

RESEARCH MANAGEMENT PEER EXCHANGE
Hosted by the
Nevada Department of Transportation
November 7-8, 2006

Introduction

The Nevada Department of Transportation (NDOT) hosted a research management peer exchange November 7-8, 2006 in Carson City, Nevada. It was conducted to comply with federal regulatory requirements for state research, development and technology transfer (RD&T) programs, and to exchange information among members of the peer exchange team on conducting, managing, and implementing research. The members of the NDOT peer exchange team included:

- Bernie Jones, Research Manager, Research Unit, Oregon Department of Transportation
- Leni Oman, Director, Office of Research and Library Services, Washington State Department of Transportation
- Sivanuja S. “Siv” Sundaram, Assistant Division Engineer, Planning and Research Division, Oklahoma Department of Transportation
- Mike Herron, Assistant Division Administrator, FHWA Nevada Division
- Reed Gibby, Research Coordinator/ Project Manager, Research Division, Nevada Department of Transportation
- Tie He, Chief of the Research Division, Research Division, Nevada Department of Transportation

Although the overall objective of this peer exchange was to review and discuss ways to improve the NDOT research program, its focus was to:

- Look for new ways to identify and address research needs
- Look for new ways to provide incentives for research champions
- Look for new ways to improve internal and external research customers’ satisfaction

Peer Exchange Procedures and Methods

To prepare for the peer exchange, the team reviewed documentation describing the Nevada DOT research procedures and program. During the exchange, Tie presented NDOT’s research program including its mission, objectives, and program scope. The team then questioned and discussed some specific processes and procedures used by NDOT in comparison with those used in other team members’ agencies and organizations. The team also interviewed more than 20 people representing the following groups:

University of Nevada at Las Vegas, Department of Civil and Environmental Engineering

University of Nevada at Las Vegas, Transportation Research Center
University of Nevada at Reno, Department of Civil and Environmental Engineering
University of Nevada at Reno, Department of Mechanical Engineering
University of Nevada at Reno, Department of Natural Resources and Environmental Sciences
NDOT Accounting Division
NDOT Construction Division
NDOT Districts
NDOT Equipment Division
NDOT Maintenance and Operations Division
NDOT Materials Division
NDOT Structures Division
NDOT Research Division
NDOT Roadway Design Division
NDOT Safety/Traffic Division
NDOT Traffic Information Division

These individuals represented NDOT research project principal investigators, research project managers, Research Advisory Committee (RAC) members, and Research Project Panel members. Interviews followed a question/answer format and provided the exchange team an opportunity to listen to concerns, experiences, technical accomplishments and suggestions from those interviewed. Team members also answered questions posed to them by the people interviewed and the team volunteered information pertinent to the discussions on research processes.

On November 8, 2006, Barnie, Leni and Siv presented their research processes and experiences in the three focus areas. During and following each presentation, the presenter answered questions and explained the specifics of their practices.

At the end of the peer exchange, the findings/recommendations were presented to NDOT Deputy Director/Chief Engineer, Susan Martinovich and the Assistant Director for Planning, Kent Cooper.

Major Observations of Peer Exchange Team

During the peer exchange, the strength of NDOT research program and opportunities for improvement were noted as follows:

Overall Research Program

- 1) All representatives interviewed were pleased with the evolution of the research program processes and regard the staff as qualified and responsive.

- 2) As the Research Management Committee (RMC) members, NDOT upper management is actively engaged in the program formulation and evaluation. They are very supportive of the research program.
- 3) Substantial state funds have been used for research projects that have enhanced credibility and responsiveness of the research program.
- 4) Having upper management review and approve the list of prioritized research projects is a good practice that ensures the research projects address concerns of the Director's Office and align with the departmental strategic goals.
- 5) The research program has dramatically improved since the last peer exchange in 2001; the processes for research development, project management and implementation are well documented, effective and widely accepted by both NDOT divisions/districts and universities.
- 6) Divisional and departmental research needs may be better addressed by coordinating increased communication between RAC and RMC in the project selection/rejection process.
- 7) Consider having engineers in the Rotational Engineering Program come through the Research Division to promote awareness of the research program and continued interest in innovative practices.
- 8) Feedback on the Research Library services was very positive. RAC members mentioned the responsiveness and the quality of the information returned. In addition, they appreciate the proactive management as demonstrated by forwarding relevant information sources when they become available. There was interest in information/activities of other states as well as sharing NDOT information. This could be improved by networking with other transportation libraries such as the Library Connectivity Study.
- 9) Conduct strategic planning meetings with other divisions to help develop research long-term and short-term focus areas balancing the needs for traditional research (such as materials and bridge research), planning/policy/human factor research, and basic (cutting edge) research (e.g. alternative fuels and engines).
- 10) Consider using the practices of Oregon's Expert Task Groups and Washington State's RACs to prioritize research statements by category.
- 11) Consider using the biennial program in place of annual program to streamline the research selection procedure.
- 12) Conduct an annual "Research Open House" or "Research Day" to showcase/market the research program.
- 13) Work with FHWA Nevada Division to encourage FHWA's participation on panel meetings.
- 14) Enhance the research website to include research reports, research problem statements, annual reports, etc to help market the research program.
- 15) Recommend reclassification of research staff positions to a series equivalent to/attractive to engineer positions so that the positions may be seen as part of a career track.
- 16) There is interest in diversifying the types of projects funded: near term and longer term results; non-highway modes; and human behavior, etc.

