

PEER EXCHANGE MEETINGS

Creating a strategically driven transportation research program & Conducting a comprehensive evaluation to measure the efficiency and effectiveness of a State Department of Transportation research program

June 25-26, 2008



New York State Department of
Transportation

NYSDOT Research Peer Exchange

June 25-26, 2008

Introduction

Under 23 Code of Federal Regulations 420.209 (a)(7), as a condition for approval of FHWA planning and research funds for research activities, state transportation agencies are required to conduct peer exchanges on a periodic basis. The objective of the peer exchange program is to give these agencies a means to improve the quality and effectiveness of their research management processes. A peer exchange is a practical and effective tool to foster excellence and provide an opportunity for panelists to share best practices and management innovations.

The basic approach is to invite an outside panel of managers to meet with the host agency to discuss and review its management processes or a specific focus area. Information on the host agency's policies and procedures is shared with panel members in advance of the meeting. The information gathered from the exchange is documented in a written report and presented to agency management.

The following report summarizes the results of a peer exchange held in Albany, New York, on June 25-26, 2008. This peer exchange was hosted by the Research and Development Bureau of the Engineering Division and the Research and Policy Studies Section of the Policy and Planning Division of New York State Department of Transportation (NYSDOT). Representatives from four state DOTs, Research and Innovative Technology Administration (RITA), and Federal Highway Administration (FHWA) Headquarters joined representatives from NYSDOT and FHWA-New York Division to share experiences and best practices in the following focus areas:

- Creating a strategically driven transportation research program.
- Conducting a comprehensive evaluation to measure the efficiency and effectiveness of a State Department of Transportation research program.

The exchange consisted of presentations and active discussions as the group worked to share key information about their involvement in creating a strategically driven transportation research program and conducting comprehensive performance measures for this program.

This report highlights the key observations and action items that came out of the peer exchange discussions, including best practices and the opportunities identified for NYSDOT in creating a strategically driven transportation research program and conducting a comprehensive evaluation to measure the efficiency and effectiveness of its research program.

Objectives

The overall theme for the peer exchange was how to create a strategically driven transportation research program and program evaluation with an emphasis on techniques to measure the efficiency and effectiveness of a transportation research program.

Representatives from NYSDOT gave an overview presentation on the transportation systems of New York State with issues currently addressed by the State Transportation Master Plan and challenges facing the Department. New York State's vision for transportation in 2030 is of a seamless system in which travelers can conveniently shift between modes and operators to complete trips that meet their individual and business needs.

The Peer Exchange took place over two days. The meetings were structured around presentations and active discussions among the participants. On the first day, visiting team members presented overviews of what their respective state/agency is doing to achieve the goals for creating a strategically driven transportation research program, and their performance measures. The second day session proceeded with discussion and exchanging ideas and concluded with a "lessons learned" session and "take away" notes.

The NYSDOT research team hoped to leave the exchange with ideas for creating a strategically driven transportation research program and evaluating and reporting on the many activities of the research program.

Participants

NYSDOT Executive Leadership

- Karen Rae, Director, Policy & Planning Division, NYSDOT

Team members

- Gary Frederick, Director, Research and Development Bureau, NYSDOT
- Paul Hoole, Head, Research and Policy Studies Section of the Policy and Planning Division, NYSDOT
- Deborah Mooney, Policy and Planning Division, Research and Policy Studies Section, NYSDOT
- Denise Bumbulsky, Policy and Planning Division, Research and Policy Studies Section, NYSDOT
- Nancy Chinlund, Chief, Office of Planning, Policy and Innovation, Division of Research and Innovation, California Department of Transportation
- Jennifer Fitch, Research Engineer, Materials and Research Section, Vermont Agency of Transportation
- Richard Long, Director, Florida Department of Transportation Research Center
- Sue Sillick, Manager, Research Program, Montana Department of Transportation
- Debra Elston, Director, Office of Corporate Research, Technology, and Innovation Management, Federal Highway Administration, U.S. Department of Transportation
- Maria Chau, FHWA-New York State Division
- Timothy Klein, Senior Policy Advisor, Research and Innovative Technology Administration (RITA), U.S. Department of Transportation

Other peer exchange participants

- Sam Elrahman, Research and Development Bureau, NYSDOT
- Matthew Hannon, Policy and Planning Division, Research and Policy Studies Section, NYSDOT
- Jay Higle, Policy and Planning Division, Research and Policy Studies Section, NYSDOT

