Action Plan

for Implementation of the Strategic Highway Safety Plan for Alabama

PREPARED WITH COOPERATION AND ASSISTANCE OF REPRESENTATIVES OF THE FOLLOWING AGENCIES AND ORGANIZATIONS

AGENCIES: Alabama Legislature, Alabama Department of Transportation, Administrative Office of Courts, Alabama Beverage Control Board, Alabama Department of Economic and Community Affairs, Alabama Department of Public Health, Alabama Department of Public Safety, Alabama Department of Senior Services, Federal Highway Administration-Alabama Division, Federal Motor Carrier Safety Administration-Alabama Division, National Highway Traffic Safety Administration-Southeast Regional Office, Choctaw County Emergency Medical Services, City of Alabaster Police Department, City of Birmingham Police Department, City of Birmingham Regional Council, City of Dothan Police Department, City of Huntsville Safety Office, City of Huntsville Traffic Engineer, City of Hoover City Engineer, City of Montgomery Department of Transportation, City of Montgomery Police Department, City of Montgomery Traffic Safety, City of Montgomery Transportation Planning, City of Tuscaloosa Department of Transportation, City of Tuscaloosa Police Department, Clark County Engineer, Crenshaw County Engineer, Dale County Engineer; Elmore County Engineer, Houston County Engineer; Mobile County Traffic Safety, Montgomery Area Transit System; Montgomery County Human Resources Department, Montgomery County Sheriffs Office, NE Alabama Highway Safety Office, North Alabama Highway Safety Office, Office of Prosecution Services, Regional Planning Commission of Greater Birmingham, State Safety Coordinating Committee, and Sumter County Engineer.

ORGANIZATIONS: AARP, Alabama Optometric Association, Alabama Safe Kids, Alabama Section of the Institute of Transportation Engineers, Alabama Traffic Safety Center, Alabama Trucking Association, ALFA Insurance, Auburn University, Bellsouth, Children's Hospital, Earth Tech, Inc; Eye Clinic of Prattville, Fountain City Eye care; Jeff State JC Highway Safety Office, KBR, Inc., Moss Enterprises, Inc, MADD - Alabama Chapter, Operation Lifesaver, Quick Kurb, Inc, Skipper Consulting, Southeast Alabama Medical Center, University of Alabama-CRDL, University of Alabama-UTCA, University of Alabama at Birmingham-Emergency Medicine, University of Alabama at Birmingham- Injury Control Research Center, University of Alabama in Huntsville-Civil Engineering, University of South Alabama College of Medicine, Voices for Alabama Children and Vulcan, Inc.

UTCA

University Transportation Center for Alabama

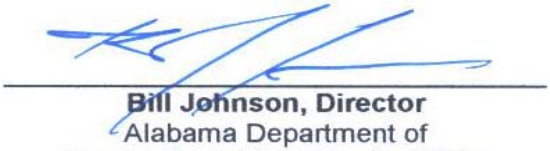
The University of Alabama, The University of Alabama in Birmingham,
And The University of Alabama at Huntsville

UTCA Report 06408(2)
June, 2007

Action Plan for the
Strategic Highway Safety Plan for Alabama

Bob Riley, Governor

Sue Bell Cobb
Chief Justice
Alabama Supreme Court

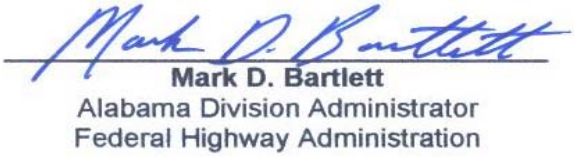


Bill Johnson, Director
Alabama Department of
Economic and Community Affairs

Col. J. Christopher Murphy
Director
Alabama Department of Public Safety

Dr. Donald E. Williamson
State Health Officer
Alabama Department of Public Health

Joe McInnes
Director
Alabama Department of Transportation



Mark D. Bartlett
Alabama Division Administrator
Federal Highway Administration

Judy Van Luchene
Alabama Division Administrator
Federal Motor Carrier Safety Administration

Technical Report Documentation Page

1. Report No	2. Government Accession No.	3. Recipient Catalog No.

4. Title and Subtitle	5. Report Date
Action Plan for Implementation of the Strategic Highway Safety Plan for Alabama	February 28, 2007
	6. Performing Organization Code
7. Authors Waymon Benifield, David Brown, Wes Elrod, Linda Guin, and Dan Turner	8. Performing Organization Report No. UTCA Report 06408(2)
9. Performing Organization Name and Address The University of Alabama Department of Civil and Environmental Engineering Tuscaloosa, AL 35487	10. Work Unit No.
	11. Contract or Grant No. Alabama DOT Research Project
12. Sponsoring Agency Name and Address University Transportation Center for Alabama The University of Alabama Tuscaloosa, AL 35487	13. Type of Report and Period Covered Implementation Report: 01/01/06-6/30/07
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

There are about 145,000 traffic crashes in a typical year in Alabama, resulting in about 1100 fatalities and 45,000 injuries. This is a staggering toll and reflects the national picture – 40,000 motorists die annually and more than three million are injured on the nation's roadways.

At the encouragement of the American Association of State Highway and Transportation Officials, the Alabama Department of Transportation (ALDOT) engaged the University Transportation Center for Alabama (UTCA) to prepare a Comprehensive Highway Safety Plan to reduce fatalities on Alabama Highways. UTCA led a group of 100 volunteers in shaping this plan, which concentrated on five safety topics: Emergency Medical Services (EMS), Legislation, Older or At-Risk Drivers, Risky Driving, and Run-Off-Road crashes.

The SAFETEA-LU Legislation enacted in 2005 required that each state develop a Strategic Highway Safety Plan (SHSP). Agencies involved in highway safety were required to coordinate their programs and resources and unify their efforts to reduce crashes, injuries, and deaths. UTCA was again engaged by ALDOT, and the plan was developed using volunteers from various agencies and private sector interests. The Alabama SHSP was signed by the Governor and seven State and Federal agency heads on September 30, 2006, and was approved by the Federal Highway Administration.

For the five key safety topics, groups of experts were formed to identify the most important elements of the safety topics, the best treatments, cost estimates, and time schedules. Each group worked through the fall of 2006 and early months of 2007 to prepare implementation plans. Chapters 2 though 6 of this report contain the five plans developed through this process.

17. Key Words	18. Distribution Statement
strategic highway safety plan, integrated highway safety plan, risky driving, emergency medical services, older drivers, at-risk drivers, run-off road crashes, traffic safety legislation	

19. Security Classification (of this report)	20. Security Classification (of this page)	21. No of Pages	22. Price

Form DOT F 1700.7 (8-72)

Contents

Contents (Continued)

Contents (Continued)

List of Tables

List of Figures

Executive Summary

There are about 145,000 traffic crashes in a typical year in Alabama, resulting in about 1100 fatalities and 45,000 injuries. This is a staggering toll and reflects the national picture – 40,000 motorists die annually and more than three million are injured on the nation's roadways.

At the encouragement of the American Association of State Highway and Transportation Officials, the Alabama Department of Transportation (ALDOT) engaged the University Transportation Center for Alabama (UTCA) to prepare a Comprehensive Highway Safety Plan to reduce fatalities on Alabama Highways. UTCA led a group of 100 volunteers in shaping this plan, which concentrated on five safety topics: EMS, Legislation, Older or At-Risk Drivers, Risking Driving, and Run-Off-Road crashes.

The SAFETEA-LU Legislation enacted in 2005 required that each state develop a Strategic Highway Safety Plan (SHSP). Agencies involved in highway safety were required to coordinate their programs and resources and unify their efforts to reduce crashes, injuries, and deaths. UTCA was again engages by ALDOT, and the plan was developed using volunteers from various agencies and private sector interests. The Alabama SHSP was signed by the Governor and seven State and federal agency heads on September 30, 2006, and was approved by the Federal Highway Administration.

For the five key safety topics, groups of experts were formed to identify the most important elements of the safety topics, the best treatments, cost estimates, and time schedules. Each group worked through the fall of 2006 and early months of 2007 to prepare implementation plans. Chapters 2 though 6 of this report contain the five plans developed through this process.

Chapter 1
Introduction

Preparation and Implementation of the SHSP

There are about 145,000 traffic crashes in a typical year in Alabama, resulting in about 1100 fatalities and 45,000 injuries. This is a staggering toll and reflects the national picture – 40,000 motorists die annually and more than three million are injured on the nation's roadways.

The United States Department of Transportation and the American Association of State Highway and Transportation Officials (AASHTO) are determined to improve safety on our nation's highways. USDOT made safety its top priority and adopted aggressive goals for reducing fatalities and injuries from traffic crashes. In 2003, AASHTO developed a Strategic Highway Safety Plan that contains 22 emphasis areas and 92 separate safety strategies that are intended to save 7,000-8,000 lives per year. AASHTO asked state departments of transportation to create their own safety plans, and to begin implementing countermeasures in one or more of the 22 emphasis areas of the AASHTO plan.

Following AASHTO's lead, the Alabama Department of Transportation (ALDOT) engaged the University Transportation Center for Alabama (UTCA) to prepare a Comprehensive Highway Safety Plan (CHSP) to reduce fatalities on Alabama Highways. UTCA led a group of 100 volunteers - from both the public and private sectors - in shaping this plan, which was completed in late 2004. The volunteers examined fatal crash data and selected five emphasis areas that they felt would provide the greatest traffic safety benefits (listed in alphabetical order): Emergency Medical Service, Legislation, Older and At-Risk Drivers, Risky Driving, and Run-Off-Road crashes.

In 2005 Congress enacted SAFETEA - the Safe and Accountable Transportation Equity Act – a Legacy for Users (SAFETEA-LU). It required that each state develop a Strategic Highway Safety Plan (SHSP), and it stipulated multiple requirements and considerations for SHSPs. ALDOT engaged UTCA again, this time to: (1) refine the CHSP into the SHSP while meeting all requirements in the legislation and (2) develop implementation plans for the five emphasis areas in the SHSP. UTCA completed the SHSP (UTCA Report 06408) using groups of volunteers the non public and private sectors to shape the five emphasis area plans. The names of these volunteers are listed in Appendix A of this report. The completed Alabama SHSP was signed by the Governor and seven State and Federal agency Directors/Administrators on September 30, 2006. It was consequently approved by the Federal Highway Administration on December 4, 2006.

The SHSP Implementation Plan (this document) was produced by UTCA and the same public/private sector volunteers that produced the SHSP. For each of the five key safety emphasis areas, subject area experts and agency managers identified the most important elements of each emphasis area, developed lists of the best countermeasures, prepared cost estimates, and

estimated time schedules. Each group worked through the fall of 2006 and early months of 2007 to prepare implementation plans. Chapters 2 though 6 of this report contain the five action plans developed through this process.

The Alabama Traffic Crash Situation Warrants the SHSP

The 2005 *Alabama Traffic Crash Facts* booklet documented that 1,134 people were killed and 44,158 were injured in 143,994 traffic crashes in Alabama in 2005. This amounted to one person being killed in a traffic crash every 7 hours and 43 minutes. The booklet also noted that a typical driver in Alabama has a 54.1% probability of being involved in an injury or fatal crash while driving during his or her lifetime.

Table 1-1 shows additional Alabama crash statistics that were documented in the SHSP. Over the past decade, there were 1.39 million vehicle crashes, accounting for 457,163 injuries and 10,862 fatalities. To put this into perspective, there were about twice as many traffic crash injuries over the past ten years as there were people living in the Birmingham metropolitan area. Over the same period, the fatality total was about the same as the current population of Leeds, Alabama. In other words, everyone in Leeds died and everyone in metropolitan Birmingham was injured twice in traffic crashes during the past decade. These are unacceptably large numbers.

Table 1-1: 10 year trends for Alabama crash statistics

Year	Crashes	Injuries	Fatalities	Fatality Rate	National Fatality Rate
1996	136,698	48,200	1,142	2.22	1.69
1997	139,606	49,300	1,190	2.23	1.64
1998	138,400	47,300	1,071	1.94	1.58
1999	137,723	47,100	1,148	2.03	1.55
2000	132,626	43,500	986	1.74	1.53
2001	133,739	42,917	998	1.76	1.51
2002	140,436	44,452	1,038	1.80	1.51
2003	141,067	44,845	1,001	1.71	1.48
2004	146,359	45,391	1,154	1.96	1.45
2005	143,994	44,158	1,134	1.90	1.47
Totals	1,390,648	457,163	10,862	---	---

Fatality rate is in terms of fatalities per 100 million miles traveled.
Source: Alabama Strategic Highway Safety Plan, Table 1-1

Another major conclusion can be drawn from Table 1-1. Since 1979, the Alabama fatality rate has been as much as 36 percent above the national average, and averaged 25 percent above the national average for the past five years.

These example statistics point out that the traffic crashes, injuries, and fatalities in Alabama have been significant over the last decade. Furthermore, the state's fatality rate has consistently been above the national average. These two facts and the associated pain and suffering by Alabama's citizens warrant a major, coordinated campaign to reduce roadway carnage. This SHPS Action Plan was created for such a purpose.

References

"2005 Alabama Traffic Crash Facts," CARE Research and Development Lab, University of Alabama, http://care.cs.ua.edu/docs/2005FactBook.pdf/, accessed Jan 28, 2006

"Comprehensive Highway Safety Plan for Alabama," University of Alabama, UTCA Report 04404, October 30, 2004, http://utca.eng.ua.edu/projects/final_reports/04404fnl.pdf, accessed January 13, 2007

"Strategic Highway Safety Plan for Alabama," University of Alabama, UTCA Report 06408, September 30, 2006, http://utca.eng.ua.edu/projects/final_reports/06408fnl.pdf, accessed February 17, 2007

Chapter 2
Emergency Medical Service

Problem Statement

History

The concept of Emergency Medical Service (EMS) evolved after the Vietnam War, where survivability was greatly improved by decreasing the time between the onset of trauma and the delivery of military patients to treatment. Following the war individual states developed EMS programs, but in different styles and with varying rates of success. Consequently, there was not a uniform national pattern for EMS organizations, policies, responsibilities or funding sources.

