crash types of Ran Off Road – Left, Ran Off Road – Right, Ran Off Road – Straight, Overturn/Rollover, Fixed Object, Head On and Sideswipe - Opposite Direction. The Lane Departure working group was one of the initially formed groups and held its first meeting in April 2004.

THE PROBLEM

In North Carolina, lane departure crashes account for a significant portion of the total crashes, fatalities and injuries on our highways each year. Two primary challenges in this emphasis area include finding ways to keep vehicles on the road and in their lane (positive guidance) and minimizing the consequences when they do leave the road (forgiving roadside).

DATA HIGHLIGHTS

- υ 23% of all crashes are lane departure
- υ 55% of all fatalities are lane departure
- υ 66% of all lane departure fatalities involve only one vehicle
- υ 79% of lane departure fatalities occur on 2 lane roads

STRATEGIES APPROVED BY THE ECHS:

Strategy:	Rumble Strips to Reduce Lane Departure Crashes
Description:	Increasing the utilization of rumble strips as an effective countermeasure to reducing the number of run-off-road type collisions.
Group Lead	Roger Thomas, NCDOT – Highway Design
ECHS Approval:	July 21, 2004
Host Agency:	NC Department of Transportation
Agency Contact:	Debbie Barbour, NCDOT - Preconstruction
Notes:	In an aggressive effort to reduce the number of ROR crashes, the Department has revised their guidelines to place rumble strips on all median divided Interstates, Freeways and Expressways where access is limited to at grade intersections. The placement of rumble strips shall also be considered for other types of roadway facilities where there is a documented history of lane departure type crashes. Rural median divided roadways with partial control of access will be considered on a case by case basis. The revised guidelines also propose to move the placement of rumble strips to 6" off the edge of travel lane. The revised policy allows for rumble strips to be incorporated into new TIP and 3R/4R resurfacing projects.
Status:	Actively being implemented – The Department has programmed over \$8 million in rumble strip projects.

Strategy:	Provide Roadway Design & Geometric Enhancements
Description:	This strategy includes improvements to the roadway cross-section, which will reduce the likelihood of lane departure crashes, primarily by helping to keep the vehicle on the roadway.
Group Lead	Roger Thomas, NCDOT – Highway Design Branch
ECHS Approval:	October 20, 2004
Host Agency:	NC Department of Transportation
Agency Contact:	Steve Varnedoe, NCDOT - Operations
Notes:	This strategy will be incorporated into the practices and policy of the construction and maintenance programs within the Department. It will be an enhancement to existing programs and not an additional program to be administered.
Status:	Active

Strategy:	TARGET ENFORCEMENT TO DETER BEHAVIORS CONTRIBUTING TO LANE DEPARTURE CRASHES
Description:	Upon analyses of lane departure related crashes, there are three primary factors often involved: 1) Speed, 2) Alcohol and 3) Unbelted occupants. This strategy focuses on encouraging law enforcement agencies and officers to identify and then to concentrate enforcement efforts on problem areas and peak times within their jurisdiction. The intent is to target locations rather than individual drivers.
Group Lead	Sargent Tim Hartsell, Concord Police Department
ECHS Approval:	July 21, 2004
Host Agency:	NC Department of Transportation – Governor’s Highway Safety Program
Agency Contact:	Darrell Jernigan, NCDOT - GHSP
Notes:	The Governor’s Highway Safety Program (GHSP) will be initiating a campaign focused on the issue of speeding called “No Need 2 Speed”. This strategy will be combined with the GHSP initiative to evaluate the short, intermediate and long range effects of enforcement activities on speeding. Depending on the outcome, the results may be utilized as the basis for future strategies.
Status:	Waiting for GHSP campaign to be finalized and implemented.

STRATEGIES UNDER DISCUSSION (IN DRAFT MODE):

Strategy:	Implementation of “The Safety Edge”
Description:	Research has shown that vertical pavement edge drop-offs of three inches or less can contribute to vehicular loss of control, leading to a possible subsequent crash. This strategy addresses the unsafe pavement edge issue by the adoption of a standard contract specification requiring an asphalt fillet, “Safety Edge” of no more than a 45 % angle along each side of the roadway in all paving projects on state system roadways in North Carolina.
Group Lead	Bucky Galloway - NCDOT
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussion are continuing. Candidate locations are being identified for possible pilot implementation.

Strategy:	Driver's Education
Description:	North Carolina spends in excess of \$30 million each year on driver's education. The present NC general statutes that governs the curriculum of the Driver's Education program are dated and need to be revised. There is also a need to review the content of the curriculum, who is accountable and other key issues. A decision has been made to thoroughly investigate the current initiatives to determine if the end product can be improved to reduce the number of collisions involving young drivers.
Group Lead	N/A
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	This is a joint effort between several of the working groups; Lane Departure, Keeping Drivers Alert and Speed.
Status:	In draft mode – Work Group discussion are continuing.

Strategy:	Evaluation of Advanced Driving Schools
Description:	There are several advanced driving schools offered in North Carolina to provide drivers with additional experience behind the wheel. These typically are targeted towards young (teens) and therefore inexperienced drivers and teach them how to handle emergency situations (i.e. how to properly correct when the vehicle runs off the edge of the road).
Group Lead	Cliff Braam - NCDOT
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	N/A
Status:	In draft mode – Work Group discussion are continuing.

Ensuring Drivers Are Fully Licensed

IN GENERAL

This emphasis area includes suspended, revoked and unlicensed drivers. Unlicensed drivers include individuals who have never obtained a license and those who do not currently have one. The Unlicensed Drivers working group was one of the initially formed groups and held its first meeting in May 2004.

THE PROBLEM

Unlicensed drivers continue to pose a significant threat and problem to highway safety within North Carolina. With society becoming more dependant each day on having viable transportation, this will be a difficult issue to get under control. To put this issue in perspective, the Raleigh Police Department (N.C.'s capital city) issues over 500 citations a month to suspended, revoked or unlicensed drivers.

DATA HIGHLIGHTS

- υ 24% of all fatalities involve an unlicensed driver
- υ Approximately 75% of unlicensed drivers continue to operate a motor vehicle

STRATEGIES APPROVED BY THE ECHS:

Strategy:	More Accurate Identification of Revoked Drivers
Description:	One problem with reducing the number of Driving While License Revoked (DWLR) offenders is the initial identification of these offenders by law enforcement officers (LEO). Law enforcement depends on the Division of Motor Vehicles (DMV) data to provide information regarding a subject's license status. This strategy will modify the computer information systems used by LEOs to greatly facilitate the identification of DWLR offenders.
Group Lead	Sargent Tim Tomczak - Raleigh Police Department
ECHS Approval:	January 26, 2005
Host Agency:	NC Department of Transportation – Division of Motor Vehicles
Agency Contact:	Commissioner George Tatum, NCDOT - DMV
Notes:	
Status:	In Progress

STRATEGIES UNDER DISCUSSION (IN DRAFT MODE):

Strategy:	Tougher Punishment for Repeat Offenders: Habitual Revoked Driving
Description:	One of the most frustrating aspects of charging someone with Driving While License Revoked (DWLR) is that they usually continue to drive, uncaring that the State has suspended their privilege to operate a vehicle. Even if someone is convicted of DWLR ten times, the most punishment they could receive is Permanent Revocation (which really is not all that “permanent” if you carefully read the law), conviction of a Class 1 Misdemeanor, and possibly 120 days in jail and a fine. The reality of the situation is that judges rarely impose active time for DWLR offenses. This strategy will seek tougher punishment as a means of deterring individuals from driving while revoked.
Group Lead	Rob Foss – UNC Highway Safety Research Center
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussion are continuing.