- Deniz Sandhu, Research and Development Bureau, NYSDOT
- Harry White, Research and Development Bureau, NYSDOT
- Wes Yang, Research and Development Bureau, NYSDOT



Pictured above, from left to right are: Jennifer Fitch of Vermont Agency of Transportation, Paul Hoole of NYSDOT, Nancy Chinlund of CALTRANS, Timothy Klein of RITA, Debra Elston of FHWA, Richard Long of FDOT, Susan Sillick of Montana DOT, and Gary Frederick of NYSDOT.

Background on Current Key Issues Addressed/Faced by NYSDOT

NYSDOT has developed a State Transportation Master Plan that aims to integrate the transportation system physically and operationally to achieve performance goals for mobility and reliability, safety, security, economic competitiveness and environmental improvement. The following are some key issues that are addressed in the State Transportation Master Plan and current challenges/issues faced by NYSDOT in general:

- Addressing climate change, meeting clean air requirements and energy goals, and proactively improving the overall environment of the State.
- Fiscal constraints: inflation has reduced the department's purchasing power, and causing limits on investments and staff travel.
- Limited staff resources/staff time: staff has been diverted to take on new issues (e.g. Climate and Energy; Freight Planning), resulting in difficulty of thinking about "research" when immediate issues are pressing executives.
- Assessments of public benefit: how to measure quality of life benefit, economic sustainability benefit and energy benefit resulting from transportation investments?
- Preserving the aging transportation infrastructure: New York faces challenges to restoring its extensive transportation infrastructure to a state of good repair and then maintaining it at that level. Aging infrastructure, harsh weather conditions and heavy utilization are ongoing problems. The strategy to address this issue is pursuing a focus on "maintenance first" programs, giving preventative maintenance the highest funding priority.
- Alleviating congestion through operational strategies and targeted infrastructure expansion.

Focus 1: Creating A Strategically Driven Research Program - *Key observations and best practices discussed*

From most of the presentations and discussions it would seem that creating a strategically driven research program that meets the organization's needs is a challenge for all participants. There was consensus that not all the programs could be or should be considered "strategic" but that a portion or percentage could be leveraged in that direction. Identifying or determining that "research direction" is another challenge. The following key observations and best practices were discussed:

- Must have a clear strategic vision -- develop strategic research questions to be pursued.
- In order to develop a strategically driven transportation research program, the following questions should be posed:
 - Are we doing the right research?
 - Are we doing the research right?
 - Are we making a difference?
- The mission statement for NYSDOT is broad. The research program goals should be in alignment with the strategic goals of the Department. This requires prioritization.

- Research staffs are not trained to develop a vision for the future; whatever research topic we study as a priority today will take 4-5 years before having results; by that time, people may have lost interest in the topic.
- To be successful, it takes cooperation with management and communication with executives. We must look at the needs of the executive board and incorporate them into the research strategic plan.
 - Research direction is set by executive management.
 - The buy-in from executive management for research needs identification is important.
- Timeliness of the research is an issue to be addressed.
- Accountability is exceptionally important.
- Research program process must be continuously improved to meet its objectives.
 - Develop more opportunities to market implemented research and research products.
 - Publish annual report which highlights performance measures.
 - Advertise the accomplishments of the research program.
 - Brand the reports/products/newsletters.
- Create project summaries and project exit surveys.
- Research projects require a champion and a sponsor. The champion is someone who will be involved in the project from the beginning and is willing to chair the technical panel of the project. The sponsor is a higher level administrator of the project committed to assuring that the findings are implemented.
- The strategic plan should focus on the most important priorities for a specific state. The focus may be on a particular problem area for that states, and should not try to include all international/national/regional issues. There are other organizations that deal with international/global/national issues; these should be monitored and leveraged as appropriate to meet the states' goals.
- The research program needs full higher executive support. Organizing a mini-symposium internally may aid in getting buy-in from executive management into the program, and in conducting outreach to other program areas.
 - Conduct a transportation symposium to gather project managers, office managers and directors, and university transportation researchers from around the state to network and explore the future of transportation in the state may be necessary. The goal is to generate a roadmap of research that should be undertaken in the near term to support one state's anticipated transportation system needs...
 - Target outreach to other divisions through presentations of the research program.
 - Select target areas/program areas for direct contact.
- Strategic planning is a great tool that involves a lot of players. However, it is still behind the curve. In order to develop a strategic plan, one must look at mega trends of issues and forecast where we are going to be (what happens in economic, demographic, environmental, political, business, etc.). There are factors which drive trends and the strategic plan must be adapted accordingly to these driving factors of change that will affect transportation. One must look at future trends before developing a strategic plan. With these driving factors of change, there are scenarios that would/could/should be developed. One should look at probable, preferable, and possible (there are no limits) scenarios.
- Development of a "corporate" master plan listing the guiding principles that affect how one manages the research program is recommended. However, one must note that at the national level the program is often "legislated," which presents a different challenge than NYSDOT research faces.

