Institutional Needs in Safety Planning
AASHTO Standing Committee on Planning NCHRP 8-36, Task 57

final report

prepared for

National Cooperative Highway Research Program

prepared by

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June 2007
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date
June 2007
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1.0 Executive Summary

The transportation profession has recently given increased attention to the issue of how safety can be incorporated into transportation planning and decision-making. Providing a collaborative and coordinated approach to safety planning is a very real challenge. Numerous agencies and organizations need to remain or become involved in the safety planning process, each bringing an important history, vision, and mission to the process. There is a clear need to learn and understand effective strategies for bringing these different groups to the “transportation safety planning table.”

The objective of this project is to provide information, assistance, and guidance on how to institutionalize a process for integrating the necessary transportation and safety stakeholders into a comprehensive safety planning process and suggest methods for improving the state of the art.

The study includes a literature review on transportation and safety, collaboration, and incorporating new issues into the planning process; a focus group study report conducted during the Governors Highway Safety Association’s (GHSA) annual meeting; survey results from a 2006 SHSP Peer Exchange; reports from a large MPO peer exchange in Detroit and a rural domestic scan to learn more about small and rural MPOs and cities; and six case studies documenting challenges, opportunities and best practices.

The research results were used to develop a conceptual institutional framework to guide the documentation of effective collaboration strategies; guidance on institutional needs in safety planning; and summary recommendations for improving the state of the art in collaboration strategies for safety planning and methods for disseminating the results.

The research findings are summarized in four areas considered to be major characteristics of successful collaboration:

1. A successful collaboration must have a basic foundation in terms of stated need, goals, and resulting benefits;
2. There should be strong leadership from members of the collaboration;
3. An effective process of collaboration must be in place in terms of participant responsibilities and the level of trust engendered; and
4. Organizational support should be provided by those participating in the collaboration.
2.0 Background

2.1 INTRODUCTION

Traveler safety has been a concern of transportation officials for many years, and
the transportation profession has recently given increased attention to the issue
of how safety can be incorporated into transportation planning and decision-
making. Efforts to better integrate safety and transportation planning have
occurred with a variety of names and approaches – safety conscious planning,
safety integration, safety-oriented transportation planning, comprehensive safety
planning, etc. Common to all of these efforts is the need for safety stakeholders
to be part of the process, each contributing their own special expertise and
resources to the overall outcome of a safer transportation system.

As can be expected in an institutional structure that involves many different
agencies and groups with varying mandates and missions, providing a collabora-
tive and coordinated approach to safety planning is a very real challenge. Not
only does one face strong organizational cultural histories (e.g., some police
agencies tend to view themselves primarily as crime fighting entities with a low
priority given to traffic law enforcement), but also the types of strategies that
should be part of a comprehensive transportation safety plan range from familiar
(to transportation agencies) infrastructure projects to behavioral modification
strategies that are more often associated with safety agencies.

Numerous agencies and organizations need to remain or become involved in the
safety planning process, each bringing an important history, vision, and mission
to the process. Assuming all of these groups should be participants in a compre-
hensive safety planning process, there is a clear need to learn and understand
effective strategies for bringing these different groups to the “transportation
safety planning table.” The purpose of this project is to provide such guidance.

2.2 OBJECTIVE AND METHODOLOGY

The objective of this project is to provide information, assistance, and guidance
on how to institutionalize a process for integrating the necessary transportation
and safety stakeholders into a comprehensive safety planning process and sug-
gest methods for improving the state of the art.

Although there is a small amount of literature on collaboration strategies in
transportation as well as safety integration, there is no comprehensive overview
of the collaboration strategies and institutional mechanisms that are useful and
supportive of transportation safety planning. Therefore, the research team relied
more on empirical evidence and interviews with experienced practitioners. The
research methods used as well as the organization of this report are as follows:
1. Review of the literature on transportation and safety, collaboration, and incorporating new issues into the planning process;

2. Attendance and participation in safety-related transportation and comprehensive safety planning activities (e.g., conducted a focus group during the Governors Highway Safety Association’s (GHSA) annual meeting; conducted a survey, and analyzed the results from a SHSP Peer Exchange held in Phoenix; attended and participated in a large MPO peer exchange in Detroit; and facilitated a rural domestic scan to learn more about small and rural MPOs and cities);

3. Development of a conceptual institutional framework to guide the identification of effective collaboration strategies;

4. Feedback on interim products (e.g., literature review, conceptual framework, and candidate states for the case studies) from Transportation Research Board (TRB), state, and regional planning committees;

5. Case studies in six states that were considered to represent some aspects of best practice or state of the art in safety planning;

6. Development of guidance on institutional needs in safety planning; and

7. Development of summary recommendations for improving the state of the art in collaboration strategies for safety planning and methods for disseminating the results.

For purposes of brevity, more detailed results from this research are presented in the appendices. Appendix A presents the results from the literature review; the Governors Highway Safety Association (GHSA) focus group, and the Strategic Highway Safety Plan (SHSP) Peer Exchange results can be found in Appendix B; and Appendix C contains the full case studies.
3.0 Literature Review

A review of the literature relating to transportation planning and safety was conducted for this study. Only a brief overview of the topics and questions addressed by this literature is provided here. A more complete coverage of the most important literature is found in Appendix A.

The literature relevant to this study has addressed the following topics:

1. To what extent do DOT and MPO transportation planners address safety in the traditional planning process and documents [Chatterjee, et al. (2000), Depue (2003), and Roden, et al. (2003)]? The findings in these studies were limited. Safety was often noted in the vision and perhaps in a goals statement, but the subject was rarely addressed beyond that point in the plan development process. However, an MPO survey was conducted in support of the Safety Conscious Planning Forum in Florida by the Center for Urban Transportation Research (CUTR). CUTR reported that some of the MPOs were engaged in safety-related activities even though the subject was not addressed in their planning documents (Safety Conscious Planning Forum Reports: Florida).

2. Several studies attempted to define the basic concepts, key characteristics, and processes associated with integrating safety into the transportation planning process. The studies that provided the most detail with supporting examples and other documentation included [de Leur and Tarek (2002), Herbel (2001, 2004b), Hoffman and Epstein (2003), and Petzold (2003)].

3. Following a series of safety and planning forums, training, and other collaborative efforts, opportunities were identified for documenting attempts to integrate safety into the transportation planning process, i.e., case studies [e.g., Bax (2005), and the Safety Conscious Planning Forum Reports (2001-2006)].

4. Some authors have taken the initiative to address the linkage between safety conscious planning and other planning considerations, such as land use planning, etc. [e.g., Bahar, et al. (2004), Berkovitz (2001), Knezek, et al. (2005), and Meyer (2005)].

5. Practical guidance and information documents have appeared to guide state and local planners in essential safety planning activities and characteristics [e.g., Campbell, et al., Harkey, et al. (2005), Herbel (2002, 2004a), Johnston (2005), Roberts (2001), and Washington and Meyer (2004-2005)]. However, none of these studies to date have addressed the institutional and organizational arrangements necessary to support safety planning improvements.
6. Additional guidance and information to assist in safety planning has been developed in support of implementation the AASHTO Strategic Highway Safety Plan. These materials contain information on countermeasure solutions and strategies and an integrated management process (e.g., AASHTO (1998), NCHRP 17-18 Report 501, NCHRP 17-18 Report 500 (2003-2006)).

7. Several “white papers” and presentations have addressed the relationship between safety conscious planning and strategic highway safety plans. A common understanding and agreement has not yet been achieved and there are no published works to report on at this time. However, it is expected that some reports or articles will be forthcoming.

8. Finally, the annotated reference list in Appendix A includes information and documents developed specifically for this research project (Herbel and Meyer (2005a and 2005b)).

The review of the literature suggests that there is not a substantive body of information available to the transportation and safety community that can guide professionals on how safety and transportation planning can be more closely integrated. In particular, there has been almost no attention given to the institutional issues that occur when attempting to foster collaboration among the many different agencies and groups that should be involved with a safety planning effort.
4.0 Conceptual Framework

This section provides a conceptual framework of the institutional structure and interrelationships among the many different actors that are part of safety planning. The purpose of such a framework is to help identify key factors and strategies that could help influence the outcome of the planning or decision-making process it represents.

A conceptual framework is a representation of the institutional structure associated with a particular initiative or program. It includes the major actors involved with the initiative, the relationship among these actors, and the strategies and points of intervention that can influence their responses to an initiative. Given the complexity of any policy or program initiative that involves many different organizations and individuals, the conceptual framework must be viewed as a simplification of reality. It is intended to lead the investigator into areas of research and study that focus on the key variables of interest to a research effort.

Figure 4.1 shows the “stylized” conceptual framework described above. Several characteristics merit special note.

Arrow number 1 is a special case whereby influences external to the institutional domain of transportation and safety planning foster closer interaction. These influences can be such things as Federal laws/regulations or public pressure on government agencies to act on a particular issue.

The institutional domain for transportation and safety planning includes three decision-making levels. First is the state executive level, which includes the organizational leadership of the agencies and groups that need to be involved in comprehensive safety planning. It is important that this level of decision-making be separate from others because agency leaders provide overall guidance, budget approval, and resource allocation to those who implement the policies and plans. In most states, the executive level is led primarily by the Department of Transportation (DOT) and the Highway Safety Office (HSO). However, there are many other actors with a potentially important role in providing overall guidance and leadership to the safety planning effort, including the Department of Public Safety (DPS), Department of Motor Vehicles (DMV), the designated coordinator of the Motor Carrier Safety Assistance Program (MCSAP), state agencies providing policy leadership in health, education and emergency medical services (EMS), and other safety stakeholders.
The second decision-making level involves state operations. This level is important because it is the operating core of the involved organizations where an initiative is actually implemented. The operating core of the organizations also provides information to the agency leadership which may influence executive decision-making. In the conceptual framework, the left side of operations includes the operating units and staff of safety-related organizations while the right side focuses on the internal operating units of the DOT (e.g., planning, engineering/design, traffic and safety, operations, maintenance, and district functions).
The third level of the institutional domain includes the organizations and groups at the regional and local levels that are often critical for implementing policy and planning initiatives. In this case, there are many different organizations often having the same mission or purpose (e.g., local police departments). To represent this, the conceptual framework indicates the type of participants that are likely to be involved in safety planning at the regional or local levels. For example, law enforcement includes all local police agencies; educators include all local school boards and individual schools. On the transportation side, planners represent not only metropolitan planning organization (MPO) agencies, but also regional, county, and city planners and traffic and safety engineers represent all local government and regional authorities (e.g., transit agencies) that have transportation infrastructure and service responsibilities.

The shaded arrows in Figure 4.1 represent the areas where different types of strategies could be used to enhance collaboration among the participants. For example, arrow number 2 represents efforts to provide enhanced interaction among the different actors that would participate at the executive decision-making level. Similarly, arrow number 4 represents efforts to facilitate interaction among those in each of the participating organizations that are responsible for functional and operational activities. Note that there also are arrows representing vertical linkages between the executive and operations levels of decision-making, and the state and regional/local levels of decision-making. Arrow number 5 represents efforts that might be needed within the safety and transportation groups to promote internal collaborative efforts.

Improving the interaction among the participants shown in Figure 4.1 is one way to change an organizational culture. All of the strategies represented by arrows in Figure 4.1 could be used in a comprehensive and continuous manner to foster new ways of thinking for individuals and agencies (e.g., safety and transportation planning.)

The following series of figures focuses on each of the arrows in Figure 4.1, and suggests possible strategies or approaches that could be used to improve collaboration among the different participants. These figures are not intended to represent a complete set of strategies but rather to serve as an illustration of the types of strategies that might be appropriate. A series of case studies will identify additional structures and strategies as well as provide more detail, such as why and how the strategies were implemented.

Figure 4.2 illustrates the types of external influences that influence executive decision-making to promote a more integrated or collaborative approach to safety and transportation planning. These influences could include:

1. **Research/Discovery** – This influence represents new knowledge or technology related to a specific issue or problem. It may identify or clarify issues as well as provide hitherto unknown solutions to current problems. Discovery might emanate from other levels of government, university research centers, think tanks, advocacy groups, etc.
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**Figure 4.2 External Influences on Executive Decision-Making**

- Federal Law/Regulation
- State Law/Regulation
- External Champion
- Public Notice
- $ State Executive Level

1. Federal Law/Regulation – Federal laws and regulations have an important influence on planning processes and products. In the case of safety and transportation planning, this might include new planning regulations or Federal laws relating to the linkage between transportation planning and safety.

2. State Law/Regulation – State laws and regulations also influence how state and local agencies approach policy issues (e.g., state environmental laws and regulations).

3. External Champion – This category represents someone or an organization that has the power to raise the profile of an issue, such as a governor or highly visible and articulate advocates. For example, the governor may want to show substantive progress in reducing fatalities or position the state as a national role model.\(^1\)

4. Public Notice – New policies or initiatives are often considered in response to public or media attention to a problem. For example, teenage driving fatalities and the public reaction to them has resulted in legislation, special enforcement, and education initiatives targeting this group.

5. Funding – Financial incentives, such as grants, process requirements for programmatic funding categories, demonstration monies, etc., also are used to encourage the desired collaborative decision-making. In fact, SAFETEA-LU (Section 148) requires all states to develop a strategic highway safety plan based on a collaborative process.

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\(^1\) Even though the governor is the chief executive of state agencies; in this case, the office is considered outside the specific institutional domain for transportation safety and planning.
The focus of this research project is on the institutional structures and strategies that can be used to integrate safety and transportation stakeholders into a comprehensive safety planning process; hence, Figure 4.2 is not directly targeted as a focus. However, it does represent an important point of departure for understanding that there are external influences that promote collaborative efforts, perhaps even more so in some cases than activities that originate internal to an organization.

Figure 4.3 represents the interaction among the major safety and transportation participants at the executive or agency leadership level. It is clear from previous research that unless one has active agreement among organizational leaders, it is difficult to implement an initiative successfully. Figure 4.3 shows the SHSO and the DOT as the leading actors at this level of decision-making. Other participants from the education, health, and law enforcement communities are listed. The participants listed for a specific state might vary. For example, in some states the State Police and the DMV are under a single agency; hence, the agency (e.g., DOT, DPS, Justice, Attorney General, etc.) might be named but not the individual entities. The key point is to suggest that one of the first efforts that must occur in developing a collaborative approach toward policy and decision-making is to determine who should be involved at this level of effort.

**Figure 4.3  Collaboration Strategies for State Executive Decision-Making**

The types of strategies that foster collaboration at this level of decision-making are listed. They range from combining different units into one organization to reporting progress against safety performance targets. The success of each of these strategies will depend on the willingness of each participant to agree to the effort, which often relates to the history of collaboration and trust among the groups established from previous interactions.
Strategies that enable collaboration:

- Combine different organizations into one or establish a separate division for safety;
- Establish clear leadership responsibilities for transportation and safety planning;
- Develop a memorandum of understanding;
- Create an executive committee;
- Define a common mission statement and performance goals;
- Identify a champion within the executive level and share the responsibility for providing organizational, political, and other resources to support the position;
- Monitor and regularly report on safety performance; and
- Establish performance accountability in executive job reviews.

Figure 4.4 represents the interaction between the state executive decision-makers and the operating units within each agency. The key issue here is to identify strategies to ensure policy directions established by executive leaders are carried out in a collaborative manner and to provide opportunities for operating unit officials to influence executive decision-making. The types of strategies identified for this interaction are directly related to the level of hierarchy that is found within an organization and/or the degree to which successful joint efforts have been undertaken in the past. As noted previously, the operating units on the right side of Figure 4.4 represent the key units within a DOT, whereas the operating units on the left represent the operating staff of many different agencies and organizations with a potential stake in road safety. There may not be a direct substitution for the strategies that could be used within a DOT with those that might be used with the safety participants, which may involve a very different institutional dynamic.

Strategies for fostering collaboration among the levels of decision-making range from clearly identifying organizational responsibility for carrying out safety and transportation planning integration to creating an interagency task force.

Strategies that enable collaboration:

- Establish clear leadership responsibilities for transportation and safety planning;
- Create a task force or interagency advisory committee;
- Define a common mission statement and performance goals;
- Identify and assign a full-time champion within the executive and/or operations levels and share the responsibility for providing organizational, political, and other resources to support the position;
• Monitor and regularly report on safety performance;
• Establish performance accountability in job performance reviews; and
• Create Standard Operating Procedures (SOP) for collaborative resource allocation and interagency decision-making processes.

Figure 4.5 illustrates perhaps the most important interaction in safety and transportation comprehensive planning. Much of the actual work in producing plans, prioritizing projects, and implementing programs occurs at the operations level of decision-making. Arrow number 4 thus represents all of the strategies that could enhance a collaborative process in undertaking these activities. The case studies are expected to reveal most of the examples of collaboration in the locations considered to be market leaders in comprehensive safety planning.

As shown in Figure 4.5, the types of strategies that could potentially improve collaboration range from institutional mechanisms (e.g., a memorandum of understanding) to improving staff capability (e.g., training). It is likely that a collaborative comprehensive safety planning effort would use many if not most of these strategies.
Figure 4.5  Collaboration Strategies for State Operations Decision-Making

Strategies that enable collaboration:
- Define a common mission statement and performance goals;
- Identify a champion and share the responsibility for providing organizational, political, and other resources to support the position;
- Create a task force or working group of key operations staff;
- Develop data sharing and analysis capabilities;
- Develop analysis tools that provide useful information to participants;
- Provide common training opportunities;
- Hold forums and summits to enhance interaction and understanding;
- Use outside facilitators for reaching common ground;
- Establish staff liaison positions for interfaces;
- Create shared office space;
- Sign an MOU that defines roles and responsibilities;
- Share funding for staff support and project implementation;
- Incorporate safety performance into job descriptions; and
- Involve all participants in public involvement/public information activities.

Figure 4.6 recognizes the potential need to foster collaboration within a particular agency (e.g., a DOT) or within a group of mission-specific agencies before even considering interaction with other types of organizations. The types of strategies represented by arrow number 5 in Figure 4.6 are really focused on “getting our own act together” before proceeding to foster collaboration with other agencies. Again, given the institutional makeup of the safety participants in Figure 4.6, what might be appropriate for a DOT might not be the best approach for the safety participants? However, the strategies listed with Figure 4.6 are considered to be those that could be relevant to both sets of actors.
Figure 4.6 Internally Focused Collaboration Strategies

Strategies that enable collaboration:

- Form implementation action teams;
- Review internal operating safety programs and identify opportunities for enhancement through collaboration with partner agencies;
- Conduct multidisciplinary/multifunctional data analysis;
- Establish shared safety-related goals;
- Conduct peer reviews/peer exchanges;
- Create an internal multidivisional advisory committee (e.g., a matrix organization);
- Develop, implement, and evaluate ongoing training exercises; and
- Enhance safety considerations in decision-making weights.