The Trauma Care Systems Planning and Development Act of 1990 (Roberts, 2003) was a major improvement in the situation. The purpose of the Act was to create and manage a system to give patients access to the most appropriate trauma care. Even though funding provided by the Act amounted to only about $2.5 million per year nationwide, it was a good start. Since then, there has been a clear movement to improve trauma care on several fronts. Agencies and professional organizations have stepped forward to create national standards and "best practice" protocols. For example, "Resources for the Optimal Care of the Injured Patient," was published by the American College of Surgeons in 1998. (ACS, 1998) It provided national guidelines for trauma care, and earned the nickname of "the gold book." Another initiative was the creation of the "National Trauma Data Bank" by the ACS to collect data on each event that occurs from the trauma through the end of medical treatment. To date, there has been little research into pre-hospital treatment, but over time the Data Bank will allow very detailed studies and development of improved EMS processes, protocols and treatments.

Alabama Situation

The Alabama situation mirrors the national picture. There are currently 312 EMS provider services in Alabama. Of these, 194 provide transport capabilities utilizing 918 ambulances. National Registry Staff published an abstract from the Longitudinal EMT Attributes and Demograph Study that depicts that 51% of EMT Basics are compensated non-volunteer and 81% of the Paramedics are compensated non-volunteer. Alabama currently has 11,508 licensed emergency medical technicians and ambulance drivers: 1,277 ambulance drivers, 5,937 EMT Basics, 718 EMT Intermediates, and 3,576 Paramedics. While the number of EMTs in Alabama has remained relatively consistent over the past several years, the demand has grown for "ground level" Paramedics.

The U.S. Department of Labor, Bureau of Labor Statistics projects employment opportunities for emergency medical technicians and paramedics to grow 27% or more by 2014. In comparison, the 2004 projection for 2010 was only 10%. Alabama's EMS provider services are already reporting difficulties in recruiting and maintaining EMTs and Paramedics.

The many local EMS units vary widely in type and capability from location to location. Efforts are underway on multiple fronts to enhance them. For example, the Alabama Department of Public Health (ADPH) strategic plan includes action items to reduce EMS response times. ADPH has adopted its own protocols, developed by the State Emergency Medical Committee (ADHP, 2002). Example protocols related to EMS are shown in Table 2-1.

Table 2-1: Sample protocols for Alabama EMS

PURPOSE: The purpose of this protocol is to delineate the scene time limitations.

PROCEDURE:

1. If at any time an EMT cannot provide or protect a patient airway within 5 minutes after patient encounter and initiating emergency medical care, she/he is required to transport the patient immediately.
2. If, at any time an EMT predicts that she/he will be on the scene or has been on the scene for 30 minutes after patient encounter and initiating emergency medical care, he/she is required to contact the on-line medical direction hospital.
   - A. Communicate pertinent patient history.
   - B. Communicate treatment given.
   - C. Ask whether patient should be transported immediately or other care should be given.
   - D. Anticipate answering the question: "What further can be done?"
3. For cases involving significant trauma, time spent on the scene should be ten (10) minutes or less where extrication has been accomplished and the patient can be moved away from the site.

Source: Alabama ALS Protocols, 2002

The Special Situation of Rural EMS

The availability, quality of service, and timeliness of emergency response units have a major impact on the survival of citizens involved in motor vehicle crashes. The distances between major population centers in Alabama create extensive suburban and rural regions, which have distinctly different trauma response patterns for vehicle crashes. In rural areas more time is spent locating, stabilizing, and transporting vehicle crash trauma victims, reducing their chances of survival. This pattern has been recognized by national experts, as shown by the following statements:

- Rural local road systems have a death rate three times greater than the Interstate System, and the care victims receive after a crash is one of the four major factors contributing to rural road fatalities. "Care of crash victims also contributes to rural fatalities because of the additional time needed to provide medical attention and the quality of rural trauma care. The nature of rural areas makes it difficult to provide adequate emergency medical care." (GAO, 2004)

- Responses to crashes in rural areas are likely to be slower, due to factors like remoteness, lesser quality roadways, and process complications in providing timely, quality health care. (Roberts, 2003)

- Only one-fourth of the geographical area of the U.S. is not served by trauma care systems. (Centers for Disease Control, 2002)

- Optimal acute trauma care could have saved up to 35 percent of vehicular trauma patient deaths. (Centers for Disease Control, 2000)

There are several steps between the occurrence of a rural crash and the eventual arrival of the patient at a hospital. The differences in urban and rural response times for each step are illustrated in Table 2-2. Even though the data in the table is several years old, the same general trends still hold. The rural times for individual steps averaged 35 to 90 percent longer than their urban counterparts, and the overall time from crash to hospital arrival averaged about 45 percent longer for rural crashes.

Table 2-2: Average 1998 EMS response times[1]

Time (minutes) between major events	Rural	Unknown	Urban	Unknown
Crash until EMS notification	6.77	37%	3.62	46%
EMS notification until EMS arrival at scene	11.36	3%	6.26	47%
EMS arrival at scene until hospital arrival	36.28	67%	26.63	72%
Crash until hospital arrival[2]	51.78	68%	35.46	71%

[1] NHTSA, 1999
[2] Not a total of the top three categories; separate records are kept for this category.

Of great interest is the relationship between the elapsed time between the crash and arrival of EMS, and the time between the crash and arrival of the victim at a trauma center. Studies show that the passing of time contributes to mortality, and ACS has coined the phrase "golden hour" to emphasize the need to transport victims rapidly for treatment at a qualified trauma center. This is illustrated in Table 2-3, which shows the general trend of increasing mortality with extended EMS arrival times. Readers are cautioned that Table 2-3 is an illustration based upon a specific situation (alcohol involved collisions), is not the result of a controlled, statistical evaluation. But it does provide a good example of the importance of finding and treating trauma victims.

Table 2-3: Probability of crash being fatal vs. EMS arrival time

	1-10 Minutes	11-20 Minutes	21-45 Minutes	46-60 Minutes	61-90 Minutes	91-180 Minutes
Fatalities	793	846	594	56	43	32
% Fatal	6.3%	8.4%	8.9%	7.0%	8.1%	11.5%

Source: 1994-2003 Alabama alcohol related crashes

As a further investigation of the time vs. mortality situation, ALDOT compared the Alabama situation to the national picture by using EMS response data taken from Alabama Uniform Traffic Accident Reports for 2003 traffic crashes. This data indicated that 223 deaths occurred when EMS response units required more than 20 minutes to reach crash locations. EMS response times exceeding 20 minutes were reported in a total of 5,608 injury and fatality crashes statewide. Furthermore, 52% of theses crashes occurred in only twelve Alabama counties. These were some of the most populous counties of the State, implying that suburban settings may contribute to the problem more than initially suspected. The crash data used by ALDOT to review and analyze EMS arrival times was not sufficient to reconstruct the events from the initial notice to EMS until the time a crash victim was released from a health care unit. Other sources of data must be identified and utilized to obtain a more detailed understanding of the overall problem.

EMS Review Team

A committee was formed to examine EMS contributions to traffic safety in the state, particularly the relationship of EMS response time to the fatal and injury crash problem. Those participating on this team had diverse backgrounds, and were very familiar with the traffic crash data system, EMS data, and EMS response processes. Among those participants were the following:

- EMS Division, Alabama Department of Public Health (DPH), two representatives
- Injury Prevention Division, DPH, two representatives
- Law Enforcement/Traffic Safety Section, Alabama Department of Economic and Community Affairs (LETS, ADECA)
- Southeast Alabama Medical Center
- Highway Patrol Unit, Alabama Department of Public Safety (DPS)
- Multimodal Transportation Bureau, Safety Section, ALDOT, two representatives

Several meetings were held to discuss EMS programs and processes, to learn more about the traffic crash problem and the EMS data system, and to identify the relationship of its various components to highway safety. The committee discussed a wide variety of response issues and data, looking for ways to improve EMS response times and trying to answer difficult questions like the following:

- How much must the average response time be reduced to significantly affect survival of traffic crash victims?
- What level of coverage is needed to provide access to the desired level of trauma care?
- How many units are needed to adequately cover a particular geographical region?
- What types of response and transport vehicles are needed?
- Where should units be located to provide reasonable coverage?
- What level of training is appropriate? (Individuals certified as Advanced Level providers are allowed to perform many procedures that Basic Level providers are not allowed to perform.)
- What is the total cost of providing the desired level of coverage?
- Where do funds come from for vehicles, equipment, supplies, operations, training, etc.?
- How to recruit and maintain an adequate EMS workforce?

One of the compounding factors was the relative scarcity of research in pre-hospital EMS activities, but this also made it clear that data must be gathered and evaluated as the basis for the most cost effective expenditure of resources on EMS. At length, the team developed a consensus to focus on five important issues for further development and inclusion in a work plan. These five topics can form the basis for priority decisions and continual improvement in EMS actions. These five topics are not listed in order of priority.

Implementation Work Plan for EMS

The EMS Committee has reviewed the information, data, and Work Plan contained in the original SHSP. This review has focused in greater detail on each Work Plan item to expand and

update the information available and to chart a more definitive approach for project implementation.

The Committee members have a significant number of years of experience in EMS process, procedures and protocol. Many were engaged in management and research while others have experience in records related to EMS data, and experience actually making EMS runs. The diversity and experience of Committee members has provided detailed information about the EMS process, records, data, etc. These backgrounds allowed the Committee an opportunity to develop a Plan that would offer an approach to saving lives by responding to crash victims in a more timely manner that should result in reducing the severity of motor vehicle crashes in the State of Alabama.

The Implementation Plan contains four specific priorities corresponding with suggested countermeasures to accomplish these tasks. All countermeasures identified will have sufficient details provided so a full assessment can be made available for decision making purposes. Many of the countermeasures are subjective because there is no information or data available to provide a comparison. The primary focus of this Plan is to use the information available and to develop avenues to improve this process. Also, the resources available to implement some of the countermeasures are uncertain in some areas. A timeline has been suggested for implementing each countermeasure.

Proposed Work Plan

Priority1 – Statewide Assessment and Plan

Narrative - The number and type of EMS units, responders, and hospitals operating across the State are varied and diverse in their approach and ability to provide emergency response and definitive care for crash victims requiring trauma care. The ability to respond and the quality of care may vary from area to area and it is necessary to complete a statewide assessment in order to appropriately plan.

Countermeasures - Nine countermeasures were identified.

1. Assess hospital resources and capabilities statewide by county – The ADPH Office of EMS and Trauma staff will utilize internal resources along with information from the Alabama Hospital Association to map out service areas and levels of care capabilities for every hospital in each county. This is a mid range plan item.

2. Assess EMS Provider Service's resources and capabilities statewide by county – The ADPH Office of EMS and Trauma staff will utilize the internal provider licensure database and information available from the Alabama Fire Chief's Association, the Alabama Fire College, the Alabama Volunteer Fire Fighters Association, the Alabama Rescue Squad Association, and others to map out the available resources and capabilities by response in each county. This is a mid range plan item.

3. Assess ancillary responders statewide by county – See number 2 above.

4. Assess dispatch resources and capabilities – Dispatch resources and capabilities will be determined by developing a comprehensive survey. This committee's Alabama Chapter of National Emergency Number Association (AL NENA) representative will lead this effort with the support of the ADPH Office of EMS and Trauma staff. It is a mid range plan item.

5. Assess population and distribution of populations by county – The ALDOT will research and provide available information attesting to the current population and distribution by county. This is a mid range plan item.

6. Assess types of road system and population by county – The ALDOT will research and provide available information attesting to the current population and distribution by county. This is a mid range plan item.

7. Assess communication(s) system and interoperability by county – Communication resources and capabilities will be determined by developing a comprehensive survey. The committee's dispatch representative will work with the ADPH Office of EMS and Trauma to gather this data. It is a mid range plan item.

8. Assess EMS and Motor Vehicle Crash Data by county – The Office of EMS and Trauma, ALDOT and the University of South Alabama will gather data from the State EMS patient care reporting system and the ALDOT will input information regarding motor vehicle crashes in each county. This is a mid to long term item.

9. Determine existing databases during assessment and fill in gaps – Each countermeasure will reveal available databases. Each database will be catalogued for reference for future uses as well. There should be a link for all of the available databases and information. This item is a mid and long range item.

Cost Effectiveness - Collecting these various data elements will require that databases will need to be established. Some of these countermeasures are possibly already in place. If not, the databases will have to be established and an agency will have to provide oversight. There is also the need for the software to be interoperable for information sharing. The ability to link this data will provide a means to identify and analyze performance data.

There is not a conventional measure of cost effectiveness for this activity. The benefits are numerous but difficult to define through a cost analysis procedure. The primary benefits have been the information sharing from the committee members and the commitment to pursue and collect information and data to develop an effective EMS Plan.

Time Frame - By consensus this is the number one priority. It is recommended that this begin immediately, but the reality is that this is also a permanent need and therefore, it must be a long term commitment.

Suggested Lead Agencies - ADPH will be the lead agency supported by ALDOT, ADECA, Research Universities, local governments and others must work together to address these countermeasures.

Funding - $1.5 million is an approximate amount. The countermeasures under this priority will require a great deal of cooperation and coordination between governmental agencies. Understanding the volume of necessary data and the means to bring this data together in a useful format will require a great deal of time and manpower. There are also a number of unknown values that will be discovered during the Assessment that will incur additional expense.

Priority2 – Identify and Analyze Performance Data

Narrative - Data from identified venues should be collected, sorted, prioritized and analyzed against performance standards and best practices to determine actions to improve trauma response, out-of-hospital care, appropriate and time saving definitive care choices and ultimately improved outcome.

Countermeasure - One countermeasure was identified for Priority 2.

1. Review and select a knowledgeable firm or health care group to review and evaluate the studies – The committee shall review information available from each agency that will lead to selecting a knowledgeable firm or health care group to review and evaluate the information discovered in Priority 1. This item is a mid range item.

Cost Effectiveness **–** The analyzed data will provide a defensible means to demonstrate facts that attribute to the high fatality rate among trauma victims involved in crashes on public highways in Alabama. The countermeasures determined from the analysis should clearly direct decisions to be made and should ultimately lead to a reduction for motor vehicle crash fatalities.

Time Frame **–** This is a mid range time frame.