- Project implementation should be part of the RFP for all research projects.

Focus 2: Conducting a Comprehensive Evaluation - *Key observations and best practices discussed*

From the discussions, there are no clear, commonly accepted methods for evaluating the performance of applied research programs and projects. Research program managers need to analyze their respective programs and individual projects in order to improve these programs and justify decisions. The following observations and best practices were discussed:

- Indicators used for evaluation of individual projects differ from the criteria used to evaluate the overall program.
- Emphasize research program accomplishments on the soft side, such as building relationships with other program areas that may lead to development of more champions for the research program. Working with other people and program areas, the number of champions acquired can be captured as accomplishments.
- Must tie performance measurement to the department's strategies/goals/objectives in a demonstrable and reportable fashion.
- Criteria for project selection should include consideration of whether results are likely to be implemented. Talk about barriers to facilitate implementation before the project begins.
- Assess project implementation before the project is funded/started: Establish a punch list before the project is funded. The punch list helps to create a pre-audit baseline for post-audit measurements (something has to be measured today if you are going to measure it after).
 1. Identify what needs to be done to make the project usable.
 2. What are appropriate performance measures for this project? Projects are unique even in the same functional area.
 3. What are training requirements for the project (who needs to be trained, who should give training, what type of training is necessary). Technology transfer is defined as professional talking to professional (transfer of technical information to very technical people) to deliver new techniques, technologies, processes and learnings.
 4. Marketing is a required part of successful implementation (technical information written as results for executives and managers, especially in target program areas; for press in lay terms, etc.)
 5. Conduct quarterly meetings that involve researchers and project managers. The performance track is reviewed each quarter; this also helps to develop proper implementation and marketing tools.
 6. Project implementation can be done in phases, not just right after its completion; plan for this possibility.
- Program performance is based on individual/personal goals set by the program managers to measure goals that their supervisors have set for them. (e.g., one may decide to set goals to involve more universities, more minorities or get more pooled funds, and measure to see if there are improvements).

- Do a lot of quality control/quality assurance for the program (training for how to write the scope, RFP, prepare a budget, fill out schedule, and make sure processes and training are up to date)
- Tech Transfer: Use of trading cards/video clips/project summaries and other tools. Measure how state DOT interacts with region and district, coordinated with other states, other agencies, other industries for successful deployment.
- Develop an annual report that includes performance measures.
- Use the NCHRP 20-63 metrics for performance measures.
- Buy-in on research from top management helps facilitate implementation.
- Include implementation in the research contract and RFP.

Strength, Challenges, and Opportunities for NYSDOT

Strengths

- Research staff that trains and assists others in the department
- Research informs policy makers
- Library service that serves all regional offices. Library is more visible than before
- Marketing the research program and its benefits
- Support of in-house research
- Implementation plans and potential funding needs are identified at the beginning of the research process
- Very good contacts established within the department – there are opportunities to take advantage of this strength to foster more champions throughout the organization
- Good relationship with industry and other state agencies
- Many research champions already exist throughout the department

Challenges

- Disconnect with management, management thinks of research really late in addressing issues or answering questions
- There is no strong prioritization process
- Communication between researchers and end-users is limited
- Lack of methods to institutionalize research program processes
- Lack of appropriate documentation and marketing of research project findings
- Current funding/travel issues could undo several years worth of work on growing the program
- Executive level support/involvement is not consistent
- Expectations from and for research are not clear
- Contacts within department are based on research manager's personal relationships from career experience; need to set up more formal relationships for continuity
- The size of the Department makes it difficult to network – many, many offices and bureaus to reach out to. With a large organization the use of “research liaisons in other program areas” should be considered
- Many other agencies are involved in the transportation system in the state
- Issues with coordination/collaboration with other program areas and agencies
- Would like NYSDOT research program to play an important role on national research committees; much to be leveraged.

