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Improving Rural Transportation Safety Series: Report #1
A Summary for Policymakers

Rural Transportation Safety and the Strategic Highway Safety Plan:

An Examination of Select State Programs and Practices

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February 2008



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16. Abstract (Limit: 200 words) <p>This first in a series of CERS research summaries examines the current state of safety planning through interviews and a comprehensive review of the newly mandated strategic highway safety plans (SHSPs) and supporting documents from six states representing different U.S. regions: Alabama, Idaho, Maryland, Minnesota, Vermont, and Washington. The researchers took several steps to develop a knowledge base of existing conditions pertaining to safety planning in the six states.</p> <p>During the analysis, five key themes emerged: 1. A focus on changing driver behavior; 2. The importance of state-level public policy and political leadership; 3. The use of emerging technologies; 4. The importance of sustained, collaborative approaches; and 5. The use of measurement-driven approaches, which rely on enhanced data collection and new interpretive methodologies.</p> <p>In addition to these findings, case studies of each state provide a synopsis of certain aspects of their SHSPs. Recommendations concerning the SHSP development process and emphasis areas include: strengthening public engagement activities and initiatives to communicate the importance of roadway safety, reviewing the development structure and safety stakeholders involved, and continuing integration across agencies contributing to safety.</p>			
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Rural Transportation Safety and the Strategic Highway Safety Plan: An Examination of Select State Programs and Practices

Final Report

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About the Center for Excellence in Rural Safety

The Center for Excellence in Rural Safety is a joint program between the University of Minnesota's Hubert H. Humphrey Institute of Public Affairs and the Center for Transportation Studies to facilitate research, training, and outreach activities related to rural transportation safety. The Center provides citizen-centered research, training, and outreach to enhance rural safety and to meet the online and seminar training needs of rural transportation practitioners and policymakers.

The Center, established by the 2005 federal transportation act, is sponsored by the Federal Highway Administration.

About this series

The Center for Excellence in Rural Safety conducts several focused research activities to explore policy, behavior, and technology approaches to rural transportation safety. Research projects address safety-conscious planning, ITS and rural emergency response, integrated policy approaches, and related human factors, societal trends, and stakeholder needs analysis. This series—*Improving Rural Transportation Safety*—provides a summary report of each research project as it is completed.

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Executive Summary

Federal transportation planning and policy efforts are beginning to focus on safety issues. Safety professionals and policymakers are especially concerned with rural roads, which annually claim more lives than urban roads.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, requires each state to develop a strategic highway safety plan to reduce the number of roadway fatalities and serious injuries. The plans are intended to unify existing programs operated by different state agencies.

This report examines the Strategic Highways Safety Plans created by Alabama, Idaho, Maryland, Minnesota, Vermont, and Washington.

This examination had three main goals:

1. To understand the plan development process and each state's approach to safety planning
2. To examine the extent to which plans address driver behavior, technology, and public policy issues
3. To evaluate each plan's emphasis on rural transportation safety issues

A comprehensive review of the six plans, along with supporting documents and interviews, led to these key findings:

1. Each state specifically identifies changes in driver behavior as the primary objective of its planning and policy efforts.
2. State-level political leadership and public policy play a significant role in reducing car crashes, fatalities, and serious injuries.
3. All plans rely on emerging technologies like the mapping of high-frequency crash locations, emergency response logistics coordination, and automated enforcement.

Safety professionals and policymakers are especially concerned with rural roads, which annually claim more lives than urban roads.

4. A sustained, collaborative approach to safety planning is more effective than the independent efforts of multiple agencies.
5. All plans depend on measurement-driven approaches, which rely on enhanced data collection and new interpretation methodologies.

Also included are brief case studies of certain aspects of each state plan. In addition, recommendations are offered for improved plan development. Among these are:

1. More use of public engagement initiatives to communicate the importance of roadway safety
2. Better prioritization of safety strategies or goals, along with measurable timetables for achievement
3. Inclusion of partners from public health and education in the planning process

Introduction

Federal transportation planning and policy efforts are beginning to focus on safety issues. Planners, engineers, and policymakers have always been concerned with highway safety. Traditionally, however, they have relied on engineering solutions. But safety experts now realize that engineering solutions are not enough. Driver behavior is also a significant contributing factor in most crashes. This project examines how states are approaching the issue of driver behavior through public policy and technology initiatives, in conjunction with engineering solutions.

The 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires each state to develop a strategic highway safety plan to reduce the number of roadway fatalities and serious injuries.

Plans are intended to unify existing programs operated by different state agencies. Such collaborative approaches typically involve state departments of transportation, public safety, health, and education, along with private firms or citizen advocacy groups. These coordinated efforts underscore the changing nature of safety planning and policy.

The strategic highway safety plans are based on the guidelines of the American Association of State Highway and Transportation Officials as published in the National Cooperative Highway Research Program Report 500. These guidelines promote the “Four E’s”: education, enforcement, engineering, and emergency trauma care.

Safety professionals and policymakers are especially concerned with rural roadways, which annually claim more lives than urban roads. According to the National Highway Traffic Safety Administration (NHTSA), one-fifth of America’s population resides in rural areas, yet three-fifths, or more, of all traffic fatalities and serious injuries occur in rural areas.¹

1 NHTSA Report, “Traffic Crashes Take Their Toll on America’s Rural Roads,” Page 1

Three-fifths or more of all traffic fatalities and serious injuries occur in rural areas.

According to data obtained from NHTSA’s Fatality Analysis Reporting System (FARS), 43,443 fatalities occurred on all U.S. roads in 2005. Of these, 23,818 fatalities occurred on rural roads. (Note: These numbers exclude Puerto Rico.) Only 10 states had more fatalities in urban rather than rural areas. (It is important to note, however, that these states—California, Connecticut, Florida, Hawaii, Illinois, Maryland, Massachusetts, New Jersey, New York, and Rhode Island—are the most populous states in the nation.²)

Previous research examined the effectiveness of policies and engineering solutions. This report, however, reviews the current state of safety planning through a comprehensive examination of strategic highway safety plans and supporting documents from six states.

This examination has three main goals:

1. To understand the plan development process and each state’s approach to safety planning
2. To examine the extent to which plans address driver behavior, technology, and public policy issues
3. To evaluate each plan’s emphasis on rural transportation safety issues

2 The reader should note that questions exist concerning the precise definition of what constitutes an urban area versus a rural area, but these will not be discussed in this paper.

Methods

The six states selected—Alabama, Idaho, Maryland, Minnesota, Vermont, and Washington—represent different regions across the United States.

Idaho, Minnesota, and Washington had previously established interagency safety programs to coordinate resources, exchange knowledge, and enhance public communication and educational outreach. In Idaho and Minnesota, the programs are called Toward Zero Deaths. Washington’s program is titled Target Zero.

Alabama, Maryland, and Vermont were exploring innovative approaches to safety issues and/or developing coalition-based safety plans and programs.

The research team gathered all six strategic highway safety plans, along with all available data and documents. The team also looked at current safety planning efforts, policies, and programs, as well as associated goals and performance measures.