Strategy:	Temporary Impoundment of Offender’s Vehicle to Deter Repeated Violations of Driving While License Revoked (DWLR)
Description:	A recurring problem with Driving while License Revoked (DWLR) charges is the fact that simply removing a person’s privilege to drive does not ensure that an individual will not drive. As many revocations are the result of Driving While Impaired charges or an accumulation of points due to poor driving, it is especially important to ensure that revoked drivers do not operate vehicles on the roads of North Carolina. When implemented, this strategy will result in a 48 hour impoundment of the vehicle for anyone who is caught DWLR.
Group Lead	Sargent Tim Tomczak, Raleigh Police Department
ECHS Approval:	October 20, 2004
Host Agency:	NC Department of Transportation – Division of Motor Vehicles
Agency Contact:	Commissioner George Tatum, NCDOT - DMV
Notes:	This strategy targets all individuals who drive while suspended, revoked or unlicensed.
Status:	In Progress – Will Need Legislation

Strategy:	Impoundment of Vehicle License Plates
Description:	Strategies targeting unlicensed drivers should examine ways to 1) Increase the penalties for driving while revoked, 2) Make it more difficult or more of an inconvenience to do so and 3) Make it easier for law enforcement officers to identify vehicles of revoked individuals. This strategy will accomplish all three by impounding the license plates of a vehicle for individuals found driving without being licensed, increase penalties and fees associated with driving unlicensed and provide specially marked plates for these vehicles so that members of the family can drive the vehicle while making it easily recognizable to law enforcement.
Group Lead	Cliff Braam - NCDOT
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	This strategy will only be applied to individuals who continue to drive while suspended, revoked or unlicensed due to repeated DWI convictions.
Status:	In draft mode; submitted to the ECHS on July 27, 2005. Committee asked for revisions to the strategy.

Curbing Aggressive Driving

IN GENERAL

This emphasis area targets drivers who drive aggressively on North Carolina's highways. The Curbing Aggressive Drivers working group was one of the initially formed groups and held its first meeting in May 2004.

During the initial efforts of this working group, one of the biggest challenges was to define aggressive driving. Aggressive Driving is something that everyone can easily recognize when you see it, but it is difficult to develop a definition that can be defined and validated in terms of crash and citation data.

In December 2004, the North Carolina General Assembly enacted House Bill 1046 – Aggressive Driving into law. This bill defines aggressive driving as anyone who is speeding and commits two or more of the following offenses: running a red light, running a stop sign, illegal passing, failure to yield the right of way or following too closely.

In light of the new law, the working group has been placed on an inactive status. It is anticipated that at some point in the future, this group may reconvene to evaluate the aggressive driving legislation and the effects that it has had on this problem in North Carolina.

Increasing Safety Belt Usage

IN GENERAL

This emphasis area will focus on ways to increase safety belt usage in North Carolina. The Increasing Safety Belt Usage working group was one of the initially formed groups and held its first meeting in May 2004.

THE PROBLEM

While N.C. has a compliance safety belt usage rate of 86%, this compliance applies only to front seat occupants. Even with such a high usage, the remaining 14% of those who do not use their safety belt have a large impact on overall fatalities.

DATA HIGHLIGHTS

- ∪ 43% (554) of vehicle occupant fatalities are **unbelted**
- ∪ Unbelted occupants account for 68% of all lane departure related fatalities
- ∪ Unbelted occupants account for 70% of all speed related fatalities
- ∪ Unbelted occupants account for 74% of all keeping driver alert fatalities

STRATEGIES APPROVED BY THE ECHS:

Strategy:	Eliminating Safety Belt Exemptions and Increasing Penalties for Non-Compliance
Description:	This strategy will strengthen existing safety belt laws in the state. The highlights include: 1) Mandating safety belt usage for all vehicles except those exempted by Federal Standards, 2) Mandating safety belt usage for all seating positions in a vehicle and 3) Increasing fines for non-compliance from \$25 per violation to \$50 per violation.
Group Lead	Darrell Jernigan, NCDOT – GHSP
ECHS Approval:	January 26, 2005
Host Agency:	Governor's Highway Safety Program, NCDOT
Agency Contact:	Darrell Jernigan
Notes:	Senate bill sponsored by Senator Purcell
Status:	Senate Bill 774; passed the Senate 45-4 on August 11, 2005. Bill is now pending House approval.

Keeping Drivers Alert

IN GENERAL

This emphasis area is currently focusing on distracted and drowsy drivers. The Keeping Drivers Alert working group was one of the initially formed groups and held its first meeting in April 2004.

THE PROBLEM

Nationally, it is estimated that between 1.5 and 3 million crashes occur annually as a result of distracted drivers and N.C. is no exception when it comes to this crash type. With increases in technology, busier schedules and more things to get done in shorter time frames, the automobile and our highways have become a venue for an alarming increase in distracted driver related crashes.

Some studies have shown that the risks of driving drowsy are the same as driving drunk. At greatest risk are young people aged 16-29, especially males who are five times more likely than females to be involved in drowsy-driving crashes.

DATA HIGHLIGHTS

- u Drivers aged 16-20 are four times more likely than other age groups to be involved in a distracted driver crash.
- u In 2002, NC drivers who were fatigued, fell asleep, fainted or lost consciousness accounted for 34 deaths, 1,791 injuries and 3,192 crashes.
- u Because of how crash data are recorded, both distracted and drowsy driving are thought to be underreported causal factors in crashes.

STRATEGIES APPROVED BY THE ECHS:

Strategy:	Conduct Education and Awareness Campaigns to Increase Younger Drivers' Awareness of the Risks of Distracted Driving
Description:	This strategy focuses on educating young drivers and teens (ages 13-18) who are approaching the driving age of the risks involved with distracted driving. The intent is to target teens with a long-term, multi-faceted educational program to make them aware of the dangers involved in distracted driving and to eventually make it as socially unacceptable as drinking and driving
Group Lead	Joe Geigle, Federal Highway Administration
ECHS Approval:	January 26, 2005
Host Agency:	UNC Highway Safety Research Center and NCDOT Public Information Office
Agency Contact:	Doug Robertson – UNC HSRC and Jessica Jones – NCDOT PIO
Notes:	The working group has held 6 focus group meetings utilizing Governor's pages between the ages of 13-18 to discuss the issue of distractions and teen drivers. Each session engaged the teens in an hour-long discussion of distracted driving, teen driving behavior and appropriate messaging to reach a teen audience in a public relations campaign. Presently, the group is working with a public relations campaign class (Fall Semester 05) at the University of North Carolina at Chapel Hill. This class has adopted this strategy as their semester class project and will be developing appropriate campaigns to reach teen drivers to educate them about the dangers of distracted driving.
Status:	In progress.

STRATEGIES UNDER DISCUSSION (IN DRAFT MODE):

Strategy:	Conduct Education and Awareness Campaigns to Increase Drivers' Awareness of the Risks of Drowsy Driving
Description:	This strategy focuses on educating drivers (with an emphasis on ages 16-29) of the risks involved with drowsy driving. The intent is to target this group with a long-term, multi-faceted educational program to make them aware of the dangers involved in drowsy driving and to eventually make it as socially unacceptable as drinking and driving
Group Lead	Tom Crosby, AAA of the Carolinas
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussions are continuing.