- State travel restrictions a significant limitation.

Opportunities

- Conduct Self Assessment to develop action plan.
- Implement NCHRP 20-63: Performance Measurement Tool Box and Reporting System for Research Programs and Projects.
- Meet with various divisions/program areas. Conducting a symposium among different players in state transportation can bring them together to explore what each one is doing, and how they can support/be supported by research. Set up mini research brainstorming sessions/peer exchanges with the various Divisions
- Continue marketing the program to other program areas. Let other program areas know that effort/involvement in national research committees is part of the research program, and the payoffs for investing staff time on committees.
- Increase input from high level managers, develop more buy-in from upper level management on the research program
- Be more proactive with initiating projects, propose research rather than wait for research to show up.
- Pursue networking opportunities with other state agencies involved in transportation.
- Set specific focus areas.
- Leverage leadership's interest in the research program to provide some research direction; but don't hesitate to find and develop research proposals for their consideration.
- Research program wants to serve the needs of other program areas, however, their goals/needs are not known by the research program staff.
- Build support from executives who are likely to stay longer with DOT. The highest levels of management in a DOT are often "short timers" and, while their support is important to the research program, it may be best to work with management that will be around long term for development of a long term program. Their experience in the organization may provide guidance on some "future needs" type research. Their support would be beneficial to the long term health of the research program, and provide "built-in" champions for research to executive level as it changes.
- Initiate Customer Survey with Project Manager and Department Managers. Use survey tools to get feedback from other program areas (e.g., Survey Monkey).
- Support Out- of- State Travel
 - Appropriately approve travel to leverage knowledge and information to accomplish NYSDOT goals and objectives.
 - Develop mission purpose to allow people to travel.
 - Require travel reports; distribute these learnings.
 - Use travel as a recruitment and retention tool.
- Express research program's expectations to research staff.
- Develop mini-synthesis of research, create synthesis of research/state-of-the-art practices/summary of completed research; advertise Web availability; distribute by e-mail, other means.
- Leverage the research library.
- Collaborate and coordinate within other state agencies.
- Be aware of multi-modal issues.

- Universities can help develop strategic visions.
- Develop liaisons to other divisions/Research Champions.
- Promote Market Ready Technologies.
 - Keep in alignment with focus areas and goals.
- Use external contractor to capture research by other divisions to market to executives.
- Produce final reports for research projects.
- Focus the program – set specific goals.
- Expanding successes of research program.
- Establish goals for research bureau and set performance measures and future needs.
- Look for opportunities to provide service to other program areas; get point-of-contacts/liaisons outside of the research division.
- Pursue opportunity to establish a strong working partnership between NYSDOT and the universities to leverage resources.
- Peer exchange report/recommendations.
- Have some funding set aside for “solving tomorrow’s problems starting today.”

Opportunities for Application by Peer Exchange Members:

Vermont Agency of Transportation

- Find your champions
- Consider sections with successful turn around
- Focus on implementation – add deployment criteria to solicitation form
- Performance measures – focus on goals for the future
- Pick specific topics in line with Agency goals
- Stress importance of involvement in successful research projects
- Generate technical panels – determine need and venue and develop scope – include FHWA representative
- Focus research on driving factors of change and leading indicators
- Collect information without asking (be proactive)
- More involvement in committee meetings
- Use tools like survey monkey to determine perceived success of research program and related projects
- Generate briefs regarding national research efforts for distribution to Agency staff members
- Set goals and expectations for research program
- Don’t waste time on customers that are not interested in research
- Inform Agency of market-ready research

Florida Department of Transportation

- Place more emphasis on identifying gaps in the research program. These gaps refer to areas where there is an acute need for research that with current funding limitations cannot be addressed. For example if there are 5 strategic issues but funding to address

only two, the issues need to be fully vetted and perhaps a compromise reached in order to maximize return. This is the responsibility of the research center.

