

Strategic Highway Safety Plan Implementation Process Model



*The Essential Eight-
Fundamental Elements and
Effective Steps for SHSP Implementation*

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| 16. Abstract This document describes the components necessary for successful Strategic Highway Safety Plan (SHSP) implementation. It features discussions on the four fundamental elements (leadership, collaboration, communication, and data collection and analysis) and the four steps for successful implementation (emphasis area action plans; linkage to existing plans; marketing; and monitoring, evaluation, and feedback). For each element and step, the document provides a list of key strategies as well as a checklist for practitioners to use to assess their implementation efforts. | | | |
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Message from the FHWA Associate Administrator of the Office of Safety

The SAFETEA-LU Act of 2005 required all States to develop Strategic Highway Safety Plans (SHSP). Just two years later all States met this requirement. Since then the focus has shifted from SHSP development to SHSP implementation. This document, *The Essential Eight – Fundamental Elements and Effective Steps for SHSP Implementation*, will help States implement their SHSPs. The initial draft of the Implementation Process Model (IPM) incorporated the latest research as well as the practical experiences of six model States. Ten other States then pilot-tested the IPM. This final version incorporates the lessons learned during the pilot test. It describes how to develop the fundamental elements of leadership, collaboration, communication, and data analysis and how to apply them to the four steps to implementation. These four steps cover: 1) emphasis area action plans; 2) integration with existing transportation and safety plans; 3) marketing; and 4) monitoring, evaluation, and feedback. Included in this document are lists of strategies based on noteworthy practices as well as checklists of questions to help practitioners assess their SHSP implementation efforts. Each chapter describes a fundamental element or step and provides guidance on advancing SHSP implementation.

Sincerely yours,



Joseph S. Toole
Associate Administrator for Safety
Federal Highway Administration

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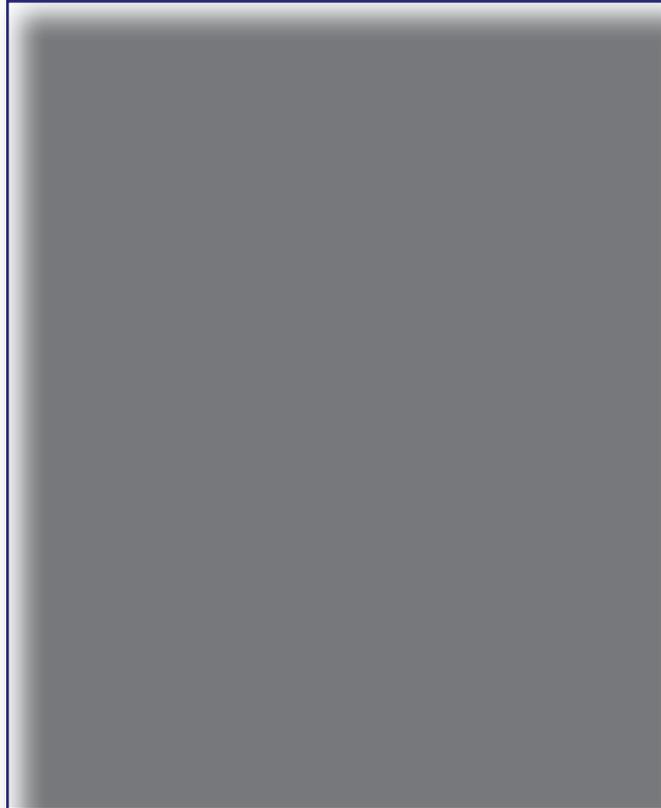
The Strategic Highway Safety Plan Implementation Process Model Overview

■ Introduction

The Federal Highway Administration (FHWA) in collaboration with partners at the Federal, State, and local levels (e.g., the National Highway Traffic Safety Administration (NHTSA) and the Federal Motor Carrier Safety Administration (FMCSA)), is leading the effort to implement Strategic Highway Safety Plans (SHSP) across the Nation. To assist States with this task the partners researched noteworthy practices and incorporated them into an SHSP Implementation Process Model (IPM). The IPM is an implementation guide based on research, the experiences of 6 “model” States, feedback from 10 “pilot” States, a panel review by related organizations, and the knowledge and experiences of subject matter experts.

■ Background

To prevent the devastating human and economic consequences of traffic crashes, the American Association of State Highway and Transportation Officials (AASHTO) published an SHSP (titled: AASHTO Strategic Highway Safety Plan) in 1997 and encouraged States to develop evidence-based SHSPs addressing the emphasis areas in the AASHTO plan. Some of the States had already produced an SHSP and others began work after the AASHTO plan was published. With passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA LU) in 2005, States were required to develop SHSPs, and today each State has completed an SHSP.





The SHSP is a data-driven, comprehensive, multidisciplinary plan integrating the “4E’s” of safety – engineering, education, enforcement, and emergency medical services or emergency response. It establishes Statewide goals, objectives, performance measures, and emphasis areas and is developed in consultation with Federal, State, local, and private sector safety stakeholders. All States are implementing their SHSPs, and many are experiencing remarkable results.

■ Implementation Process Model (IPM) Methodology

Successful SHSP implementation will result in transportation safety improvements that save lives and reduce injuries. The IPM identifies model practices and processes to support SHSP implementation. This is not to suggest that one size fits all; each State should review the model elements and determine which are useful for overcoming barriers and implementing its SHSP more effectively.

The IPM is based on wisdom gained through developing and implementing *The Champion’s Guide for Developing Strategic Highway Safety Plans* and reviewing “model” State practices in implementing one or more elements of the SHSP. Extensive interviews with leaders and champions from model States, as well as in-depth examination of SHSPs and various transportation planning and programming documents, highlighted examples of approaches and noteworthy practices some States are using to implement their SHSPs.

■ IPM Elements

Chapter 1 presents an overview of the essential eight components of the IPM – the four fundamental elements and the four steps for successful SHSP implementation. Chapters 2 through 7 provide in-depth discussions of each component, including its description or definition, the rationale supporting its inclusion in the model, and a range of implementation strategies, actions, and process techniques. Specific roles and responsibilities of the various safety stakeholders, (i.e., transportation planners and engineers, law enforcement, educators, and emergency medical services personnel) are described where appropriate.





The IPM suggests successful implementation requires collaboration, communication, and leadership (Chapter 2); data collection and analysis (Chapter 3); emphasis area action plans (Chapter 4); SHSP integration into other transportation plans and programs (Chapter 5); a marketing plan (Chapter 6); and monitoring, evaluation, and feedback to the planning and implementation process (Chapter 7). The chapters in this document provide an overall framework along with specific strategies and examples States may use to support and enhance implementation efforts.



■ Using the IPM

Readers should review the first chapter to identify strengths and weaknesses in their own implementation activities. Subsequent chapters describe the fundamental elements and steps needed for successful SHSP implementation.

Each chapter includes a summary list of key strategies and a series of questions for users to assess their implementation efforts. Helpful recommendations and procedures are identified throughout the guide; however, users can also turn immediately to the chapters relating to areas where their implementation efforts are stalled or have not yet started.

For example, if users identify “disconnects” between the SHSP and the HSIP, they can refer directly to Chapter 5 to identify steps in the process where the most beneficial and effective integration can occur. Becoming familiar with how the SHSP is integrated into the HSIP process is the first step to establishing collaboration among people working in both processes.

To effectively manage transportation safety improvement efforts and attract safety funding and other resources, progress must be measured and tracked over time. The guidance within Chapter 7 can help develop methods to assess ongoing progress at the State and metropolitan planning organization (MPO) levels. Demonstrated progress based on crash and other safety data will help make the case for continuing and increasing financial and institutional support for programs devoted to saving lives and reducing injuries.

The IPM is designed to be helpful for well-established safety professionals as well as those new to the field. Together with the FHWA’s *Strategic Highway Safety Plans: A Champion’s Guide to Saving Lives*, the IPM provides practical guidance for engineers, planners, enforcement personnel, and other safety stakeholders. The IPM provides new executives and leaders representing critical stakeholder organizations with a concise overview of their roles in SHSP implementation. They can use the ideas and strategies in the IPM to help them sustain effective existing safety efforts and advance new ones.



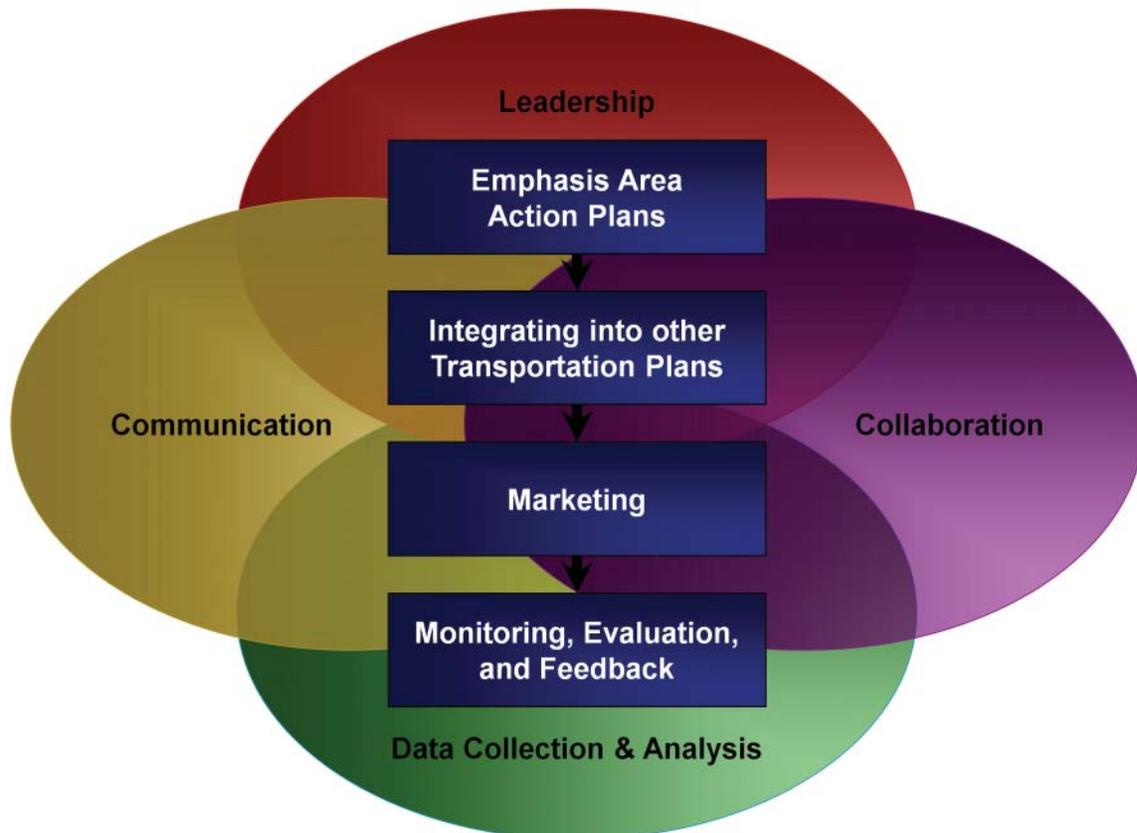


Chapter 1 Overview of the Essential Eight Components

SHSP development and implementation break new ground in the safety arena because multidisciplinary, multimodal, and collaborative relationships have not been standard practice in the past. The pioneering efforts of States over the last few years have brought to light elements that consistently appear in effective implementation efforts. At least four fundamental elements support all SHSP implementation practices: leadership, collaboration, communication, and data collection and analysis. Effective use of these elements is essential for moving forward on the following steps:

1. Developing emphasis area action plans;
2. Integrating the SHSP into other transportation and safety plans;
3. Developing a marketing strategy; and
4. Monitoring progress, evaluating results, and establishing a feedback loop to ensure SHSP adjustments and updates are continually incorporating experiences and lessons learned.

Figure 1.1 SHSP IPM Elements





■ Fundamental Elements

Leadership

Sustained, visible, and committed leadership is fundamental to successful SHSP implementation. Leaders recognize that implementing an SHSP is a long-term, ongoing process that changes how safety partners interact and collaborate to create and manage effective safety programs.

Leaders are responsible for influencing policy direction, setting priorities, and defining performance expectations for agency staff; affecting the way partner agencies respond to SHSP requirements; controlling time and resource allocation; managing interagency relationships; and establishing accountability for actions and outcomes.

Leadership Roles

SHSP development revealed three fundamental leadership roles important for SHSP implementation. As SHSP implementation becomes more far reaching and complex, these roles may be assumed by different people and agencies with varying levels of authority.

Role 1 – These leaders have access to resources and the ability to implement change; in other words, they may not be involved in the day-to-day management responsibility for program development and implementation, but they are able to “move mountains” in terms of resource allocation and policy support.

Role 2 – These leaders inspire others to follow their direction. They are often referred to as “Champions.” Champions are people who provide enthusiasm and support to SHSP implementation; have excellent interpersonal skills; are expeditors; are credible and accountable; tend to be subject matter experts; and are highly respected within their own agencies and in the safety community.

Role 3 – These leaders are often known as program managers, and their activities keep the implementation process on track. They manage the process and attend to the day-to-day tasks of arranging, facilitating, and documenting meetings, tracking progress, and moving discrete activities through to completion.

In some cases, a single person may fulfill all these roles, but it is more often the case that these responsibilities are assumed by multiple people.

Where possible, States should establish SHSP leadership through the Governor, the State’s highest executive office. This sends a clear message to all agencies regarding the importance of highway safety and the need to address it in State programs and policies. It establishes a basis for prioritizing available funding to support transportation safety among all partner agencies. Leadership can also be established through institutionalized partnerships between the Department of Transportation, the State Highway Safety Office, the Department of Public Safety, and other partner agencies. As the lead agencies



responsible for SHSP implementation, the partnership provides leadership and ensures that traditional safety-funded programs are driven by the SHSP. The partnership also institutionalizes the continuity necessary to sustain safety efforts through changes of administration and personnel.

Collaboration

The SHSP development process established broad-based collaboration among many agencies and organizations. Internal and external collaboration also is necessary for effective SHSP implementation. Collaborative relationships among safety partners are fundamental to the implementation process because the responsibility for addressing the wide range of programs and disciplines necessary for improving transportation safety falls upon many participants. States can facilitate internal collaboration through agency policies and procedures and support external collaboration through inter/intra-agency communication. Establishing collaborative arrangements where partners regularly work together builds trust and understanding. These collaborations help expand the initiative to the broader safety community and foster widespread understanding and support for safety priorities.

Collaboration results in a wiser use of limited resources and may facilitate the leveraging of additional resources to achieve a broader range of program objectives. For example, multiple agencies may have responsibilities that require the use of crash data. Collaboration among these agencies and individuals is imperative to effectively support crash data collection and analysis and minimize duplication of effort. Solutions reached collaboratively among several agencies and data users result in improved processes, opportunities to apply innovative approaches, and cost-sharing among the agencies. Collaboration on SHSP strategies and/or projects also brings new partners and further expands resources to assist with SHSP implementation.

