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# **Safety-Conscious Planning**

## Safety-Conscious Planning

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Richard F. Pain, *TRB Staff Representative*

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**Transportation Research Board  
National Research Council  
2101 Constitution Avenue, NW  
Washington, DC 20418**

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A Planning Group was convened to develop an agenda and identify participants for the workshop. The following organizations and individuals were involved:

Federal Highway Administration	Michael Culp Ken Epstein Jill Hochman Roger Petzold George Schoener Dee Spann Suzanne Stack Bud Wright
Federal Transit Administration	Sherry Ways
Federal Motor Carrier Safety Administration	Jim McCauley
National Association of Governors' Highway Safety Representatives	Barbara Harsha
National Highway Traffic Safety Administration	Adele Derby
National Safety Council	Highway Traffic Safety Division
Roadway Safety Foundation	Kathleen Hoffman
Transportation Research Board (staff)	Rick Pain
Transportation Research Board (Transportation Safety Management Committee–A3B01)	Leanna Depue

The breakout sessions during the workshop were ably facilitated by Tony Brown (MTA Planning, Baltimore), Jill Hochman (Office of Intermodal and Statewide Programs, Federal Highway Administration), and Frederick Wright (Office of Highway Safety, Federal Highway Administration).

The background presentations that set the stage for the technical discussions and breakout groups were presented by Lisa Irwin (Michigan State Police), Betty Mercer, (Michigan Office of Highway Safety Planning), Susan Mortel (Michigan Department of Transportation), Carmine Palumbo (Southeast Michigan Council of Governments), Kelvin Roberts (Insurance Corporation of British Columbia), George Schoener (Federal Highway Administration), and Patricia Waller (University of Michigan Transportation Research Institute, retired).

## CONTENTS

<b>Safety in Planning</b> .....	<b>5</b>
<b>Purpose</b> .....	<b>5</b>
<b>Problem</b> .....	<b>6</b>
<b>Background</b> .....	<b>6</b>
<b>Process</b> .....	<b>7</b>
<b>Safety-Conscious Planning Process</b> .....	<b>8</b>
<b>Examples of Good Practices</b> .....	<b>8</b>
<b>Planning Focus</b> .....	<b>9</b>
<b>Action Planning</b> .....	<b>9</b>
<b>Strategies</b> .....	<b>9</b>
Foundations for Safety in Planning .....	<b>9</b>
Data Collection and Analysis .....	<b>10</b>
Expanding the Data Issue .....	<b>11</b>
Collaboration.....	<b>11</b>
Policy.....	<b>13</b>
Outreach .....	<b>13</b>
<b>Next Steps</b> .....	<b>13</b>

# Safety in Planning

## PURPOSE

An effective and efficient transportation system has been a top priority in this country for much of the last century. The goals are clearly defined in the U.S. Department of Transportation's strategic plan. They include

- **Safety:** Promote the public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage.
- **Mobility:** Shape America's future by ensuring a transportation system that is accessible, integrated, and efficient, and that offers flexibility of choices.
- **Economic Growth and Trade:** Advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.
- **Human and Natural Environment:** Protect and enhance communities and the natural environment affected by transportation.
- **National Security:** Advance the nation's vital security interests in support of national strategies such as the National Security Strategy and National Drug Control Strategy by ensuring that the transportation system is secure and available for defense mobility and that our borders are safe from illegal intrusion.

This vision requires the successful accomplishment of several objectives, not the least of which is to ensure the planning process focuses on several independent, but not necessarily mutually exclusive, factors. The factor under consideration in this Circular is safety. The short-term objective is to integrate safety considerations into the transportation planning processes at all levels, specifically the Statewide Transportation Improvement Programs (STIPs) and the Transportation Improvement Programs (TIPS) developed by state departments of transportation (DOTs) and Metropolitan Planning Organizations (MPOs) respectively.

This step should be followed by consideration of safety objectives in the longer range—for example, the 20-year plans that the state DOTs and MPOs are required to prepare and update periodically. Ultimately, the goal is to integrate a focus on safety throughout the transportation planning process. Achieving a longer-term mission requires cooperation, collaboration and integration of the planning processes of several agencies including federal, state and metropolitan transportation and transit planning agencies, rural planning organizations and the highway safety and motor carrier safety agencies. The end product of this initiative is a metropolitan and statewide planning process that incorporates safety as one of the explicit planning priorities.