Previous state plans, if available, were also reviewed to determine what changes the states have made to their safety programs over time. But the main focus of the study was the six strategic highway safety plans.

In addition, a survey questionnaire (see below) was



also developed. It was administered to state officials or private-sector professionals directly involved with safety planning efforts. In certain cases, the questionnaire was also administered to specific individuals or groups identified by state officials as having a significant role in safety planning. Interviews were conducted by telephone or e-mail.

Survey questions included:

- How much emphasis do your safety planning efforts place on rural areas?
- How do shifts in leadership positions at the state level affect ongoing or developing policies or safety programs? -
- What statistics does your state maintain related to road safety? Can these numbers be broken down by urban versus rural roads?
- What do you feel are the most significant challenges to developing and implementing rural safety programs and plans in your state?
- What have been the greatest rural program successes in your state? Beyond reductions in crashes, what other performance measures do you use to determine the effectiveness of these programs?
- What areas do you feel need improvement? How could these programs adapt to solve the problems you’ve identified?

Key Findings

The results from the review of strategic highway safety plans and related interviews had the following key themes:

1. A focus on changing driver behavior
2. The importance of state-level public policy and political leadership
3. The use of emerging technologies
4. The importance of sustained, collaborative approaches
5. The use of measurement-driven approaches, which rely on enhanced data collection and new interpretive methodologies



1. DRIVER BEHAVIOR

All six plans focused on driver behavior. In each case, the data used to develop the plan attributed the majority of fatalities and serious injuries to high-risk behaviors like impaired driving, speeding and aggressive driving, and failure to use proper safety restraints (including motorcycle helmets).

Also listed were cell-phone use, roadside distractions, and “drowsy driving.” In addition, plans also focused on young drivers, with an emphasis on the poor driving practices of young males in rural areas.

Impaired driving. Among the issues addressed were physical and cognitive impairments, especially among mature drivers. Each plan contained specific chapters or sections devoted entirely to impaired driving, along with strategies to address it.

Speeding and aggressive driving. States identified this behavior as a leading cause of run-off-the-road crashes. The supporting evidence also suggests that higher speeds result in more severe crashes.

Failure to use restraints. These included seat belts, as well as child safety seats and motorcycle helmets. Also of concern was the inappropriate installation of child safety seats and other restraints. Each plan included statistics that showed the increased severity of injury when appropriate restraints are not used. Only two of the six states had enacted primary seat-belt laws.

The four states without primary seat-belt laws advocated enactment of such legislation in their plans. All six plans

supported increased funding for law enforcement efforts and educational campaigns. These efforts included expanding part-time “Click-it or Ticket” programs to year-round campaigns. In the states where passage of a primary seat-belt law was unlikely, plans supported increased fines for unbelted drivers.

The Idaho plan aggressively pushed for increased seat-belt use through a variety of state initiatives. These included raising fines for unbelted drivers, as well as incentive-based approaches like youth campaigns and awards competitions.

Most of the plans focused on the lack of seat-belt use in rural areas. According to 2004 data from the National Highway Traffic Safety Administration:

- Seventy-two percent of unbelted people who died after being thrown from a vehicle were traveling in rural areas.
- Individuals traveling through rural areas in pick-up trucks were the most likely to be unbelted.
- The vast majority of rural crash victims who were intoxicated at the time of the crash were not wearing proper safety restraints.
- Teens and young adults in rural areas, particularly male drivers, are less likely to buckle up than their urban counterparts.¹

Driver distraction. Particular emphasis was placed on limiting cell-phone use. Some plans also advocated the restriction of other electronic devices, such as in-vehicle

¹ NHTSA Report, “Traffic Crashes Take Their Toll on America’s Rural Roads,” Page 3

DVD players.

Plans also supported the enactment of state laws that would mandate minimum sign setbacks and limit distracting signage like variable or dynamic display billboards, which rotate advertisements on a loop cycle. Vermont, for example, has a statewide billboard ban, although the law was enacted for aesthetic purposes.

Strategies directed at young drivers. Among these were:

- Specific marketing campaigns
- Increased funds for driver education programs

- Incentive-based approaches like scholarships or prizes for teen-established safety campaigns in schools
- Intermediate driver licensing programs

Fines and penalties. All plans supported increased fines and penalties as a way of changing driver behaviors. At the same time, plans included incentive-based approaches. These “carrot-versus-stick” approaches deserve greater attention and might be an appropriate focus for future plan revisions.

2. PUBLIC POLICY AND POLITICAL LEADERSHIP

Many interview respondents said that the goals of the strategic highway safety plans could only be achieved through state-level policies and leadership.

Proposed legislation. Most plans suggested:

- Increased fines and penalties
- The establishment of specific courts or prosecutors for handling impaired-driving cases
- State funding for automated enforcement technologies
- More state funding for overtime pay for law enforcement professionals
- Legalization of sobriety checkpoints
- The enactment of primary seat-belt laws

Some plans proposed increased penalties for drivers whose negligence led to a crash. The justification given was that the general public should not have to pay for the consequences of an individual driver’s recklessness.

Most plans recommended the enactment of laws allowing police officers to stop motorists who don’t use safety restraints. Several states did not have primary seat-belt laws. Others had such laws, but their plans suggested a need for better enforcement of these laws. Idaho’s plan, for example, focused on the need for a primary seat-belt law and included data showing how such a law could save lives. Many plans also cited statistics showing rates of seat-belt use increase immediately after the enactment of primary seat-belt laws.

State agencies, however, can only go so far when advocating for legislative change. The argument of personal freedom from governmental control can be a powerful obstacle. In some states, advocacy groups opposed to seat-belt or motorcycle helmet laws have led successful campaigns to overturn an existing primary law.

Several respondents said that engaging the legislative branch would be difficult. Others noted that state legislators were well aware of current safety programs and had been invited to attend safety summits. Many state

The argument of personal freedom from governmental control can be a powerful obstacle.

agencies have chosen not to engage state legislators at this time. Instead, they are allowing programs to operate at agency levels for a while before they begin to advocate for new legislation.

Increased funding. All plans requested more funding for:

- Triage training for first responders, who are typically police officers
- Overtime pay for local police, especially in rural areas where travel distances are great and manpower is limited
- Expansion of current safety programs like “Click-it or Ticket”
- Hiring new police officers, particularly state troopers

These proposals are being made at a time when state budgets are stretched, and public safety departments at the state and local levels are being asked to do more with less.

Removal of administrative barriers. Several state plans also called for the removal of administrative barriers, especially for enforcement measures like the use of traffic cameras and for the establishment of special courts to prosecute impaired driving offenses.

Furthermore, several state plans noted that prosecutorial “red-tape” and an overburdened judicial system allowed repeat offenders to drive while waiting for their court hearing.

3. THE USE OF EMERGING TECHNOLOGIES

Governments at all levels are turning toward technology-based solutions to improve transportation safety. In all plans, technology played a critical role.