Speed

IN GENERAL

When the initial crash data was analyzed for the various areas of the AASHTO Strategic Highway Safety Plan, one issue was consistently illustrated in most of the data that was reviewed: Speed. Since speed was such a prevalent factor in so many of the data areas, the Committee decided to make this a stand alone issue to be addressed. The Speed working group was one of the initially formed groups and held its first meeting in April 2004.

THE PROBLEM

Each year, speeding is a contributing factor in over 80,000+ crashes in North Carolina and a direct factor in more than 46% of all highway fatalities. Unfortunately, speeding is not readily viewed by the general public as a serious issue and certainly not one that can or likely will have a direct impact on their safety. There are many challenges associated with the speed issue from all aspects: engineering, enforcement and the judicial system.

DATA HIGHLIGHTS

- v 39% of all crashes are speed related
- v 46% of all fatalities are speed related
- v 66% of all speed related fatalities are single vehicle crashes

STRATEGIES APPROVED BY THE ECHS:

Strategy:	SAFE SPEED ACT; ESTABLISHING UNIFORM SENTENCING FOR SPEEDING OFFENSES
Description:	“The Safe Speed Act”, will; 1) In essence make the process of adjudicating speed related citations more of an administrative one, thus having minimal impact on the courts, 2) Establish uniform sentencing of speeding offenses with set and non-negotiable penalties 3) Ensure that the severity of the penalties increases with severity and frequency of the violation, thus providing the necessary sanctions to discourage this behavior and 4) Eliminate plea bargaining by judicial officials and ensure uniform sentencing by judges.
Group Lead	Captain Dave Haggist, Charlotte Police Department
ECHS Approval:	October 20, 2004
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	Group is doing more research on this. Legislation will be needed.

Recommendation:	Monitoring Charlotte’s Photo Enforcement Speed Program
Description:	<p>The Charlotte DOT and the Traffic Safety Advisory Committee (formed in 1999) are conducting a series of awareness campaigns and a photographic speed enforcement program to address the problems of speeding in the Charlotte metro area. In particular, the awareness campaign, called “Speed a Little, Lose a Lot,” is aimed at young drivers aged 16-25 where fatalities in speed-related crashes are increasing. A photographic speed enforcement program, called “Safe Speed,” is being run in conjunction with the awareness campaign.</p> <p>This recommendation is to monitor closely the measured effectiveness of these coordinated education and enforcement activities for possible expansion to other areas of North Carolina. The program is being evaluated by NC State and ITRE.</p>
Group Lead	Captain Dave Haggist; Charlotte Mecklenburg Police Department
ECHS Approval:	July 21, 2004
Host Agency:	Charlotte Mecklenburg Police Department
Agency Contact:	Captain Dave Haggist
Notes:	
Status:	In Progress

Strategy:	FEEES TO INCREASE ENFORCEMENT CAPABILITIES OF LAW ENFORCEMENT WITH REGARD TO SPEEDING
Description:	This strategy focuses on providing resources to law enforcement to increase their presence on the highways and to write more citations for speeding. In specially identified corridors, there would be an additional fee or fine assessed to anyone caught speeding. These additional fines would be utilized to fund law enforcement personnel (either additional personnel or overtime for existing officers) for the sole purpose of speed enforcement. In essence, only the violators would be paying for this program.
Group Lead	Gaines Weaver
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussion are continuing.

STRATEGIES UNDER DISCUSSION (IN DRAFT MODE):

Strategy:	Targeted CMV Speed Enforcement as a Generalized Deterrent to Speeding Motorists
Description:	This strategy will focus on speed enforcement targeting commercial motor vehicles with two primary purposes: 1) slowing down speeding CMVs and 2) The spill over effect that should be present. It is understood that many motorists (especially on interstate facilities) take their cues as to the presence or absence of speed enforcement from what the ‘truckers’ are observed to be doing. The perception is that truckers communicate via CB radios and other devices to inform other truckers of the presence of speed traps. When drivers of passenger vehicles observe a sudden decrease in the speed of trucks, it is usually taken as an indication that speed enforcement is present. Conversely when truckers are exceeding posted speeds the drivers of other vehicles feel it is ‘safe’ to do so also (i.e., not likely to be ticketed). “So go the trucks, so go the other elements of the traffic stream.” The generalized benefit of slowing down the trucks is a concurrent reduction in the speed of other vehicles as well.
Group Lead	Ron Hughes
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussion are continuing.

Strategy:	Statewide Pace Car Program Spearheaded by State Employees
Description:	A Statewide Pace Car Program would recruit people to voluntarily travel within the posted speed limit on all roadways, beginning with State Employees. This is a way North Carolina residents can join together and set a good example for other drivers, especially younger drivers. The intent is for these drivers to act as pace cars by driving at the posted speed limit and limiting the opportunities for those behind them to drive in excess of the speed limit. Once there are enough Pace Car volunteers, the Pace Car Program Volunteers would actually be a mobile traffic calming system. North Carolina is the home of stock car racing and nearly everyone understands the concept and purpose of the pace car when it comes to racing. The basic principle of this program is that it clearly puts the accountability to drive responsibly on the motorists.
Group Lead	Haywood Daughtry, NCDOT – Traffic Safety Programs
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In Draft Mode - Discussions are continuing.

Strategy:	Compliance Dismissals – Provide for Recovery of Court Costs Associated with Dismissing Minor Traffic Violations
Description:	This system or “The Recovery of Costs for Compliance Dismissals’ Act”, would 1) Continue the process of dismissing minor traffic citations as an administrative one, thus having minimal impact on the courts, 2) Would provide for the recovery of costs associated with these violations and 3) By requiring violators to pay costs would help to discourage this behavior.
Group Lead	Ken Ivey – NCDOT – Traffic Engineering and Safety Systems Branch
ECHS Approval:	N/A
Host Agency:	N/A
Agency Contact:	N/A
Notes:	
Status:	In draft mode – Work Group discussion are continuing.

Intersection Safety

IN GENERAL

The Intersection working group was recently added and held its first meeting in June 2005. The role of the Intersection Safety Working Group is to develop long term sustainable strategies to decrease intersection related crashes, fatalities and injuries at both signalized and unsignalized locations.

THE PROBLEM

Intersection related crashes account for a large percentage of all crashes within North Carolina. This working group will address crashes at both signalized and un-signalized intersections in an effort to improve highway safety at the many intersections within the State.

DATA HIGHLIGHTS

- υ 23% of all crashes in 2003 occurred at intersections
- υ 20% of all fatal crashes in 2003 occurred at intersections
- υ 39% of intersection related crashes were at signalized intersections

This is a newly formed working group and therefore, no strategies have been developed yet.

Older Drivers

IN GENERAL

Since March 2004, there has been a Senior Driver Coalition within North Carolina that has been meeting to address older driver issues. In July 2005, the coalition was brought under the guidance of the Executive Committee to address highway safety issues as they pertain to the older driver (age 65 and over).

THE PROBLEM

Older drivers comprise a continually growing segment of licensed drivers in North Carolina. As a person ages, they experience declines in sensory, cognitive and/or physical abilities that often present them with unique challenges in safely operating a vehicle on the highways.