## PROBLEM

Injury from all causes is the major cause of death in the nation from about six months to 45 years of age. Because it so disproportionately strikes the young, it is also the leading cause of lost years of productive life. Motor vehicle injury is the largest single component of these losses. The United States provides a model for what can be accomplished in this important field. The record over the past 30 years is nothing short of miraculous, yet we still experience over 40,000 deaths and more than three million injuries annually. Clearly much remains to be done.

The human and economic consequences of motor vehicle crashes are unaffordable and unacceptable. While we continue to make modest progress in reducing highway fatality rates, over the past few years the number of motor vehicle related deaths has remained essentially unchanged and injuries continue to increase each year. If these numbers continue, more than 400,000 people will die on our roadways over the next ten years at a cost of more than \$1.5 trillion. The majority of motor vehicle crashes are predictable and preventable. The carnage is unnecessary.

## BACKGROUND

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) announced a change in focus regarding highway and transit programs from construction to preservation and emphasized mobility and environmental protection. The goal was to produce a transportation system that provides safe and efficient mobility and accessibility as well as protection of the human and natural environments.

ISTEA required 23 planning factors for statewide transportation plans and 16 for metropolitan plans under the general headings of

1. Mobility and access for people and goods,
2. System performance and preservation, and
3. Environment and quality of life.

Nowhere in the legislation was *safety* specifically mentioned or mandated in the planning process. Transportation planning has historically focused on capacity and congestion with some attention to the operation and management of the transportation system.

ISTEA was reauthorized in 1998 by a bill titled the Transportation Equity Act for the 21st Century (TEA-21). The legislation consolidated the ISTEA planning factors into seven broad areas, one of which reads, "Increase the safety and security of the transportation system for motorized and nonmotorized users." In other words, it requires state DOTs and MPOs to incorporate safety and security as a priority factor in their respective transportation planning processes and activities.

This marked the first time safety was explicitly included as a *planning* factor for consideration in developing metropolitan and statewide transportation plans and programs. Prior to TEA-21, safety was sometimes a prominent factor in project development and design, but this legislation calls for safety consciousness in a more comprehensive, systemwide, multimodal context.

## PROCESS

To begin the safety integration process, it is imperative to understand the planning factors and timelines that guide each of them. Transportation planning is accomplished primarily by the state DOTs and local MPOs, with technical assistance and some oversight by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The DOTs and MPOs are responsible for establishing both long-term plans and short-term programs. The longer-term plan, known as the Transportation Plan, establishes goals and objectives and identifies transportation investments over a 20-year period. The shorter-term programs are, in a sense, implementing documents and include specific projects to be accomplished over a three-year period. These plans must be updated triennially but project and program monitoring, needs assessments, and priority setting are a continuous process.

The planning process includes several steps. Although the steps may differ by jurisdiction, they generally reflect the nature of the process:

1. Problem Identification and Definition
  - a. Identifying and defining problem areas
    - i. Collecting and managing the supporting data and data systems
    - ii. Data analysis
  - b. Establishing goals and objectives
2. Planning
  - a. Establishing long-range plans (20-year horizon)
  - b. Developing short-term (three-year) programs at the state and local levels
  - c. Identifying, analyzing and evaluating policies, projects and strategies
3. Programming: Developing and implementing projects
4. Monitoring and Feedback
5. Evaluation
  - a. Conducting process and impact studies
  - b. Reporting results

Integrating safety into the transportation plans requires that DOT and MPO transportation planners and transit operators coordinate with the established safety planning processes of the state highway and motor carrier safety agencies. Neither of the latter processes requires a long-term 20-year plan. Otherwise, the planning steps followed by the safety communities are remarkably similar to those listed previously.

If the planning steps are essentially the same for all constituencies, integrating the planning processes should be simply a matter of educating management, acquiring their support and introducing the groups to one another. However, it is somewhat more complex than that. There are inconsistencies in the various planning processes regardless of the planning steps. For example, the state highway safety agencies follow an annual planning process while the transportation, transit, and MPO planners develop plans for a 20-year horizon with three-year program implementation documents. How to make the two processes converge has yet to be determined. Furthermore, MPOs and state DOTs have not typically or traditionally considered safety as a priority planning factor.