Communication

One of the challenges facing States as they move forward is that the majority of stakeholders already have full-time jobs requiring their time and attention. These stakeholders need to know “what’s in it for them” to sustain their interest and involvement and to enable effective ongoing communication. Describing the vital role each safety stakeholder plays in the SHSP implementation process, as well as the benefits they will receive through participation, builds buy-in and ownership. Conducting regular meetings where stakeholders report on progress, offer opinions on SHSP programs and activities, identify opportunities, solve problems, and celebrate successes builds transparency into the process and maintains communication.

Effective communication within organizations and agencies responsible for SHSP implementation is essential. The existence of institutionalized communication mechanisms to support information sharing among technical and senior staff facilitates decision-making and enables agencies to be more effective.



Data Collection and Analysis

The purpose of a data-driven process is to direct resources to projects and programs with the greatest potential impact. The strength of the SHSP lies in a State's ability to identify and analyze safety data. Just as data were analyzed to identify crash characteristics, trends and behaviors during the SHSP development phase, data analysis is critical for prioritizing countermeasures, evaluating results, and updating the plan. Data analysis reveals the reductions in fatalities and serious injuries resulting from effective safety programs and countermeasures. By comparing these benefits with other considerations such as cost and resource availability, projects, programs, and resources can be prioritized more effectively.

■ Steps for Implementation

Emphasis Area Action Plans

SHSPs are implemented through the objectives, strategies, and action plans developed for each emphasis area. Multidisciplinary emphasis area action planning teams that include various agencies and encourage differing perspectives result in more robust safety programs. They keep stakeholders involved, interested, and motivated. The needs and priorities of different agencies should be considered to ensure they have a stake in the SHSP and are committed to its implementation.

An effective action plan describes in detail how each of the strategies will be accomplished through a series of action steps. It identifies the responsible persons and agencies and includes performance measures, deadlines, evaluation criteria, and resource requirements.

Integrating into Other Transportation Plans

Integrating the SHSP into Statewide and metropolitan LRTPs, S/TIPs, HSIPs, CVSPs, HSPs, and other plans and programs advances the safety agenda because they reflect Statewide priorities, provide a blueprint for action for key agencies, and influence resource distribution. A brief description of SHSP integration with each plan or program is provided below.

Long-Range Transportation Plan – LRTPs identify transportation goals, objectives, needs, and performance measures over a 20- to 25-year horizon and provide policy and strategy recommendations for accommodating those needs. Integrate the SHSP into the LRTP by ensuring transportation safety is *explicitly* addressed within the scope of Statewide and MPO long-range transportation planning processes.

Statewide and Metropolitan Transportation Improvement Program – S/TIPs, developed by the States and MPOs, are capital programming documents. These programs are resource constrained and identify projects and funding that reflect society's mobility, operational, and safety needs. Therefore, they should support the emphasis areas and strategies in the SHSP.



Highway Safety Improvement Program - The purpose of the HSIP is to achieve a significant reduction in the occurrence of and the potential for fatalities and serious injuries resulting from crashes on all public roads through the implementation of infrastructure-related highway safety improvements. This is accomplished through a data-driven program consisting of planning, implementation, and evaluation components. The HSIP also includes the Railway Highway Grade Crossing and High-Risk Rural Roads set-aside programs. SHSP emphasis areas, strategies, and actions can be used as tools for selecting and prioritizing HSIP investment decisions.

Highway Safety Plan - HSPs address behavioral safety areas (e.g., occupant protection, impaired driving, police traffic services, emergency medical services, motorcycle safety, traffic records improvements, and other program areas). The HSP is an annual plan identifying program activities supported by Federal funds targeting identified highway safety problems. These activities may support traffic safety law enforcement, media and public education, prosecution and adjudication, training and many other activities designed to reduce motor vehicle crash-related injuries and fatalities. The emphasis areas of the SHSP and HSP should be consistent.

Commercial Vehicle Safety Plan - The CVSP is a performance-based plan which outlines a State's commercial vehicle safety objectives, strategies, activities, and performance measures. The CVSP aims to reduce the number and severity of crashes and hazardous materials incidents involving commercial motor vehicles (CMV) through consistent, uniform, and effective CMV safety programs. CVSPs may also address some of the behavioral safety elements in the SHSP.

Marketing

A well-designed marketing strategy performs several functions, including informing the general public on transportation safety issues, educating key political leaders on their role in saving lives, and encouraging active participation in SHSP implementation activities among safety partners. Marketing to individuals both inside and outside of the transportation community and to nonparticipating partners helps build and maintain support for SHSP implementation. It also broadens the reach of the SHSP to those who may not participate in implementation activities on a regular basis.

Effective SHSP marketing strategies include, among other things, news events, web sites, newsletters, and a branding theme that stakeholders and the public can identify with.

Monitoring, Evaluation, and Feedback

Monitoring, evaluation, and feedback are essential steps for any strategic planning process. They are especially important because most SHSPs have been developed in the recent past and States currently are in the initial stages of implementation. Institutionalizing lessons learned in these early implementation efforts can improve the efficiency of future efforts.

Comprehensive action plans identify the parties responsible for implementing action steps and include performance measures and deadlines. SHSP leadership should establish a



monitoring process and assign responsibilities for updating the information frequently. An evaluation process should be developed early to ensure appropriate data are collected for evaluating both the overall program and individual projects. Finally, a feedback loop should be incorporated into the plan to ensure 1) leadership and stakeholders are informed; 2) information is regularly used to make course corrections as implementation takes place; and 3) SHSP updates are based on solid evaluation results.

The following chapters provide details and noteworthy practices on the Essential Eight elements of the SHSP IPM. States began addressing the fundamentals (e.g., leadership, collaboration, communication, and data collection and analysis) and directing efforts toward steps for implementation during the SHSP development process (e.g., developing emphasis area action plans; integrating the SHSP into other transportation plans; marketing the SHSP and related safety efforts; and monitoring, evaluation, and feedback). Continuing these practices throughout the implementation process will lead to sustainable, results-driven safety programs that work.

Each State will implement the SHSP according to the available opportunities and resources. Models, such as this IPM, are representations or ideal States and therefore all parts of the model may not work or be necessary for all States. However, the IPM includes “take-aways” for everyone and States should use the pieces that work best for them.



Chapter 2 Leadership, Collaboration, and Communication

Successful SHSP development and implementation requires leadership, collaboration, and communication. The interaction or synergy of these elements results in an outcome greater than would be accomplished by focusing efforts on just one element. In the complex, multidisciplinary world of the SHSP, leaders bring together the diverse interests and concerns of engineers, planners, law enforcement officers, education officials, emergency medical services personnel, and others.

Inherent in the word “leader” is the idea of followers, i.e., a leader is someone capable of motivating others to follow. The word leader also implies direction, i.e., leaders inspire others to action or to do things differently. Some leaders hold formal positions of authority, but not all. All leaders have the ability to set direction and inspire others to follow them. Leaders are risk takers, problems solvers, and creative thinkers, committed to doing what is necessary to advance the cause, which sometimes means breaking traditional institutional barriers. These attributes are essential for SHSP implementation.

Leaders are needed at the top and throughout all levels of the SHSP implementation effort. As noted in Chapter 1, at least three leadership roles are involved in SHSP implementation: leaders who have access to resources and “position power;” champions or individuals who inspire others to take action; and managers who focus on the nuts and bolts of day-to-day SHSP implementation.

Leaders communicate the SHSP vision, goals, and objectives and support a collaborative framework that enables safety stakeholders to actively participate in implementation programs and activities.

The essence of SHSP development and implementation lies in its multidisciplinary character. In their book, *Quality or Else: The Revolution in the Business World*, Lloyd Dobyns and Clare Crawford-Mason say, “It is not a question of how well each process works, the question is how well they all work together.” SHSP implementation is not about how well planners conceptualize the transportation system, engineers design the roadway, police officers enforce the law, drivers are educated about proper driving behavior, or emergency medical services personnel respond to crashes; it is about how well these groups work together to improve safety.

The diversity of the safety field, the importance of coordination among disciplines, and the need to advance safety among a host of competing public sector priorities all contribute to the need for strong SHSP leadership. Leaders are important in every phase of the SHSP, but especially during implementation when maintaining momentum and interest is more difficult.

SHSP implementation is a long-term process designed to change how safety partners conduct business, interact with each other, and manage safety programs – a tall order



for any plan, but particularly in the safety arena where groups have traditionally worked together only in limited instances. These challenges can be met through effective leadership, a collaborative framework, and clear communication about expectations.

SHSP implementation requires the effective application of the fundamental elements of leadership, collaboration, and communication. These elements, incorporated to some degree during the SHSP development process, should continue and be strengthened during the implementation process.

Ensure Strong Leadership

Leadership can be applied through an executive committee that meets periodically to solve problems, remove barriers, track progress, and recommend further action. Many States established this type of committee during the SHSP development process, and continue to utilize it during implementation. The role of the executive committee is to decide which projects or strategies are funded based on input from the emphasis area teams, and to prioritize them based on benefit/cost analysis, expected fatality reductions, and the extent to which they address SHSP goals and objectives.

A working group or steering committee comprised of technical staff is often formed to support the executive committee and manage day-to-day implementation efforts. With the full support of the executive committee, the working group provides leadership by overseeing the implementation of SHSP strategies and action plans. The membership of the working group often includes leaders of the various SHSP emphasis area teams (see Chapter 4). These leaders represent the various disciplines within the transportation safety field and their participation in the working group expresses the multidisciplinary nature of the SHSP process.

As with any committee or group, maintaining interest and activity is a challenge. Leaders want to feel their input is valued. They are decision-makers with an understanding of larger contexts, so the focus of executive committee and working group meetings should be on problem solving and on seeking advice and guidance. At least one State found that encouraging the various stakeholders to periodically chair executive committee or working group meetings raised the level of involvement and motivation among all committee members.

SHSP champions provide leadership through their enthusiastic support of the SHSP and its implementation. Effective champions are credible, accountable, and have excellent interpersonal and organizational skills. They encourage commitment and participation from a diverse range of safety partners and may be appointed by the DOT leadership or by the primary sponsoring agency. To enhance leadership focus on improving transportation safety, consider incorporating transportation safety-related performance objectives into the position descriptions of champions, engineers, planners, and others involved in SHSP implementation.

All agencies and organizations undergo staff changes, and it is essential to train the leaders of tomorrow to ensure that the focus on safety continues into the future. This can



be done by assigning leadership responsibilities for program implementation to newer staff and by ensuring that all staff have opportunities to engage and lead during meetings and other activities.

Establish a Collaborative Process

Dramatic improvements in roadway safety are more likely to result from a collaborative effort among the 4E's of safety (engineering, enforcement, education, and emergency medical services) than from efforts within a single discipline. The need for multidisciplinary solutions necessitates collaboration. Research suggests that the results of interdisciplinary team efforts are greater in scope and value than results from individual professionals working in isolation.

SHSP partners typically include the DOT; the SHSO; departments of public safety (State police or patrol); emergency medical services; health and education; Motor Carrier Safety Assistance Program (MCSAP) managers; Federal partners (FHWA, FMCSA, and the NHTSA); MPOs; local agencies; Tribal governments; special interest groups; and others.

To ensure continuity when an individual SHSP champion or committee member retires, takes a position in another organization, or moves out of State, a systematic approach to identifying their replacement is necessary. The selection process should be based both on individual skills and leadership traits as well as the position held within a stakeholder organization. One way to institutionalize the selection of safety committee members is to link their selection to the position they hold within the stakeholder organization, i.e., whoever assumes the previous safety champion or committee member's position should also become the new SHSP committee member. Institutionalizing partnerships at the local and regional level helps to extend the reach of the SHSP to all public roads, which is mandated by SAFETEA-LU. MPOs are key partners at the regional level while associations representing county/city governments can provide support from the local level. Local Technical Assistance Programs (LTAP), which support local highway agencies by transferring highway technology from FHWA, the State DOT, and universities through workshops and other training mechanisms, can be particularly effective at providing safety education to individuals within local governments.

The various agencies and organizations involved in the SHSP bring unique and valuable perspectives to bear on the roadway safety problem. Their competing philosophies, worldviews, and problem solving approaches, however, can make collaboration difficult. Creating a basic foundation for effective collaboration and establishing a process to support collaborative efforts are two ways to overcome these barriers. Incorporating SHSP goals, mission statements, and safety targets into the priorities of each stakeholder agency is one way to create a foundation for collaboration. This basic foundation can be further strengthened by identifying which agencies or organizations are responsible for implementing each of the strategies and action steps in the plan. A memorandum of understanding (MOU) is a useful tool for institutionalizing the process. States with existing MOUs should review them periodically to determine if updates or changes are required. MOUs also help build sustainability. As stakeholders change and new partners come on board, commitment on the part of all agencies can be reaffirmed by updating the MOU.



Finally, establishing collaborative relationships with other State DOTs through peer exchanges, conferences, meetings, and/or webinars can provide helpful insights. Learning from the experiences of others helps to identify and remove obstacles before they begin to hinder SHSP implementation efforts.

Create Communications Mechanisms

Collaboration is enabled when the vision, mission, and goals of the SHSP are clearly and continually communicated to all partners and stakeholders. Formal communication methods include meeting reports, media events, newsletters, presentations at safety conferences, etc.

Communication can also be informal and involve blogs, listservs, chat rooms, web sites, and periodic e mail blasts to encourage greater interaction, provide progress updates, distribute information on recent research, or request assistance from fellow partners and stakeholders. The communication need not be lengthy or complicated, but regular updates remind all stakeholders of the SHSP effort and their role in ensuring success.

Key Leadership, Collaboration, and Communication Strategies:

- Assign leaders who are credible, accountable, and have excellent interpersonal and organizational skills.
- Meet with new leaders to brief them on their role in supporting the SHSP and to persuade them to get involved.
- Establish multidisciplinary collaborative efforts involving the 4E's of safety.
- Clearly and broadly communicate the SHSP vision, mission, and goals to all partners and stakeholders.
- Use peer exchanges to learn from the experiences of other States.
- Incorporate safety collaboration performance objectives into the position descriptions of those involved in SHSP implementation.
- Establish a regime where the chairperson for the regularly scheduled high-level safety meetings rotates among the various stakeholder groups.



■ Checklist

Answering these questions will help stakeholders assess their SHSP leadership, collaboration, and communication processes and identify opportunities for improvement.

- Does your implementation process have a clearly defined leader with the commitment, ability, and institutional authority to move forward? Do the Governor, the DOT Director/Secretary/Commissioner, and the State Police Director/Commissioner support or facilitate SHSP implementation?
- Does your implementation process have an organizational structure to oversee the process and measure performance?
- Have formal agreements (e.g., MOUs) been established among agencies with respect to SHSP implementation?
- Do senior management and technical staff communicate and coordinate on SHSP implementation?
- Does your State hold regularly scheduled meetings on SHSP implementation and related safety programs?
- Are the DOT, the SHSO, and other safety stakeholders collaborating and sharing resources to implement the SHSP?
- Are MPOs and other regional and local agencies involved in SHSP implementation?
- Is SHSP implementation coordinated with both transportation and nontransportation agencies?