Suggested Lead Agencies – ADPH will be the lead agency supported by ALDOT, ADECA, Research Universities, local governments and others must work together to address these countermeasures.

Funding **–** $1.0 million is an approximate amount. This priority's countermeasure can range from significantly less funding depending on the results being sought. It was considered that the highest end results were being sought in predicting this funding amount.

Priority 3 – Communications (System Network) and Crash Site Data

Narrative – Actions to improve trauma response, out-of-hospital care, appropriate and time saving definitive care choices and ultimately improve outcome derived from the data previously identified and analyzed in Priority 2. This should initiate the development and establishment of uniform dispatch protocols and systems.

Countermeasures – Two countermeasures were identified for Priority 3.

1. Develop statewide uniform communication dispatch protocols, interoperable communications systems and explore GPS enable systems to reduce all responder's response times – The EMS component committee will analyze the components of this countermeasure by proposing to adapt and implement uniform dispatch protocols, determine an interoperable communications system and explore GPS systems utility to reduce response times. This is a mid to long range item.

2. Create a Statewide Trauma Communications System to save critical patient delivery time to the facility best able to provide definitive care – Continue the progress of the current Birmingham Regional Emergency Medical Services System (BREMSS) TCC model as supported currently by the Governor's Office. This is a mid range item.

Cost Effectiveness – The data analyzed will provide a defensible means to demonstrate facts that attribute to the high fatality rate among trauma victims in motor vehicle crashes on public highways in Alabama. The countermeasures determined from the analysis clearly direct decisions to be made and will ultimately lead to the reduction in motor vehicle crash fatalities.

Time Frame – The time frame for Priority 3 is mid range.

Suggested Lead Agencies – ADPH will be the lead agency supported by ALDOT, ADECA, Research Universities, local governments and others must work together to address these countermeasures.

Funding – $10 million is an approximate amount. We can estimate that there are over 10,000 response vehicles in Alabama that would need to be outfitted with GPS systems. There are more than 67 dispatch systems and there will need to be additional equipment purchased for these systems. The training will involve over 15,000 individuals. Tied into that system will be a statewide trauma communications system. The equipment, training and staffing at the center will require over $1.5 million per year independent of the rest of this priority. Development and initial implementation of a statewide interoperable communications system will potentially cost $4 million.

Priority 4 – EMS System Rural Response Needs and Improvements

Narrative – There are a number of areas in the State that do not have reasonable access to EMS responders, particularly in rural areas. This increases the response time for emergency services to reach a crash site and provide trauma care. A program to reduce the access time in rural locations could increase the survival rate among crash trauma victims.

Countermeasures – Six countermeasures were identified for Priority 4.

1**. Establish a means to provide full-time Advanced Life Support (ALS) provider services to rural counties –** The ADPH office of EMS and Trauma and other state agencies should provide

success models for rural county governments to demonstrate how ALS services can be established and maintained. This is a mid to long range item.

2. Develop a "best practices" manual for use by EMS units operating in various locations (urban, suburban and rural) – The ADPH Office of EMS and Trauma should establish response, treatment and on-scene, transport, and transport-destination protocols to extend time at definitive care centers. This is a mid to long range item.

3. Establish a means to improve rural volunteer training opportunities, equipment and rapid response – The ADPH Office of EMS and Trauma should determine additional training, equipment and response needs from assessment to fit existing responder's needs. This is a mid range item.

4. Develop literature to increase the public awareness of EMS issues and needs – The ADPH Office of EMS and Trauma and other state agencies should increase public and elected official's awareness (State, local governments) of issues and needs facing EMS in Alabama to reduce crash fatalities. This should be a continuous range item.

5. Provide training and equipment for law enforcement officers who respond to vehicle crashes, so that basic trauma techniques can be performed – The DPS, State Sheriff's Office organizations and Police Officers association should determine if it is feasible to train law enforcement responders in basic trauma techniques. This is a short range item.

6. Establish air-medical coverage areas for rural areas – The ADPH Office of EMS and Trauma will present legislation to enable regulation of air ambulance so that coverage is provided for areas affected, appropriate FAA regulations are followed, and appropriate licensed personnel are providing for motor vehicle crash victims. This is a short range item.

Cost Effectiveness – A base line of effectiveness can easily be established from the initial assessment. Performance indicators can be established and measure incrementally when countermeasures are implemented.

Time Frame – These countermeasures can be implemented in a short range to long range time period.

Suggested Lead Agencies – ADPH will be the lead agency supported by ALDOT, ADECA, Research Universities, local governments and others must work together to address these countermeasures.

Funding – $75 million is an approximate funding cost. This priority's countermeasures greatest cost involves establishing full time Advanced Life Support (ALS) response in rural areas. Regardless of the mechanism to fund this goal, no other means or countermeasures will improve and impact trauma outcomes as much. If each of the 67 counties were to legislate full time ALS staffing, housing and equipment, it would cost approximately $67 million per year. Obviously, this annual cost will be reduced because many counties have infrastructure and resources to support ALS provider services.

The proposals for the EMS Implementation cannot be measured by conventional cost effectiveness processes and procedures. It is not possible at this time to predict a reduction in severity of motor vehicle crashes resulting from this Plan. It is reasonable to expect reductions will occur. The primary benefits from the process established to date has been the information sharing by committee members and the commitment to pursue and collect information and data for this Plan. As the SHSP is implemented, refined, and support provided for improvement positive results are expected.

References

"Acute Care," National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDCP), Atlanta, GA, 2002.

Alabama ALS Protocols, Alabama Department of Public Health (ADPH), Montgomery, AL, page 112, 2002.

Brown, W.E., Jr., Dawson, D, and R. Levine, "Compensation, Benefits, and Satisfaction: the Longitudinal Emergency Medical Technician Demographic Study (Leads) Project," Volume 7, Number 3, Taylor & Francis Health Sciences, July-September, 2003.

"Federal and State Efforts to Address Rural Road Safety Challenges," General Accounting Office (GAO), Washington, D.C., May.

National Trauma Data Bank, TM Annual Report, 04T-0009, American College of Surgeons (ACS), accessed August 23, 2004 at http://www.facs.org/trauma/ntdb.html

"Resources for the Optimal Care of the Injured Patient," American College of Surgeons (ACS), Chicago, Illinois, 1999

Roberts, Adrienne, "Trauma Awareness Month Offers Opportunity to Boost Support," Bulletin of the American College of Surgeons, Vol. 88, No. 5, American College of Surgeons, Washington, D.C., pp 21-24, May 2003.

"Traffic Safety Facts 1998," National Highway Traffic Safety Administration (NHTSA), US DOT, Washington, D.C., 1999.

"Trauma Performance Improvement Reference Manual," Performance Improvement Subcommittee of the American College of Surgeons, Committee on Trauma, accessed August 23, 2004 at http://www.facs.org/trauma/publications/manual.pdf

"10 Leading Causes of Death," United States: 2000, All Races, Both Sexes," National Center for Heath National Vital Statistics System, Centers for Disease Control and Prevention (CDCP), Atlanta, GA 2000.

Chapter 3
Legislation

Introduction

The Highway Safety Plan for Alabama (UTCA Report 06408) established two goals for the Legislative element of the Plan:

(1) Establish a permanent organization to monitor legislation dealing with traffic safety (review, identify, monitor, propose legislation, etc.).
(2) Identify issues that could be addressed by the 2007 Alabama Legislature (adopting new safety legislation, providing additional resources to address traffic crashes, or addressing federal legislation that provides incentives or curtails funding unless Alabama adopts specified legislation).

The two principle goals were supported by multiple sub-categories and action tasks necessary to fully implement an effective Legislative plan of action. These are described in the following paragraphs.

Identifying a Legislative Work Group

The SHSP identified the State Safety Coordinating Committee (SSCC) as a good potential group to track and otherwise facilitate the adoption of safety legislation on a continuous basis. This group was established many years ago, but had been inactive for an extended period. During the past year the Governor reestablished the SSCC and appointed Representative Jim McClendon as the Chair. Under his leadership the SSCC developed a preliminary draft of a Five Year Strategic Plan (attachment B). Several statements, goals and strategies of the Plan relate directly to the establishment of a legislative monitoring group:

> *The SSCC recognizes that this mission involves not only its own resources but the influence that it can exert in coordinating and assuring the more effective use of resources of other traffic safety advocates and professionals within the total traffic safety community, both within Alabama and those provided by our federal partners…*
>
> *The goal that has shown the greatest potential from cost-effectiveness in the past is that of legislation. While there are many organizations that are expending great resources on the broad range of accepted traffic safety countermeasures, the SSCC is the only organization that is statutory recognized and given the responsibility to recommend statutorily changes…*
>
> *Interact heavily with the planning effort to establish an effective presence with the annual Safe Home Alabama Traffic Safety Conference in order to get on the program and solicit input from the traffic safety community…*

Establish a web portal focused on traffic safety legislation and legislative updates and to inform and obtain input from the traffic safety community… The Safe Home Alabama Portal (SHA)… will be designed initially to support SSCC legislative activities, but it will be extensible to other communication and coordination activities… The legislative component of the SHA Portal will keep track of all current and proposed legislation, track it through the legislature, and accept input from the traffic safety community to improve and promote legislation… Provide a push mechanism (via e-mail) to keep all interested parties aware of legislative activities... Provide a telephone question and response (1-800 number) capability to augment the web site...

Extend the SHA web portal to include all aspects of traffic safety by adding traffic safety efforts agencies and organizations that have major traffic safety responsibility...

The SSCC is doing an excellent job and appears to be operating in the same mode as the Legislative Group outlined in the SHSP. For example, under its guidance a preliminary version of the Safe Home Alabama web portal was placed into operation at http://www.safehomealabama.gov/, with the Administrative Office of Courts providing temporary staffing to begin populating the website database. The Website has strong potential for collecting and displaying legislative information that affects traffic safety in Alabama. For example, the home page includes the following topics:

- A description of the State Safety Coordinating Committee
- A description of the Traffic Safety Information System Coordinating Committee
- A description of the Safety Management Action & Resources Taskforce (SMART)
- A description of the Strategic Highway Safety Plan Coordinating Committee
- A menu bar with direct links to other pages
    - Daily Updates
    - Public Education
    - CARE (software)
    - Traffic Safety Studies
    - Committees
    - Legislation
    - Stakeholders
    - Quick Links

Of direct interest in the implementation of the Alabama Strategic Highway Safety Plan is the Legislative Page of this website. It contains information on recently enacted legislation, and more importantly, proposed traffic safety legislation, as shown in Table 3-1.

Representatives of the team preparing the SHSP Legislative Action Plan has attended meetings of the SSCC, has examined the SSCC's Preliminary Strategic Plan, and has followed the Committee's development. This led to the conclusions that the State Safety Coordinating

Committee is a very suitable data collection and coordinating point for all traffic safety legislation in Alabama, including implementation of the Strategic Highway Safety Plan.

Table 3-1: Website legislation page menu

Legislation – Please continue to visit this page for the latest on traffic safety legislation pending and recently enacted.

Pending Legislation

- Proposed 2007 Legislative Agenda - Updated

Recently Enacted Legislation

Traffic Safety Legal Rules

- "Move Over" Law
- Recent Changes to the Child Safety Seat Law

Traffic Citation Legal Rulings

- Code of Alabama: Alabama Rules of Judicial Administration
- Order From Alabama Supreme Court to Initiate e-Citation
- Order From Alabama Supreme Court Approving Electronic Citation Format
- Electronic Citation Legislation

Committee Legislation

- SSCC Enabling Legislation and Membership

Graduated Drivers License (GDL)

- History and Fiscal Notes, SB386, HB673, HB283, SB304

Identifying and Supporting Potential Legislation

The activities of the Legislative team included identifying legislation for adoption by the 2007 Legislature. This was accomplished by evaluating crash data; soliciting input from other SHSP committees, and reviewing legislation and programs implemented nationally and locally. Another consideration was determining potential legislation for adoption to prevent loss of federal funds if such legislation is not adopted. To the extent practical the Legislative team focused its safety issues relevant to the SHSP. Potential legislation identified by the task force was submitted to the SSCC for adoption and support. As a result of these activities, the team assembled an extensive list of bills which it recommended SSCC, and team members participated in the SSCC deliberations involving 40 potential safety bills. As a result of this process, the SSCC elected to concentrate on the nine bills shown in Table 3-1, with a possible tenth bill to be added later.

A three-step process (described below) was developed by the Legislative team to provide coordination, direction and accountability to the process of building support for potential legislation. The process assigned specific responsibilities to individual team members to enhance the opportunities to identify and support desirable safety legislation. This process is displayed graphically in Figure 3-1.

Table 3-2. 2007 topics selected for introduction to Legislature

Candidate Bill	Topic
1	Prior alcohol, out of state
2	No previous DL, close loophole
6	Attempting to allude
10	Cities under 19,000 inhabitants
11	Arrest for misdemeanor if not seen by officer
13	Aggravated DUI? 0.15 BAC
14/26	Increase seat belt fine from $25 to $50 combined with seatbelt all passengers
19	Strengthen GDL
23	Teen cell phone prohibition
Additional legislation recommended for support, if introduced	
16	Red light camera

STEP 1: Identify Support

A. Sponsors/Stakeholders- Solicit support or sponsorship of safety legislation from Legislators by phone or letter.
    1) Legislative team members will show commitment by establishing timelines for contacts and reporting back to the team.
B. Establish deadline for input for legislation from other SHSP committees.
C. Identify internal initiatives (i.e. existing legislation, etc.)
D. Research Legislators or stakeholders position or stance on prior legislation relative to the initiative.

STEP 2: Review

A. Sponsors/Stakeholders- Submit first draft of legislation
B. Solicit input from other committees
C. Committee Actions.
    1) Identify which initiatives have greatest potential for passage
    2) Identify which initiatives will result in gain or loss of funds.
    3) Determine what existing legislation needs amending/strengthening
    4) Determine what legislation is the needed.
D. Develop talking points on the relevant issues.

STEP 3: Report

A. Member report back to committee briefing group on contact made, political feelers as to acceptance or rejection of legislation
B. Report status to other committees
C. Develop cover letter for submittal to Legislator with outline of legislative package and attachments of reference data.