Ways to identify and address research needs

- 1) Formal visits to NDOT District/Division Offices to discuss research needs enhance the quality and quantity of research problem statements.
- 2) Conduct strategic planning to develop research focus/subject areas addressing divisional and departmental research needs for short-term and long-term projects.
- 3) Explore opportunities for federal grants (non-SPR funds) and joint funding projects with local governments and transportation agencies.
- 4) Look into Oregon's two-stage statement process to select and approve research projects.
- 5) Continue to use research newsletter, website, marketing oriented publications, and staff outreach to expand agency participation.
- 6) Involve RTCs, MPOs and the T2 center in the research problem statement solicitation process.

Ways to Provide Incentives for Research Champions

- 1) One of the major incentives for research champions is their own interest in acquiring knowledge of research subjects and using research results.
- 2) Use the department and research newsletters to recognize research champions and research panel members.
- 3) Provide opportunities for research champions to present research findings to RAC and RMC and have NDOT management recognize their efforts.
- 4) Provide opportunities for research champions (using research funds) to travel to conferences/workshops to present research results, network with colleagues, and provide exposure to national research activities.
- 5) Work with Divisions/Districts to allow staff, even with overtime, if necessary, to actively participate in research activities.
- 6) Nominate research champions to serve on TRB committees and NCHRP panels.

Ways to Keep/Improve Research Customers' Satisfaction

- 1) Consider changing the research process schedule to synchronize with the university recruitment schedule.
- 2) Approve requests (on a case-by-case basis) for travels to research conferences/trainings for researchers to present research findings and acquire specialized knowledge necessary for research projects.
- 3) Encourage participation of NDOT in the university sponsored annual "Transportation Conference" to foster good relationships.
- 4) Consider hiring technical editors to review/edit some final research reports to enhance their quality.
- 5) Conduct a customer service survey of research users annually to evaluate the adequacy of the services and to seek their suggestions for improvement.
- 6) Consider developing a short report to keep RAC and RMC informed of ongoing research progress and achievements.

- 7) Continue to use peer exchange to get feedback from Divisions/Districts to address their concerns and make improvements.

Individual Perspectives and Planned Actions

Leni Oman, Washington State Department of Transportation

- 1) Find out about opportunities to include Research in engineering rotational assignments.
- 2) Require at Technical Advisory Committees for initial project kick-off meeting and key project milestones.
- 3) Publish both funded and unfunded problem statements on web site
- 4) More actively pursue funding from other programs such as IBRC.
- 5) Consider 'open' RAC or REC meetings.
- 6) Consider 'off year' workshop to discuss research results and new needs.
- 7) Work with Communications to identify research results that should be forwarded to media as means to market the quality of WSDOT (as TxDOT does).
- 8) Reinstigate a customer survey following project selection process.
- 9) More actively document the incentives for Technical Monitors.
- 10) Track performance of Principal Investigator, Research Manager and Technical Monitor.
- 11) Consider a comment card in the research report to solicit feedback on research products.

Barnie Jones, Oregon Department of Transportation

- 1) Find ways to recognize agency staff for volunteer service on research committees.
 - a. Make sure TAC members are named in the acknowledgements section of reports, and list TAC members in Research Notes, and project summaries in the semi-annual *Research News* and the *Research, Development and Technology Transfer Annual Report*.
 - b. Make recent or current service on an ODOT Technical Advisory Committee or Expert Task Groups an explicit criterion for an NCHRP Panel nomination.
 - c. Send an annual thank-you letter, with CC to supervisor.
- 2) Consider a research open house or "research day" to promote research within the agency.
- 3) Capture "Sponsored Research" in the *Research, Development and Technology Transfer Annual Report*.
- 4) Revisit the issue of university indirect rates.

