Safety in Numbers
Using Statistics to Make the Transportation System Safer

Safety Data Action Plan

September 13, 2000

Prepared by the Bureau of Transportation Statistics
under the direction of the DOT Safety Council

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Safety Data Action Plan

*Using Statistics to Make the Transportation
System Safer*

Overview

D eaths and injuries are a major cost in transportation. Transportation fatalities rank third as the cause of lost years of life in the U.S. (behind heart disease and cancer). Several travel modes have death counts whose impact exceeds that of AIDS. But the Department of Transportation has not yet responded to this public health threat by developing data programs as capable as those used in the federal medical community.

This plan aims to improve the quality of safety data programs throughout the Department of Transportation. Our principal model for improvement is the reporting system used by the National Institutes of Health to track and treat disease, and this requires better timeliness, comparability, accuracy, and coverage for transportation data. Our goal is to provide DOT with a new level of data quality, sufficient to identify, quantify, and minimize the risk factors in U.S. travel. This quality is essential to fact-based management of transportation safety programs.

The *Safety in Numbers* project was developed in response to Secretary Slater's 1999 National Transportation Safety Conference, where stakeholders identified better data collection and reporting across all jurisdictions as one of the top priorities to improve safety.

Four Safety Data Workshops were convened in September and October 1999, and a national conference was held in April 2000, to gather input and develop an action plan for improving the quality of safety data. Over 200 stakeholders participated, representing the diverse interests of the transportation community such as non-profit organizations, associations, businesses, government (state, local, and federal), advocacy organizations, and academia.

The *Safety in Numbers* workshops were organized along "modal" lines – one each for marine and aviation, and two for surface transportation. However, the feedback from these workshops demonstrated many common concerns and themes, as summarized in the discussions at the national conference. Stakeholders worked together to discuss and assess the current data system, the impact of this system on safety policy and decision-making, and the desired future state where better data would provide a more complete picture of the transportation system and therefore contribute to a safer system.

Overall, participants felt that changes were needed in the current approach to safety data collection, analysis, and application. Problems with data quality, and lack of timeliness and relevance were cited repeatedly. Most participants agreed that continued improvements in transportation safety require sweeping improvements in the data. Visions of a desired future state included a user-friendly system that provides "one-stop shopping" for transportation safety data and research, integration of the latest technology and automated data collection, "real time" data collection and analysis, national – and eventually international – data standards, and a national effort to monitor and continue improving the quality of transportation safety data.

Key next steps identified by participants centered around the following:

- continuing and expanding involvement of stakeholder organizations (development of a national forum or working group),

- assessing data needs,

- developing data standards,

- increasing data accessibility and education for data users,

- developing ways to examine safety intermodally,

- sharing best practices across the government and private sectors as well as across modal lines,

- developing incentives for data sharing (and removing legal barriers),

- applying technology and assessing procedures to increase timeliness,

- linking data sets,

- continuing development of precursor data, and

- developing a variety of common denominators.

The *Safety in Numbers* project directly supports the DOT Strategic Safety Goal – "Promote the public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage."

The plan is divided into two sections:

- **<u>Section 1</u>** describes the actions that need to be taken to improve the quality of existing data and fill data gaps. There are five key areas that are addressed in the plan, each described in greater detail below:

  A. Establishing a Lead Agency and Ensuring Intermodal Collaboration
  B. Developing an Intermodal Transportation Data Base
  C. Developing Data Standards
  D. Expanding Transportation Resources
  E. Conducting Focused Research Projects to Improve Data Programs

- **<u>Section 2</u>** describes a process for involving all stakeholders in the process.

  A. Implementation Team
  B. National/Regional Forums
  C. Ongoing Communication

Section 1

What We'll Do to Improve Safety Data

A. Establishing a Lead Agency and Ensuring Intermodal Collaboration

What Our Stakeholders Said. Participants in three of the workshops recommended that the Department of Transportation "designate a lead agency" to coordinate efforts across all modes to improve data. Participants in the national conference reinforced this recommendation. Many organizations also expressed an interest in providing input and working to help improve data.

What We'll Do. The Bureau of Transportation Statistics (BTS) will be the lead agency for the Department of Transportation to improve safety data. This is a natural extension of BTS' mission to lead in developing high-quality data and information and to advance their effective use in transportation decisionmaking. BTS reports to the Secretary and will coordinate its work with the DOT Safety Council as well as with data experts from each modal administration. There will also be opportunity for stakeholders to provide input in this process, as outlined in Section 2 of the plan.

