

# Strategic Highway Safety Plan for Vermont

## Executive Summary

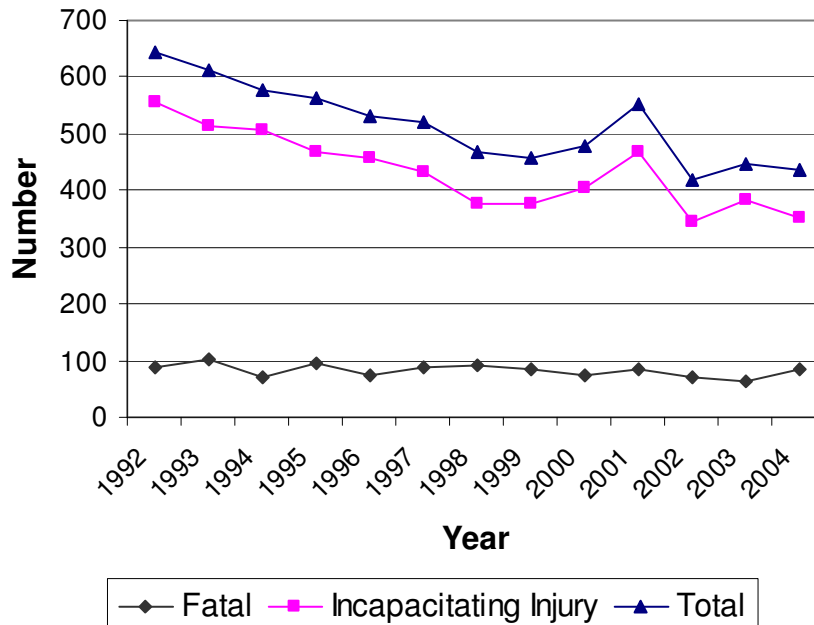
**Mission:** The mission of the Vermont Strategic Highway Safety Plan is to minimize the occurrence and severity of crashes, related human suffering and economic losses on the Vermont transportation network. We will accomplish this by identifying and implementing achievable and effective education, enforcement, engineering, and emergency response initiatives (the four E's).

**Goal:** The Vermont Strategic Highway Safety Plan will reduce the number of major crashes to 350 or fewer annually by 2010 resulting in 40 fewer fatalities and 26 fewer incapacitating injuries per year.

## Introduction and Background

Figure 1 displays the historical trend in crashes that resulted in fatalities and incapacitating injuries in Vermont between 1992 and 2004 (combined, these crashes are referred to as major crashes in this document). Figure 1 illustrates that the total number of major crashes steadily declined between 1992 and 1999 before starting to fluctuate between 2000 and 2004. Overall, the total number of major crashes was substantially less in 2004 (437 crashes) than in 1992 (643 crashes), representing a 32 percent decrease in the annual number of major crashes during the time period.

**Figure 1. Vermont Major Crashes, 1992-2004**



In Vermont, for the last five years, an average of 700 persons has been seriously injured and another 83 persons have been killed each year in a motor vehicle crash. The consequences to individuals, families and society are considerable. The social and economic future of any family can be forever shattered when a family member, especially the "bread winner", is killed in a traffic

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crash. Likewise, a business can be equally devastated with the loss of a valued employee and the potential loss of business. While the human suffering is enormous and immeasurable, the economic impact of major crashes also bears consideration. Based on National Highway Traffic Safety Administration (NHTSA) estimates, Vermont's economic losses caused by fatal and serious injury crashes were at least \$483 million in 2004.

The American Association of State Highway and Transportation Officials (AASHTO) has developed a framework for comprehensive highway safety planning that has the promise of making significant gains in the reduction beyond current numbers. This framework is referred to as the Strategic Highway Safety Plan (SHSP) and emphasizes addressing areas where significant reductions in crashes can be achieved through the involvement of safety stakeholders from all jurisdictions within a State evaluating the State's safety needs based on hard data and formulating and implementing countermeasures to improve safety.

