TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

January 14, 2005

Ms. Mary E. Peters
Administrator
Federal Highway Administration
Room 4218
400 7th Street, SW
Washington, D.C. 20590

Dear Administrator Peters:

The Research and Technology Coordinating Committee (FHWA) met on November 22–23, 2004, at the Keck Center of the National Academies in Washington, D.C. The enclosed meeting roster indicates the members, liaisons, guests, and TRB staff in attendance. On behalf of the committee, I wish to thank FHWA for its continuing interest in and support for the work of the RTCC. I also thank and commend members of the FHWA staff for their participation in the meeting. The committee appreciates the presentations made by Charles (Chip) Nottingham, Susan Binder, Dennis Judycki, Debra Elston, and Marci Kenney, as well as the contributions of other FHWA staff who attended the meeting.

This letter report is an intentionally brief summary of the meeting; information about the committee's future activities and meetings is also provided. The report is organized under the following main topics:

- Highway safety performance
- Effects of earmarking federal transportation research funds
- Review of R&T activities of FHWA's Office of Policy
- Status reports on other FHWA R&T activities, including laboratory assessments at Turner-Fairbank Highway Research Center; a recent international highway R&T initiative; FHWA's Corporate Master Plan for R&T; international highway R&T
- Current and future highway pavement research needs
- Effects of surface transportation reauthorization on highway R&T

Highway Safety Performance

The committee hosted a panel discussion to review and comment on the dramatic improvement in highway safety that has occurred in Australia—a decline from 27.5 fatalities per 100,000 population in 1973 to 8.2 fatalities per 100,000 population in 2003. This performance improvement was first brought to the committee's attention at its June, 2004

meeting by Dr. Michael Meyer of Georgia Tech, a member of the TRB Executive Committee. The RTCC decided to explore whether the key countermeasures used in Australia are transferable to the United States and whether the Australian experience suggests topics for FHWA safety research.

While many of Australia's key countermeasures are similar to those used in the United States, they differ to some extent. For example, universal seat belt use is required in Australia and vigorously enforced; this is not the case in the United States, where many states do not actively enforce seat belt use. In addition, the blood alcohol concentration limit for Australian drivers is 0.05, while the limit in all states in the United States is currently 0.08. Such differences in laws, conventions, and public attitudes reflect, among other things, different attitudes with regard to individual rights, and affect the ability to transfer experiences from other nations.

Several panelists noted that international comparisons are usually based on fatalities per 100,000 population because both road deaths and population are relatively easy to track. Safety performance based on exposure, however—usually vehicle-miles traveled—can yield different results. In fact, in terms of fatalities per vehicle-miles traveled, U.S. safety performance compares favorably with that of Australia. Nevertheless, the United States is no longer the world leader in road safety on such a risk-adjusted basis. Panelists also pointed out that while fatalities provide the basis for such comparisons, the identification and design of countermeasures rely more heavily on injury crashes, for which data are less reliable across jurisdictions.[1]

The participants observed that in the United States, highway safety is a multifaceted problem whose ownership is fragmented across a highly decentralized and disaggregated set of agencies of varying size, type, responsibility, and resources. In Australia, and many other countries as well, highway safety programs are managed more centrally. The participants also noted that (1) there are no quick fixes for major improvements in highway safety, and (2) future improvements require data-driven, research-based safety programs. FHWA and AASHTO are currently supporting efforts aimed developing state safety programs that include all the appropriate stakeholders. Also, in the United States, there is considerable political resistance to countermeasures aimed at changing human behavior, but there is interest in and support for technical fixes aimed at mitigating the consequences of poor decision making by highway users.

Committee members pointed out that there are states and regions where road safety experience compares favorably with that of Australian and benchmark European nations. As a result, opportunities exist for identifying and applying lessons learned from the most successful jurisdictions within our own borders. Beginning early in 2005, the National

[1] The National Highway Traffic Safety Administration maintains the nation's two primary highway crash databases—the Fatal Analysis Reporting System, which is a census of all U.S. fatal traffic crashes, and the General Estimates System, which is a sample of about 50,000 annual police-reported crashes involving property damage, injury, or death. The Federal Highway Administration (FHWA) supports the Highway Safety Information System (HSIS), a crash database that includes detailed information about crashes, roadway geometrics, traffic control devices, traffic volume data, and the location of hardware and obstacles on the roadside; data from nine states is included in HSIS in a unified format that permits compilation and analysis.