> **DOT Values:**
>
> *"We are committed to excellence in transportation, and to that end, we will:*
>
> - *Ensure that all our work at DOT focuses on improving safety and the quality of life for all users of our national transportation system*
> - *Listen to, learn from, and collaborate with customers on how best to address their needs"*
>
> *From the DOT Strategic Plan*

To provide a forum to address intermodal issues within the department, the Deputy Secretary established the Committee on Transportation Statistics (CTSTAT). The Director of BTS chairs the CTSTAT, with members of the committee drawn from the senior leadership of the Department.

Benefits. BTS' role in coordination will provide a centralized point of contact at DOT for constituents to provide helpful suggestions and feedback, to stay abreast of the progress of the DOT safety data improvement project, and to facilitate sharing best practices across the department.

Timing. The DOT Safety Council has approved BTS' role, and CTSTAT has already been established.

B. Developing an Intermodal Data Base

What Our Stakeholders Said. Many workshop participants encouraged the department to provide Internet access to a standardized, central data base so they could have easy access to multiple data sets. Workshop participants called for 'more information sharing,' 'ability to search multiple data bases,' 'compendium of niche sources,' 'creating a bridge to historical data,' and 'development of a data dictionary.' Concerns were also expressed over how definitions vary across modes and level of government.

What We'll Do. The Intermodal Transportation Data Base (ITDB) will provide the organizing system for combining and integrating safety data, including a comprehensive data element dictionary. Mandated by the Transportation Equity Act for the 21st Century (TEA-21), ITDB will provide a common repository for key transportation data. The system's general design will include transportation data from all DOT data systems, contextual data from others, linkages across data elements, web-based access, and online data documentation and descriptive statistical tools.

Benefits. The ITDB will provide "one-stop shopping" for transportation safety data as well as provide a more in-depth look at comparability across modal data sets.

Timing. BTS has already commenced work on the ITDB, and a prototype was demonstrated and discussed at the April 2000 *Safety in Numbers* Conference. CTSTAT will provide guidance for continued development of the ITDB, with Internet posting of a "beta" version planned for Fall 2000.

C. Developing Data Standards

What Our Stakeholders Said. Participants from all workshops stressed the importance of evaluating current transportation data and developing standards within the current systems. Participants called for "creating a set of standards with regard to terms, what to collect and analyze, and data storage and format."   Discussion also addressed thresholds—e.g., when does an incident become "significant;" when should an injury be recorded?

What We'll Do. BTS, with guidance from CTSTAT, will develop data-quality standards to guide the collection, documentation, presentation, and interpretation of transportation data within current data-collection systems. These standards are also mandated by TEA-21. Existing standards from other federal statistical agencies will be used as a starting point.

Benefit. Standards will provide benchmarks against which the quality of current systems and comparability among them can be assessed. From these assessments, a roadmap can be developed that identifies fruitful areas for change, leading to systems that provide higher quality data for policy decisions and transportation planning across all modes of transportation.

Timing. Data quality standards are in the early stage of development and are available for review on the BTS website at http://www.bts.gov/programs/statpol/btsguide.html.

D. Expanding Resources for Transportation Research

What Our Stakeholders Said. Participants mentioned the need to access anecdotal and qualitative transportation research. Comments included: "extracting useful information, organizing it, and analyzing it is a problem," " retrieval is a challenge," and "the data and information that exist are not available for systemwide use."

What We'll Do. The National Transportation Library (NTL) will provide research material beyond data. NTL is an online library providing reference materials, publications, reports, journal articles, and an index to abstracts on transportation research. NTL exists now, but remains to be expanded, particularly to include non-federal materials.

Benefit. Expansion of the National Transportation Library will increase the dissemination of transportation research-related materials and resources.

Timing. NTL development will require a multi-year program to expand the collection to federal, state, and local documents and research; develop access to full-text documents from abstracts; and improve the cataloging of materials.