Commonly used technologies. These include:

- Red-light cameras, or automated enforcement
- Speed-monitoring devices, which are used mostly in urban locations
- Mapping technologies that identify high-frequency crash locations and pinpoint addresses for emergency responders

States are also reviewing in-vehicle technology, such as improved air bags, for occupant protection. Also under review are collision-avoidance systems that warn drivers about impending crashes at intersections or that they are drifting in and out of the lane. In addition, several plans proposed use of technology such as ignition interlock systems to prevent convicted DWI offenders from using a vehicle.

Benefits of technology. Here are some examples:

- The cost is relatively low compared to the cost of human enforcement.

- The use of cameras and speed monitoring devices allows police to deal with other criminal activities, while keeping a watchful eye on drivers.
- Cameras identify roadway hazards like stalled cars, which can cause crashes.

Data collection. All plans discussed the need to improve data collection. The type of data collected varied widely. Some states simply collected current data on crashes. Others gathered data on driver behaviors, competency issues, physical fitness, and eyesight.

Many plans also discussed the need to provide feedback for field personnel like police and emergency medical workers who collect and report data. This feedback would show them the usefulness of this information.

All plans specifically mentioned the importance of using geographic information systems (GIS) to map high-frequency crash locations along traffic corridors and identify potential solutions. In addition, the presence of global positioning systems (GPS) in emergency response vehicles improves service delivery and saves lives. Several states are currently using vehicles equipped with GPS in rural areas.

4. SUSTAINED, COLLABORATIVE APPROACHES

According to the Federal Highway Administration (FHWA), strategic highway safety plans are intended to serve as umbrellas that enhance collaboration between safety partners. John Baxter of the FHWA's Office of Safety provided a summation of findings from a November 2005 Transportation Research Board Peer Exchange on plan development:

Key foundational aspects of successful programs include: senior leadership awareness of the issue, and support for addressing the issue; having a champion who can assure the partners engage and that the plan is not only developed, but also implemented; having timely and accurate data from which to make sound decisions; and, having a mechanism to assess the strategies, evaluate the overall success of the program, and make adjustments as necessary.¹

Implementation is crucial to the success of the plan, and continued revision of the plan is crucial to implementation.

Additionally, the goals and objectives of a state's strategic highway safety plan should be woven into supporting documents and existing safety plans. This strengthens ties between state and local agencies and underscores the importance of a sustained approach to safety.

Plan development. All six plans listed stakeholder groups—both public and private—that contributed to its development. All plans were created under the direction of an executive committee. This was typically made up of

¹ Retrieved online from: <http://www.fhwa.dot.gov/planning/scp/impstrhwsp.htm>

leaders from key state departments like transportation, public safety, and public health. Also contributing to plan development were subcommittees led by members of the executive committee. Subcommittee members included safety partners and key state personnel (for example, division directors of highway departments, state patrol officers, or hired consultants). The development process was generally based on a top-down approach.

More structure needed. Each plan also included an implementation strategy and a review process to measure and evaluate performance. Several plans called on standing executive committees to meet periodically to review plan activities and recommend changes. Specifically, several plans suggested that executive committees meet annually. In one case, the committee met twice a year.

A lack of structure for executive committees or safety-partner groups, coupled with infrequent meetings, may reduce effective collaboration and impede advocacy efforts. In Minnesota and Washington, which have established safety programs, partners meet frequently to address pressing safety issues and coordinate activities in response to significant events. Both states have significantly reduced traffic fatalities.

Collaboration and implementation. While collaboration among different agencies and stakeholder groups is essential for success, collaboration raises many questions. Among them:

- How or why are stakeholders motivated to participate in a planning exercise?
- How will the eventual plan or product be marketed to the general public and under whose budget or initiative?
- Which agency or group will take responsibility for outreach activities to both the public and other stakeholder groups?

5. MEASUREMENT-DRIVEN APPROACHES

All plans rely on the use of longitudinal traffic data to identify pressing roadway safety issues, suggest potential solutions, and recommend immediate and future actions. In most cases, crash data from the past five years (2001–2005) were used to determine crash trends, develop critical emphasis areas, and guide safety strategies.

State safety partners advocate a more proactive approach, however. They want to use data to prevent crashes, and this necessitates accurate data and models. As a result, several plans support the enhancement of existing data modeling systems, the collection of new data, and the creation of new methodologies for analyzing data.

Communication of data to field personnel. A common theme echoed by state safety partners around the country was the need for instantaneous communication of data to safety personnel in the field.

Several questionnaire respondents said that police, especially in rural areas, felt the only reason to do crash reports was to satisfy insurance requirements. Safety

Several plans support the enhancement of existing data modeling systems, the collection of new data, and new methodologies for analyzing data.

leaders felt strongly that this mindset contributed to poor records and crash reports. This is unfortunate because accurate data play an important part in crash prevention. Such data can also predict emerging trends in driver behaviors.

Systems that “close the loop” by providing data to police or first responders as quickly as possible could show them how the information they collect can make a difference.

Conclusions and Recommendations

The following conclusions and recommendations are based on the results of the plan reviews and interviews completed as part of this project. More specific descriptions of the six case study plans follow on page 9.

Prioritize. The six plans varied significantly in their overall completeness and depth. Each plan outlined at least five critical emphasis areas. Some plans prioritized the issues in each emphasis area. Others took a general approach, which did little more than satisfy federal reporting requirements. Plans that prioritized goals and strategies were more focused and clearer than those that were general.

Prioritization is important for successful implementation. Plans with specific objectives and measurable timetables can leverage available resources to resolve the most pressing issues. This helps to keep pressure on state leaders to continue funding important initiatives. Lower-priority issues can be financed later on.

It is important to note, however, that this was the first time some states had created a safety plan. As these plans are revised, it is likely that they will become more complete and focused.

Try new approaches to public information. Some plans recognized the need to go beyond traditional mass-media campaigns to communicate with the public or to engage stakeholder groups with supporting constituencies. Vermont and Idaho, for example, are working with businesses to spread the safety message.

Engage the public. Plans were developed through a multi-tiered, top-down bureaucratic approach. State officials did say that the completed plans or final drafts would be sent out for public comment before being signed by the governor. But there was little or no mention of a public participatory process in the plans themselves.

Safety stakeholders bring their own agendas to the table during a plan's development. The top-down approach, coupled with the lack of public involvement opportunities, suggests that these agendas will dominate the planning process.

Yet these are plans for public safety, funded by tax dollars. Public participation would engage citizens in the discussion of roadway safety issues. This lack of public involvement should be addressed in future plan revisions.



Emphasize rural roads. All six states targeted driver behaviors. The data clearly show that young male drivers in rural areas are most likely to be involved in a crash. Despite this, few states mentioned specific programs for improving rural transportation safety.

Several questionnaire respondents indicated that their states did target rural safety. Yet a review of their planning documents indicates that more can be done. States should go beyond the federal High Risk Rural Roads Program and consider more funding for law enforcement and educational efforts in rural areas.

Of course, urban areas will continue to receive the bulk of state dollars because this where the most people live. But states need to dedicate funding and resources to rural areas, while at the same time ensuring that funding for law enforcement and driver education does not compete with funding for engineering improvements.