CHALLENGES

- υ Plan for an aging population
- υ Improve roadways and the driving environment to better accommodate older drivers
- υ Identify older drivers at risk of crashing and define strategies to intervene

This is a newly formed working group and therefore, no strategies have been developed yet.

Motorcycles

IN GENERAL

North Carolina has had an independent group actively pursuing motorcycle safety for the past several years. Since motorcycle safety is a growing concern in North Carolina, in July 2005, this group was brought under the guidance of the Executive Committee to address highway safety issues as they pertain to motorcycles.

THE PROBLEM

Motorcycle registration has increased by over 76% in the last ten years and along with this, North Carolina has experienced an increase in motorcycle related crashes, fatalities and injuries. Over this same time period, while motorcycle registration has accounted for only 1.3 % of all registered vehicles, motorcyclist have comprised over 5% of all fatalities.

DATA HIGHLIGHTS

- υ Motorcycle fatality rate is 4.5 times higher than other vehicles
- υ 9 out of 10 motorcyclist killed are male
- υ 50% of motorcycle fatalities are young (16-29) males
- υ 56% of motorcycle crashes, the motorcyclist was at fault

This is a newly formed working group and therefore, no strategies have been developed yet.

Public Information

IN GENERAL

There are a number of state and local agencies represented on the Executive Committee. Members of the Committee decided that it would be beneficial to have a working group comprised of the various public information offices of the various agencies represented on the Committee. Although this group will not be developing strategies to address a particular safety issue, there are two primary purposes of this group. First, to collectively share and act as a pool of resources for each other. Often one agency may get media or other request outside of their area of expertise. Now they will have a pool of resources available to help address any issues they may encounter. Secondly, when the Executive Committee has issues that need to be relayed to the public, dissemination of this information should be made easier with all represented agencies assisting in getting the message out.

Contact Information

For more information on how North Carolina is saving lives, visit:
<http://www.ncdot.org/doh/preconstruct/traffic/echs/>

or call/write to:
Cliff Braam, P.E. CPM
North Carolina Department of Transportation
122 N. McDowell Street
Raleigh, North Carolina 27611
919-733-5699
abraam@dot.state.nc.us

APPENDIX A

NORTH CAROLINA SAFETY EFFORTS

Comprehensive Traffic Safety Reviews

The comprehensive traffic safety review (CTSR) is intended to provide a “big picture” of traffic safety issues for Comprehensive Transportation Plans (CTP) at the municipal or county level and to proactively introduce traffic safety into the long-range planning process. The CTSR process is still under development but will primarily include multiple analyses (motor vehicle, truck, bicycle, pedestrian, etc.) of five years of traffic crash data categorized from a number of different perspectives. The primary intended audience will be the targeted municipality or county, and secondary customers will consist of the NCDOT Transportation Planning Branch (TPB), the local Metropolitan or Rural Planning Organization (MPO or RPO), the Governor’s Highway Safety Program (GHSP), and NCDOT regional and division engineers. It is also expected that the TPB, the GHSP, the Executive Committee for Highway Safety (ECHS), and possibly the Board of Transportation’s (BOT) Safety and Emerging Issues Committee will play instrumental roles in the final development, sponsorship, and/or support of the CTSR process.

TRAFFIC SAFETY ANALYSIS

The traffic safety analysis (TSA) is a comprehensive traffic safety review of projects that are generally in the pre-scoping phase, and is designed to proactively introduce safety into the project development process. The TSA is a collection of roadway use driven analyses designed to make sure that the proposed project will address any current traffic safety issues, mitigate any potential future traffic safety issues, and assist with the Purpose and Need statement for the project. Different analyses are conducted per project depending on whether the project route is located on the National Highway System (NHS), the STAA vehicle network, the North Carolina Intrastate System, a North Carolina Strategic Highway Corridor (SHC), and/or evacuation (hurricane, nuclear, or flood), bicycle, pedestrian, and transit routes. The TSA process can also be used to assist as a framework for conducting Road Safety Audits (RSA).

Primary among the many items reviewed during the course of a TSA are roadway and bridge parameters, ordinances, at-grade railroad crossing information, signal plans, traffic counts and movements, school information, and current/proposed/future land uses for the project area (if available). Other studies and safety programs that may also affect the TSA include feasibility studies and other pre-planning documentation, spot safety improvements, the Highway Safety Improvement Program (HSIP), the Secondary Road Safety Program (SRSP), and the North Carolina Moving Ahead (NCMA) program.

SCHOOL SAFETY INITIATIVE

Due to recent requests to address student safety at area high schools, the Traffic Engineering and Safety Systems Branch (TESSB) has altered its internal processes in order to take a more proactive approach to addressing bicycle and pedestrian traffic safety issues around primary and secondary schools. The traffic

congestion and traffic safety sections of the branch now work together to pool their resources and expertise in reviewing traffic safety related to students to address requests in a timely and efficient manner, even at locations where there are few, minor, or an absence of crashes. These safety initiatives primarily address non-motorist exposure, conflicts, accessibility, mobility, visibility, awareness, and behavior, but may address other school and traffic related issues depending on the location. Some of these student safety reviews involve a team approach that may also include additional NCDOT engineers and local stakeholders such as the school principal, local/municipal traffic engineers or officials, and law enforcement personnel.

ROAD SAFETY AUDITS

NCDOT has begun performing Road Safety Audits (RSA) primarily on two-lane urban or rural roadways that have higher than average severe injury and fatal crashes and/or crash rates. Identification of these roads is being done by using a combination of Highway Safety Improvement Program warrants and State Highway Patrol information/data. A RSA is a formal safety performance review of an existing (or future) road or intersection by an independent multidiscipline audit team. RSAs can be utilized at any phase of project development from planning to construction to existing roads as well as on any size project from minor maintenance to a multi-million dollar transportation improvement project. The benefits of a RSA include; 1) helping produce designs or countermeasures that reduce the number and severity of crashes, 2) promoting awareness and implementation of safe design practices, 3) integrating multimodal safety concerns and 4) considering human factors in all facets of the design. RSA's are a low cost, proactive approach to improving highway safety that can help engineers develop a number of potential countermeasures to address safety on existing roads and to identify solutions that were not originally included in the planning or design of a project.

RUMBLE STRIPS

The old guidelines used by the North Carolina Department of Transportation specify that rumble strips should be placed on the following types of median divided roadways: Interstate Through Routes, Rural Freeway Segments, and Expressway Segments that are located in sparsely developed rural areas.

However, in an aggressive effort to reduce the number of run-off-road crashes, the Department has recently revised these guidelines to place rumble strips on all median divided Interstates, Freeways and Expressways where access is limited to at grade intersections. The placement of rumble strips shall also be considered for other types of roadway facilities where there is a documented history of lane departure type crashes. Rural median divided roadway with partial control of access will be considered on a case by case basis. The revised guidelines also propose to move the placement of rumble strips to 6" off the edge of travel lane.

The NCDOT has recently programmed over \$8 million in rumble strip projects and is currently reviewing all existing projects under construction for the addition of rumble strips where applicable.

NORTH CAROLINA MOVING AHEAD (NCMA)

A bold transportation initiative that, over two years, will result in nearly 30,000 new jobs and have a \$4 billion impact on North Carolina's economy. The program will also bring a new level of safety and mobility to the state's transportation network by attacking the state's most critical needs—maintenance, modernization and public transportation. The full program includes a list of 908 highway and bridge projects and will be funded with over \$700 million in Highway Trust Fund money. To be selected, projects must fulfill vital safety and highway preservation needs, such as pavement rehabilitation, road widening and bridge replacements. The NCMA initiative developed by NCDOT and approved by the General Assembly in 2003 is a 2 year program focusing on 2 lane roadways with more than 2000 ADT. Approximately 2200 miles will be improved by widening, resurfacing, constructing turn lanes and installing enhanced pavement markings. Corridor crash data was used as a screening tool for project selection. Post construction analysis should show a reduction in lane departure crashes along many of these routes.