E. Conducting Focused Research Projects to Improve Data Systems

What Our Stakeholders Said. Throughout the workshops participants drew attention to data quality. Both under- and over-reporting of accidents were mentioned, as well as lack of uniformity in completing reports, exclusion of reporting requirements for some types of transportation workers, and that all data are not reported. Participants commented that "there needs to be better information and it needs to be of a higher quality" and "there needs to be better data on results." Others indicated that "accuracy is a challenge because of budgetary problems and different interests," and that "it is difficult to get accurate, undiluted information on human error and performance."

Another related key issue mentioned was relevancy; participants wanted to ensure the right information was being collected and that data that was duplicative or no longer useful was not collected.

The Limitations of DOT Safety Data. Safety is the top priority of the Department of Transportation. During the last decade, DOT has reduced accident rates in every category of transportation. The tools used to achieve this success were broad educational campaigns (drunk driving, seatbelt use, truck no-zones), widespread implementation of new technology (better black boxes in aircraft, airbags, weather satellite reports), and national enforcement initiatives (hazardous spill reporting, zero-tolerance policies on drugs and alcohol, aggressive accident investigation and appropriate prosecution).

Diminishing gains indicate that these broad-brush approaches to safety are reaching their performance limits. Such strategies are analogous to the nationwide inoculation and fluoridation programs used in public health, in that they are essential, but so general that better-focused efforts can reap major additional benefits. For DOT to achieve the next level of safety improvement, new tools are needed that focus very specifically on the

causes and circumstances of accidents, in the same way that modern public health researchers have gone beyond national vaccination programs by sifting medical data to find risk factors. Success requires the analysis of high-quality accident data to identify patterns that can be addressed by new local legislation, technology, or other interventions.

What We'll Do. With the support of the Bureau of Transportation Statistics and the Committee on Transportation Statistics, the Department will plan and conduct 10 research projects to focus on addressing specific shortcomings. These will be organized into four broad areas:

- Improving the quality, comparability and timeliness of existing data
    - Research Project #1 – Reengineer data programs
    - Research Project #2 – Develop common criteria for reporting deaths and injuries
    - Research Project #3 – Develop common denominators for safety measures
    - Research Project #4 – Advance the timeliness of safety data

- Collecting better data on accident circumstances, precursors, and leading indicators
    - Research Project #5 – Develop common data on accident circumstances
    - Research Project #6 – Develop better data on accident precursors
    - Research Project #7 – Expand the collection of "near-miss" data to all modes

- Expanding the use of technology in data capture
    - Research Project #8 – Link safety data with other data
    - Research Project #9 – Explore options for using technology in data collection

- Improving analytical capability
    - Research Project #10 – Expand, improve and coordinate safety data analysis

RESEARCH PROJECT #1
Reengineer DOT data programs

The problem: The Department of Transportation maintains in excess of 40 programs that capture either safety data or crucial related information, such as measures of exposure. But a recent data quality review requested by Congress suggests that quality improvements can be made that will better serve the DOT mission.

What we need: The first step in improving our data programs will be a data quality audit. The Bureau of Transportation Statistics intends to perform a full quality audit of 29 data programs. This audit will be done in two stages: the first stage will identify broad quality issues for each program, and the second stage will produce a detailed report describing problems and potential remedies.

Following this initial assessment of major data-collection systems, areas for possible process improvement activities will be identified, working closely with the modal data-collection organizations and data suppliers. Process improvements will then be developed and implemented. There will be periodic review of data collection to keep the processes flexible and up-to date and to ensure quality.

Benefits: Unless we have reliable and accurate data, we will be basing program decisions on a misguided understanding of the transportation system and its operating environment. With improved data, DOT's safety programs will become not only more effective, but more cost-effective as well. As DOT more accurately focuses its inspection, education, regulatory, investment, and research efforts, both the numbers of fatalities and injuries and the costs for prevention will decline.

RESEARCH PROJECT #2
Develop common criteria for reporting injuries and deaths

The problem: Transportation-related deaths and injuries are key measures of interest in the department's strategic plan. But the modes currently use up to eight different sets of definitions and reporting criteria. This includes the description of what constitutes a death or injury, as well as what kinds of activities and victims might be subject to reporting. For example:

- Most modes count any death that occurs within 30 days of an incident. But two modes use other thresholds: The Federal Railroad Administration (FRA) uses 360 days for illness-related deaths, and the U.S. Coast Guard (USCG) does not specify a period of time.
- Every mode has a different set of conditions defining a reportable injury. The Research and Special Programs Administration (RSPA) and USCG each have two different criteria, depending on the program.
- The modes often treat similar circumstances very differently—e.g., ground crew in aviation are counted while longshoremen in the maritime industry are not; rail maintenance workers are counted while shipyard and bus maintenance workers are not. The question is: what does *transportation-related* mean?

