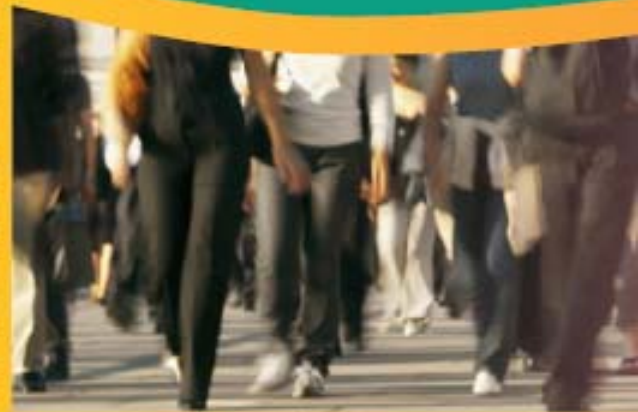
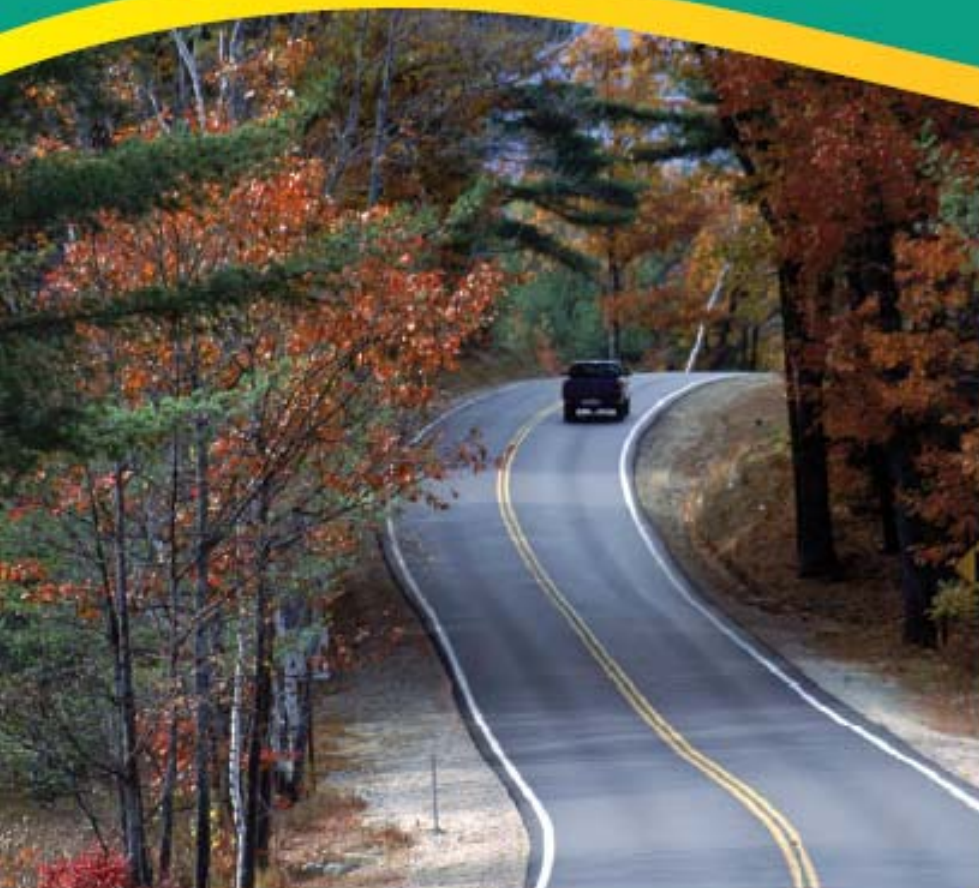


Highway Safety Improvement Program Self Assessment Tool



FHWA Safety Program



U.S. Department of Transportation
Federal Highway Administration



Safe Roads for a Safer Future
Investment in roadway safety saves lives

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Preface

The Highway Safety Improvement Program (HSIP) Self Assessment Tool provides a mechanism for agencies to evaluate HSIP implementation efforts. The HSIP Self Assessment Tool consists of a number of questions designed to provide those with HSIP management responsibilities information to assess their programs, policies, and procedures against many of the recommended HSIP practices in use today. The HSIP Self Assessment Tool is intended to be a group exercise and, as such, should be conducted with as many transportation safety stakeholder representatives as possible. Among other things, the Self Assessment Tool can be used to:

- Benchmark and track progress towards improving the effectiveness of the HSIP over the long term;
- Raise the level of awareness of HSIP-related practices and strategies;
- Identify gaps in existing HSIP efforts; and
- Generate strategies to improve HSIP-related practices.

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Abbreviations

CMAQ – Congestion Mitigation and Air Quality Program

CMFs – Crash Modification Factors

FHWA – Federal Highway Administration

HRRRP – High Risk Rural Road Program

HSIP – Highway Safety Improvement Program

IM – Interstate Maintenance

MPO – Metropolitan Planning Organization

PDIT – Program Delivery Improvement Tool

RHGCP - Railway-Highway Grade Crossing Program

RPC – Regional Planning Commission

RSAs - Road Safety Audits/Assessments

SDOT – State Department of Transportation

SHSP – State Strategic Highway Safety Plan

SPF – Safety Performance Functions

State HSIP – State Highway Safety Improvement Program

STIP – State Transportation Improvement Program

STP – Surface Transportation Program

TIP – Transportation Improvement Program

1. Introduction and Background

Title 23 U.S.C. 148 establishes the Highway Safety Improvement Program (HSIP) to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. The HSIP encompasses the State Strategic Highway Safety Plan (SHSP), the State's Highway Safety Improvement Program (State HSIP), which includes the High Risk Rural Roads program (HRRRP), and the Railway-Highway Grade Crossing Program (RHGCP). To obligate funds under the HSIP, States are required to: (1) develop and implement a SHSP; (2) produce a program of projects or strategies; (3) evaluate the plan on a regular basis; and (4) submit annual reports.

The Federal Highway Administration (FHWA) Office of Safety developed the *Highway Safety Improvement Program (HSIP) Assessment Toolbox*¹ to help states identify program strengths and weaknesses as well as to identify and share noteworthy practices to continually improve the program. The *HSIP Assessment Toolbox* presents three approaches to conduct a program assessment including self assessment, program review and peer exchange. There are two tools described that support HSIP Self Assessment: the HSIP Quality Assessment and the Program Delivery Improvement Tool (PDIT). These tools are very broad in nature, and FHWA Division Safety Specialists indicated that a detailed HSIP Self Assessment Tool would provide a more accurate representation of the health and status of the HSIP. The Highway Safety Improvement Program (HSIP) Self Assessment Tool Guide describes a third approach to self assessment that allows users to evaluate specific aspects of the HSIP process.

The HSIP Self Assessment Tool consists of a number of questions designed to provide those with HSIP management responsibilities information to assess their programs, policies, and procedures against many of the recommended HSIP practices in use today.

