



**Research Management Peer Exchange
hosted by the
New Hampshire Department of Transportation
October 25-28, 2004**

FINAL REPORT

INTRODUCTION

The New Hampshire Department of Transportation hosted a research management peer exchange October 25-28, 2004. Invited members of the peer exchange team were:

Nick Vitillo, Manager of Research, New Jersey DOT, team leader
Dale Peabody, Transportation Research Engineer, Maine DOT
Timothy McDowell, State Transportation Programming Engineer, Wyoming DOT
William Carr, Director of Research & Technology, District DOT
Mike Sanders, Research Engineer, South Carolina DOT
Richard Woo, Director of Policy and Research, Maryland SHA
Steve Pepin, Manager of Research, Massachusetts EOT
Dave Hall, Bridge Engineer, FHWA NH Division

Participating members of the New Hampshire DOT Bureau of Materials & Research included Bill Real, Denis Boisvert, Alan Rawson, and Glenn Roberts.

Peer exchanges are designed to foster excellence in State transportation research programs through the sharing of best practices and successful program management strategies among participating research manager peers. The overall objectives of the exchange process are to:

- Learn how the host state (New Hampshire Department of Transportation) manages and conducts research and how its program might be improved;
- Share information among members of the exchange team and customers/partners of NHDOT Research; and
- Identify useful ideas that members of the peer exchange team can practically apply in their own agencies.

In addition, three (3) specific focus areas were identified by NHDOT prior to the exchange. These themes were:

- Tying the research program to the strategic goals of the agency;
- Marketing research successes. Documenting and demonstrating program value; and
- Enhancing program efficiency while balancing competing demands and collateral staff duties.

To prepare for the peer exchange, the team reviewed documentation describing the New Hampshire Department of Transportation's research program and procedures. During the exchange, the team discussed New Hampshire's practices and those used in other team members' respective agencies and organizations. The exchange team also met with staff from the Commissioner's office, Public Information office, and the University of New Hampshire's Recycled Materials Resource Center.

Discussions followed a free dialogue format and provided the exchange team an opportunity to listen to concerns, experiences, accomplishments and suggestions from those interviewed. In relation to the identified themes, team members volunteered information pertinent to research administration, program development, project management, and other accomplishments.

The team identified a number of strengths and opportunities related to the New Hampshire DOT research program:

STRENGTHS

- Clear, effective process & procedures for operating the research program. See current edition of the RD&T² Primer (Research Advisory Council (NHRAC), program documentation, etc.).
- Active in American Association of State Highway Transportation Officials (AASHTO) research community (Standing Committee on Research (SCOR) & Research Advisory Committee (RAC).
- Very capable personnel to manage contractor and consultant projects and perform in-house projects.
- Handle large volume of work.
- Service to field, construction support. Responsive to inquiries from other Bureaus; information resource.
- Sound fiscal management and responsibilities.
- Good quality reports and newsletters.
- Executive staff buy-in through early involvement in NHRAC and Technical Advisory Groups (TAGs).
- Effective intra-department communications
- Good understanding of research literature resources; Research in Progress (RiP), Transportation Research Information Services (TRIS), Transportation Research Board (TRB).
- Focus on practical research that is readily implemented.
- Strong University partnership through its involvement in NHRAC and Contract Project Agreements to perform research. Relationship with the Recycled Materials Resource Center (RMRC).
- Participation in strategic planning efforts of NHDOT.
- Involvement on Quality Council.
- Good relationship with FHWA.

OPPORTUNITIES

- Tie research to Department's Strategic Plan (under development).
- Market successful research through showcases, newsletter, website, etc.
- Use resources to address upper-management issues and concerns (several were identified during Front Office meeting with Peer Exchange Team):
 - Human Resources research
 - Benchmarking, other states' practices.

