

Saving Lives on Our Nation's Highways

Written Testimony of:

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Madame Chair, Ranking Member, and Members of the Committee, I am Robert Johns, director of the Center for Transportation Studies (CTS) at the University of Minnesota. I am honored to be invited to discuss one of our nation's highest transportation and public health priorities: saving lives on our road systems. My focus will be on the development and use of traffic safety performance measures.

CTS Background in Traffic Safety

Our center is one of the largest university transportation centers in the nation, ranking in the top five in terms of annual funding attracted for research, education, and outreach activities related to transportation. Our Intelligent Transportation Systems Institute is a national University Transportation Center (UTC) funded by the Research and Innovative Technology Administration. Our Local Technical Assistance Program (LTAP) funded by the Federal Highway Administration offers extensive training and technology transfer services to transportation professionals throughout Minnesota. We also compete for and have been awarded several grants and contracts from a diverse set of federal sponsors, including FHWA, FTA, NHTSA, NSF, NASA, DOE, and DHS. We have a close partnership with the Minnesota Department of Transportation, the Minnesota Local Road Research Board, the Minnesota Department of Public Safety, and other state agencies, which also are sponsors of CTS research projects and training activities.

As a center in a land-grant university, we work to advance the land-grant mission of research, teaching, and public service in the field of transportation, which we define very broadly. We are a large research university—with more than 50,000 students at our Twin Cities campus—and are able to call on numerous disciplines to address the multi-disciplinary nature of transportation challenges. We have coordinated extensive research

activities for years on engineering and technology topics, exploring infrastructure, traffic, and vehicle research issues. In recent years, our research activities in policy and planning topics—such as transportation and regional growth, community design, non-motorized transportation, and land use relationships—have grown considerably. We work with over 70 faculty members in more than 25 academic departments and disciplines.

Traffic safety has been an ongoing area of research for our center. We address safety challenges from the perspectives of traffic engineering, mechanical engineering, psychology, computer science, urban planning, public policy, and law. I do not intend to discuss our research findings today; it would be better to have our experts in these fields testify. But I will describe our involvement in Minnesota's performance-based safety programs. Our research contributes to the development of new intervention strategies (technology, human behavior, and policy) and to the understanding of the performance impacts of these and other strategies. Our education and outreach activities contribute to enhancing the safety expertise of our current and future workforce and to increasing the public understanding of safety issues.

Increased Transportation Performance Measurement

Both the public and private sectors have made advances in recent years in measuring performance. In the early 1990s, private sector companies facing increased global competition developed extensive data systems for monitoring product quality, organizational performance, market acceptance and change, and financial success. Today many companies tie strategic plans, goals, and objectives to quantitative measures that indicate how well the strategic goals are being met. This allows executives to compare the results of alternative investments, better analyze how well their company is performing in relation to their competition, make mid-course adjustments, capitalize on emerging opportunities, and hold their managers and staff accountable. Management and investment decisions have increasingly become data-driven, with strategic priorities justified by an analysis of the likelihood of reaching target performance measures.

The public sector has followed these practices, often influenced by elected and appointed officials who are demanding more accountability for the expenditure of public funds. In transportation, the practice of performance measurement has advanced rapidly in the past decade. The Transportation Research Board of the National Academies established a performance measurement committee in 2000. In addition to identifying research needs and publishing papers, this committee has sponsored two national conferences on performance measurement in transportation, resulting in extensive proceedings that describe examples of practices for measuring infrastructure condition, congestion, safety, and other indicators of the performance of our transportation system. State departments of transportation and metropolitan planning organizations have begun to include performance targets in their updated transportation plans. In 2006, the Minnesota Department of Transportation (Mn/DOT) received a national award from the Federal Highway Administration as the leading state department of transportation in incorporating performance measures into its state transportation plan. Those measures are

reviewed and used by the Minnesota legislature in its response to Mn/DOT's biennial budget proposals.

Traffic safety performance measures are usually one of the first sets of measures to be tracked by a transportation agency as it advances its practice of performance measurement. The overarching measures, such as total traffic fatalities, are straightforward and have been measured in crash statistics for years, but the linking of program goals and investments to performance targets is in its infancy.

Why Measurement-Driven Safety Programs Are Needed

In 2006, almost 43,000 people died on U.S. roads and almost 2.6 million were injured. While these numbers represent tragic experiences for many families, it is particularly discouraging that we are not making progress as a nation. A key performance measure for traffic safety is the fatality rate, which is measured by fatalities per 100 million vehicle-miles traveled (VMT). The U.S. rate dropped from 5.3 in 1965 to 1.7 in 1995. Since then it has stayed at a plateau, declining only to 1.4 fatalities per 100 million VMT in 2006.