Figure 4.7 represents the interaction between state operations and regional/local decision-making. In many cases, a strong institutional relationship already might exist between the two; in this case, the relationship can be used to promote comprehensive safety planning. In other cases, such a relationship might not exist for the transportation and safety sectors, and special efforts could be necessary.

Strategies that enable collaboration:

- Mandate inclusion of safety into local plans;
- Provide financial incentives to incorporate safety more comprehensively into plans and programs;
- Provide state technical assistance;
- Increase state participation in local planning efforts and vice versa;
- Reduce barriers (e.g., data, analysis capability, subject matter expertise, etc.).
Figure 4.7  Collaboration Strategies for Interaction between State Operations and Regional/Local Decision-Making Levels

- Use statewide forums to exchange information;
- Develop, implement, and evaluate ongoing training exercises; and
- Raise the visibility of the local safety transportation planning practitioners to establish their credibility.

Figure 4.8 represents a concept similar to that presented in Figure 4.5, although likely more complex simply because of the number of participants. Regional and local participants in safety comprehensive planning are critical to overall success. Local police departments, departments of public works, school districts, regional MPOs, et al., can be important participants in implementing safety programs.

As one would expect, many of the collaboration strategies identified in Figures 4.1 through 3.8 are similar. Others are specific to a particular component of the conceptual framework, and would likely be successful only in that context. The case studies undertaken for this project added depth and dimension to the use and effectiveness of the collaboration strategies suggested in the conceptual framework.
Figure 4.8  Collaboration Strategies for Regional/Local Decision-Making

Strategies that enable collaboration:

- Establish multidisciplinary, multiagency “safe community” programs and initiatives;
- Conduct interdisciplinary training;
- Hold forums (e.g., at the MPO level) for exchange of information;
- Create regional/local advisory committees;
- Use regional/local safety campaigns to motivate participation;
- Develop collaborative safety marketing/public information efforts;
- Develop joint programs for safety improvements;
- Conduct multidisciplinary analyses of safety problems;
- Create local MOUs (e.g., incident response protocols);
- Create shared office space (e.g., a traffic management center);
- Share funding for staff support and project implementation; and
- Enhance the weight of safety in project prioritization.
5.0 Case Study Summary

While the previous section provided a concept of institutional interaction, this section describes in general terms the results of the case studies conducted for this research. As noted in the report introduction, the detailed case studies are found in Appendix C. This section provides a summary of findings without the level of detail in the actual case studies. In many instances, one of the states is noted as an example of a principle or practice. This is not to imply it is the only state with that particular practice, program, structure, etc. Other examples are provided in Appendix C.

5.1 Case Study Methodology

The conceptual framework developed earlier was used to identify case study candidates that illustrate the interactions among the transportation and safety professionals and stakeholders at all levels (e.g., executive, state operations, and local/regional). Several sources were used to identify the candidate states. The research team used its own extensive experience in and exposure to safety and transportation planning initiatives to suggest best practice examples. In 2005, the researchers attended both the Governors Highway Safety Association national conference in Norfolk, Virginia and a national peer exchange on Strategic Highway Safety Plans in Phoenix, Arizona. A focus group was held in Norfolk with selected Governors Representatives (GR) to identify the characteristics of collaborative efforts and examples of best practice. In Phoenix, a conference participant survey was used to solicit information on best case examples. A member of the team attended the annual meeting of the International Association of Chiefs of Police which provided an opportunity to discuss collaborative safety planning with the law enforcement community. Members of the research team facilitated a peer exchange among five large MPOs and a domestic scan of two states that are largely rural in nature, e.g., New Mexico and Iowa. Finally, the principal authors team-taught a well received safety conscious planning course in several states to state, regional, and local transportation planners, engineers, and safety practitioners.

These activities together with the conceptual framework guided the identification of several potential case study sites. Considerations focused on the potential to further understanding of what strategies are chosen and why as well as how they are implemented. Additional consideration was given to geographical diversity and the relationships among state, regional, local, and rural transportation planning agencies.

Sixteen states were identified and the list was narrowed to six states in consultation with the NCHRP panel: Iowa, Louisiana, Michigan, Missouri, Ohio, and Washington. (See Appendix C for the original 16 states.) In most cases, the case studies were developed on the basis of information obtained from printed...
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documents and telephone interviews. In some instances, for example, Iowa and Washington, members of the research team conducted the interviews on-site. The following sections provide an overview of case study findings.

5.2 **HISTORY OF COLLABORATIVE SAFETY PLANNING**

The reader should remember that the criteria for identifying the case study states included “best practice,” i.e., the research team expected to identify effective strategies and practices. Therefore, one would expect that the case study states have a solid and long history of collaborative safety planning. However, this is not necessarily the case.

Michigan’s experience goes back to the 1940s and Washington State also has a long history of collaboration under the Washington Traffic Safety Commission. Iowa began the process with the ISTEA (Intermodal Surface and Transportation Equity Act of 1991) mandate to establish a Safety Management System (SMS), while others have changed within the past decade either because of new leadership, e.g., Louisiana, or a departmental reorganization, e.g., Missouri and Ohio. However, all six of the case study states were engaged in collaborative safety planning well before the SAFETEA-LU (Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users) mandate to develop a Strategic Highway Safety Plan (SHSP) was passed.

5.3 **ORGANIZATIONAL STRUCTURES**

The states differ with respect to organizational structures. In Iowa, Louisiana, Michigan, Ohio, and Washington the behavioral and infrastructure safety responsibilities reside in separate agencies, most often the DOT and the DPS. However, in about a third of the states, including Missouri, both functional responsibilities are housed within the DOT. Some think colocation is an advantage while others disagree; believing that separating the functions brings more political power to the safety enterprise.

In all six of the case studies, however, the research team found that whether separate or co-located, safety managers are relatively high up and visible in the parent organizations having access to top management. They have some level of responsibility and authority over state safety planning activities, and usually control some level of resources.

Relatively recent adjustments in organizational structures have had a profound impact on safety in some of the states studied. In Missouri, the Division of Highway Safety was transferred by Executive Order to MoDOT. The change brought most of the safety responsibility within a single agency, and with strong support from top management; a well-organized structure for implementing the SHSP was born. On the other hand, Ohio DOT (ODOT) management transferred safety from an engineering environment to the Office of Systems Planning and Program Management; this strengthened the position of safety by eliminating the need for safety planning and programming to compete with engineering-related projects.
It is clear that organizational structures are important for effective safety planning; however, the research team is unable to offer a single structure or format as key to success. The safety champion’s (or champions’) access to top management, responsibility, authority, and resources seem to be more important factors. Another critical factor rests with the champions themselves, although it is difficult to articulate or evaluate. The champions come from different backgrounds and experiences, and their personalities differ somewhat dramatically; however, they are uniformly informed, energetic, intelligent, committed, and relentless in their devotion to safety.

5.4 SAFETY AND TRANSPORTATION PLAN DEVELOPMENT

In 1998, the transportation reauthorization bill or TEA-21 (Transportation Equity Act for the 21st Century), for the first time established safety (and security) as a priority planning factor. A cursory review of state transportation plans and transportation improvement programs (TIP) at the time showed that safety was often a goal, although not always, in these plans. Weighting safety projects and identifying specific safety programs were rarely found in transportation plans prior to TEA-21. Since 1998, much work has gone into training, communication, networking, etc., to inform transportation planners about data and methods for incorporating safety into the traditional transportation planning process.

Virtually all of the case study states incorporated safety goals and strategies into the planning process. They struggle with forecasting safety needs and benefits due to the lack of rigorous planning tools, but they use high-crash location analysis to program countermeasure dollars and estimate the benefits as best they can. For example, corridor studies in Washington are showing a 10 to 12 percent reduction in fatalities, 15 to 18 percent reduction in injuries, and a 24 percent reduction in total crashes in the corridors receiving treatments. WSDOT officials estimate a benefit/cost ratio of $35 crash avoidance benefit to $1 of cost. More studies such as this are needed.

In some cases, the safety champions participated directly along with others in the development of the long-range plans and TIPs. In all cases they have influence because they provide the data and often the analyses for setting priorities and making investment decisions. All of the SHSP development and implementation processes involve the broad safety and planning communities; however, there is little evidence that the Highway Safety Plan process incorporates a similar philosophy because, in most instances, safety engineers and transportation planners are absent from the decision-making process.

Some of the states, such as Ohio and Michigan are working directly with the MPOs to ensure they are informed and engaged in safety planning. While the DOTs have little authority over MPO investment decisions, the hope is that providing data, analyses, and safety planning methods and practices will encourage
more investments in safety. Iowa works closely with the MPOs and RPAs providing them with data, maps, and technical assistance. Missouri accommodates the MPOs through the 10 regional coalitions that support implementation of the SHSP. Louisiana is in the early stages of engaging the MPOs and Parish officials, while Washington State tends to be more focused on working directly with communities.

The case study states distribute their safety funding according to documented needs, rather than according to a preset formula; however, in many cases, it is clear there is a tradeoff between safety and congestion. Unfortunately, the interaction effects between safety and congestion are not well understood, but there is ample evidence that safety is often a root cause of congestion and the societal costs associated with crashes far outweighs those due to volume-related delays.

5.5 **SAFETY COMMUNITY INVOLVEMENT**

Following the passage of TEA-21 when safety was mandated as a planning factor more than half the state DOTs participated in “Safety Conscious Planning Forums,” which were designed to bring the planning and safety communities together to foster a dialogue. These forums often initiated a continuing process of collaboration. SAFETEA-LU stimulated and institutionalized further collaborative arrangements for two reasons. First, Section 148 requires the states to develop SHSPs. The law is quite specific as to who should be involved and includes a broad range of agencies and organizations. Second, Section 408 provides resources to improve the states’ traffic records systems. To qualify for those funds, the states are required to develop a Traffic Records Coordinating Committee (TRCC) that includes all agencies with responsibility for collecting, managing, and using crash data. TRCCs generally include a number of agencies with safety responsibilities at the state and local levels.

As was reported earlier, involvement of the safety community in the transportation planning process was institutionalized by code in Washington State and Michigan even before the Federal laws came into effect. The other four case study states also have regularly convened meetings and summits, including broad representation from the safety and planning communities, e.g., engineers, law enforcement, safety practitioners, etc.

As states update their long-range transportation plans, safety is regularly receiving enhanced attention and focus. However, the relationship between the SHSPs and the long-range transportation plans and their short-range program components (e.g., STIPs and TIPs) has yet to be institutionalized in most cases. Even though the case study states work with the regional planning agencies in some fashion, none report success in changing the methods used to identify and fund projects to provide more funding to safety projects. Furthermore, participation by transportation planners in the development and implementation of the SHSP is uneven across the states. Hence, even though all states have engaged the safety community in planning the SHSPs, the impact on the traditional
transportation planning process is not yet clear. As an illustration, for the Phoenix Peer Exchange, the states were asked to bring the safety engineer, the Governor’s Highway Safety Representative (GR), and a transportation planner. However, very few states brought their planning directors or staff. The representation was heavily oriented toward traffic and safety engineers and GRs. On the other hand, sharing crash data analyses with regional and local planning agencies, such as is done in Iowa, Ohio, and Michigan, holds promise for greater impact, especially with the development of safety planning and forecasting tools.

5.6 COMMUNICATIONS STRATEGIES

When asked about communication strategies, the states generally referred back to organizational structures for explaining their methods of reaching out to the safety and planning partners. Ohio, Michigan, and Washington State use formal institutional mechanisms to foster communication, such as the Governor’s Task Force on Ohio Highway Safety. Communication is more likely to take place through regional committees in Louisiana and Missouri. Washington State recognizes the critical importance of internal communication as well as outreach. The State has formalized an internal team, the Highway Safety Issues Group (HSIG), to ensure all DOT functions related to safety planning are communicating and working together.

Several states hold annual safety summits of some type (e.g., Michigan, Louisiana, and Missouri). These summits or meetings foster networking and development of personal relationships, which leads to improved and increased communication. Other strategies include training, crash data sharing, and project and program funding.

Funding of some type seems necessary to maintain interest and participation. Missouri believes an important factor involves sharing of power and the “limelight.” In other words, if safety is seen as the responsibility of a single agency, others will not be as eager to participate. It is important that task forces, committees, etc., be chaired or led by a range of agencies and participants. For example, in Michigan’s Governor’s Traffic Safety Advisory Committee (GSAC), the MPO for the Detroit region chairs the engineering committee, and leadership rotates among the core state agencies.

Iowa DOT has hosted a listserv of safety professionals since 2002. The communications tool was originally developed to increase communication with rural areas. Participants can post questions, and it enables the DOT to conduct surveys for gathering information and identifying opportunities for safety improvements. Iowa is the only State in our study that appears to have a regularly scheduled safety management meeting, which is coordinated by a staff liaison within the DOT Office of Traffic Safety.
5.7 **BARRIERS TO COLLABORATION**

The case study states all report progress toward breaking down the institutional and other barriers that have stymied collaborative safety planning in the past; however, most also are aware that these issues are ever present and it is important to anticipate and address potential problems and issues. The Michigan case study provides a good summary of potential barriers.

1. Lack of a safety champion in all agencies and organizations with responsibility for safety.
2. Failure to mainstream safety into the standard procedures of the organization.
3. Insufficient data to foster a collective understanding of the safety challenges facing a jurisdiction, especially in the case of tribal governments (Washington).
4. Incompatible funding sources, as noted in Ohio, “How can we think outside the box, when all the money is in boxes?” On the other hand, Washington points out that there is a benefit to segmented funding sources, e.g., it allows programs to move forward. If all the funding stemmed from a single source, they believe it would lead to an increase in turf battles.

Even though collaboration has increased due to better data and Federal requirements, the tendency to view problems and solutions from “siloed” mindsets, e.g., engineering, behavioral perspective, etc., is a continuing issue. Furthermore, elected officials continue to respond to constituencies that focus on congestion relief or system expansion. Educating elected officials about the costs and benefits associated with safety improvements is a continuing challenge. Finally, Missouri points out that there is a constant need to deal with turnover, especially in the law enforcement community, and the challenge of training and educating new members of safety coalitions.

5.8 **BEST PRACTICES**

The single most important best practice in all case studies was the wide use of analysis-driven approaches to inform policy and decision-making. With high-quality and timely data, attention can be focused on identifying and resolving problems. This practice focuses the discussion on the desired outcome rather than who gets what dollars.

Washington State credits the Washington Traffic Safety Commission (WTSC) as a key factor in their success. High-level officials with authority over decision-making and funding are engaged, which characterizes the process with legitimacy. Iowa and Michigan agree that having a strong safety management institutional structure and management mechanisms that regularly meet is important for making progress and achieving results.
Other best practices include:

- Having a common goal (Michigan);
- Having a high-level, committed champion (Ohio);
- Committed champions at the staff level (Iowa);
- Dedicated safety funding (Louisiana, Iowa);
- Sharing safety resources (Louisiana);
- Continual monitoring of safety performance (Ohio);
- Removing barriers to local participation by providing data and technical assistance (Iowa, Ohio, Michigan);
- Building relationships and establishing regional and local coalitions (Missouri, Iowa, Louisiana); and
- Establishing information communications mechanisms through meetings, summits, and other venues (all).
6.0 Assessment of Best Practices

This section examines the results of the case study summaries presented in Section 4.0 and relates the findings to effective collaboration strategies. The characteristics of effective collaboration are based on a previous TCRP/NCHRP report entitled, “From Handshake to Compact: Guidance to Foster Collaborative, Multimodal Decision-Making.” This report examined a variety of transportation institutional contexts (not safety planning) to identify effective collaboration strategies for motivating collaborative relationships. The guidance was used in part as the approach for understanding the success factors in the case studies.

6.1 BASIC COMPONENTS OF SUCCESSFUL COLLABORATION

TCRP Report 106/NCHRP Report 536 identifies four major characteristics of collaboration that become important factors in understanding successful efforts. They include:

1. A successful collaboration must have a **basic foundation** in terms of stated need, goals, and resulting benefits;
2. There should be strong **leadership** from members of the collaboration;
3. An effective **process of collaboration** must be in place in terms of participant responsibilities and the level of trust engendered; and
4. **Organizational support** should be provided by those participating in the collaboration.

These four characteristics form a structure for identifying the strategies used by the case study participants in collaborative planning and decision-making process.

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6.2 Creating a Basic Foundation for a Safety Planning Collaboration

Creating a foundation for an effective safety planning collaboration depends on several key factors.

Data and Data Analysis Capability – All of the case study states spend considerable time and resources collecting and analyzing crash data. They were some of the first states in the country to develop statewide safety plans, and in many cases, they are some of the few states that kept the safety management system in place that was required by ISTEA in 1991, but later made optional in 1995. Understanding the underlying causal and associated factors of any policy issue is helpful in focusing organizational and individual interests on those actions or strategies that will truly make a difference. Exposing the analysis results to the involved stakeholders also raises the level of understanding of why specific decisions are being made, and what the expectations are.

In Iowa, Louisiana, and Michigan, in particular, data analysis capability has been extended to local governments through data sharing tools and protocols. This was identified by the state DOT representatives in these states as an important contributor to raising the level of awareness of local officials to the types of safety problems facing their communities.

Clear Goals and Objectives – A common characteristic of all of the states was the adoption of common goals and objectives for all safety planning participants. This was supported by the SHSP requirement, but in most cases, it was true even before the SHSP requirement occurred in SAFETEA-LU. The existence of common goals and objectives has helped focus resources and decision-making on those characteristics of a state’s safety record that need the most attention. To the extent that the goals and objectives are articulated in a straightforward manner, they become an important means of conveying to other members of an organization what the agency is trying to accomplish with its safety efforts. They also help to establish a common language among the different participants.