This variety of criteria makes aggregate counts of transportation deaths and injuries misleading. The aggregate numbers cannot be used reliably to present trends, as modal shifts would distort the comparisons. The numbers also cannot be disaggregated and compared for purposes of finding differences in risk or applying lessons from one mode to another (e.g., in the area of human factors), since the meaning of terms is not consistent.

What we need: There are differences in operating environments that need to be understood and respected. There are also historical differences and sometimes large stakeholder investments in the current systems. We will need to provide for comparability across time in any case, such that we don't create discontinuities in measurement that disrupt our view of long-term trends. However, the potential solutions are not necessarily all-or-nothing changes. We need: 1) sufficient detail to classify the reports in common terms, 2) a reasonable approach for crosswalking definitions, or 3) changes in the reporting criteria.

First, we need to identify and inventory the inconsistencies, and develop common principles for describing the circumstances of death/injury. Then we should explore options for crosswalking the data or extending the level of detail to permit such

crosswalks. Finally, we will need to explore the feasibility of consistent, national definitions and reporting. These last two steps will be particularly challenging in view of modal investments and differences in program jurisdiction.

Benefits: Common criteria in some form will allow us to set goals and manage resources across modes—at the departmental level—which we cannot do now with existing data. They will help provide a better sense of relative risk in different operating environments, and they will permit more reliable use of lessons learned in one mode by another. They will also provide a more credible public view of departmental data.

RESEARCH PROJECT #3
Develop common denominators for safety measures

The problem: Each of the modes uses a different set of denominators for evaluating changes in safety risk.

- Some programs (e.g., general aviation, recreational boating) use primarily a count of deaths or injuries, since they currently lack a reliable measure of "exposure." The Federal Motor Carrier Safety Administration (FMCSA) and the Federal Highway Administration (FHWA) also use a count, by choice, although some exposure data are available.
- Some (National Highway Traffic Safety Administration , FRA) primarily use a rate based on vehicle-miles, although the meaning and magnitude of a "vehicle" varies, and the numerator may be viewed as inconsistent with the denominator (e.g., person-deaths divided by vehicle-miles).
- One program (USCG maritime safety) uses the number of workers as a denominator for occupational safety, to enable comparisons with other occupations.
- One program (commercial aviation safety) uses the number of fatal accidents divided by flight (i.e., "vehicle") hours.
- One cross-modal program (grade-crossing safety) uses a composite denominator – the product of two "vehicle" mile counts – to attempt to account for the risk associated with the intersection of two modes.

This variety makes aggregation or comparison unworkable, which limits our ability to find differences in risk. It can mask important safety risks, and limits the public's understanding of the relative risk associated with different activities or transportation modes. Without good information, choices may be misdirected and the public may be exposed to unnecessary risk.

What we need: We need some set of common denominators that can be used to characterize transportation safety in a comparable way for comparable circumstances. It should be possible to compare the risk of recreational boating, for example, to the risk of recreational flying or recreational driving. Similarly, the risk of working on a ship should be comparable (even if not equal) to the risk of working on a train, truck, bus, taxi, or airplane.

Benefits: Denominators allow us to express safety in terms of risk, and comparable measures of risk allow us to determine the riskiest operating environment. That may help reveal risks we were not aware of. It may help focus effort on more serious safety threats, and it will provide useful information to the public. It will also help inform policy and resource decisions, and it may offer a better basis for justifying resource requests.

RESEARCH PROJECT #4
Advance the timeliness of safety data

The problem: Much of our safety data are reported only on an annual basis, and for most of our safety data there are reporting lags of up to several months after the accident or end of the reporting period. When we reported safety results in our first DOT Performance Report to Congress, we could not provide the data for many of the measures three months after the end of the year. The Deputy Secretary has characterized this situation as "light from a distant star—it may have been extinguished long ago by the time we see it." This is not adequate for managing and redirecting our programs throughout the year, and it is not adequate for reporting performance against our goals.