2. Conducting the Self Assessment

A self assessment can be initiated and led by either the State Department of Transportation (SDOT), FHWA Division Office, or other safety partners, as appropriate. A self assessment is most beneficial if conducted as a partnership among stakeholders, as self assessment requires a collaborative effort. The timeframe and frequency for conducting a self assessment is at the discretion of the agency. Typically, self assessments are conducted annually, or every other year, to measure progress in implementing program improvements.

¹ Federal Highway Administration. *Highway Safety Improvement Program (HSIP) Self-Assessment Toolbox*, FHWA-SA-10-017, July 2010.

2.1 Self Assessment Participants

The HSIP Self Assessment Tool is intended to be a group exercise and, as such, should be conducted with as many transportation safety stakeholder representatives as possible. Those involved in the assessment should represent every aspect of the HSIP, including HSIP Champions, HSIP Administrators, HSIP Managers, Planners, and others involved in project programming (e.g., District Traffic and/or Planning staff, local public agencies). A meeting facilitator should be identified who is familiar with the HSIP Self Assessment Tool and experienced with the HSIP. This could be an outside facilitator, but in many cases it will likely be the FHWA Division Safety Specialist or State DOT Safety Engineer.

It is important that the facilitator approach the exercise with an open mind. He or she should have excellent listening skills to clearly understand and appreciate group discussions and to be able to accurately capture key points. The facilitator will be responsible for guiding the group through the self assessment by: developing and maintaining a meeting agenda; structuring and encouraging participation; and, recording results on the scoring template provided in Appendix A. An effective facilitator:²

- Challenges thinking;
- Helps the group create lists of important points;
- Summarizes the issues throughout the meeting;
- Shares ideas when they can help the meeting progress;
- Provides handouts when needed to clarify the main points;
- Raises questions to bring out different viewpoints;
- Guides discussion, but does not lead it;
- Restates ideas when the person presenting them is not clear; and
- Provides constructive criticism when, for example, a person or people attempt to dominate the meeting.

2.2 Self Assessment Preparation

In advance of the assessment discussion, this Guide and the scoring template should be provided to each invited participant. Each participant should be asked to read the Guide, consider the questions, and score each based on their perception regarding the level of adoption by the agency. Participants are encouraged to bring their score sheets and the Guide to the assessment group discussion for reference. The time to conduct the assessment discussion can vary depending on the number of participants and their previous experience in conducting the group discussion. For the initial group discussion, it is suggested

² Center for Conflict Resolution. *A Manual for Group Facilitators*. The Center for Conflict Resolution. 731 State St. Madison Wisconsin. PO Box 1468 Madison Wisconsin 53701

that approximately three hours be scheduled to complete the self assessment group discussion.

2.3 Self Assessment Format

After the welcome and introductions, it is recommended that the assessment facilitator describe each of the five primary self assessment areas: Leadership, Administration, Planning, Implementation, and Evaluation - before proceeding to the actual assessment questions. The facilitator should briefly review the scoring scale and methodology, and then encourage open discussion on each assessment question to identify at what level this activity or process is being accomplished. Due to the complexity of operational, economical, and political issues that can impact the response to any of the assessment items, the facilitator should emphasize that “one size does not fit all conditions,” and encourage the group to be aware of the constraints that transportation agencies have in each of the topic item areas.

In summary, to carry out the self-assessment group discussion:

- Identify a meeting facilitator;
- Assemble a team of participants that is fully versed in the HSIP;
- Provide background information that the team can reference during review (e.g., FHWA HSIP Manual,³ State HSIP, and SHSP);
- Provide participants with the assessment Guide and score sheet to complete in advance of the meeting;
- Ask the participants to submit their responses to the facilitator prior to the meeting. Participants should also bring their completed score sheets and Guide with them to the assessment exercise;
- Summarize each of the participant’s scores on a single sheet and distribute the summary sheet to the group. This will provide each participant with a means to quickly review all scores recorded by others.
- Encourage open discussion about each topic area to better understand the participants’ responses;
- Discuss the final score in each topic section and collect information on any practices, policies, and procedures that are being done and that are proving successful. The discussion should also address what could be done to improve the score.

2.4 Applying the Results

The first applications of the tool results in a baseline – this baseline can be applied to: 1) identify strengths, weaknesses and opportunities for improvement;

³ Susan Herbel, Lorrie Laing, Colleen McGovern. *Highway Safety Improvement Program (HSIP) Manual*, FHWA-SA-09-029, January 2010.

and 2) monitor progress over time by comparing HSIP Self Assessment results against the baseline. Among other things, the Self Assessment Tool can be used to:

- Benchmark and track progress towards improving the effectiveness of the HSIP over the long term;
- Raise the level of awareness of HSIP-related practices and strategies;
- Identify gaps in existing HSIP efforts; and
- Generate strategies to improve HSIP-related practices.

3. Scoring the Self-Assessment

The method for scoring each question in the Self Assessment Tool assumes that adoption of a particular requirement follows a five phase adoption process: initiation; development; execution; evaluation; and integration. Questions are scored on a scale of 0 to 15 using the guidelines presented in Table 1.

Table 1 Scoring Guidelines

Adoption Phase	Scoring Range	Description
Initiation	(0-3)	Agency has started to address the requirement*described in the question. If the agency has not initiated any activities to address the requirement, record a response of "0."
Development	(4-6)	Agency has developed a plan or approach to address requirement described in the question
Execution	(7-9)	Agency has executed an approach to meet the requirement described in the question
Evaluation	(10-12)	Agency has assessed the performance of the requirement described in the question after it has been executed for a period of time
Integration	(13-15)	Agency has integrated the requirement described in the question into agency culture

* Requirements include characteristics, feature, capability, element, policy, etc.

In assigning a score for a particular question, participants should select the appropriate adoption phase by considering the following:

Initiation

During this phase, agency leadership has acknowledged that a particular requirement will be beneficial to the HSIP and agrees to initiate activities required to implement that particular requirement. Consider:

1. If the agency management acknowledges the need for the particular item.

2. Whether exploratory research has taken place to assess the benefits of this item.
3. If management supports further development of the requirements of this item.

Example: Has the State adopted a strategic safety goal to guide the Highway Safety Improvement Program (HSIP)?

Situation: The agency has not adopted a goal; however, the agency management recently agreed that a goal should be developed.

Scoring: This could be scored either a “1” or “2” depending on how advanced and developed these discussions regarding the adoption of a goal have progressed. The salient point is that the requirement has been acknowledged as important by management.

Development

During this phase, the agency has commenced activities to develop the requirement described in a question. Consider:

1. Whether the agency has developed a plan or approach to address requirements of this item and/or has started to investigate the feasibility of implementation.
2. If the agency is developing standards, and guidance to enable implementation of this item.
3. Whether the agency has required approvals necessary for implementation.
4. If all resources are in place to support the adoption of this item.

Example: Has the State adopted a strategic safety goal to guide the Highway Safety Improvement Program (HSIP)?