Siv Sundaram, Oklahoma Department of Transportation

Nevada DOT's Research Division structure and the program size are very similar to ODOT. NDOT has a good Research Manual and a streamlined project selection process. The following are some of the ideas from NDOT and Oregon and Washington DOT that ODOT might consider implementing to improve ODOT's Research Program:

- 1) Invite Problem Statements from MPOs and Universities.
- 2) Synchronize problem solicitation, RFPs and project selection with Universities' student recruitment cycle. Also consider a longer cycle for soliciting problem statements (starting in April of previous year for projects starting in July).
- 3) Conduct meetings with expert task groups to review problem statements and proposals to encourage active participation instead of simply sending them the proposals and asking for rating.
- 4) Develop strategic priorities to align with Dept priorities (Oregon DOT).
- 5) Provide feedback on quarterly reports provided by PIs. Quarterly reports will become part of final report.
- 6) Make the draft report delivery date close to the end of contract period.
- 7) Provide PIs with due dates for deliverables based on the Contract instead of relying on them to interpret the Contract times.
- 8) Consider using Master Contract with Universities to simplify contract process (Washington DOT).
- 9) Market research through quarterly newsletters.
- 10) Conduct customer satisfaction survey (Oregon DOT).
- 11) Consider funding student studies to develop future workforce for DOT (Washington DOT).
- 12) Hold open house for Universities to explain ODOT proposal submittal process.
- 13) Add a section for Product Evaluation Program similar to NDOT in our Research Manual.
- 14) Add a section for Pool Fund Studies selection process.
- 15) Consider adding Assistant Director for Administration to Research Council.
- 16) As we get more problem statements, screen and rank problem statements and request proposals only on the highly rated problem statements.
- 17) Use an evaluation form to keep track of PIs past performance for consideration for future projects.
- 18) Consider having technical panels with Research sponsors for each project.
- 19) Have the PIs provide an implementation plan as part of final report
- 20) Advertise and market Research Library more. Summarize library usage by keeping track of queries.

Tie He/Reed Gibby, Nevada Department of Transportation

- 1) Update NDOT Research Manual to document recent changes in research project development and approval processes. Also, incorporate the recommendations made by the peer change team to enhance the program value.

- 2) Produce an annual report on research achievements, record of successes and quantified value of research to be presented to the Research Management Committee and the Research Advisory Committee and made available to the public.
- 3) Continue to visit universities to present NDOT research needs/processes to encourage participation in the research program.
- 4) Conduct a customer service survey of research users annually to evaluate the adequacy of the services and to seek their suggestions for improvement.
- 5) Conduct an annual “Research Open House” or “Research Day” to market research.
- 6) Pursue opportunities for federal grants and joint funded research projects with other agencies to increase funds for research.
- 7) Use the department newsletters to recognize research champions.
- 8) Consider conducting “open meetings” of RAC and RMC to include NDOT research champions to present research results.
- 9) Work with NDOT Information Service Division to put NDOT research reports, problem statements and annual reports on web to promote research.
- 10) Consider using biennial program in replace of annual program to reduce internal workload for research development and management.
- 11) Use the format of Washington State DOT’s “Monthly Report” to develop a publication to report NDOT research activities.

Appendix

A. NDOT Peer Exchange Team Photo



NDOT Research Peer Exchange Team (from left to right): Reed Gibby, Tie He, Leni Oman, Barnie Jones, Siv Sundaram, and Mike Herron

B. NDOT Peer Exchange Agenda

Monday, November 6

5:30 PM Team Greeting and Informal Social Dinner at Adele's

Tuesday, November 7 (Third Floor Conference Room, #301 large side)

8:15-8:30 AM Welcome & Introductions
Tie He- Nevada DOT Research Manager

8:30-9:00 AM Presentation of Nevada Research Program
Tie He- Nevada DOT Research Manager

9:00-9:30 AM Questions/Answers on Nevada Research Program

9:30 –9:40 AM Break

9:40-11:30 AM Team Interviews NDOT RAC Members

11:30 –1:00 PM Lunch

1:00- 2:30 PM Team Interviews University of Nevada Project Investigators

2:30 –2:40 PM Break

2:40-4:30 PM Team Interviews NDOT Project Panel Members

Wednesday, November 8 (Third Floor Conference Room, #301 small side)

8:30 –9:20 AM Presentation of Oregon DOT's Practice/Experience on
A) Ways to Identify and Address Research Needs
B) Incentives for Research Champions
C) Ways to Keep/Improve Internal and External Customer Satisfaction
Barnie Jones-Research Manager, Oregon DOT

9:20 -10:10 AM Presentation of Washington DOT's Practice/Experience on
A) Ways to Identify and Address Research Needs

	B) Incentives for Research Champions C) Ways to Keep/Improve Internal and External Customer Satisfaction Leni Oman-Director of Transportation Research, Washington State DOT
10:10-10:20 AM	Break
10:20 –11:10 AM	Presentation of Oklahoma DOT’s Practice/Experience on A) Ways to Identify and Address Research Needs B) Incentives for Research Champions C) Ways to Keep/Improve Internal and External Customer Satisfaction Siv Sundaram - Assistant Planning & Research Division Engineer, Oklahoma DOT
11:10-12:00 AM	Team Begins to Develop Findings/Recommendations
12:00-1:00 PM	Lunch
1:00-3:00 PM	Team Prepares Final Report
3:00 –4:00 PM	Team Presents Findings/Recommendations to NDOT Upper Management (Director’s Conference Room, #211)