HIGHWAY SAFETY IMPROVEMENT PROGRAM

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic procedure that identifies and reviews specific traffic safety issues in the state and to determine potentially hazardous locations that are possibly deficient in these issues. The ultimate goal of the HSIP process is to reduce the number of traffic crashes, injuries, and fatalities by reducing the potential for these incidents on public roadways. The Traffic Safety Systems Management Unit (TSSMU) and the Regional Traffic Engineering (RTE) staff continuously strive, through a collaborative effort, to improve the identification of relevant traffic safety issues, minimum warranting criteria, and the location selection process.

Presently, the HSIP identifies locations under four categories: 1) Intersections, 2) Sections, 3) Bridges and 4) Bicycle and Pedestrian. In the 2003 program;

- 1,950 potentially hazardous intersection locations,
- 318 potentially hazardous section locations,
- 113 potentially hazardous bridge locations,
- 67 potentially hazardous bicycle and pedestrian intersection locations and
- 192 potentially hazardous bicycle and pedestrian section locations were identified.

MEDIAN BARRIER

In 1998 North Carolina began a three pronged approach to prevent and reduce the severity of Across Median Crashes on freeways.

- Phase I - Add median protection to freeways with historical crash problems,
- Phase II - Systematically protect all freeways with median widths of 70 feet or less and
- Phase III - Revise Design Policy to protect all future freeways with median widths of 70 feet or less



The 2000 - 2006 Transportation Improvement Program (TIP) included 58 median barrier projects covering approximately 1000 miles of freeway at an initial cost of over \$120 million. As of spring 2004, all projects have been let or completed. Engineering analysis estimates that over the past five (5) years, these systems have prevented 59 fatal across median crashes resulting in 96 lives saved and a savings of over \$205 million in fatal crash costs alone.

BOOZE IT AND LOOSE IT

The "Booze It & Lose It" campaign zeros in on drunken drivers with the most innovative and extensive anti-driving while impaired (DWI) enforcement and education effort in state history.



Sobriety checkpoints are continually set up in all North Carolina counties as part of the state's highly effective anti-drunk driving campaign.

As part of the "Booze It & Lose It" campaign, law enforcement officers conduct sobriety checkpoints in all 100 counties of the state. Since the start of the Governor's Highway Safety Initiative in 1993, law officers have conducted more than 26,000 checkpoints for seat belts and impaired driving and charged more than 44,000 people with driving while impaired (DWI), resulting in a 22% decrease in alcohol related fatalities.

CLICK IT OR TICKET

If you live in North Carolina, chances are you've heard of "Click It or Ticket" from the public service ads or even riding through a safety belt checkpoint. North Carolinians take highway safety, and wearing their safety belts seriously. The program has boosted safety belt use to as much as 86 percent giving the state one of the top percentages of safety belt use in the United States. North Carolinians are proud that they're leading the way.



Former Governor Jim Hunt launched North Carolina's "Click It or Ticket" program in 1993 to increase safety belt and child safety use rates through stepped-up enforcement of the state's safety belt law. Nearly every law enforcement agency in the state participates in "Click It or Ticket," one of the most intensive law enforcement efforts of its kind. Since the start of the program, law officers have held nearly 30,000 checkpoints and more than 200,000 safety belt and 18,000

child safety seat citations. Since its inception in 1993, it has reduced fatalities and serious injuries by over 14%.

ROADSIDE SAFETY DEVICES BROCHURE

This brochure is a reference guide that has been produced by the North Carolina Department of Transportation (NCDOT) and provided to law enforcement officials within the state. Any time a collision occurs, that involves roadside safety devices (signs, median barrier, etc.) the NCDOT can seek retribution for the damages from the responsible party's insurance company. If the officer's estimate of the damage (as indicated on the collision report) and the actual billed, repair cost are close, then the insurance companies typically reimburse the state without much questioning. However, in instances where these two numbers vary substantially, the insurance companies are often reluctant to pay. Due to insufficient manpower, the district offices do not always actively pursue these collections, resulting in millions of lost revenue each year.

This brochure was prepared and distributed in an effort to provide law enforcement with a more accurate method of assessing actual damages and repair/replacement costs to roadside safety devices to be included on the DMV-349, North Carolina Collision Report form.

By providing a more accurate estimate of actual damages, law enforcement officials greatly assist the NCDOT in its efforts to recuperate these costs from the appropriate parties.

FATAL SLIP DISTRIBUTION

When a fatal collision occurs in North Carolina that is investigated by the State Highway Patrol (SHP), the Traffic Engineering Branch has the ability to query the Patrols database of fatal crash investigations. This information is queried three times a week and information about the fatal crash is sent out to traffic engineering field offices for investigation. This information is also summarized and grouped by collision type into broad categories that have historically been of concern (i.e. across median, run off road, alcohol, etc.). In addition to this information being sent to our field offices, it is also sent to many high level stakeholders both within and outside of the Department who have an interest in highway safety. The notification not only serves as a reminder of the need to move forward with our safety efforts, but it also provides some generalized information as to the problem areas.

ELECTRONIC REPORTING

TRCS is our electronic crash reporting application that allows officers to fill out a crash report, have it approved by a supervising officer and then directly submitted to the Division of Motor Vehicles (DMV) crash database. This application eliminates the need for DMV data entry personnel to reenter the data, which saves time and reduces opportunity for data entry error. Reports submitted by police officers again have to be approved by a supervising officer and the data must also meet all of the business rules in order to be included in

the official DMV crash database. If a report is submitted to DMV and fails to meet all of the set business rules, it is rejected and returned to the reporting officer/agency for correction.

This program started accepting crash reports from law enforcement agencies in June of this year and currently has 21 agencies reporting crashes using TRCS. Through November 2004, almost 1500 crashes have been submitted and accepted using the TRCS system. The North Carolina State Highway Patrol (NCHSP), Durham Police Department and Charlotte-Mecklenburg Police Department already have some of their officers reporting crashes through TRCS. Additional large cities, such as Raleigh and Fayetteville are trained to use TRCS and are scheduled to start submitting crashes through TRCS sometime in the first part of 2005. Getting the NCHSP and these larger cities submitting all of their crash reports through TRCS will constitute well over 70% of the total crashes that will no longer need to be entered into the system manually by DMV. This would have the effect of reducing DMV's data entry workload, which should easily reduce the backlog of crashes to be entered from 6 months to possibly 3 or less months. TRCS is improving crash reporting timeliness and accuracy.

TEAAS DEVELOPMENT

The Traffic Engineering Accident Analysis System (TEAAS) is the tool utilized to perform standardized crash analysis. TEAAS provides an easy to use interface for producing standardized reports and crash rates and is capable of producing these for both intersection and section analysis. TEAAS can also provide city and county wide "canned" summary reports for various queries such as: 1) Accident types and violations, 2) Age and sex of driver, 3) Alcohol, Ambulance and Vision, 4) High Accident Intersections, 5) Injuries and Restraint Usage and others. TEAAS is available to anyone who wishes to use it and only requires a PC with a windows operating system, an internet connection and the TEAAS software (free). The NCDOT provides free training and support for all end users.