Involve public health and education departments. Many strategic highway safety plans still rely on engineering and law enforcement practices. Minnesota and Washington have established safety programs that incorporate public health and education into the safety planning process. But in the other four states, there was little evidence that public health and education departments had been involved in plan development. States should consider including safety partners from their fields in any future safety planning.

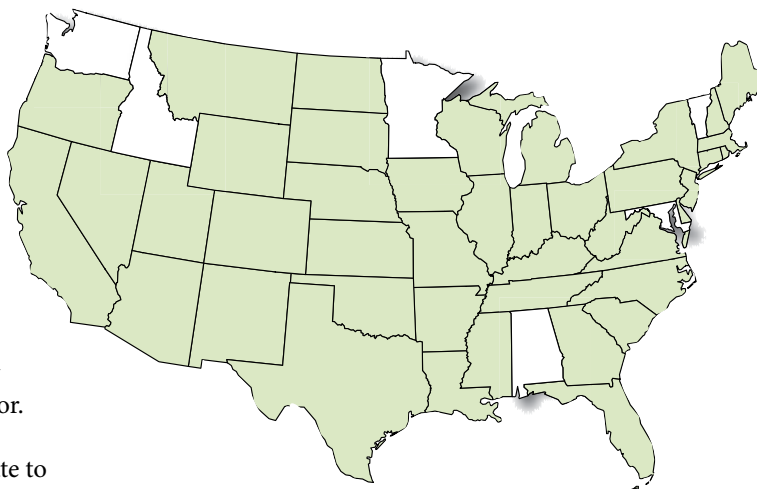


Focus on the States: Case Studies

These six case studies highlight both existing safety practices and the emphasis that the strategic highway safety plans place on rural areas. All six case studies are based on collected documents, questionnaire responses, and data from the Fatality Analysis Reporting System.

Traditionally, state departments of transportation and public safety have assumed most of the responsibility for surface transportation safety plans and programs. These have usually relied on engineering or law enforcement solutions that target driver behavior. But state agencies concerned with education, technology, and public health can also contribute to roadway safety. Until recently, however, most state agencies have managed their safety plans, programs, and funds independently.

The six strategic highway safety plans had much in common, but there were also differences. For example, all six focused on impaired driving, and most were using a



data-driven approach to the problem. But Washington's plan was selected for a case study because of the state's previous experience with and innovative use of traffic safety data.

WASHINGTON: IMPAIRED DRIVING AND SPEEDING

Washington's strategic highway safety plan, Target Zero, is one of the earliest attempts at a multi-agency approach to traffic safety in both urban and rural areas. Established in 2000, the plan aims to eliminate fatalities or disabling injuries by 2030. This will be accomplished if 24 fewer people die on the state's roads each year for the next 25 years.¹

Organization. The Washington Traffic Safety Commission, chaired by the current governor, outlines the governor's highway safety objectives. The commission also uses current data to identify emerging safety problems and measure the performance of selected practices. The initial plan has been revised several times to reflect changing safety issues and the priorities of different gubernatorial administrations.

The program is principally operated under the auspices of the Washington Traffic Safety Commission, the Washington Department of Transportation, and the Washington State Patrol.

Data collection. A crucial component of the plan is the Washington Traffic Records System. This centralized system captures, stores, and analyzes many kinds of data,

including information on collisions, fatalities, traffic citations, drivers and registered vehicles, emergency medical services and response times, and traffic volumes.²

By combining different types of data, the strategic highway safety plan committee can accurately identify traffic safety problems, select countermeasures, and monitor the performance of safety strategies. The Washington Traffic Records Committee, which involves state and federal agencies and officials, oversees the Traffic Records System.

Rural fatalities. According to Washington's strategic highway safety plan, 61 percent of the state's fatalities occurred on rural roads between 2001 and 2005. Alcohol use contributed to 64 percent of fatalities. Speed was implicated in 62 percent. Following national patterns, most of these crashes involved males between the ages of 21 and 25.

The plan includes a brief list of strategies intended solely for rural roads. These include:

- Enhanced pedestrian safety
- Safer passing lanes on two-lane roads
- Use of global positioning systems (GPS) to reduce the response times of emergency medical service personnel

1 Washington State Strategic Highway Safety Plan: "Target Zero," Page 1

2 Washington SHSP, Page 10

State officials interviewed for this study emphasized that the plan was intended to serve the entire state. Nevertheless, given the high rural fatality rate, it makes sense for Washington to focus specifically on rural roads.

Impaired driving. Washington's latest plan focuses on reducing the rates of impaired driving and speeding. According to the plan, 41 percent of all roadway fatalities in 2005 were alcohol-related. While this is significantly lower than in previous years, impaired driving remains the most important contributing factor to crashes throughout the state.

The plan advocates legislative action to address this issue, including:

- A reduction in the legal blood-alcohol concentration level
- License suspensions -
- Increased penalties for intoxicated drivers under 21
- Ignition interlock requirements
- Sanctions for repeat offenders³

Washington's safety partners credit the state's primary seat-belt law for reduced impaired driving because police officers can stop vehicles with unbelted occupants and also check for driver impairment.

The plan calls impaired driving:

*... A societal issue that pushes us beyond traditional traffic safety partnerships. Washington seeks partnerships with prosecutors and courts, prevention and intervention systems, health care communities and hospital emergency room personnel, in an ever-expanding effort to continue to eliminate impairment as a factor in traffic crashes.*⁴

As a result, Washington State intends to pursue strategies that include:

- Enhanced law enforcement training in alcohol and drug detection
- Targeting areas with high rates of DWI-related crashes
- Creating sobriety checkpoints around the state
- More rapid adjudication of DWI cases

Protecting young drivers. Washington has experienced a drop in the overall fatality rate among teens and drivers in their early 20s. Nevertheless, state safety partners want:

- Broader intermediate driver licensing laws
- More funding for overtime enforcement
- Expanded driver education curriculum for teachers, students, and parents

Outreach to specific communities. Washington's plan also suggests a need to work with specific populations, such as Native American and Latino communities, which currently experience the highest rates of traffic fatalities involving both impaired driving and young male drivers.

The goal: Reducing speeding fatalities. This was the second leading cause of roadway fatalities in Washington from 2001 to 2005. Washington's plan defines speeding as driving too fast under inclement weather conditions or driving in excess of posted speed limits.

Speeding contributed to 38 percent of all fatal crashes, and 58 percent of speed-related fatalities involved alcohol use. Most of these fatalities occurred on freeways or county roads. Run-off-the-road crashes on curves were typically speed-related.⁵

From 1993 to 2005, speed-related fatalities have fluctuated. Over all, however, both the actual number of fatalities and the rate of fatalities per 100 million vehicle miles traveled have been decreasing. The Washington plan calls for no more than 212 fatalities by the year 2012, with a speed-fatality rate of 0.34.