The basis of the SHSP concept is the recognition that highway safety is not the responsibility of only one organization in one specific domain, but is the responsibility of many organizations in many domains. In the world of highway safety, these domains are referred to as the four E's, namely, Engineering, Education, Enforcement and Emergency Services. Also at the root of this concept is the understanding that resources are limited and that resources should be used where the return is expected to be the greatest. AASHTO has identified twenty-two such emphasis areas where it is believed that a significant number of major crashes could be prevented. The Vermont SHSP identifies a subset of seven of these critical emphasis areas (CEA).

Currently, State, regional and local organizations have been carrying out a number of independent safety initiatives that have helped to reduce injuries and fatalities on highways. The SHSP provides a detailed guide for multiple jurisdictions to collaborate on delivering safety services more efficiently and effectively and, where it counts the most, to achieve significant gains in reducing deaths and injuries on Vermont roads. The Strategic Highway Safety Plan contains strategies that when implemented by the safety partners will significantly improve highway safety in our State.

## Development Process

The SHSP was developed through a collaborative and voluntary process involving many organizations responsible for highway safety in Vermont. The process was led by the Agency of Transportation and the Departments of Public Safety, Health, Education and Labor. The leaders of these State entities formed an **Executive Committee** which provided the overall direction to the SHSP development and made key decisions.

The overall management of the SHSP development was coordinated by a **Core Group** of the same State entities. Representatives from the Federal Highway Administration and the American Traffic Safety Services Association also participated.

The **Safety Partners** guided the technical work of the process, including the identification of critical emphasis areas, and the development of strategies and work plans.

The SHSP initiative was officially launched on December 12, 2005, when Governor Douglas kicked off the development process at a meeting attended by more than 100 safety partners. The purpose of this meeting was to first explain the purpose of the SHSP and to then ask the safety partners to review Vermont's data and choose key issues related to fatal and serious injury crashes. Safety partners were invited to a second meeting on January 20, 2006, to select a critical emphasis and to commit time towards the development of the plan. Over the next six months, the task teams identified strategies and developed work plans. These strategies and work plans were presented at a meeting of safety partners on September 7, 2006. Participants broke out into small groups to further refine and validate the strategies for inclusion in the SHSP.

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## Data Analysis

Vermont crash data for the five most recent available years at the time of analysis (March 2006) was analyzed by the Vermont Center for Justice Research. The crash data used represented all the crash reports that were submitted by law enforcement agencies to the Vermont Department of Motor Vehicles between 1999 and 2003. The data analysis focused on a subset of crashes that resulted in fatal and/or incapacitating injuries.

Data analysis consisted of two phases. In the first phase, the magnitude of the problem for each of the 22 AASHTO emphasis areas was determined by identifying historical trends in the form of counts and percentages for the five-year period. The second phase of the data analysis included the identification of trends and patterns for the seven critical emphasis areas selected by the safety partners. The intent of this phase was to provide enough information for developing strategies to reduce major crashes in Vermont. To supplement the analysis, recent fatal crash reports (for the period May 31, 2004 to May 31, 2005) were read and evaluated to further identify patterns and information that would not have been readily apparent by simply performing the statistical analysis of the crash data.

## Critical Emphasis Areas

The critical emphasis areas that offer the greatest potential for reducing major crashes in Vermont were selected for the SHSP by reviewing AASHTO's list of 22 emphasis areas. To assist in the determination of these critical emphasis areas, two methods were followed. One involved comparing the 22 emphasis areas to Vermont crash data while the other sought the opinions of those involved with highway safety on a day-to-day basis.

At the December 12 Kick-off Meeting, participants were divided into small working groups. Each group was tasked with discussing the 22 AASHTO emphasis areas. At the end of the discussion, each participant selected three areas that they felt were the most important in reducing major crashes in Vermont. At the end of the discussion, seven critical emphasis areas were selected.