Situation: The agency has not adopted a goal; however, the agency management recently authorized staff to develop a goal for adoption.

Scoring: This could be scored either a “3” or “4” depending on how far the plan to develop and adopt a goal has advanced.

Execution

At this phase, the agency has implemented a particular requirement. Consider:

1. If the agency has started implementing or carrying out the requirements of this item.

2. How the agency has allocated financial or staff resources necessary for continued execution of this item.
3. Whether appropriate personnel have been trained to execute the requirements of this item.
4. If a process owner has been established to support this item.

Situation: Has the State adopted a strategic safety goal to guide the Highway Safety Improvement Program (HSIP)?

Discussion: The agency has adopted a goal.

Scoring: This could be scored either a “7” or “8” as a goal has been adopted.

Evaluation

During this phase, the agency reflects on the effectiveness of the requirement that has been implemented. Consider:

1. If the agency has developed an evaluation process to assess the effectiveness of this item.
2. Whether the agency has started using the evaluation process for assessing this item.
3. If the agency has implemented appropriate changes to the requirements of this item based on performance evaluation.

Example: Has the State adopted a strategic safety goal to guide the Highway Safety Improvement Program (HSIP)?

Situation: The agency has recently conducted an evaluation of the adopted goal and developed a process to update the goal.

Scoring: This could be scored either a “10” or “11” depending on the how the far the development of the evaluation process has progressed.

Integration

At this phase, the agency has incorporated the requirement into its policies, processes or standards. The results of evaluation efforts are used to establish management commitment to HSIP goals and objectives as well as processes and procedures. Evaluation results are periodically reviewed to improve quality. The requirement is strongly supported by management and is a key contributor to the agency mission. Consider:

1. How the agency is integrating the requirements of this item into quality improvement processes.

2. If the requirements of this item are integrated into agency processes and standards.
3. Whether the requirements of this item are included as part of employee performance rating system.
4. If the requirements of this item are documented and approved, as appropriate, by the FHWA Division Office.

Example: Has the State adopted a strategic safety goal to guide the Highway Safety Improvement Program (HSIP)?

Situation: The agency has published the goal and uses it to guide agency operations.

Scoring: This could be scored either a “13” or “14” depending on the extent of support.

In summary, as you discuss the self-assessment questions consider the degree, or extent, to which an agency performs or practices the item under consideration. While it appears that in some cases a simple “yes” or “no” answer may be an appropriate response, the purpose of the self-assessment activity is to assign a level of adoption. In assigning a rating to a question, first decide which adoption phase best fits the overall item response (i.e., initiation, development, execution, evaluation, integration). Overall “best fit” does not require total agreement with each of the questions or the description for that scoring range. Next, assign the score within the adoption range. This requires participants to evaluate the level of effort that has been applied within a particular adoption phase. If only a “minimal effort” has been applied, then the lowest rating in a range should be assigned. If a “moderate effort” has been applied, then the mid-point rating in a range should be applied. If an “extensive effort” has been applied, then the highest rating for a range should be assigned.

4. HSIP Self Assessment Tool Questions

The HSIP Self Assessment Tool consists of five primary assessment areas:

- Leadership
- Administration
- Planning
- Implementation
- Evaluation

The **Leadership** area acknowledges the relationship between support from the highest levels of agency management and the effectiveness of the HSIP. Agency management support as well as consistent safety goal setting and the

presence of safety champions combines to raise the visibility and importance of the HSIP. This helps to create an agency culture supportive of HSIP goals.

A comprehensive set of **Administration** elements are key to HSIP effectiveness. These elements include adequate staffing, established procedures, and clear guidance that define safety funding and eligibility features to maximize the effectiveness of the HSIP.

The **Planning** area consists of features that assist in the identification of safety problems, the development of improvement strategies and countermeasures, and the programming of projects. The HSIP should be a data-driven process that considers a range of problems and solutions to maximize the return on scarce safety resources.

Implementation questions are designed to evaluate the extent to which safety funds are allocated and safety projects are managed to assure fulfillment of safety goals. Once a program of projects is developed, it is important to monitor implementation to ensure successful completion.

The **Evaluation** area provides feedback to policy makers and program managers regarding the effectiveness of the HSIP. Feedback provides a basis to continuously improve the program.

The following sections describe each assessment area and their questions in detail. Appendix A includes forms that can be used to record scores for each question in the tool and to summarize the results of each section. A simple excel spreadsheet is also provided to enable recording and display of results.

4.1 Leadership

The success of any program begins with leadership. It is important that the HSIP is led effectively, and that the program's goals and objectives are promoted by the agency's top management to ensure the program is given priority, resources, and consideration for the purpose of improving traffic safety. Leadership is also advanced by champions who regularly promote the goals of the program as well as other safety leaders who are authorized to make decisions regarding program implementation.

4.1.1 Safety Goal Setting

Question: *Is the Highway Safety Improvement Program (HSIP) connected to the Strategic Highway Safety Plan (SHSP) safety goals and objectives?*

As an "umbrella document" intended to guide other plans, the SHSP provides an opportunity to develop a consistent safety strategy among safety partners throughout the state. An agency should adopt written strategic goals consistent

with the SHSP to guide the overall efforts of the HSIP. The goals are generally based on number, proportion, type, or rate of crashes, fatalities, and/or serious injuries. Many states have interim “not to exceed” targets for fatalities and serious injuries to measure their performance toward longer term goals; others have adopted an ultimate goal of zero fatalities in their jurisdictions.

Objectives are concrete steps toward achieving a goal, stated in measurable terms. They typically have specific performance targets (e.g., reducing roadway departure-type crashes by 12 percent by 2020).

The process of developing and adopting goals and objectives provides an opportunity to examine the importance of safety, promote HSIP efforts to improve safety, and measure performance over time. The resulting products are specific goal statements and documented objectives that can be used to set direction and establish expectations for HSIP planning and implementation.

To achieve the highest scores in this category, the agency should adopt safety goals and objectives to guide the HSIP, and they should identify the links between the HSIP and SHSP.

4.1.2 Safety Leadership

Question: *Does the State have a person responsible for leadership and oversight of the HSIP who is authorized to make decisions regarding program implementation?*

For the HSIP to be an effective program, it is important that the overall process be led by a person with responsibility and authority to implement the program. Investing responsibility and implementation authority in a single person (or a limited number of persons) enhances accountability for program results. It is desirable to have one person leading and overseeing the Statewide HSIP program, though in some situations the program may have multiple leaders (e.g., a program separated by State and non-State roadways) such that multiple HSIP leaders are appropriate.

Focusing HSIP implementation leadership concentrates program knowledge in a staff member (or members) who have authority to act on that knowledge. It also provides “one-stop-shop” benefits to safety practitioners around the state who may have questions about the program. Authorization for decision making allows the HSIP leader(s) to make decisions that improve implementation of the program without delay or potential veto by a multi-level approval structure.