TRAFFIC CRASH FACTS REPORT

The *North Carolina Traffic Crash Facts* report contains statewide information on traffic crashes, deaths and injuries from the Department's crash database, compiled from traffic crash reports completed by state and local law enforcement agencies. In an effort to identify current and emerging traffic safety issues, this report offers this information in several levels of detail, including number and type of crashes, types of vehicles involved in crashes, severity of injuries, and age and sex of drivers. Overall, these crash statistics provide a comprehensive understanding of highway safety issues and assist in the development of engineering, enforcement and education programs in target areas. This information serves as a resource for traffic safety professionals and others interested in making North Carolina's roadways safe for the traveling public.

Also provided in this report are summary data at the county level for all 100 counties in the state. This information includes not only crash data in various

categories, but also information such as population, vehicle miles traveled, crash rates and comprehensive costs. In addition to the county level summary information, county rankings along with individual city rankings (grouped by cities with populations greater than 10,000 and populations less than 10,000) are provided.

The data in this report, illustrates the true “crash tax” of these incidents to the citizens of the state. In 2003, the comprehensive costs per person in the state for all crashes and associated costs was over \$1,100.00.

SMARTZONE TECHNOLOGIES

North Carolina has many efforts underway to improve the safety within our many work zones across the state. Listed below are some of the major initiatives ongoing within our work zones.

I. Real Time Travel Information Systems:

These systems monitor traffic conditions to provide “real time” travel/delay times in advance of the work zone. Also, where alternate routes exist, they can provide alternate route information well in advance of the traffic queue.

The significance is these systems can provide information for current conditions in a real-time manner. The messages displayed can be activated and deactivated based on current traffic conditions. The previous use of changeable message signs involved using preprogrammed messages that were displayed continuously whether the condition existed or not. The motorist couldn't be sure if the message was reflective of actual conditions. Now, with the use of this technology, the motorists can “trust” the information to be more reflective of the actual conditions.

The benefit is we are providing information the motorists can rely on for accuracy and in turn will be able to adjust to the upcoming road condition. The idea is to reduce rear end crashes and fatalities associated with queuing in work zones.

II. Weather/Road Condition Information

These systems involve roadside sensors that detect standing water, fog, ice, etc. and can relay this information to portable changeable message signs in advance of the road condition.

The significance is that it can provide this information for current conditions. Until recently, the only method to inform motorists of these type of conditions were either stationary signs with flashing beacons that had to be manually activated or a changeable message sign that was pre-programmed. The motorist couldn't be sure if the message was reflective of actual conditions. Now, with the use of this technology, the motorists can “trust” the information to be more reflective of the actual conditions.

The Benefit is we are providing information the motorists can rely on for accuracy and in turn will be able to adjust to the upcoming road condition. The idea is to reduce rear end crashes and fatalities associated with queuing due to poor visibility or the presence of standing water on the highway.

III. Dynamic Lane Merge

These systems manage lane utilization during lane closure activities by detecting congestion. Once activated, this information is relayed to portable changeable message signs.

The significance is that it can manage queue lengths by allowing more utilization of the upcoming lane closure once congestion is detected. Counter, it can also encourage early lane merging during free flow periods in an attempt to reduce late lane mergers at higher speeds resulting in errant maneuvers and possible crashes.

The benefit is this system can monitor “real time” traffic conditions and can perform “freeway metering” once traffic conditions deteriorate thus dissipating longer queues by utilizing more of the available lanes for storage until volumes subside. In addition, it can better manage queue development during non-peaking periods by encouraging the motorist to merge early and reducing the number of “late lane” mergers.

IV. Automated Speed Enforcement

Although no deployments have been made, these systems will target work zones where speeding is a contributing factor to crashes or where speeds are jeopardizing the safety of the construction workers when working behind passive lane closures.

The significance will be a system that brings a needed element of speed enforcement without straining the resources of local and state law enforcement agencies.

The benefit will be work zones with better uniform speeds in advance and through the zone without having to reduce the existing speed limits to get speed compliance. These uniform speeds will provide additional safety to the motoring public’s exposure to the highway construction as well as improve the safety of the highway workers.

As illustrated, there has already been many major efforts made to improve highway safety within North Carolina, however, current crash data shows that there is still much left to be done. Table 1 summarizes motor vehicle crash data and characteristics about the population and transportation system for North Carolina for the past ten years.

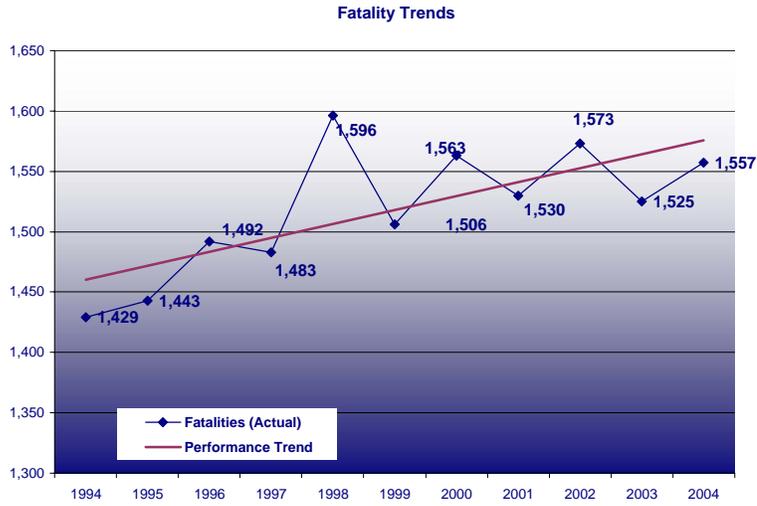
Crash Data / Trends

	Baseline Data 1994-1997					Progress Report Data 1998-2004					
Fatalities (Actual)	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	1,429	1,443	1,492	1,483	1,596	1,506	1,563	1,530	1,573	1,525	1,557
Fatality Rate /100 million VMT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	1.99	1.94	1.90	1.81	1.87	1.72	1.75	1.67	1.68	1.63	1.62
Injuries (Actual)	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	138,795	147,607	150,788	152,289	150,120	151,235	141,367	134,122	133,216	134,472	134,354
Fatality & Serious Injury Rate/100 million VMT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	193	198.3	191.8	186.1	176.3	172.3	158.4	146.5	142.1	143.4	140.49
Fatality Rate/100K Population	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	20.56	20.43	20.74	20.25	21.65	19.96	19.42	19.01	19.22	19.11	18.22
Fatal & Serious Injury Rate/100K population	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	182.2	161.7	158.5	151	143.2	141.7	95.2	75.3	70.9	68.11	67.39
Alcohol Related Fatalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	458	392	460	462	469	407	465	371	379	354	356
Proportion of Alcohol Related Fatalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	32.1	27.2	30.8	31.2	29.4	27.0	29.8	24.2	24.1	22.8	22.8
Alcohol Related Fatality Rate/100M VMT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	0.64	0.53	0.59	0.57	0.55	0.47	0.52	0.4	0.4	0.38	0.37
Percent of Population Using Safety Belts*	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	79.20%	77.50%	81.90%	83.00%	81.70%	82.30%	80.50%	82.70%	84.10%	86.10%	86.10%
Motorcycle Fatalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	62	72	64	61	82	98	89	102	114	101	119
Pedestrian Fatalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
		189	169	178	199	156	164	151	177	145	159
Bicyclists Killed	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	27	35	37	31	41	27	20	20	14	14	25

