

**Research Management  
Peer Exchange**

**Hosted by the  
Oregon Department of Transportation**

*Oregon Department of Transportation*



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**FHWA-OR-RD-99-11**

**June 2-4, 1998**



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***Research: A strategic tool for use by management in achieving the goals and objectives of the Department.***

## **1.0 INTRODUCTION**

The Oregon Department of Transportation hosted a Research Management Peer Exchange June 2-4, 1998. The members of the peer exchange team included:

- ❑ Bruce Gates, Professor, Management Consultant, Willamette University
- ❑ Scott Sabol, P.E., Director, Delaware Transportation Institute
- ❑ Bob Schmiedlin, P.E., Wisconsin Department of Transportation (WisDOT)
- ❑ Nick Fortey, P.E., Division Contact, FHWA
- ❑ Liz Hunt, P.E., Interim ODOT Research Manager

To prepare for the peer exchange, each panel member was mailed a binder that included ODOT background information including:

- ❑ Historical information,
- ❑ Organizational charts,
- ❑ Lists of current SPR funded and State Program funded projects,
- ❑ Recap of the current FY selection process and results, and
- ❑ Work plans for presentations made during the introductory session.

Panel members were also asked to complete a form that included state DOT and research program information. The completed forms are included in Appendix A.

The objectives of the peer exchange process were to:

- ❑ Identify how ODOT can improve the quality of the research results.
- ❑ Examine how ODOT can better implement research findings.
- ❑ Identify methods to determine the value of research.
- ❑ Determine how much emphasis ODOT should place on research done by other sources.

To collect information addressing the objectives, core questions were asked of all the participants. The participants included ODOT managers, Research Unit customers, Oregon State University researchers, Albany Research Center researchers, Portland State University researchers, and FHWA staff. A complete list is included in Appendix B. Participants were provided with copies of the questions before the one-on-one interviews. Responses were discussed during the meeting with the peer exchange team. The core questions and common responses from the participants are shown in Table 1.1.

Table 1.1. Core questions and common responses.

Question	Common Responses
What do you and your staff do to learn about outside research results and activities?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Internet, journals</li> <li><input type="checkbox"/> TRB Conference</li> <li><input type="checkbox"/> Formal and informal contacts</li> <li><input type="checkbox"/> ODOT Library</li> </ul>
What are the elements of value that are added by research?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Timely</li> <li><input type="checkbox"/> Credible</li> <li><input type="checkbox"/> Documented</li> <li><input type="checkbox"/> Unbiased</li> <li><input type="checkbox"/> Cost-effective</li> <li><input type="checkbox"/> Policy oriented</li> <li><input type="checkbox"/> Specification oriented</li> </ul>
How should upper management influence the direction of research and development in ODOT?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Management to provide recognition for innovation.</li> <li><input type="checkbox"/> Management to provide funding.</li> <li><input type="checkbox"/> Management to provide a presence. Appearance of management being involved can make a difference.</li> <li><input type="checkbox"/> Management to provide strategic direction to the RAC.</li> <li><input type="checkbox"/> Management to require Research accountability.</li> </ul>
How can credibility of the Research Unit be improved?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Complete projects on time, on budget.</li> <li><input type="checkbox"/> Select projects that are applicable, relevant and with identified risks associated with implementation.</li> <li><input type="checkbox"/> Produce quick responses.</li> <li><input type="checkbox"/> Produce valid results.</li> </ul>
How can research implementation be improved?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Transfer the information in other ways than only a report—workshops, training sessions.</li> <li><input type="checkbox"/> Marketing, marketing, marketing.</li> <li><input type="checkbox"/> Maintain communication.</li> </ul>
What do you see as the role of research in ODOT?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Research can satisfy expectations of the travelling public by providing new and innovative solutions.</li> <li><input type="checkbox"/> Research can filter research done by others.</li> <li><input type="checkbox"/> Research should be the technology transfer agent.</li> </ul>

Successes and resulting action items based on the Peer Exchange are presented in terms of the stated objectives.