4.1.3 HSIP Champion

Question: *Does the State highway agency have a champion (or champions) for highway safety who regularly promotes and advances HSIP goals and objectives with senior management (Chief Engineer, Director, CEO, etc.)?*

The agency should have an HSIP champion with a regular “seat at the table” with senior management. For example, in some states a highway safety champion is a member of the State DOT leadership team, participating in high-level management meetings for the purposes of promoting SHSP and HSIP goals and objectives. Since the HSIP is a relatively small program, its priorities can sometimes be pushed to a lower priority than other highway programs and agency issues. It is important that the HSIP goals and objectives are clearly shared with agency leadership on a regular basis to ensure the use of these funds for purposes consistent with the agency’s safety goals.

To achieve the highest scores on this question, the agency should have an identified HSIP Champion who meets regularly with senior management to discuss the program.

4.1.4 Senior Management Support

Question: *Are the goals and objectives of the HSIP regularly discussed at the senior managerial level (Chief Engineer, Director, CEO, etc.) in the State transportation agency?*

It is important that the highest levels of management in an agency discuss the HSIP goals and objectives on a regular basis within the agency, with stakeholders, and with the general public. The support of senior management in safety goal setting and oversight of the HSIP gives them buy-in and regular feedback regarding implementation progress. Keeping safety at the forefront of transportation discussions can provide opportunities to promote the SHSP and HSIP goals and objectives in the long term.

To achieve the highest scores on this question, HSIP goals and objectives should be a regular agenda item in senior management meetings of the State highway agency.

4.2 Administration

Effective administration of the HSIP is vital for program success. For example, documenting procedures ensures program continuity and consistency and

reduces the impacts of staff turnover or leadership changes. Providing adequate staff, as well as clear eligibility policies and guidance, results in timely and consistent program administration.

4.2.1 HSIP Staffing

Question: *Does your State highway agency have a staff member who devotes his/her time to management of the Highway Safety Improvement Program (HSIP)?*

Administration of HSIP rules, regulations, policies, and procedures is typically handled most effectively when an agency gives a single staff member responsibility for the program. A dedicated staff member responsible for administering the HSIP supports consistent interpretation and enforcement of the established, documented policies and procedures. It is not necessary that this person is in control of project-level funding decisions, but rather that he/she assures HSIP projects meet base guidelines as established by FHWA and the State. This staff member may report directly to the Safety Champion discussed in the previous section, or the Safety Champion and the HSIP administrator may be the same person.

To achieve the highest scores on this question, there should be a recognized HSIP administrator at the State highway agency that is known as such by management. Performance measures related to the management of the HSIP should be included in his/her annual performance review.

4.2.2 Established Procedures

Question: *Does your agency have established and documented procedures for administering the HSIP?*

Due to issues like employee turnover and the interpretation of regulations and policies, it is important that the administrative processes and procedures for implementing the HSIP are documented. Documentation should include the network screening process, problem identification process, identification of countermeasures, project prioritization, project programming process, and evaluation of benefits. Ideally, the agency should develop an *HSIP Implementation Guide* or similar State-specific document that defines the processes and procedures for administration of the HSIP. Examples of State HSIP manuals are linked on the Office of Safety website at <http://safety.fhwa.dot.gov/hsip/resources/>.

4.2.3 Safety Need Focus

Question: *Do HSIP eligibility policies focus on addressing the greatest safety needs, regardless of jurisdiction (i.e., State roads, locally-owned roads)?*

For the HSIP to be the most effective at reducing the number and severity of traffic crashes, prioritizing projects based on safety need on State and locally-owned roadways is vital. Safety need is not simply identifying the intersections or segments that have experienced the most crashes; a more in-depth analysis of where HSIP funds can be most effectively used to improve safety is necessary. Statewide HSIPs that identify safety needs based on data rather than jurisdictional boundaries more effectively address statewide safety goals. Additionally, providing HSIP funds to local jurisdictions may encourage those agencies to expand safety projects with other funding sources beyond the HSIP. Established policies bring clarity and objectivity to a program that is sometimes affected by external influences that are not always consistent with the intent of the program. Focusing HSIP funds on a state's greatest safety needs supports the goals and objectives of both the HSIP and SHSP to reduce the number of fatalities and serious injuries in the most efficient manner possible.

4.2.4 Project Eligibility

Question: *Does your State have established criteria for HSIP project eligibility (e.g., project size, specified countermeasures) in your State?*

FHWA regulations regarding HSIP project type eligibility are relatively broad. HSIP-related laws, regulations, and policies can be interpreted differently by various State highway agencies. Established policies bring clarity, consistency and objectivity to the program, especially as it relates to the definition of HSIP-eligible expenditures. In some cases a State may want to further define the approved HSIP process in their state (beyond the Federal regulations) based on their specific safety needs and SHSP goals and objectives.

Examples include limits on the size of a single HSIP-funded project (e.g., less than \$1 million); and further limitations beyond what is described in safety regulation (23 CFR 924) regarding State-approved countermeasures. In some States, only infrastructure countermeasures are funded with HSIP monies. In others, non-infrastructure treatments (e.g., law enforcement, public education, data system improvements) are deemed eligible as well.

Focusing HSIP project types on those that support State-specific SHSP goals will improve the effectiveness of the HSIP in each State for reducing the number of fatalities and serious injuries.

4.3 Planning

HSIP project planning consists of three primary areas: problem identification, countermeasure selection, and project prioritization. Since the HSIP is a data driven program, quality data and data collection processes are important to the network screening process that identifies safety issues on the network. Once the high-risk locations are identified, it is important to identify contributing crash factors and select and prioritize effective crash countermeasures. The project prioritization process ends the planning process as HSIP projects are prioritized for implementation through a number of ranking and optimization approaches.

4.3.1 Data Screening on State System

Question: *Are crash, roadway and traffic data used in the screening process to identify potential HSIP project locations on the State-owned roadway system?*

A data-driven network screening process is the most effective method for identifying locations with a higher-than-expected number of crashes. A combination of crash type and crash frequency history, roadway characteristics (number of lanes, roadway curvature and median type), area type (rural versus urban) and traffic volume is the most effective way to identify locations most likely to experience future crashes. Agencies should use the identification methods that suit their eligibility criteria, coordinate with SHSP goals and emphasis areas, and are supported by available data.

4.3.2 Data Screening on the Locally-Owned or Tribal-Owned System

Question: *Are crash, roadway and traffic data used in the screening process to identify potential HSIP project locations on the non-state-owned roadway systems?*

In support of SHSP goals of reducing the number and severity of traffic crashes on all roadways in a State, the data screening process should include the non-State roadway system. A systematic, data driven system screening process is the most effective method of determining high-risk locations. A combination of crash type and frequency, roadway characteristics (number of lanes, roadway curvature and median type), area type (rural versus urban) and traffic count data should be used to identify potential crash locations. Agencies should use

identification methods in the screening process that suit their SHSP goals and emphasis areas, and are supported by available data. By using a systematic process that is repeatable and defensible, the data screening process can be used to identify potential HSIP project locations.