Chapter 3

Collecting, Analyzing, and Sharing Data

Using data to identify safety problems is fundamental to successful SHSP implementation. Just as development of the SHSP was a data-driven process, an effective implementation process also depends on appropriate use of data. These data enable managers to identify safety problems, select proper strategies and countermeasures, monitor progress toward achievement of SHSP goals and objectives, measure the effectiveness of SHSP strategies, identify needed improvements, and direct limited resources to where they have the highest potential for reducing fatalities and serious injuries.

A variety of strategies can be employed to collect data, perform analysis, and ensure SHSP stakeholders can access the data and the analysis. NHTSA Section 408 grants, established in Title 23, United States Code, through SAFETEA LU, provide funding for States to improve the timeliness, accuracy, completeness, uniformity, integration, and accessibility of safety data. In some States, multiple agencies provide funding for data collection and management through interagency agreements. Educating State legislatures on the benefits of data-driven decision-making has helped some States successfully make the case for additional safety funding.

In many States, safety data are collected by several different organizations. It is common for data collection procedures within these organizations to be well-established and difficult to change. At the same time, advances in transportation safety research highlight new data needs and improvements in hardware capability and software applications change how data is collected. To help ensure that data collection procedures respond to evolving requirements, participation of Information Technology (IT) personnel from relevant stakeholder organizations should be encouraged.

Collect Relevant Data

Given the multidisciplinary nature of SHSP efforts, types of data relevant to implementation include the following:

- **Crash Data** - Type of crash (lane-departure, intersection, rear-end, etc.), weather conditions, time of day, day of week, person type (driver, occupant, pedestrian, etc.), number and severity of injuries, traffic law violations, crash location, manner of collision, number of vehicles involved, alcohol or drug impairment, direction of travel, crash diagram, narrative description of the crash.
- **Injury Surveillance** - EMS response time, hospital assessment of injury severity, hospital length of stay and cost, rehabilitation time and cost.
- **Roadway** - Roadway classification, roadway inventory data, traffic control devices, location referencing system, rail grade crossings, structures (bridges, tunnels), traffic volume, vehicle types on the roadway.



- **Vehicle** - Vehicle Identification Number (VIN), registration information and plate, age/model/year, weight, owner information, U.S. DOT number (commercial), carrier information (commercial), inspection/out-of-service records (commercial).
- **Driver** - Age and date of birth, driver history (previous convictions), license status, gender and ethnicity, education/training.
- **Law Enforcement** - Citation tracking, prosecution, conviction, sentencing, case tracking, adjudication.
- **Other** - Statewide occupant protection use survey, insurance data (carrier, policy number, claims cost), demographic data.

These data may be collected from a variety of sources, including State and local crash data systems and roadway inventory files, the National Fatality Analysis Reporting System (FARS), the General Estimates System (GES), the Motor Carrier Management Information System (MCMIS), the National Emergency Medical Services Information System (NEMSIS), the Crash Outcome Data Evaluation System (CODES), and others.

In many cases, important safety data are unavailable or unknown. Information in police crash reports may vary from location to location; medical records, insurance records, and licensing information may not be available or linked to the crash data; and roadway inventory information may be limited and difficult to link to the crash data system. These and other data quality problems inhibit the effectiveness of efforts to improve transportation safety. However, access to timely and accurate safety data is critical for successful SHSP implementation. The following strategies have proven successful for improving data collection, management, and analysis:

- Include Information Technology (IT) personnel from relevant organizations on appropriate SHSP implementation teams.
- Prepare a traffic records improvement strategic plan and link it to SHSP implementation.
- Integrate the Traffic Records Coordinating Committee (TRCC) into the SHSP implementation team. The TRCC is responsible for identifying traffic records data system enhancement strategies to improve data access, accuracy, and timeliness.
- Provide input to the TRCC on data collection and processing problems or on needed changes in crash report fields, roadway inventory data, traffic data, driver history data, or citation/adjudication data.
- Establish data collection task forces or committees to promote collaboration among safety stakeholders.
- Implement data collection technologies to reduce the number of errors and processing time for data. *National Cooperative Highway Research Program (NCHRP) Synthesis 367: Technologies for Improving Safety Data* provides a comprehensive summary of crash data collection innovations.



- Provide continuous training for State and local police officers on the importance of high-quality crash data and collection techniques.
- Provide continuous training for State and local crash report system administrators to properly handle reports with inaccurate or missing information.
- Develop proper protocols to address crash reports that need additional investigation.
- Develop a data standards manual that provides definitions of variables and identifies available data streams and the agencies responsible for collecting and maintaining the data.
- Develop data submission protocols for agencies that provide data to the management system.
- Provide training for data input personnel and analysts to understand how their efforts contribute to and are utilized by technical staff for safety program support.

Analyze the Data

Just as data were analyzed to identify emphasis areas and develop emphasis area goals, objectives, and strategies, they are analyzed to develop action plans, monitor, evaluate results, and provide feedback to update the SHSP. Analysis can involve simple statistical investigations of crash trends, types, and contributing factors. Analysis may also utilize sophisticated tools such as FHWA's Safety Analyst and the Highway Safety Manual. As a foundation for SHSP implementation, data are the basis for the following:

- Identification of systemic safety issues as well as high-crash corridors, road segments, and intersections. By describing safety problems quantitatively, an agency knows the magnitude of the problem and can focus its efforts on areas with the greatest potential to save lives.
- Identification of crash type. Data analysis is used to discern trends in the frequency of certain types of crashes (e.g., rear-end collisions, lane departures, impaired driving, etc.). Crash type data are used to identify SHSP emphasis areas and develop action plans.
- Performance-based program management. Analysis of safety data allows managers to determine the extent to which the SHSP is achieving its stated goals and objectives.
- Project selection and prioritization. Analysis of safety data helps managers select and implement appropriate systemic improvements to the transportation network and identify projects to improve safety at high-crash locations. It helps identify high-risk groups such as young, elderly, and impaired drivers as well as motorcyclists and pedestrians. Managers use these data to select and prioritize countermeasures with the greatest potential for reducing death and injury.



- Monitoring and evaluation. Data monitoring and evaluation helps managers make course corrections as the plan advances; develop new programs using more effective countermeasures and strategies; improve existing programs; and direct resources toward implementation of the most effective programs, policies, and projects.
- Resource justification. Data-driven prioritized road safety projects provide transportation planners, engineers, law enforcement officers, and others with justification for additional resources.

Share the Data

Local governments, MPOs, advocacy groups, and private consultants require crash data to conduct safety planning and project-related activities; therefore access to the data is critical. Some agencies managing crash and other safety-related data provide raw data as well as filtered datasets that can be readily used by local agencies. Collaboration is fostered by providing stakeholders with direct access to safety data and the training needed to analyze them. In addition data quality may be improved because data sharing often promotes local efforts to improve data accuracy.

Access to reliable data for all stakeholders enables them to more fully realize the benefits of integrating the SHSP with other transportation and safety plans (as discussed in Chapter 5). Adopting the following strategies will allow more effective and efficient data sharing practices.

- Maintain a centralized data source accessible to all State and local agency partners ensuring everyone uses consistent information.
- Provide training to State and local agency partners on how to gather and analyze safety data.
- Develop policies to establish data dissemination schedules.
- Develop a standard procedure for handling data requests that clearly identifies who will handle requests and how they will be addressed.
- Host MPO forums to discuss data issues and enhancement strategies.
- Employ university research centers to provide safety data analysis support to MPOs.
- Encourage MPOs to conduct safety analysis for member jurisdictions, including crash location mapping.
- Work with LTAPs and others to support safety planning efforts at the local level by providing data for non-State highways and developing a GIS-based integrated roadway management system.



Key Data Collection, Analysis, and Sharing Strategies:

- Conduct initial research into a range of available data sources.
- Collect relevant data necessary to define safety needs and support decision-making processes.
- Prepare a traffic records improvement strategic plan and data collection task forces or committees.
- Provide training in the collection, analysis, and use of safety data.
- Use data to select and implement appropriate systemic improvements to the transportation network and identify projects to improve safety at high-crash locations.
- Use data to monitor and evaluate the outcomes and results of safety projects and programs.
- Use data to justify the need for resources to support implementation of safety projects and programs.
- Establish data sharing protocols to ensure all stakeholders are working from the same data sets and have access to the data they need.
- Allow State and local agency partners to query safety data directly.



■ Checklist

Answering these questions will help stakeholders review their SHSP data collection and analysis process and identify opportunities for improvement.

- Does your State have a traffic records improvement strategic plan?
- Is the TRCC strategic plan integrated and/or coordinated with the SHSP?
- Is the TRCC integrated with SHSP implementation efforts?
- How is data collection funded? Do the agencies and organizations using the data provide funding support? Does your State make full use of all available funding (section 408, TRCC, etc.) for data collection?
- How is data collection coordinated at the regional/local level?
- Who provides/collects/processes/analyzes data?
- How are data shared at the Statewide level and with whom?
- How are data disseminated to and utilized by regional and local agencies?
- Are data uniform and coordinated among entities?
- Are transportation planning data utilized in SHSP implementation (i.e., travel demand models, Highway Performance Monitoring System (HPMS) data, etc.)?
- Are GIS-based tools being utilized for analysis and visualization of roadway inventory and crash data?



Chapter 4 Emphasis Area Action Plans

SHSP emphasis area action plans provide a road map to give stakeholders and partners direction. While emphasis areas may be defined differently, all can be supported by action plans that provide specifics such as performance measures, funding sources, project-level detail, and evaluation criteria for assessing outcomes. Action plans turn SHSP concepts and ideas into a reality that saves lives and prevents injuries.

During SHSP development, States identified emphasis areas and developed strategies to improve safety by using data to focus on the most serious transportation safety problems. Action plans describe how the identified strategies will be implemented. For instance, if the objective is to reduce lane-departure crashes by 10 percent by the end of fiscal year 2012, the strategies would detail how the State intends to meet the objective. One strategy could be to identify the top 10 hazardous lane-departure locations in the State and reduce lane-departure crashes at those locations while another strategy could be to install rumble strips on principal arterials throughout the entire State. The action plan details how each strategy will be achieved, i.e., obtain base line data; conduct road safety audits; etc.

Action plans include data needs, resources (staff, equipment, materials, and training), a timeline, whether legislative action is required, what agency or organization is responsible, a budget, performance and process measures, and an evaluation plan. Decision-makers can use the information in the action plans to commit the resources and people needed for implementation. The level of detail required depends on the strategy's complexity, size, scope, and the number of participating agencies. Process and performance measures form the basis for monitoring and evaluation. To promote accountability throughout the action planning process, some States assign agency/organization responsibilities for each emphasis area, objective, strategy, and action step. Some States define their action plans in terms of work tasks, inputs/outputs, and agency roles, using project management techniques, including Gantt charts, to manage the implementation process.

After enduring the often challenging SHSP development process, some stakeholders experience strategic planning fatigue. Developing action plans may seem detailed and tedious, but the step cannot be ignored. The hard work and effort put forth during SHSP development becomes meaningless without the organizational and institutional framework of the action plan that cultivates and enhances the collaboration and cooperation essential to success.

Action plans eliminate guesswork, prevent shot gun approaches, and focus resources where they are most needed. They create a link between the goals and objectives of the SHSP and the prioritization and selection of projects within existing transportation planning and programming activities (e.g., HSPs, HSIPs, CVSPs, S/TIPs, etc.). SHSP action plans can be posted on the Internet to promote transparency and offer opportunities for additional stakeholders to participate in or support SHSP implementation.



The action planning process emphasizes collaboration, communication, cooperation, and agency coordination. Successful approaches to action planning may vary. Some States develop uniform processes across emphasis areas and others allow flexibility in how individual emphasis areas teams are managed. Regardless of the approach, all have involved active participation from emphasis area team members and often a facilitator to assist the team in reaching consensus on the action plan elements. Emphasis area team leaders should work closely with the facilitators to ensure the process to develop action plans does not get bogged down. States should also consider developing a matrix or tool to focus the discussion and ensure the necessary information is collected. Figure 4.1 illustrates an example action planning tool.

Figure 4.1 Action Planning Matrix Steps

| | | | | | | | | | | |
|----------------------|----------------------------|---------------------------|------------------|-----------------|---------------|-----------------|----------------------|--|--------------------------------|--|
| Emphasis Area | | | | | | | <i>Updated</i> _____ | | Reporting Period: _____ | |
| Lead Agency | | | | | | | | | | |
| OBJECTIVE #1 | | | | | | | | | | |
| OBJECTIVE #2 | | | | | | | | | | |
| Strategy #1 | | | | | | | | | | |
| Strategy Agency | | | | | | | | | | |
| Action Steps | Action Step Measure | Action Step Agency | Resources | Partners | Budget | Timeline | | | | |
| | | | | | | | | | | |

Some States coordinate SHSP action plans with existing agency safety plans and programs (i.e., HSP, CVSP, HSIP). Emphasis area action plans can and should be incorporated into the work plans of existing task forces or committees. This approach avoids duplication, promotes buy-in from the implementing agencies, and provides an opportunity to leverage existing programs and resources.

Action plans are living documents that should be revisited and amended as necessary. Teams can add, remove, or revise strategies and action steps over time to ensure the plan remains relevant. For instance, dramatic changes in data may warrant a fresh look at all SHSP elements, including action plans. Waiting for next SHSP update cycle to make these changes can result in losing the momentum needed for successful implementation.

Some action plan steps are easier to implement than others. Advocating legislative strategies to advance road safety may be politically sensitive. Some States omit them completely, while others make attempts to address these strategies through appropriate channels. States successfully addressing legislative strategies involve key partners, such as legislative officials and private organizations in the effort. In some instances, a legislatively mandated task force is formed to examine laws pertaining to specific emphasis areas, such as impaired driving. In this case the task force can develop the strategies and



action plans for the SHSP. Involving these parties up front ensures everyone is working from the same information and avoids conflicting programs and messages.

Action plans involving changes to policy and design standards can be complicated as well. Incorporating standards for cable median barriers, rumble strips, etc., into a State’s design standards or policies, may be difficult to address in action planning. In these cases, the action plan may point to a series of steps leading to the development of new standards, without defining the specific standards or policies. Once again, involving the appropriate partners in the process provides greater opportunity for adoption of the strategies.

The following guide can be used to develop action plans. The list can be tailored to individual State and local needs and conditions.

Action Planning Guide

| | |
|--|--|
| Establish an Action Planning Framework and Evaluation Approach | <ul style="list-style-type: none"> • Define the goals for the SHSP – the reasons for the plan. • Define the measurable objectives – what the plan will accomplish. • Determine the performance measures that will be used to evaluate the plan. • Determine the measurement method for each performance measure. |
| Develop the Action Plan | <ul style="list-style-type: none"> • Determine the strategies for achieving each of the objectives. • Determine the action steps for accomplishing each strategy. • Determine the process measure or performance indicator for measuring progress. |
| Identify Resource Requirements | <ul style="list-style-type: none"> • Agencies whose cooperation and coordination is required. • Funding and personnel. • Data and information. • Equipment, materials, and training. • Schedule. • Steps that require legislative approval. |
| Develop a Detailed Budget <i>(many States include this step as part of the specific plan/program processes described in Chapter 5)</i> | <ul style="list-style-type: none"> • Provide detailed budget information by task. • Separate information by funding source and agency/office. |



Tracking and evaluation are discussed in Chapter 7; however, evaluation design is a critical element of an action plan and should be developed before the project starts to ensure activities are directly linked to expected outcomes and baseline data are collected.