It is also discouraging that the United States, formerly a world leader in traffic safety, has been surpassed by many countries whose fatality rates continue to decrease. In other countries, traffic safety is increasingly being seen as a public health concern. The World Health Organization has projected that if action is not taken, road traffic injuries in 2020 will be the third leading contribution to the global burden of disease and injury, ranking above pulmonary disease, respiratory infection, tuberculosis, war, and HIV. Several countries have taken on this challenge with comprehensive, integrated programs to address the culture of road safety. Sweden established its Vision Zero program in 1997, which focuses on shared responsibility to meet public health targets; it has shown success in reducing fatalities and injuries. Other European countries have followed Sweden's model with innovative programs. Australia and New Zealand have also achieved impressive results in meeting targets. U.S. gains during this period have been small in comparison.

Setting performance targets for traffic safety can improve safety performance by motivating everyone involved to make optimal use of their resources, with ambitious long-term targets often more effective than modest short-term ones. Performance targets encourage people to identify all possible interventions, rank them according to their impact, and implement ones that are most effective. Good baseline data and ongoing measurement systems are essential.

In its 2007 report, the National Surface Transportation Policy and Revenue Study Commission called for increased performance measurement and accountability for all federal transportation programs. It acknowledged the challenge in developing measurement-driven programs applicable to all states and metropolitan areas, since local conditions are so different. But it strongly reinforces the potential gains of using

performance standards—in accomplishing national objectives and in restoring public confidence in the transportation decision-making process.

For the United States to follow the National Commission’s recommendations and tie federal safety investments to meeting performance measures, it will need to address a barrier not present in some of the countries that have advanced beyond our nation in traffic safety. This is the cultural value of “individual rights” present throughout our history, which contributes to resistance to some of the interventions being implemented more easily in other countries, such as mandatory seat-belt laws, low blood-alcohol standards, and increased electronic surveillance. Our challenge is to create integrated, shared approaches that address cultural trends in addition to implementing technical strategies. Lessons can be learned from innovative states that have recently developed new performance-driven approaches in traffic safety and have begun to show impressive results.

State Experiences

The increased use of performance measures by state governments has led to several innovative performance-based programs in traffic safety. They have been accelerated by the SAFETEA-LU requirement for each state to develop a strategic highway safety plan (SHSP). A few states are highlighted below, with a more extensive description of Minnesota’s program in the next section.

In 2000, the state of Washington developed its Target Zero program. Its vision is to reach zero traffic deaths and zero disability injuries by 2030. The program recognized the important need for partnerships by creating a Traffic Safety Commission chaired by the governor. Washington has established a number of goals and strategies, with extensive performance measures and targets for each. Most trend lines are downward since the establishment of the Target Zero program.

The state of Michigan also recognized the need for a comprehensive program. In 2002, the governor formed the Governor’s Traffic Safety Advisory Commission, with extensive outreach to and involvement of partners. Similar to Washington, this previous experience prepared Michigan well for the development of its SHSP in 2004. The state established 12 emphasis areas and measures safety performance for each one.

The state of Missouri in 2003 developed its Blueprint for Safer Roadways. This contained four emphasis areas and 17 targets. Missouri also established the Missouri Coalition for Roadway Safety, which is divided into 10 regional coalitions; each has a safety plan. For each of its targets in the four emphasis areas, Missouri has established benchmarks as the “ideals” toward which it strives.

In 2006, several organizations in Utah came together to introduce the goal of reaching zero traffic fatalities. A Utah Safety Leadership Team was formed to develop the Zero Fatalities program and the Utah SHSP. Eight safety emphasis areas were identified, with

strategies and performance measures established for each. In addition, the Utah Department of Public Safety's Highway Safety Office addresses 10 focus areas and sets goals, measures of success, action plans, and performance goals for each.

Minnesota's Towards Zero Deaths Program

In 2004, Minnesota's Toward Zero Deaths (TZD) program was formed as a result of a stakeholder workshop sponsored by Mn/DOT and the Minnesota Department of Public Safety (DPS); the workshop was hosted by the Center for Transportation Studies (CTS) at the University of Minnesota. The stakeholders heard speakers from Sweden and Australia as well as university faculty and then formed small groups to develop strategic directions. This process led to a strengthened partnership between Mn/DOT and DPS and an active support role by CTS. Other partners in the state include the State Patrol, the Minnesota Department of Health, and counties and cities. A leadership team drives the program's activities.