## 2.0 SUCCESSES

ODOT has a research program and structure that they can be proud of, especially considering the size of its staff and the funding level. Generally, the research process in Oregon is an organized, logical and workable process. All of the basic pieces are in place to be able to conduct a research program that meets the needs of the department: a process to identify departmental needs, a staff dedicated to research, support of top management, champions or allies scattered throughout the organization, various associations or connections both within and outside the organization; and a customer base that is in need of and wants the results that the research program is able to provide. In addition:

- ❑ ODOT has successfully introduced new technology through workshops including the recent training in composite materials.
- ❑ Several positive comments were made regarding the recent research strategic planning session.
- ❑ The research selection and oversight process is a significant improvement.
- ❑ Research has expanded its customer base to include more non-traditional research.
- ❑ There is an entrepreneurial spirit in pockets of the organization that significantly contributes to research productivity.



## **3.0 ACTION ITEMS RELATED TO OBJECTIVES**

### **3.1 IDENTIFY HOW ODOT CAN IMPROVE THE QUALITY OF THE RESEARCH RESULTS**

*Quality research is defined as research done that meets the needs of the Department in the most efficient way.*

Action items identified that will help achieve this goal include:

- ❑ Place greater emphasis on technical content when managing research projects (versus administration).
- ❑ Increase the pool of researchers (Wisconsin's NOI (Notice of Interest) process).
- ❑ Increase the frequency and level of involvement of the TAC, for example, whether to grant no cost time extensions.
- ❑ Educate all Units in the Department of the project selection process.
- ❑ Consider best way to staff socioeconomic, planning, public transit and multi-modal issues ETG. Should Environmental be included?
- ❑ Consider applicability, relevancy, and implementation during project formulation, selection and conduct.
- ❑ Identify research liaisons in Regions, design sections, etc. to identify problems, needs, and innovations.
- ❑ Seek direction on the appropriate split between front-end (project development)/back-end (implementation) efforts and number of projects managed.
- ❑ Review the balance of funding between Research and Planning.

### **3.2 EXAMINE HOW ODOT CAN BETTER IMPLEMENT RESEARCH FINDINGS**

- ❑ Create research liaisons in Regions, design sections, etc. to identify problems, needs, and innovations. The liaison would also act as the technology transfer conduit.
- ❑ Promote research done by others and the Unit through periodic "brown-bag" presentations to appropriate audiences. Invite upper management.
- ❑ Perform follow-up of implementation activities.

### **3.3 IDENTIFY METHODS TO DETERMINE THE VALUE OF RESEARCH**

- ❑ Publish research results in professional journals.
- ❑ Present research results at professional conferences.
- ❑ Complete research in a timely manner.

### **3.4 DETERMINE HOW MUCH EMPHASIS ODOT SHOULD PLACE ON RESEARCH DONE BY OTHER SOURCES**

- ❑ Organize research done by others to address ODOT needs. Our expertise should be used to identify valid research results.
- ❑ Strongly encourage Director to get TRIS/Research in Progress database operational.
- ❑ Coordinate with FHWA to get information about research done in other states.

## **4.0 ADDITIONAL ACTION ITEMS IDENTIFIED**

### **4.1 MARKETING**

*The sole purpose of marketing is **getting** and **keeping** customers. (Theodore Levitt)*

- ❑ Make use of public information officer and the tools being used by that office (survey).
- ❑ Participate in Commissioner tours to local Districts.
- ❑ Identify research liaisons in Regions, design sections, etc. to identify problems, needs, and innovations. The liaison would also act as the technology transfer conduit.
- ❑ Amend the project solicitation/selection process to include more communication with the problem submitter to insure understanding.
- ❑ Provide assistance to problem statement submitters in preparing and marketing problem statements.
- ❑ Establish a regular contact schedule with other ODOT sections to both provide information and identify needs.
- ❑ Promote research done by others and the Unit through periodic “brown-bag” presentations to appropriate audiences. Invite upper management.
- ❑ Integrate additional partners in the program (private industry).

### **4.2 CONTRACTING**

- ❑ Include Gantt charts in all work plans. Require quarterly updates by the principal investigators. Gantt chart to include scheduled milestones and contacts with Technical Advisory Committee.
- ❑ Specifics of OSU contract need to be revisited to include items such as overhead rate and tuition reimbursement.
- ❑ Explore flexible services type contracts to allow rapid response.
- ❑ Increase the pool of researchers (Wisconsin’s NOI process).
- ❑ Seek solutions to shorten internal timeline for contracting.