4.3.3 Application of Advanced Statistical Methods for Network Screening

Question: *Does the HSIP network screening process in your State incorporate advanced statistical methodologies for determining locations of need?*

Simple before/after studies can sometimes provide misleading results, as they are susceptible to the randomness inherent in annual crash frequencies and changes in other roadway network characteristics (e.g., roadway cross section, traffic volume).

Advanced statistical methods can improve the effectiveness of a State's network screening process, as they can address normalization factors (e.g., traffic volume, route length), potential roadway cross section changes, and statistical randomness of annual crash frequency.

Relatively simple analysis methods include using multiple years of crash data (typically three or more), route length, and crash rates (by traffic volume) to appropriately compare similar route segments and intersections. More advanced methods use safety performance functions (SPF) to predict the number of expected crashes.

The use of multiple screening methods may provide more confidence in the evaluation of the roadway network, as it is likely that locations with the highest safety need will rise to the top of the list using multiple methods.

To achieve the highest scores in this category, it is necessary for the agency's documented screening process to use advanced statistical methods that accounts for potential biases such as regression to the mean and traffic volume changes.

4.3.4 Assessment of Crash Locations

Question: *Does your State highway agency evaluate and apply safety countermeasures not only at high-crash locations, but also at other high-risk locations?*

Crash analysis can result in problem identification and countermeasure implementation at the spot, corridor, and area levels (particularly in rural areas). For situations where high crash spot locations are not as readily apparent, systemic improvements may be a more viable solution for implementing SHSP strategies related to that emphasis area. High risk locations can be intersections and segments that are not identified using a crash screening analysis, but have similar geometric and/or traffic characteristics to locations that have experienced crashes.

The systemic approach focuses more on crash types, which tend to be more predictable than specific crash locations over time. During crash analysis, the criteria used to identify locations for treatment include historical crash data; however, additional information such as traffic volume, functional class of roadways, and geometric features can also be beneficial.

This is a particularly effective approach in rural conditions, as crash locations tend to be dispersed throughout a jurisdiction, and only a few specific locations experience a high number of crashes. Installing low-cost countermeasures along entire routes, on a series of curves, or at groups of intersections can provide a cost-effective benefit across the system. For example, some State highway agencies are systematically installing shoulder and centerline rumble strips on hundreds of miles of rural roadways. Agencies have decided to install rumble strips on roadways with a crash history as well as on roadways with similar cross sections and traffic volumes that have not yet experienced an elevated number of roadway departure crashes.

4.3.5 Systemic and Spot Location Improvements

Question: *Does the HSIP consider a balance of spot location and systemic safety improvement projects in your state?*

Many states are now implementing systemic improvements, which identify roadway segments, areas, or a set of spot locations based on high risk roadway characteristics, rather than focusing solely on individual sites. A systemic highway safety improvement is a particular countermeasure, or set of countermeasures, implemented on all roadways or roadway sections where a crash type is linked with a particular roadway characteristic. Usually this crash type has been identified in the SHSP for further action. For example, if a State has identified roadway departure crashes in their SHSP, then the state may decide to target this crash type by installing edge line rumble stripes, addressing clear zone issues, and considering shoulder installation, among other treatments.

Striking a balance between funding both systemic improvements and site-specific improvements is critical, as each has advantages and disadvantages. Systemic improvements are generally low-cost and affect a large portion of the network, but their crash reduction is limited at any single location. Spot location improvements can provide a greater benefit at a small number of locations, but the overall impact is generally much lower.

The appropriate balance between systemic and spot location improvements should be determined by each State. Using HSIP funds for both of these categories is likely to produce the strongest overall safety improvement results for the State.

4.3.6 Rural Road Safety Needs

Question: *Does your State highway agency address rural roads at a level consistent with their safety needs?*

Traffic fatality rates on rural roadways have historically exceeded those on urban roads for a number of reasons, including lack of safety features, higher vehicle speeds, a higher occurrence of high-risk driver behavior (e.g., impaired driving, unbelted occupants), and longer distances from the crash scenes to medical care.

Due to relatively low traffic volumes, typically lower overall number of crashes, and the dispersion of severe crashes around most states, addressing safety needs on rural roads can be challenging.

It is important for rural safety needs to be identified and addressed to impact the overall number of fatalities and serious injuries in a state. This can be accomplished by the development of a rural-specific network screening process, identification of safety strategies proven effective on rural roads (e.g., curve warning signing, rumble strips, vegetation removal), and processes to ensure rural needs receive funding consistent with their safety needs.

4.3.7 State Agency Safety Data Analysis

Question: *Does your State highway agency analyze location-specific safety-related information to determine the specific safety concerns at potential HSIP project locations?*

Once the network screening process identifies a number of locations (e.g., intersections, segments, corridors) with a higher-than-expected number and/or severity of crashes, additional analyses should be performed to determine the crash types, other contributing factors (e.g., impaired driving, weather conditions), traffic volume, and roadway characteristics (e.g., lane width, shoulder width and type) at these locations.

The most beneficial countermeasures tend to those installed at locations, or systemically to address a specific crash type, where in-depth safety data analyses have been performed. For example, if an analysis of crashes at a signalized intersection reveals a high number of red-light-running severe crashes, the practitioner can choose a number of engineering countermeasures (e.g., revised clearance intervals, increased signal head conspicuity) and/or law enforcement strategies (e.g., red light running cameras, targeted enforcement). If a high number of roadway departure crashes have been identified at curves in a jurisdiction, the practitioner can choose a systemic solution of low-cost curve safety strategies to treat that crash type.

4.3.8 Countermeasure Identification

Question: *Does the State highway agency consider all contributing factors (driver, vehicle, roadway, environment) when identifying appropriate countermeasures?*

Properly diagnosing the contributing factors in crashes requires engineering and human behavior experience and judgment. Due to this fact, it is understandable why identifying effective crash countermeasures seems so complex. Determining the cause of a crash often requires a great deal of observation at the specific crash location to determine why the crash could have occurred. There are often multiple contributing factors for crashes related to various SHSP emphasis areas, including driver-related causes (e.g., inattention, driving while intoxicated), vehicle-related causes (e.g., vehicle malfunction, flat tire), roadway-related causes (e.g., sharp curve, pothole) or environment-related causes (e.g., wet pavement, snow covered roads).

Identifying as many of the contributing factors as possible is an important part of the process to determine the most appropriate mitigation measures, which may result in infrastructure projects funded by the HSIP or other safety strategies as determined by SHSP leadership and emphasis area teams.

4.3.9 Road Safety Audits/Assessments (RSAs)

Question: *Are RSAs used to support the HSIP engineering study and countermeasure identification process?*

Road Safety Audits/Assessments (RSAs) can be used to supplement other engineering studies to provide a broader and more complete picture of the crash problem. The FHWA defines an RSA as “a formal and independent safety performance review of a road transportation project by an experienced team of safety specialists, addressing the safety of all road users.” RSAs provide an opportunity to improve safety by taking a detailed look at an intersection or roadway segment and suggesting specific safety improvements. Conducting RSAs can help to strengthen the countermeasure development process through the use of a multidisciplinary team.