Cooperative Highway Research Program will initiate a project to examine alternative institutional models for improving highway safety in the states. The project will examine at the range of partnerships, committees, and agreements among various agencies—state departments of transportation, public safety, motor vehicles, and driver licensing; state and local police agencies; and local governments—that carry out integrated highway safety programs. To complement this study, the RTCC decided to prepare a few case studies of state experiences in building political support and coalitions for improved highway safety performance. These case studies will identify who the initial champions for highway safety were, what they did to build agency and political support, and how they persuaded decision makers of the need for a strong highway safety program. They will also highlight effective models of state organization for safety. The purpose of these case studies is to determine whether further research in this area is feasible and warranted.

The committee also decided to invite representatives of other federal agencies involved in highway safety research to make presentations on their research programs at future meetings.

Effects of Earmarking Federal Transportation Research Funds

Ann Brach of TRB summarized the results of a TRB meeting held in October 2004 to explore the full range of views on earmarking of federal transportation R&T funds. Several RTCC members and FHWA staff participated in this meeting which was undertaken at the request of the TRB Executive Committee. While research earmarking can help achieve policy goals that might otherwise be neglected, it affects an agency's flexibility to address strategic national research needs identified by agency stakeholders, as well as its ability to ensure quality research. Committee members noted that earmarking imposes a cost on a research program and also reduces the amount of funds available to research managers.

The value of highway research is realized through improved performance and reduced costs, especially in areas of national priority. Specific examples of successful research programs can help stakeholders make the case for the national research program and clarify what is at stake when it is diluted by earmarks. The committee decided to review previous work on the benefits of highway research and explore new examples of the impacts such research can have on issues of national importance.

Review of R&T Activities of FHWA's Office of Policy

Charles (Chip) Nottingham, Associate Administrator for Policy and Governmental Affairs, and Susan J. Binder, Director, Office of Legislative and Governmental Affairs, reviewed R&T activities of the Office of Policy. The committee was pleased to hear that the office has developed multiyear roadmaps[2] for its R&T and has expanded efforts to increase stakeholder involvement in the development of such roadmaps. The committee is interested in how the

[2] Research roadmaps are designed to provide researchers and decision makers with a quick sketch—using text and graphics with project timelines—of ongoing research program activities.

office interacts with the Office of Intermodalism in the Department of Transportation; the committee plans to host a panel discussion on intermodal transportation and its implications for the highway system and research at a future meeting.

There was a discussion about the growing costs of travel surveys, as well as survey limits imposed by federal agencies. These costs and limits affect the Nationwide Household Travel Survey, for which the Office of Policy is responsible. Such constraints are of growing concern because many state and local planning agencies rely on the data from that survey for transportation planning and forecasting.

Among the international programs supported by the Office of Policy are the international scanning tours. Several committee members suggested that advanced research be a future theme for an international scan, especially in light of previous RTCC recommendations that FHWA's R&T program focus more on fundamental, long-term research. It was noted that there is a continuing need for widespread dissemination of the results of the international scanning tours, especially in a form that would be useful to local and regional transportation agencies.

Status Reports on Other FHWA R&T Activities

Laboratory Assessments. Marci Kenney, Director of the Office of R&T Program Development and Evaluation, reported on preliminary efforts aimed at documenting the outcomes of recent laboratory assessments at Turner-Fairbank Highway Research Center (TFHRC). The committee agrees that agency actions aimed at improving the laboratory's performance—based on the suggestions of the assessment teams—are of interest to the highway research community, and suggested that information on these actions would be a logical component of the annual TFHRC performance report.

Assessments of the Structures Laboratory, the Arens Photometric and Visibility Laboratory, and the Concrete Laboratories are scheduled for 2005. FHWA provided the committee with lists of assessment team members—based on suggestions from a wide range of stakeholders—for review and comment. While FHWA seeks to have the assessment teams include experienced researchers, laboratory managers, and research program managers representing government, academia, and the private sector, the committee believes that the most qualified people be included regardless of their current affiliation. Individual committee members would be pleased to review the assessment teams and provide their comments via TRB staff.