What we need: We should have safety data on a monthly basis at least, and with no more than a 30-day lag. To achieve this, we will need to reexamine our processes for collecting the data, and explore options for alternative data collection where the processes cannot be changed easily. The solutions may involve new technology or different operating procedures. In any event, we will need to be very aware of how incentives act on the behavior of those who report or collect the data.

Benefits: More timely data will allow us to identify trends earlier and take corrective actions earlier. This may mean program design changes or reallocation of resources, but the effect could be fewer deaths, injuries, and accidents. More timely data will also provide greater credibility in our performance reporting, helping to underpin the department's budget requests.

RESEARCH PROJECT #5
Develop common data on accident circumstances

The problem: Over time, each mode has developed its own taxonomy for describing the circumstances surrounding accidents. In fact, much of the focus has been on defining "causes" of accidents and developing "causal" data. However, determining the cause of an accident involves a subjective judgment, and often leads to a statement such as "operator error"—which by itself does not provide information on the underlying causes of accidents so they can be analyzed and measures can be taken to prevent them. Perhaps more important is a description of the chain of events and the operating environment, including characteristics of the operator, the vehicle, the weather, and the system. But there is no consistency in collecting such data across modes. This inconsistency inhibits the sharing of information (such as in the area of human factors or the effects of weather),

and fails to take advantage of advances in different modes. Event recorders, for example, are used in aviation extensively, but are not widely used in other modes. Extending the use of event recorders is one of the National Transportation Safety Board's (NTSB) top 10 most wanted safety improvements in transportation.

A related issue will be how to protect confidentiality for those who provide data.

What we need: We should be taking advantage of technology like event recorders, and we should be taking advantage of research on classifying accident circumstances. We need data that will help identify the causal chain for individual accident investigations, and that will be useful in analyzing data statistically across a wide variety of accidents— even in different modes.

First, we will need to identify and evaluate the range of taxonomies across modes (and look at failure mechanisms in other areas like occupational safety, nuclear safety, and such, for ideas). We also need to evaluate the range of technologies already available. Then we will need to develop a common framework for thinking about transportation accidents and explore implementation issues.

Benefits: Common data on accident circumstances would allow easy sharing of research findings and could improve most modes' data and understanding of accidents. Expanded use of event recording technology, in particular, could provide a wealth of data to help isolate important factors that could be addressed through targeted government or private sector intervention. We could expect greater visibility of accident circumstances, and thus more cost-effective actions to prevent or mitigate accidents.

RESEARCH PROJECT #6
Develop better data on accident precursors or leading indicators

The problem: Accidents, deaths, and injuries are "lagging" indicators, in the sense that they tell us after things have already gone wrong. "Leading" indicators, on the other hand, might be useful in warning us about changes in risk before the system has failed. For example, changes in demographics present a leading indicator for driver safety. We might also consider looking at certain industry safety practices, vehicle age, operator attitudes, training programs, or any number of variables that could be used as leading indicators for safety, if significant correlations can be found.

There has been a strong focus in DOT on safety outcomes, but often only subjective assessments of the relationship between contributing factors and the resulting accidents, deaths, and injuries. This limits our ability to intervene early in the process, and may result in program designs that are not as targeted or as cost-effective as they could be.

What we need: We need indicators that signal future changes in safety, and that are based on demonstrated correlations. To develop such indicators, we need to first tap the expert knowledge in the various modes to help identify factors that are suspected to be leading indicators. Then we need to develop hypotheses and design research projects to test the hypotheses. This may be a continuous process, not a one-time project. Finally,

we need to look at the data-collection process itself, and the experience of the data collectors, to determine how best to improve the data.

Benefits: Leading indicators could help us forecast trends, and we could use that information to help set more realistic (or ambitious) program goals. The results of the research to identify leading indicators could also be used to target or redirect programs for greater effectiveness—fewer fatalities and injuries.

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RESEARCH PROJECT #7
Expand the collection of "near-miss" data to all modes

The problem: Virtually all transportation accidents are preceded by a chain of events or circumstances—any one of which might have prevented the accident if it had gone another way. In a large number of cases, operators are aware of these "close calls" or "near misses" and may have information that could prevent future accidents. However, most of our modal programs are focused on collecting data on mishaps only when they result in a reportable accident. This leaves unexposed the large majority of cases where we could develop useful data on accident precursors or on prevention strategies that have actually worked.