- Group strategic research issues into a family of projects.
- Explore the use of Broad Agency Announcements in order to encourage researchers in discussions/scope development.
- Strike a balance between university and consultant produced research.
- Need to formalize impact studies to complete research circle.
- Concentrate on and better market “market-ready technologies” across spectrum of research, not just Florida produced

Federal Highway Administration-USDOT

- Conduct process improvement evaluation of the peer exchange and update guidance accordingly. . (In progress- We are working with AASHTOO’s Research Advisory Committee task group to review)
- Establish relationships with FHWA division research coordinators. (In progress- list of key participants is being identified)
- Conduct process improvement evaluation on state research reporting requirements (e.g., annual work plans and individual project reports).
- Establish detail assignments to assist with the process improvement evaluations.(In progress – discussed at the FHWA- New York Division)
- Investigate NCHRP 20-63: Performance Measurement Tool Box and Reporting System for Research Programs and Projects for program performance evaluation application.
- Establish contact between advanced research program and nanotechnology center at State University of New York (SUNY). (Contact has been made and a workshop is being planned.)
- Coordinate with Transportation Research Board (TRB) on uploading planned research into Research in Progress (RIP) national database.
- Share megatrends information with NYSDOT.
- Investigate opportunities to establish business practices for Intellectual Property decisions.

Montana Department of Transportation

- Send report distribution requirements to FHWA and Vermont Agency of Transportation.
- Continue to decrease time from initiation through implementation of research projects.
- Obtain information discussed on megatrends and futures planning (SCOR, FDOT and FHWA work).
- Use information gained through megatrends and futures planning work with MDT Research Review Committee to inform research strategic focusing effort and develop management expectations of MDT research program.
- Review FHWA.dot.gov/crt website.
- Review Jan/Feb issue of Public Roads.
- Review concrete pavements roadmap.
- Obtain FDOT deployment plan template.

- Send exit survey and backup surveys to NYSDOT and Vermont Agency of Transportation.
- Continue to improve performance measures work for the Research Bureau of Montana DOT.
- Better market “market-ready technologies”

California Department of Transportation

- Revisit development of an advanced research program for California. In addition to projects currently being pursued (e.g., VII and alternative fuels), consider a wider range of technologies (e.g., nanotechnology applications).
- Identify emerging issues to be considered in on-going development of Caltrans’ Strategic Research Program. Build on work being done by NCHRP “Megatrends” study.
- Investigate opportunity to use a broadcast mechanism to solicit research proposals from private sector vendors, similar to mechanisms used by the federal government (Broad Agency Announcement), New York State (Project Opportunity Notice) and Florida (non-competitive RFP).
- Restructure Research and Deployment Advisory Committee (RDAC) and Research and Deployment Steering Committee (RDSC) agendas to include regular reports back on research deployment.
- Conduct project panel exit surveys and report results to researchers.
- Check on entry of project data into NCHRP 20-63 database.
- Send information to Paul Hoole on Caltrans contact for Climate Change Program.
- Conduct workshops/symposia for priority research questions, to more fully define desired research program.
- Incorporate Florida’s “punch list” concept in Caltrans’ deployment process.
- Develop program-level performance measures.
- Encourage agencies to post mini-synthesis studies on the Transportation Research Coordination/Collaboration Website. These studies, which are not usually published, often respond to important current topics, and could be useful to other agencies.

Research and Innovative Technology Administration-USDOT

- Establish increased state DOT liaisons for RITA programs, via FHWA division offices (no need to invent new DOT infrastructure).
- Identify ongoing “core mission” research v. “flavor of the month”; track progress on the core mission work and results.
- State DOTs require a national liaison function to other Federal agencies to share research knowledge (USDA, EPA, etc.)
- Remind RITA leadership of FHWA’s “Guiding Principles” and other existing guidance on research success (Seven Keys, etc.).
- Present NCHRP 20-63 as a possible resource for RITA research performance management.
- Identify who in DOT and or RITA is responsible for foresight (trend identification and analysis, driving future research questions, data collection decisions, and policy research.)