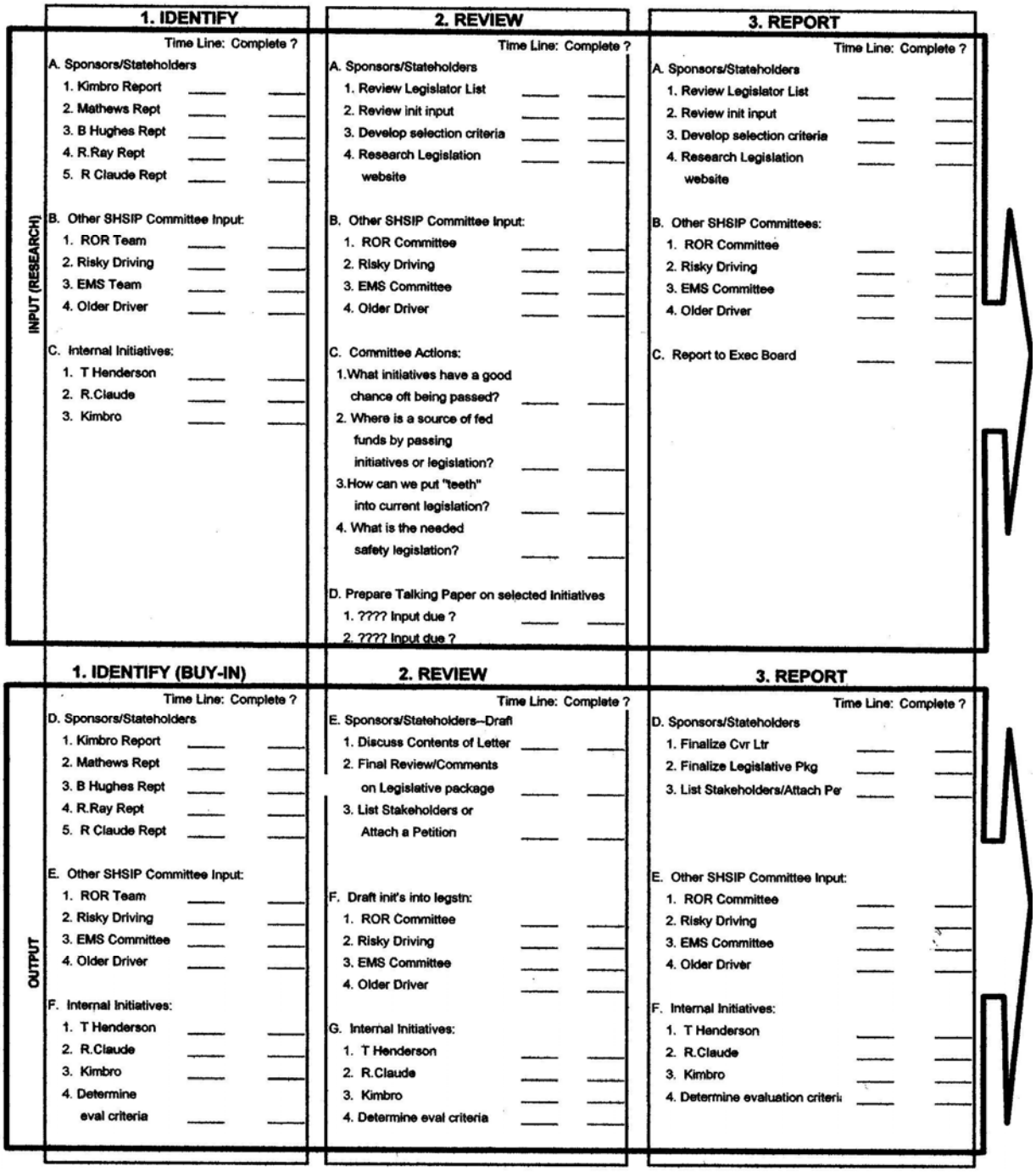


Figure 3-1: Process developed by legislative team to identify and support desired safety legislation

Summary

The Legislative team's actions in 2006-07 to develop an action plan have been documented in the previous paragraphs, and it is summarized in the following list.

- Identify existing legislation in other jurisdictions to use as a model.
- Identify those laws that are resulting in loss of funds and focus on them.
- Identify legislation which has the greatest probability of enactment.
- Review proposed legislation to determine if it will adequately address the safety issue.
- Prioritize potential legislation and recommend it to the SSCC.
- Identify or develop legislative support procedures which have proven to be effective.
- Identify legislators, special interest groups and lobbyists to assist.
- Continue to track, encourage, and support legislation during the Legislative session.
- Continue to work as a team to develop the best safety legislative program possible.

Chapter 4
Older or At-Risk Drivers

Introduction

Most Americans arrive at their destination by automobile. Seven out of eight people age 50 and older are licensed drivers. This mode of travel is the overwhelming choice of households, as reflected in the built environment. Given historical development patterns in metropolitan areas, many neighborhoods, schools, shopping centers and services are accessible only by car. Although more communities are investing in alternative modes of transportation (e.g., public transportation, walking and bicycling) the automobile remains an essential tool for personal mobility and independence.

Of all the challenges incorporated within this SHSP, the older or at risk driver is perhaps the most complex because it involves so many issues beyond simple traffic safety. All individuals should have access to a range of safe, accessible, dependable and affordable transportation options that enhance mobility, enable independent living and foster social engagement. Sooner or later, in the interest of safety for the general population, older or at risk drivers must make a personal decision to restrict or eliminate driving themselves before the decision is made for them by a family member, a medical professional, or law enforcement.

The Committee used an overall goal of trying to retain as much mobility, through driving, for our older and at risk driver population as would be consistent with the safety of the driver, their passengers and others on the roadways.

Analysis of Crash Data

Assistance was requested from the CARE Research and Development Laboratory (CRDL) at the University of Alabama to pinpoint crash data as pertains to older drivers. CRDL staff members supplied the committee with much pertinent information. Among the findings, this data impressed the committee as being most applicable to our concerns:

Primary Contributing Circumstances

The Primary Contributing Circumstance is the primary reason for the crash listed on the crash report by the officer. While a number of factors show up as over represented, the three that are the top of the list are: Failure to Yield Right of Way, Failure to Heed Sign or Signal, and Unseen Object or Person or Vehicle. These factors likely point to older drivers failing eyesight, their declining physical ability to look and accurately observe what is going on around them and their slowed response time to react to what is happening around them.

First Harmful Event

When looking at the First Harmful Event listed on the crash form, the most over represented factor is Hitting a Non-Parked Vehicle. For this category, there are almost 28% more than the expected number of crashes among older drivers as compared to all other drivers. This indicates that older drivers are not typically running off of the road and hitting things like a ditch, tree, mailbox, etc. Instead they are hitting other vehicles on the road.

Number of Vehicles

Both two and three-vehicle crashes are over-represented for older drivers. This follows closely with the information observed in the "First Harmful Event" section of this report. This indicates that older drivers are more likely to be involved in crashes where they are hitting at least one other vehicle, as opposed to those crashes where a single vehicle is involved. In fact, it is interesting to note that single car crashes are extremely under-represented for older drivers.

Table 4-1: Number vehicles involved in crashes (2003-2005)

Vehicles Involved in Crash	Crashes, one or more Driver 65 or Older	% Crashes, one or more Driver 65 or Older	Number All Other Crashes	% All Other Crashes
1	4,040	6.72%	95,493	25.72%
2	51,371	85.45%	256,285	69.02%
3	4,109	6.83%	16,732	4.51%
4	504	0.84%	2,333	0.63%
5	76	0.13%	352	0.09%
6	17	0.03%	78	0.02%
7	4	0.01%	14	0.00%
8	0	0.00%	4	0.00%
9	0	0.00%	2	0.00%
10	0	0.00%	0	0.00%
11	0	0.00%	2	0.00%
12	0	0.00%	1	0.00%
13	0	0.00%	0	0.00%
14	0	0.00%	0	0.00%
15	0	0.00%	0	0.00%
16	0	0.00%	0	0.00%
17	0	0.00%	0	0.00%
18	0	0.00%	0	0.00%
19	0	0.00%	0	0.00%
> 19	0	0.00%	1	0.00%
Crashes	60,121	100.00%	371,297	100.00%

Driver Maneuver

The over-representation seen in the Driver Maneuver category indicates there are certain maneuvers older drivers likely cannot perform as well as their younger counterparts. The most over-represented categories seen for driver maneuver are: Left Turn, Exiting Private Road or Property, Backing and Right Turn. The Left Turn maneuver is the most over represented,

indicating that this is a particular problem for the older driver. Because of their reduced field of vision and ability to react to a situation drivers may be making turns that would not be considered safe by those who may be younger and able to react to a situation more quickly. Also a contributor to this is drivers who may be making left turns when a traffic sign or signal indicates that it is not safe.

Safety Belt Usage

When looking at the safety belt usage rates for those older drivers involved in crashes, the most over represented categories are those where the driver is wearing a safety belt. Because older drivers tend to be risk adverse this is what you would expect. The older drivers are more likely to wear their safety belts than the younger drivers; therefore, efforts to increase belt usage among older drivers are not needed although they are still encouraged as a matter of routine.

Time of Day

The time of day where older drivers are over represented as drivers in crashes is early in the day and going into the early afternoon between the hours of 9 AM and 4 PM. This indicates that many of the older drivers are already self-limiting their driving behavior and thus strategies for improved safety should target this time frame.

Implementation Plan Objectives

Rather than trying to solve all challenges at one time with the resultant failure caused by too many solutions going in too many directions, our committee has decided to concentrate on three attainable objectives:

1. Roadway improvements
2. Education of law enforcement and medical professionals
3. Intervention where needed under existing Alabama law

All these objectives are countermeasure oriented. This committee evaluated the possibility of proposing legislation related to mandatory vision, cognition, and motor function re-testing, as a requirement for driver license renewal. Available literature related to the subject was reviewed, and the implementation team concluded that the literature available at this time is inconclusive regarding a direct link between mandatory vision re-testing and a reduction in roadway fatalities, injuries or crashes.

An in-state expert on this topic was consulted, Dr. Cynthia Owsley of the UAB School of Optometry. Dr. Owsley is presently conducting a study in Florida which addresses this issue, and recommended that the implementation team postpone suggesting legislation for mandatory vision re-testing in Alabama until the results of her study are available. The committee accepted her recommendation with the hope that in approximately one year, research results will allow the team to make an informed decision regarding the cost-benefit effectiveness of mandatory vision re-testing in Alabama. For now, a workable alternative is educating law enforcement to better recognize these problem areas during citation, crash investigation, or checkpoint stops and to

make reevaluation referrals to the DPS under existing laws. Education of personnel at the County Probate Office renewal sites to use similar observation techniques would further strengthen this approach.

Roadway Improvement Countermeasures Implementation Plan

Improvements in the travel environment, including sidewalks, crosswalks, roads, highways, signage, and traffic monitoring and information systems can improve vehicle and pedestrian safety. Proper design and enforcement of laws at intersections can reduce the danger of crashes occurring during left turns (the highest-risk situation for older drivers). Improvements for intersections could include signs giving adequate advanced warning, standardized road markings, larger signs with more legible fonts, more reflective sign materials (particularly on entrance and exit ramps for freeways), better road and sign maintenance, and better-illuminated highways would help all motorists drive more safely.

Improving the travel environment takes long-range planning and substantial public investment. The Federal Highway Administration (FHWA) has developed guidelines for road and highway design intended to improve safety for older drivers and pedestrians. These are contained in the "Older Driver Highway Design Handbook" and the "Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians." However, these are only guidelines and are not mandatory; implementation is discretionary with State and local agencies.

ALDOT and some cities and counties are already beginning to use many of these traffic control improvements. We will work with traffic engineers throughout the state to begin a program of upgrading to the recommendations listed below as their budgets permit and replacement of existing control devices become necessary. Trying to make all improvements at one time would not be financially feasible. We believe that most agencies can accomplish a few improvements in each budget cycle and not put any financial strain on their resources.

Planned Roadway Implementation Strategy:

A. Enhanced Signing – Avoiding and Reducing Sign Clutter
   (1) Oversized signs and legends for better visibility
   (2) Advance street name signs to allow lane adjustment for turns
   (3) LED street signs that are easier to read where applicable
   (4) Reduce sign clutter on right of way to avoid confusion caused by too many attention distracting announcements and advertisements
   (5) Investigate a "model" ordinance to control and restrict private signs on right of way

B. Signal Head Modifications
   (1) LED signal heads for better visibility
   (2) Dark back plates on signal heads to make them stand out
   (3) Left turn phasing should be looked at as the situation merits

C. Markings and Delineation
   (1) Increase striping on roadways to 6 inches in width, where appropriate

(2) Consider rumble striping for centerline and shoulder striping
(3) Consider roadway rumble strips in particularly dangerous areas
(4) Increase usage and maintenance schedule of reflective pavement markers

Educational Driver Countermeasures Implementation Plan

The educational portion of the Driver Countermeasures involves three general categories: law enforcement, medical professionals, and the general public. In many cases, the three overlap and therefore all three will be kept in mind when developing all training and literature for use in this broad countermeasure. Whenever possible, existing literature and brochures will be used. AARP has several guides available, of which, two good ones for our purposes are "At the Crossroads" and "We Need to Talk". However, the committee feels that a few specific brochures and training aids will have to be developed. Funding for this outreach has not been determined at this point. Additional educational programs to make the general public aware of transportation options will address the issue of mobility for older and at risk individuals who make the decision to no longer drive themselves.

Planned Education Implementation Strategy:

Law Enforcement Education: The nine Regional Traffic Safety Coordinators-Law Enforcement Liaisons that are funded by ADECA/LETS are in a unique position to coordinate training for law enforcement personnel after the core training curriculum has been developed and instructors have been certified. All officers are required to attend continuing education classes of one form or another each year.