Key Emphasis Area Action Plan Strategies:

- Develop detailed action plans for each strategy in your SHSP.
- Identify a facilitator to assist emphasis area teams in achieving consensus on action plan elements.
- Identify performance measures as a basis for monitoring and evaluation and assign responsibilities to support accountability.
- Assign responsibilities to support accountability.
- Review and amend action plans as you proceed with implementation.
- Provide emphasis area team members with a copy of the IPM.

■ Checklist

Answering these questions will help stakeholders review their SHSP action planning process and identify opportunities for improvement.

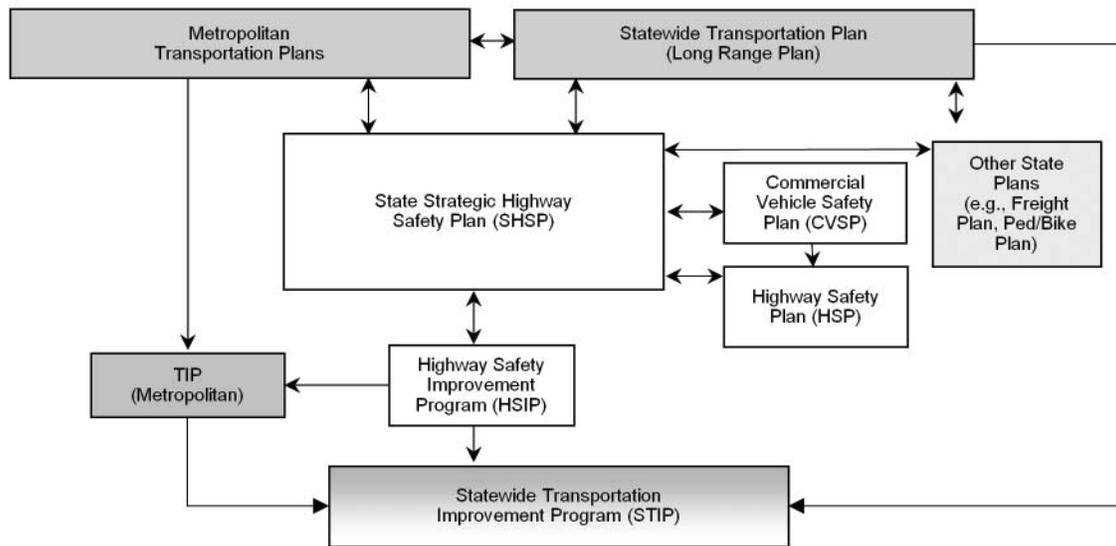
- Does your State have action plans for all SHSP emphasis areas and strategies?
- Does your State have multidisciplinary action planning teams?
- Is someone assigned to coordinate and document all the actions plans and track progress?
- Are the action plans available to all the stakeholders?
- Are projects and activities identified in the action plans?
- If your State's SHSP includes strategies that require changes in legislation, policies, or design standards, are the proper legislative officials involved in the action planning process?



Chapter 5 Integration into Other Transportation Plans and Programs

Effective SHSP implementation leverages the resources of other transportation planning and programming activities. This chapter describes how the SHSP can be integrated into existing transportation and safety planning processes. Many such plans and programs exist, but this chapter focuses on LRTPs, S/TIPs, HSIPs, HSPs, and CVSPs. Figure 5.1 illustrates the relationships among these plans and programs.

Figure 5.1 Coordinated Transportation Safety Planning



Source: FHWA, revised by Cambridge Systematics.

The five planning processes are examined from an SHSP integration perspective. Each section provides a brief description of the plan or program and identifies both general and specific integration opportunities. These opportunities are gathered from reviews of existing practices in the model States and from conversations with Federal, State, and local officials. Many planning and programming processes have a long history and are managed by different agencies such as DOTs, State Police, SHSOs, MPOs, etc., and changing the institutional structures associated with them may be the most difficult aspect of SHSP integration.

Strategic planning, whether long-range, short-term, safety, or transportation-focused, follows a relatively similar process. The steps include: collect and analyze data; identify problems or issues; select relevant and appropriate projects, programs, policies, and countermeasures; prioritize the elements; implement the plans; monitor implementation



progress; evaluate outcomes; and use the monitoring and evaluation results to inform process and program improvements. Bringing these various plans and programs into alignment with the SHSP reduces administrative burden, ensures the use of consistent data and analysis methods, and allocates resources to more effectively produce safety improvements.

■ 5.1 Long-Range Transportation Plans and State/ Transportation Improvement Programs

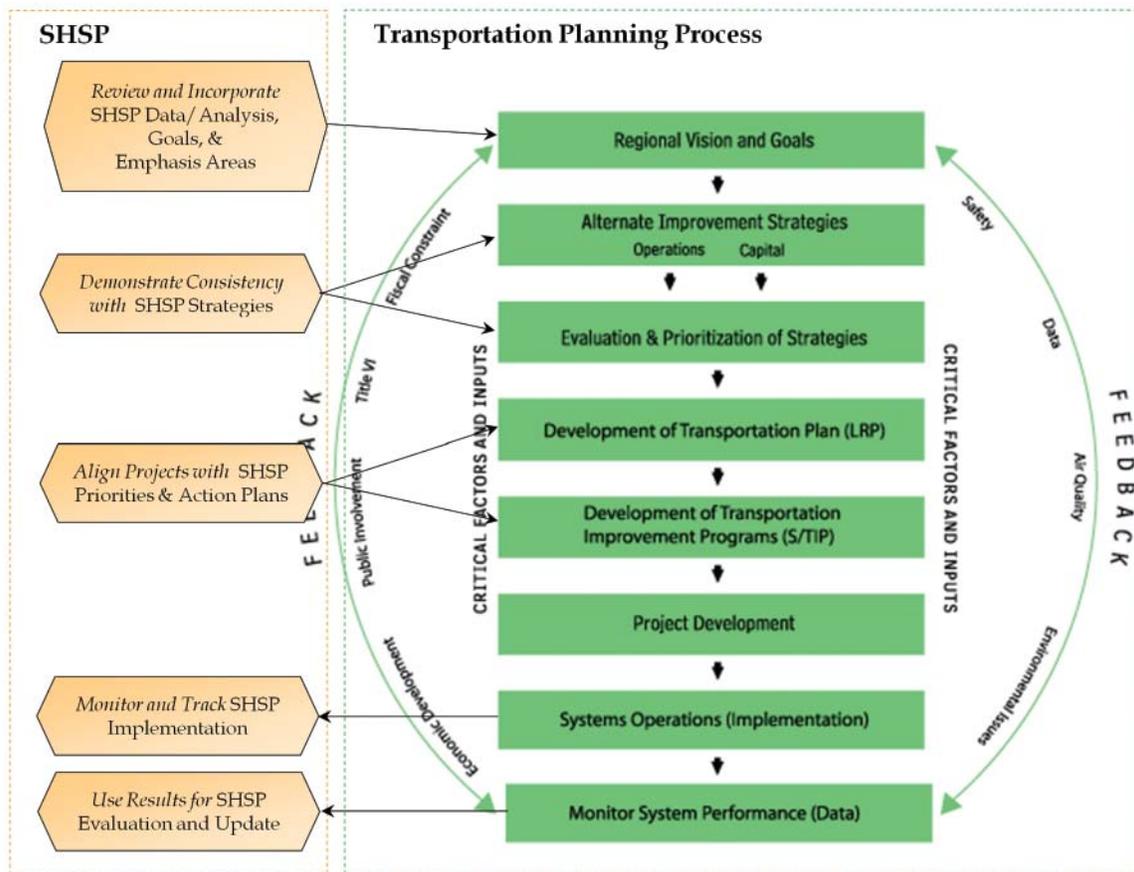
LRTPs and S/TIPs prepared at both the State and MPO levels provide guidance for improvements to transportation facilities and systems. They typically present a multimodal set of capital, operations, and systems management strategies for transportation facilities within their geographic areas. LRTPs may include policies, strategies, and future projects; projected demand for transportation services over periods of 20 years or more; a systems-level approach that considers roadways, transit, nonmotorized transportation, and intermodal connectors; Statewide and regional land use, development, housing, environmental and employment goals and plans; cost estimates and reasonably available financial sources for operations, maintenance, and capital investments; and strategies to preserve existing facilities and make efficient use of the current transportation system.

TIPs and STIPs are short-range (covering a period no less than four years and updated, at minimum, every 4 years), fiscally constrained programs of transportation improvements. Programs and projects included in S/TIPs must have identified funding sources. TIPs from each MPO are incorporated directly, without change, into the State STIP. Through an established process, the State DOT identifies projects from rural areas, smaller urban jurisdictions, and areas of the State outside of its MPOs for inclusion in the STIP. Development of a transportation plan sensitive to safety issues creates opportunities to improve the strategies used by agencies to design and operate the transportation system. For example, incorporating the SHSP into the S/TIP development process can lead to implementing additional strategies that positively affect crash rates and increase focus on safety by incorporating safety evaluations of project alternatives prior to final design selection.

Figure 5.2 illustrates the relationship between the SHSP and the transportation planning process. The SHSP should influence the transportation plan's visions and goals, alternative improvement techniques, and evaluation and prioritization strategies. Systems operations and project implementation activities should provide feedback to the SHSP. This feedback enables SHSP managers to improve future transportation planning efforts.



Figure 5.2 Relationship Between SHSP and the Transportation Planning Process



Establish Regional Vision Statements and Goals

Transportation planning begins with a vision, which typically consists of general Statements describing desired end-states. For example, most planning visions highlight the need for a safe and secure transportation system that provides mobility and accessibility.

The LRTP vision is important to SHSP implementation efforts because it sets the tone for the overall planning process and outlines the needs considered when evaluating alternative transportation options. Since the S/TIP and LRTP must be consistent, the vision from the LRTP is carried forwarded into the S/TIP. Visions for LRTPs and S/TIPs should include statements about the importance of safety. To make this happen, the SHSP stakeholder group should be engaged in these planning processes early to promote consideration of safety during the visioning process. Prototype vision statements that include safety language should be presented to raise awareness at public meetings, board meetings, or in other forums where the visioning process is taking place.

SHSP stakeholders can attend monthly meetings of the State MPO association and encourage them to include safety on the agenda at every meeting. Some MPOs involve the DOT traffic safety division during development of the LRTP to coordinate safety



planning. MPO personnel serve as regional safety ambassadors to local governments and increase awareness by incorporating safety pages on their Web sites. Transportation Safety Planning (TSP) activities at the State and regional level will improve the safety component in MPO transportation planning efforts. Peer exchanges with other States can provide valuable feedback and encouragement to MPO and DOT personnel working to integrate the SHSP with LRTPs and S/TIPS.

Goals and objectives provide guidance to subsequent planning efforts and help assess the relative contribution of alternatives toward achieving desired safety improvements. Properly developed goals and objectives also lead to the identification of criteria for evaluating options and alternatives. SHSP goals and emphasis area objectives set quantifiable targets for Statewide priorities and should be adopted into the LRTP verbatim or, at a minimum, should be clearly reflected in the transportation planning process based on safety data and analysis.

Involving MPOs in SHSP implementation efforts provides critical local and regional input. In turn, some MPOs are beginning to institutionalize safety by establishing safety committees and adopting safety resolutions that support the SHSP. Some MPOs are developing Regional Safety Action Plans in conjunction with the SHSP.

Identify Alternate Improvement Strategies

The next step in the transportation planning process is to identify the strategies needed to achieve the desired safety improvements. Safety strategies and projects within both the LRTP and the S/TIP should be consistent with SHSP goals and objectives. The adoption of these strategies and projects improves the effectiveness of the LRTP and S/TIP development processes and ensures consistency among them with respect to safety.

Evaluate and Prioritize Alternative Strategies

Evaluation is the process of synthesizing information on benefits, costs, and impacts so judgments can be made concerning the relative merits of alternative actions. In the same way that including safety in the vision statement is important for setting planning priorities, including safety in evaluation criteria is essential for ensuring real action is taken to address safety problems. Most evaluation efforts use one of three methods:

1. List the evaluation criteria and show how the alternatives compare.
2. Assign weights or scores to the evaluation factors.
3. Conduct benefit/cost analyses.

It can be worthwhile to meet with planning officials at both the DOT and MPO levels to discuss how safety considerations are best incorporated into project selection and prioritization activities. One way to do this is to establish a project prioritization process that takes the safety benefits of a project into account and assigns weighting or scoring in the selection of projects. Weighting may attempt to account for the value of lives saved and/or crashes reduced within the context of other prioritization factors, such as



congestion relief and air quality improvement. Ranking can be based on comparison of crash rates or crash severity at proposed project locations.

Develop Transportation Plans and Transportation Improvement Programs

The statewide LRTP can range from a relatively simple statement of investment policies, and strategies to a detailed master plan outlining specific investments to be made over the plan's life (usually 20 years). The metropolitan LRTP typically identifies specific projects and transportation corridors where improvements are necessary.

The STIP and TIP are connected to the LRTPs through a process called programming. Programming matches desired actions with available funding through a priority-setting process. This S/TIP priority-setting process is undertaken with contributions from a multitude of stakeholders interested in a wide variety of issues. To ensure safety is part of the prioritization effort, SHSP stakeholders need to be part of the priority setting process.

Incorporating the SHSP into the LRTP and S/TIP impacts the degree to which SHSP goals, objectives, and strategies are implemented. LRTP and S/TIP projects should be aligned with SHSP strategies and action plans. LRTPs and S/TIPS may significantly impact transportation safety by targeting appropriate groups for education efforts, enhancing traffic enforcement activities, providing improved data collection and management efforts, conducting studies on corridors or areas where safety is of particular concern, and considering additional regulations to promote transportation safety.

Some MPOs use SHSP emphasis areas as an input in the development of their annual Unified Planning Work Programs (UPWP), and some are developing their own safety work plans. These work plans identify specific programs, activities, or tasks to encourage local involvement in safety planning. Some States require documentation that explicitly shows that STIP projects utilizing HSIP funds are directly linked to the SHSP, either as a specific project or countermeasure. Some States fund safety projects through the use of funds from other sources, such as the Congestion Mitigation and Air Quality Program (CMAQ).

Once projects reach the last three phases of the transportation planning process (project development, operations, and monitoring), the SHSP is used as a tool to ensure resources are aligned with safety priorities and as a benchmark for monitoring system performance. The strategies in the SHSP should guide the safety elements that are incorporated in the project development phase of a project. In the operation phase the SHSP strategies should help to ensure safety movement of traffic during and after construction.