## **5.0 PEER EXCHANGE MEMBERS' NOTES**

### **5.1 WISCONSIN**

Remembering that WisDOT is undergoing changes that will significantly alter the way they do business, there were, never-the-less, many observations made and things learned (and re-learned) that can be used by WisDOT in their new role as the Technology Advancement Unit.

- Be more proactive.
- Communicate with the district staff including more active contact with the district technical committees.
- Use the Office of Public Affairs staff to help sell research and to communicate the accomplishments to all customers.
- Take advantage of the research champions and use them to further the effectiveness of technology advancement.
- Follow through on implementation of technology.
- Strengthen the Technology Transfer role even more than it is now (including the use of one page epistles similar to ODOT's Research Notes).
- Continue to have an eye towards the national perspective and the networking it provides so we can stay better connected.

### **5.2 DELAWARE**

Observations to take back to Delaware Department of Transportation (DelDOT):

- ODOT's organizational structure and research process lend themselves to a successful program.
- WisDOT's Notice of Interest approach is an effective method for soliciting widespread interest in performing research.
- WisDOT's post-project performance evaluation helps track success of projects.
- The need to pressure TRB to allow for research-in-progress updates in TRIS is not just a Delaware issue.
- Stopping "bad" projects early helps avoid "tainting" the perception of research.
- ODOT's recognition of people enhancing innovation at DelDOT helps reward special efforts.
- Post-projects implementation workshops for affected DelDOT units and others are useful.
- ODOT's planned use of the communication staff for Research Unit objectives is good.
- Use research staff as a "quality filter" for reports coming to DelDOT.

- Obtain district/front-line/field-level input to the process and feed appropriate results to those groups, also.
- Have top management communicate DelDOT broad-based priorities to research and other units to help in setting areas for research.
- Consider split of planning and research funds (SPR) to best meet Department goals and objectives.
- Consider use of Gantt charts in work plans.
- Consider DelDOT staff as co-authors.
- Consider use of intermediate deliverables in projects.

### **5.3 FHWA**

- Distribute the peer exchange report to all FHWA Division Offices and to FHWA Headquarters.
- Work with FHWA Headquarters staff to ensure peer exchange reports from other State's are more widely distributed. Summaries of common and significant findings should also be shared widely.
- Emphasize to Headquarters the importance of bringing the TRIS/RIPS on line as soon as possible.
- FHWA should focus on maximizing the dispersal of quality research findings. While the use of computer databases such as TRIS and RIPS are valuable tools, FHWA should also employ staff to evaluate and synthesize promising research and implementation activities done nationally and internationally.
- FHWA should increase the investment in technical training of its staff to ensure the agency can effectively promote new technology.
- Procedures to allow shared staff arrangements among FHWA, ODOT, Oregon Universities, and other State agencies should be developed and efforts made to promote staff exchanges.
- As a cornerstone in our efforts to promote transportation leadership, FHWA should develop university-level educational materials to ensure future graduates are well-versed in new technology.
- The National Highway Institute should develop a course on conducting research studies.

### **5.4 CONSULTANT**

Bruce Gates was contracted to participate in developing the interview questions, assisting in the interviews, and to prepare a paper on the role of innovation in ODOT. Bruce's finished paper, *Research as a Tool for Innovation in ODOT*, is included in Appendix C.

## **6.0 CONCLUDING STATEMENT**

The Peer Exchange Panel unanimously endorses the Peer Exchange process as a method to improve the ODOT research management process. The forum provided an opportunity to meet and candidly discuss research issues from a variety of perspectives.



**APPENDIX A**

**STATE DOT AND RESEARCH PROGRAM  
BACKGROUND INFORMATION**



**APPENDIX B**

**PEER EXCHANGE PARTICIPANT LIST**



## **APPENDIX C**

*Research as a Tool for Innovation in ODOT*

**By**

**Bruce Gates, Ph.D.**