Organizational Structure – Every state organizes itself differently in how it addresses safety planning. In some cases, the GR is located within the state DOT, and in other cases the position is located elsewhere. With strong institutional structures to link the different stakeholders together (e.g., to establish standard operating procedures and decision-making structures that assure collaborative efforts), it should not matter where the different units are located. However, it is interesting to note that the most successful states for collaborative safety planning seem to have either both functions within the same organization (Missouri) or have a very strong overarching safety commission that is viewed as a credible and influential source of policy guidance and direction (Washington and Michigan).
Formal Structures – As noted above, having strong institutional linkages among the safety planning participants is one of the most effective means of establishing effective collaboration. Examples from the case studies include the use of safety charters and memoranda of understanding (Louisiana, Ohio, and Washington), a state safety blueprint (Missouri), and the creation of formal state/regional safety coalitions (Michigan and Missouri). A similar example of this is the “safe communities” program found in Iowa.

Dedicated Resources – It is not surprising that the case studies illustrate that successful collaborative efforts in safety planning have occurred in those states where staff and, in some cases, funding have been dedicated to safety planning. This is no different from any other program. However, having such dedicated resources has allowed each of the case study states to not only initiate innovative safety programs (such as the safe corridors program in Washington), but also to provide continual feedback on the overall effectiveness of safety efforts and the implementation of previous plans. Dedicated funding always attracts interest in a particular policy area.

Performance Measurement and Accountability – Establishing statewide or agency goals without monitoring progress often leads to unsatisfactory results. Most of the case study states have adopted a performance-based approach to planning and agency management that in essence monitors progress toward the established programmatic goals. In particular, this is applied not only to headquarters units, but to regional districts/divisions that are often the most important implementing capability within a state DOT or state police agency. In many states (e.g., Ohio), district engineers are responsible for understanding the safety problem in their districts and explaining the strategies they will use to improve the safety record.

6.3 EXERTING STRONG LEADERSHIP

One of the common characteristics of the case studies, and indeed in other successful safety planning efforts, is the presence of strong leadership in the institutional structure supporting the safety effort. This leadership can take many varied forms and have different characteristics.

Safety Champions – In every case, an influential individual, or group of individuals has provided the impetus for the safety planning effort. Sometimes, this individual or group is a champion not only because of their interest in safety, but also because of the position they hold in the institutional structure (e.g., WTSC, chaired by the Governor in Washington). Each of these groups has emphasized safety concerns in their institutional decision-making processes, and has strongly influenced how others pursue safety goals.

Although safety champions can only be fully characterized within the institutional structure in which they thrive, they seem to have some common characteristics.
Institutional Needs in Safety Planning

- Holds a position of influence or leadership within an organization having a strong role in transportation and/or safety;
- Either through position or influence is able to get others to the collaboration table;
- Has the ability to understand and communicate the “big picture”;
- Has thought through the reasons for collaboration and is able to articulate them;
- Has developed a support structure for collaboration;
- Often has resources to support collaboration; and
- Is respected, trusted, and viewed as credible by other collaboration partners.

6.4 Establishing a Process to Support Collaboration

The third characteristic of successful collaboration is having in place a process of interaction and an approach for information exchange that encourages interaction. This process can be formalized through such institutional means as a memorandum of understanding or can occur on an informal basis through conferences and workshops. Many of the states studied have established a recognized and understood process of collaborative activities that together provide a comprehensive approach toward safety planning. In particular, the following process-oriented strategies and actions were evident in the more successful examples.

Analysis-Driven Planning – Given that the safety challenge far exceeds the level of resources available to address the challenge, efforts must be taken to identify the most cost-effective use of limited resources. Therefore, understanding those factors that have the greatest influence on a state’s safety record, and identifying and funneling resources to high-crash locations and contributing crash factors is based on a comprehensive analysis of the traffic and safety data. Data analysis also should be conducted from a systems perspective, meaning that a broad perspective is adopted in understanding the many different influences that affect safety, the interrelationships among key variables, and the likely consequences of different actions being taken. By conducting such analyses, those participating in a collaborative effort can understand the rationale for the investment decisions. The analysis can help decision-makers focus on those aspects of a state’s safety challenge that will benefit most from additional resources. Both Iowa and Washington, in particular, showed a very strong commitment to the use of data analysis in informing policy and operational decisions.

Local Involvement in the Analysis Process – Successful safety planning requires the involvement of many different agencies and organizations at all levels of government. Getting the commitment and resources of local governments focused on the safety challenges facing their communities is an important step in
a state’s efforts to improve its safety record. The more successful states have
shared data with local jurisdictions, and in some cases, have shared analysis
results specifically undertaken for the individual communities. Some of this data
sharing occurs as part of regional safety forums and other special safety events,
but in other instances the data sharing occurs on a periodic or as requested basis.
Those interviewed for this project felt strongly that the sharing of data and
analysis results with local officials is an important strategy for enhancing local
interest and motivation in taking steps to focus more resources on safety chal-
lenges. This strategy was particularly evident in Iowa, Louisiana, Michigan, and
Ohio. Washington State DOT works with the WTSC to examine the safety per-
formance of highway corridors and encourage local communities to address the
problems identified through the process.

**Implementation Focus in Safety Planning** – Analysis-driven planning allows an
organization to effectively focus its resources. Of equal note is an emphasis on
consideration early on in the planning process of implementation feasibility and
requirements. Implementation focus provides an important reality check on the
planning process in terms of what types of actions and strategies could be
implemented in the short term, and what would be necessary if implementation
were to occur over a longer timeframe. Such a focus also draws attention to the
key actors who must be involved. In some cases, such as Missouri, a detailed
implementation plan was developed that lays out the steps and responsibilities
for making sure the safety plan is implemented.

**Feedback into Decision-Making** – One of the fundamental characteristics of
good policy-making is providing feedback on how well a previously adopted
policy decision is performing. In the context of safety planning, this information
feedback can occur at both the systems level through the use of system perform-
ance measures, and at the individual project or action level through studies that
compare the expected outcome with the actual results. Systems-level monitoring
can be further disaggregated by geography (e.g., statewide, district, metropoli-
tan, rural), road functional classification, or by contributing crash factors (e.g.,
impaired driving, speeding, weather, etc.). The feedback into decision-making is
particularly effective when the information is used to hold other decision-makers
accountable. For example, the Ohio DOT uses a comprehensive performance
monitoring system to track investment strategies and measure effectiveness of
actions taken at the district level.

**Formal and Informal Communication Strategies** – Exchange of information was
found to be a key element in successful transportation/safety collaboration. This
exchange occurs in formal ways, such as periodic meetings, list serves, or sched-
uled data exchanges, but surprisingly, many of those interviewed for this study
pointed to informal meetings and opportunities as one of the most successful
mechanisms to foster communication among different participants in the safety
planning process. The Iowa, Michigan, and Ohio case studies indicated the value
of such informal interactions. More structured annual forums or workshops also
were viewed as excellent opportunities to exchange information.
6.5 PROVIDING ORGANIZATIONAL SUPPORT

Successful collaboration initiatives need resources to support their activities, or at least have influence over organizational resources that help to achieve their goals. These resources can include funding, personnel, equipment/technology, decision support (such as data), and delegated authority. In some cases, resources exist externally, but the organization must provide funding to access them. For example, local universities often have significant resources in computer/database operations, technology development, and statistical analysis. Several of the state DOTs in the case studies had entered into agreements with a local university to provide analysis support for the State’s safety program (Iowa, Louisiana, and Michigan).

Although the strategies for providing organizational support can be quite varied, the following examples were found in the case studies.

**Dedicated Safety Funding** – Louisiana has segmented its transportation funds into four major categories, with safety being one of the four. By so doing, Federal and state dollars are allocated to safety problems and do not have to compete with other funding categories. In Iowa, one-half of 1 percent of the state gasoline tax is dedicated to safety projects, and thus similar to Louisiana, safety projects have their own dedicated funding source. By having dedicated safety funds, both states have been able to engage the interest of a range of safety stakeholders in the safety planning process, because they realize that projects and actions will clearly result from the process. Safety funding is a major motivator for participation in a collaborative planning and decision-making process.

**Local Funding Support** – Similar to the previous point, some states provide funding to regional and local safety committees (Missouri) or to local safety-focused planning efforts (Washington). Others of the case study states worked closely with local governments in identifying possible funding sources for addressing the safety challenges in their communities. As noted above, potential funding for the community has a strong influence on a local official’s motivation to participate in safety planning.

**Agency Technical Support** – Having an effective internal structure for dealing with the safety challenge is one of the most important means of effectively focusing an agency’s resources on a problem. To some extent, the concept of having a committee or working team structure is a “process” issue and thus could be discussed in the previous section. However, it is presented here because the case studies clearly showed that organizing for safety has been a prerequisite for successful safety collaboration, and ultimately targeting resources on the critical safety challenges facing the State. Washington DOT, in particular, illustrates a strong internal organizational structure focused on safety.

**Data Analysis Support Groups** – The analysis of safety and traffic data is often time-consuming and personnel-intensive. Some states have contracted with other groups to provide the safety analysis that is necessary to support the safety
planning activity. For example, Louisiana State University and Wayne State University (in Detroit) have been working with their respective state DOTs to analyze safety data and provide critical assessments of safety performance. Other states have engaged consultants to do the same type of work. One of the most convenient and easy-to-implement support strategies is to look outside the partnership for planning support.

**Liaison Strategies** – Effective communications among collaboration participants has been identified previously as a critical component to successful safety planning. One way to maintain communication is to identify liaison positions among the different collaboration participants, and assign them responsibility for keeping everyone abreast of what is happening in the safety planning process. The liaison can act as a coordinator, a conduit of information, a contact person, and an initiator of meetings. In Iowa, a full-time employee acts as a coordinator for the safety management system, the process used by the State to continuously update its safety efforts. In this capacity, the employee serves in all of the roles mentioned earlier.
7.0 Guidance

One of the major purposes of this project was to develop guidance for improving collaboration in the safety planning process. Such guidance should provide direction for what transportation agencies can do to improve the effectiveness of existing collaborative relationships and establish new ones. The guidance is organized by the four major characteristics of effective collaboration. By looking collectively at the recommended steps in each of the four areas, one can develop an overall strategy for collaborative safety planning that will enhance the chances of success. This guidance is based on the results of the case studies, but it also incorporates the results of collaboration research in other fields, as well as the researchers’ experience.

It is likely that many states already have adopted some or many of the guidance steps in their SHSP development and implementation efforts. States should conduct an assessment of their collaborative processes to identify the degree to which the guidance has been implemented and determine the feasibility or desirability of implementing those additional activities.

7.1 Creating a Basic Foundation for a Safety Planning Collaboration

1. Establish common goals, mission statements, and safety targets; and incorporate them consistently into each agency’s priorities.

2. Assess your organizational structure from the perspective of how it supports successful safety planning and decision-making. Are the right people in the right place to influence safety planning and decision-making results? Are the channels of communication effective? Is there a clear understanding of who is in charge of the safety planning process? To what extent would the effectiveness of your current approach to safety planning change if key personnel were to leave or retire?

3. Develop a data collection and analysis strategy that supports collaborative safety planning and relates to the types of decisions that have to be made; identify mechanisms for sharing the data and analysis results with local agencies and other partners.

4. Organize and institutionalize opportunities for informal interaction, such as workshops, forums, training courses, conferences, etc.

5. Establish safety as a prime objective of investment decision-making; examine the feasibility and desirability of providing a dedicated funding source for safety; include safety performance as part of the accountability system within your organization.
7.2 **EXERTING STRONG LEADERSHIP**

1. Identify, support, train, and support safety champions.
2. Establish a high-level executive committee with state and local participation that meets periodically and works collaboratively by sharing information and resources to solve problems, address barriers, identify opportunities, track progress, and recommend further action.
3. Engage the leadership of other organizations in structured opportunities to motivate them to adopt a safety orientation in their planning and investment strategies. If possible and desired, formalize this interaction through a memorandum of understanding, charter, or some other form of agreement.
4. Incorporate performance objectives relating to safety collaboration in the position descriptions, performance measures, and performance improvements plans for safety champions, engineers, transportation planners, and others. Establish a system of rewards and recognition for those who perform well. Send a message that safety is an important part of everyone’s job.

7.3 **ESTABLISHING A PROCESS TO SUPPORT COLLABORATION**

1. Develop and institutionalize an analysis-driven planning process that supports the collaboration’s goals, and directs attention to the most pressing safety problems facing the State. This process should include a way of sharing the results with local agencies and of monitoring system performance.
2. Adopt an implementation focus early in the process that defines who will do what, by when, and identifies the necessary resources to accomplish the task.
3. Establish formal channels of communication among the different collaboration partners to foster increased understanding of the expected results. Periodically assess the effectiveness of these channels.
4. Create informal communication opportunities where members of the collaboration can network and exchange information (e.g., workshops, forums, conferences, training, etc.).
5. If appropriate, utilize memoranda of understanding or other tools to institutionalize the process of interaction so that it will last beyond the current participants. The MOU should be flexible enough to respond to changing conditions.
6. Utilize collaboration technology, such as list serves, chat rooms, web sites, and other electronic forms of communication, to encourage greater interaction.
7.4 PROVIDING ORGANIZATIONAL SUPPORT

1. Develop an implementation plan not only for the specific strategies that are being implemented as part of the safety planning effort, but also for the planning process itself, including:
   a. An assessment of (and suggested changes to) the current organizational relationships among the different transportation/safety partners;
   b. Periodic evaluation of the type and quality of data being collected that inform the safety planning process;
   c. An examination of the overall effectiveness of interagency communications, both formal and informal, and recommendations for making the interaction more effective; and
   d. A determination of the human resource and training needs to support the collaborative safety effort.

2. Assess investment decision-making processes to see to what extent safety is considered in prioritization and programming. Determine the degree to which safety champions or those responsible for safety in your organization can influence final investment decisions. To the extent possible, provide dedicated funding to support the safety goal.

3. Examine the potential of using resources other than those provided by government, such as consultants, universities, retirees, advocacy groups, etc.
8.0 Summary Recommendations

8.1 Substantive Recommendations

The findings from the case studies and ancillary events cover a wide range of policies, strategies, and action steps. The following bullets attempt to summarize the key recommendations that can be drawn from the research.

- Create a uniform approach to data analysis and problem identification;
- Establish formulas for dispersing safety funding to high-crash locations/road segments/corridors;
- Develop a formula for weighting safety projects in the STIP and the long-range plan;
- Mainstream safety into the transportation planning, design, operations, and maintenance practices;
- Create a separate unit/division/office with authority to make and influence investment decisions to focus on safety within DOTs;
- Monitor safety performance on a regular basis; and
- Publicize the results of performance monitoring to upper management, elected officials, and the public.

8.2 Strategies for Disseminating the Guidance

Research, analysis, and documentation are of little use without a plan for disseminating the information to anyone who might find it useful. The case study interviewees offered the follow recommendations for getting the word out:

- Develop written reports and executive summaries using nontechnical language:
  - Distribute to the members of the AASHTO Standing Committee on Planning and relevant TRB Committees, e.g., Transportation Safety Management, the Transportation Safety Planning Subcommittee, etc.;
  - Post on web sites and provides links; and
  - Produce and distribute CDs.
- Develop and conduct workshops;
- Deliver conference presentations:
  - AASHTO annual and regional meetings;
  - Governors Highway Safety Association; and
  - State Safety Summits.
• Conduct regional safety forums;
• Organize peer exchanges;
• Deliver the information through one on one, face to face meetings;
• Brief the FHWA Division Administrators and ask them to share the information with the State Chief Engineers; and
• Consider mass mailings.
A. Annotated References

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<tr>
<th>Title</th>
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<tr>
<td>American Association of State Highway and Transportation Officials (1998). AASHTO Strategic Highway Safety Plan. Washington, D.C., <a href="http://www.transportation.safety.org">http://www.transportation.safety.org</a>.</td>
<td>The AASHTO plan follows a well-defined planning and implementation process. Its publication was followed by a major NCHRP project (17-18), to develop a series of countermeasure guidebooks and an integrated management process. For the guidebooks and other information, visit the web site.</td>
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<tr>
<td>NCHRP 17-18 (2003-2006). Report 500. Transportation Research Board of the National Academies</td>
<td>The NCHRP 17-18 Report 500 is a series of implementation guides for addressing each of the AASHTO Strategic Highway Safety Plan priority areas. The guides contain a problem statement, alternative solution strategies, and specific guidance for implementation. The first 16 guides have been published as of 2005. Other titles will be added as they are published. Additional guides are being developed to address work zone crashes, motorcycle crashes, head-on collisions on freeways, crashes involving bicyclists, crashes involving younger drivers, and data needs.</td>
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<td>1. A Guide for Addressing Aggressive-Driving Collisions</td>
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<tr>
<td>NCHRP 17-18 (2003). Integrated Safety Management Process. Report 501, Transportation Research Board of the National Academies.</td>
<td>Report 501 is a curriculum for developing a management process that addresses major highway-related crash problems by effectively integrating engineering, education, enforcement, and emergency services, regardless of where these responsibilities may reside within a government organization.</td>
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</table>

This paper presents the methodology used for the development of a proactive safety program for the Regional Municipality of Durham, Ontario, Canada (“Durham”) commencing with a network screening of sites with potential for safety improvements and progressing into a detailed safety assessment comprising of office and site investigations. Two case studies were included which demonstrate a higher occurrence of collisions at access points, specifically those that are not in compliance with Durham’s Draft Access Management Policies, 2001.


The article discusses how the decision-making process should be organized so that the interests and the negotiations contribute to a good “decisive” road safety policy. The context is the Netherlands.


The article presents information on safety, roadway, and community design, and relationships. It argues that land use and community design strategies hold promise for improving safety.


The purpose of this handbook is to provide overall guidance on the characteristics of successful collaboration and on the steps that can be taken to enhance the probability of success. A method of assessing the health of an existing collaboration is proposed that allows one to identify areas of weakness and areas where improvement can occur. For those who wish to start a collaborative initiative as well as those already involved who want to expand and improve, a multi-step strategy is described.


This report contains information on a sample of MPOs.


Paper addresses an evolving need to deal with road safety in a proactive manner rather than rely exclusively on the identification of hot spots – a reactive approach. The obstacles that must be overcome include the lack of an opportunity to consider safety in the traditional transportation planning process, data and analysis tools, and a systematic process for considering safety in the planning process.


The synthesis reports on the state of the practice of highway safety management systems, a systematic process designed to assist decision-makers in selecting effective strategies to improve the efficiency and safety of the transportation system.