## **Safety-Conscious Planning Process**

To initiate discussion on the TEA-21 safety-planning factor, approximately 40 interested professionals convened in May 2000 to explore the independent planning processes, to identify data, tools, partners and other resources that are currently available or need to be developed for implementing the safety requirement. The following organizations were responsible for planning and organizing the invitational workshop: FHWA, FTA, the Transportation Research Board (TRB), the Roadway Safety Foundation (RSF), the National Association of Governor's Highway Safety Representatives (NAGHSR), the Federal Motor Carrier Safety Administration (FMCSA), the National Highway Traffic Safety Administration (NHTSA), and the National Safety Council (NSC). FHWA and NHTSA provided sponsorship. The meeting was designed to accomplish several objectives:

- Introduce leaders in the safety, transportation and transit planning communities to one another and give an overview of how each operates.
- Learn about current initiatives that have incorporated safety into the planning process.
- Develop ideas and steps to integrate safety and transportation planning.

The participants represented three arenas that perform independent planning processes:

1. General surface transportation, which includes federal, state and local transportation and transit planners;
2. Highway safety; and
3. Motor carrier safety.

Those who are responsible for developing, collecting and analyzing data were also invited. For many, it was the first experience communicating across planning cultures.

### **EXAMPLES OF GOOD PRACTICES**

Dr. Patricia Waller, recently retired director of the University of Michigan Transportation Research Institute, set the stage for the workshop by reviewing the numbers associated with traffic crashes in the United States. She eloquently described where we've been, where we are now, and where we need to go.

Experienced experts introduced the audience to good practices in safety integration. One example of safety conscious planning was provided by Carmine Palombo, Director of Transportation Programs at the Southeast Michigan Council of Governments (SEMCOG), one of the MPOs represented at the meeting. Kelvin Roberts, a representative of the Insurance Corporation of British Columbia (ICBC), discussed the subject from a larger geographic perspective. At SEMCOG the approach

is project oriented and geared to fixing identified problems. ICBC, on the other hand, focuses more on designing safety into the initial planning process to prevent problems from occurring.

The lesson learned from the presenters is that it is not only possible to integrate safety into the planning process, but there are substantial benefits. Both cases followed a similar process:

1. Convince upper management and other stakeholders of the value to be gained by integrating safety.
2. Identify, collect and analyze crash data to determine high-risk locations.
3. Convene a group of stakeholders to identify and discuss potential solutions and determine the most cost-effective methods for proceeding.
4. Design and implement specific projects and programs.
5. Evaluate the outcomes and publicize the project results.

## **PLANNING FOCUS**

It is soundly established that to improve safety, one must have an effect on the crash experience of motor vehicle drivers and other more vulnerable road users by producing crashworthy vehicles and creating a safe roadway environment that is as forgiving as possible in the event of a crash. The driver is the weakest link in the safety chain. The idea of safety integration is to reduce crashes, injuries, and deaths by focusing attention on improving driver behavior as well as on preventing and mitigating the consequences of driver error by enhancing infrastructure safety investments.

## **ACTION PLANNING**

The meeting participants shared information and brainstormed ideas for accomplishing the task of safety integration. They were asked to develop a set of potential strategies for integrating safety into the planning process, create a series of initiatives that could be used for implementing the strategies and develop lists of the information, tools, partners and resources required to support the action steps.

## **STRATEGIES**

A wide variety of strategies were discussed. Many of them have similar and overlapping characteristics. The following subheadings consolidate the diverse strategies into a set of common themes.

### **Foundations for Safety in Planning**

The overriding strategy is to integrate safety into the transportation planning process. The participants provided several ideas for accomplishing the objective in both the near and the long terms:

- Provide a forum for safety partner involvement in the planning process.

- Develop a safety goal in the planning process at the state and MPO levels.
- Make safety planning an element and a criterion for identifying, evaluating and selecting projects. Support the activity through the federal certification review process.
- Ensure adequate resources are provided or reallocated for the planning function.<sup>1</sup>
- Reorient the facility design process to incorporate safety.<sup>2</sup> Focus on the design guidelines, such as this in the American Association of State Highway and Transportation Officials' Green Book, and revise them to include safety as a key factor in project development.
  - Issue Transit Cooperative Research Program (TCRP) and National Cooperative Highway Research Program (NCHRP) proposals to develop model impact estimates for different types of safety improvements.
  - Examine results from the safety audit process, including project modifications and safety benefits, to generate support for safety integration among planning professionals, public officials, and others.
  - Develop multimodal performance measures and prioritization strategies incorporating safety into the decision criteria.
  - Investigate the transportation and transit joint planning process and seek guidance from the integrated activities.
  - Encourage colleges and universities—especially university transportation centers—to incorporate safety into transportation planning curriculum modules for urban planners, traffic engineers, and other related disciplines.