Officers have the opportunity to observe drivers directly at traffic stops or crashes

(1) Develop training for detection of visual, cognitive and motor function issues in order to identify drivers who cannot drive safely in certain situations or at all with whatever issue they may have
(2) Develop training for making decisions on restriction or revocation referrals to D.P.S. for action
(3) Develop similar training for license renewal personnel so that appropriate action can be taken to re-issue a license, issue a restricted license, or revoke the license entirely

B. Enlist the aid of the Alabama Association of Chiefs of Police and the Alabama Sheriffs Association for certifying the training for a Post continuing education credit

(1) Develop low cost brochures for officers to have available for relatives or the drivers themselves

C. Explore modification to the Alabama Drivers Manual to explain sharing the road with older or at risk drivers and make them aware of visual, cognitive, and physical impairments for the next and future printings of the Manual

D. Encourage the development of public transportation in all Alabama counties that could be used by older or at risk drivers who decide that they are no longer comfortable with driving. Currently only 50 of the 67 counties have any form of public transportation

E. Use Public Information Officers to obtain or develop PSAs to educate the public in general about the challenges for older or at risk drivers and provide information about the process to provide public transit for those who no longer drive

Medical Professionals Education: Medical Professionals, including EMS personnel, are in a unique position to assess if changes in patients' physical, cognitive, or visual abilities have increased their risk for driving. After assessment, the medical professional could provide counseling and assistance for driving as needed or refer patients to the licensing agency at D.P.S. if appropriate.

A. Develop a brochure for medical professionals regarding identification and reporting methods for physical, cognitive, and visual impairment

B. Locate and obtain existing materials for the professionals use such as the AARP guides listed above

C. Partner with AMA, AARP, AAA, and other agencies or groups in getting this literature in the hands of the medical professionals

General Public Education: Older adults living independently in their community need transportation to the places and services that support their independence. These community residents are best served by a multimodal transportation system. Mobility choices in addition to the automobile are: pedestrian facilities, bikes, buses, trains and, where suitable, waterborne transportation. Like people of all ages, older individuals rely most heavily on automobiles for transportation. People age 50 and older make nearly 90 percent of their local trips by private vehicle. It is projected that by 2010, 90 percent of women and nearly 100 percent of men over age 65 will have been licensed drivers for most of their adult lives. As they continue to age, however, older people face a growing likelihood of functional impairment. Hence they must increasingly rely on alternatives to driving, including ride-sharing, walking, and public transportation. All of these must be safe, accessible, dependable and user-friendly.

Loss of mobility or the fear of that loss is one of the most important issues to older or at risk drivers. Alternative modes of transportation that currently exist within the state of Alabama should be publicized to help alleviate this fear.

A. Older or at risk drivers –
   (1) Educate and train older or at risk drivers to assess their driving capabilities and limitations and improve their skills where possible
   (2) Encourage older or at risk drivers to voluntarily limit their driving to times and situations where they can drive safely
   (3) Help drivers adapt to functional conditions that may affect driving

B. Alternative transportation –
   (1) Educate potential users about the availability of municipal transportation and rural public transportation out in the counties
   (2) Use PSAs to combat the mind set that public transportation is only for indigent persons and to convince the aging population that it is a great way to get wherever they wish to go – this will require convincing some 17 Counties to participate and provide resources

Intervention Points Implementation Plan

This committee believes there are many intervention point opportunities for law enforcement, medical professionals, and family members. It will be a major goal of this committee to examine these points even after the SHSP for this year is in place and being implemented. The group, because of its diverse and dedicated membership, will continue to communicate after the official committee has been disbanded, in an effort to address the needs of "Older or At Risk Drivers." Points to be explored are:

A. Law enforcement –
   (1) After a traffic stop regardless of whether or not a citation is issued
   (2) During crash investigation regardless of who was at fault
   (3) Safety checkpoint stops whether a violation is present or not

B. Medical professional –
   (1) During routine examination or health checkup
   (2) During treatment for conditions that may cause a driver to be unsafe

C. Family member –
   (1) At family gatherings, medical exams, sickness visits
   (2) After a near crash witnessed by family member
   (3) Other occasions to be determined as appropriate by family member

Legislative Implementation Plan

As stated in the Implementation Plan Objectives, this committee prefers to defer proposing new legislation at this time to concentrate our efforts where the probability of success is greater. We do believe there is a need for reexamination of all citizens for visual, cognitive, and motor function abilities at the time of license renewal but do not believe this reexamination should only be for older or at risk drivers. One of our members is currently working on a research paper that explores attitudes on retesting in the state. The preliminary data appears to favor retesting for all drivers. We believe this may be a more appropriate approach to retesting in theory and getting legislation passed in the future in particular.

During the coming year, we believe there are enough laws, rules, and regulations to accomplish the first stage of our efforts toward traffic safety as regards the older or at risk driver. By working within the existing framework, we believe we will be better prepared to make

recommendations to the Legislative Committee after we have a year of experience and the chance to see if our educational efforts make a difference in attitudes and decisions.

As the age 50 and older population increases, discussions such as these will continue. Our key responsibilities should be as educators to ensure these Alabamians have access to information to assist in the decision-making process and as advocates to ensure there are options for residents to have transportation options at their disposal.

References

Federal Highway Administration, "Older Driver Highway Design Handbook," Report FHWA-RD-97-135, January 1998, http://ntl.bts.gov/DOCS/older/intro/index.html, accessed January 10, 2007

Federal Highway Administration, "Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians," Publication No. FHWA-RD-01-051, http://tfhrc.gov/humanfac/01105/cover.htm, accessed January 10, 2007

Chapter 5
Risky Driving Implementation Plan

Introduction

The initial development for the Risky Driving element of the SHSP occurred during 2004-05, when a team of over 100 volunteer safety professionals developed a comprehensive highway safety plan (CHSP). This document served as the foundation for the development of this detailed implementation plan.

During examination of Alabama fatal crash data during 2004-05 the work group identified issues like DUI, speeding, other violations, failure to use restraints, and similar topics that were prevalent in fatal crashes. An analysis showed a strong correlation in demographics between these issues; no single cause could be isolated. Individuals who drove while intoxicated were also likely to speed, not wear restraints and commit other violations. In other words, drivers who engage in one risky behavior will likely engage in other forms of risky behavior.

Others had previously recognized the bundling of risky driving behaviors. For example, "The primary safety issues related to drivers between the ages of 15 and 24 are inexperience, immaturity, and risk taking." (NHTSA, 1993; UTCA, 2005). The project work group felt confident that consolidation of all of these issues into a single "Risky Driver" category was an excellent way to address these highway safety issues, and that a number of countermeasures could be used to address the related multiple symptoms simultaneously. This decision was supported by additional analysis of data and the opinions of the volunteer experts who prepared the Risky Driving element of the CHSP.

Background Information

The traffic crash data analysis that was performed in the SHSP identified a wide range of crash causes that were all symptoms of a single risky driving cause. The following emerged as the primary components of risky driving as associated with fatal crashes:

- Restraint not used (includes child restraints)
- Speeding
- Alcohol/Drug use
- Youth drivers (age 16-20)
- Fail to conform to a stop or yield sign
- Fail to conform to a signal

The volunteer safety advocates who composed the Risky Driving Team for this implementation report selected four areas as the most important for action to reduce risky driving in Alabama. Together with a fifth (multiple-area) category, the following list is ordered by their respective countermeasure effectiveness estimates:

- Occupant Protection (base condition for effectiveness estimates)

- Multiple Areas (91%)
- Youth-Targeted Programs (85%)
- Police Traffic Services (68%)
- Alcohol/Drugs (56%)

The percentages given above indicate the Team's relative estimates of the average effectiveness of the recommended countermeasures that address that category, *relative to Occupant Protection countermeasures, which would be ranked at 100%.* In other words, the Risky Driving Team estimated that, on average, the countermeasures that address Occupant Protection would be more effective than the countermeasures that address the other four areas. For example, the average effectiveness for Youth-Targeted Programs countermeasures was only 91% of the average of those within the Occupant Protection category. The ranking methodology is explained in more detail below.

Note that Alcohol and Drug use is a root cause of crashes, while Occupant Protection and Police Traffic Services are countermeasure-oriented. Youth-Targeted is appropriate since youth have been clearly demonstrated to be most heavily involved in risky driving behavior. The planned implementation items are given for each of these below, and a fifth has been added – *Multiple Category Countermeasures* – for those that cannot be isolated to just one of the categories above.

The categories below are generally ordered according to these priorities. Within each category and subcategory, countermeasures are listed in priority order. Thus, some of the low priority countermeasures in one subcategory could have a lower priority ranking than those ranked higher in a category below them.

Occupant Protection Implementation Plan

Restraint systems have been demonstrated and recognized for decades to be one of the most cost-effective countermeasures for reducing the severity of crashes. However, they do no good if they are not used, and failing to use them is clearly risky behavior. The following activities are planned in this area:

- Enforcement
  - Provide incentives (e.g., overtime) for the increased enforcement of occupant protection laws.
  - Increase police emphasis on restraint enforcement.
- General
  - Conduct area briefings, establish partnerships, employ the media, conduct training, and perform rigorous law enforcement of the state's occupant protection laws.
  - Develop special programs to concentrate on groups that exhibit low safety belt and child restraint usage.
  - Continue the promotional and educational campaigns to reinforce the importance of safety belt usage and serve as a strong reminder of the Alabama Primary Safety Belt Law.
  - Increase fines to include court costs for seat belt violation citations.
  - Provide educational programs and technical assistance (brochures, advertising campaign, and other informational materials) throughout the state.

- Provide occupant protection information in Spanish.

- Click It or Ticket
  - Coordinate the activities of the nine regional highway safety coordinators, the Alabama Department of Public Health, the Alabama Department of Public Safety, local law enforcement agencies, governmental agencies and other organizations to promote the Click It or Ticket safety belt campaign during major holidays.
  - Expand the Click It or Ticket campaign efforts to be an ongoing, yearlong program.

- Child Restraints
  - Provide a comprehensive educational program designed to heighten community awareness, provide Child Protection System (CPS) information, and establish car seat checking stations.
  - Conduct standardized CPS training to train and certify CPS Technicians to increase the size of the trained personnel pool qualified to conduct CPS clinics and training throughout the state.
  - Provide more publicity for free child seat inspections. (Many localities provide free child seat inspections but citizens are not aware of them.)
  - Conduct an additional CPS survey which ascertains appropriate usage, in addition to the annual statewide observational survey. Ensure all survey results are available to stakeholders across the state.

Multiple Category Countermeasures

The following action items could not be categorized into just one of the four categories discussed previously, and were grouped into the new "multiple category" countermeasure classification:

- Establish and extend local task forces (or councils), perhaps coordinated by the Community Traffic Safety Programs (CTSPs). Their goal will be to: (1) establish local safety plans; (2) formulate problem-solving strategies; (3) transfer crash countermeasure technology, (4) mobilize and empower all local community participants to change the norms and policies within their communities concerning all aspects of risky driving. Their special focus will be on the areas of youth alcohol, alcohol countermeasures in general, restraints and youth risk taking.
- Work toward the development of a "culture of safety" in which law enforcement, government, educators, and other opinion leaders across the state keep the dialog about safety in the public's consciousness, and in which they lead by example.
- Increase public awareness of new and existing laws. Utilize any and all media outlets to publicize laws, with special focus on Occupant Protection, Child Passenger Safety and the Move-Over Law.
- Examine the entire subject of *road rage* to determine ways in which most of the various countermeasures developed to approach the issues of risky driving can be extended to approach this growing and developing traffic safety problem.
- Develop a mechanism by which unsafe driving practices (especially of, or around, trucks) can be reported more easily than is currently the case.
- Develop local alcohol safety plans and councils to formulate problem-solving strategies and to transfer alcohol crash countermeasure technology.

Youth-Targeted Implementation Plan

The term "youth" refers to two age groups: 16-20 year old drivers for non-alcohol related risk taking, and 19-23 year old drivers in alcohol related risk taking. Planned action items follow.

- School or University Based Programs
  - Make sure a driver safety course is part of the Health Curriculum taught to 7th, 8th and 9th graders, this group will drive in 2 to 3 years (plant the seed early and often).
  - Develop and implement an "early education" program starting in the grade schools and providing reinforcement over a 10-15 year period.
  - Tie high school parking privileges to the use of seatbelts. (At this point not sure if this involves legislation or getting individual schools to participate.)
  - Conduct programs in the elementary schools to teach children K–5 the essentials of Pedestrian, Bicycle, and Seat Belt/Booster Seat safety.
  - Develop comprehensive campaigns (school-based, media based, etc.) attacking "culture of speed" and the damage it can do. Use testimonials of people injured in crashes due to excess speed, use peer influence to empower passengers to speak up, use signs, e.g., "slow down on wet roads" to make safer driving more salient.
  - Reward teens upon high school graduation with gifts from participating sponsors if they have no points against their license. This will need to be a substantial package in order to be effective.
  - Develop a component aimed at parents, for the program defined in the "early education" bullet above.
  - Purchase and maintain simulators to teach young drivers how to react to dangerous situations.
  - Promote education on traffic safety and alcohol use at college orientation or through some type of freshman class.
  - Work with universities to develop and incorporate messages on their web sites or through e-mail.
  - Create a statewide program to expand the education effort of School Resource Officers and ABC enforcements agents.
  - Establish a mechanism to promote alcohol free events for colleges.
- Specialized Volunteer Programs
  - Establish "Train the Trainers" programs for high schools and collegiate students on risky driving behaviors, using the existing groups such as D.A.R.E., SADD, MADD, law clubs, 4-h, etc.
  - Provide or increase funding to bolster the volunteer efforts of Students Against Destructive Decisions (SADD).
  - Provide or increase funding to bolster the volunteer efforts of D.A.R.E. to say Know, a program to educate students about the harmful effects of drugs and alcohol on their developing brains.
- Graduated Drivers License (GDL)
  - Perform a comprehensive evaluation of the effectiveness of the GDL, especially the passenger portion, and recommendations for modifications based on findings and reviews of research.
  - Tighten up enforcement of graduated drivers' license laws.