Meeting the goal. Washington's plan supports broad involvement from engineering, enforcement, education, and public policy communities. Specifically, the plan calls for:

- The use of automated enforcement practices
- Additional funding to equip police units with state-of-the-art speed detection and enforcement technologies
- Interagency collaboration in educational outreach to specific populations such as rural residents, tribal groups, and the Latino community

Finally, from an engineering perspective, Washington has made substantial efforts to address roadway geometry issues that can lead to run-off-the-road crashes. The state has also improved signage and pavement markings and increased the use of roundabout intersections or rumble strips.⁶

The rumble strip program has been especially successful. According to representatives from the Department of Transportation, the program has continually received funding from the state legislature.

Prioritization matters. Of the six strategic highway safety plans reviewed, Washington's was the only one to prioritize

Forty-one percent of all roadway fatalities in 2005 were alcohol-related.

³ Washington SHSP, Page 21

⁴ Washington SHSP, Page 22

⁵ Washington SHSP, Page 28

⁶ Washington SHSP, Page 31

safety strategies. The other state plans listed critical emphasis areas to be addressed, but they did not prioritize.

Prioritization focuses available resources. In addition, some problems can be solved only if others are dealt with first.

As the Washington plan states:

The analytic nature of the SHSP (strategic highway safety plan) made it clear that a change in tactics and strategic planning was required to more accurately prioritize the traffic safety emphasis areas and more effectively apply resources to achieve the Target Zero vision.⁷

Results. Traffic fatalities have declined considerably even though more vehicle miles are being traveled in Washington than ever before.⁸ In 2005, the state's death rates per 100 million vehicle miles traveled dropped to 1.17, well below the National Highway Traffic Safety Administration's goal of 1.38 for the same year.⁹

This suggests that improved vehicle safety and engineering, better emergency medical services, tougher legislation, and strong enforcement can reduce traffic

fatalities.

A model program. Washington's strong commitment to traffic safety, coupled with the prioritization of safety goals and objectives, has focused resources on the state's most important safety issues. The state has seen a tremendous reduction in fatalities since the adoption of the Target Zero program and, by all accounts, plans to continue its strong commitment to safety.

The latest version of the strategic highway safety plan outlines several general strategies for each safety issue. These are intended for use in rural and urban areas throughout the state. The plan, however, emphasizes that a significant percentage of total crashes occur in rural areas and involve impaired and/or young male drivers. When the plan is revised, policymakers may wish to include specific strategies for rural safety issues.

⁷ Washington SHSP, Page 13

⁸ Washington SHSP, Page 11

⁹ Washington SHSP, Page 11

MINNESOTA: THE "FOUR E'S"

Like Idaho and Washington, Minnesota recognized the need to coordinate safety activities more efficiently. In 2004, officials at the Departments of Transportation and Public Safety developed a multi-agency collaboration with representatives from the Department of Health, the University of Minnesota, the Minnesota State Patrol, the Federal Highway Administration, the county engineers association, several private consultant firms, and public advocacy organizations.

Toward Zero Deaths. This program is the most important achievement of the multi-agency collaboration. Toward Zero Deaths emphasizes the Four E's: education, enforcement, engineering, and emergency trauma care. Its goals are to raise public awareness of traffic safety issues and to develop a series of tools or activities tailored to Minnesota's local communities.¹

Like Washington's Target Zero initiative, Toward Zero Deaths aims to eliminate roadway fatalities or disabling

Toward Zero Deaths is the backbone of the Minnesota Strategic Highway Safety Plan.

injuries by the year 2030, through incremental crash reduction.

Perhaps the greatest strength of Toward Zero Deaths is the organizational structure and continued support of safety professionals and participants. The program emphasizes the importance of working with local safety groups and public officials to identify safety issues and find solutions. Partners meet monthly and hold an annual conference. Partners also meet informally to discuss significant safety issues.

Toward Zero Deaths is the backbone of the Minnesota Strategic Highway Safety Plan. Minnesota's strategic highway safety plan builds on the Comprehensive

¹ Minnesota Toward Zero Deaths Web site: <http://www.tzd.state.mn.us/>

Highway Safety Plan, which was created in 2004 to implement the vision of Toward Zero Deaths.

Minnesota's strategic highway safety plan. Like the other five plans, Minnesota's plan is intensely data-driven. And like the other plans, it was developed in partnership with multiple stakeholder groups. The Department of Transportation had major responsibility for development, but representatives from other agencies and organizations also contributed.

One of the first steps in the development of Minnesota's strategic highway safety plan was the formation of the Interagency Work Group. The group was given the responsibility of reviewing the plan's progress.

A significant portion of Minnesota's plan is dedicated to the interconnection between the strategic highway safety plan and existing safety plans like the Statewide Heavy Vehicle Safety Plan and the Intelligent Transportation Systems (ITS) Safety Plan, both developed by Department of Transportation.²

Statewide Heavy Vehicle Safety Plan. This plan aims to reduce heavy vehicle crashes that result in serious injuries and fatalities. The plan uses longitudinal data to identify high-crash locations, types of crashes, and ways that these crashes differ from those involving passenger vehicles.

The plan outlines 10 strategic goals for reducing heavy vehicle crashes. These include:

- Better enforcement and inspection
- Education of both heavy vehicle operators and regular motorists
- Installation of four-cable median barriers³

Minnesota ITS Safety Plan. The Intelligent Transportation Systems Safety Plan was prepared by the Office of Traffic, Security and Operations at Department of Transportation, in collaboration with the Department of Public Safety and representatives from Mille Lacs County. The plan proposes six critical technology-based solutions and strategies to reduce crashes and fatalities:

- The use of in-vehicle safety systems
- Improved systems for first responders and law enforcement
- Vehicle-infrastructure integration
- Improved infrastructure systems and signs
- The use of collision warning systems
- The use of technology to improve driver education⁴

² Minnesota SHSP, Page 2-6

³ Minnesota SHSP, Page 2-8

⁴ Minnesota SHSP, Page 2-10

Minnesota's plan is intensely data-driven. And like the other plans, it was developed in partnership with multiple stakeholder groups.

Of the states considered for this project, Minnesota was the only state to have an established ITS plan available.

Other safety programs. Minnesota's strategic highway safety plan also looks at programs operated by various public agencies. These include:

- Safe & Sober Campaign/Operation NightCAP, a traffic enforcement program that helps pay for overtime policing for impaired driving, aggressive driving, and seat-belt usage
- Highway Enforcement of Aggressive Traffic (HEAT), intended to reduce speed-related crashes, which brings together safety partners from disciplines such as engineering, education, and traffic enforcement
- Minnesota Statewide Trauma System, which helps hospitals provide faster emergency response, better triage practices at the crash scene, and state-of-the-art treatment to victims during the "golden hour"
- Minnesota Speed Management Program, the goal of which was to reduce the number of fatal and life-changing crashes on Minnesota highways

The plan also incorporates programs that focus on traffic safety in the Minneapolis-St. Paul metropolitan area:

- The cable median guardrail program, which installs cable guardrails to prevent cross-median crashes
- Regional Transportation Management Center, which provides the communications and computer infrastructure necessary for coordinated transportation management on metro freeways
- Freeway Incident Response Safety Team (FIRST), which strives to minimize congestion and prevent secondary crashes through the quick response and removal of incidents

Areas of emphasis. The Minnesota State Highway Safety Plan identified 10 areas of emphasis, and then, using additional data, narrowed these to five that met federal reporting requirements:

1. Reduction of impaired driving and increased safety restraint usage
2. Improved design and operation of highway intersections
3. Reduction of speeding and aggressive driving through educational outreach to young drivers
4. Reduction of head-on and across-median crashes, and run-off-the-road crashes
5. Increased driver safety awareness and improved information systems⁵

Implementation. Minnesota's strategic highway safety plan and Toward Zero Deaths program are carried out by multiple agencies. Toward Zero Deaths relies on a multidisciplinary network of safety professionals. It is also the umbrella organization for safety planning and has primary responsibility for carrying out the strategic highway safety plan. Funding for safety projects comes from a variety of different sources, including federal and state funds. Updates to the strategic highway safety plan are the responsibility of the Interagency Work Group, and are to be based on the five critical emphasis areas.