The purpose of the Guide is to promote best practice and serve as interim guidance to state DOTs and their safety partners for development and implementation of the state SHSPs. It was developed by FHWA in cooperation with NHTSA, FMCSA, FTA, and FRA.
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<th>Title</th>
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<tr>
<td>Forbes, G. and E. Geddes (1999) Planning for Safety:</td>
<td>This presentation presents several aspects of the complexities associated with safety work, e.g., the use of</td>
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<td>The Process and Its Perils. ITE Spring Meeting.</td>
<td>crash data, engineering standards, and terminology regarding the definition of “safe.”</td>
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<td>Harkey, D., R. Srinivasan, C. Zegeer, B. Persaud, C. Lyon, K. Eccles,</td>
<td>This digest summarizes the current status of crash reduction factors for a variety of treatments, provides a</td>
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<td>F. Council, and H. McGee (November 2005). Crash Reduction Factors</td>
<td>summary of the “best available” crash reduction factors, and discusses the relationship between this study and</td>
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<td>for Traffic Engineering and Intelligent Transportation system (ITS)</td>
<td>other ongoing research studies that are either documenting or developing additional factors.</td>
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<td>Improvements: State-of-Knowledge Report. Research Results Digest</td>
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<td>299, NCHRP Project 17-25 (interim deliverable), Transportation</td>
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<td>Research Board of the National Academies.</td>
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<tr>
<td>Herbel, S. and M. Meyer (2005a). The Governors Highway Safety</td>
<td>The report documents the results of a focus group held during the GHSA annual meeting in Norfolk, Virginia in</td>
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<td>Virginia.</td>
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<td>Herbel, S. and M. Meyer (2005b). SHSP Peer Exchange: Phoenix,</td>
<td>The research team conducted a survey during a peer exchange focused on the SAFETEA-LU requirement to develop an</td>
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<td>Arizona, NCHRP 8-368, Task 57 Survey (unpublished results).</td>
<td>SHSP. The results have been tabulated and preliminary analysis is underway. No report is envisioned or underway but the data are available from the research team.</td>
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<tr>
<td>Summary Report. Transportation Research Board Circular, Transportation</td>
<td>Conferences are designed to bring planning and safety professionals together who have exhibited leadership in</td>
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<td>Research Board of the National Academies, Washington, D.C.</td>
<td>addressing safety as a planning factor and to identify best practice and strategies for improving safety planning. In addition to the proceedings, the CD-ROM contains the conference agenda, a participant list, conference highlights, and PowerPoint presentations.</td>
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<tr>
<td>Herbel, S. (Spring 2004b). “Planning It Safe to Prevent Traffic</td>
<td>This article discusses the concept of safety conscious planning (SCP) and the efforts underway to explain and</td>
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<td>Deaths and Injury,” in Transition, Volume 12.</td>
<td>implement the SCP process. It contains multiple examples from state DOT and MPO SCP initiatives.</td>
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<tr>
<td>Herbel, S. (2002). Supporting the Establishment of Safe Transportation</td>
<td>This Circular has two very distinct parts. Part I introduces safety conscious planning (SCP) and summarizes the</td>
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<td>Networks: Part I: Safety-Conscious Planning Forums; Part II:</td>
<td>SCP forums conducted by six states. Part II is a toolkit that provides the information needed by any state or local agency to organize and conduct a safety conscious planning forum.</td>
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<td>Facilitators Toolkit. Transportation Research Board Circular C041,</td>
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<td>Transportation Research Board of the National Academies, Washington,</td>
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<tr>
<td>Herbel, S. (2001). Safety-Conscious Planning, Transportation</td>
<td>This Circular considers the goal relating to safety: promote the public health and safety by working toward the</td>
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<td>Research, E-circular, Number E-C025, Transportation Research Board</td>
<td>elimination of transportation-related deaths, injuries, and property damage. Following a general discussion of</td>
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<td>of the National Academies, Washington, D.C. <a href="http://nationalacademies">http://nationalacademies</a></td>
<td>safety in planning (problem, background, and process), attention is focused on a workshop convened in May 2000 with the objective to develop guidance for safety conscious planning.</td>
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<td>Hoffman, K. and K. Epstein (March 2003). Safety in Planning: New Developments at the Federal and State Levels. 2003 Technical Conference and Exhibit, Institute of Transportation Engineers, Fort Lauderdale, Florida.</td>
<td>This paper describes early efforts to organize the Federal SCP initiative, its accomplishments over the past two years, the results of the first national leadership conference, a national action plan for SCP, and next steps.</td>
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<td>Knezek, C., J. Orth, and A. Maher (2005). New Jersey Congestion, Security, and Safety Initiative. FHWA Report 2005-01, Washington, D.C.</td>
<td>The purpose of this project was to examine the relationship between effective national transportation congestion, security, and safety technology transfer applications, compare national trends and the conditions found in New Jersey, and implement the most appropriate solutions. As a result, the Safety Conscious Planning (SCP) Model was selected and implemented as the network because it promoted the reduction of crashes that affect the security and congestion of the entire transportation infrastructure in New Jersey.</td>
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<tr>
<td>Meyer, M. (2005). Linking Safety-Conscious Planning and Context-Sensitive Solutions. ITE Journal, 75:8, Washington, D.C.</td>
<td>This article examines SCP and CSS from the perspective of basic concepts and principles, and identifies issues that have served as focal points for disagreements in the past between those interested in promoting the community context and those advocating safety. Despite these disagreements, the two concepts are complementary: SCP can provide important context for CSS development efforts, and CSS provides an opportunity to consider safety along with other community concerns in project-level planning.</td>
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<td>Safety Conscious Planning Forum Reports,</td>
<td>The reports document the Safety Conscious Planning Forums held in the states between 2001 and January, 2006. The early forums were sponsored and supported by the TSPWG and those reports can be found on the web site. However, in more recent years, states such as Illinois, Ohio, Kentucky, and West Virginia have held forums without such support. In those cases, one or TSPWG members may have provided advice and guidance but the states and MPOs essentially designed and implemented the forums on their own. Readers are advised to contact the DOT in those states for a report.</td>
</tr>
<tr>
<td>Transportation Research Board of the National Academies, <a href="http://www.trb.org/safety">www.trb.org/safety</a>, Alaska, Arizona, Florida, Georgia, Iowa, Kansas/Missouri (Mid-America Regional Council), Louisiana, Maryland, Massachusetts, Michigan, Montana, Nebraska, Nevada, New Jersey, New York, Oregon, South Carolina, Tennessee, Texas, and Washington.</td>
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<td>State Strategic Highway Safety Plans. The state plans (completed or draft) reviewed for NCHRP 36B, Task 57 include: Arizona, Florida, Georgia, Illinois, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, Tennessee, Utah, and Washington.</td>
<td>Following the publication and implementation of the AASHTO Strategic Highway Safety Plan, some states began work on a state-level plan essentially mirroring the national effort. Since the SHSP requirement contained in SAFETEA-LU, it is unclear which of those plans meet the requirements and which may need to be expanded and/or updated. Cambridge Systematics currently is working with Louisiana, Montana, New Mexico, and Iowa on their SHSPs.</td>
</tr>
<tr>
<td>Washington, S. and M. Meyer (2004-2005). Incorporating Safety into Long-Range Transportation Planning. NCHRP Project 8-44 (in progress), Transportation Research Board of the National Academies, Washington, D.C.</td>
<td>The objective of NCHRP 8-44 is to develop a guidebook for the use of state DOTs and MPOs that describes both an overall planning framework and an associated set of analysis tools that will improve the manner in which safety is explicitly treated in state-, regional-, and local-level transportation planning. Testing of the forecasting tool is still in progress. Results are anticipated in 2006.</td>
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B. Outreach Summary Results

B.1 GHSA Focus Group Report

Introduction

The purpose of this project is to provide assistance and guidance on how to integrate all the necessary participants involved in transportation and safety activities into a comprehensive safety planning process and recommend ways to improve the state of the art.

During the 2005 Annual Meeting of the Governors Highway Safety Representatives (GHSA), the principal authors conducted a focus group with highway safety managers to hear their thoughts and advice on the current status, challenges, and opportunities for achieving a truly collaborative integration of safety and planning professionals and other stakeholders.

The focus group participants represented the following states: Florida, Georgia, Kansas, Maryland, Michigan, Minnesota, Missouri, New Mexico, Ohio, and Rhode Island. The highway safety office is located within the Department of Transportation in all of these states except Michigan, Minnesota, and Ohio where the office is located in the Department of Public Safety.

The discussion focused on several key issues concerning safety and planning integration. The participants were asked to:

• Describe the current relationship between highway safety and transportation planning from both an organizational and communications perspective;
• Name the barriers to collaboration and partnerships;
• Identify opportunities for improving communication and collaboration;
• Discuss suggestions for institutionalizing a collaborative working relationship;
• Provide advice for improving collaboration; and
• Identify candidates for best practice case studies.

Current Status

Florida - Florida enjoys a strong relationship with other state agencies and local planning agencies.

The authors have observed significant changes in communication, collaboration, and intra- and inter-agency relationships in the short period of time since the focus group took place.
Georgia – There is a good relationship between the GR and the DOT safety engineers but there is no relationship with planning. They communicate some with the ARC but no other MPOs.

Kansas – The GR function is within the Division of Planning at KDOT. They are conducting forums around the State and working closely with the Kansas Highway Patrol and the Secretary of Health and the Environment.

Maryland – The highway safety office is in the DOT (State Highway Administration) and they have recently begun interacting with the engineers but not with the planners or MPOs. They have made contact but, so far, no reaction.

Minnesota – Traffic safety is in the DPS. There is a good relationship with the DOT safety engineers but not with Planning. They are working on it.

Missouri – DOT has a good working relationship with the DPS and works closely with Planning because there is a new, young director of Planning and the culture is changing. There was some resistance to work with the MPOs at first but they are moving beyond that and they now work with the larger MPOs; the smaller ones are a greater challenge.

Ohio – A recent institutional change in the DOT has brought about a much closer working relationship with the highway safety office (DPS) and the MPOs. ODOT created a safety office/focus with a mandate to interact with the safety stakeholders.

New Mexico is creating a change in the safety culture. They are forging a new relationship with the MPOs and RPOs as well as the data acquisition function. The new structure has created a “feeling of belonging” among the regional planning agencies.

Rhode Island – The DOT safety engineer has recently established a relationship with the design engineers.

Barriers

Georgia – Most of the safety work is at the county and city level. The MPOs have not really been engaged.

Kansas – The Governor is focused on not “rocking the boat.” It is difficult to get her to publicly support safety issues.

Maryland – Safety is one of the Governor’s top five “pillars.” However, there is a fear that the health/welfare/, etc., program will take over the safety program.

Minnesota – SAFETEA-LU is disappointing in that it does not give us the flexibility we need with regard to how the funds are spent.

New Mexico – The problem is that no one in New Mexico is held responsible for the deaths and injuries. The Governor has appointed “Czars” in some program areas, e.g., Drug Czar and Alcohol Czar. They are not required to follow the chain of command which causes trouble when working with the legislature and others. All Public Information Officers work directly for the Governor which also sometimes presents coordination and messaging problems.
Ohio - The culture change within the DOT, together with a new Director and young professional staff has brought about “smooth sailing” with regard to the SHSP. The relationship between the GHSO and the DOT safety lead is very good; however, communication within the DPS between the GHSO and the Highway Patrol was impeded by the required chain of communication imposed by the agency’s culture.

Rhode Island - At present, no one has taken ownership for the SHSP. We need to have a conversation and determine who will lead. SAFETEA-LU could serve as a catalyst.

Opportunities

New Mexico is educating the district offices regarding the safety problems and statistics. This is a new program in New Mexico; safety has never been pushed to that level in the past.

Rhode Island is using SAFETEA-LU as a catalyst to start a conversation between highway safety and the DOT engineers.

Missouri is assisted by the appointment of a full-time safety specialist in one of its two large MPOs.

Institutionalizing Collaborative Relationships

Florida - The SHSP outlines each agency’s roles and responsibilities for safety. It encourages everyone to get involved.

Missouri has created an Executive Committee and is developing operating procedures, a foundation structure, and Regional Coalitions.

Michigan has had a Governor’s Traffic Safety Advisory Committee since the 1940s, which until 2000 represented only the relevant state agencies. They have since added local representatives. The Committee has taken responsibility for developing the SHSP and formed action teams around each of the emphasis areas.

Rhode Island – SAFETEA-LU may present an opportunity to codify the coalition but not necessarily under the Governor.

Improving Collaboration: What Will It Take?

Georgia – Sponsorship and resources for the MPOs. The ISMP has to be implemented in such a way that it will withstand any one person leaving.

Kansas – Get the Governor out in front on the issue; make it an election issue.

Maryland – A full-time MPO safety specialist to bring about the necessary change in the transportation planning culture.

Michigan – Start with an Executive Order from the Governor, hold an executive summit, and move forward. The discussion between the states and the Federal government needs to be more open and honest.
Institutional Needs in Safety Planning

**Minnesota** – Patience, persistence, hope, and political courage on the part of the elected officials, particularly the state legislature.

**Missouri** – Recognize the value of planning as an integral part of the DOT mission and the potential role for the MPOs. We need to talk to them on their turf and prove that this effort will provide “value added” to what they already do. We also need to take better advantage of the opportunities to educate the public, e.g., tragic accidents. Institutionalize the statewide coalition and increase the perception of its value among the State’s leaders. Develop best case examples and provide opportunities for interaction and involvement. Develop the coalitions as far away from the political process as possible. They have to be driven by what’s best for safety. (Note: Kansas agreed with this but others said you really have to have both, i.e., insulation from the political process and a role in the process!)

**Ohio** – The MPOs only have so much money; the DOTs need to help them. The coalition/advisory committee needs to be codified in a statute that forces the officials to meet.

**Best Practice Case Study Candidates**

**Georgia** – A person has been funded in southeastern Georgia to establish a coalition representing the “4 E’s.”

**Minnesota** – Self assessment process using the AASHTO guide. In the southeastern corner of the State a coalition representing the “4 E’s” has been formed to move programs toward the local level. It is in its infancy but they appear to be working well together.

**Michigan** – Study the institutional structure, e.g., the Governor’s Traffic Safety Advisory Committee and its long-term effect on safety.

**Missouri** – Ten regional coalitions have been formed and have developed SHSP implementation plans. MoDOT has provided $2 million to support implementation efforts. Examining the effect of hiring a full-time safety person in the MPO (MARC) might be worthwhile. Collaboration practices in the St. Louis MPO (EW Gateway).

**B.2 SHSP Peer Exchange**

**Introduction**

Section 148 of SAFETEA-LU requires all states to develop a Strategic Highway Safety Plan (SHSP). Many states already had developed a plan or were in the process of doing so when the Act was passed. To identify and discuss best practice for developing and implementing SHSPs, a national peer exchange was held in Phoenix (November 2005).
More than 300 people, representing 48 states and some of the U.S. territories, attended the two-day event. The discussions centered on a set of key emphasis areas, including leadership and management (e.g., How do you recruit the support of elected and appointed officials?); data elements and analysis strategies (e.g., What data are used to develop an SHSP, and how can you overcome insufficient or limited data?); planning and funding strategies (e.g., What are the major steps in the planning process, and what funds are available to develop and implement an SHSP?); and implementation and institutionalization strategies (e.g., What are the critical implementation steps, and how can you ensure an ongoing partnership when the plan is completed?).

The research team persuaded the conference organizers to support the inclusion of the survey instrument in the conference participant package. Nearly half of the participants completed the survey.

Results of Interest

Each jurisdiction was asked to send the state traffic and safety engineer, a transportation planner, and the governor’s representative for highway safety. The work of the conference took place through six breakout groups; therefore, representatives from law enforcement, MPOs, motor carriers, and emergency medical services also were represented, to the extent possible, in each of the breakout groups.

As Figure B.1 shows, the vast majority of the participants were either DOT traffic and safety divisions or highway safety offices; hence, the expected number of transportation planners was not achieved. In addition, the majority of participants work at the state level (Figure B.2). This is not surprising since the state DOT is assigned the lead for developing the plans. Analysis of the survey results must be careful to reflect the lack of balance among the participants.

Although 61 percent of the participants said they “meet regularly” with safety professionals, it must be remembered that at least 64 percent of the attendees fall into that category. Of those who reported regular meetings, 39 percent were DOT traffic and safety engineers and support staff and 32 percent are highway safety office personnel (Figure B.3).

When asked what strategies hold the most promise for fostering collaborative relationships, the collaborative development of goals and missions and forming task forces or advisory committees ranked higher than all others (Figure B.4).

The participants also were asked about barriers to collaborative planning and programming. Most reported time constraints as the largest factor. However, about half reported that having different organizational missions and, the closely related factor, a lack of understanding of one another’s procedures and processes were other problematic areas. Surprisingly, more than one-third reported that the agency directors simply lack sufficient interest to support multidisciplinary safety initiatives (Figure B.5).
Institutional Needs in Safety Planning

Figure B.1  Affiliation for Participant Job Function

- Crash Data Analyst, 11 (8%)
- Law Enforcement, 3 (2%)
- Highway Safety, 38 (26%)
- Transportation Planning, 14 (10%)
- MPO Planner, 3 (2%)
- Other,* 19 (13%)
- Traffic/Safety, 55 (38%)
- Law Enforcement (CMV), 1 (1%)

* Other included: EMS, design engineers, asset managers, researcher, vendor association, process facilitator, and safety advisory board member.

Figure B.2  Level Where Majority of Work Occurs

- State, 90 (70%)
- Federal, 20 (15%)
- Local/Regional/Rural, 7 (5%)
- Private, 1 (1%)
- Multiple, 11 (8%)
- No Response, 1 (1%)

Cambridge Systematics, Inc.
Figure B.3  Of Those Saying They Meet Regularly…

CMV, 1
1%

MPO, 2
2%

Planning, 3
3%

Crash Analysts, 8
8%

Law Enforcement, 3
3%

Traffic Safety, 42
39%

Highway/Safety, 34
32%

Other,* 13
12%

* Others include: identifying a champion, SCP forums, traffic safety visits to MPOs, SCP training, combining both safety and planning into one unit, executive committee, stakeholder involvement in plan development, educating partners about EMS.