- Intelligent Transportation Systems (ITS)
- Disseminating internal research with others, including local municipal agencies.
- Fading signs; specifically, red sign sheeting on Interstate shields and stop signs.
- Durable traffic paint.
- Pavement Management Systems (PMS).
- Documenting ad hoc research occurring in other NHDOT bureaus (lessons learned)
- Take advantage of spreading the word on innovation via Public Information Officer (interesting issues/subject).
- Develop performance measures (Tie to Strategic Plan). Future research and links to:
 - Preservation of system
 - Congestion relief/mobility
 - Safety
 - Organization performance
- Cooperative funding opportunities - other agencies, organizations, etc.
- Reduce non-research duties of research staff. Frame in terms of increased return on investment.
- Broaden scope of research program to include nontraditional areas.
- Expand performance measurements into non-traditional areas.
- Meet one-on-one with Department staff. Identify problems in need of research, rather than seeking general research ideas.
- Enhance access to library information resources.
- Provide seed money for customers, particularly in the area of implementation.
- Disseminate information more broadly in DOT; include lower level staff, who probably were directly involved in the work.
- Consider incentives for research participation.
- Eliminate using project cost estimates in project selection.
- Use State TRB visits to make in-roads and identify important research needs.
- Broaden NHRAC membership.
- Engage executive management.

PLANNED ACTIONS

Nick Vitillo
New Jersey Department of Transportation

- Importance of the Peer Exchange Process to renew the research-spirit in the research staff of the host state and the visiting states.

- There is similarity in our research program needs despite differences in our research program's size and organizational makeup. All struggling to develop effective and efficient Research Programs to enhance their Transportation Agency.
- EVA 3D Geotechnical Software for underground mapping and investigation.
- Using responses to inquires as mini-research projects - toot your horn
- Marketing PowerPoint presentation from Utah FHWA
- Using pictures and video to enhance eye appeal of our research products and marketing products.
- Include the names of the Research Project Selection and Implementation members for both recognition and accountability. Send the members of the RPSIP and their superiors a personalized final report and a thank you note for their participation and contributions to the research program.
- Select projects to show the economic impact of the research on the Department and use that in marketing the value of the Research Program.
- Work with the public affairs office to develop a marketing strategy for the Research Organization and the research projects. Repeat often.
- Work with the legislative liaison office to keep the Transportation Committees in the Senate and Assembly informed on the contributions of their research funding.
- Use an acid test in selecting the research products to market to ensure credibility (peer reviewed).
- Accessibility to Top Management is critical to a sustainable Research Program
- Funding Quick Turn around Research capabilities.
- Should involve all the Assistant Commissioners in an Annual Strategic Research needs/directions meeting.
- Engage the operational units to capture "unofficial" research. Disseminate while giving credit to the operational researcher and share success stories with other units within the NJDOT, other DOTs and County and Municipal agencies through the Local Technical Assistance Program (LTAP).
- Publicize a Research Service to assist operational units with their own "unofficial" research efforts, capture the accomplishments, and disseminate the information as a component of the Research Program technology transfer effort.
- Have a "Brown Bag" lunch session on the capabilities and accomplishments of the Research Program. Market the program.
- Use research staff to facilitate implementation, training, and technology transfer and market the research accomplishment.
- The need to promote continuous improvement through self-evaluation and peer review. Do not become complacent with current successes.
- Tell the research story using non-technical words. **Heart, Head, and Pocket Book - Tell the story in these terms to catch the attention in a brief message.**

- Consider meeting with the school of marketing to discuss developing a marketing strategy for the organization and the program.
- How do you prove your program's worth to your supervisor, directors, or Department as a whole?
- How do you measure your Research Program Accountability?

PLANNED ACTIONS

**Dale Peabody
Maine Department of Transportation**

- Consider a Maine Research Showcase event similar to NJ DOT.
- Include Tech Brief with each Research report.
- Work with Public Information Office on media worthy research stories.
- Look into submitting successful research project (foamed asphalt) for FHWA Recycling Award.
- Meet one-on-one with Regional Offices to market research and gather research needs. On yearly basis rotate Regional Offices visited.
- Consider a Research Ideas Workshop for marketing and needs.