Appendix A: AGENDA



**NEW YORK STATE DEPARTMENT OF TRANSPORTATION
PEER EXCHANGE -- JUNE 25 – 26, 2008
ALBANY MARRIOTT (Schenectady-Troy Room), ALBANY, NY
AGENDA**

Focus Areas:

- Creating a strategically driven transportation research program
- Conducting a comprehensive evaluation to measure the efficiency and effectiveness of a State Department of Transportation Research program

Wednesday, June 25th

8:00 – 8:30 AM Continental Breakfast in meeting room
8:30 – 9:15 AM Welcome and Peer Exchange Overview – Paul Hoole
9:15 – 10:15 AM NYSDOT Research Program Overview – Gary Frederick

Speakers to give an overview of their programs related to the focus areas:

10:15 – 10:30 AM Beverage Break

10:30 – 11:00 AM Florida's Research Program - Richard Long

11:00 – 11:30 AM Montana's Research Program – Sue Sillick

11:30 – 12:00 PM Q and A; discussions on presentations

12:00 – 1:00 PM Lunch – in room if possible

1:00 – 1:30 PM California's Research Program – Nancy Chinlund

1:30 – 2:00 PM RITA's Research Program – Timothy Klein

2:00 – 2:30 PM FHWA's Research Program – Debra Elston

2:30 – 3:00 PM Q and A; discussions on presentations

3:00 – 3:15 PM Beverage Break

3:15 – 4:30 PM Day 1 review of strength/ weaknesses and opportunities related to the focus areas

6:30 PM Dinner (optional)

Thursday, June 26th

- | | |
|------------------|--|
| 8:00 – 8:30 AM | Continental Breakfast in meeting room |
| 8:30 – 9:00 AM | Overview of previous day/ Goals for day two |
| 9:00 – 10:00 AM | Continuation of strength/ weaknesses and opportunities related to the focus areas and NYSDOT |
| 10:00 – 10:15 AM | Beverage Break |
| 10:15 – 12:00 PM | Condense and discuss recommendations for report |
| 12:00 – 1:30 PM | Lunch– in room if possible |
| 1:30 – 3:30 PM | Final report preparation, beverages brought in about 2:00 PM |
| 3:30 – 4:00 PM | Final thoughts – wrap up |

Appendix B: Peer Exchange Contact List

<p>Nancy Chinlund, Chief Office of Planning, Policy and Innovation California DOT Division of Research and Innovation, MS 83 P.O. Box 942873 Sacramento, CA 94273-0001 Phone: 916/654-9368 Email: nancy_chinlund@dot.ca.gov</p> <p>Jennifer Fitch, Research Engineer Materials & Research Section Vermont Agency of Transportation Drawer 33 One National Life Drive Montpelier, VT 05633 Phone: 802/828-2553 Fax: 802/828-2792 Email: jennifer.fitch@state.vt.us</p> <p>Richard C. Long, Director Research Center, Florida DOT 605 Suwannee Street, Mail Stop 30 Tallahassee, FL 32399-0450 Phone: 850/414-4617 Fax: 850/414-4696 Email: richardc.long@dot.state.fl.us</p> <p>Sue Sillick, Research Manager Montana DOT 2701 Prospect Avenue PO Box 201001 Helena, MT 59620 Phone: 406/444-7693 Fax: 406/444-7204 Email: ssillick@mt.gov</p>	<p>Gary A. Frederick, Director Research and Development New York State DOT POD 34 50 Wolf Road Albany, NY 12232 Phone: 518/457-5826 Fax: 518/457-7535 Email: gfrederick@dot.state.ny.us</p> <p>Paul M. Hoole, Head Research / Policy Studies New York State DOT POD 61 50 Wolf Road Albany, NY 12232 Phone: 518/457-4788 Fax: 518/457-4944 Email: phoole@dot.state.ny.us</p> <p>Debra Elston, Director USDOT/Office of Corporate Research, Technology, and Innovation Management Turner-Fairbank Highway Research Center 6300 Georgetown Pike McLean, VA 22101 202-493-3181 debra.elston@fhwa.dot.gov</p> <p>Timothy Klein, Senior Policy Advisor USDOT/Research and Innovative Technology Administration. U.S. Department of Transportation RTG-30, E36-332 1200 New Jersey Avenue, S.E. Washington, DC 20590 Phone: 202-366-0075 Timothy.Klein@dot.gov</p>
--	--

Appendix C: Bio of Visiting Team Members

Nancy Chinlund

Nancy Chinlund is Chief of the Office of Planning, Policy and Innovation in Caltrans' Division of Research and Innovation (DRI). In that role, she oversees planning, policy and modal research, including projects dealing with bus rapid transit, transit-oriented development, climate change and alternative fuels. She also oversees processes used by DRI to select research projects, and to facilitate the deployment of research products. Before joining Caltrans in 2000, Nancy operated her own consulting practice, Strategic Design Associates, and specialized in projects dealing with community process and design. Earlier in her career, she worked for the Southern California Association of Governments (SCAG), where she managed the Regional Transportation Plan. Nancy received her MA in Urban Planning from UCLA, and her BA in Psychology from Brown University. She is a member of the American Institute of Certified Planners (AICP).