For an agency to receive the highest scores on this question, the RSA Program and HSIP should be coordinated. Activities could include a requirement that any site recommended for an HSIP-funded project receive an RSA before it is approved.

4.3.10 Selection of Safety Countermeasures

Question: *Does your State highway agency choose safety countermeasures supported by quantifiable safety benefits (i.e., crash modification factors)?*

Crash modification factors (CMFs) are used by safety practitioners to estimate the expected safety benefit of a given countermeasure at a specific site. The objective nature of CMFs provides a “third party” tool to support decisions related to countermeasure selection and benefit-cost calculations.

CMFs are available for many engineering improvements, such as installing a traffic signal or constructing a left-turn lane. Multiple resources are available from which widely accepted CMFs can be obtained to provide safety practitioners with an estimate of countermeasure effectiveness. Even when using published CMFs, practitioners should make every effort to use a CMF applicable to their State and local roadway conditions.

For an agency to receive the highest scores in this area, they should have a list of recommended CMFs to use in the state.

4.3.11 Objective Project Prioritization

Question: *Does your State highway agency use objective criteria to prioritize safety projects for programming?*

Once countermeasures are identified, SHSP priorities and emphasis area action plans drive project prioritization. Quantitative analysis should be used whenever possible in the HSIP project prioritization process. This approach involves identifying and comparing costs and benefits for each proposed project. Benefit/cost analysis is a quantitative measure commonly used in prioritizing projects and countermeasures. Quantitative information allows for an objective analysis of the decision-making process which might otherwise be dominated by subjective judgment or political considerations. Using a quantitative approach helps to improve the likelihood that the maximum safety benefit will be obtained for the amount of funds invested.

Projects can be prioritized by a number of criteria, including the following:

1. Benefit/Cost ratio
2. Total number of estimated crashes (and/or severe crashes) reduced
3. Project readiness
4. Project cost

To achieve the highest scores in this category, a State highway agency should have a documented process for prioritizing projects that is coordinated with SHSP priorities and action plans. For example, benefit/cost ratio and total benefit (in terms of expected crash reduction) could be used as the initial ranking criteria to prioritize projects, with project cost and readiness provided as secondary factors.

4.3.12 Planning Partners Involvement

Question: *Are planning partners outside the State highway agency involved in the HSIP planning process?*

By involving interested parties from outside the State highway agency in the HSIP planning process, unique perspectives on the relevance of certain safety projects can be vetted. It may be advantageous to engage safety stakeholders and other partners outside the State highway agency when selecting potential solutions. Creative options are often identified when issues are reviewed from different perspectives.

Examples of planning partners include Metropolitan Planning Organizations (MPOs), tribal governments, Regional Planning Commissions (RPCs), cities, and counties. They can be consulted at various times throughout the process, including network screening, potential countermeasure development, and project prioritization based on safety need. The earlier these agencies are involved, the more likely they will be able to provide valuable input to improve the results of the process.

4.3.13 SHSP Priorities in HSIP Project Identification and Prioritization

Question: *Does your State highway agency consider SHSP priorities during HSIP project identification and prioritization?*

SHSP emphasis areas and strategies in each State are intended to drive HSIP planning and investment decisions. The State HSIP should be consistent with the SHSP emphasis areas and strategies; therefore, it is important that the relationship between the SHSP and the HSIP be maintained. This tight linkage between the SHSP and HSIP will strengthen and solidify implementation efforts to efficiently improve traffic safety.

As potential HSIP projects are identified and prioritized, criteria related to the SHSP should be used to determine which projects are the most beneficial in meeting SHSP goals and objectives.

To achieve the highest scores in this category, the State's HSIP Implementation Guide (see Question 4.2.2) should identify the links between the HSIP and SHSP.

4.4 Implementation

The implementation phase of the HSIP occurs after needs have been identified and countermeasures have been selected, as projects are prioritized for programming. Implementation, as described here, addresses funding sources, funding allocation issues, and project management during construction.

The base performance measurement for programming and implementation is the HSIP obligation rate for a State, which calculates the percentage of apportioned HSIP funds a State has obligated in a given time period – typically a Federal fiscal year. Additional information about State-specific obligation rates can be found at http://safety.fhwa.dot.gov/hsip/gen_info/slorhsip/.

4.4.1 Distribution of Funding Off-system

Question: *Is HSIP funding distributed to non-State roadway safety projects in your State proportionate to safety needs?*

In most states, a significant percentage of traffic fatalities and serious injuries occur off the State highway system. In order to meet SHSP goals, non-State road safety needs should be addressed. One step towards addressing these needs is including local roads in the funding distribution process.

If safety needs on the non-State roadway system are not addressed in the State HSIP funding distribution process, the selected safety projects will not have as much of an impact on addressing serious injuries and fatalities statewide. Each State highway agency should seek to proportionately allocate HSIP funds to non-State-owned roadway safety projects based on safety needs.

To achieve the highest scores in this category, the agency's HSIP funding distribution policy should specify that funding be allocated proportional to the need.

4.4.2 Use of Other Funding Sources

Question: *Are other funding sources leveraged to support the use of HSIP funds on safety projects in your State?*

To get the most impact from HSIP funds, it can be helpful to support them by leveraging other funding sources. There are numerous funding sources that can be used to improve safety. These funding categories include, but are not limited to, Congestion Mitigation and Air Quality Improvement Program (CMAQ), Interstate Maintenance (IM), and Surface Transportation Program (STP), as well as state and local funding sources.

Section 148(d)(2) of title 23 U.S.C., makes clear that other Federal-aid funds are eligible to support and leverage the safety program. By leveraging these funds, the HSIP funds can be used to complete more safety-related projects each year.

4.4.3 Stand-Alone Safety Projects

Question: *Does your State highway agency limit the use of HSIP funding to stand-alone safety projects only?*

It is important for each State highway agency to develop a plan to most effectively use HSIP funding to meet the goals and objectives of the SHSP.

Improvements to safety features, such as guardrail, that are routinely provided as part of a broader Federal-aid project should be funded from the same source as the broader project. This allows the HSIP funds to be reserved for stand-alone safety projects. This is consistent with the provision of separate funding for safety projects and with FHWA's long-standing position on the use of safety funds.⁴

4.4.4 Innovative Programming Practices

Question: *Has your State highway agency considered and implemented innovative programming practices to provide time and cost savings to HSIP-funded projects?*

Implementing innovative practices into the HSIP programming process can help the State highway agency save time and money over the long run. The longer it takes for safety projects to get on the program, the more likely additional crashes will occur, resulting in potential additional injuries and fatalities.

An example of an innovative programming practice used successfully in some States is the provision of an HSIP placeholder in the State Transportation Improvement Plan (STIP) and/or regional or local Transportation Implementation Plans (TIPs). This practice allows for increased flexibility in moving safety projects forward and addressing emerging safety needs without the multi-year delay that is typical of many programmed projects.