PLANNED ACTIONS

**Tim McDowell
Wyoming Department of Transportation**

- Look into adding the Research program into the Department's overall Strategic Plan and Long Range Plan.
 - Make a part of the Long Range Plan goals.
 - Use quantifiable performance measures using the "SO WHAT" principle.
- Begin using a modified version of New Hampshire's Technical Advisory Group on larger, more complicated research projects.
 - Use select DOT personnel with expertise in this arena.
- Increase communication efforts with DOT personnel in District offices.
- Look for opportunities for using Research funds to provide training on Research results. This can be tied into the Technology Transfer Section of each project.
- Work with Wyoming T² Center to provide a periodic conference highlighting research results by the DOT, Cities and Counties.
- Capitalize on information dissemination through the use of WYDOT's Web site. Short and concise research results.
- Look into the possibility of adding a WYDOT Executive staff member to the RAC. The current WYDOT climate may be conducive to doing this.
- Begin use of Research Technical Briefs similar to New Hampshire's.
- Begin documenting quick hit research assistance requests.

PLANNED ACTIONS

Bill Carr
District of Columbia Department of Transportation

- Investigate conducting a research showcase/open house after 2005 FY program has produced results and implementation plans. (similar to New Jersey or South Carolina showcase concept).
- Pursue common research interests in “mini” pooled fund efforts with other DOTs.
- Link UNH Recycled Materials Resource Center (RMRC) activities with Environmental Management System currently being developed at DDOT.
- Connect HUTRC staff with RMRC staff to share information and learn from experiences
- Compare DDOT joint performance plan to the strategic plans being developed by peer exchange participants.
- Schedule DDOT TRB visit to take advantage of opportunities to increase the participation in the research program.
- Conduct an evaluation and develop an operating plan for DDOT library to enhance access to information and library services.
- Fill position of research assistant to support mission of program.
- Develop DDOT website link to research and technology program to communicate activities. Provide TRIS and RIP links to publications.
- Develop research newsletter or tech brief in conjunction with Bill Rice for dissemination outside and within DDOT.

PLANNED ACTIONS

Mike Sanders
South Carolina Department of Transportation

- Investigate the possible use of State Planning & Research (SPR) Part I funds for a portion of the National Cooperative Highway Research Program (NCHRP) and TRB payments.
- Explore the use of some of the marketing strategies, particularly movie clips used in Wyoming, presented by various members of the Peer Exchange Team.
- Investigate the possibility of hosting a research showcase similar to New Jersey.
- Use e-mail to announce research project completion/findings to appropriate Department personnel.
- Apply the “so what” principal to performance measures being considered for the research program to ensure measures are meaningful.
- Explore methods of increasing interaction with Department executives on research matters.
- Investigate involving the Department’s Public Relations Unit in disseminating information on the research program and projects.
- Become more familiar with activities of RMRC.

PLANNED ACTIONS

Richard Woo
Maryland State Highway Administration

- Learn from Wyoming DOT's Asset Management Approach to Enterprise Resource Planning.
- Share the NHDOT's Evaluation Report on "Durability of Truncated Dome Systems" with Maryland's ADA Steering Committee.
- Develop performance Measures for Maryland's research program.
- Obtain ITS Scan Report when it is available.

PLANNED ACTIONS

Steve Pepin
Massachusetts Executive Office of Transportation

Lessons Learned/Possible Action Items for the Massachusetts Transportation Research Program:

Program Development:

- As the update of the Transportation Strategic Plan moves forward, identify policies and goals that are supported by the Research Program.
- Add section to the update of the Transportation Strategic Plan that describes the Massachusetts Transportation Research Program and how the program can address agency mission and goals.
- Conduct Peer Exchange

Process and Procedures:

- Update our Research Manual.
- Consider soliciting Problem Statements one year in advance to when projects are actually defined in the Research Work Program. Similar to approach used by N.J.
- Consider adding a formal description of report format into the contracts with Research organizations.

Conduct of Research:

- Look for opportunities for projects to test the TAG approach used by the NH DOT on its projects rather than the Technical Representative approach currently used on our projects.

Implementation of Research Results:

- Consider implementation meetings before projects are completed with Principal Investigator, Technical Representative, and representatives of division, agency or functional area benefiting from the research.
- Consider scheduling an implementation follow-up meeting approximately one year after project completion with Technical Representative, and representatives of division, agency or functional area benefiting from the research to see if the research results performed as expected. Schedule other follow-up as appropriate.

- Consider adding Implementation to the Technical Transfer section of Research Program to provide support for implementation.

