

RESEARCH MANAGEMENT PEER EXCHANGE
Hosted by the
Oregon Department of Transportation
November 6, 2019

Peer Exchange Team

Anna Bosin, Chief of Research, Alaska Department of Transportation and Public Facilities

Anne Freeman, Research & Library Services Program Administrator, Washington Department of Transportation

Cameron Kergaye, Director of Research, Utah Department of Transportation

La Keda Huckabay, Office Chief, Office of Planning, Policy and Program Development, CalTrans

Jill Martindale, District Research Coordinator Ohio Department of Transportation.

Kira Golver-Cutter, Research Coordinator, Oregon Department of Transportation.

Michael Bufalino, Research Section Manager, Oregon Department of Transportation.

Introduction

The Oregon Department of Transportation hosted a research management peer exchange on November 4, 5, and 6, in Salem, Oregon. The purpose of a peer exchange is to give all participants a means to improve the quality and effectiveness of their research efforts, processes and programs..

To prepare for the peer exchange, the team reviewed documentation describing Oregon's research procedures, program and the agency management, and leadership structures. These Oregon DOT Specific documents included:

- **ODOT Research Website** (ODOT, 2019)
<https://www.oregon.gov/odot/programs/pages/research.aspx> (Primarily focusing on 1. Problem statement Identification, 2. Statement Review and Refinement, and 3 Research Project Selection, and 8. Identification of Research Priorities)
- **The ODOT Research Procedures Manual** (ODOT, 2017)
Online at:
https://www.oregon.gov/ODOT/Programs/ResearchDocuments/Procedures_Manual_2017.pdf
- **Oregon DOT Strategic Business Plan** (ODOT, 2018)
Online at: <https://www.oregon.gov/ODOT/About/Documents/SBP.pdf>

Additional materials reviewed in advance of the exchange included:

- **Synthesis of Highway Practice 280: Seven Keys to Building a Robust Research Program** (Deen & Harder, 1999)
Online at: <http://www.trb.org/Main/Blurbs/154352.aspx>
- **NCHRP Synthesis 522 Managing State Transportation Research Programs** (Ludlow, Sakhrani, & Wu, 2019)
Online at: <http://www.trb.org/NCHRP/Blurbs/179042.aspx>
- **FHWA Guide For Peer Exchanges** (FHWA, 2010)
Online at: <https://www.fhwa.dot.gov/publications/research/spr/10048/10048.pdf>

This exchange met the requirements for a periodic review of Oregon's Research Program identified in 23 CFR 420.2031; 23 CFR 420.209(a)(7) and 23 CFR 420.203.

Exchange Overview

The primary focus of the 2019 peer exchange at Oregon DOT was research priority identification, alignment, dissemination and application. This Peer Exchange explored the need to incorporate agency leadership strategic direction while also encouraging research problem statements from practitioners and stakeholders who observe and encounter needs in the field. To place this in context, the Oregon Department of Transportation is now working under a newly adopted Strategic Business Plan “2018 – 2022 ONE ODOT: Positioned for the Future”. The agency is increasingly focused on higher-level agency governance prioritization with internally focused decision-making. (ODOT, 2018) Peer state input was sought to enhance our understanding of the issues surrounding the alignment of research goals with state DOT strategic efforts.

This exchange also explored the utility of research priorities. Historically, ODOT Research Priorities have been a broad mix of recommended topics for transportation research that are roughly in line with the agency’s mission statement. Research Priorities are intended to help research proposal submitters identify research that will serve the agency. However, these priorities have not necessarily been used as criteria during project review and selection. In fact the current priorities document includes the statement “to be effective the research selection process needs to be flexible enough to consider new concepts; therefore these priorities are to be considered guidance and not criteria. Proposals that address the transportation needs of Oregon in ways not identified may be selected.” Discussions focused on how research programs can best set and communicate priorities without stifling intellectual exploration and innovation.

Each member of the exchange team came prepared to discuss the following elements of program administration as they relate to the broader theme of managing research priorities:

- Balancing Agency Leadership Needs with Practitioner Needs
- Identifying Research Priorities
- Solicitation of Research Needs/Problem Statements
- Proposal Review by Subject Matter Experts
- Proposal Selection and Approvals

(A copy of the peer exchange agenda is provided in the Appendix)

Exchange

Day 1

The team began this peer exchange with a review of the meeting agenda, an overview of the Oregon DOT research program, and an introduction to the Oregon DOT research section staff. Each peer state provided a self-introduction and a summary of the Research Program in their respective state. Discussion focused on the states' research programs' relationship to the overall DOT organizational structure, the DOTs' research budgets and what specific functions are conducted by the various research units.

Oregon highlighted the Oregon project solicitation through selection processes. These processes heavily on two types of committees, the line-manager and subject matter expert populated ODOT Expert Task Groups (ETGs)¹, and the executive-level ODOT Research Advisory Committee (RAC)². The peer states identified a number of tools such as scouring matrices that may be used to facilitate project review and selection.