4.4.5 Innovative Contracting Practices

Question: *Has your State highway agency implemented innovative contracting practices to provide time and cost savings to HSIP-funded projects?*

Implementing innovative practices into the HSIP contracting process can help the State highway agency save time and money over the long run. The longer it takes for safety projects to get implemented, the more likely additional crashes will occur, resulting in potential additional injuries and fatalities.

Alternative contracting methods may include task order contracts. This contracting method allows an on-call contractor to be given multiple safety

⁴ U.S. Department of Transportation, Federal Highway Administration Memorandum, *Achieving Maximum Results in Safety*, May 16, 2006. Available at http://safety.fhwa.dot.gov/hsip/policy_guide/memo051706.cfm

improvement projects to construct on an as-needed basis. This method works well for traffic signal installations, sign installations, and minor intersection improvements, such as turn lanes. For larger safety improvement projects or for multiple smaller projects bundled into one large project, a design-build contract could be selected for construction, depending on the State-specific related rules and regulations.

4.4.6 Scope Management

Question: *Does your State highway agency have an established procedure to minimize the impact of project scope increases (i.e., scope creep) on HSIP projects?*

To ensure HSIP projects are constructed in a timely manner, increases in the scope and corresponding costs must be controlled. Once preliminary engineering starts on a safety project, it is critical that the original scope of the project does not significantly increase. For example, a relatively low-cost roundabout retrofit project could be modified to include additional capacity improvements down the multiple intersection legs to tie into adjacent intersections. In another situation, desired enhancements such as adding a closed drainage system could be added to a lighting improvement project, which may not significantly improve the safety benefits of the project. These efforts could add cost without adding value related to safety.

One way this issue can be controlled is to complete some of the preliminary engineering prior to programming the project. The scope of the project, estimated cost, and proposed schedule can be fine tuned with more information, such as a detailed survey. It is also important to collaborate with stakeholders and decision-makers within and outside the agency to help generate internal and external support so that projects can quickly move through the programming process.

4.4.7 Project Monitoring

Question: *Does your agency use a tracking system to monitor project implementation?*

In order to promote the implementation of HSIP projects according to established policies, an agency should use tracking system to monitor the processes of problem identification, project prioritization and selection, and implementation. Tracking the implementation of HSIP projects can provide information about any

problems in the process, the most often-funded project types, and comparisons of projects chosen to previously identified safety needs.

Specifically, project monitoring is an important aspect of the evaluation process. A number of States have developed customized project evaluation tools to track important elements of their project delivery. One State has developed a tracking tool to combine crash data and safety project data to report on the effectiveness of safety projects in reducing crashes. Additional information is available in the HSIP Evaluation Noteworthy Practices at http://safety.fhwa.dot.gov/hsip/resources/fhwasa1102/eval_fl.cfm.

To achieve the highest scores in this category, the agency's tracking tools should include constant updates, discussion with management related to issues encountered, and development of recommended solutions to resolve those issues.

4.5 Evaluation

Once HSIP projects have been selected, constructed, and are in operation, it is important to evaluate their effectiveness. Depending on the benefits of each type of project, that same type of project can be expanded or eliminated from future programming for the purpose of improving the cost-effective reductions of fatalities and serious injuries.

4.5.1 Data Gathering for Project Evaluation

Question: *Does your agency collect and analyze data to assess the benefits of HSIP-funded safety projects?*

To achieve fulfillment of statewide safety goals, agencies should monitor the performance of HSIP-funded safety projects. Measuring the benefits of project implementation provides much-needed feedback about the effectiveness of projects. The most effective project types may be expanded to additional sites, while projects that were not as successful may cause an agency to consider removing those types from future consideration in the HSIP. Suggested data to be collected include before and after crashes at the project location(s) with details about those crashes (e.g., crash type, contributing circumstances); traffic volumes and traffic patterns before and after project completion; and any other changes in the region that may have affected safety at the project location. Due to the need to wait a period of time to perform an evaluation, it is sometimes difficult to prioritize post-installation evaluation when current safety needs are

ving for attention. However, determining the benefits of recently-installed safety countermeasures can provide valuable information to support future decisions.

4.5.2 Data Gathering for Program Evaluation

Question: *Does your agency collect and analyze data to assess overall program-level benefits of the HSIP?*

Beyond simply analyzing before/after traffic crashes at each project location, it is important to determine the overall benefit of the HSIP in a given State. The combination of benefits on multiple projects can provide a picture of the overall effect the HSIP is having on traffic safety. Knowing the overall benefits of the HSIP can be a selling point for safety. It can give HSIP administrators / coordinators the information needed to solicit funding from other sources for additional safety projects based on HSIP success.

4.5.3 Evaluation Methods

Question: *Does your agency's evaluation of safety projects and programs incorporate advanced statistical methodologies?*

Simple before/after studies can provide an indication of the safety benefits of HSIP projects, but can sometimes under-estimate or over-estimate the actual safety benefits. Changes in traffic volumes and traffic patterns can skew the results, as can statistical issues like regression to the mean. Applying statistical methodologies to the before/after study can provide a more realistic and repeatable analysis of HSIP project benefits. Regression-to-the-mean concerns can be mitigated by using more robust statistical analysis (e.g., Empirical-Bayes, yoked pair). More advanced methods would use Safety Performance Functions (SPFs) rather than rates. Normalization of data that may change over time (e.g., traffic volume) may provide a more accurate comparison of the before and after conditions.

4.5.4 Future Countermeasure Development

Question: *Does your agency modify policies, procedures, and recommended countermeasures based on historical performance of HSIP-funded safety projects?*

Evaluating the effect of countermeasures on HSIP projects can provide safety practitioners with State-specific information about the effectiveness of those treatments on their roadways. This information provides the basis to modify

decisions on policies, procedures, and countermeasures for future HSIP projects; and to improve the cost effectiveness of those projects.

Once successful treatments are supported with jurisdiction-specific data over time, the agency can consider expanding those countermeasures to additional locations on its system, including locations that have yet to experience a high number of crashes. The move from project-specific treatments, to programmatic solutions, to policy changes can enhance the safety culture in an agency.

For example, an agency may choose to install chevron signs around a curve or series of curves experiencing a high number of roadway departure crashes. If these projects are successful, the agency could set up a program to install chevrons in broader areas (e.g., counties, districts, regions) that experience a safety need, or even systemically to even more curves. If this program proves to be beneficial, then the State may develop a policy requiring any curve with certain characteristics (i.e., degree of curvature) to have chevrons installed.

4.5.5 Developing Agency-Specific Crash Modification Factors

Question: *Does your agency develop its own crash modification factors (CMFs) based on completed HSIP projects?*

Crash Modification Factors (CMFs) are typically based on national averages or a small number of studies that could have occurred anywhere. Depending on the types of drivers, environments, etc., of the studies, the results may or may not be applicable in a particular state. By developing agency-specific CMFs, a state can have increased confidence in the effectiveness of crash countermeasures. They can use this information to increase the efficiency of funds used for future HSIP projects. When shared within the state and among states, this information provides the ability to improve the ever-changing state of the practice in traffic safety.