The plan recognizes the critical emphasis areas may change over time. Any changes, however, will be driven by data that show the impact of the chosen strategies.

Funding the plan. The Central Safety Fund is essential to Minnesota's safety planning efforts. The fund was established following the completion of the Comprehensive Highway Safety Plan in 2004. Each year, the Departments of Transportation and Public Safety pool safety funding. Some funding comes from federal grants or programs. Other funding consists of penalties collected by the state. The money helps fund safety programs that touch on the "Four-E's" discussed earlier.

According to the strategic highway safety plan, the Central Safety Fund has been instrumental in funding the cable median guardrail barrier program, the Minnesota Speed Management Program, and select county safety programs.⁶

Minnesota's strategic highway safety plan also includes a section on the High Risk Rural Roads Program (HRRRP) recently established under federal guidelines. This program specifies that federal funding be set aside for rural roads with fatal and serious injury crash rates above the state average for similarly classified road systems.⁷

According to Minnesota's Strategic highway safety plan, "...there are 9,644 miles of roadway in [the state]



The Minnesota plan prioritizes road systems that deserve attention. Rural roads are at the top of the list.

that are eligible for the special funding through the HRRRP⁸ In contrast to the Washington State plan, which prioritizes safety issues, the Minnesota plan prioritizes road systems that deserve attention. Rural roads are at the top of the list.

A bottom-up approach. Both the Minnesota Strategic Highway Safety Plan and Toward Zero Deaths emphasize partnerships with local authorities. Unlike other state plans that took a top-down approach to safety planning, Minnesota's plan has relied on local networks to identify priorities and issues. These concerns are communicated to state officials, who work with local stakeholders to find solutions. The Minnesota Department of Transportation has devoted a portion of the Central Safety Fund to local projects, especially in rural areas.

Many of the recommendations in Minnesota's Strategic highway safety plan are also found in the other five state plans. But the true value of the Minnesota plan is the solid foundation it establishes for safety planning, programs, and policy recommendations. The Minnesota Strategic Highway Safety Plan and Toward Zero Deaths are models for other states to consider as they revise their own safety plans and programs.

⁵ Minnesota SHSP, Page 3-1

⁶ Minnesota SHSP, Page 2-7

⁷ Minnesota SHSP, Page 2-10

⁸ Minnesota SHSP, Page 2-11

ALABAMA: RURAL EMERGENCY MEDICAL SERVICE

Alabama's strategic highway safety plan was developed in cooperation with numerous public and private stakeholder organizations. These included the Departments of Transportation, Economic and Community Affairs, Public Health, Public Safety, the Alabama chapter of the AARP, and traveler services like AAA. Colleges and universities also participated, along with the Federal Highway Administration.

Developing the plan. Early on, state officials determined to use Alabama's Safety Management, Action and Resources Task Force (SMART) as the steering committee for the project¹ since SMART best represented a comprehensive, multi-agency approach to safety issues. The state also decided to use the Critical Analysis Reporting Environment (CARE) software developed at the University of Alabama.

After using CARE to analyze safety data, Alabama officials determined five critical emphasis areas:

1. Emergency medical services
2. Older/restricted drivers
3. Legislative efforts
4. High-risk driving groups
5. Run-off-the-road crashes²

The Alabama plan focused on several strategies to improve transportation safety. With regard to safety on rural roads, two strategies deserve special attention: 1) the use of technology to locate crashes and coordinate logistics, and 2) improved emergency medical response times and care for crash victims.

Focus on rural EMS. Alabama's strategic highway safety plan is the only one of the six to devote an entire section to emergency medical services (EMS) in rural areas.³ This section specifically highlights the needs of rural crash victims during the "Golden Hour":

The distances between major population centers in Alabama create extensive suburban and rural regions, which have distinctly different trauma response patterns for responding to vehicle crashes. In rural areas more time is spent locating, stabilizing, and transporting vehicle crash trauma victims, reducing their chances of survival.⁴



Alabama's strategic highway safety plan is the only one of the six to devote an entire section to emergency medical services (EMS) in rural areas.

In 2003, 223 deaths occurred in 5,806 injury and fatality crashes, which reported EMS response times longer than 20 minutes. Interestingly, 52 percent of these crashes occurred in some of the most populous areas of the state. This suggests that suburban environments also need quicker EMS response.

To reduce rural fatalities, Alabama safety partners took a cross-disciplinary approach involving driver behavior, technology, and public policy actions. State officials made five recommendations for future action:

1. Identification and analysis of current performance data (response time, treatment, and mortality rates)
2. Additional state funding to train first responders (often police) to provide basic care at the crash site
3. Identification of high-frequency crash locations using global positioning (GPS) and geographic information systems (GIS), and provision of in-vehicle GPS to help EMS personnel locate victims and minimize transport time to hospitals
4. Development of a statewide assessment plan detailing the number of EMS responder units and logistics coordination among first responders and EMS units
5. Improved access to EMS services in rural areas

Because funding for rural emergency medical services

1 Alabama Strategic Highway Safety Plan, Page 12

2 Alabama SHSP, Page 8

3 *The Special Situation of Rural EMS*, Alabama SHSP

4 Alabama SHSP, Page 18

is a big concern, the plan provides a time frame for implementation that includes both short- and long-term goals. The plan also points out that performance evaluation will be crucial to determining not only the overall effectiveness of the implementation but also to securing funding for future projects.

Emphasis on legislation. Also unique to the Alabama plan is a Legislative Component chapter. Because no organization currently provides the state with a comprehensive overview of highway safety, the Legislative Work Team, which included a representative from the Governor's office, called for the establishment of a legislative task force to identify, review, monitor, and promote safety legislation.⁵

In addition, the Legislative Work Team also proposed 14 traffic safety legislation initiatives. These include:

- A booster seat law
- Restriction on cell-phone use
- A primary seat-belt law
- A ban on transporting passengers in the bed of a pick-up truck
- Legislation targeting aggressive driving

5 Alabama SHSP, Page 25

IDAHO: SAFETY RESTRAINTS

Traffic safety officials in Idaho had noted the success of campaigns in Minnesota and Washington. Idaho had also seen a gradual reduction in fatality rates from 1996 to 2005. In 2005, the state held its first Governor's Highway Safety Summit: Toward Zero Deaths.