The 2006 SHSP focuses on the following seven critical emphasis areas:

**CEA 1 Keeping Vehicles on the Roadway & Minimizing the Consequences of Leaving the Road**

**CEA 2 Improving Young Driver Safety**

**CEA 3 Improving the Design & Operation of Highway Intersections**

**CEA 4 Increasing Seat Belt Use**

**CEA 5 Reducing Impaired Driving**

**CEA 6 Curbing Speeding and Aggressive Driving**

**CEA 7 Keeping Drivers Alert**

For each of these seven critical emphasis areas, the strategies most likely to help reduce the number of major crashes were further identified by the safety partners. These critical strategies are shown in Table 1 along with specific crash reduction targets for each of the critical emphasis areas. In reading the list of critical strategies, it may appear that many of these strategies are already being implemented to some extent in Vermont. When this is the case, the Strategic Highway Safety Plan proposes to focus efforts to enhance the quality and quantity of implementation and the extent to which the strategies are used.

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Table 1a. Critical Strategies and Major Crash Reduction Targets

<b>Keeping Vehicles on Roadway &amp; Minimizing the Consequences of Leaving the Road</b>	
<p><b><u>Objective</u></b></p> <p>Reduce the number of major crashes related to roadway departure by 5% by 2010 from 2004 levels.</p>	Pilot program to implement low cost safety improvements on local road systems
	Provide improved delineation in low visibility conditions
	Provide edgeline or centerline rumble strips
	Improve advanced warning & delineation of unexpected changes in horizontal alignment
	Improve roadside geometry by eliminating shoulder drop-offs, and providing safer side slopes and ditches
	Improve clear zone by removing, relocating, shielding, or delineating roadside objects
<b>Improving Young Driver Safety</b>	
<p><b><u>Objective</u></b></p> <p>Reduce the number of major crashes involving young drivers by 19% by 2010 from 2004 levels.</p>	Strengthen the VT graduated licensing law for young drivers
	Improve initial driver education and advanced skill training
	Improve parental accountability in young driver training and behavior

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**Table 1b. Critical Strategies and Major Crash Reduction Targets**

## Improving The Design & Operation Of Highway Intersections

<p><b><u>Objective</u></b></p> <p>Reduce the number of major crashes at intersections by 3% by 2010 from 2004 levels.</p>	Improve operation at intersections
	Improve visibility by providing enhanced signing and delineation
	Improve maintenance and visibility of signs and markings
	Improve geometry at intersections
	Implement physical changes on the approaches to and at intersections
	Improve driver compliance through the use of targeted increased enforcement and traffic control devices at intersections
	Reduce speed at intersections
	Increase public awareness at High Crash Locations
	Implement local program for identifying and prioritizing High Crash Intersections

## Increasing Seat Belt Use

<p><b><u>Objective</u></b></p> <p>Reduce the number of fatal crashes in which occupants suffering fatal injuries are unbelted by 10% by 2010 from 2004 levels.</p>	Raise awareness of the importance of safety belts & the link to air bag effectiveness
	Pursue a standard safety belt law
	Increase enforcement of traffic safety laws in Vermont
	Engage the Vermont business community in mitigation efforts

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Table 1c. Critical Strategies and Major Crash Reduction Targets	
<b>Reducing Impaired Driving</b>	
<u>Objective</u>  Reduce the number of major crashes related to alcohol by 30% by 2010 from 2004 levels.	Improve the public awareness of impairment
	Convince the public that DUI apprehension is likely
	Improve the public awareness of the consequences of impaired driving
	Convince the public that punishment is likely
<b>Curbing Speeding and Aggressive Driving</b>	
<u>Objective</u>  Reduce the number of major crashes involving aggressive driving by 19% by 2010 from 2004 levels.	Convince the public that punishment is likely
	Educate the public to why it is dangerous
	Convince the public that apprehension is likely
	Improve the education of novice drivers
	Develop a remedial driver education course
<b>Keeping Drivers Alert</b>	
<u>Objective</u>  Reduce the number of major crashes related to keeping drivers alert by 14% by 2010 from 2004 levels.	Enact cell phone restriction legislation
	Install shoulder and/or centerline rumble strips
	Enhance effectiveness/awareness of safety rest stops
	Increase driver awareness of dangers associated with distractions while driving

## Implementation Process and Relationship to other Plans

The key to success of implementing the SHSP is public acknowledgement and acceptance that highway crashes are a serious problem. Therefore, success will not only take the efforts of government agencies, but the direct involvement of Vermont's business community and the general public.