Figure B.4  Percent of Participants Mentioning Each Strategy for Collaborative Planning and Programming

* Others include: identifying a champion, SCP forums, traffic safety visits to MPOs, SCP training, combining both safety and planning into one unit, executive committee, stakeholder involvement in plan development, educating partners about EMS.
Institutional Needs in Safety Planning

Figure B.5  Percent of Participants Mentioning Each Barrier to Successful Collaborative Planning and Programming

One question asked was, “If you were to give one piece of advice to your colleagues in transportation planning on how to develop a collaborative effort with transportation safety stakeholders, what would it be?” The answers were widely diverse, but communications skills, performance measurement, accountability, multiagency involvement, and having a knowledgeable, articulate, charismatic champion were mentioned often in one form or another.

The research team was particularly interested in the planners’ perspectives on how fully integrated safety is in their transportation planning processes. Only 20 people answered the question; however, as pointed out earlier, there were not very many planners in attendance (see Figure B.1). It also should be remembered that the planners who did attend already were associated with safety planning efforts within their organizational structures; therefore, it would be expected that these planners if any would be integrating safety data and concerns in their work. They answered as follows:

7  – Safety is fully integrated into every aspect of their planning;
10  – Safety is included in some elements; and
3  – Safety is something officials talk about but do not consider it substantively.
C. Case Studies

C.1 Candidate Case Studies

Research, interviews, and the conceptual framework guided the identification of several potential case study sites. Considerations focused on the potential to further understanding of why certain strategies are chosen and how they are implemented. Additional consideration was given to geographical diversity and the relationships among state, regional, local, and rural transportation planning agencies.

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<th>Northeast Region</th>
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<tr>
<td>States Considered</td>
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<td>Recommendations</td>
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<tr>
<td>Maryland</td>
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<td>New Jersey</td>
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<th>Southeast Region</th>
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<td>States Considered</td>
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<td>Recommendations</td>
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<tr>
<td>Alabama</td>
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<td>Louisiana</td>
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Institutional Needs in Safety Planning

Midwest Region

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<th>States Considered</th>
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<td>Recommendations</td>
<td>Iowa has an experienced, dedicated, and articulate “champion” leading the effort with a relatively large staff and external funding support; a safety management system supported by a memorandum of understanding among key state agencies; a successful relationship with the highway safety office resulting in many joint initiatives, exemplary data, analytic capabilities, and a history of data sharing; and a system for providing data, technical assistance, and training to regional, local, and rural agencies.</td>
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<td>Missouri has a full-time champion hired to implement the SHSP who has a good understanding of the national literature and research on best practice, etc.; used an outside, objective facilitator to bring the agencies together in the development of the SHSP; is implementing the SHSP through the DOT districts and troop commands, which are mandated to participate through performance reviews; funding and full political support from the DOT chief engineer; and at least an initial working relationship with the larger MPOs (e.g., MARC and East West Gateway Coordinating Council).</td>
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<td>Ohio presents a case study on DOT internal reorganization to heighten the focus on safety; close collaboration among the DOT safety office and the highway safety office; and a focus on providing data, technical assistance, and training to the MPOs and local planning and safety agencies, which build on the longstanding community traffic safety programs.</td>
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<td>Wisconsin provides an example of an almost fully integrated functional transportation agency; allows examination of the impact of reducing the size and support for the transportation planning function under state budget reductions; and has a history of providing guidance to the regional planning agencies on safety conscious planning.</td>
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Western Region

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<th>States Considered</th>
<th>Arizona, Nevada, New Mexico, Oregon, Washington</th>
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<td>Recommendations</td>
<td>Oregon has a strong safety program with many innovative strategies, especially regarding the organizational arrangement of safety within the DOT, the long-range plan, the STIP, and the HSIP; the state legislature has provided a one-time, large infusion of funding which provides an opportunity to see how safety is weighted among the competing priorities; and the safety leader reaches out to some unusual partners in developing priorities, e.g., elected officials, educators, etc.</td>
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<td>Washington has a codified MOU that mandates working together through regular meetings and information sharing among key state agencies; exemplary data collection and analysis capabilities; a comprehensive mission statement; implementation teams; and linkage to the planning process.</td>
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With assistance from the review panel, six states were selected: Iowa, Louisiana, Michigan, Missouri, Ohio, and Washington.

C.2 INTERVIEW QUESTIONS

The research team developed a series of interview templates to address the varying experiences and responsibilities of transportation planners, traffic and safety engineers, and highway safety practitioners – the most likely professionals to engage in collaborative safety planning, at least in the beginning. Generically, the questions focused on the follow concepts.
1. History of the agency’s experience with safety and transportation planning and safety champions;

2. The degree to which safety is a significant factor addressed in the goals, objectives, policies, and strategies in the long-range plan and whether and how safety benefits of a project are considered when programming the STIP;

3. Relationships among the transportation and safety communities, particularly the likelihood of data sharing;

4. How responsibility for the HSIP and the HSP is organized and delegated within an agency;

5. Communication and collaboration strategies;

6. History and background of implementing communication and collaboration strategies;

7. Barriers to successful collaboration;

8. Advice or guidance to state and metropolitan transportation agencies aimed at fostering collaborative efforts; and

9. Knowledge of other state efforts that could prove useful to the research report.

**C.3 CASE STUDIES**

**Iowa**

*History of Collaborative Safety Planning*

While safety has always been a consideration in transportation planning at the Iowa DOT, it was typically handled in policy statements, such as “safety is a top priority for future transportation investments.” In recent years additional effort has been placed in taking safety to another level in the planning process by providing safety data and information to all levels of transportation planning in Iowa to more fully integrate safety into the planning process.

Safety Management Systems (SMS) were required under ISTEA, but the requirement was discontinued under TEA-21. However, Iowa continued its SMS program beyond the Federally required period, maintaining a dedicated staff person to manage coordination of stakeholders and traffic safety programs. This function has played a central role in keeping safety stakeholders involved. Stakeholders include representatives from a full range of planning, medical, engineering, education, and advocacy organizations. This group developed an extensive SMS Toolbox of Highway Safety Strategies[^4] published in 2001 that

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contains a full range of safety countermeasures. The SMS team has been involved in the development of the Strategic Highway Safety Plan (SHSP), and the range of stakeholders has been broadened even further through that process.

A key partner in the process is the Governor’s Traffic Safety Bureau. GTSB develops programs primarily related to behavioral issues, e.g., occupant protection and impaired driving. GTSB is often required to be more flexible than the Department in that they are not developing and managing five-year infrastructure programs as the DOT does but rather they are required to respond to more immediate issues such as road rage and high-profile crashes covered by the media. GTSB creates multidisciplinary, multiagency campaigns in response to immediate issues.

The safety champion in the State is clearly Tom Welch, the state traffic safety engineer, who is known as a national expert on traffic safety. However, the Commissioner of Public Safety also has shown strong leadership, such as in 2005 when his department spearheaded a legislative initiative to improve the safety of novice drivers by proposing legislation to modify the graduated drivers license (GDL).

Safety and Transportation Plan Development

While historically safety was included in the vision statement of long-range plans, safety did not drive investment policy. The State is moving to place greater emphasis on safety in future long-range plans. The DOT’s Office of Systems Planning currently is updating the long-range plan and has identified safety as one of three goals. The other two goals of this policy-level plan are quality of life and efficiency. The Office of Traffic and Safety has limited involvement in the development of the long-range plan, but attends team meetings in the initial development phases.

The State is addressing safety in the planning process by providing data and tools to state, regional, metropolitan, and local planning agencies so safety issues/areas can be defined and integrated into the planning/programming and project development process. Iowa has nine MPOs and 18 Regional Planning Affiliations (RPA). RPAs serve the same role as MPOs except they cover the non-metropolitan areas in Iowa. Each of these organizations is required to develop a Transportation Improvement Program (TIP) that includes all Federal-aid projects programmed at their level along with DOT projects in their areas. Some of the projects may be safety projects that are funded by the Office of Traffic and Safety through one of its local support programs. All 27 TIPS are combined to create the State Transportation Improvement Program (STIP) for Iowa. The safety benefit of a project is considered by a small number of agencies in Iowa. It is up to the agency to determine its project prioritization process, and each process is unique. OTS and GTSB are not involved in development of the STIP.

Iowa’s Highway Safety Improvement Program (HSIP) is developed using statewide data, and projects are selected centrally by the DOT based on need, instead
Institutional Needs in Safety Planning

of distributing funding evenly to all jurisdictions. All planners across the State are allowed to suggest projects for the Highway Safety Improvement Program (HSIP). Systems Planning involvement has been the identification of funds for the HSIP via long-range plan development. The DOT Systems Planning manager is an office director, who is at the level of the director of the DOT Office of Traffic and Safety. The Office of Traffic and Safety houses the nine-person Traffic Safety section and the Traffic Engineering section.

OTS does not participate directly in development of the Highway Safety Plan (HSP) developed by GTSB. Indirectly, OTS contributes by sharing data and raising the safety issues of greatest importance on an ongoing basis. Additionally, OTS contributes knowledge to the corridor investment strategy developed in the HSP. The primary contact on safety initiatives for DOT Systems Planning is OTS, and OTS serves as Systems Planning’s connection to GTSB.

Safety Community Involvement

The initiation of the State’s update of its long-range plan can be traced to the Safety Conscious Planning Forum held in January 2003, which was initiated by OTS and attended by a full range of stakeholders. The Forum was designed to encourage planners to use safety data. OTS communicates with planners on changes in safety investment philosophy such as the switch from investment in intersections to systemwide low-cost safety improvements and asks for their input. Systems Planning reaches out to RPAs and MPOs through quarterly meetings at which transportation directors, including OTS, are invited to attend and participate.

While good quality crash data has been available in Iowa for a number of years, local engineering offices often do not have the technology or expertise to conduct analyses. To facilitate local access to data, the Traffic Data Service Center was developed at the Center for Transportation Research and Education (CTRE) at Iowa State University. This analysis service, funded through a partnership between GTSB and OTS enables localities to make free crash data requests and facilitates local safety. CTRE has been a key partner with all state agencies, providing traffic safety data and maps and conducting ongoing research for DOT and GTSB for safety analysis and planning.

OTS also provides data analysis tools on CD and free on-site training for local jurisdictions. The most sophisticated analysis tool, Safety Analysis Visualization and Exploration Resource (SAVER), is used primarily by the DOT, but a few local jurisdictions work with it as well. A second tool, Crash Mapping Analysis Tool (CMAT), is more simplified and more widely used. The DOT also provides a statewide software license for analysis of intersections and development of collision diagrams. Planners, law enforcement, and engineers are invited to attend training on the tools, which has the added benefit of facilitating cross-agency discussion and collaboration.
GTSB works with DOT on development of programs, such as the Safety Circuit rider, a former district engineer who provides training in the field, and the Traffic Engineering Assistance Program (TEAP) for local engineers. TEAP was developed to provide safety engineering support to jurisdictions without an engineer on staff. The program funds an on-call consultant with traffic and safety expertise to conduct local safety studies. The program is helpful for jurisdictions with limited resources that might have hired a general civil engineer without safety expertise. The program emphasis is on developing customized, low-cost solutions that can be implemented. The program is funded at a level of $200,000 with funding split between GTSB and DOT. Each project is limited to 100 hours of consultant time.

In Iowa, the five largest metropolitan areas (Davenport, Dubuque, Des Moines, Council Bluffs, and Sioux City) have multidisciplinary safety teams, which were established in the mid 1990s. The genesis of these teams was identification of the need to provide information to officers on alternative routes in their regions, e.g., when a major thoroughfare is blocked by an incident. GTSB provided funding to produce materials so that all safety staff in the region had information on the same alternative routes. These teams include members from all stakeholder groups, with a high level of participation by enforcement. Project funding requests for GTSB are sometimes generated by these teams. GTSB works closely with the enforcement community and holds an annual, state-level enforcement forum at the state level.

Communications Strategies

OTS manages a listserv of safety professionals initiated in 2002. Via the listserv cities can post traffic safety questions and OTS can conduct surveys of what safety projects are in place. The listserv was developed to facilitate communications in rural areas of Iowa where safety suffers because of geographic isolation.

Memorandums of understanding and other types of agreements are not generally used in Iowa. Collaboration is more informal. However one example of such a document was for the SMS Toolbox project, which included a “Statement of Commitment to Highway Safety,” signed by state leadership, including:

- Governor;
- Lieutenant Governor;
- Director, Iowa DOT;
- Commissioner, Iowa DPS;
- Director, Iowa Department of Education;
- Director, Iowa Department of Public Health;
- Executive Director, Iowa Department of Elder Affairs;
- Attorney General, Iowa Department of Justice;
• Administrator, Iowa Division, FHWA;
• State Director, Iowa Division, FMCSA; and
• Regional Administrator, NHTSA.

The SMS group has maintained a standing monthly meeting since development of the SMS Toolbox, although there are exceptions. Following intense work to complete the Toolbox, activity diminished. However, this group has been re-energized and its membership augmented through work on the Strategic Highway Safety Plan (SHSP).

Designated staff liaisons are an important part of maintaining communications on transportation safety across departments. GTSB has a designated staff liaison that interacts with DOT and the Department of Motor Vehicles, and OTS’s designated staff liaison is the SMS program manager.

While GTSB and DOT are located about 35 miles apart in different cities, staff from GTSB regularly works out of DOT’s office. GTSB and DOT have common goals and objectives, although they have not formally created a common mission statement other than through the SHSP.

**Barriers to Collaboration**

Inter-organizational barriers to collaboration can exist. Iowa DOT, which houses the planning function and OTS, is separate from DPS, which houses GTSB. Organizational hierarchies are not an issue in Iowa, although sometimes organizations require staff to follow the chain of command, which can lead to diminished communication.

Different organizational missions have been a problem in Iowa in the past. Previous DOT Directors and Transportation Commissions instituted a program to build and expand roads for economic development which resulted in safety receiving less consideration for investment decisions than it does now. Lack of time to interact among agencies is viewed as a legitimate difficulty by some, in the era of reduced budgets and staffing. However, according to other partners, lack of time is viewed as an excuse to avoid a commitment. Safety terminology is not viewed as a barrier: “Blood is blood.” There is no lack of interest in safety in Iowa.

Iowa has a number of forums where the safety community can interact, including the SMS group and a Traffic Safety Engineering Forum, a peer exchange to expose engineers to traffic safety issues has been conducted annually since 1995.

**Best Practices**

Dedicated funding and staff are critical to effective safety programming. DOT staff has observed that when safety is housed in the traffic engineering department, staff work is dominated by signs, signals, and pavement markings, and it
is difficult to make safety a priority. Therefore the separate Transportation Safety section within the DOT’s Office of Traffic and Safety is critical.

The safety effort requires a dedicated “champion” that is committed to the effort and has the support of management. A benefit of housing safety initiatives in two locations, DOT and DPS, is that two leaders, the director and commissioner, have the opportunity to bring the message about safety to state leadership.

Additionally, Iowa traffic safety leaders note that barriers need to be removed so that safety can be incorporated into the planning process. For example, MPOs and RPAs need safety data to incorporate safety into their plans. Therefore, OTS provides GIS plots of crashes to MPOs and RPAs because most of them lack safety data.

Other advice is to “greet, meet, and eat.” By getting together in person, good ideas are generated and the departments keep up to date on various projects. In Iowa, FHWA, DOT, and GTSB meet informally for lunch several times per year.

**Strategies for Conveying Guidance**

The AASHTO annual meetings of chief engineers and regional AASHTO meetings are viable forums for communicating this type of information. Another approach is to for the FHWA Division Administrator to share the guidance with the DOTs chief engineer in their monthly meeting; then arrangements can be made for mentoring and training. The guidance also should be prepared for presentation on appropriate web sites.

**Louisiana**

**History of Collaborative Safety Planning**

Prior to 1996, there was little in the way of formal partnership between the Louisiana Highway Safety Commission (LHSC) and the Louisiana Department of Transportation and Development (DOTD). Partnerships with Federal agencies were limited as well. In 1996, new leadership was installed at LHSC. And subsequently a new highway safety engineer was hired by DOTD, who was previously employed by the LHSC. Building on a strong working relationship between these two individuals, they implemented a Memoranda of Understanding, held a Highway Safety Summit, and prepared briefings for higher officials on the importance of collaboration. Over time, turf barriers were broken down and collaboration increased.

In 1998, the DOTD established four categories for its budget:

1. System preservation;
2. Capacity;
3. Highway Safety; and
Highway Safety was given a separate budget category for the first time. Prior to this change only $3 million in hazard mitigation funds were set aside; however, with the establishment of a separate budget category $30 million became available for safety projects. The DOTD Secretary during this time period provided support for collaborative efforts between the LHSC and DOTD, including the development of broader solutions that address both engineering and behavioral components. Outreach efforts became more effective with a combined front. For example, the agencies were able to meet with newspaper editorial boards to help highlight the relationship between alcohol and fatal crashes. Analysis of crash data and dissemination of the results in a timely fashion also has been part of this strategy and has helped all parties work together more effectively. The subsequent DOTD Secretary has continued to extend cooperation by enabling input from a wide range of stakeholders on the expenditure of safety funds.

Safety and Transportation Plan Development

The process for incorporating safety into the plan development process is well-defined and documented in Figure C.1. One of the key elements in the process is input from the State’s Safety Management System, which is comprised of a series of multiagency, multidisciplinary committees. Input is provided to a seven-person team of DOTD headquarters personnel and one representative each from the LHSC and the State Police. The seven-person team receives input from a wide range of partners, including the District Administrators on project selection.

Locations showing abnormal crash patterns are provided to the nine District traffic engineers who undertake detailed studies of top locations. The Districts then forward their priority locations to the highway Safety Section for potential programming by the seven-member Safety Selection Team.

Additionally, District engineers may recommend projects based on their knowledge of specific locations, even if those locations do not show abnormal crash patterns. The State Police also play an active role in identifying problem locations, based on their knowledge of locations where crash statistics may not be abnormal, but where crashes tend to be more severe. For relatively minor improvements such as signing and striping, the project is implemented entirely within the District. For those projects requiring construction and right-of-way acquisition, the project is submitted to the Highway Safety Selection Team. The Team has the final say on how to allocate funding among different programs, including highway safety improvements and so-called “soft-side” programs related to education, outreach, and enforcement.
Once the amount of funding allocated to highway safety improvements is determined, projects are evaluated and ranked using a set of defined criteria, including:

- Highway Safety Engineer
- Highway Needs Engineer
- State Traffic Engineer
- Road Design Engineer
- Road Maintenance Engineer
- State Police Representative

Note: All information confidential per 23USC409.
• Total crash rate;
• Total crash frequency;
• Injury/fatal crash rate;
• Injury/fatal crash frequency;
• Commercial vehicle crash rate;
• Commercial vehicle crash frequency;
• Pedestrian/bicycle crash frequency; and
• Tort claim frequency.