Key Integration Strategies – LRTP and S/TIP

- Meet with planning officials at the DOT and MPO levels to discuss how to incorporate safety considerations into project selection and prioritization activities.
- Participate in DOT and MPO visioning exercises to ensure safety is explicitly addressed.
- Develop prototype vision statements that include safety language for presentation at DOT and MPO visioning exercises, MPO board meetings, public involvement meetings, and other forums to raise awareness.
- Encourage the adoption of SHSP goals, objectives, and performance measures.
- Provide the results of research and analysis conducted during the SHSP development process to identify strategies and projects for inclusion in LRTPs and S/TIPs.
- Offer to serve on committees and teams that prepare and influence transportation plans.
- Support MPO transportation safety planning forums to review crash data, introduce the SHSP, and discuss how safety can be integrated into their planning documents.
- Attend statewide and local MPO board meetings to encourage a focus on safety.
- Encourage MPOs to establish safety committees, adopt safety resolutions in support of the SHSP, and develop regional safety action plans reflecting appropriate elements from the SHSP.
- Encourage and participate in the establishment of project prioritization weighting or ranking schemes that explicitly address safety considerations.
- Encourage MPOs to use the SHSP emphasis areas as a source for programs in their annual Unified Planning Work Programs.
- Ask the DOT and MPOs to require explicit documentation showing how S/TIP projects utilizing HSIP funds are directly linked to the SHSP.
- Use peer exchanges to learn from the experiences of other States.



■ 5.2 Highway Safety Improvement Programs

HSIP is a “core” Federal funding program with the objective of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. It includes the State HSIP, the High-Risk Rural Roads Program, and the Railway-Highway Grade Crossing Program.

HSIPs emphasize data-driven approaches to improving highway safety. States focus attention on relevant emphasis areas and implement a range of SHSP strategies and countermeasures, including:

- An intersection safety improvement.
- Pavement and shoulder widening (including addition of a passing lane to remedy an unsafe condition).
- Installation of rumble strips or other warning devices, if the rumble strips or other warning devices do not adversely affect the safety or mobility of bicyclists, pedestrians, and persons with disabilities.
- Installation of a skid-resistant surface at an intersection or other location with a high frequency of crashes.
- An improvement for pedestrian or bicyclist safety or for the safety of persons with disabilities.
- Construction of any project for the elimination of hazards at a railway-highway crossing that is eligible for funding under 23 U.S.C. 130, including the separation or protection of grades at railway-highway crossings.
- Construction of a railway-highway crossing safety feature, including installation of highway-rail grade crossing protective devices.
- The conduct of an effective traffic enforcement activity at a railway-highway crossing.
- Construction of a traffic calming feature.
- Elimination of a roadside obstacle or roadside hazard.
- Improvement of highway signage and pavement markings.
- Installation of a priority control system for emergency vehicles at signalized intersections.
- Installation of a traffic control or other warning device at a location with high-crash potential.
- Transportation safety planning.

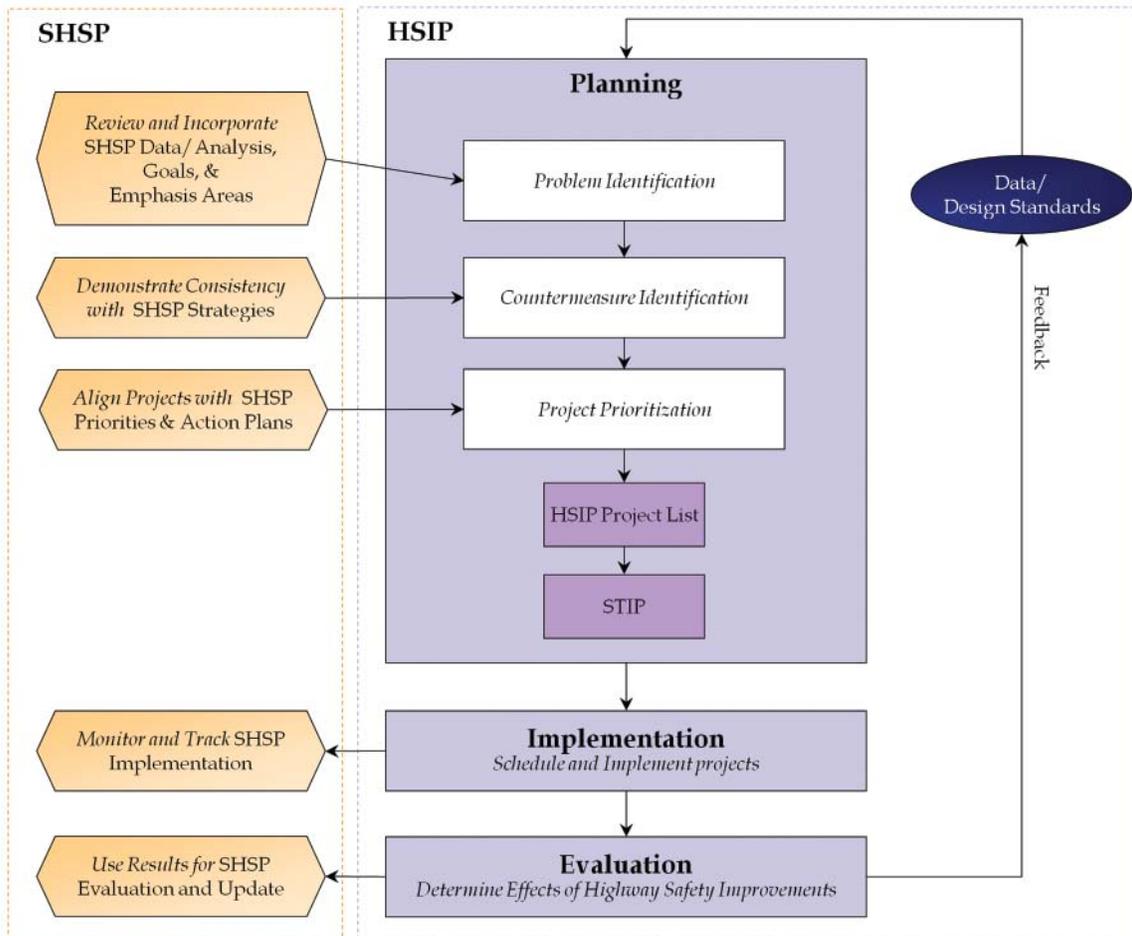


- Improvement in the collection and analysis of safety data.
- Planning integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including law enforcement assistance) relating to work zone safety.
- Installation of guardrails, barriers (including barriers between construction work zones and traffic lanes for the safety of road users and workers), and crash attenuators.
- The addition or retrofitting of structures or other measures to eliminate or reduce crashes involving vehicles and wildlife.
- Installation and maintenance of signs (including fluorescent yellow-green signs) at pedestrian-bicycle crossings and in school zones.
- Construction and operational improvements on high-risk rural roads.
- Conducting road safety audits.

Figure 5.3 illustrates the relationship between the SHSP and the HSIP. The SHSP should be used to influence decisions made during the *planning* phase of the HSIP process. Implementation and monitoring of highway safety improvement projects provides information for updating both the SHSP and the HSIP.



Figure 5.3 Relationship Between SHSP and HSIP



Identify Problems

HSIP problem identification should be based on the same data and analysis used to develop the SHSP emphasis areas. Network screening identifies crash types to address systemic improvements as well as specific locations with potential for safety improvement (various network screening methodologies are defined and fully described in FHWA’s newly released HSIP Manual). The process may vary among States but typically involves the following steps:

1. Identify the crash types to address (e.g., run-off-the-road, median crossover). This process is similar to that used to select emphasis areas in the SHSP. Typically the crash types are selected based on frequency of occurrence.
2. Identify the characteristics of the crash types (e.g., rural versus urban, two-lane versus four-lane, divided versus undivided, on curve versus on tangent, type of intersection control, etc.). Some SHSPs identify characteristics such as rural crashes as emphasis areas. Others address them as strategies within SHSP emphasis areas.



The network screening process identifies sites with potential to benefit from a safety improvement and involves a comprehensive review of the roadway network to identify locations with safety problems. Several problem identification methodologies, based on factors such as crash frequency, crash rate, severity index, etc., can be used in this process and should be supported by the SHSP. For example, if States identify unsignalized intersections as an SHSP emphasis area, they may focus on just those types of intersections when applying a problem identification method. Also, some SHSPs recommend problem identification methodologies and criteria (i.e., fatality frequency, injury severity, etc.).

Identify Countermeasures

The next step in the HSIP process is to identify contributing crash factors and effective countermeasures. This involves developing a “problem diagnosis” or a comprehensive description of the crash site or road segment; identifying several alternate countermeasures to address the crash factors; and assessing the countermeasures’ practical limitations and constraints.

Countermeasures can be identified during a field study, a road safety audit (RSA), a literature search, by agency policy, etc., and assessed using concepts and tools such as the Crash Modification Factors (CMF) Clearinghouse, and the Highway Safety Manual (HSM). HSIP countermeasures should be consistent with corresponding SHSP countermeasures. For example, a State that has identified run-off-the-road crashes as an emphasis area in their SHSP may have identified median cable barriers as the preferred systematic improvement to address this crash type. This decision should be reflected in the HSIP through the inclusion of median cable barrier projects.

Furthermore, the SHSP process engages safety stakeholders and other partners to provide a wide range of perspectives when selecting potential solutions. Involving these safety partners results in comprehensive and effective multidisciplinary solutions. To ensure local stakeholders are well-equipped to conduct safety studies, one State developed a Safety Study Guidelines course to train local governments, MPOs, and consultants to systematically determine crash contributing factors and identify strategies for improving safety at high-crash frequency locations.

Prioritize Projects

Project prioritization is typically accomplished using ranking, incremental benefit/cost analysis, or optimization methods. The SHSP should guide prioritization decisions so the selection of projects reflects the strategies and action plans identified in the SHSP. This can be accomplished by developing policies and procedures to ensure consideration of the SHSP during project prioritization. One State requires district safety review teams to evaluate projects based on several safety-related criteria. Another State, recognizing the importance of working with local stakeholders, dedicates resources to off-system safety projects and provides technical assistance for local efforts.



Prioritization is required because resources are limited and not all beneficial projects can be funded. However, funding can be increased for HSIP projects to implement SHSP strategies. For example, one State has committed additional State funds for safety projects aligned with the SHSP. Some States also leverage funds beyond Section 148 (i.e., mainstream safety features such as rumble strips into general construction projects) to free up HSIP resources for dedicated safety work. Project sharing and the use of cooperative agreements to fund projects also can be used.

Key Integration Strategies - HSIP

- Program HSIP funding to implement strategies aligned with the SHSP emphasis areas.
- Familiarize the SHSP team with the HSIP Manual.
- Participate in FHWA's HSIP Assessment Toolbox.
- Identify the infrastructure-related emphasis areas in the SHSP.
- Develop policies and procedures to ensure the SHSP is considered during project prioritization.
- Encourage a systems approach for implementing proven effective countermeasures.
- Engage safety stakeholders and other partners to ensure more comprehensive and effective multidisciplinary solutions.
- Train local governments, MPOs, and consultants in safety analysis techniques and countermeasure selection.
- Use the SHSP process to review and evaluate the safety impacts of projects proposed by DOT Districts.
- Reserve funds specifically for projects that align with the SHSP.
- Mainstream safety features (i.e., rumble strips, etc.) into the scope of general construction projects to conserve scarce safety funds.
- Provide technical assistance and traffic engineering expertise to locals.



■ 5.3 Highway Safety Plans

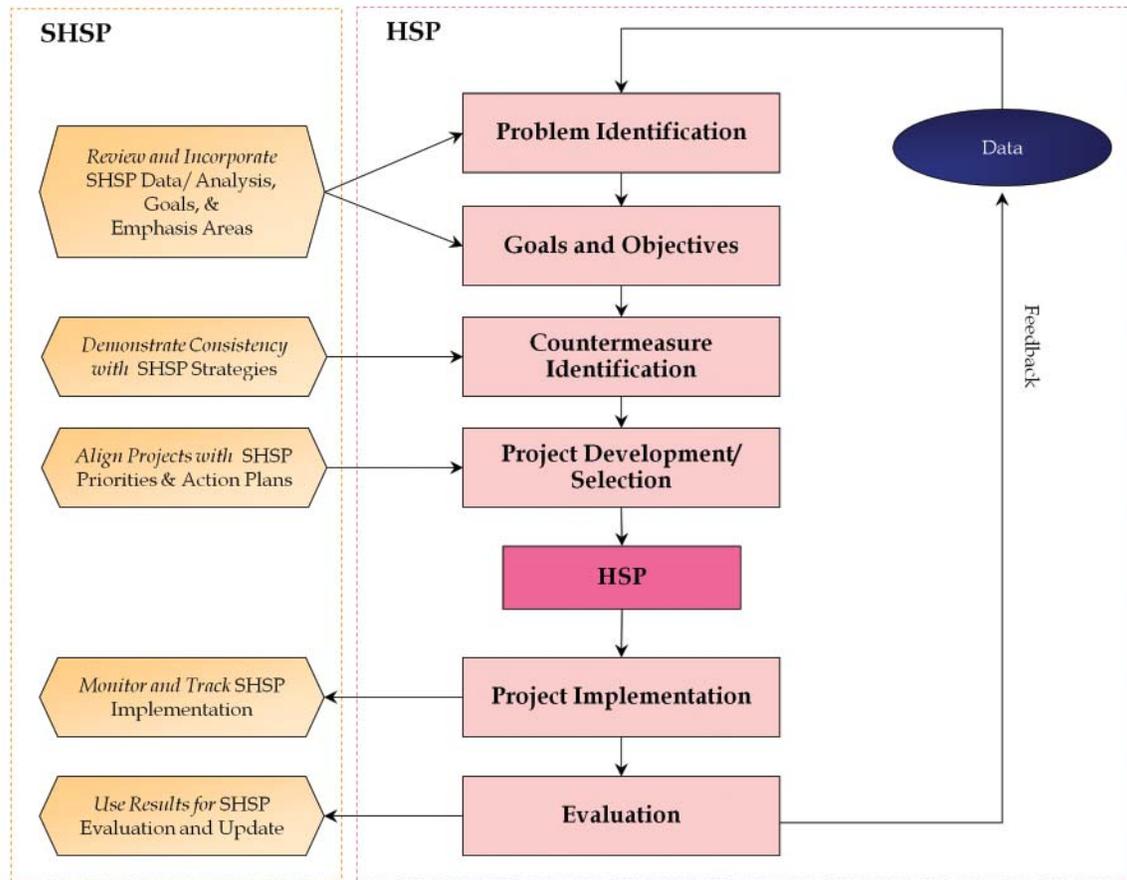
HSPs are designed to reduce crashes, fatalities, injuries, and property damage by addressing road user target groups (e.g., young and elderly drivers), behavioral issues (e.g., impaired driving, occupant protection, speeding, and aggressive driving), police traffic services, emergency medical services, motorcycle safety, and traffic records improvements.