### **Data Collection and Analysis**

The importance of good data cannot be overemphasized. It is crucial for accurate problem identification and definition. It points the way to effective intervention strategies, helps identify future problems, and provides information for evaluating countermeasure results.

Much of the data needed to identify and define safety problems resides at the state level and does not translate well to the local level for use by MPOs. The meeting participants outlined several ideas for improving access to safety data and encouraging its use.

- Collect, integrate and maintain regional and state safety information systems.
- Develop and provide training for state and local transportation and transit planners on how to access and analyze safety data.
  - Compile a set of guidelines for “best practices” in collecting, accessing, analyzing, and utilizing safety data in the planning process.
  - Develop community-based data identification, collection, and analysis systems to integrate fully with existing regional and state safety information systems.

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<sup>1</sup> Funding for the planning process is provided under current regulations and practices. However, some of the meeting participants suggested that a full integration of safety—including more comprehensive data analysis into the planning process will require additional resources.

<sup>2</sup> Many suggested that safety becomes an issue in the planning process at the project design stage after the planning process is completed. However, even at that stage, there is evidence that safety is given minimal or uneven consideration in many instances.

- Make those who collect, analyze and use data a part of the process.<sup>3</sup>
- Identify case studies on successful safety management system (SMS) initiatives and document other innovative practices to provide guidance for MPOs and states.

### **Expanding the Data Issue**

Analysis of data and identifying high-risk locations—such as specific sites, corridors and roadway sections—are not the only considerations in identifying and defining problem situations. It is necessary in many cases to go beyond the crash statistics and think about safety in ways not normally considered. For example, safety can be affected by providing transportation alternatives with a range of choices for trip making. It might be assumed that with more and better sidewalks and bicycle paths, people will consider alternatives to the private automobile. Also, addressing personal safety and security in public transportation may enhance alternative mode choices.

The social consequences of providing effective, efficient, safe and secure transportation are enormous. Viable and widespread transportation alternatives will dramatically improve the nation's potential for solving some of its most difficult problems such as public health, poverty, mobility for older and disabled persons, and congestion.

### **Collaboration**

The participants discussed the need to enhance communication and understanding among safety, transportation, and transit planning practitioners about the respective planning processes currently in use. It is also clear to the stakeholders involved in the planning process that the activity developed to increase communication and understanding should be replicated many times in different geographical regions around the country and among different constituencies. These forums will ensure that representatives of the planning groups are identified at all levels and encouraged to collaborate.

How to accomplish this obvious strategy is less well understood. Who is responsible for the necessary outreach that will initiate the process? Who will conduct these forums? What are the appropriate formats, agendas and timelines? What incentives can be offered? Finally and of utmost importance, who are the stakeholders and how can they be motivated to participate?

Several ideas were shared for accomplishing the collaboration initiative:

- Disseminate the steps and timelines from each of the planning processes—transportation, transit, highway safety, and motor carrier safety.
- Identify strategies for ensuring management support at the highest levels of transportation planning organizations.

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<sup>3</sup> In many cases, these functions are performed independently and the persons involved may not communicate with one another. The point was often made during the meeting that those who collect data should receive feedback on the value of its use. Institutionalizing this form of collaboration will improve both the quantity and the quality of the data collected.

- Collaboration across disciplines is ultimately required, but the first step may be for those who understand and support the initiative to market the concept within their own communities. The idea is to create a receptive environment for change strategies.
- Hold geographically dispersed forums to introduce key stakeholders in the planning process to each other and facilitate discussions about strategies for integrating safety into the state and local transportation and transit planning processes. Publicize the importance and potential benefits of the activities.<sup>4</sup>
- Identify available materials as a starting point for developing a user-friendly “Highway and Transit Safety Planning Manual” for state and local transportation and transit planners. To the extent possible, integrate the information into the guidelines currently used by planners.
- Develop training modules for key stakeholders, tailoring the content to their specific responsibilities and emphasizing the importance of safety. Provide them with tips on how to integrate the concepts into the state and local planning processes.
- Create a rapid response team of key stakeholders—federal, state, and local transportation; transit; highway safety; and motor carrier safety planning professionals—who are available to provide technical and planning assistance on-site. The team visits will provide an incentive for states and MPOs that have demonstrated an interest and are motivated to begin the process of safety integration.
- Develop incentives for participation in safety planning exercises especially in the MPO and law enforcement communities.<sup>5</sup>
- Investigate the outcomes of the requirement for Motor Carrier Safety Assistance Program (MCSAP) planners to communicate with the Governors’ Highway Safety Representatives (NAGHSR) and transportation planners as part of their planning processes. Include a review in states that have integrated the highway safety and MCSAP planning processes (e.g., Missouri and Illinois).
- Investigate the successful processes, tools, partners and other resources used by the multi-modal users group in the environmental justice arena to enforce federal regulations and determine the potential for technology transfer.
- Recruit a group of stakeholders to work collaboratively with DOT and MPO planning professionals to identify safety issues and brainstorm solutions. The stakeholders might include:
  - Safety-related and planning organizations and associations in both the public and private sector;
  - The public—specifically neighborhood and community groups;
  - Agencies and organizations responsible for land use policy and development;
  - Elected officials and the media;
  - The education community; and
  - System users, such as transportation-related companies and transit operators.