Comprehensive and coordinated planning. During the summit, Idaho safety officials and groups created the Toward Zero Deaths traffic safety program. Both this program and the state's strategic highway safety plan seek to develop and implement a multi-agency approach based on the "Four E's" (education, enforcement, engineering, and emergency trauma care). Idaho has set an incremental goal of 168 or fewer fatalities by 2012 with a fatality rate of 1.0 per 1,000,000 vehicle miles traveled.

Safety partners, including state agencies, private firms, and constituency groups, wanted to take a comprehensive approach to safety. They also wanted to coordinate goals established in three previous safety plans: the Highway Safety Performance Plan, the Highway Safety Improvement Program, and the Motor Carrier Safety Assistance Program.¹

1 Idaho Strategic Highway Safety Plan, Page 4

The Legislative Work Team also sought input from the other four working group teams. The Risk Taking Task Team suggested legislation that would allow investigation of businesses with continued violations of state liquor law.

The Risk Taking Task Team also suggested the use of "Whiskey Plates," color-coded vehicle tags for persons convicted of DWIs.

The Older/Restricted Driver Task Team recommended laws that would require physicians to take a more active role in determining the fitness of older or physically impaired drivers.

A good first step. Alabama's initial strategic highway safety plan is a good first step toward increased safety. Like other states, Alabama has adopted a data-driven approach to safety planning and policy, using programs like CARE to identify crash locations, communicate with safety personnel, and coordinate emergency response.

In 2005, 1,131 people were killed on Alabama's roads, with a rate of 1.9 per 100 million vehicle miles traveled. The state is looking for ways to incorporate a variety of safety stakeholders into its planning process so it can find more ways to reduce fatalities.

Seventy-six percent of Idahoans used their seat belts regularly in 2005.



Participants at the Governor's Highway Safety Summit identified 10 emphasis areas (in no ranked order of importance):

1. Aggressive driving
2. Commercial vehicles
3. Emergency medical services
4. Highway-railroad grade crossings
5. Impaired drivers
6. Mature drivers
7. Occupant protection
8. Road-related crashes
9. Vulnerable users (including bicyclists, motorcyclists, pedestrians, and school children)
10. Young drivers²

Low rates of seat-belt use. Idaho's strategic highway safety plan focuses on changing driver behaviors. The enactment of a primary seat-belt law is a key goal. According to information contained in the plan, 76 percent of Idahoans used their seat belts regularly in 2005. Of drivers or passengers killed on the road, 60 percent were unbelted.³ Seat-belt use increased in 2006 to 80 percent. It fell slightly in 2007 to 78.5 percent according to observational studies.

In 2006, 121 unbelted persons were killed. In 2007, 110 unbelted persons lost their lives.⁴ People who do not buckle up are actually subsidized by the state's citizens. In 2006, for example, the deaths of unbelted Idahoans represented a net loss to the state of \$543 million.⁵

Idaho's fine for lack of seat-belt use is one of the lowest in the nation—just \$10 in 2005, up from \$5 in 2003. (Only Kansas, Tennessee, Missouri, and Vermont have an equally low fine. New Hampshire has no fine at all.) By comparison, neighboring Washington State has one of the highest fines in the nation: between \$101 and \$250 dollars.⁶ Idaho's strategic highway safety plan calls the \$10 fine “a low priority for cops, a joke, and difficult to enforce.”⁷

Increasing seat-belt usage. The creation of the Idaho Seatbelt Coalition in 2006 was the first step in the implementation of the Toward Zero Deaths plan. The coalition's strategic goal was to increase seat-belt usage to 85 percent in the first year of the plan. This goal was not met due to loss of funding and a weak law.

The Idaho Transportation Department also established

a teen youthful driver Web site, XTR4 Teen Drivers, which is intended to increase new-driver knowledge, improve safe-driver practices, and promote seat-belt use.⁸

Frequently cited obstacles to increased seat-belt use and better roadway safety in general include:

- Lack of state financing
- Legislative support for personal freedoms
- Limited policing capabilities
- Current roadway conditions

In 2006, for example, the deaths of unbelted Idahoans represented a net loss to the state of \$543 million.

Idaho's plan is intended to serve both rural and urban regions. Nevertheless, the seat-belt program does address rural areas differently (especially, south central and eastern Idaho). According to Idaho Transportation Department officials, these differences include:

- More money per capita for paid media campaigns in rural media
- Use of tailored media messages that stress family values and include local statistics
- An effort to increase participation of rural law enforcement agencies
- Use of Regional Law Enforcement Liaisons from sheriffs' offices, city jurisdictions, and the state police agencies
- Partnerships with local officials and organizations that promote seat-belt use

On the right track. Idaho has modeled its developing safety program on successful programs in other states. The Toward Zero Deaths program recently went online. The number of traffic fatalities is going down. A review of the strategic highway safety plan indicates that the state's safety partners are continuing to identify critical emphasis areas and targeted strategies. It looks like Idaho is on the right track at this time.

8 <http://www.xtr4.com/index.html>

2 Idaho SHSP, Page 8

3 Idaho SHSP, Page 30

4 Idaho Seatbelt Coalition, www.buckleupidaho.org

5 Idaho Seat-Belt Coalition Fact Sheet—Lost Lives, Lost Opportunities, Costly Price Tag, 2007

6 Automotive Coalition for Traffic Safety, Inc., “Penalties for Violating Adult Seat Belt Laws, 2005”

7 Idaho SHSP, Page 31

MARYLAND: ENGINEERING SOLUTIONS

From 1996 to 2005, over 6,000 people lost their lives and more than 600,000 were injured on Maryland's roads, at an estimated cost of more than \$4.5 billion annually.¹

As a result, the state developed a statewide highway safety plan in 2003, one of the first to use a multi-agency approach to safety planning and programs. When the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted in 2005, Maryland was able to build on its previous safety planning efforts.

Critical emphasis areas. During the state's first Traffic Safety Summit in July 2006, safety partners developed a comprehensive list of problems and a total of 168 strategies to address them.² Like the other five plans, Maryland's strategic highway safety plan emphasizes current traffic safety data and a multidisciplinary approach to safety. The plan outlines seven critical emphasis areas:

1. Reducing impaired driving
2. Improving information and decision-support systems
3. Eliminating hazardous locations
4. Increasing occupant protection and safety restraint use
5. Improving driver competency
6. Curbing aggressive driving
7. Improving emergency response systems and time³

The third emphasis area, eliminating hazardous locations, was further divided into sub-areas:

- Keeping vehicles on the roadway
- Improving safety at intersections
- Creating safer work zones
- Making walking and crossing streets safer

The fifth emphasis area, improving driver competency, was also divided into sub areas:

- Reducing distracted driving
- Enhancing safe driving for older drivers
- Developing safe young drivers
- Improving motorcycle safety
- Making truck and bus travel safer

In subsequent meetings, the emphasis area and sub-area teams combined, changed, added, or removed strategies. They also developed implementation plans for areas of highest priority.