With the exception of hazardous material incidents and tort claims, crash rates and frequencies are evaluated for roadway sections, intersections, and spot locations. Physical characteristics of the roadway and/or intersection also are taken into account. Depending on the project cost and physical scope, the steps to implementation may include feasibility studies, cost estimates, environmental review, design, and construction.

Eight performance indicators have been defined to judge the success of the highway safety program. These map closely to project selection criteria identified above and include:

• Lives saved per year;
• Injuries reduced per year;
• Fatal crashes eliminated per year;
• Injury crashes eliminated per year;
• Property damage only (PDO) crashes eliminated per year; and
• Commercial vehicle crashes eliminated per year.

The Safe Community Program is used to help Metropolitan Planning Organizations (MPO) and Regional Planning Commissions incorporate transportation safety projects into their plans. Most funds are used to implement local road safety projects, but funds also can be used to support committee and coordination activity and educational programs. The following case study documenting program activities in South Central Louisiana was included in “Partnering with State Highway Offices,” a best practices report, prepared by the Governor’s Highway Safety Association.5

Highway safety is a priority in the statewide transportation plan. A stated goal is to improve safety in all transportation modes. Projects in the statewide plan are categorized by mode. The statewide transportation plan includes projects

selected through a defined planning process (modal advisory councils, public involvement, etc.) and is based on specific funding scenarios.

The highway safety program is funded primarily through Federal sources with state gas tax revenues used as the match. Also, additional funds are received by DOTD as a result of Sections 154 and 164. These funds are transferred to the LHSC as part of the NHTSA 402 program, and then shifted back to the DOTD Highway Safety Program where they are used for hazard elimination projects. Since these funds require no match, they reduce the pressure on the very tight state budget. Roughly $15 to $16 million in transfer funds is preserved through this cooperative agreement.

Safety Community Involvement

Members of the broader safety community are involved as extended partners. DOTD and LHSC have an excellent working relationship with their partners. A Traffic Safety Summit was held in 2003 to formalize the partnership and a number of agencies signed a charter, including DOTD, FHWA, LHSC, FMCSA, the regional NHTSA office, and the State Police. A goal was agreed upon to reduce fatalities to 1.0 per 100 million vehicle miles traveled (MVMT).

This goal was later revised to 1.54 fatalities per 100 MVMT during the preparation of the Louisiana Strategic Highway Safety Plan. Additionally, a Memorandum of Understanding was prepared between the LHSC and DOTD to identify how the Safety Transfer funds would be utilized.

A strong and positive relationship has developed between DOTD and the enforcement agencies with crash data serving as a focal point. Crash data also have been important in building relationships with local law enforcement. The DOTD Highway Safety Section is responsible for crash records, with Louisiana State University serving as a subcontractor. LSU has developed a system that permits crash data to be transferred electronically from either laptops in patrol vehicles or from local police stations. A relatively sophisticated set of access protocols have been implemented to make sure the data are made available only to those with the proper credentials. Agencies utilizing this system are able to expedite the time it takes to process crash reports and thereby drastically improve the timeliness of data for all involved.

DOTD serves as the central repository for all crash records. Information on abnormal crash locations is provided on a statewide basis to the State Police and helps them target enforcement efforts more effectively. Information also is provided in response to special requests. Aggregate reports are available to the public on the LSU web site, http://lhsc.lsu.edu/default.asp. A sample report is shown in Table C.1. Customized queries also can be developed that narrow the data down to the Parish level and enable users to select different types of roadway facilities and crashes.
### Table C.1  Safety Belt Use

<table>
<thead>
<tr>
<th>Year</th>
<th>Child Restraint Usage Under Age 5</th>
<th>Safety Belt Usage 5 and Older</th>
<th>Children (Below 5) Killed Not Properly in Child Seat</th>
<th>Drivers Killed Not Wearing Safety Belt</th>
<th>Passengers, Ages 5 and Older, Killed Not Wearing Safety Belt</th>
<th>All Occupants Killed Not Wearing Safety Belt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>82%</td>
<td>59%</td>
<td>70%</td>
<td>51%</td>
<td>58%</td>
<td>56%</td>
</tr>
<tr>
<td>1997</td>
<td>82%</td>
<td>64%</td>
<td>77%</td>
<td>53%</td>
<td>58%</td>
<td>54%</td>
</tr>
<tr>
<td>1998</td>
<td>81%</td>
<td>66%</td>
<td>67%</td>
<td>56%</td>
<td>53%</td>
<td>55%</td>
</tr>
<tr>
<td>1999</td>
<td>85%</td>
<td>68%</td>
<td>100%</td>
<td>63%</td>
<td>65%</td>
<td>64%</td>
</tr>
<tr>
<td>2000</td>
<td>85%</td>
<td>68%</td>
<td>59%</td>
<td>59%</td>
<td>64%</td>
<td>61%</td>
</tr>
<tr>
<td>2001</td>
<td>85%</td>
<td>68%</td>
<td>43%</td>
<td>64%</td>
<td>77%</td>
<td>66%</td>
</tr>
<tr>
<td>2002</td>
<td>88%</td>
<td>69%</td>
<td>42%</td>
<td>64%</td>
<td>69%</td>
<td>65%</td>
</tr>
<tr>
<td>2003</td>
<td>89%</td>
<td>74%</td>
<td>38%</td>
<td>64%</td>
<td>71%</td>
<td>65%</td>
</tr>
<tr>
<td>2004</td>
<td>86%</td>
<td>75%</td>
<td>64%</td>
<td>59%</td>
<td>69%</td>
<td>62%</td>
</tr>
<tr>
<td>2005</td>
<td>N/A</td>
<td>N/A</td>
<td>42%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>2006</td>
<td>N/A</td>
<td>N/A</td>
<td>27%</td>
<td>60%</td>
<td>62%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Difference**

<table>
<thead>
<tr>
<th>Difference</th>
<th>1 Year</th>
<th>N/A</th>
<th>N/A</th>
<th>-14%</th>
<th>-0%</th>
<th>3%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Year</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-16%</td>
<td>-4%</td>
<td>-15%</td>
<td>-6%</td>
</tr>
<tr>
<td>Average</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-19%</td>
<td>-2%</td>
<td>-7%</td>
<td>-3%</td>
</tr>
</tbody>
</table>

The values for 2006 are calculated by taking an estimate based on the last 12 months of reporting from Friday, July 1, 2005 to Friday, June 30, 2006. These are not the actual numbers for 2006.

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**Communications Strategies**

Regional committees include a wide range of safety partners, (e.g., Federal, state, and local agencies, as well as private nonprofit groups). These committees have become a key forum for exchange of information and ideas. Crash data provided through the LSU aggregate reports are an effective communication tool, and are used by local agencies and safety groups to help focus their efforts and increase the public understanding of the magnitude of the problem. Local agencies that realize the benefits of good data are able to understand their role in improving data quality. Briefings to local municipal and Parish agencies also are effective.

DOTD has become increasingly involved in education and outreach programs with a wide range of safety partners and have participated in highway safety campaigns. One example is the Tailgator program, originally developed by a local State Police Troop and includes elements of both education and enforcement. The program was taken statewide through a partnership of DOTD, LHSC, State Police, Universities, and Federal partners. It reaches motorists through college football tailgate parties and utilizes media campaigns, to inform them of the dangers of tailgating. The program logo is shown below.
Institutional Needs in Safety Planning

The mascot shown here, for the “Don’t Be a Tailgator” campaign is an alligator dressed in the uniform of a Louisiana State Trooper. Source: http://www.tfhrc.gov/trnsptr/feb03/index.htm#la.

The Strategic Highway Safety Plan effectively summarizes the activities that have provided improved coordination and support for safety-related plan development. Four areas were noted:

1. **Data Improvements** – Louisiana has dramatically improved the timeliness and quality of the crash data and has instituted an on-line query system for accessing and analyzing the data.

2. **Partnerships** – An exemplary working relationship has been established among DOTD, LHSC, LSP, and FHWA. Other partners became involved as the process moved forward.

3. **Champions** – Dedicated champions are in place to move the plan through to completion and to shepherd its implementation and evaluation.

4. **Current Level of Effort** – Numerous safety programs and projects have been implemented and continued. The apparent need is to develop a structure for coordinating efforts to leverage additional resources and ensure safety programs are collaboratively addressing identified and documented safety problems. (Source: Louisiana State Highway Safety Plan, prepared for LA DOTD by Cambridge Systematics, September 2006.)

**Barriers to Collaboration**

Turf issues which are generally a major barrier to collaboration, have been largely overcome in Louisiana. The key ingredients are top leadership commitment and the existence of champions in each agency. While many safety partners have been successfully brought to the table, there are others who are still not fully involved. It has been difficult, for example, to involve emergency medical services and the Office of Motor Vehicles. EMS has recently been more involved and attended the Highway Safety Summits. The relationship between the DOTD and the LHSC provides a good example of how personal relationships are critical in developing and sustaining collaboration. However, turf issues are always a potential barrier; and everyone needs to be aware of them even when cooperation is going well.

**Best Practices**

- DOTD, LHSC, and LSP have established a model for collaboration, including the sharing of safety funds. This has enabled the State to stretch scarce dollars and develop solutions that incorporate both engineering and behavioral components.

- Transportation and safety agencies have partnered with LSU to make crash data more readily available and understandable to a wide range of safety partners. Clear reports on crash rates and the causes of crashes have focused
the discussion among safety partners and enabled Louisiana to establish effective educational and enforcement programs. Alcohol-related crashes for example, have declined from 55 percent of all fatal crashes 10 years ago to 42 percent today.

- Louisiana has used both funding and crash data to help establish strong local safety committees. This has led to the development of solutions tailored to local needs, and has helped generate local solutions.

Strategies for Conveying Guidance

The primary methods used to disseminate information include:

- Annual Safety Summits;
- Person to person contract through telephone calls; participation in peer exchanges, etc.;
- Circulation of electronic material;
- Printed material;
- CDs and material downloaded from web sites;
- Conference presentations; and
- Distribution of NCHRP research on incorporating safety into the transportation planning process.

Michigan

History of Collaborative Safety Planning

Michigan has been one of the most engaged states in road safety planning at all levels of government. Not only has Michigan DOT included safety factors in its plan and program development efforts for many years, but it also has sponsored forums at the regional and local levels to engage officials at all levels of governance in safety planning. Michigan DOT was also one of the few states that retained the management systems requirement from the Intermodal Surface Transportation Equity Act (ISTEA) of 1991 even though the requirement was lifted in 1995. The safety management system (SMS) has evolved to a level where it is considered one of the best in the country.

Michigan’s first major statewide institutional focus on safety occurred in 1944 when the legislature created the Michigan State Safety Commission (MSSC), comprised of representatives from the departments of Community Health, Education, State Police, State, and Transportation. The Commission’s mandate was to foster interagency cooperation to reduce road crashes, injuries, and deaths. The MSSC was the primary focal point for safety planning until 1995 when MDOT developed the Michigan Traffic Safety Management System (MTSMS) in response to ISTEA requirements. The goal of this effort was also to reduce traffic crashes, deaths, and injuries.
By the early 2000s, it became apparent to Michigan officials that with both the MSSC and the MTMS in place, the State did not have a clear focus on traffic safety goals. As a result, the Governor’s Traffic Safety Advisory Commission (GTSAC) was established in May 2002 to provide leadership in the identification of state and local traffic safety issues and promote recommended strategies to address them. The GTSAC consists of the Governor (or a designee), the Directors (or their designated representatives) of the Departments of Community Health, Education, State, State Police, and Transportation, the Governor’s Office of Highway Safety Planning (the designated Governor’s Representative for Highway Safety), the Office of Services to the Aging and three representatives from county, city and township governments. Two of the three local representatives represent police departments. The collaborative characteristics of safety planning in Michigan now occur primarily through the GTSAC, although as noted by Michigan officials, the many informal interactions that happen among the involved agencies really serve as the foundation for an effective process.

The development of the Strategic Highway Safety Plan (SHSP) is a good example of how the collaborative nature of safety planning in Michigan occurs. A state traffic safety forum (cosponsored by the relevant state agencies) was held to identify the context, format, and substance for the State’s SHSP. A Safety Action Team was created as a result of this forum whose purpose was to develop implementation plans for the action items in developing the SHSP. The Safety Action Team also recommended that the GTSAC be the group to oversee and monitor progress on the action items. Some of the action steps included:

- Provide information and education for road authorities regarding low-cost/high-benefit safety improvements;
- Expand/enhance partnerships of all transportation stakeholders to find ways to utilize technology to reduce crashes;
- Continue education for drivers and nondrivers beyond initial license requirements and increase enforcement; and
- Define and improve data collection.

The SHSP itself focuses on the collaborative aspects of safety efforts by stating a mission that emphasizes collaboration, and promotes a vision and a goal that supports the mission. The mission, vision, and goal statement from the SHSP are as follows:

**Mission** – Provide leadership to improve traffic safety by fostering communication, coordination, and collaboration among government and other public and private entities in Michigan.

**Vision** – All roadway users arrive safely at their destinations.

**Goal** – 1.0 fatalities per 100 MVMT by 2008, which amounts to a 10.4 percent reduction (1,283 to 1,150) in fatalities and also a reduction in serious injuries (9,531 to 8,540).
In summary, safety planning has been occurring in Michigan for a long time, with a strong institutional foundation for promoting the statewide approach that is found today in the State. The interaction among the transportation, safety, enforcement and other stakeholder groups as it relates to safety planning appears strong and effective in producing a safety program that reflects a stable and supportive collaborative process.

**Safety and Transportation Plan Development**

The Michigan statewide transportation plan is in the process of being updated. As part of the update process, MDOT held numerous outreach meetings and forums to solicit input into the vision, goals, objectives, and strategies that should be considered by the State. One of the nine goals that resulted from this effort related to safety and security. Table C.2 shows how this goal is being defined in the newest update of the statewide transportation plan.

### Table C.2 MDOT’s Transportation Safety and Security Goal

<table>
<thead>
<tr>
<th>Objective Category</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration</td>
<td>Reduce fatality, injury, and crash/incident rates on all modes.</td>
</tr>
<tr>
<td></td>
<td>Reduce the vulnerability of transportation facilities and its users to terrorist attacks, natural disasters, and other risks.</td>
</tr>
<tr>
<td>Economic Benefit</td>
<td>Reduce economic losses due to transportation crashes and incidents.</td>
</tr>
<tr>
<td></td>
<td>Manage risks and responsiveness to ensure transportation system and border crossing continuity for passengers and freight.</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>Provide a safe environment to transportation users through engineering, enforcement, and education activities</td>
</tr>
</tbody>
</table>

The development of the transportation investment program that reflects the priorities established in the statewide plan is probably the best indicator of how MDOT decides on project emphasis areas. The overall budgets for program areas are determined through the use of an “investment template” that directs the needs assessment for investment over a specific time period. Thus, for example, the investment template for safety projects is targeting the 1.0 fatality per 100 MVMT goal established as part of the SHSP process. Other examples that relate to safety include a traffic signal goal of modernizing signals every 10 years, a sign goal of replacing signs every 15 years, and a pavement striping goal of re-striping 85 percent of the state road network every year.

The investment templates establish a budget allocation for different program categories. Table C.3, for example, shows the FY 2009 funding target for MDOT’s regional offices. The funding target represents the total budget for preliminary engineering, right-of-way, and construction expenditures. As shown, these funds were allocated based on the percentage of high-crash locations in the respective regions.
Table C.3 Allocation of Safety Budgets to MDOT Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage of High-Crash Locations</th>
<th>FY 2009 Safety Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior</td>
<td>5.04%</td>
<td>$790 thousand</td>
</tr>
<tr>
<td>North</td>
<td>9.35%</td>
<td>$1.46 million</td>
</tr>
<tr>
<td>Grand</td>
<td>14.88%</td>
<td>$2.32 million</td>
</tr>
<tr>
<td>Bay</td>
<td>8.24%</td>
<td>$1.29 million</td>
</tr>
<tr>
<td>Southwest</td>
<td>10.58%</td>
<td>$1.65 million</td>
</tr>
<tr>
<td>University</td>
<td>14.64%</td>
<td>$2.28 million</td>
</tr>
<tr>
<td>Metro</td>
<td>37.27%</td>
<td>$5.81 million</td>
</tr>
<tr>
<td>Discretionary</td>
<td></td>
<td>$2.00 million</td>
</tr>
<tr>
<td>SWA</td>
<td></td>
<td>$1.40 million</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>$19.00 million</strong></td>
</tr>
</tbody>
</table>

Once a budget has been established, MDOT then issues a “call for projects.” The final project list results in adding the fifth year to the State’s five-year improvement program. In safety, for example, the FY 2011 call for projects directed MDOT regional offices to focus on locations where safety improvements (such as adding a center left turn lane, right turn lane, geometric improvements to accommodate signalization, median protection, etc.) can be made in FY 2009. These locations are to be identified through the current high-crash location list, 3R/4R safety reviews, customer concerns, and pavement friction analyses. To qualify for safety funding, submitted projects must meet a Time-of-Return (TOR) of 10 years or less.

This process has been effective at targeting MDOT resources on high-crash locations. Figure C.2 shows Michigan’s safety record over the past five years. Although the reduction in crash rates can be attributed to many different strategies applied by different agencies, the record is an impressive one. MDOT was awarded the American Association of State Highway Transportation Officials’ (AASHTO) 2005 Safety Leadership Award for “Driving Down Fatalities.” To continue its safety efforts, MDOT will spend approximately $60 million annually on its safety program (approximately 5 percent of its overall budget and an increase of 47 percent since 1996), with special emphasis on:

- Improving driver guidance;
- Warning motorists who leave the roadway;
- Providing minimal consequences of leaving the roadway;
- Improving safety at identified locations; and
- Applying uniform applications and replacement of traffic control devices for efficient and safe operations.
In addition, MDOT has identified five safety focus areas within its overall planning efforts, including senior mobility, pedestrians, traffic operations, roadway delineation, and the safety improvement program.