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<sup>4</sup> One method suggested for efficiently accomplishing this initiative as well as recruiting management support and participation is to develop a video or CD ROM program package with a leader’s guide and other tools. Members of the Planning Group and their staffs, colleagues, and customers could disseminate the program quickly and broadly.

<sup>5</sup> The meeting participants offered specific suggestions on incentives, including challenge grants and a waiver of the required 20 percent local match for planning activities.

The current transportation planning process contains a clear requirement for public involvement, which the participants strongly endorsed. The participants discussed incorporating the concerns of all system users and including a proactive element for identifying and recruiting the participation of at least the following groups—employees, motor vehicle operators, transit passengers and other members of the traveling public, shippers and recipients of goods and services, and property owners—in the planning process.

## **Policy**

Some participants believe that even though TEA-21 addresses the issue, safety integration must be formally mandated before it will be fully implemented. They believe that the concept must be explicitly addressed in federal and state regulatory environments with specific reporting requirements and associated consequences for failure to comply such as has been done in the environmental protection arena.

States also have the option to improve or revitalize the SMS concept. The process could be represented by a formal mechanism for reviewing and approving new construction and maintenance plans.

## **Outreach**

Advocacy is an imperative part of the safety integration process. It is not enough simply to inform groups and individuals. Like other professionals, planners, conduct business according to established routines. Changing the routines will require motivating planners through incentives, persuasive dialogue, and the provision of user-friendly tools and models for easy implementation. Beginning with the need for safety data collection at the local level, all phases of the integration process will need to be marketed to the user groups.

One identified strategy is to identify “champions” who have integrated safety into their planning processes and promote their programs through publications, speeches, conference panels, and awards programs.

## **NEXT STEPS**

This product is one step in a long-term process. A group of stakeholders has established a framework for discussion, investigation, research and further collaboration. They must now add energy to an inert document by defining and prioritizing specific action items, assigning responsibilities and identifying resources for integrating safety into the transportation planning process. Several initiatives are under way.

The Planning Group has continued to meet and discuss implementation of the strategies identified during the larger meeting. Members of the group are committed to continue the dialogue at regularly scheduled intervals.

- If resources are available, the Planning Group will identify and publish regular updates, including state and local safety integration initiatives and the results of these activities.

- TRB will post this document on their web site and develop a flyer announcing its availability that will be distributed at conferences, meetings and through other delivery mechanisms.
- The Planning Group will provide facilitation and documentation support for a pilot state program. Tennessee has volunteered to convene representatives from the various planning entities to begin the process of building a model safety integration planning process. The initiative will help identify areas of consensus, problems, information, and technical assistance requirements and barriers to further progress. Members of the Planning Group will assist in solving the issues that arise from the experience.
  - Assuming a successful outcome to the Tennessee pilot program, tentative plans include testing and further development of the model planning process in other states that have indicated an interest.
  - FHWA has begun to gather information and develop “best practices” associated with safety integration.
  - A by-product of the pilot initiative is to develop a glossary of terms used by the various planning groups to facilitate communication and understanding.
  - TRB has created a Safety in Planning Subcommittee of the Transportation Safety Management Committee to address and track progress on this issue.
  - The Subcommittee will sponsor a conference session on Safety in Planning at TRB’s annual meeting January 7-11, 2001.
  - FHWA will sponsor a half-day preconference session January 7, 2001, on Safety in Planning for state DOT transportation planners.
  - NAGHSR hosted a workshop on safety in planning during its regularly scheduled annual meeting, September 24-27, 2000.
  - The Roadway Safety Foundation is exploring the potential of developing an awards program to recognize outstanding accomplishments related to safety integration.
  - The Planning Group will develop a presentation to be used for explaining the TEA-21 safety integration requirement and activities that are taking place to implement it.