Maryland's plan recognizes that engineering solutions can play a significant role in changing driver behaviors.



Engineering better driver behavior. Maryland's plan identifies driver behavior as a chief priority and suggests that targeted education and enforcement programs can save lives. But the plan also recognizes that engineering solutions can play a significant role in changing driver behaviors.

Specifically, the plan calls for widespread use of safety features like forgiving shoulders, intersections retrofitted with new technologies or roundabouts, and pavement technologies that reduce speed and increase friction.⁴

According to the plan, nearly one-third of all roadway fatalities in Maryland result from run-off-the-road crashes. The risk is highest for drivers under age 24. The problem is of particular concern in rural areas. Overturning and striking fixed objects increases the risk of fatalities in run-off-the-road crashes. For this reason, the plan advocates the removal of fixed objects whenever feasible.

The Maryland plan also calls for an evaluation of pavement technologies and strategies that reduce speeds and increase friction, guide drivers, and create awareness of the road's edge. In addition, the plan supports the use of forgiving roadway designs intended to mitigate

1 Maryland Strategic Highway Safety Plan, Page 5

2 Maryland SHSP, Page 13

3 Maryland SHSP, Page 12-13

4 Maryland SHSP, Page 25

the impact felt by cars that do leave the road.⁵ The safety of pedestrians walking along roadways or within intersections is another important focus.

Plan development and implementation. Metropolitan planning organizations throughout Maryland were directly involved in plan development and are expected to help carry out the strategies, which include a statewide mass media campaign.

According to representatives of the Department of Transportation's State Highway Administration, however, a lack of direct funding for implementation has required the state to find new funding sources.

Beyond the strategic highway safety plan, the Rural Transportation Assistance Program (RTAP), overseen by the Maryland Transit Administration, manages federal grants that provide technical and training assistance to non-urban transit provider groups.

Maryland has also looked at creating a Rural Area Transportation Advisory Board. Its mission would be to engage rural communities in state planning and engineering activities.⁶ The board would be made up of legislative leaders or their selected liaisons, along with officials from counties or rural communities and the Maryland Department of Transportation. Whether the

state has actually developed this board is not known at this time.

Urban focus, rural benefit. Maryland had created an interdisciplinary safety plan before the enactment of the new federal requirements. Building on that experience, the state created a strategic highway safety plan that identified issues like impaired driving, safety restraint use, and the need for better traffic safety data collection and methodologies. Unlike other states, Maryland has focused on using engineering solutions to influence driver behavior.

A review of documents available on the Maryland Department of Transportation Web site suggests that the state is looking for ways to engage local communities. The state is also seeking additional sources of funding to carry out the plan.

Because Maryland has two densely populated metropolitan areas, it is not surprising that its strategic highway safety plan focuses on urban traffic safety and operations. But the state's safety partners have raised awareness of roadway hazards and begun to explore creative engineering solutions that would reduce driver error and improve driver behaviors in both urban and rural settings.

5 Maryland SHSP, Page 25

6 MDOT Memorandum, December 30, 2004 re: Non-Metropolitan Area Consultative Process. Obtained from <http://www.emdot.com/Planning/STIP%20and%20TIP/Rural%20Consultation%20Process%20Jan%202006.pdf>

VERMONT: LOW-COST, HIGH-RETURN STRATEGIES

Vermont, a rural state, is also one of the nation's smallest and least populous states, and its annual operating budget is the smallest of the six states considered in this report. The state has relatively few major metropolitan centers, and its population is highly dispersed.

Instead of calling for a reduction in fatalities by a given year, Vermont's strategic highway safety plan calls for a reduction in the number of "major crashes."¹ The plan sets a goal of 350 or fewer major crashes annually by 2010, with 40 or fewer fatalities and 26 or fewer incapacitating injuries each year.²

To achieve this, the plan relies on low-cost, high-return safety strategies with proven records of success, paid for with existing funds. These strategies include improved signage, clearer pavement markings, and

Vermont's plan sets a goal of 350 or fewer major crashes annually by 2010.

removal of trees and other objects that block a full view of the road. Every section of the plan lists several targets that involve rural, two-lane roads with speeds of approximately 50 miles per hour.

Critical emphasis areas. Vermont's strategic highway safety plan identifies seven critical emphasis areas:

1. Keeping vehicles on the roadway
2. Young drivers

1 Strategic Highway Safety Plan for Vermont, Page iv

2 Vermont SHSP, Page Ivo

3. Improved design and operation of highway intersections
4. An increase in seat-belt usage and airbag effectiveness
5. Reduction of impaired driving
6. Curbs on speeding and aggressive driving
7. Driver alertness.³

These seven emphasis areas were developed by the Vermont Center for Justice Research and state safety partners, using crash data reported between 1999 and 2003. The safety partners then refined and reviewed data specific to the seven areas. Longitudinal data for each area were reviewed, to examine historic trends and factors that contributed to crashes. The data were also studied to determine which counties have experienced the greatest number of crashes, fatalities, and serious injuries in each emphasis area.

Community outreach. The Vermont plan stresses the need to involve the entire business community, not just motor carrier operations, in communicating the importance of safety issues to employees and the greater public.

According to the Vermont plan:

*Involving Vermont's business groups and organizations before implementation (of the plan) will give businesses an 'ownership' position in the implementation of this highway safety strategy that will impact their employee's workplace, which may be essential in achieving public policy support for the strategy.*⁴

The plan also recommends engaging local communities, particularly young drivers and parents. This would be done through increased outreach in schools and driver education training workshops as part of the state's graduated licensing program.

Other aspects. Interestingly, the plan devotes little space to technological solutions. For example, the plan suggests that better driver compliance with traffic control devices at intersections is important. But unlike the other state plans, Vermont's says nothing about the use of technology for enforcement.

Like the Idaho plan, the Vermont plan identifies barriers to the realization of the suggested safety solutions and identifies the resources needed to carry them out. But unlike the Idaho plan, the Vermont plan gives a justification for this reasoning and suggests how state safety partners might carry out safety strategies.

Vermont's strategic highway safety plan offers a thorough analysis of existing roadway conditions and lists strategies for each critical emphasis area.



Framework for safety. Vermont's strategic highway safety plan offers a thorough analysis of existing roadway conditions and lists strategies for each critical emphasis area. The plan does not prioritize strategies or roadway systems. The plan, however, does a good job of identifying obstacles to the use of these safety strategies and suggests how to deal with these obstacles.

The discussion of plan implementation is somewhat limited, although the document does outline how updates will be made: safety partners will meet annually to discuss pressing issues. An appendix includes a list of "Action Plan" items, but it is unclear whether these so-called "sample items" are intended to complement the strategies listed in the main body of the text.

Nevertheless, Vermont's strategic highway safety plan does provide a framework for current and future activities. Revisions of the plan will undoubtedly lead to a reduction in major crashes and fatalities on the state's roads.

³ Vermont SHSP, Page vi

⁴ Vermont SHSP, Numerous Pages



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