    - Involve parents and young drivers in education about GDL.
- Public Information and Education
    - Develop specific brochures (add to what already exists) that address needs of new drivers to be distributed to all the dealerships in Alabama, working with the AAMVA. Distribute the same brochures for new drivers to all the PTA groups in Alabama in conjunction with the Alabama PTA associations (until the State adopts a comprehensive graduated driver license). Note that effective brochures (and for that matter all PI&E efforts) must consider several separate targets that might require different approaches for each:
        i. Pre-high school students,
        ii. High school students,
        iii. College students, and
        iv. Parents.
    - Develop a brochure for the risky driver behaviors for all two year and four year college freshmen orientation classes.
- General
    - Expand ABC enforcement to combat youth access from point of origin.
    - Provide an avenue to receive complaints about youth alcohol usage, including a secure web site to receive anonymous complaints; report the results to enforcement agencies.

Police Traffic Services Implementation Plan

Police Traffic Services countermeasures include all traffic enforcement efforts as well as the various publicity efforts that are facilitated by State and local police departments. Countermeasures under consideration follow.

- General Statewide and Local Agencies
    - Implement overtime efforts to conduct a statewide rural STEP project aimed at identified segments of roadway with high crashes, including D.U.I. enforcement, safety belt and child seat enforcement as well as strict enforcement of posted maximum speed limits, including public information and education efforts.
    - Provide funding for overtime for all STEP and check-stop activities through the Community Traffic Safety Programs (CTSPs).
    - Increase penalties for violations in high-crash areas (as has been done in work zones).
    - Increase enforcement on the Interstate highways with the goal of reducing the average speed by 5 MPH.
- Technological Support for Selective Enforcement Efforts
    - Purchase video equipment to support police STEP efforts.
    - Reduce speed of vehicles in residential areas by use of traffic calming techniques.
    - Install small lights on top of traffic signal poles that work with signals. They operate with the red ball, allowing officers to see a vehicle running the light from a distance and do not have to be sitting in view of the signal heads.
    - Promote the use of the Law Enforcement Tactical System (LETS) at check-stops.

Alcohol/Drugs Implementation Plan

No other single causal entity can be tied to as many fatalities as the use of alcohol/drugs while driving. Approximately 40% of fatalities are caused by alcohol/drugs. Planned action items follow.

- School/University Based Programs
  - Provide education to school age children in grades K-12 on alcohol awareness as part of a comprehensive program of traffic safety.
  - Establish comprehensive campaigns in areas near universities that involve media and university programs that incorporate research-based messages (norms, testimonials, and/or fear appeals) combined with designated driver programs, non-drinking events, and discussions of responsible behavior.
- Coordination
  - Encourage joint enforcement activities including all involved state and local agencies (e.g., include ABC enforcement officers where appropriate).
  - Foster and promote comprehensive cooperative efforts including the state Department of Mental Health, Public Health, the Department of Education, ABC Board as well as DPS, ADECA, ALDOT, and all other interested agencies, recognizing the synergism that accrues from such collective efforts and the possible waste of resources in fragmented programs.
  - Expand statewide the program to coordinate college personnel and activities and teen alcohol outreach peer counseling.
- Statewide/General
  - Enlarge and enhance responsible vendor programs, and make it mandatory for anyone selling alcoholic beverages. Expand the dispenser awareness program into a mandatory training course.
  - Coordinate and facilitate a statewide DUI workshop in conjunction with the annual Safe Home Alabama conference.
  - Further develop and implement a statewide alcohol Public Information & Education campaign.
  - Expand uniform training in the Standardized Field Sobriety Test Battery (SFSTB), Breath Alcohol Screening Devices (BASD) to adhere to changes in Alabama's Traffic Laws (Act 96-324), which requires consistent calibration.

Setting Priorities

The establishment of priorities among countermeasures within the risky driving category was problematic because of the lack of accepted scientific estimates of effectiveness resulting from the great interaction among the various proposed countermeasures. In addition, several funding sources might be applied from agencies with entirely different purviews. In order to prioritize the countermeasures, an estimate was obtained from members of the team for the potential to reduce the various crash types from Table 1-4 (presented in the approved Alabama Strategic Highway Safety Plan, formerly called the CHSP, UTCA report 06404). Table 5-1 extracts crash types that are related to risky driving.

Table 5-1. Crash severity by crash type for risky driving crash types

Crash Type (Causal Driver)	Fatal Number	Fatal %	Injury Number	Injury %	PDO Number	PDO %	Total
1. Restraint Not Used*	449	3.09%	5,685	39.18%	8,376	57.73%	14,510
2. Speeding	276	3.72%	3,164	42.69%	3,971	53.58%	7,411
4. Alcohol/Drug	192	2.55%	2,984	39.57%	4,366	57.89%	7,542
6. Youth – Age 16-20	152	0.53%	6,842	23.69%	21,889	75.79%	28,883
11. Fail to Conform to S/Y Sign	56	0.66%	2,420	28.47%	6,023	70.87%	8,499
17. Fail To Conform to Signal	24	0.25%	3,023	31.52%	6,545	68.23%	9,592
20. Child Not Restrained*	12	0.85%	767	54.13%	638	45.02%	1,417

* Person count as opposed to crash count for “fatal number” category.

This indicates that, all other things being equal, there are higher potentials for reduction in the restraints, speeding, alcohol/drug and youth areas than in the remaining categories, which are significantly lower in potential. However, all other things are not equal. In applying these numbers to prioritize countermeasures, the following must be considered:

- Neither these categories nor the countermeasures that are proposed to address them are mutually exclusive. For example, a crash might simultaneously involve speeding, alcohol and an unrestrained driver of age 16. Similarly, a selective enforcement effort might consider alcohol, speeding and restraints simultaneously.
- The effectiveness of the countermeasure is as important in determining priorities as the potential that this effectiveness will impact. For example, a countermeasure with 20 percent impact on the speeding category would receive a higher priority than a 10 percent impact on the restraint-not-used category.
- Given that considerable recent efforts have been made to increase restraint usage in Alabama, the marginal effect of applying resources to this topic might not return benefits as large as achieved immediately after the passage of the mandatory usage law. On the other hand, the recent gains will most surely be lost unless the effort is maintained to some degree.
- In many cases categorical funding, federal agency guidelines, and regional programs dictate overall countermeasure strategy. In these cases, information should be generated and applied to assure that the most effective tactics are applied in carrying these strategies out.

Every Team member who wished to participate provided an estimate of the effect the various countermeasures would have on each category of crashes. This was accomplished by completing a table (see Table 5-2 below) that provided an estimated crash reduction for each of the categories. Each of these estimates was weighted by the number of fatal crashes that occur within that category to provide an estimate of the number of fatal crashes that would be reduced by its implementation. These estimates were averaged to produce the ordering of countermeasures given above. In the absence of accepted scientific procedures to perform traditional cost-effectiveness and prioritization studies, this analysis provided an alternative procedure to optimize use of safety funding to reduce risky-driving fatal crashes.

Table 5-2: Table used to estimate effectiveness of countermeasures

INSTRUCTIONS: Insert a percentage in those cells in which you feel the countermeasure will have an impact. The percentage should reflect the average amount that you believe that crashes (or persons injured) within the respective category will be reduced by a reasonable level of implementation of the countermeasure.							
CM No.	Restraint	Speeding	Alcohol	Youth	FTC Sign	FTC Signal	Child Rest.
1							
2							
3							
4							
.							
.							
.							
57							
58							
59							

Quantifying the Implementation Plan

Obviously, the lack of prior scientific analyses of the effectiveness and the interaction between countermeasures makes it difficult to quantify the level of effort and consequent reduction in fatalities, injuries and property-damage crashes associated with risky driving. This is especially true in comparison to other elements of this implementation plan like Run-Off-Road crashes. However, it is still possible to provide reasonable projections and estimates to guide the implementation based on the expert opinions of the Risky Driving Implementation Team, as outlined above.

Countermeasures – All of the elements contained in the five categories of countermeasures listed previously are encapsulated in the following paragraphs.

Cost Effectiveness – The expert opinion of the Risky Driving Implementation has provided a surrogate for traditional cost-effectiveness and optimization procedures. *The priority ordering was based on the average estimates, in terms of expected reduced fatalities.*

Time Frame – The time frame varies from short to mid term, depending upon the nature of individual countermeasures and the magnitude of the application. A few countermeasures may be long term in nature. *Experts were asked to provide estimates based on their expectation of a reasonable investment and the time frame over which that investment was to take place.*

Suggested Lead Agencies – This depends largely upon the type of countermeasure that is recommended. The following summarizes these by type:

- Occupant Protection – ADECA, DPH
- Youth-Targeted Programs – ADECA, Education, DPS (for GDL)
- Police Traffic Services – ADECA (for County and Local law enforcement) and DPS
- Alcohol/Drugs – ADECA, Administrative Office of Courts.

Funding – Funding levels vary widely for the range of applications, and for the degree of application of individual countermeasures. This makes it impossible to provide accurate estimates of funding needs.

References

NHTSA, 1993: Addressing the Safety Issues Related to Younger and Older Drivers; A report to Congress," Office of Program Development and Evaluation, Traffic Safety Programs, January 19, 1993.

Off-Road Accidents & CHSP Development, UTCA Report 04404, University of Alabama, 2004, http://utca.eng.ua.edu/projects/final_reports/04404fnl.pdf, accessed January 9, 2007

Chapter 6
Lane Departure Implementation Plan

Background Information

Based upon traffic crash data, the SHSP work team identified three types of lane departure crashes as high priority: (1) single-vehicle run-off road (ROR), (2) single vehicle crossing the centerline initiating a head-on or sideswipe crash, and (3) single vehicle crossing the median of a divided highway and hitting a vehicle traveling in the opposite direction.

ROR Crashes

All types of lane departure cause severe crashes with higher than normal injury and fatality rates. ROR crashes were selected for the SHSP because they typically constitute 15 % of all crashes, but about 40% of fatal crashes (see Figure 6-1). In other words, ROR is 2.67 times over-represented in fatal crashes (i.e., 40% fatal divided by 15% crashes). Overall Alabama crash fatalities cannot be significantly reduced unless ROR crashes are addressed.

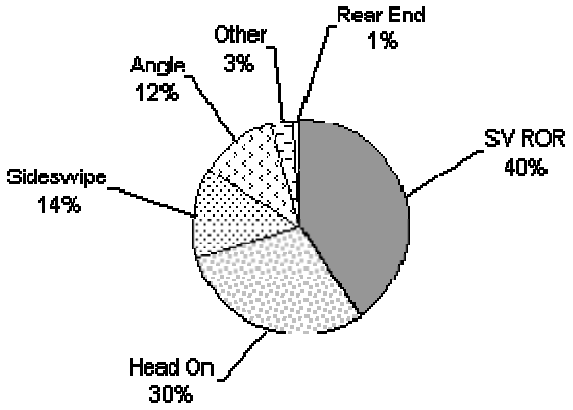


Figure 6-1: Types of fatal crashes

Alabama mirrors the national ROR situation. A recent report indicated that national roadway departure crashes cause 60% of all roadway fatalities, and 40% of these are attributed to ROR (*Safety Compass*, Vol. 1, No. 1, FHWA, December 2006). FHWA indicates it is the largest highway safety problem in the U.S. The publication goes on to indicate that:

> Of the 43,443 highway fatalities in 2005, 25,473 were roadway departure fatalities. Of those, 17,295 were single-vehicle ROR crashes. Eighty percent of ROR fatalities occurred on rural roadways, with about 90% of these occurring on 2-lane roads (based on current available data). In addition, there were almost 8,178 fatalities from head-on, opposite direction front to side, and opposite direction sideswipe crashes which accounted for 19% of all fatalities in 2005.

Alabama ROR crash information is shown in Tables 6-1 and 6-2. Figure 6-1 indicates the types of highways where crashes occur. It is obvious that county roads are the leading contributor to fatal ROR crashes, which is why this type of crash was selected for the SHSP. Two-thirds of roadway mileage in the state belongs to counties. These are typically older, narrower roads with steeper grades and sharper curves than State and Federal routes. In addition, there is less data available about the county highway and traffic crashes than for other highway types. A safety program must consider and address all of these factors.

Table 6-1:
Fatal ROR crashes by highway type, 2005

Highway Type	Percent
County	41%
Municipal	18%
State	17%
Federal	12%
Interstate	12%
Total	100%

Federal and State highways have similar design characteristics and both are under ALDOT's jurisdiction and constitute another 29 percent of these crashes. These appear to be good candidates for a safety program. Separate types of safety treatments are needed because county roads have different characteristics from State and Federal roads. Certainly the types of countermeasures used to reduce ROR crashes on county roads will be much different from those used on State and Federal roads.

Table 6-2 shows what happens to these vehicles after they leave the roadway. The most frequent first harmful event is hitting a ditch, which occurs in 28 percent of fatal ROR crashes. Hitting a tree is the next most frequent first harmful event and the total of these two constitutes about half of all off-road crashes.

Table 6-2:
First harmful event in ROR crashes, 2005

First Harmful Event	Crashes	Percent
Ditch	7742	28%
Tree	4720	17%
Utility Pole	1980	7%
Overturned	1823	6%
Side Slope	1488	5%
Fence	1199	4%
Guardrail	1196	4%
Mailbox	1020	4%
41 other events	6973	25%
Totals =	28,141	100%

Lane Departure on Two-lane State Routes

As shown in Table 6-1, about 29 percent of Alabama fatal ROR crashes occur on State and Federal highways. This makes these highways good candidates for safety programs. But the best safety cost-effectiveness occurs for treatment of high-frequency crash locations (i.e., the treatment "cures" many crashes for a reasonable cost). On the other hand, ROR crashes generally occur at random locations along State and Federal highways, so safety countermeasures are not as cost-effective structure locations as for sites with multiple crashes.

Crossover crashes on two-lane roads are usually of the head-on variety. These are random occurrences caused by impairment, inattention, sleep deprivation, risky driving on the part of the vehicle operator, mechanical failure of the vehicle, or similar causes. The roadway may also contribute due to geometric deficiencies, limited sight distance or similar factors. These types of crashes are hard to single out using a digital crash database because there is not a unique data variable that identifies them.

UTCA conducted a project for ALDOT in 2004, to help find a methodology to identify ROR and centerline crossover sites where countermeasures might be safety cost-effective. The result was a modification to the CARE software to identify stretches of roadway where these types of crashes were overrepresented. Since then ALDOT has initiated a study using special FHWA funds to test centerline rumble strips as a treatment for crossover crashes. A project is being conducted in Elmore County to install and evaluate them.