Performance Goals and Trends

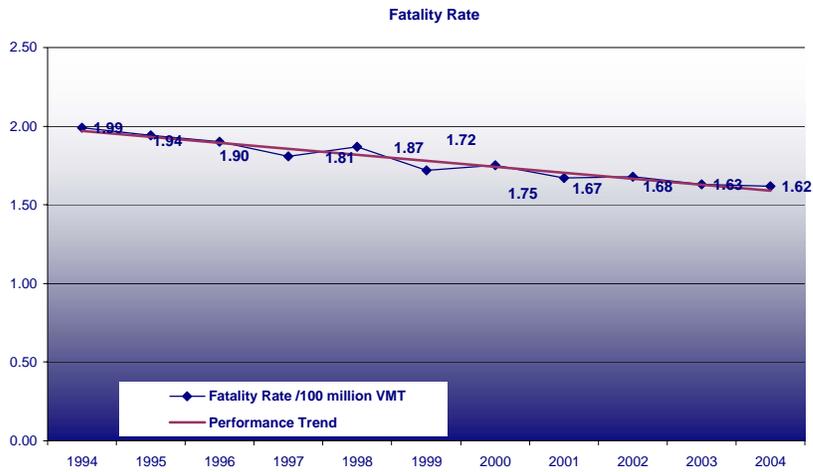
Goal: Fatalities
Baseline

Maintain 3-year average on overall traffic fatalities
3-year average 1,551



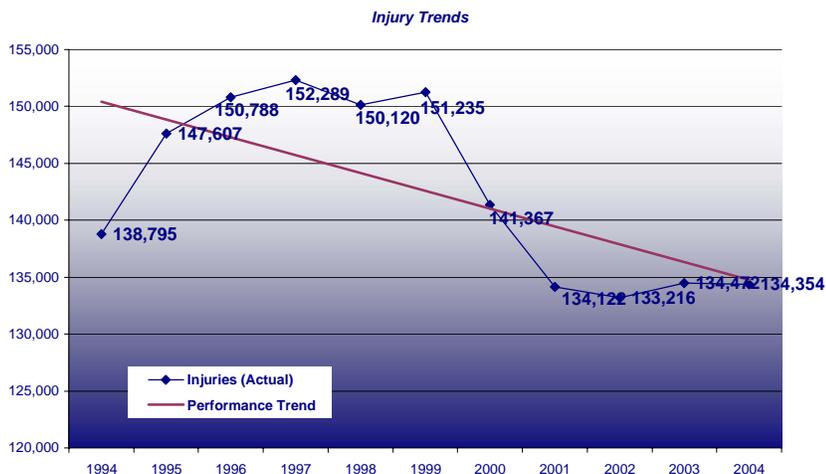
Goal: Fatality Rate/VMT
Baseline

To reduce the mileage death rate to less than 1.55/vmt by 2007
3-year average 1.64/vmt



Goal: Injuries
Baseline

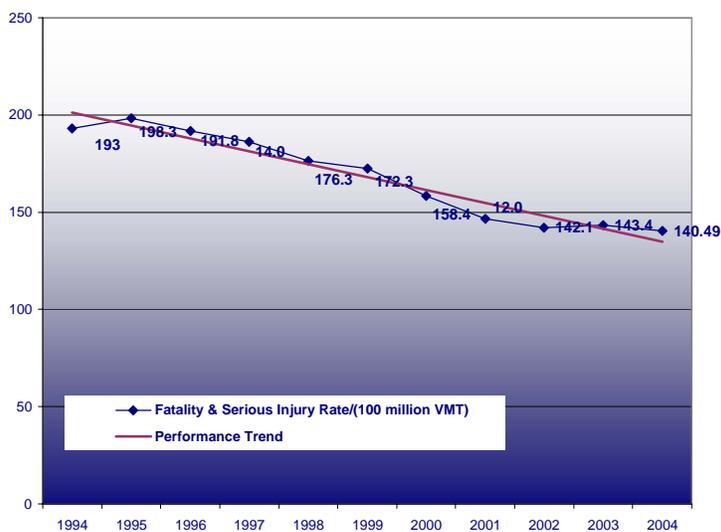
To reduce the mileage injury rate to less than 5.9 injuries per 100 MVMT by 2006
1999 rate of 8.6 injuries per 100 MVMT



Goal: Fatal and Injury Rate/VMT
Baseline

N/A
N/A

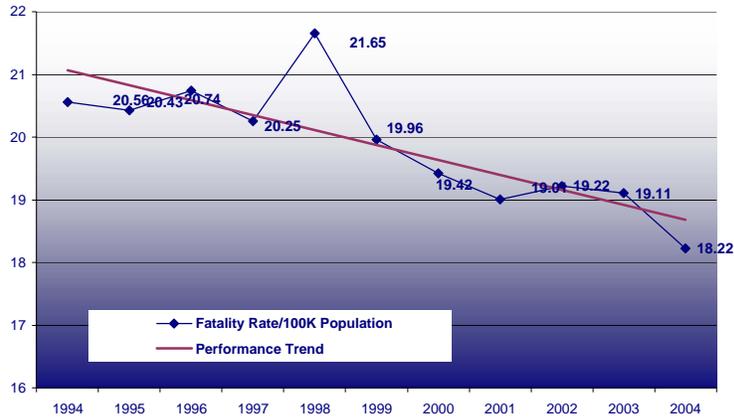
Fatal and Serious Injury Rate per 100M VMT