Oregon DOT organized an overview of the Oregon DOT Strategic Business Plan. Ms. Jessica McGraw presented on the intent of the plan is to provide the Oregon DOT with a five year guide that helps keep the agency aligned and focused. The plan priorities are unify and align Oregon DOT operational governance; build a qualified and diverse workforce for today; optimize and modernize technology and data; and strengthen strategic investment decision making. The research section has the potential to support these priorities, as well as benefit from there implementation.

After the discussion of the Oregon strategic planning context the peer exchange team discussed how agency missions, visions and strategic plans influence the research programs; how agency leadership and agency staff contribute to the development of research priorities; and research programs achieve a balance between leadership direction and staff needs in the field. The exchange team discussion continued and addressed the focus of applied research within the state DOTs and how this shapes the type of research we work on, the publication and use of research priority statements; and the value of predetermined priorities in the research project identification and selection process.

At the end of the day's discussions, the exchange team met with three research coordinators from the research program who discussed the processes of the odot ETGs work to guide and refine agency research. Specifically the presentation covered the ETGs identify broad topics of interest. This practice developed in response to the desire of problem statement submitters to better identify project proposals that would successful submissions. Problem statement generation and the use of a two stage research needs solicitation and refinement process. Recent Oregon DOT efforts to expand pre-project outreach and collaboration were highlighted.

¹ The Research Section divides research subject matter into eight topic areas. For each topic area we have an advisory committee called an Expert Task Group (ETG). Members of these groups are selected on the basis of their training, knowledge, and experience.

² The ODOT Research Advisory Committee (RAC) advises the Research Manager on the overall direction and conduct of the ODOT Research program. The RAC reviews pooled fund investments and the research priorities of the Expert Task Groups.

Day 2

The second day began with a panel discussion covering subject matter expert input into the research process. Select members of the Oregon Expert Task Groups (ETGs) were invited to provide a cross section of the Oregon DOT expert input. Oregon ETG members included:

- Justin Moderie, State Pavement Engineer
- Matthew Barnes, Transit Network Program Manager
- Mike Kimlinger, State Traffic Roadway Engineer Section Manager
- Susan Ortiz, Senior Bridge Geotechnical Engineer
- Galen McGill, Systems Operations and ITS Manager

The ETG representatives discussed with the peer exchange members their participation in helping to guide research, problem statement development and provided recommendations for process improvements. ETG members highlighted the value of the process, and how the needs of different parts of the agency are met with focused and discipline specific engagement. The ETG members also noted the variation in the quality of the engagement across the agency, the need at times for a faster research turnaround, and the need for access to research professors with expertise in their fields.

After the ETG representative discussion the exchange the exchange team continued the discussion of research problem statement solicitation processes, DOT staff participation and access to the process and problem statement quality. The role of subject matter expert needs and relationship to agency executive level decisions were discussed. Peer team members highlighted alternative engagement structures and the inclusion of front line staff in the whole research process. Final ranking of projects was discussed with specific emphasis on the role of executive leadership in selecting research projects.

In the afternoon of the second day the team found itself ahead of schedule. This provided the opportunity to discuss several items of research program administration that were not included on the peer exchange agenda. Topics covered included:

- Research pooled fund management, administration, governance, and quality control.
- Research project contracting and intergovernmental agreement mechanisms
- Research university overhead and permitted expenditures on equipment
- The Use of SPR funds for payment of student tuition when the course of study is directly related to the topic of a DOT research project.
- Principal investigator identification assignment and performance monitoring
- Section 508 compliance and report publishing
- The value of the AASHTO Fellowship program (See <https://aashtojournal.org/2019/09/20/aashto-opens-nomination-window-for-2020-fellowships/>)
- TRB and NCHRP coordination

The discussion of the immediate needs of the participating states for the above topics was valuable to all participants. Future exchanges should consider including an unstructured “not on the agenda” session. Many of these discussions were initiated by a participant to address a specific problem facing them in their home state.

Day 3

The third day of the exchange consisted of a review of the previous discussions, and a presentation of key takeaways to the Oregon leadership and staff. Based on the three days of meetings the peer exchange team recorded major observations may be transferred to other states that use or plan to adopt similar agency alignment, priority setting, and project selection processes.

The team identified several general observations for all state DOT's

- Student tuition reimbursement may be allowed only if directly related to the research project.
- State DOT's libraries need to ensure our research reports are 508 compliant³.
- ODOT process improvement discussion considered forming a transportation pooled fund project focused on state strategies and tactical metrics

Opportunities Identified by the Peer Exchange Team

In addition to the major observations above, each participant identified opportunities for transfer of practices back to their respective home state or organization. These observations represent a compilation of the individual comments of the various team members and are recorded below.