SHSOs (State Highway Safety Office) engage a wide range of State, local, nonprofit, and private sector partners. Through the HSP, States can focus attention on relevant SHSP emphasis areas to implement the corresponding range of SHSP strategies and countermeasures. Common grant programs focus on law enforcement, community traffic safety programs (CTSP), occupant protection programs, etc. HSPs also implement Statewide campaigns and initiatives to increase public recognition of safety issues.

Figure 5.4 illustrates the relationship between the SHSP and the HSP. The SHSP influences problem identification, goals and objectives, countermeasure identification, and project development within the HSP process. After the development and approval of the HSP, project implementation and evaluation activities provide feedback to both the SHSP and the HSP planning processes.



Figure 5.4 Relationship Between SHSP and the HSP



Identify Problems

The first step in developing the HSP is problem identification. States are required to produce a data-driven document that identifies highway safety problems using crash data. Other information, such as demographic, roadway, travel, and medical data also are included in the analysis. SHSP emphasis areas should be included in the HSP since the same data are used in both analyses. States can align HSP focus areas with SHSP emphasis areas by including the same team members during the development of both.

Develop Goals and Objectives

After determining the nature, extent, and location of the State’s traffic safety problems, goals and measurable objectives for each program area are established by SHSO staff. While the goals and objectives of the SHSP and HSP may not be identical, they are based on consistent data and should complement each other and jointly support the State’s safety priorities.



Performance measures are required in the HSP. The purpose of measuring performance is to determine effectiveness. Selecting performance measures need not be arduous. It is important, however, to ensure the data are available and the performance measure will actually demonstrate the effects of the goal, objective, or project being measured. Reliable resources for performance measures, including guidance on the development and implementation of behavioral plans and programs by NHTSA and the Governors Highway Safety Association (GHSA) are available. States should consider adopting the objectives and performance measures identified in the SHSP within the HSP.

Identify Countermeasures

The next step is to identify countermeasures. Certain programs and initiatives are predefined by NHTSA in the Certification Statement, such as participation in National “Click It or Ticket” campaigns. Countermeasures are selected from the National Priority Program Areas and other program areas based on data analysis. The countermeasures selected by SHSOs should be consistent with SHSP countermeasures identified through analysis of the same data and review of the wide range of noteworthy practices available.

Develop and Select Projects

The process for selecting grant projects varies among States based on their data and identified problems. Bringing together multiple agencies during the programming process improves project selection and is consistent with the SHSP. Some SHSOs release a grant solicitation announcement detailing the State’s traffic safety problems, the countermeasures selected, and information for submitting a grant proposal. After proposals are received a selection process determines who will be awarded grants. Other SHSOs identify entities they feel can implement specific countermeasures and work with them to develop grants. SHSOs should emphasize SHSP emphasis areas, strategies, and action plans in their grant development and application processes.

Many SHSOs provide grants to local coalitions, nonprofits, advocacy organizations, and Community Traffic Safety Programs (CTSP) to address issues specific to their areas of expertise or jurisdictions. Grant applications for these programs should be aligned with the SHSP goals, objectives, performance measures, emphasis area strategies, and action plans.

SHSOs may provide assistance to law enforcement partners to facilitate the grant application process and ensure consistency with the SHSP. Other effective strategies include: establishing safety outreach programs throughout the State through a partnership with the health department; conducting data analysis for grant applications to ensure proposed projects are aligned with safety problems; educating HSP grant recipients on the SHSP to improve grant application alignment with the emphasis areas; and developing a template for grant applications to improve efficiency for both grant recipients and the SHSO.



Key Integration Strategies - HSP

- Ensure personnel working on SHSP and related programs and projects are familiar with HSP performance measures.
- Conduct data analysis to focus on the greatest problem areas consistent with the SHSP emphasis area identification process.
- Focus the grant development and selection process on priority problem areas consistent with SHSP emphasis areas and strategies, e.g., revise grant solicitation announcements to include SHSP priorities.
- Bring multiple agencies together during the programming process to improve project selection and ensure consistency with SHSP priorities and strategies.
- Provide grant funds to local coalitions, nonprofits, and advocacy organizations to address issues specific to their jurisdictions and areas of expertise.
- Use peer exchanges to learn from the experiences of other States.



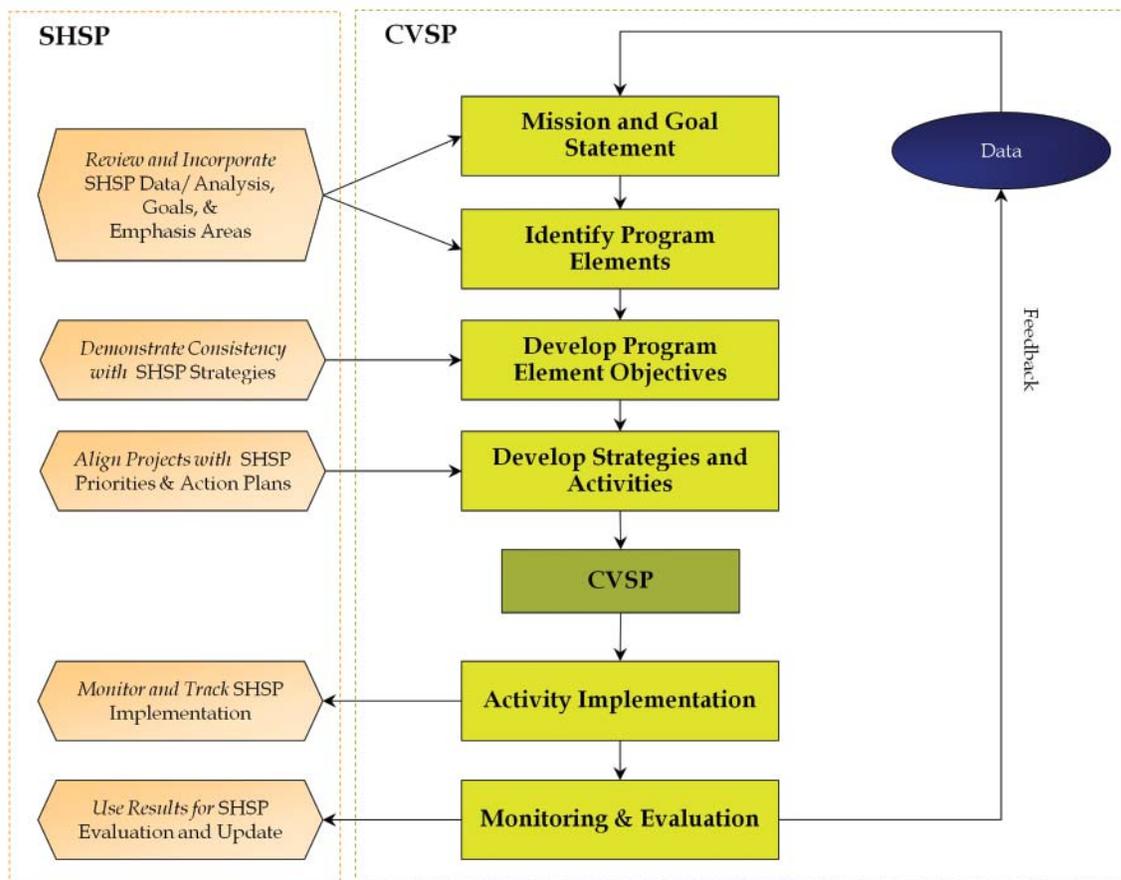
■ 5.4 Commercial Vehicle Safety Plans

The performance-based Commercial Vehicle Safety Plans (CVSP) is designed to reduce the number and severity of crashes and hazardous materials incidents involving CMVs. FMCSA directs Motor Carrier Safety Assistance Program (MCSAP) lead agencies to coordinate with the SHSO and other safety partners on data collection and information systems, participate in the Traffic Records Coordinating Committee (TRCC), and align their safety activities with the SHSP.

Figure 5.5 illustrates the relationship between the SHSP and the CVSP. The SHSP should influence the development of the CVSP mission and goal statements, the identification of CMV safety problems, and the development of State-specific objectives, strategies, and activities. After the approval of the CVSP, implementation, monitoring, and evaluation activities provide feedback to the SHSP.

Collaboration and communication should be encouraged by engaging the SHSP stakeholder group throughout the CVSP development process to facilitate the integration of the two processes and programs.

Figure 5.5 Relationship Between SHSP and the CVSP





Prepare a Mission and Goal Statement

The first step in developing the CVSP is to prepare a mission and goal statement. The inclusion of a CMV fatality reduction goal, including annual performance targets, is required. The goal must be compatible with the National CMV fatality reduction goal (currently, “reducing the rate of truck-related fatalities to no more than 0.16 per 100 million vehicle miles traveled (VMT) by 2011 from a baseline rate of 0.184 per 100 million VMT in 2005”). While having a State goal consistent with the National goal does not mean they must be identical, they must both aim to reduce CMV crashes and fatalities in a measurable and repeatable manner. States that have identified CMV crashes as a separate SHSP emphasis area should consider using that emphasis area objective within the CVSP mission and goal statement.

Analyze Data and Identify Problems

As part of their CVSPs, States are required to address the five MCSAP National Program Elements: driver/vehicle inspections, traffic enforcement, compliance reviews, public education and awareness, and data collection. States also are strongly encouraged to define one or more State-specific CMV safety objectives where they intend to focus both their attention and MCSAP resources during the next year, such as passenger carrier safety, or improving CMV safety data quality. The State should look to the SHSP for emphasis areas and/or strategies that relate to CMVs and include them in the CVSP. At a minimum, CVSP planning should use the same data to identify problems as was used to identify SHSP emphasis areas.

Develop State-Specific Objectives

Each State-specific problem in a CVSP must describe the expected outcome or result (i.e., reduction in the number/percentage of crashes, serious hazardous materials incidents, fatalities, injuries) anticipated as a result of the strategies and activities undertaken. These objectives must be quantifiable and include an explicit timeframe (number of months/years) within which the outcome or result is expected. States should look to SHSP emphasis area action plans to identify relevant objectives with this level of detail.

Develop Strategies and Activities

States must next describe the program strategies it intends to employ to achieve the objectives and the program activities it will deploy to support the strategies. Some States include CMVs in SHSPs as emphasis areas and draw heavily from existing truck safety plans to identify SHSP strategies and actions. Other States incorporate SHSP education, and enforcement strategies into their CVSPs (i.e., safety belts, impaired driving, work zones, etc.). These strategies and activities must be accompanied in the CVSP by specific, quantitative performance measures, whereby the MCSAP agency can periodically monitor and evaluate its progress toward its CMV safety objective. State MCSAP agencies must report quarterly on their progress toward goals and they are encouraged to shift the mix of strategies when monitoring and evaluation indicates revisions are warranted.



States that have successfully integrated CVSP and SHSP strategies and action plans have included CMV stakeholders at the table and built upon existing CMV safety efforts. State MCSAP personnel and representatives from State trucking associations bring a valuable perspective to the SHSP process and contribute ideas on how CMV safety efforts can support the Statewide goals. This process encourages collaboration between CMV and other safety stakeholders, and provides new partnership opportunities.

MCSAP's partners include among others, motor vehicle administrations, law enforcement agencies, and engineers. In one State, MCSAP, in partnership with the Association of Chiefs of Police, developed an Award for Excellence in Commercial Vehicle Safety to acknowledge local law enforcement agencies. In another State, MCSAP personnel are involved in freight planning processes thereby providing greater opportunities to incorporate SHSP elements into broader CMV efforts.

As with all other safety efforts, reaching out to local stakeholders provides greater opportunities to improve safety. Some State police agencies have engaged local law enforcement in CMV inspections, and in at least one State, they have trained and certified local agency personnel to conduct truck inspections.

Preparing the CVSP

Priority activities are selected based on available funding and State spending authority. Emphasis should be placed on activities contributing to SHSP implementation as they relate to CMV safety specifically and to support the broader safety goals and objectives established as part of the SHSP.



Key Integration Strategies – CVSP

- Ensure personnel working on SHSP and related programs and projects are familiar with MCSAP requirements.
- Identify SHSP emphasis areas and/or strategies related to CMVs and include them as State-specific objectives within the CVSP.
- Use data for problem identification consistent with the SHSP.
- Incorporate SHSP education and enforcement strategies into the CVSP (i.e., safety belts, aggressive driving, work zones, etc.).
- Encourage State trucking associations and commissions to collaborate with a broad range of safety stakeholders.
- Collaborate with law enforcement, motor vehicle administrators, and engineers to develop joint training and campaign programs.
- Develop an Award for Excellence in Commercial Vehicle Safety, in collaboration with the State Association of Chiefs of Police to acknowledge local law enforcement agencies.
- Integrate safety and SHSP elements into the State and local freight planning processes.
- Reach out to local stakeholders by training, certifying, and collaborating with them on CMV inspection programs.



■ 5.5 Plan and Program Integration Checklist and Timeline

■ Checklist

The following series of questions will help stakeholders identify opportunities for integrating the SHSP into the other transportation plans and programs and help identify areas for improvement.