To achieve the highest scores in this category, the agency should have a robust set of state-specific, customized CMFs for all safety countermeasures used in the state.

5. Next Steps

Interpret the Results

After completing the HSIP Self Assessment, the evaluation team should calculate the scores and review the results together. First, the team should examine the resulting scores for each individual question in the self-assessment tool. These scores will provide an indication of particular areas of strength as well as areas where improvements may be required to improve performance. Agencies may also wish to consider the relative importance of each activity to the success of their program.

In addition to examining individual questions, the team should examine the scores for each of the five primary assessment areas (e.g., Leadership, Administration, Planning, Implementation, and Evaluation). This examination will provide an indication of broad areas of strength as well as potential opportunities for improvement.

Develop an Action Plan

Once the team understands the areas where performance can be improved, members should consider developing an action plan to improve performance. To make this action plan implementable, the team should assign responsibilities and time frames for completing each action item where needed improvements were identified.

Some actions may be very straight forward. For example, if a champion for highway safety needs to be designated to improve HSIP leadership (Question 4.1.3), the action required is to identify a champion or champions. In some cases, the action may be less clear, so the team may need to collect more information or conduct more detailed discussions to create multiple steps to implementation. For example, if your agency does not incorporate advanced statistical methods into safety evaluation (Question 4.5.3), discussions may be required to identify such procedures and to adopt procedures for use in safety evaluations. In any event, actions plans should be as specific as possible and should include, at a minimum, a description of what needs to be done, who is going to do it, and when it will be completed.

Communicate the Findings and Actions

Finally, once the evaluation team has completed an examination of results and developed an action plan, they should prepare a communications plan to share results with management. The team should consider the following questions as they create this communications plan:

- Who needs the information and why?

- What information is needed?
- How will the information be communicated?
- How will the information be used?
- Who will convey the information?
- When will the information be given?

Develop Schedule to Update Self Assessment

After implementing the action plan, the evaluation team should schedule a time to update the self assessment. The process of updating the self assessment provides an opportunity to examine the effectiveness of the action plan and to monitor overall program effectiveness over time.

APPENDIX A – HSIP Self Assessment Tool Scoring Template

SECTION 1 LEADERSHIP

<u>SCORE</u>

4.1.1: Is the Highway Safety Improvement Program (HSIP) connected to the Strategic Highway Safety Plan (SHSP) safety goals and objectives?	
4.1.2: Does the State have a person responsible for leadership and oversight of the HSIP who is authorized to make decisions regarding program implementation?	
4.1.3: Does the State highway agency have a champion (or champions) for highway safety who regularly promotes and advances HSIP goals and objectives with senior leadership (e.g., Chief Engineer, CEO, etc...)?	
4.1.4: Are the goals and objectives of the HSIP regularly discussed at the senior managerial level (Chief Engineer, Director, CEO, etc.) in the State transportation agency?	
SECTION TOTAL:	

**SECTION 2
ADMINISTRATION**

SCORE

<p>4.2.1: Does your State highway agency have a staff member who devotes his/her time to management of the Highway Safety Improvement Program (HSIP)?</p>	
<p>4.2.2: Does your agency have established and documented procedures for administering the HSIP?</p>	
<p>4.2.3: Do HSIP eligibility policies focus on addressing the greatest safety needs, regardless of jurisdiction (i.e., State roads, locally-owned roads)?</p>	
<p>4.2.4: Does your State have established guidance defining the criteria for HSIP project eligibility (e.g., project size, specified countermeasures) in your State?</p>	
SECTION TOTAL	

**SECTION 3
PLANNING**

	<u>SCORE</u>
4.3.1: Are crash, roadway and traffic data used in the screening process to identify potential HSIP project locations on the State-owned roadway system?	
4.3.2: Are crash, roadway and traffic data used in the screening process to identify potential HSIP project locations on the non-state roadway systems?	
4.3.3: Does the HSIP network screening process in your State incorporate advanced statistical methodologies for determining locations of need?	
4.3.4: Does your State highway agency evaluate and apply safety countermeasures not only at high-crash locations, but also at high-risk locations?	
4.3.5: Does the HSIP consider a balance of spot location and systemic safety improvement projects in your state?	
4.3.6: Does your State highway agency adequately address rural road safety needs at a level consistent with their safety needs?	
4.3.7: Does your State highway agency analyze location-specific safety-related information to determine the specific safety concerns at potential HSIP project locations?	
4.3.8: Does the State highway agency consider all contributing factors (driver, vehicle, roadway, environment) when identifying appropriate countermeasures?	
4.3.9: Are RSAs used to support the HSIP engineering study and countermeasure identification process?	
4.3.10: Does your State highway agency choose safety countermeasures supported by quantifiable safety benefits (i.e., crash modification factors)?	
4.3.11: Does your State highway agency use objective criteria to prioritize safety projects for programming?	
4.3.12: Are planning partners outside the State highway agency involved in the HSIP planning process?	

4.3.13: Does your State highway agency consider SHSP priorities during project identification and prioritization?	
SECTION TOTAL	

**SECTION 4
IMPLEMENTATION**

SCORE

4.4.1: Is HSIP funding distributed to non-State roadway safety projects in your state proportionate to safety needs?	
4.4.2: Are other funding sources leveraged to support the use of HSIP funds on safety projects in your state?	
4.4.3: Does your State highway agency limit the use of HSIP funding to stand-alone safety projects only?	
4.4.4: Has your State highway agency considered and implemented innovative programming practices to provide time and cost savings to HSIP-funded projects?	
4.4.5: Has your State highway agency considered and implemented innovative contracting practices to provide time and cost savings to HSIP-funded projects?	
4.4.6: Does your State highway agency have an established procedure to minimize the impact of project scope increases (i.e., scope creep) on HSIP projects?	
4.4.7: Does your agency use a tracking system to monitor project implementation?	
SECTION TOTAL:	

**SECTION 5
EVALUATION**

SCORE

<p>4.5.1: Does your agency collect and analyze data to assess the benefits of HSIP-funded safety <u>projects</u>?</p>	
<p>4.5.2: Does your agency collect and analyze data to assess overall <u>program-level</u> benefits of the HSIP?</p>	
<p>4.5.3: Does your agency's evaluation of safety projects and programs incorporate advanced statistical methodologies?</p>	
<p>4.5.4: Does your agency modify policies, procedures, and countermeasures based on historical performance of HSIP-funded safety projects?</p>	
<p>4.5.5: Does your agency develop its own crash modification factors (CMFs) based on completed HSIP projects?</p>	
<p>SECTION TOTAL:</p>	

SUMMARY

SCORE

Section	
1. Leadership	
2. Administration	
3. Planning	
4. Implementation	
5. Evaluation	
TOTAL:	