Multilane Median Crossover Crashes

Some segments of Interstate highways have experienced situations when out-of-control vehicles "crossed over" the median and hit oncoming vehicles. These are very severe, violent collisions, and are often are featured by TV news shows and newspaper articles. It would be possible to reduce the number of fatal Interstate median crossover crashes by placing barrier along all multilane highways, including Interstates, but it would be difficult to place barriers on non-Interstate highways because of access requirements. However, many locations are not suitable for barrier and the total expense of such a program would be cost prohibitive.

ALDOT wanted to find locations where median safety treatments would be cost effective, but it is difficult to identify and diagnose these types of crashes because the Alabama accident report form does not specifically list "median crossover" crashes. In other words, a computer scan of the data could only look at surrogate data items to try to find them.

The 2004 UTCA project for ALDOT also produced a methodology for identifying Interstate median crossover crashes, using the CARE software. ALDOT used this technique and an intensive scan of Interstate crash reports to identify sites for median barrier treatments.

An Interstate median barrier program was begun to install median barriers at selected locations. The program is moving ahead quickly, and barrier has already been installed in multiple locations. This includes a test implementation of three types of cable barrier on I-85 east of Montgomery to determine which performs best. This determination will involve safety

performance, installation cost, maintenance and replacement cost, etc. ALDOT is collecting and analyzing data for evaluation of this test site. It is also collecting data from other sites so that a thorough evaluation can be made to identify and select the most cost effective barrier system implemented at sites.

Implementation Plan

Implementation Planning Team

A planning team was assembled to create the best plan to address the roadway departure in Alabama. Twenty six individuals participated in the effort, which provide a good cross section of those directly involved in roadway design, maintenance and safety. This group included the following agencies and organizations:

- Alabama Department of Public Safety (2 participants)
- ALDOT (8 participants)
- County Engineers (7 participants)
- Cities (2 participants, one in law enforcement and one city engineer)
- FHWA, Alabama Division (1 participant)
- Consulting firms\Industry (6 participants)
- UTCA

The team met three times between September and December, 2006, and also conducted a conference call. In arriving at their recommendations, members reviewed the team's charge, background information contained in the SHSP, prior ROR/Lane departure studies in Alabama, ROR safety publications, ROR countermeasures, and similar information. These actions by dedicated volunteers produced the recommendations in the following paragraphs.

Priority 1 – County Road ROR Fatalities

Narrative – ROR crashes produce more fatalities than any other crash type in Alabama. More than 40% of these crashes occur on County Roads. Any program to reduce roadway fatalities in this state must include the leading cause of such deaths – County Road ROR crashes.

The recommended implementation plan for County Road ROR crashes consists of three components: Administrative/Policy Countermeasures, System Wide or Individual Route Treatments, and High Crash Sites (hot spots).

Priority 1a – County Road Administrative/Policy Countermeasures

There are several low cost safety improvements that can be implemented relatively quickly. Many of these are changes to administrative practices or agency policies.

Countermeasures – Eight countermeasures were identified in this category:

1) Provide training for County Engineers (understanding ROR crashes and other crash types, how to organize a safety program, etc.)
2) Provide county engineers with access to paper copies of crash reports for safety studies
3) Develop safety presentations for County Commissioners
4) Add safety to the current ALDOT road condition ratings (design this step carefully, and train county engineers to accept the data)
5) County Engineers can investigate potential changes to county design or maintenance policies,
6) County Engineers can make night inspections of signs and pavement markings
7) County Engineers can review road maintenance records to identify safety actions needed
8) ALDOT can provide hot spot crash summaries of County Roads to County Engineers in simplified form

Cost Effectiveness – Although it is clear that these countermeasures will improve county road safety, there is no method to conduct a cost-effectiveness analysis.

Time Frame – These countermeasures can be implemented in a short time frame.

Suggested Lead Agencies – County engineering agencies, the Association of County Engineers of Alabama, the Association of County Commissioners of Alabama, ALDOT and FHWA are the primary agencies for implementation.

Funding – These are low cost treatments.

Priority 1b – County Road System-Wide or Individual Route Treatments

Countermeasures – The Implementation Planning Team developed eight treatments for Priority 1b:

1) Signs (high priority)
2) Markings (high priority)
3) Forgiving roadside (high priority)
    - Trees
    - Ditches
    - Utility poles
    - Other obstacles
    - Rumble strips, shoulder and centerline
4) Raised pavement markers
5) Delineators/Chevrons, particularly on curves
6) Shoulder blading
7) Shoulder paving
8) Guardrail
9) Other treatments from accepted publications like *NCHRP Report 500, Volume 6* and the ATSSA/NACE booklet "*Low Cost Local Road Safety Solutions*," prepared by the American Traffic Safety Services Association and the National Association of County Engineers, 2006 edition).

Cost Effectiveness – The cost-effectiveness for these treatments varies, and may be estimated from documents like those cited in Countermeasure 9, immediately above.

The cost effectiveness is a function of the cost to install, maintain and operate the countermeasure, along with the savings to the public in reduced crash costs due to the countermeasure. The key is the estimation of crash reduction. A complete list of reduction factors for the many types of countermeasures would be too extensive for this plan, but the following provide good examples:

- The estimated number of utility pole crashes per year may be estimated by knowing the average daily traffic, the spacing between poles, and how close the poles are to the pavement. That estimate allows prediction of how many crashes could be saved by increasing distance between poles, or by moving a pole line further from the road (Exhibit V-20, NCHRP 500, Volume 8). In 2001, ALDOT engaged UTCA to conduct a utility pole safety analysis, and the project findings may be found in UTCA report 01453 located on the UTCA website under the "projects" page.

- On average, moving a utility pole further from the road reduces estimated crashes by 4% to 82%, depending upon how close the pole was to the road, and how much additional offset was provided. (Exhibit V-9, NCHRP 500, Volume 8)

- On average, crash reduction rates from flattening side slopes may be calculated (Exhibit V-9, NCHRP 500, Volume 3). For example, they may be reduced by an estimated 10% by flattening a side slope from 3:1 to 4:1, and 8% by flattening a side slope from 2:1 to 3:1.

- On average, moving an obstacle further from the road reduces collision frequency. For example, moving the obstacle 10' further from the road produces crash reductions such as: 40% for mailbox, culvert and signs; 78% for guardrails, and 52% for fences and gates (Exhibit V-26, NCHRP 500, Volume 6).

- Several example estimated crash reduction factors were extracted from NCHRP Report 500, Volume 6, *Low Cost Local Road Safety Solutions:*

    - Chevrons can be expected to reduce total ROR crashes by 33 to 49%.
    - Post mounted delineators typically reduce ROR crashes by 25 to 58%.
    - An ALDOT study of wider longitudinal markings recommended using 6"- 8" markings on two-lane roads with ADT between 2,000 and 5,000, roadway width of 24 feet with unpaved shoulders, and frequent rainfall.
    - Rumble strips installed on shoulders produce benefit-cost ratios from zero to more than 10, depending upon ADT and shoulder width.

Time Frame – Items 1, 2, 4, 5, 6, and 7 are short term. Items 3 and 8 are short to medium term.

Suggested Lead Agencies – County engineering agencies, the Association of County Engineers of Alabama, the Association of County Commissioners of Alabama, ALDOT and FHWA are the primary agencies for implementation.

Funding – Items 1, 2, 4, 5, 6, and 7 are low cost. Item 3 is low to medium cost. One important source of funding is the "High Risk Rural Roads" program specified by the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). These federal funds are made available to ALDOT, which is using them for county road safety programs. The ability to make improvements beyond this level will be largely dependent on the funding resources available for Counties.

Priority 1c – County Road System Hot Spots

Countermeasures – Four countermeasures were identified.

1) Provide training on procedures so that each county can develop and organize its own safety program,
2) Provide training to County Engineers on procedures to identify crash hot spots,
3) Provide training to County Engineers on how to select safety treatments for crash hot spots, how to identify the most cost effective treatments, and how to select the locations needing attention.
4) Recommend that ALDOT expedite its GIS program, so accurate crash data locations are available for counties, and
5) Conduct spot enforcement programs at high crash locations.

Cost Effectiveness – Items 1, 2 and 3 can be combined to determine the most cost-effective program for any given safety budget.

Item 4 will provide very accurate data to show the locations of traffic crashes. This will make it easy to improve crash location data, display maps of various types of crashes, and analyze traffic crashes at any site.

Time Frame – Items 1, 2 and 3 can be done in a short time frame. Item 4 is a long term effort.

Suggested Lead Agencies – The primary lead agencies will include ALDOT, the Department of Public Safety, the Emergency Management Agency, county engineering agencies, the Association of County Engineers of Alabama and the Association of County Commissioners of Alabama. ADECA and DPS can conduct the spot enforcement programs.

Funding – Items 1, 2, 3, and 5 are low cost. Item 4 is high cost.

Priority 2 – Lane Departure on State/Federal Two-Lane Roads

Countermeasures – Three countermeasures were recommended.

1) Expand the ALDOT test program to use the CARE methodology to identify sites and use striped rumble strips to treat lane departures crossing the centerline,
2) Continue the ALDOT program to use CARE methodology to identify sites, and appropriate countermeasures to treat individual sites to diminish crashes, injuries, and fatal crashes.
3) Implement a major roadway marking and signing improvement program.

Cost Effectiveness – The cost effectiveness for item 1 is potentially high, based upon preliminary research to evaluate rumble strips in other states.

The cost effectiveness for item 2 varies with the treatment selected for each treated site. ALDOT's crash analysis program for selecting cost-effective treatments is computerized, and automatically selects the most cost effective treatment.

The cost effectiveness for item 3 is more difficult to estimate. There are a good number of studies of crash reductions following initial implementation of signs and markings, but few regarding upgrade/maintenance of signs and markings. *Low Cost Local Road Safety Solutions* indicated that a thorough, repetitive sign/marking treatment program in one California county reduced crashes by 42%, but this was for county roads, not state roads. Wider longitudinal markings increase safety, as indicated during the cost-effectiveness discussion for item 8 of County Road priority 1c of this report.

Elvik and Vaa (*Handbook of Road Safety Measures*, Oxford UK, Elsevier Press, 2004) found that sign improvements reduced crashes 7% to 15% in urban areas, but the data for this study was primarily from Europe. The same document indicated that edge lines and directional markings on horizontal curves may reduce crashes by 19%, but the degree of variance in the findings limits its usefulness in safety applications. Recent studies of pavement markers and post-mounted delineators suggest that there are instances in which they may contribute to increased crashes (over driving the road because it looks safer). In summary, engineering judgment and the Elvik and Vaa study show that installing signs, markings, etc., produces safer roads in most situations. But once signs have been installed, there are few studies that document the degree of safety associated with proper maintenance and upgrading of them.

Time Frame – Items 1, 2 and 3 can be accomplished in a short to medium time frame.

Suggested Lead Agencies – ALDOT and FHWA are potential lead agencies.

Funding – Items 1 and 2 are low to medium expenditures, depending upon how extensive a program may be. Item 3 varies from low to high expenditures, depending upon the number of miles of roadway to be upgraded.

3 – Interstate Median Crossover Crashes

The ALDOT Interstate Barrier Program is operational using present historical crash data as discussed previously in this report. It is based upon crash safety analysis (manual review of

records and CARE compilation of digital data), with an appropriate barrier being designed for each site. The ROR team has endorsed this project as essential for Alabama, and recommends that it be continued.

Countermeasures – Barriers of both types, crash cushions, median slope considerations, and other clear zone countermeasures are applicable, with engineering judgment and cost effectiveness being used to determine the most appropriate treatment for each applicable site.

Cost Effectiveness – The AASHTO Roadside Design Guide provides a thorough cost-effectiveness procedure for barrier design. In addition, ALDOT is collecting its own data on cost to design and install, cost to maintain, and crashes to guide future studies. This includes one test section where competing types of median barrier have been installed. They will be monitored to select the most appropriate one for Alabama.

Time Frame – This item appears to be a mid to long term effort. With the continuing growth of Interstate traffic and of the speeds of those vehicles, this program will probably be in use for many years as portions of the Interstate reach their capacity and the number of cross median crashes continues to grow.

Suggested Lead Agencies – ALDOT and FHWA are potential lead agencies.

Funding – Item 3 is medium expense, and the current program is being implemented using categorized Safety funds from FHWA..

Chapter 7
Implementation, Oversight and Evaluation

The most significant step in solving a challenge is identifying and documenting the challenge. This major step was accomplished in five key traffic safety emphasis areas during the preparation of this plan, which contains the best ideas and best planning of traffic safety experts in Alabama. It was developed after careful study and interaction among teams of experts, who volunteered to perform the study because of their concern over the high rates of traffic crashes and fatalities in this state.

When Congress required development of state level SHSPs, it did not provide implementation guidelines, timelines or funding. So the next step in implementing the Alabama plan will require the same type of cooperative attitude that was displayed throughout plan preparation – willingness to seek the best countermeasures possible across the broad field of traffic safety, and willingness to help each other find and implement those countermeasures.

Approval of Implementation Plan

The project steering team and the chairs of the five emphasis area teams recommend that the implementation plan be adopted in the same manner used for SHSP approval – the signatures of the Governor and the directors/administrators of the involved agencies.

The State Safety Coordination Committee (SSCC) addresses safety at the highest levels, and the Implementation Plan should be submitted to that Committee for approval and signature.

Funding the Plan

Since there is no dedicated funding for this project, the project steering team and the chairs of the five emphasis area teams recommend that the directors/administrators of State and Federal agencies meet to study implementation of the plan. Most existing funding is designated for use on infrastructure improvements as required by SAFETEA-LU, through the SHIP Program. The flexible funding portion can be used for those aspects of the SHSP identified as high priorities.

An ideal solution would be for the directors/administrators to identify those elements of the Plan that can be funded from existing budgets, those elements that can be implemented with innovative use of existing funding, and those elements for which new funding sources should be sought.

Monitoring Implementation

Individual agencies will each be implementing portions of the plan, but Federal and State restrictions, budgets and other factors will restrict the ability to cover all plan aspects. The same factors will govern the timing and effectiveness with which portions of the plan are

implemented. These factors point out the need for one agency, group or individual to monitor and coordinate the activities of all agencies and groups during implementation.