The Joint OECD/ECMT Transport Research Center. Dennis Judycki described the evolution of a new international transportation research initiative organized by the Organization for Economic Cooperation and Development (OECD) and the European Council of Ministers of Transport (ECMT). The OECD/ECMT Joint Transport Research Center is a union of OECD's Road Transport Research Bureau—which focused on road engineering issues—and ECMT's

Economic Research Committee—which focused on transportation-related economic and policy issues. The new center will focus on four primary areas of transportation infrastructure research: operations, safety and security, environmental costs and sustainability, and globalization and trade. Mr. Judyki indicated that many current and planned projects and other activities of the center will be of considerable interest to U.S. highway researchers and assured the committee that FHWA plans to support widespread dissemination of the center's work.

Corporate Master Plan for R&T. Debra Elston, Director of the Office of Corporate Research and Technology, reported on the status of FHWA's continuing efforts to direct agency research and implementation through its Corporate Master Plan. These efforts include website development to simplify access to information on research products. The committee encouraged this undertaking and underscored the need to develop an efficient, user-friendly website. The RTCC appreciates FHWA's efforts to keep the committee informed of developments in this activity.

Current and Future Highway Pavement Research Needs

RTCC member Don Brock led a discussion of current and future highway pavement research needs. The Superpave® mix design system, developed under the Strategic Highway Research Program, is currently in use in every state and yielding cost reductions and performance improvements over traditional design mixes. Nevertheless, there are continuing needs in pavement research, particularly on issues related to Superpave®; evaluation of other mix designs, such as stone matrix asphalt (SMA); and means of making improved mix designs more affordable. There is also considerable interest in mix designs that can reduce pavement noise impacts and reduce vehicle fuel consumption. Currently, FHWA is planning to establish a new pavement research advisory committee to assist the agency in coordinating its future pavement research activities with those being proposed under reauthorization. The RTCC plans to confer with this group once it is in place on research issues such as SMA mix designs.

Effects of Surface Transportation Reauthorization on Highway R&T

Recognizing that highway research funding and coordination will be affected by the passage of the next surface transportation reauthorization bill, the committee decided to begin preliminary planning for a panel discussion on the impacts of reauthorization on highway R&T. For planning purposes, the target date for the panel discussion is October 2005. Representatives from federal, state, university, and private sector research programs will be invited to examine whether national highway research needs as articulated by the National Highway R&T Partnership and other stakeholder groups will be adequately met by the programs and how the full range of highway research can be coordinated most effectively.

Future Meeting Plans

The committee's next meeting is scheduled for March 21-22, 2005 in Washington, DC.

Final Remarks

In closing, the committee again expresses its appreciation for the highly constructive participation and presentations of FHWA staff at its meeting. The committee stands ready to support FHWA through the transition of the reauthorization process.

On a personal note, I look forward and working with you and your staff during my term as chair of the RTCC. I invite you to participate in future committee meetings as time permits.

Sincerely,

E. Dean Carlson
Chair
Research and Technology Coordinating Committee (FHWA)

Enclosure

Meeting Attendance: Committee, Liaisons, Guests, and Staff
November 22-23, 2004

Committee

E. Dean Carlson (NAE), Chair
Don Brock
Steve Heminger
Ysela Llort
Tim Neuman
Len Sanderson
Al Teich
John Conrad
Mike Kelley
Cash Misel
Sandra Rosenbloom
Joseph Sussman
Kevin Womack

Liaisons and Guests

John Baxter, FHWA
Susan Binder, FHWA
Tom Bryer, SAIC
John Bukowski, FHWA
Rick Capka, FHWA
Richard Compton, NHTSA
Debra Elston, FHWA
Tony Furst, FHWA
Tony Giancola, NACE
Barbara Harsha, GHSA
Tom Harmon, FHWA
Dennis Judycki, FHWA
Marci Kenney, FHWA
Tom Krylowski, FHWA
Kevin Lacy, NCDOT
Heide Liske, FHWA
Charles (Chip) Nottingham, FHWA
Keith Sinclair, FHWA
Kim Wilkins, FHWA
Allan Williams, IIHS
Julie Zirlin, FHWA

TRB Staff

Ann Brach
Stephen Godwin
Amelia Mathis
Jocelyn Sands
Walter Diewald
Neil Hawks
Robert Reilly
Robert Skinner

Abbreviations

FHWA	Federal Highway Administration
GHSA	Governors Highway Safety Association
IIHS	Insurance Institute for Highway Safety
NACE	National Association of County Engineers
NCDOT	North Carolina Department of Transportation
NHTSA	National Highway Traffic Safety Administration
SAIC	Science Applications International Corporation
TRB	Transportation Research Board