Marketing - Program Outreach and Awareness:

- Consider following approaches used by other agencies to foster awareness of the program
 - Meet with key agency people individually to explain Program.
 - Put Research information onto intra-net.
 - Feed information on interesting and innovative research to the webpage and to the newsletter.
 - Provide an Executive briefing on the program at least annually.
 - Look at opportunities for a Research Showcase.

PLANNED ACTIONS

**Dave Hall
Federal Highway Administration, NH Division**

- Make sure the research program is well understood in the Division Office (DO);
 - Showcase reports at staff meetings.
 - Request participation of DO employees on TAG's within their area of expertise.
 - Keep my management informed of successes/ opportunities so they can promote research with the NHDOT front office.
- Don't be part of the problem with ad hoc research – guide suggestions into the research program so they are properly considered and documented.
- Take a more active role on TAGs I am a member of, especially on topics that come from FHWA.
- Support Glenn in changes resulting from this peer exchange – as a participant, I already have a good understanding of the changes he may propose.
- As appropriate, encourage more use of Technology Transfer (T2) Center, brown bag lunches, 1:1 meetings, research workshops, changes in the NHRAC membership, and a library resource.

PLANNED ACTIONS

**Research Section
New Hampshire Department of Transportation**

Glenn Roberts:

- Consider eliminating estimated funding requirements on internal research problem statements to allow NHDOT RAC members to focus primarily on the relative merit and priority of the research.
- Explore the concept of biannual Research Workshops (South Carolina) and/or Showcases (New Jersey) to better identify research needs.
- Look at utilizing “brown bag” lunches (New Jersey) to present research findings and communicate successes to customers.

- Continue outreach efforts to maintenance and other Operations personnel to capture and document experiments conducted outside the formal Research program.
- Study Wyoming's marketing efforts including the use of movie clips and other techniques to "tell the story".
- Request copy of Maine's biannual Research Highlights document, which refers to key words and concepts contained in upper management's strategic plan.
- Get in the habit of sharing more research information with the NHDOT public information office.
- Continue dialog with Commissioner's office regarding nontraditional research topics. (e.g., human resources, safety, benchmarking, etc.).
- Follow up on outstanding Operations issues such as faded stop signs and pavement markings (e.g. status of Utah pooled-fund study).
- Explore the Open House idea with Bureau Administrator for new building when built. Include posters of selected research successes.
- Investigate partnering with RMRC on New Frontiers recycled plastic sound wall. Consider expanding to include specification development (key RMRC objective).

Bill Real:

- "So what" principle. Can be applied to almost anything we do.
- Butch said that they do a lot of research that they don't involve us in. Market the need and value of documentation and using the Research Office as a central repository for this info.
- Look at shifting deck condition survey's to others.
- Management of consultant contract and recommendations should go to Bridge Design (Dave Powelson) and M&R support to Materials section of M&R.
- Look at other peripheral duties to determine relevance to research/Departmental objectives.
- Shift product testing to Materials section or require independent lab testing.
- Focus more on coordination/administration, less on actual tasks such as report writing, work plan development, etc. Solicit help from TAG members where possible. Supplement their efforts as necessary to make sure project moves along.
- Marketing.
- Create a poster for John O. Morton Building (JOM) Lobby. Poster can be of an individual research project or a summary of ongoing or recently completed research.
- Arrange for a wall space in the lobby that we can use to rotate posters.
- Consider requiring Principal Investigators (PIs) under contract to provide a poster as part of their final report requirements.
- Consider requiring PI's under contract to provide a one-page newsletter-style summary as part of their final report requirements. This could be widely distributed through the Department.

- Before deciding to perform research, NHRAC should decide if resulting product is likely to be implemented. Should not do research that is not likely to be implemented. (Dale comment: may also want to ask “potential for public outreach?”).

Denis Boisvert:

- Projects concerning “personnel issues” could be considered.
 - Methods for dealing with disciplinary problems.
 - Asset management – workforce planning.
 - Employee satisfaction
 - Employee evolution from primarily needing technical to needing management skills.
- Development of meaningful performance measures.
- Funding and resources for “Quick Response” research.
- Brown-bag lunch presentations at the end of research projects.