Debra Elston

Debra Elston, Director of the Federal Highway Administration's (FHWA) Office of Corporate Research and Technology, accepted the leadership position in May 2004, and the challenge to implement the agency's Corporate Master Plan for Research and Deployment of Technology and Innovation (CMP). The CMP is a corporate strategy, developed in 2003, to help the agency do the right research, do it well, and get the products into the hands of the people who then are responsible for delivering the best highway transportation system possible. Debra's personal goal is to establish an integrated approach to the Innovation Life Cycle from agenda setting through impact analysis for FHWA's research and technology program.

Debra's commitment to public service began in the 1990 as a special agent for the Office of Motor Carriers (now Federal Motor Carrier Safety Administration), where she investigated commercial motor carriers for compliance with the Federal Motor Carrier Safety Regulations. Her previous work experience as a traffic manager and consolidated freight forwarder was the perfect precursor to understanding the freight industry and related transportation issues.

The first female investigator in the Kansas division office, Debra became recognized for her fairness and ability to facilitate groups and develop consensus. As a result, in the spring of 1996, she was selected to lead an organizational management initiative in Washington, DC. While performing as the strategic planning and organizational excellence manager, Debra was responsible for implementing the Government Performance and Results Act and Reinventing Government's National Performance Review. She created a system to ensure customer-driven and performance-based management planning policies and managed a national network of process improvement managers. During her tenure, the organization received the national "Quality Journey Award" for improving performance-based measurement system.

Then, selected as a legislative liaison in 1998, Debra served the agency as a link to Congressional Staffers, National Transportation Safety Board (NTSB), and the Departmental Safety Council. She was directly responsible for leading and managing a long-range "Future's Search" project for highway safety in 1999 and received the Secretary's Award for "Partnering for Excellence." During this timeframe, Debra also facilitated the development of the FHWA's Professional Development Program work group.

Debra was the public affairs specialist in Chicago from 1999-2000, here she received awards for safety conference facilitation, managed regional media campaigns including work zone safety, and conducted media communications training.

July 2000, Debra returned to Washington, DC as the research program manager for FHWA's Office of Planning, Environment and Realty. She managed the Surface Transportation-Environment Cooperative Research Program project and developed the reauthorization proposal for the implementation of Transportation Research Board (TRB) Special Report 268. As an active member of the TRB Research of Conduct committee, Debra moderated a panel session at the 2004 TRB annual meeting titled, "Communicating the Value of Research."

Debra was born in the Rocky mountain town of Telluride, Colorado and grew up in rural southwestern Kansas. She has two sons, Lance and Scott, who are amazing men. She graduated from Nazarene University in Olathe, Kansas with a Bachelor in Business Administration.

Jennifer M. V. Fitch

Jennifer M. V. Fitch, P.E., administers the Research Program for the Vermont Agency of Transportation (VTrans). Jennifer is currently pursuing a M.S. degree and earned a B.S. degree in Civil Engineering from the University of Vermont.

Following graduation, Jennifer worked for a private environmental engineering company performing construction oversight of sub-aqueous and wetland caps as well as environmental site assessments and monitoring. Jennifer joined VTrans in the fall of 2005 performing research support tasks for the Materials and Research Section and has been managing the Research and Development Unit in January of 2007. Responsibilities include chairing the state's Research Advisory Council (RAC) which is an interactive process of identifying and prioritizing proposed research initiatives. Jennifer also develops and implements research proposals that support the goals and needs of the VTrans which are designed to improve procedures, standards, specifications and materials used in Vermont's infrastructure. Specifically, she has examined experimental pavement treatments, culverts modified for fish passage, innovative pavement markings, and traffic calming techniques as well as instrument specific sites for monitoring purposes. Jennifer is also an active member of National RAC community, New England Transportation Consortium (NETC) and the Transportation Research Board's Committee on the Conduct of Research.