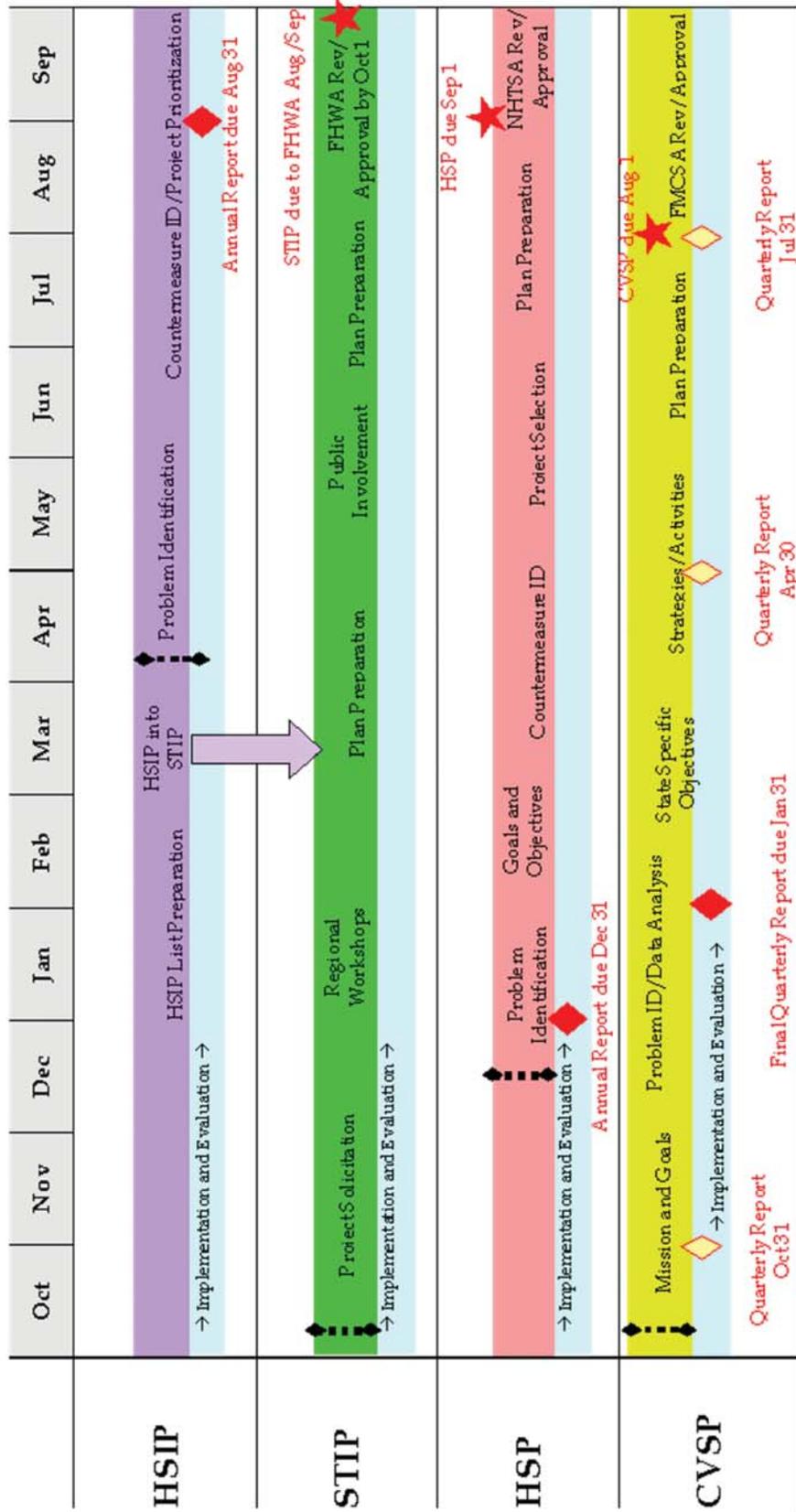
- Do SHSP stakeholders participate in the plan/program development process?
- Do all safety agencies use the same database and analysis strategies to identify problems and program funding?
- Do the plan/program visions, goals, and objectives reflect SHSP goals?
- Are plan/program strategies and countermeasures consistent with SHSP strategies?
- Do plan/programs target funding to implement strategies associated with SHSP emphasis areas?
- Do SHSP stakeholders participate in the establishment of project prioritization weighting or ranking schemes?
- Do plan/program managers engage SHSP stakeholders in project selection?
- Are safety criteria included in agency performance reviews?
- Have SHSP stakeholders met with DOT and MPO planners to learn how safety data, analysis, and strategies are incorporated into their planning process?
- Do DOT and MPO planners have access to SHSP safety data and analysis?
- Do SHSP stakeholders participate in MPO board meetings?
- Do the MPOs have safety committees and regional safety action plans?
- Is safety mainstreamed into the scope of general construction projects?
- Is safety integrated into the State and local freight planning processes?
- Do HSP grant solicitation documents contain SHSP criteria?
- Do MCSAP officers and managers collaborate with local law enforcement, motor vehicle administrators, and engineers?
- Does local law enforcement participate in CMV inspections and enforcement?



■ Timeline

Figure 5.6 provides an annual schedule for the different transportation plans and programs discussed. Federally required plan submission and reporting dates are noted; however, the timelines are presented only as a general guide because States follow different schedules. States are encouraged to develop similar timelines consistent with their specific planning schedules. Understanding when phases of the different planning processes occur is helpful to collaborative integration efforts.

Figure 5.6 Safety and Transportation Planning Timeline





Chapter 6 Marketing

“Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large” (American Marketing Association). In the SHSP context, marketing is the process for creating, communicating, delivering, and exchanging information about transportation safety to the public, to safety stakeholders, and to elected officials.

Marketing benefits SHSP implementation efforts in several ways: it increases awareness of the SHSP goal to reduce traffic-related fatalities and serious injuries; educates key political leaders on their role in saving lives; and helps address those SHSP elements that require behavior change.

Marketing is a necessary component of transportation safety because the reduction of crashes and fatalities depends on attitude and behavior changes in the individuals who use the transportation system, not just modifications to the roadway and surrounding environment. SHSPs address both infrastructure and behavioral emphasis areas, and the techniques and approaches used to connect with road users and modify their behavior, i.e., branding, information dissemination, awareness, etc., can be applied to marketing transportation safety overall. While the SHSP is an important vehicle or process for improving safety, marketing efforts should be focused on education and reducing fatalities and serious injuries. States spent a great deal of time and effort developing SHSPs in hopes of improving safety. Effective marketing can persuade stakeholders, officials, and the public to support the goals of the SHSP and become more involved in its implementation. Facilitating involvement among all stakeholders is important because without active and committed supporters, implementation does not happen.

When thinking of stakeholders it is important to consider involving as many individuals and groups as possible. Keeping the SHSP as a purview of a small group of stakeholders defeats another goal of the SHSP which is to change the way engineers, planners, law enforcement, educators, and emergency medical services do business, and persuade them to work collaboratively. Marketing helps stakeholders understand that “business as usual” is ineffective and no longer acceptable.

Marketing helps safety stakeholders understand the vital role they play in saving lives and why their continued involvement in SHSP implementation is important. Previous chapters noted the difficulty in maintaining interest in the SHSP once it is developed. Marketing is one way to keep interest and activity levels high. People want to be a part of something bigger than themselves; educating stakeholders about life saving programs and activities generates ongoing commitment.



Develop and Implement a Marketing Plan

It is recommended that States develop and implement a marketing plan. A successful marketing plan should include clear goals and objectives. Listed below are some strategies and dissemination techniques that should be developed as part of a marketing plan.

Marketing Strategies

- Define the target audience(s) for the marketing effort.
- Gain support and involvement from new safety stakeholders.
- Keep current safety stakeholders interested and actively involved in implementation.
- Educate the public about the SHSP and the State's most serious transportation safety problems.
- Raise awareness of the SHSP goals and objectives among elected officials.
- Coordinate media and communications messaging among all the partners involved in the SHSP.
- Provide opportunities to highlight different aspects of transportation safety.

Marketing Dissemination Techniques

- Unique branding that includes a logo and slogan.
- Brochures.
- Newsletters.
- Web sites.
- Public service announcements.
- Paid radio and television advertising.
- News media events (earned media).
- New media (e.g., blogs, podcasts, Facebook pages, etc.).
- Presentations at safety and community meetings.
- Safety summits.



Marketing Elements

The marketing strategies and dissemination techniques listed above can be organized in many ways. Each of them can be used to reach nearly any audience, but due to their different characteristics, some are better suited to address stakeholders and elected officials while others naturally focus on reaching the general public. Here they are organized according to how well they support the five elements of a safety marketing plan. These elements are 1) educate the public; 2) gain stakeholder support; 3) raise awareness; 4) highlight different aspects of the SHSP; and 5) coordinate media and communications messaging.

Establishing a branding strategy is particularly important when attempting to reach the general public. Because efforts to engage the public are broad-based and focus on raising awareness and modifying behavior, it is important to reach as many people as possible. Techniques to support this type of marketing effort include radio and television advertising, public service announcements, blogs, podcasts, news conferences, etc.

When attempting to engage stakeholders and elected officials, on the other hand, marketing efforts tend to be “outreach” based and focused on the particular ways a given stakeholder or official can help to improve transportation safety. For example, practitioners may be in a position to implement policy and allocate resources and elected officials have the ability to strengthen laws and appropriate funding. To reach these people requires a marketing approach customized to each stakeholder. Techniques to support this type of marketing effort include meetings, presentations, safety summits, SHSP newsletters, etc. The five marketing elements together with the dissemination techniques best suited to each of them are described below.

Educate the public about the SHSP and the State’s most serious transportation safety problems.

Branding

Almost anyone in America knows the golden arches represent McDonald’s. Large corporations spend millions of dollars branding their products and their companies so people will recognize and remember them. The same can be true for the SHSP. When members of the public see the SHSP branding, they know the product, activity, or information they see is related to improving transportation safety. For instance, if the State is conducting a traffic safety campaign on impaired driving, such as “Over the Limit, Under Arrest,” the SHSP logo can be included on all print and broadcast materials. Branding usually includes a logo and a slogan. The graphics in Figure 6.1 illustrate branding examples for several State SHSPs.



Figure 6.1 SHSP Logos and Slogans

State SHSP Branding & Logos

Maryland



Maryland Strategic Highway Safety Plan

Rhode Island



New Mexico



The New Mexico Comprehensive Transportation Safety Plan

Florida



News Events News media events educate the public and involve safety stakeholders in a stimulating and fun activity. These events are usually centered on a specific issue coordinated with the SHSP emphasis areas. Invite the SHSP champion to attend and participate in the event and distribute brochures and other materials to the news media representatives. Changes in the number of fatalities and serious injuries are a good topic for a news media event centered on the SHSP.

Gain support from new safety stakeholders and keep current stakeholders active and involved.

Web Sites Web sites generate interest in safety, particularly if an interactive function allows people to sign up, ask questions, and obtain additional information. Some States post the SHSP on the DOT Web site, while others create a unique site to support the SHSP. Web sites also serve the practical function of allowing emphasis area team members and other stakeholders to gain information on the latest research, review meeting reports, obtain updated data, etc.



Newsletters One way to gain support and keep current stakeholders interested and involved is to let them know how different groups and individuals are implementing the plan. Quarterly newsletters could be sent to stakeholders throughout the State. The newsletter features quick updates on each of the emphasis areas team activities. In addition to the update information, a feature recognizing a stakeholder who stands out as a safety champion could be included.

Presentations States interested in gaining support for the SHSP from new stakeholders can conduct outreach activities. For example, presentations by SHSP champions can be made to the State association of counties or to the State police chiefs association to spread the word about the SHSP. Many States also have State or local engineering chapters that may welcome SHSP presentations at their meetings. The key to effective presentations in these cases is to leave the participants with strategies for getting involved and specific activities to implement.

Summits Safety summits generate enthusiasm. They are used to educate stakeholders on implementation progress, stimulate networking, suggest ideas for best practices, etc. To obtain buy-in and support, however, the best approach is to give participants something to do. This can involve a review of the SHSP to determine what is working and where additional help is needed or organizing participants into regional teams that select the emphasis areas they feel are most pressing and determine what they will do to address them.

Raise awareness about the SHSP goals and objectives among elected officials.

Brochures Concise, well-written brochures that outline the purpose of the SHSP and its importance to the State's residents can be especially effective in educating elected officials. Whenever possible, include information that shows how the SHSP not only saves lives and prevents injury, but also improves the State's financial bottom line. Providing this information to State legislators helps pave the way for legislative changes identified in the SHSP implementation plan.

Presentations Presenting the SHSP to legislators is an effective way to raise their level of awareness. Providing elected officials with a presentation they can use to talk about safety also is helpful. Elected officials are often called upon to address community and business groups. A tailored presentation on transportation safety demonstrates to constituents that officials are well informed and concerned. States may want to conduct symposiums to educate legislators about the State's safety needs and the SHSP.



Provide opportunities to highlight different aspects of the SHSP.

In many States marketing traffic safety focuses on behavior such as impaired driving (the “Over the Limit, Under Arrest” campaign), safety belt use (the “Click It or Ticket” campaign), etc.; however, marketing campaigns can effectively address infrastructure issues as well. For instance, a number of infrastructure improvements could be of interest to the news media, which is one of the marketing dissemination tools. In one State installing rumble strips on 1,400 miles of roadway resulted in a 42 percent reduction in the number of vehicles driving off the road. The effort caught the attention of the news media which traveled to one of the rumble strip sites to interview the DOT program coordinator. During the interview, the coordinator highlighted the benefits of the rumble strip program and tied the strategy back to the SHSP.

Coordinate media and communication messaging among all the partners involved in the SHSP.

A review of the number of agencies and organizations that promote transportation safety messages in any State may reveal a surprising level of activity and interest, (e.g., community groups promoting pedestrian safety for children walking to and from school, the annual “Click It or Ticket” campaign sponsored by the SHSO, etc.). While this level of activity is appreciated, it can create problems particularly when messages compete for the same audience. Rules of marketing include consistency and repetition – tell people what you are going to tell them, tell them, and tell them what you told them.

To address the issue of message consistency and repetition, one State formed a Strategic Communications Alliance made up of public information officers and media professionals from government agencies, MPOs, private sector organizations, public relations firms, and community groups. The purpose of the Alliance is to bring together traffic safety communications experts; coordinate messaging; develop a communications calendar that includes the major high-visibility enforcement initiatives; and support implementation of the SHSP. The State believes the group is needed to prevent competing messages from different agencies and coordinate efforts.

The Alliance meets quarterly and approves all marketing materials for the SHSP, including the branding and logo, newsletter design and contents, and information for the SHSP Web site. Recently the group developed a traffic safety survey to determine how each agency or organization currently provides or could provide support to existing safety campaigns.



Key Marketing Strategies

- Develop a Statewide strategic marketing plan.
- Address overall transportation safety rather than just the SHSP document.
- Brand the effort with a unique identity.
- Gain support from new safety stakeholders.
- Use newsletters and safety summits to keep stakeholders interested and active.
- Educate the public and elected officials about the SHSP and safety issues.
- Provide opportunities to highlight different aspects of the SHSP through news media.
- Coordinate media and communications messaging among all SHSP partners.
- Prepare materials to distribute through public relations channels and earned media.

■ Checklist

Answering these questions will help stakeholders assess their SHSP marketing processes and identify opportunities for improvement.

- Has your State developed a marketing plan?
- What agencies are involved?
- What groups are targeted in the marketing plan?
- Has your State developed a specific branding for the SHSP?
- Have marketing and communications materials been developed?
- Does your State have an SHSP Web site; is the number of hits tracked?
- What outreach activities have been conducted to gain more interest and support for the SHSP?
- Has the State held any news media events related to the SHSP?
- Does your State conduct safety summits?





Chapter 7

Monitoring, Evaluation, and Feedback

Monitoring, evaluation, and feedback are methods for measuring SHSP progress, understanding its impact on safety, identifying and institutionalizing lessons learned, improving decision-making, and providing the information necessary to make course corrections and update the SHSP. Some States have already updated or begun the process of updating their SHSP based on the experience they have acquired to date. Effective monitoring and evaluation requires an engaged SHSP management team, action plan implementers who provide regular status updates, and a procedure or system to collect, organize, and display progress.

Monitor SHSP Implementation

Establishing a formalized reporting system with standard elements provides timely and consistent information to SHSP managers and stakeholders to improve decision-making and accountability. In some States, emphasis area teams provide quarterly, annual, or semiannual reports to a Statewide highway safety commission or coalition. While reporting of progress is typically done on a periodic basis, the internal process of monitoring implementation and results is continuous and ongoing. Several States have developed tools to formalize and streamline the monitoring and reporting process. Tracking tools range from relatively simple spreadsheets showing fatalities by emphasis area to customized Web-based tools and programs identifying location-specific crashes by emphasis area. One State is developing a formalized process to update action plans: who is responsible for emphasis area updates; when are updates required; what information is provided; and how will the updates drive the SHSP decision-making process?