Like Washington and Michigan, Minnesota was a step ahead in creating the required SHSP. The plan includes several emphasis areas and performance measures. The TZD vision is perhaps most powerful in providing an umbrella under which several activities can be coordinated in several agencies. It accelerated initiatives by other organizations, such as the county engineers association, which wanted to be part of this vision.

The result of this comprehensive program was a reduction of traffic fatalities from 657 in 2002 to 494 in 2006. Minnesota achieved its target measure of 500 fatalities by 2008, two years ahead of schedule. The TZD leadership team decided to establish a new safety goal of 400 fatalities by 2010.

The energizing TZD vision and the resulting partnerships led to new strategic thinking and resources at a central level to focus on large pay-off activities. The amount of funds allocated towards safety projects was doubled. Three centrally administered programs were initiated: 1) county SHSP grants; 2) a state speed management program; and 3) a cable median barrier program. Continued performance measurement has recently led to new directions that address high crash cost locations.

This short-term success of TZD is complemented with long-term investments in research and public education. CTS's Intelligent Transportation Systems Institute has been successful in attracting federal funds in addition to its UTC funds for intersection control and for teen-age driving research initiatives. CTS also coordinates a stakeholder conference each year for Mn/DOT and DPS that attracts more than 550 participants from local government and from safety interest and advocacy groups. CTS provides additional support by maintaining a comprehensive TZD Web site.

Increased safety courses in Minnesota have been developed both for degree programs in civil engineering and for short courses for the LTAP training program. The recently established Center for Excellence in Rural Safety at the University's Humphrey Institute

of Public Affairs has begun to produce research and tools that highlight the significant policy issues of traffic safety, including a Google-Earth Web site that allows visual displays of traffic fatalities for various geographic areas in the United States.

The linking of these diverse activities under the TZD vision has created an atmosphere of continuous learning and cooperation and a willingness to pilot new approaches and actively court the media's attention. In addition to creating innovative programs, the TZD vision is fostering important steps in addressing Minnesota's traffic safety culture, as Sweden and other countries have done.

Implications for Federal Safety Programs

State agencies in the United States and governments in other countries can be seen as laboratories for the U.S. government. Their positive experiences with measuring safety performance and establishing performance targets provide a base of knowledge and practice for the federal government to use in following the recommendations of the National Commission for performance-based programs. Several directions at the federal level should be explored:

- Federal funding programs based on meeting performance standards. Financial incentives could be developed for states that demonstrate measured improvement in safety performance.
- Federal requirements for a state structure, vision, and plans that involve multiple partners and set ambitious long-term goals, building on the state initiatives in the SHSPs.
- Increased federal funding for public education programs, with grants available for communities to bring together local elected officials, school districts, hospitals, enforcement agencies, and other stakeholders who together can influence public attitudes.
- Federal reinforcement of the need to integrate approaches with multiple strategies—such as the four E's (engineering, enforcement, education, and emergency response), research, training, media relations, and involvement of elected officials and advocacy groups.
- The development and sharing of best practices by states and other countries in data-driven programs that utilize safety performance targets.
- Federal sponsorship of university-based programs for long-term basic research in traffic safety. While successful applied research programs are in place, such as the National Cooperative Highway Research Program and the Strategic Highway Research Program administered by the Transportation Research Board, there is a need for more fundamental knowledge of the complex interactions of human behavior,

vehicle performance, and infrastructure design in traffic safety. Increased knowledge would lead to more effective intervention strategies.

- Federal programs for workforce development, assuring that our future professionals have expertise in traffic safety. This is an important outcome of student-based university research, in addition to the new ideas and knowledge created.
- Federal requirements and funding that assure safety data collection systems and ongoing statistical analyses, both at the federal and state level. These form the foundation for performance measurement and for the evaluation of how well states are meeting performance targets.
- Information resources for a wide range of traffic safety topics that are easily accessible by professionals, researchers, students, elected officials, the media, and the public. An example is the Transportation Knowledge Network program that AASHTO is proposing be funded in the next authorization, which would link state libraries and information resources to the National Transportation Library and federal information resources, taking advantage of rapidly developing Web-based systems and sharing of electronic databases and information.

The U.S. government has an opportunity to establish federal safety programs based on performance measurement and performance targets that will break through the plateau the nation has been on for the past decade. Other countries and innovative state governments are demonstrating how it can be done. We need the commitment of the U.S. Congress and the executive branch to make this a high priority and provide new directions such as those suggested above.

Thank you this opportunity to testify today.