The following are suggestions for monitoring implementation of the plan:
(1) The State Safety Coordinating Committee can monitor all agencies during implementation.
    a) The SSCC members can monitor the plan.
    b) The SSCC can request that a specific agency monitor implementation.
    c) The SSCC can hire a staff member or engage a consultant to monitor implementation.

(2) One agency can monitor all agencies during implementation.
    a) The agency can designate a senior manager for monitoring.
    b) The agency can engage a consultant for monitoring.

(3) Each agency participating in implementation can each designate one person as its implementation monitor for its own efforts. These designees can meet periodically to review progress and identify enhancements to the ongoing safety efforts.

Evaluating and Updating of the Plan

The project steering team and the chairs of the five emphasis area teams recommend that the implementation efforts be evaluated two years after implementation commences. This will allow enough time to accumulate the crash data necessary for scientific before-after studies of effectiveness. Thereafter the evaluation can be conducted annually, or on an as-needed basis.

The steering team and chairs suggest that the plan be updated annually, with agencies suggesting revised safety actions or new emphasis areas. These recommendations should be based upon a careful studies of crash data.

If the State has made a significant reduction in crashes, injuries, fatalities at the end of FY 2009 under the current SAFETEA-LU Legislation, it will decide about the merits of the process and reconsider the need for using a Strategic Highway Safety Plan concept to reduce the effort and concentrate on improvements using the current analysis methods or new procedures developed to guide the process. This decision would consider any new requirements that may be included in future Federal legislation.

Summary

Crash statistics in Alabama are alarming because fatal crash rates are above the national average, and because 1100 families are devastated each year by the loss of loved ones in traffic crashes. The SHSP offers thoughtful and tailored countermeasures to combat those conditions. Its implementation and effectiveness will require the continued cooperation of all agencies and all safety advocates in Alabama.

Appendices

Appendix A – Individuals who Contributed to the SHSP Action Plan

Appendix B – Preliminary Strategic Plan
Of the State Safety Coordinating Committee

Appendix A: Individuals who prepared the SHSP Implementation Plan Development Process

NAME	AGENCY	Team	NAME	AGENCY	Team
Joan Carter	AARP, Ala State Director	Older	Scott Erwin	City of Huntsville, Safety Dir.	Risky
Ray Fitzgerald	AARP, Ala Driver Safety	Older	Richard Kramer	City of Huntsville, Traffic Engr	Older
Terry Henderson	ADECA	Steer, Risky	Bradley Pemberton	City of Montgomery, Police Dept	Legislate
Mike James	ADECA, Child Pass. Safety	Legislate	Stuart Manson	City of Montgomery, Traffic Engr	Older
Mike Carroll	Administrative Office of Courts	Steer, Leg	Robert Smith	City of Montgomery, Trans Plan	Risky
Dennis Blair	ADPH, EMS Dir	EMS	Sam Noble	Clark Co., Co. Engineer	ROR
Melissa Kahn	ADPH, Injury Prevention	EMS	Benjamin Sanders	Crenshaw Co., County Engr	EMS
Russell Crowley	ADPH, Acting Dir EMS & Trauma	EMS	Derek Brewer	Dale Co., County Engineer	ROR
Dr. John Campbell	ADPH, Medical EMS Director	EMS	Mark McAdams	Earth Tech, Inc.	ROR
Jim McClendon	AL Legislature, Rep, District 50	Legislate	Richie Beyer	Elmore Co., Co. Engineer	ROR
Michael Bassett	Ala Dept of Education	Risky	Linda Guin	FHWA, Alabama Division	Steer, Older
Aaron Wren	Ala Dept of Education	EMS	Judy Van Luchene	FMSCA, Ala Administrator	Legislate
Lt. Danny Hall	Ala DPS	Risky	George Eischens	Fountain City Eyecare	Older
Kevin Claunch	Ala DPS	ROR	Mark Poole	Houston County, Co. Engineer	ROR
Tim McGlothlin	Ala DPS	ROR	Denise Hornbuckle	Jeff State, Hwy Traffic Safety	Risky
Maj Roscoe Howell	Ala DPS, Drivers License	Older	Marie Crew	Jeff State, Hwy Safety Program	Risky
Harry Kearley	Ala DPS, Motor Carrier Safety	ROR	Nadia Shalaby	Jeff State, Safety Educator	Risky
John Perkins	Ala SADD, State Coord.	Older, Risky	Scott Parker	KBR, Design Manager	ROR
Gene Vonderau	Ala Trucking Assn	Risky	Tom Barclay	Mobile Co., Hwy Traffic Safety	Risky
Wallace McAdory	ALDOT, 5th Div., Maint. Ops	ROR	Tim Omick	Montgomery Area Transit Sys	Older
Deborah Leo	ALDOT, 9th Div, Asst Traf Engr	ROR	William W. Moss	Moss Enterprises, Inc.	Legislate
Wayne Curry	ALDOT, 9th Division Traffic Engr	ROR	Eddie Russell	N Ala Highway Safety Office	Risky
Don Arkle	ALDOT, Asst Chief Engineer	ROR	Vernon Dolberry	NE Ala Traffic Safety Office	Older
Bill Sherlock	ALDOT, Modal Programs	EMS	Lora Weaver	NE Ala Traffic Safety Office	Risky
Wes Elrod	ALDOT, Modal Programs	Steer, EMS	Glen Cummings	NHTSA, Ctr - Rural Veh Trauma	EMS
Waymon Benifield	ALDOT, Modal Programs	Steer, Leg	Brandon Hughes	Office of Prosecution Services	Leg, Risky
Sonya Baker	ALDOT, Modal Programs	EMS	Dr. Dawn Wilczek	Optometrist	Older
Linda Crockett	ALDOT, Public Affairs	Risky	Mike Hare	Quick Kurb, Inc	ROR
Norman Lumpkin	ALDOT, Public Affairs	ROR	Julie Farmer	Safe Kids, Children's Health Sys	Risky
Tim Taylor	ALDOT, Traffic Engr	Older	Julie Lenoir	Skipper Consulting, Inc.	ROR
Paul D. Ray	ALDOT, Trans Planner	Older	Richard Caudle	Skipper Consulting, Inc	Leg
Ray D. Pugh	ALDOT, Trans Planner	Risky	Anthony Crear	Sumter Co., County Engineer	ROR
Larry McGhee	City of B'ham Police Dept.	EMS	Shannon Stephens	UAB, Depart Emer Medicine	EMS
Derrick Richardson	City of B'ham Regional Council	Legislate	Katherine Terry	UAB, Injury Control Resh Ctr	Risky
Geraldine Curtis	Choctaw Co. EMS	EMS	Kate Leonard	UAH, Civil & Enviro Engr Dept	Older
Brian Brandenberg	City of Alabaster, Police Dept	ROR	Richard Gonzales	Univ S Ala, College of Medicine	EMS
Bettye M. King	City of B'ham, Municipal Court	Legislate	Dave Brown	University of Ala, CARE	Steer, Risky
James Summers	City of B'ham, Police Dept	Older	Dan Turner	University of Ala, CRDL	Steer, ROR
Scott Heath	City of Dothan, Police Dept	Legislate	Nancy Rhodes	University of Ala, ISSR	Risky
Tim Ward	City of Dothan, Police Traf Safety	Legislate	Kristin N. Bailey	VOICES, Ala Kids Count	Legislate
Anthony Nelms	City of Dothan, Police Traf Safety	Risky	Robert W. Lee	Vulcan Inc.	Older
Rodney Long	City of Hoover, City Engineer	ROR			

Appendix B

Preliminary Draft
FIVE YEAR STRATEGIC PLAN
State Safety Coordinating Committee

INTRODUCTION

The purpose of this document is to provide a plan of action to guide the activities of the State Safety Coordinating Committee (henceforth SSCC) over the next five years. This is a working document, and it will be updated to keep abreast of the changing conditions that are inevitable in the traffic safety field.

This plan will be organized starting with the *mission statement*, which will be analyzed into *goals*. The goals will be further analyzed into a set of measurable *objectives*, each of which will be used to define a set of activities.

MISSION STATEMENT

It is quite clear that the mission of the SSCC is increased safety, with particular focus on the problem of traffic accidents. This is a complex mission, since there are a number of ways that increased safety can be approached, including crash prevention, crash severity reduction and remedial actions (e.g., emergency medical services). There are potential conflicts among these various approaches, and thus a great need for coordination among the various efforts that are ongoing and planned. For example, the reduction of crash frequency would seem to be a noble mission, but resources employed to reduce relatively minor crashes could negatively impact fatality reduction.

In order to focus the efforts of the SSCC, the following mission statement will provide a guiding principle for all that follows:

The mission of the SSCC is to formulate, coordinate, and apply whatever SSCC resources are available to reduce crash frequency and severity (including remedial first responder services) so that there is a maximum reduction in the following (in prioritized order):

- *Fatalities,*
- *Severe injuries,*
- *Fatal and injury crashes, and*
- *Property damage crashes.*

The SSCC recognizes that this mission involves not only its own resources but the influence that it can exert in coordinating and assuring the more effective use of resources of other traffic safety advocates and professionals within the total traffic safety community, both within Alabama and those provided by our federal partners.

GOALS STATEMENT

The goals of the SSCC define how the mission is to be accomplished. They are given by the SSCC enabling legislation. Paraphrased, they are:

1. To explore every facet of the complex problem of traffic safety;
2. To identify major highway and traffic problems;
3. To formulate concrete plans of action to meet those needs;
4. To establish a schedule of priorities for action; and
5. To coordinate the separate programs adopted by the entire traffic safety community, both public (State and National) and private; and
6. To enact laws designed to promote improvement in existing programs of highway safety and for the adoption of additional programs or measures as may be considered necessary and advisable to accomplish the objects of the committee.

The goal that has shown the greatest potential from cost-effectiveness in the past is that of legislation. While there are many organizations that are expending great resources on the broad range of accepted traffic safety countermeasures, the SSCC is the only organization that is statutory recognized and given the responsibility to recommend statutorily changes.

OBJECTIVES AND STRATEGIES

Objectives are measurable entities that elaborate on the goals and enable them to be turned into activities for their accomplishment. When goals are mutually exclusive, it is expedient to analyze each goal into a set of objectives and proceed from there. In this case, however, most of the goals overlap, and each objective generally addresses more than one goal. In order to provide mapping of the objectives to their respective goals, the numbers of the goals that apply will be given for each of the objectives. Note that at this point the ordering of the objectives does not reflect any prioritization of the SSCC. Once those priorities are established and the full set of objectives and strategies are established, an activity list and time line will be established with specific assigned responsibilities.

The following are the proposed objectives and their supporting strategies:

- Interact heavily with the planning effort to establish an effective presence with the annual Safe Home Alabama Traffic Safety Conference in order to get on the program and solicit input from the traffic safety community (1).
- Become totally familiar with current statewide traffic safety efforts (2). Strategies:
    - Review the Comprehensive Highway Safety Plan that is currently being developed by the University Transportation Center of Alabama under the direction of the Federal Highway Administration and ALDOT.
    - Review the ADECA Community Traffic Safety Program (CTSP) Highway Safety Plan.
    - Review the DPS Motor-carriers Safety Plan.
    - Review the part of the Department of Health strategic plan that deals with highway safety.
    - Review the ALDOT State Transportation Improvement Plan (STIP).

    - Organize hearings to resolve questions that might arise from the review of these plans.
    - Develop a summary document that provides a comprehensive view of traffic safety activities in the State, and that heavily references these other plans.
- Establish a web portal focused on traffic safety legislation and legislative updates and to inform and obtain input from the traffic safety community (6). Strategies:
    - Create the Safe Home Alabama Portal (web site) as a counterpart of the SHA conference. This will be designed initially to support SSCC legislative activities, but it will be extensible to other communication and coordination activities as indicated in the next objective below. The legislative component of the SHA Portal will keep track of all current and proposed legislation, track it through the legislature, and accept input from the traffic safety community to improve and promote legislation.
    - Provide a push mechanism (via e-mail) to keep all interested parties aware of legislative activities.
    - Provide a telephone question and response (1-800 number) capability to augment the web site.
- Extend the SHA web portal to include all aspects of traffic safety by adding traffic safety efforts agencies and organizations that have major traffic safety responsibility (5). Strategy: add the following agency efforts on a prioritized basis:
    - ADECA Law Enforcement and Traffic Safety (LETS) section,
    - Department of Public Safety Patrol Division;
    - Department of Public Safety Motor carriers Unit;
    - Alabama Department of Transportation;
    - Alabama Department of Health;
    - Local governmental agencies who wish to participate;
    - University Transportation Center of Alabama;
    - CARE Research and Development Laboratory;
    - Private sector organized traffic safety efforts (e.g., Alabama Trucking Association);
    - Volunteer organizations (e.g., MADD, SADD, etc.).

  Note: agencies/organizations above would generally be added one at a time; the ordering will have to be established – no priority should be inferred from the list above.
- Establish a work group that is charged with the task of setting the agenda for SSCC focus (2, 3, 4). [Note: the purpose here is to determine a limited number of traffic safety problems and countermeasures that should be given special concern by the SSCC.] Strategy:
    - Review existing statewide plans.
    - Determine areas that are of the highest criticality.
    - Determine subset of these areas where SSCC can have the greatest impact.
    - Establish agenda.
- Establish a formal mechanism for the creation, review and promotion of effective traffic safety legislation (6). Strategy:
    - Document lifecycle of typical legislation beginning with its motivation, conception and development, and proceeding on through to enactment and

implementation.
    - Determine points in process where other individuals and organizations need to be involved.
    - Determine effective mechanisms for informing key individuals.
    - Implement these mechanisms as resources allow.
- Establish rapid response component to deal with special problems as they arise (3). Strategy:
    - Monitor crash records and federal mandates to identify special problems.
    - Establish mechanisms for creating task forces from involved agencies to coordinate countermeasures.
- Establish SSCC Organization (all goals).
    - Recruit and retain Executive Secretary.
    - Establish management structure for ongoing programs.
    - Establish sub-committee structures.
    - Establish multi-level SSCC structure.