The Federal Aviation Administration (FAA) has had a near-miss reporting system in place for several years, including confidentiality protections for those reporting. USCG is in the process of developing a similar near-miss reporting system, but still is struggling with the issue of confidentiality protections. Other modes have an interest, but have not started development.

What we need: Each mode has a different operating environment and its own set of issues with the industry. But we need to approach the problem more comprehensively, to take better advantage of others' work and potential economies of scale.

First, we need to explore the transferability of near-miss reporting from aviation and the maritime modes to rail, transit, motor carriers, pipeline, and passenger vehicles. We need to explore issues and options for data confidentiality, including a review of whether BTS' legislative protections could be extended to other DOT units (even including FAA). Then we need to explore implementation issues and options.

Benefits: Near-miss reporting systems can provide a data stream that complements accident investigations, and that may provide key data that would prevent low probability -- high consequence accidents in particular. The systems may also provide new information on what works to break the accident chain before an accident occurs. As a result, we would expect more focused prevention efforts, better prevention, and a better ability to mitigate accidents. A coordinated effort across DOT could also probably be implemented more cost-effectively than separate efforts.

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RESEARCH PROJECT #8
Link safety data with other data

The problem: The essence of data analysis is finding patterns and relationships. To the extent that our programs are guided by data analysis, people need easy access to a variety of data and the ability to link those data to reveal relationships. Right now, there are many safety-related data sets—like vehicle and driver records, EMS records, police and medical reports, and inspections—that cannot be analyzed together easily. This constrains our ability to analyze data on a departmental basis, and it limits our ability to use information for developing more effective programs.

What we need: We need an easily accessible repository for transportation safety-related data, along with clear documentation so that the data are interpreted and used correctly. The ITDB—currently under development—can provide such a repository with web-based access and a suite of analytical tools. It will include a data dictionary, as well as online documentation for the data/sources.

Benefits: The ITDB will expand and improve access to transportation data and the ability to analyze the data. It will provide "one-stop shopping" for transportation data—for researchers, state and local governments, industry, the general public, as well as DOT analysts and other federal agencies. By putting the data together in one place and providing easy links, it will highlight inconsistencies and gaps. As a result, it will also help to improve the quality, timeliness, and comparability of the data. Ultimately, better data and more analysis will support better program management and decisionmaking, making the system safer overall.

RESEARCH PROJECT #9
Explore options for using technology in data collection

The problem: Much of our safety data collection continues to follow old patterns of paper reporting—sometimes still on paper and sometimes an automated facsimile of paper reporting. This is manually intensive, making it costly and often resulting in incomplete data reporting. It is also prone to a variety of errors. Several areas seem particularly ripe for exploiting technology to improve our data collection and reporting:

- Highway vehicle-miles traveled data are currently reported on an annual basis, with significant variation in data-collection methods and significant error in the measurement.
- Estimates of seat belt usage are also reported on an annual basis, with significant sampling and non-sampling error reported.
- Hours and miles of travel are currently unavailable for general aviation and recreational boating.

- Commodity flow data are collected on a five-year cycle, with significant limitations in the scope of the data.
- Highway accidents are reported through paper reports filed by police officers on the scene.

What we need: We need to explore options for using new technology to collect data. We can begin by bringing together an expert panel to brainstorm ideas, then consider testing some of the ideas, perhaps with prototype demonstrations.

Benefits: Better use of technology could greatly facilitate the timely collection of data, and may improve data quality as well. It may also be more cost-effective. As a result, we could have better data at a lower cost.

RESEARCH PROJECT #10
Expand, improve, and coordinate safety data analysis

The problem: The purpose in collecting data is to enable analysis to help understand the causes and circumstances of transportation-related deaths and injuries, and then to help reduce deaths and injuries. But methods and skills vary widely, and there is no good forum for sharing research findings or best practices in research methods. Also, the level of resources for analysis and evaluation is widely believed to be too low, after two decades of decline in its prominence. As a result of these shortcomings, the effectiveness of our analyses is limited, and therefore the effectiveness of our programs is also limited.

What we need: We need a sophisticated and coordinated analysis capability, with a size and scope commensurate with its value in directing programs, and where the value is widely recognized. To achieve this, we should benchmark other agencies and evaluate the variety of modal approaches to data analysis. We need to develop a plan for building the department's analytical capability, and create a mechanism for sharing best practices and research results.