Goal: Fatality Rate/100K Population
Baseline

N/A
N/A

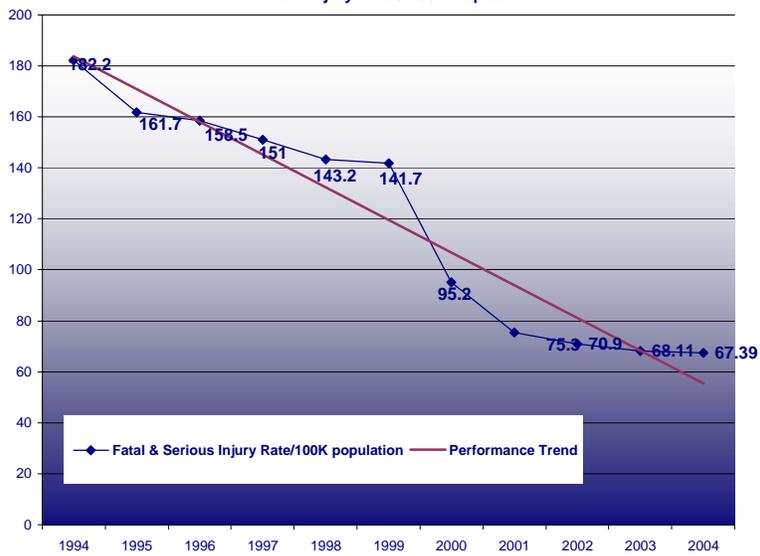
Fatality Rate/100K Population



Goal: Fatal/Injury Rate/100K Population
Baseline

N/A
N/A

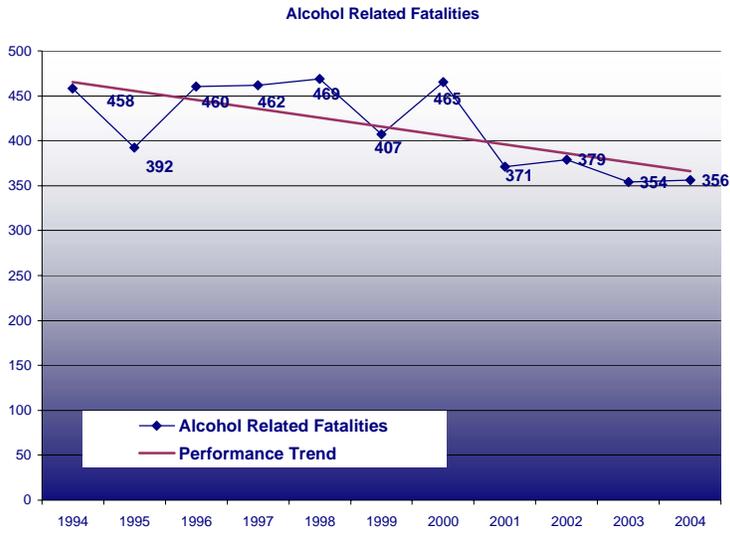
Fatal and Injury Rate / 100K Population



1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004

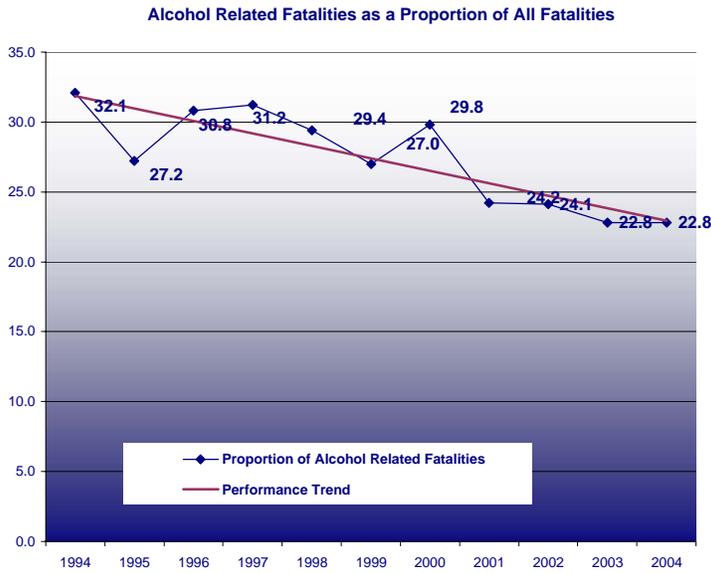
Goal: Alcohol Fatalities
Baseline

Reduce alcohol-related fatalities to 300 by 2010
3-year average 363



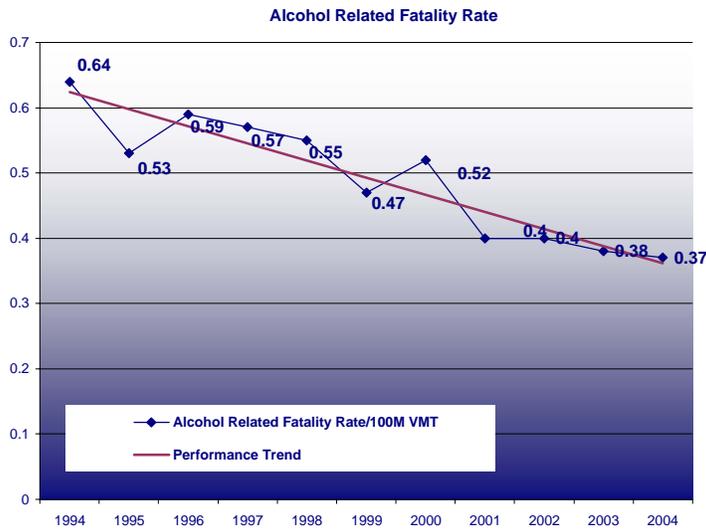
Goal: Alcohol Fatality Proportion
Baseline

Reduce the percentage of alcohol-related fatalities to 20.0% by 2010
3-year average 23.2%



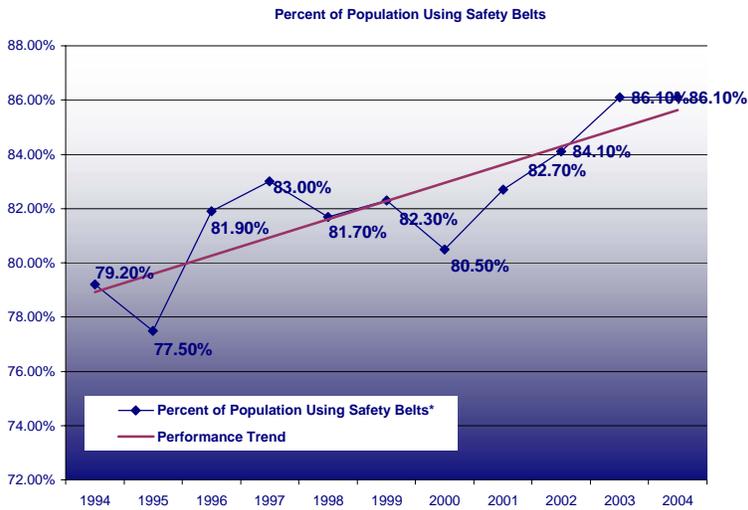
Goal: Alcohol Fatality Rate/VMT
Baseline

Reduce the alcohol-related fatality rate to 0.32 by 2010
3-year average 0.38%



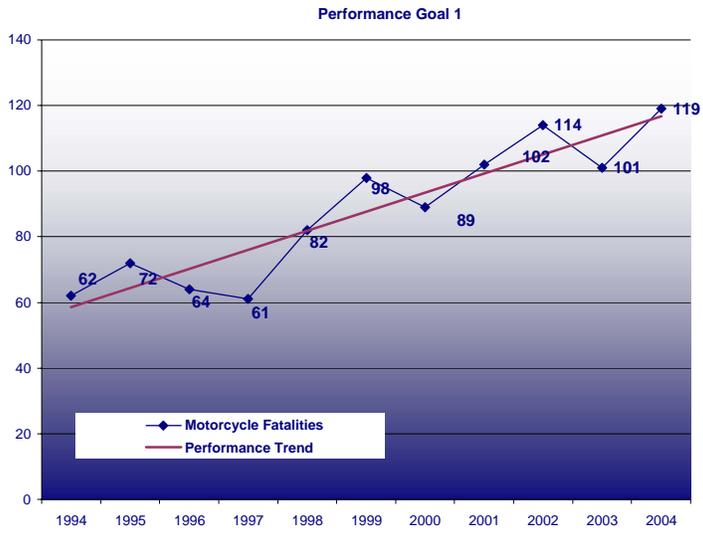
Goal: Safety Belt Use
Baseline

Increase safety belt usage to 90 percent by 2010
3-year average 85.4%



Goal: Motorcycle Fatalities
Baseline

Reduce motorcycle injury crashes to 2,100 by 2005
2,185 motorcycle crashes in year 2000



Goal: Pedestrian Fatalities
Baseline

Reduce pedestrian fatalities to 160 in 2005
3-year average 164 fatalities



Goal: Bicycle Fatalities
Baseline

Reduce bicycle fatalities to 15 in 2005
3-year average 18 fatalities