Timothy A. Klein

Timothy A. Klein is the Senior Policy Advisor for the U.S. Department of Transportation's (DOT) Research and Innovative Technology Administration (RITA). He supports the RITA Administrator on policy and program issues affecting RITA's missions:

Advancing intermodal transportation research, development and deployment of innovative technologies;

Leading university education and research in transportation and transportation-related fields; and Coordinating, facilitating, and reviewing the Department's research, development and technology programs and activities.

He also currently serves as DOT's Program Manager for the Nationwide Differential GPS (NDGPS), a national positioning, navigation and timing (PNT) utility for multiple terrestrial

applications; and is responsible for RITA's international, technical standards, and internal audit and review programs. He is active as RITA's representative to AASHTO Standing Committee on Research (SCOR) and Research Advisory Committee (RAC). Prior to joining DOT, Mr. Klein worked for 15 years in a progressively responsible series of program and project management positions at NASA's Goddard Space Flight Center.

Richard C. Long

Richard Long is the Director of the Florida Department of Transportation (FDOT) Research Center. He is responsible for the identification, selection and reporting of the Departments \$15 million/year research program and for the coordination of Florida's research programs with federal agencies, the Transportation Research Board, universities and other research partners. He is a member of the AASHTO Standing Committee on Research, Vice Chair of the Research Advisory Committee, Past Chair Research Advisory Committee Region II, Member TRB Committee on the Conduct of Research, Panel member on NCHRP 20-36 "Highway Research and Technology - International Information Sharing", Serves as Panel Chair on NCHRP 20-63 "Performance Measurement Tool Box and Reporting System for Research Programs and Projects", and serves on numerous university advisory boards.

He has been employed by the State of Florida since February 1970. He has worked for the Florida Senate Committee on Transportation and the Department of Transportation. He has experience in Maintenance, Construction, Work Program Development, Contractual Services, Long Range and Multimodal Planning and has been managing the Departments research program since 1984.

Sue Sillick

Sue has been with the Montana Department of Transportation for 14 years. She is currently the Research Programs Manager at the Montana Department of Transportation and has held this position for ten years. Her responsibilities include managing the research, development, and technology transfer programs of MDT and project management. Prior to this position, Sue was a project manager in the research programs for four years.

Sue is active nationally and in Montana furthering research, development, technology transfer, and library issues. She chairs the new RAC coordination and Collaboration of Research Task Group and is also a member of the Futures Task Group. Finally, Sue is a member a couple of NCHRP Research Panels and is a member of a number of TRB committees, including: Conduct of Research, Information Services, and Library and Information Science for Transportation.

Appendix D: Resources

- Caltrans Strategic Research Questions documents
- Caltrans RDSC-Prioritized Strategic Research Questions
- Advancing Future Transportation with Breakthrough Innovations - Summary Report
<http://www.fhwa.dot.gov/advancedresearch/pubs/ajuly05summary.cfm>
- Berkeley Conference: Advancing Future Transportation with Breakthrough Innovations - Summary Report
<http://www.fhwa.dot.gov/advancedresearch/pubs/berkleysummary.cfm>

USDOT/RITA

- *DOT Strategic Plan, 2006 – 2011* (September 2006) --
<http://www.dot.gov/stratplan2011/index.htm>
- *Transportation Research, Development and Technology Strategic Plan: 2006-2010* (November 2006) --
http://www.rita.dot.gov/publications/transportation_rd_t_strategic_plan/
- *Five-Year ITS Program Plan (2007)* --
http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE/14289.htm
- *DOT Center for Climate Change and Environmental Forecasting Strategic Plan 2006 – 2010* (December 2006) -- http://climate.dot.gov/plan/splan_2006.pdf
- *A Strategic Plan for Transportation Statistics: 2003 – 2008* (June 2006) --
http://www.bts.gov/publications/strategic_plan/2003_2008/
- *Instructions for Preparing a University Transportation Center (UTC) Strategic Plan* (March 2006) -- <http://utc.dot.gov/STRATPLANINSTRUCTS.html>
- *UTC Reference Documents* (includes strategic plans, research plans and program plans from FHWA, FTA, and others) -- http://utc.dot.gov/utc_reference.html