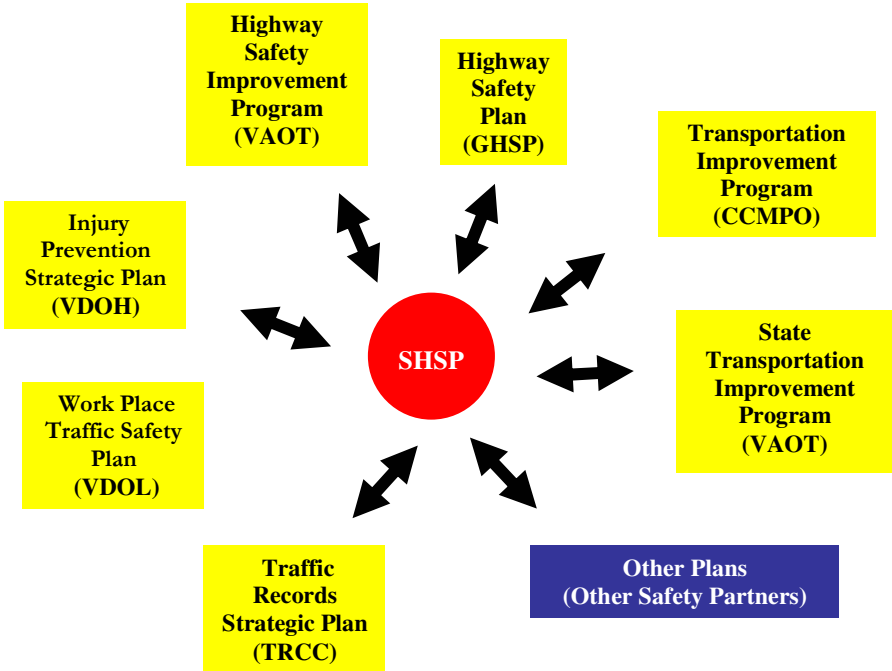
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Upon the acceptance of the SHSP, the Core Group and the seven task teams will meet with other safety partners to promote the Plan, agree on action plans and implement the strategies.

A two-phase, concurrent approach for a comprehensive outreach, communications, and marketing/public relations plan will be a first step. Phase I will be directed towards the continued involvement, expansion and commitment of safety partners and stakeholder groups in the ongoing implementation of the SHSP. Concurrently, Phase II will be the implementation of the strategies as identified.

The SHSP concentrates on the areas where a reduction in fatal and serious injury crashes is more likely to be substantial and provides the tools necessary beyond existing efforts to contribute significantly to the goal of lowering fatal and incapacitating injury crashes. In the broader context of highway safety, the SHSP is to be operated, to the extent possible, in conjunction with other safety programs. As suggested in Figure 9, each safety partner will review the work plans in which they have been identified as a key player and look for synergies between their activities and the SHSP.

Figure 9. Relationship between SHSP and Other Plans



To facilitate the implementation of the critical strategies, a series of “sample action plans” have been developed for several of the critical strategies. These sample action plans provide suggested courses of action that an organization could take to accomplish the critical strategies.

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## Evaluation Process

The SHSP shall be evaluated annually to determine the success of strategies previously identified. This evaluation will be based on the review of updated crash data and the outcomes resulting from implementation of strategies.

## SHSP Updates

The implementation of the strategies listed in the SHSP will take place over time. A number of years of crash data are required to accurately evaluate a strategy. Specific revisions to the critical strategies identified in the initial SHSP will be done at the end of 2009 unless interim measures indicate a need to modify the strategies before then. Based on data analysis and resource availability, new critical strategies could be added yearly. At least one SHSP workshop will be held annually for safety partners to discuss progress and major crash trends. This workshop will be held in the spring of each year to permit safety partners to program revised or new strategies.