Evaluate SHSP Implementation Efforts

Evaluation depends on collecting baseline data reflecting the situation prior to implementation, as well as continued data collection during the implementation period and after project completion. Waiting until after the project has started to develop an evaluation plan can result in missed opportunities to collect data that are critical to evaluating the impact of a project. To avoid this, establish an evaluation plan to track progress and evaluate effectiveness as an integral part of the process. Define what constitutes “success” prior to implementation to ensure appropriate data are collected for the evaluation.

SHSP evaluations determine project effectiveness in terms of fatality and serious injury reductions. The data to collect may include:

- Costs of safety countermeasures.
- Benefits of safety countermeasures.



- Incidence of crashes before and after strategy implementation.
- Expected incidence of crashes without strategy implementation.

While it may take several years to develop valid conclusions about the effectiveness of a complex project, preliminary judgments can often be made more quickly when based upon suitable data. These may provide an early indication of likely success or failure and enable managers to react accordingly. Some engineering and behavioral countermeasures (e.g., low-cost safety improvements, enforcement) tend to generate early or interim results that are accurate predictors of longer-term effects. Other countermeasures (e.g., graduated driver licensing) may take several years of performance monitoring and reporting cycles to begin to reveal their actual effectiveness in a particular implementation.

Develop SHSP Performance Measures

Many States develop action plans with measurable objectives and track quarterly progress on them. Performance measures or indicators are used to streamline the tracking and evaluation process by defining consistent data, metrics, and reporting methods from one period to the next. Performance measurement provides quantifiable evidence of progress and helps managers determine whether the project met its stated objectives or needs to be modified. Even “permanent” installations (e.g., rumble strips) require decisions about future maintenance investments. An evaluation plan should specify the measures that will be used to track progress in each emphasis area, and the data required to support those measures. Evaluation results should be retained to improve future estimates of effectiveness as well as to identify trends over longer-time periods.

Evaluation of performance can use measures of “output” or “outcome,” and preferably will include both. Output measures indicate the level of activity or effort that was put into a particular countermeasure, for example, miles of rumble strip installed or guardrail replaced. These are appropriate to track the cost and productivity of SHSP implementation. Outcome measures are direct indicators of the effectiveness of a countermeasure in meeting the fundamental objectives of the SHSP, for example, crash rates or fatality rates. These require different types of data than output measures, and professional judgment must be exercised before concluding there is causality between the countermeasure and the outcome.

Evaluate Projects and Programs

Evaluation can take place at the project level (e.g., a specific implementation of a countermeasure) or at the program level. Project-level evaluation focuses on the impacts, benefits, and cost-effectiveness of a particular project or set of projects, and therefore requires data that is specific to the project location(s). Project-level information is most useful in determining whether the appropriate countermeasures have been selected and effectively implemented. This should also inform the review of, and decisions about, strategies and countermeasures identified in the SHSP. In contrast, program-level evaluation provides managers and stakeholders with a broad picture of the efficiency and



effectiveness of the SHSP implementation effort. Program-level performance measures may include evaluation of administrative aspects such as whether the programmed projects have been implemented in a timely fashion according to budget. Program-level evaluations can also include qualitative analysis of decision-making processes and consistency in the application of policies or procedures. Some strategies (e.g., data improvements) are best evaluated only at the program level as their direct impact and effectiveness on reducing fatalities and serious injuries cannot be measured.

Provide Feedback to the Planning and Implementation Process

The working group meets periodically to review the SHSP, examine progress toward goals, suggest changes or modifications, and brief the leadership. By regularly reexamining its data, evaluating the effectiveness of its countermeasures and strategies, and monitoring its progress in accomplishing the SHSP goals, they can better determine which elements of the plan, if any, should be updated or revised. The review process is accomplished at least annually, but in reality, it is a continuous process. Treat the SHSP as a living document that evolves and progresses as goals, strategies, and safety data change. Measuring the success of the overall SHSP effort is the key to maintaining momentum and advancing implementation to higher levels.

Key Monitoring, Evaluation, and Feedback Strategies

- Establish a timeline for reviewing and updating the SHSP, identifying key data inputs, reporting cycles, and other schedules (e.g., STIP) with which the review should be coordinated.
- Monitor the implementation effort and issue periodic, standardized progress reports for each emphasis area.
- Use a tracking tool, at least a spreadsheet, to organize and manage the monitoring process and to formalize reporting and sharing of information.
- Use data-driven evaluation techniques and collect baseline data prior to implementation; consult standard data collection and analysis references as necessary to ensure credible results.
- Define performance objectives that determine what constitutes “success” prior to countermeasure selection and implementation.
- Select suitable performance measures that are clearly related to performance objectives to make sure the appropriate data are collected pre-and post-implementation.
- Make sure the SHSP implementation team is familiar with safety-related performance measuring tools.
- Use the results of monitoring and evaluation to identify opportunities to update or revise the SHSP.



■ Checklist

Answering these questions will help stakeholders review their current SHSP monitoring, evaluation, and feedback processes and identify opportunities for improvement.

- Does your State have procedures for monitoring and evaluating the SHSP? Who is responsible?
- What tools do you use to assemble and analyze data? To create reports?
- Do you utilize performance measures? Are they clearly linked to or derived from SHSP objectives?
- Are performance measures tied to future program funding? If so, how?
- What procedures are in place for ongoing SHSP update and revision? Who is responsible for leading the effort? Who participates?
- What data are used to update or revise the SHSP?



Resources

The resources below provide additional tools and references for the concepts presented in the IPM.

■ Federal Web Sites

Federal Highway Administration Office of Safety Web Site:
<http://safety.fhwa.dot.gov>

Federal Highway Administration Office of Planning, Environment, and Realty Web Site:
<http://www.fhwa.dot.gov/hep/index.htm>

Federal Highway Administration Resource Center Web Site:
<http://www.fhwa.dot.gov/resourcecenter/>

National Highway Traffic Safety Administration Web Site:
<http://www.nhtsa.gov/>

Federal Motor Carrier Safety Administration Web Site:
<http://www.fmcsa.dot.gov/>

■ Chapter 2 – Leadership, Collaboration, and Communication

SHSP Champion's Guide to Saving Lives:
<http://safety.fhwa.dot.gov/safetealu/guides/guideshsp040506/>

Supporting the Establishment of Safe Transportation Networks:
<http://www.fhwa.dot.gov/planning/scp/ec041scp.htm>

■ Chapter 3 – Collecting, Analyzing, and Sharing Data

FHWA Office of Safety Link to Data and Analysis Tools:
http://safety.fhwa.dot.gov/tools/data_tools/

State Traffic Safety Information:
<http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/USA%20WEB%20REPORT.HTM>

Using Data for Better Decision-Making (SEMCOG):
http://tsp.trb.org/assets/BP18_SEMCOG.pdf



Bahar, G., et al. (September 2008). Desktop Reference for Crash Reduction Factors. Federal Highway Administration, FHWA-SA-08-011. http://safety.fhwa.dot.gov/tools/crf/resources/desk_ref_sept2008/.

Crash Outcome Data Evaluation System (CODES) Web Site:
<http://www.nhtsa.dot.gov/people/nca/codes/>

FARS Web Site:
<http://www-fars.nhtsa.dot.gov/Main/index.aspx>

Harper, Ogle, J. (2007). NCHRP Synthesis 367: Technologies for Improving Safety Data. Transportation Research Board. Washington, D.C. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_367.pdf.

National Highway Traffic Safety Administration. Traffic Records Improvement Program Reporting System (TRIPRS). <http://www.nhtsa-tsis.net/TRIPRS/>.

National Highway Traffic Safety Administration (January 2009). National Model for the Statewide Application of Data Collection and Management Technology to Improve Highway Safety Web Site: <http://www.tracsinfo.us/>.

NEMSIS Web Site:
<http://www.nemsis.org/>

■ Chapter 4 – Emphasis Area Action Plans

Strategic Intersection Safety Program Guide:
<http://safety.fhwa.dot.gov/intersection/resources/fhwas09004/>

FHWA Office of Safety Informational Web Site on Intersections:
<http://safety.fhwa.dot.gov/intersection/>

Roadway Departure Strategic Action Plan (Sample Plan):
http://safety.fhwa.dot.gov/roadway_dept/strat_approach/lanedeparture/

FHWA Office of Safety Informational Web Site on Roadway Departure Safety:
http://safety.fhwa.dot.gov/roadway_dept/

How to Develop a Pedestrian Safety Action Plan (FHWA-SA-05-12; March 2009):
http://safety.fhwa.dot.gov/ped_bike/ped_focus/docs/fhwas0512.pdf

FHWA Office of Safety Informational Web Site on Pedestrian and Bicycle Safety:
http://safety.fhwa.dot.gov/ped_bike/

FHWA Office of Safety Informational Web Site on Speed Management:
<http://safety.fhwa.dot.gov/speedmgt/>



National Highway Traffic Safety Administration. Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Fifth Edition (2010), DOT HS 811 258. http://www.nhtsa.gov/staticfiles/nti/enforcement/pdf/Countermeasures_HS811258.pdf.

Transportation Research Board. (2003-2009). NCHRP 500: Implementation Guides, Volumes 1-23. <http://safety.transportation.org/guides.aspx>.

■ Chapter 5 – Integration into Other Transportation Plans and Programs

Implementing the Strategic Highway Safety Plan:
<http://www.fhwa.dot.gov/planning/scp/impstrhwsp.htm>

Long-Range Transportation Plans and Transportation Improvement Programs (LRTP and S/TIP)

Office of Planning, Environment, and Realty TSP Web Site:
<http://www.fhwa.dot.gov/planning/scp/>

Office of Safety TSP Web Site:
<http://safety.fhwa.dot.gov/hsip/tsp/>

The Transportation Planning Process: Key Issues, A Briefing Books for Transportation Decision-makers, Official, and Staff: <http://www.planning.dot.gov/documents/briefingbook/bbook.htm>.

NCHRP 546: Incorporating Safety into Long-Range Transportation Planning:
http://trb.org/news/blurbs_detail.asp?id=5906

The Transportation Planner's Safety Desk Reference:
http://www.trb.org/news/blurbs_detail.asp?id=7259

Highway Safety Improvement Programs (HSIP)

Highway Safety Improvement Program Manual:
<http://safety.fhwa.dot.gov/hsip/resources/fhwasa09029/fhwasa09029.pdf>

Highway Safety Manual:
<http://www.highwaysafetymanual.org>

SafetyAnalyst:
<http://www.safetyanalyst.org>

Crash Reduction Factors:
<http://safety.fhwa.dot.gov/tools/crf/>



Crash Modification Factors Clearinghouse Web Site:
<http://www.cmfclearinghouse.org/>

Highway Safety Peer-to-Peer Program:
<http://safety.fhwa.dot.gov/p2p/>

Highway Safety Plans (HSP)

Traffic Safety Performance Measures for States and Federal Agencies (DOT HS 811 025; August 2008): <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811025.pdf>

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices:
http://www.nhtsa.gov/staticfiles/nti/enforcement/pdf/Countermeasures_HS811258.pdf

Commercial Vehicle Safety Plans (CVSP)

FMCSA Analysis and Information On-Line:
<http://ai.fmcsa.dot.gov/>

MCSAP Forms:
<http://www.fmcsa.dot.gov/safety-security/safety-initiatives/mcsap/mcsapforms.htm>

■ Chapter 7 – Monitoring, Evaluation, and Feedback

The Art of Appropriate Evaluation: A Guide for Highway Safety Program Managers (DOT HS 811 061; December 2008):
<http://www.nhtsa.dot.gov/people/injury/research/ArtofAppEvWeb/>



Glossary

4E's - The four disciplines that contribute to transportation safety: engineering, enforcement, education, and emergency medical services (or emergency response).

AASHTO - American Association of State Highway and Transportation Officials.

CMAQ - Congestion Mitigation and Air Quality Program.

CMV - Commercial Motor Vehicles.

CODES - Crash Outcome Data Evaluation System.

Countermeasure - A strategy designed to address a specific safety problem defined by crash data. For example, to prevent roadway departure crashes, rumble strips are often installed along roadways to alert drivers when they are leaving the traveled way.

CMF - Crash Modification Factor.

CTSP - Community Traffic Safety Program.

CVSP - Commercial Vehicle Safety Plan.

DOT - Department of Transportation.

DPS - Department of Public Safety.

Emphasis Area - Emphasis areas are usually divided into 22 categories based on extensive research by the AASHTO and National Cooperative Highway Research Program in their Strategic Highway Safety Plan (NCHRP). These include infrastructure (e.g., utility pole collisions), crash types (e.g., head-on collisions, lane departures), behavior (e.g., alcohol, speeding, occupant protection), vehicle types (e.g., bicycles, motorcycles, heavy trucks), and at risk populations (e.g., young drivers, older drivers). Implementation guides have been developed for these emphasis areas and are available as 22 volumes of the NCHRP Report 500.

FARS - Fatality Analysis Reporting System. National database of fatal crashes since 1975 that allows detailed analysis of the driver, vehicle, involved persons, and crash.

FHWA - Federal Highway Administration.



FMCSA - Federal Motor Carrier Safety Administration. Focuses on reducing crashes involving large trucks and buses.

GES - General Estimates System.

GHSA - Governors Highway Safety Association.

HRRRP - High-Risk Rural Roads Program.

HPMS - Highway Performance Monitoring System.

HSIP - Highway Safety Improvement Program.

HSM - Highway Safety Manual.

HSP - Highway Safety Plan.

IPM - Implementation Process Model.

IT - Information Technology.

LRTP - Long-Range Transportation Plan.

LTAP - Local Technical Assistance Program.

MCMIS - Motor Carrier Management Information System.

MCSAP - Motor Carrier Safety Assistance Program.

MOU - Memorandum of Understanding.

MPO - Metropolitan Planning Organization. Required in all metropolitan areas with a population of 50,000 or more, these agencies conduct regional transportation and other planning activities and are required to develop the region's Metropolitan Transportation Plan.

NEMSIS - National Emergency Medical Services Information System.

NHTSA - National Highway Traffic Safety Administration. Provides National and State research and analysis on all aspects of transportation safety and funds many behavioral efforts.



RHGX - Railway-Highway Grade Crossing Program.

RSA - Road Safety Audit. A formal safety performance examination of a roadway or intersection by an independent, multidisciplinary audit team to identify the elements of the road that present safety concerns and opportunities for mitigation.

SAFETEA-LU - Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users.

SHSO - State Highway Safety Office.

SHSP - Strategic Highway Safety Plan. Required by SAFETEA-LU, these State transportation safety plans include analysis of crash data to identify emphasis areas where a reduction in fatal and injury crashes is needed, as well as strategies for improvement. Plans must be developed via the involvement of a wide range of stakeholders representing the 4E's of safety.

STIP - State Transportation Improvement Program. Identifies projects from the State's long-range transportation plan that are funded and will be implemented in the short term.

TIP - Transportation Improvement Program. Identifies funded projects to be implemented in the short term from the MPOs regional transportation plan.

Traffic Records - System containing crash report data to enable safety problem identification.

TRCC - Traffic Records Coordinating Committee.

TSP - Transportation Safety Planning.

UPWP - Unified Planning Work Program.

VIN - Vehicle Identification Number.

VMT - Vehicle Miles Traveled.

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