**Figure C.2  Michigan’s Safety Record**

*2000-2004*

Fatality Rate per 100 Million VMT

![Fatality Rate Graph]

**Safety Community Involvement**

As noted earlier, the Governor’s Traffic Safety Advisory Commission consists of representatives from relevant state and local agencies concerned with road safety, thus a broader organizational perspective is incorporated into high-level discussions on future safety strategies and policies for the State. However, the safety effort in Michigan also consciously attempts to incorporate a wide range of safety interests into planning and program development efforts. For example, the Transportation Summit Safety Action Team recommended that a comprehensive highway safety working group be created to develop the State’s strategic highway safety plan. This working group consisted of:

- AAA Michigan;
- Federal Highway Administration (FHWA);
- Federal Motor Carrier Safety Administration (FMCSA);
- Michigan Center for Truck Safety;
- Michigan Department of Community Health (MDCH);
- Michigan Department of Information Technology (MDIT);
Institutional Needs in Safety Planning

- Michigan Department of State (MDOS);
- Michigan Department of State Police (MSP);
- Michigan Department of Transportation (MDOT);
- Michigan Sheriffs Association (MSA);
- Mothers Against Drunk Driving (MADD);
- Office of Highway Safety Planning (OHSP);
- Office of Services to the Aging;
- Road Commission of Macomb County; and
- Southeast Michigan Council of Governments (SEMCOG).

Communications Strategies

The GTSAC provides a formal means of communication among the various safety stakeholders in the State, and has established a list serve to provide a systematic method for exchanging information among the participants, and OHSP and MDOT continually encourage local governments to become more involved in safety planning. Safety forums are held in each of the State’s MPO regions; a statewide transportation summit is held each year in which safety is one of the key issues discussed; Wayne State University provides crash data analysis that allows local officials to see where the key problems are and what types of low-cost strategies might be feasible; and MDOT provides engineering support for local governments unable to afford their own staff to design safety improvements.

MDOT officials noted that there are no memoranda of understanding or protocols adopted among the safety stakeholders. They feel that given the role of the GTSAC, and its ability to get participants to “buy-into” the State’s safety strategy, such formal mechanisms are not necessary. They did point out, however, that a lot of informal interaction occurs, especially between MDOT and OHSP officials, and this more than anything else assures success of the State’s safety efforts.

Barriers to Collaboration

Michigan officials believe that most of the institutional barriers that characterize other states’ planning efforts have been addressed in Michigan. For example, they noted that the State has really evolved from an “engineering” mentality in safety program development to one more based on a planning perspective. However, they did identify those barriers that they thought were most important in Michigan’s evolution, as well as those faced by states not as far along. The four most important barriers were: 1) lack of a safety champion in the organization; 2) failure to mainstream safety into the standard procedures of the organization; 3) insufficient data to foster a collective understanding of the safety challenges facing a jurisdiction; and 4) incompatible funding sources. In this latter case, state officials face the issue of most local officials wanting to use state
highway dollars to expand network capacity, instead of for preservation or safety needs. This is in part an issue of perception of what benefits will accrue for the dollars expended, as well as an artifact of the program category nature of how funding is provided for transportation investment.

Institutionally, MDOT and OSHP officials believe that very few barriers exist between the two agencies. This has been particularly true in the recent development of the Strategic Highway Safety Plan. The role of the Governor’s Traffic Safety Advisory Commission and the strong safety advocacy of high-level managers in MDOT have fostered collaborative efforts among the safety stakeholders in the State.

**Best Practices**

The Michigan case study illustrates several characteristics of effective collaboration among safety stakeholders.

- The existence of an overall policy-making/policy-directing commission has provided an important institutional focal point for exchanging information and for participating in the process of formulating statewide strategies.

- MDOT and OHSP use regional and local forums extensively to reach out to local governments and to incorporate them into the State’s safety planning effort. MDOT officials felt these forums were critical for fostering a safety consciousness among different levels of government.

- Michigan officials noted that the Wayne State University efforts at analyzing the crash data prior to having a forum in a particular jurisdiction have allowed the “data to talk.” In other words, local officials get a much better sense of the magnitude and scope of the safety problems facing their communities.

- The adoption of the 1 fatality per 100 MVMT target has provided a common target for all the agencies involved with safety in Michigan. Everyone understands what the State is aiming for, and this goal has been incorporated into MDOT’s investment prioritization scheme.

- The existence of a statewide safety management system has been instrumental in laying the analysis foundation at the state level for developing comprehensive and targeted safety investments.

- Although formal institutional mechanisms do exist to foster effective communication channels, the overall success of Michigan’s safety program relies on a lot of informal interactions. One of the strategies for enhancing collaboration could be providing more structured opportunities for informal interactions.
Strategies for Conveying Guidance

According to Michigan officials, the most important factor in effective communications is to reach the “grass roots” support, which means local officials and the enforcement community. Thus, although a written report or web site would be a useful means for conveying guidance on collaboration strategies, the information needs to be readily available and conveyed to local officials and safety advocates that on a day-to-day basis work to improve the safety record of their communities. In Michigan, this means that materials and presentations should be available for dissemination in the regional safety forums.

Those interviewed also emphasized the need to think carefully about how to convey to nontechnical people the safety challenge facing the State. For example, as noted by one participant, it is not likely that the average citizen knows what “1 fatality per 100 million vehicle miles” really means. As this participant also stated, we need to better understand what is “sellable” to the public.

Missouri

History of Safety Planning

MoDOT has always been responsible for implementing the safety hazard elimination program, and these projects have been included in the State Transportation Improvement Program (STIP). Historically, there was a close relationship between the Division of Highway Safety and MoDOT, and in August 2003, the Division was transferred by Executive Order to MoDOT. MoDOT’s Director of System Management is in charge of Traffic Engineering and Highway Safety, and the Governor’s Highway Safety Representative (GR) works in this Division. The GR is the Director of the Highway Safety Division and is responsible for a range of safety programs related to education, enforcement, emergency medical services, the Motor Carrier Safety Assistance Program (MCSAP) and the Safe Routes to School program. The Director also is responsible for the development of the Strategic Highway Safety Plan (SHSP). The State Safety Engineer is responsible for engineering-related issues and implementation of safety-related capital and maintenance projects. There is no single champion for highway safety, but rather there are several, including the Highway Safety Director, the State Traffic Engineer, and the District Engineers. There is strong commitment to the safety program from the highest levels of MoDOT, including the Director and the Chief Engineer. This commitment is reflected in teaming agreements, strategies, and financial commitment. A strong working relationship exists between the planning and engineering groups on safety issues within MoDOT.

The 2003 consolidation encouraged a more global view toward safety. Engineering personnel, for example, often limited their view to engineering-related solutions. They are now more aware of behavioral issues and safety and law enforcement personnel who previously focused on behavioral issues now have a better understanding of engineering solutions. The relationships continue.
to improve, leading to more effective solutions. Two key efforts that have helped advance safety coordination in Missouri are:

1. The formation of the Missouri Coalition for Roadway Safety and 10 regional coalitions to engage the broader safety community in plan development and implementation; and

2. Involvement of the Coalition in the development of the “Missouri’s Blueprint for Safer Roadways” (November 2004). The Blueprint serves as the primary policy document for Missouri’s safety programs and was developed with input from more than 150 Missouri safety partners.

Both the Coalition and the Blueprint are discussed in more detail below.

**Safety and Transportation Plan Development**

Safety is a major factor in the development of the transportation plan. MoDOT is now using a severity index and focusing on crashes that result in fatalities or incapacitating injuries. Several performance measures related to safety are used in MoDOT’s “Tracker” system. ([www.modot.org/about/general_info/Tracker.htm](http://www.modot.org/about/general_info/Tracker.htm))

The tracker system is used to assess Missouri’s progress over time as well as their performance compared to other States. Two examples are shown in Figure C.3. MoDOT senior management meets quarterly to review data from the Tracker system. The system and the quarterly meetings have helped raise awareness throughout the agency of the safety goals and given them a higher level of visibility in the development of the statewide plan.

A number of safety-related planning efforts are coordinated within MoDOT and contribute directly to the statewide transportation plan. These include the High-Risk Rural Roads Plan, the Statewide Motorcycle Plan, the Rail Safety Plan, and a Safety Plan for Unsignalized Intersections. The Blueprint serves as the umbrella and provides guidance for these individual plans. Over time, the Blueprint has expanded to cover more areas such as policies toward unlicensed and suspended drivers. In addition to planning, safety also has been incorporated into the engineering stage of projects by adding a safety expert to the Value Engineering teams used on larger capital projects.

Safety plays a major role in the development of the state and regional Transportation Improvement Programs (TIP). All projects are evaluated based on a standard set of criteria and safety is always included, again with a focus on projected reduction in fatalities and incapacitating injuries. Good coordination exists between planning and engineering to help ensure the accuracy of data used in the planning process.
MPOs have been major participants in the Coalition for Roadway Safety. The two largest MPOs, the Mid-America Regional Council (MARC) in the Kansas City region and East-West Gateway in the St. Louis area, have been active participants in the statewide coalition and the other MPOs and Regional Planning Agencies have participated in the regional coalitions. There are a number of Memoranda of Understanding related to traffic records and data sharing. MoDOT has trained regional coalition members in data analysis and GIS has been used to improve the accuracy of crash location data. Quality control of this information remains a challenge since most public safety personnel still rely on paper records.

The SHSP, in line with the priorities of MoDOT and the Safety coalitions, focuses only on fatalities and incapacitating injuries. The current focus is on implementation and is supported by data analysis that follows AASHTO guidelines and the NCHRP 500 series countermeasure guidebooks oriented toward program implementation in local communities.
Safety Community Involvement

The Missouri Coalition for Roadway Safety was formed to engage the broader safety community in plan development and implementation. The Coalition is involved in a number of safety-related activities, including enforcement, public information, legislative activity, and DWI issues. Statewide policies were documented in the Blueprint. According to the Blueprint “more than 150 Missouri safety partners were contacted to seek ideas and input concerning a statewide reduction goal, the document content, and successful deployment strategies. The draft document was distributed to hundreds of safety partners throughout the State for comment and review.” The Blueprint set a goal of 1,000 or fewer fatalities by 2008 (from 1,232 in 2003) and identified the “Essential Eight” strategies to help reach the goal.

The Coalition meets quarterly, providing an opportunity to share information and work on legislative priorities. The Executive Committee consists of high-level staff of DOT, the State Patrol, MPOs, and Federal partners, including FHWA, FMCSA, and NHTSA. Seven subcommittees address technical issues, including judicial, DUI, data, public information, enforcement, implementation, and strategic planning.

The Blueprint provides for the formation of 10 regional safety committees that include representation from the broader safety community. About $2 million in safety funds are distributed directly to the 10 MoDOT Districts, and the regional committees help set priorities and determine how these funds are spent. The allocation of dollars to regions is based on their rates of fatalities and incapacitating injuries. Half the funds are dedicated to public information and a separate public information plan is required. General public information themes and messages are developed at the state and local level but plans are tailored to other needs. Other funds are primarily used for capital improvements but they also have been used for enforcement and other operational and educational programs.

The regional committees have been effective in involving local law enforcement as well as the Highway Patrol. Good coordination exists between DOT and the Highway Patrol on data and crash records. Development of a GIS logging system, training that provides law enforcement with direct access to data, and monitoring/quality control of data as it comes into the system have been implemented through this relationship. Strong participation by other local government officials and the regional coalitions also provides a place and a structure for involving the many volunteers interested in highway safety. An important element in the success of the regional committees is that they feel ownership of the process. MoDOT sees itself as one of many partners in the process and feels that the coalition and regional committees are effective partly because it is a collaborative effort and all parties are able to share the responsibility and take credit for successes.
Communications Strategies

The Statewide Coalition and the Regional committees serve as the primary coordinating bodies for all parties involved in highway safety. Key agencies participating actively in the Coalition include MoDOT, NHTSA, FHWA, Missouri Department of Revenue, and the Highway Patrol. These organizations are formalized through a charter and have clearly helped improve the flow of information and ideas among various parties. An important benefit has been the development of personal relationships that contribute to the solution of problems. This is particularly true in the regions and was cited as providing the greatest long-term benefit. The annual statewide meeting also provides an opportunity for exchange of ideas and improved communications among safety partners. The Blueprint provides a common framework for communication among the participants.

MoDOT was able to identify several lessons learned regarding communication among the participants. They feel it was important that no single party dominates the effort. Everyone must feel they are an equal partner. They also believe to be successful, the effort could not be seen as a “MoDOT project” but had to be viewed as a joint effort among equals. It is important to make sure that no single party dominates the process and that all parties feel their input is respected and valued.

No fixed organizational structure is mandated and there are a variety of partners who hold chairmanships in the regional committees. Other keys to keeping the regional committees active are the availability of data and funding. MoDOT provides analysis of safety data for each region as well as national information from NCHRP and other sources. A minimal level of funding is necessary to keep the partners interested. At the beginning of the process, MoDOT Central Office brought MoDOT regional personnel in for training on funding sources and Central Office also assigns staff to work with the regional committees in developing their programs and allocating funding.

Barriers to Collaboration

Prior to formation of the Coalition and Regional Committees, each group involved with safety tended to view problems from their own perspective and did not necessarily understand the viewpoint of others. Barriers were overcome by anticipating and addressing them ahead of time. Developing the partnership required aggressiveness at some times and patience at others.

Engineering, safety, and law enforcement personnel now have a much broader understanding of each other’s concerns and contributions. There is an improved understanding among partners that leads to better, more comprehensive solutions. Some partners were more reluctant to participate than others, but at this point most partners are actively involved. Once the coalition was formed, partners felt more comfortable with each other and have resolved potential conflicts through person-to-person communication. Continuing efforts are needed to make sure that turf issues do not become a problem, as they were in the past.
Funding, periodic conferences, and support for the regional committees are key elements in making sure barriers do not arise. Turnover, particularly among law enforcement personnel, is another challenge. Ongoing education is needed for new members of the coalitions. Another challenge is that the impact of programmatic activities related to education and enforcement is sometimes difficult to quantify, while the impact of engineering solutions are often more obvious. Therefore, the impact of programmatic solutions must be developed on a regional or statewide basis, and the information packaged in a way that documents local community benefits.

**Best Practices**

Best practices identified in Missouri include:

- Implementation of the Coalition for Roadway Safety and the coalition’s collaboration on the Blueprint document.
- Development of regional committees under the Coalition that, like the Statewide Coalition, include a wide range of partners interested in safety.
- Providing regional coalitions with a dedicated source of funding for locally based safety programs.
- Developing planning documents that focus on implementation as a goal from the start of the process. This helps maintain interest and avoids spending time on documents that “sit on the shelf.”
- Implementing a systems approach to safety improvements at both the statewide and regional levels. Rather than focusing on engineering solutions at individual locations, a wider package of solutions is considered. An example is the use of a data analysis program called CODES to match hospital and crash records as a step toward improving response times.
- Adopting a clear and specific goal to increase coordination and improve focus.
- All parties interviewed believed that housing the GR in the DOT has been beneficial to the safety program. It has been a major plus in enhancing communications among parties.
- Leadership support from the top levels of participating agencies is necessary to implement the practices that have been successful in Missouri.

**Strategies for Conveying Guidance**

One effective method of presentation is through case studies. These studies lay out the issues, the thought process, achievements. The AASHTO Safety Management Committee, the Governor’s Highway Safety Association web site and the TRB Safety Management Committee were mentioned as good forums for sharing information and best practices with key state safety leaders. Presentations at meetings and conferences are an effective way to disseminate information.
Institutional Needs in Safety Planning

Reports are helpful but summary presentations are more likely to reach a wider audience. Executive summaries of larger reports can be effective in disseminating information as well.

Ohio

NCHRP 8-36b Task 57

History of Collaborative Safety Planning

Ohio DOT was one of the earliest national leaders to place greater emphasis on road safety as part of its investment decision-making. It also has produced one of the first statewide transportation plans that had specific safety-related targets incorporated into the State’s transportation strategy.

Historically, the institutional home for the Ohio DOT’s safety program was in the Office of Traffic. In 2002, the Department created an Office of Roadway Safety and Mobility to provide more emphasis on safety but the primary focus was on engineering solutions to road safety problems. In 2005, this unit was moved to the Office of Systems Planning and Program Management, which now provides ODOT’s central contact point for road safety, system conditions, and needs analysis. The move essentially mainstreams safety into the transportation planning process. This Office, along with ODOT’s district safety coordinators, oversees an annual budget of $70 million in the Highway Safety Program.

The Office of Systems Planning and Program Management annually identifies the top crash locations within each district. Each district office is then required to study and develop and action plan for each high-crash and congested locations through an annual work plan (about 600 studies are conducted each year). The districts submit safety applications to a central Safety Program Committee twice a year for requests for funding. The applications are scored based on crash density, crash rate, EPDO, cost, trucks, relative severity index, and rate of return. This committee reviews the application, countermeasures, and prioritization of needs when selecting and approving safety projects. If the project is over $5 million, it can be submitted to the major new construction program to be prioritized against all other major construction projects in the State. Of a total possible major new construction traffic score of 70 points per project, the safety factor provides a maximum of 15 points in this prioritization scheme (the measure is the number of crashes per million vehicle miles traveled, the crash density, and the relative severity index over the past three years). A Transportation Review Advisory Committee, consisting of local elected officials, local engineering professionals, business representatives, selects which projects move into the next stage of programming.

With respect to safety planning in other jurisdictions, ODOT works with planning agencies in non-metropolitan areas to identify high-crash locations and develop plans to improve the safety record. For Ohio’s metropolitan planning organizations (MPO), ODOT noted that most MPOs have safety as a criterion for
project selection for the transportation improvement program (TIP). ODOT has worked with all MPOs in the state and has held Safety Conscious Planning sessions in all MPOs. Each MPO has developed or is in the process of developing a Safety Work Plan for their region. These safety priorities help assess the needs for the region and the basis for the transportation plan and transportation improvement program.

ODOT has undertaken several safety-related initiatives over the past five years that have had an important impact on the State’s safety record. In 2003, ODOT began placing greater emphasis on gathering crash data to identify emerging trends and quickly implement solutions to reduce fatalities and crashes. In 2004, ODOT initiated a new crash analysis program designed to identify work zone and other highway section configurations that contribute to crash problems. The program uses historical and near real-time crash data to detect increases in crashes. ODOT can then quickly respond by identifying problems and modifying the work zones to prevent future crashes.

One of the interesting characteristics of ODOT’s program management strategy is to monitor the progress being made toward stated goals. The framework for doing so is called the organizational performance index (OPI). Annual measurements are made to compare progress made against predetermined targets. The specific tasks identified for the Office of Road Safety and Mobility as reported in ODOT’s 2006/2007 Business Plan were to identify high-crash locations, partner with law enforcement to improve safety, and promote safe driving behavior through public education. Table C.4 shows the performance measurement that is reported in ODOT’s annual business plan.