Benefits: Good analysis underpins virtually every successful program. It can help identify transportation problems, as well as help in the development of policy options, in the interpretation of performance, and in the assessment of program effectiveness. Using the data will also drive improvements to the data.

Section 2

How the Transportation Sector Can Work Together to Improve Safety Data

Sustaining the momentum achieved during the modal workshops and national conference is key to furthering the objectives of *Safety in Numbers* and moving from discussion to action. Stakeholders have continually expressed a desire to stay informed and engaged in the process. Toward that end, this section outlines recommended outreach activities to be conducted over the next two years.

Continued stakeholder involvement is central to the success of the action steps previously outlined in the first section of this Action Plan. Communications and outreach can be achieved through a variety of means. For practical purposes, outreach has been divided into three general categories:

- Implementation Team -- Focusing on achieving results in specific topic areas
- National/Regional Forums -- For discussion, consensus, education, and networking
- Ongoing Communication:
    - Direct Stakeholder Communication
    - Awareness through Media

A. Implementation Team

Purpose. The Implementation Team will work on specific issues related to implementation of the recommendations discussed in the first section of this Action Plan. The Team will act as a touchstone for activities undertaken by internal departmental groups such as CTSTAT and the Safety Data Task Force, and ensure that actions stay relevant to industry.

How This Will Happen. BTS will assemble a team of 20 stakeholders with diverse geographic, modal, and industry representation. This team will meet four times a year in Washington, DC. BTS, together with the DOT modal administrations, recommend participants from the *Safety in Numbers* Workshops and National Conference participate on this team. Within the Team, ad hoc subgroups will also be established to tackle key or emerging issues. The Team will issue quarterly reports of progress on key issues and disseminate the reports to stakeholders.

B. National/Regional Forums

Purpose. Stakeholders will be invited to an annual conference that will provide updates on important issues, host educational sessions on emerging or critical issues, or discuss ways to achieve consensus in critical areas. For the next year, this conference will be held at the national level and in year two, it will be held in four regions in order to highlight regional issues. Conferences will also provide an opportunity to attract media attention to the importance of transportation safety data.

How This Will Happen. BTS will take the lead role in developing content and organizing these one-day forums. The Implementation Team will provide input on program content.

In conjunction with the annual forum, the *Secretary's Award for Innovation in Transportation Safety Data* will be established. This award will highlight transportation data innovations that directly improve transportation system safety. A call for entries will be disseminated to stakeholders four months prior to the forum. Award recipients will be recognized by the Secretary at the national/regional event. This program also provides an opportunity to highlight the issue in both national and regional media outlets and further engage stakeholder organizations.

C. Ongoing Communication

Stakeholders

Purpose. To provide stakeholders with regular and direct communication of action item progress and new developments related to the initiative and to create a feedback mechanism.

How This Will Happen. Means to achieve regular stakeholder communications include monthly e-mail updates from BTS, establishment of a Safety Data Bulletin Board linked to the BTS website to post information on the *Safety in Numbers* initiative and to act as a resource for problem-solving or information-sharing. The bulletin board will feature a transportation safety data mailbox to provide BTS with feedback on project-related issues. Conduct workshop sessions featuring DOT leadership and key stakeholders at other recognized conferences such as the Transportation Research Board, Lifesavers and more modal-specific national conferences such as AASHTO, APTA, NAGSR, etc.

Media

Purpose: To create and sustain awareness in the transportation and statistical communities' media of progress of the *Safety in Numbers* initiative and highlight achievements of initiative and stakeholder successes.

How This Will Happen. BTS will take the lead in developing a variety of tools to achieve awareness through the media. For example:

- Develop template articles for placement in transportation industry publications, adapting them to the specific modes for which the articles are being written. Articles can be written by a key leader in that modal community.

- Develop accessible data products to be distributed to transportation reporters at major newspapers and trade press on a regular basis to promote interest in the potential of safety data.

- Convene Transportation Safety Data media roundtable with trade press.

- Conduct radio talk show tour with issue experts.

- Disseminate an informational mailing to transportation editors of key newspapers outlining objectives and accomplishments of the initiative.

- Distribute a bi-annual summary of progress made against the issues and release at a National Press Club trade press conference.