<table>
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<tr>
<th>Table C.4</th>
<th>ODOT’s Organizational Performance Index for Safety</th>
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<td>2006</td>
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<td>Complete all identified format and abbreviated safety studies</td>
<td>100%</td>
</tr>
<tr>
<td>Develop countermeasures and associated action plans</td>
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The safety initiatives in Ohio are having an effect. In 2004, Ohio experienced 1.14 deaths per 100 MVMT, down from the 2001 rate of 1.29 and well below the national rate of 1.48 fatalities per 100 MVMT.

Ohio’s Department of Transportation’s leadership is credited as the major champion in the state DOT. They convinced the legislature to double the amount of funding available for safety projects, and has been instrumental in establishing institutional mechanisms in state government that enhance the coordination of safety program implementation. The Governor, another champion, has been
very supportive of transportation investment, particularly in providing additional safety dollars.

Safety and Transportation Plan Development

The Ohio statewide transportation plan (Access Ohio) recognizes safety as the most important goal for transportation investment in the State. As noted in the plan, the safety goal and the corresponding objectives include:

**Goal Number 1: Transportation Safety**

ODOT will continually reduce the number and severity of crashes.

**ODOT Objectives for 2004 to 2015:**

- Reduce the frequency of crashes from current levels by 10 percent, a reduction of approximately 40,000 crashes statewide;
- Reduce the number of rear-end crashes from current levels by 25 percent, a reduction of approximately 25,000 rear-end crashes statewide;
- Reduce the crash fatality rate from the current rate of 1.31 fatalities per 100 MVMT to not exceed 1 fatality per 100 MVMT;
- Target and implement all low-cost, short-term safety solutions, all medium-cost improvements, and 80 percent of the high-cost improvements at high-crash safety locations in the annual safety and congestion work plan;
- Continuously reduce the delay between problem identification and countermeasure implementation;
- Continuously improve safety and design standards;
- Sustain the highest standards and improve on snow and ice removal through new and improved technologies, materials, and operational strategies; and
- Sustain the highest standards and improve on safety in work zones through new and improved technologies, materials, and operational strategies.

One of the interesting elements of OhioDOT’s approach toward linking safety and transportation planning is that because the Office of Road Safety and Mobility is in the Office of Systems Planning and Program Management, ODOT’s planning for the Highway Safety Improvement Program (HSIP) emanates from the planning unit. A safety program committee consisting of representatives from roadway design, traffic safety, planning and others as needed identifies priorities for the HSIP. Institutionally, there is a close linkage between planning and safety planning efforts internal to ODOT.

Another example of the interaction between safety and planning was the “Safe Commute” campaign initiated in 2004 to reduce traffic crashes. ODOT worked with the Governor’s Highway Safety Office to identify high-crash areas in the State, implement an incident management strategy to remove crashes from the roadway, and provide enhanced speed enforcement during the midday hours.
Safety Community Involvement

Both ODOT and the Governors Highway Safety Office have used formal institutional mechanisms and processes to include the broader safety community into the safety and transportation planning process. For example, a safety charter was signed by participants involved in a traffic records committee, including representatives from the Buckeye Sheriffs’ Association, Ohio’s Supreme Court, and representatives from the health and education communities. The County Engineers’ Association has been actively involved in working with ODOT to secure legislative support for additional safety funding.

The process used to develop the State’s strategic highway safety plan (SHSP) is indicative of the approach taken to include the broader safety community. Ohio began work on its Comprehensive Highway Safety Plan in FY 2005. This effort involved a three-tier approach.

1. An Executive Committee comprised of state agency directors and administrators was created to approve the final plan;
2. An Ohio Transportation Safety Coordinating Committee of state and Federal highway safety-related agencies was charged with developing and implementing the plan; and
3. Opportunities for input from what ODOT called “Roadway Safety Partners” were provided throughout the process.

Communications Strategies

Ohio uses formal institutional mechanisms to foster communications among safety-related agencies. In 2004, for example, the governor directed ODOT and the Department of Public Safety (ODPS) to establish the Governor’s Task Force on Ohio Highway Safety. The task force was to determine whether high numbers of crashes were occurring over long corridors and were escaping detection because of the way crashes were reported. The task force was directed to:

- Create a crash trend ranking system for long stretches of highways;
- Create a common definition of “dangerous” with regard to highway safety;
- Work together to target different places and problems along the State’s vast highway system for safety concerns; and
- Work with residents and local governments on ways to comprehensively lower crashes on problem stretches.

The two agencies created a “safety corridor” program that relied on the participation of local law enforcement agencies, engineers, and citizens.

The Ohio Transportation Safety Coordinating Committee is comprised of the state and Federal agencies that work with surface transportation safety issues in Ohio. The committee’s activities are to: 1) develop and strengthen partnerships with safety stakeholders; 2) develop safety goals by establishing baseline conditions and
performance measures; 3) improve the quality, timeliness, and availability of crash data; 4) identify, coordinate and share best practices within and throughout Ohio’s “safety community”; 5) emphasize and implement safety measures throughout all operational processes; 6) identify and share safety programs with all departments and consider related efforts by other stakeholders and coordinate with them as appropriate; and 7) evaluate, assess and adjust strategies as necessary. This committee’s primary focus in the future will be overseeing the implementation of the Comprehensive Highway Safety Plan. In addition to the coordinating committee, GHSO and ODOT’s Roadway Safety and Mobility Office staff generally meet on a monthly basis to share information, discuss common problems, and identify joint ventures to address Ohio’s crash problems.

**Barriers to Collaboration**

Few barriers to collaboration were identified by the Ohio participants. One of the historical barriers in Ohio was the difficulty in obtaining timely and accurate data that were location-specific. The Department of Public Safety serves as the home of the crash data, and ODOT has dedicated resources to enhance the location accuracy of the reports. On the other hand, this was an important issue to ODOT planners and engineers. Historically, it took a year and a half to get crash data; now the time lag is about four weeks.

ODOT has developed tools for analyzing the data, thus reducing the time that it takes to interpret trends and understand causes. For example, ODOT has developed a crash analysis module (CAM) that has been quite successful in using the raw crash data and summarizing the information in useful terms. With over 380,000 crashes per year in the State, this analysis capability has been effective in focusing state attention on those characteristics of the safety problem that are most amenable to solution.

DOT also has debated the issue of whether total number of crashes and fatalities is the right measure or whether crash rates are more appropriate. In Ohio’s urban areas, the volumes on urban roads is quite high compared to other roads in the State, and thus although the number of crashes might be high, the rate would be low given the large number of vehicle miles traveled.

ODOT officials also stated that they struggle with the 20-year design traffic volume. When designing for this standard horizon year, this leads to solutions that might be larger than necessary and very high cost. For example, it might be feasible to undertake interim improvements that would be cost-effective, but would not necessarily handle the volumes expected in a 20-year timeframe. The questions are: when do you spend safety funds and on what types of projects?

Institutionally, ODOT and GHSO officials believe that few barriers exist between the two agencies. Because of the ODOT Director’s strong stance on safety and his influence within ODOT, he has been able to break down institutional constraints that stand in the way of effective collaboration between the two agencies.
**Best Practices**

The Ohio case study illustrates several characteristics of best practice in linking transportation and safety planning. The clear message received from the Ohio participants is that the leadership exerted by the ODOT Director was critical for successfully maneuvering through the institutional maze of plan development and implementation. The Secretary was given credit by members of both ODOT and the GHSO as being instrumental in fostering an environment where both agencies and key safety stakeholders feel comfortable jointly working toward programs that will benefit the State.

Another aspect of Ohio’s experience that shows best practice is the continual monitoring of system performance. The safety performance index for the State and for individual district offices is updated annually and used in assigning project priorities. This monitoring of safety performance has had the important effect of making safety “something that needs to be dealt with” at all levels of ODOT.

Institutionally, ODOT and GHSO have established several formal committees and task forces for dealing with specific topics. Memoranda of understanding and safety charters have been used with good effect in establishing the institutional structure for cooperative activities.

**Strategies for Conveying Guidance**

Both ODOT and GHSO officials felt that written reports, augmented by workshop or conference presentations, are often the most effective manner of conveying information. The reports should be placed on a web site with notification of its existence conveyed through e-mail lists.

**Washington**

**History of Collaborative Safety Planning**

The history of safety planning in Washington has been one of collaboration between the Washington Traffic Safety Commission (WTSC) and the Washington State DOT (WSDOT). Besides these two agencies, other members of the Commission include representatives from the Departments of Licensing, Health, Local and Human Services, and Public Schools, the State Patrol, representatives from cities and counties, and a representative from the judiciary. Washington is one of the few states where the Governor chairs the Safety Commission. The current governor is actively engaged in the policy setting and programmatic directions of the Commission. The Strategic Highway Safety Plan (SHSP) for Washington State was developed jointly between the WTSC and WSDOT, although the DOT took the lead in developing initial drafts.

Within the DOT, safety has been primarily the responsibility of the traffic operations and design units, although the planning division has been aggressively incorporating safety into recent updates of the statewide transportation plan.
Institutional Needs in Safety Planning

The Highway Safety Issues Group (HSIG), co-chaired by the heads of traffic operations and design, has been established within the DOT, which also includes groups from outside the DOT. The HSIG makes strategic recommendations on safety policies and programs as well as providing feedback after projects are implemented.

The two safety champions pointed to as being the most successful are the HSIG because of its ongoing safety activities and the Secretary of WSDOT. The Secretary has played a very important role in focusing discussion on the types of strategies that would make the greatest difference in the road safety record in the State. He became an activist champion when the planning unit estimated that the annual economic loss to the State due to crashes was $5.3 billion. An example of the Secretary’s role in the safety planning process is found in the initial efforts at developing an SHSP. The initial draft of the SHSP started with 26 emphasis areas; subsequently priorities were established with 18 as number 1 priorities and five as number 2 priorities. When presented to the Secretary, he thought that such a large number of number 1 priorities in essence meant there were no priorities. In looking at the data, he suggested that excessive speeding and impaired driving were clearly the most important issues with respect to crashes. In addition, by focusing on these two, other areas would be improved as well. With the Secretary’s urging, these two areas were chosen as the top priorities in the plan. Level 2 priorities include enhancing traffic records data, improving intersection safety, and targeting railroad grade crossing crash sites. The remaining emphasis areas were relegated to Level 3 and 4 priority status.

Safety and Transportation Plan Development

The Washington State DOT has long had a reputation of comprehensive transportation planning that is data and analysis driven. The current statewide transportation plan update process, begun in 2003, has identified safety as the second (out of five) most important objective, just after preservation. The plan is a policy plan and has identified investment targets. The plan also identified $26 billion in unfunded needs, of which $3 billion is strictly road safety projects. The majority of this unfunded need is on the rural highway network.

Project prioritization for the state transportation improvement program (STIP) recognizes safety as a primary consideration, in many cases, surpassing mobility and congestion relief as an important objective. DOT officials also have examined existing programs to see if funds can be targeted to address safety problems. For example, the DOT discovered that approximately 33 percent of the funds for road paving were being used for safety improvements. Even for projects with low-crash rates, funding was used to upgrade to safety standards due to Federal guidance. Given the need for preservation investments, the State has entered into a stewardship agreement with FHWA that allows paving funds to be used for paving needs, not safety improvements. In exchange, new programs have been established for safety corridors, Interstate safety standards, intersection safety, and pedestrian risk projects.
For a project to be programmed in the capital budget, it must be in the Highway System Plan. The two major factors that are considered when a project is programmed are historical crash rates and congestion relief. DOT officials have been struggling with the question of how to predict the number of crashes that would be eliminated if an investment occurs. The State also is looking to adopt a proposed NCHRP econometric modeling approach for predicting crashes when no data exist. One of the key issues with quantification of crash locations is the large turnover in the number from year to year. DOT estimates that 45 percent of the listed “high-crash” locations change from year to year because of project investments and variability in the data.

Washington DOT’s Local Program’s Division and the State Traffic Engineer have spearheaded a Corridor Safety Program, one of the first state DOTs to adopt such a program. It was modeled on a similar program in Pennsylvania, which relied primarily on engineering solutions. The Washington State program focuses on low-cost, near-term solutions, including behavioral strategies. WTSC and WDOT program managers visit communities (when invited) to discuss the program. Data analysis must be done to show what the problems are. A local steering committee selects the strategies that will be implemented in the corridor. Studies have shown a B/C ratio of $35 crash avoidance benefits to $1 of cost. There has been a 10 to 12 percent reduction in fatalities, 15 to 18 percent reduction in injuries, and a 24 percent reduction in total crashes over all the corridor sites receiving treatments.

The WTSC has adopted “Target Zero” as the State’s SHSP goal – the first state to do so. It was somewhat of a challenge to get other state agencies to buy into this goal in that many thought it could not be achieved. However, the expectation is that all state agencies will adopt the SHSP, will use the SHSP to prioritize their own projects, and will adopt portions of the SHSP as part of their government management accountability program. Non-state partners will be “encouraged” to utilize the SHSP.

Safety Community Involvement

As noted above, the existence of the Washington Traffic Safety Commission has institutionalized the participation of the broader safety community in the State’s safety planning efforts. Representatives of all the state agencies that might have an interest and a stake in road safety are members of the Commission. The State also created a Washington Traffic Records Committee consisting of representatives from WTSC, WSDOT, Administrative Office of the Courts, State Patrol, Department of Licensing, County Road Administration Board, Department of Health, Washington Associations of Sheriffs and Police Chiefs, and the Department of Information Services. In addition, both WSDOT and WTSC officials promote the active participation of local agencies in safety planning through programs targeting specific safety problems facing their communities.

The State’s metropolitan planning organizations incorporate safety into transportation planning in a variety of ways (and at various levels of commitment).
The Puget Sound Regional Council (PSRC), the State’s largest MPO, uses safety history as a criterion for prioritizing transportation projects. It recently held a workshop on transportation security, which included many of the major enforcement agencies in the region. PSRC planners also are updating the region’s transportation plan to incorporate a special section on transportation safety. Washington State DOT works with the State’s MPOs on many different issues, and has provided technical support when safety has been identified by an MPO as one of the region’s top priorities.

**Communications Strategies**

The major means of conducting safety-related discussions and communicating safety issues to a broader community is through the institutional mechanism of the HSIG and through the WTSC. Memoranda of understanding and other types of agreements are the major means of establishing the structure and responsibilities of those involved. Collaboration also occurs at the local level when WSDOT and WTSC officials undertake safety efforts in targeted corridors. This joint effort only occurs when the local community has established a task force consisting of the major safety stakeholders that are able to make decisions with respect to transportation investment.

One example of the institutional mechanisms used to establish communication channels among key transportation/safety-related groups is the WSDOT Highway Safety Issues Group Charter. Although focused internally, the Charter provides written guidance on the roles and responsibilities of the HSIG members with respect to safety issues. The members of HSIG include:

- Regional Administrators for all six WSDOT regions;
- Administrator of the Urban Corridor Office;
- Directors of the Design, Traffic, Transportation Data, Strategic Planning and Programming, Project Control and Reporting, Highways and Local Programs; and
- Federal Highway Division Administrator.

As noted in this charter, the roles and responsibilities of HSIG members include:

- Communicate to HSIG, the concerns and issues of the office or region they are representing;
- Communicate HSIG recommendations and activities back to the office or region they are representing;
- Regularly attend HSIG meetings or designate a proxy when they are unable to attend;
- Express their position when they strongly support or oppose HSIG recommendations;
- Voting members (or designated proxy) shall cast a vote when requested;
• Participate as necessary in subcommittees or task groups; and
• Prepare position papers when presenting issues.

Based on the interviews and documentary evidence collected for this case study, the HSIG seems to be a very effective mechanism within WSDOT to foster communication and to coordinate agency safety-related activities.

**Barriers to Collaboration**

Although Washington State officials felt that their safety program was working well, they did identify some barriers to collaboration that they have faced, and which they believe others will as well as they begin planning for a collaborative safety program. The most significant barriers were identified as:

• **Lack of performance data and lack of post hoc data, especially for Tribal nations and local roads.** Establishing a Tribal nation safety program is a particular challenge because of cultural and jurisdictional issues. For example, there is an important difference of opinion on what data are important, where crashes are occurring, and high-risk assessment. There is a critical need for a predictive model on the risk side.

• **Incompatible funding sources.** WTSC funds behavioral strategies, but does not have funds for engineering. This results in a “patching together” of a finance package. However, it was pointed out that the benefit of this is that it allows programs to move forward without negotiation. If there were one pot of money, there would be more in-fighting.

• **Incompatible mindsets with politicians.** Safety projects do not often represent the “big ticket” items that political decision-makers like for constituency services.

• **Lack of time.**

**Best Practices**

Washington State provides several examples of best practice with respect to transportation and safety planning. The legislature has recently provided funding for safety programs that has allowed DOT and WTSC officials to focus local government’s attention on community safety issues. The existence of the HSIG and the WTSC in supporting the creation of these programs was critical to the legislative success.

Washington State has put in place the institutional mechanisms for supporting a collaborative transportation safety program. The Governor chairs the Traffic Safety Commission and representatives of all the key state and local stakeholders are members, which has been instrumental for the effectiveness of the State’s program. The safety champions in Washington hold high-level government positions (such as the Secretary of WSDOT) and thus command decision-making and implementation authority. State agencies also have set up many working
groups to get people involved. The Traffic Record’s group and a Section 408 Grant Review group are good examples of how they work together. There are other working groups on impaired driving, bike/pedestrian, sheriff and police chief needs, motorcycle, speed, and Tribal nation issues.

Perhaps most importantly, the Washington State case shows the importance of data analysis and of establishing an analysis-driven planning process. As noted by both the transportation and safety officials, it is important to look at the data for determining how to improve road safety. This practice focuses the discussion on the desired outcome rather than who gets what dollars.

*Strategies for Conveying Guidance*

Both the transportation and safety officials said that face-to-face meetings are the best way to convey information. Regional briefings work as well. Once a written report is completed, there are many ways to make it accessible, e.g., the Internet, presentations at conferences, mass mailings, etc. Thus, it is important that a report be prepared that can be put on the web. The AASHTO Standing Committee on Planning should share the results with other standing committees as well as the membership.