- Oregon DOT does an excellent job in structuring their Research Problem and Project Solicitation processes. Their prioritization efforts on agency research is enhanced with development of their ETGs structure and participation efforts. Excellent outreach and development exists within ODOT's research office to include the right people in these groups which equate to a good fit; ODOT Research Office appointment of these members provides necessary guidance and direction.
- A genuine appreciation on how the research office views agency research priorities as integrated into the leadership (Agency Leadership Board) strategic goals. Interesting discussion with the other DOT participants on how our individual agency's mission, vision, and strategic plan should influence the research program.
- ODOT problem statement development follows a 2 stage process: Stage 1 is supposed to only describe a problem and stage 2 is development of a project proposal. ODOT research selects the ETG team that moves Stage 1 problem statements to Stage 2. Additional work may be needed to communicate expectations to problem statement submitters
- Oregon should continue data governance efforts that are being up at an agency-wide level.
- Some members of the ETGs said that they provide topics to the research community that often aren't reflected in the problem statements they receive. Additional outreach may help in this area as well as increased project controls and ongoing submitter engagement.
- Oregon may want to assess the use of their RAC's time. Perhaps the ETG should have an increased role in the final project prioritization.
- Oregon may need to consider modifying the project duration so that funded research is completed more quickly. Outreach to stakeholders is needed to demonstrate where this capacity already exists.

³ Section 508 of the Rehabilitation Act of 1973, as amended in 1998 (29 U.S.C. § 794 (d)) requires federal agencies to make their electronic and information technology accessible to people with disabilities. SPR funded research reports are uploaded to the National transportation library and should also be compliant with these requirements.

- Oregon DOT should consider providing specific divisions the ability to do quick hit low cost projects. Ohio has the Research on Call contract which sets aside \$300,000 a year for 3 years for projects that last no more than 6 months at a total cost of \$60,000 or less.
- A “quick hit” research program exists, however additional outreach is needed to raise awareness of this capacity.
- Oregon DOT should consider opening the research program to Universities from other states to provide more competition and diverse expertise.

Oregon Key Takeaways

A driving force behind the focus of this peer exchange was the need for the research program to assess how to apply the Oregon DOT's strategic business plan.

Research program alignment with the strategic business plan is less about research to implementing the plan; it is more about aligning our products and output within the structure provided by the plan.

Specifically the research section can take action in the following areas:

- Governance: develop a relationship with identified key individuals with positional authorities, the ALB, leadership teams and strategic decision making process. This outreach should include an overview of our ability to serve the agency and highlight our recent work that is ready for implementation.
- Tech and Data: develop an understanding if the existing and planned agency capacity for tech and data workload. Work to deliver appropriate tech and data related research products that align with agency needs, capacity, specifications, and standards.
- Workforce: develop a mechanism to communicate workforce forecasted needs, skills, and opportunities that are identified when we pursue new and developing lines of research, innovation, and technology development.
- Strategic Investment : continue applied research to support improvements in agency efficiency across all ODOT divisions

Peer State Takeaways

Alaska Department of Transportation and Public Facilities

- Oregon provides for good cross pollination within ETGs. Alaska hopes to implement expanded ETG membership and collaboration.
- Alaska will consider adding outside or other department representatives on some of the project panels so that there is communication on the project outcomes, implementation, etc.
- Explore the need to be more nimble for technology advancements
- Initiating a post project benefit/cost look back sounds interesting; however there is no one answer for research to look at benefit/cost for every project.
- Implementation continues to be a challenge to hold the champions on after a project is completed. Research programs can increase support for Technology Transfer, but ultimately the customers must value the product and have the resources available to implement the results of research.
- Many DOT research programs share common day-to-day struggles. Peer exchanges, regional collaboration, and national meetings are valuable and provide opportunities for us to troubleshoot common issues.

CalTrans

- DOT alignment of internal strategic planning and research program priorities, may be needed for only a portion of the research portfolio. Most research is intended to solve current problems, which is more tactical than strategic.
- California will explore possibility of using the librarian to organize searchable research results and research reports.
- California probably has the most restrictive contracting rules, and will explore increasing contract options.
- California will consider building time (120 days?) between receiving the final draft report and contract end date.
- California will consider developing a process like the PI score card which may help deter PIs from delivering late products.

Ohio Department of Transportation

As with many DOT's research programs you will always have those within the organization that believe and support the program and then others that find it cumbersome and non-responsive. For those that find it cumbersome my take away would be

- AASHTO internship program needs to be promoted at the Ohio DOT. This appears to be a great opportunity that should be explored.
- Consider streamlining the process so that research problem statements do not require extensive development until funding is assured. Ohio prioritizes projects before we ever start scope development. This way the work idea submitters put in is minimal and they continue to submit ideas every year with minimal effort still hoping to get funded.

Utah Department of Transportation

- UDOT needs to involve its Expert Task Group leaders (SMEs) in Return on Investment (Benefit /Cost) calculations efforts. Provide additional research funding for the groups that implement the most research.
- ODOT research project managers take grad students to field offices to communicate results and encourage implementation. UDOT should take our project researchers to field implementers.
- ODOT pays for national TRB and NCHRP dues using SPR A and B proportionally. UDOT will explore implementing this split.
- WSDOT hosts webinar Wednesdays for the principal investigator to present their research results. Attendance is over 100 per episode with over 50% attended vs registered.
- ODOT says their non-lead TPF (SPR) funds are simply transferred to the lead state in FMIS. The funds are never transferred onto the state books and therefore not subject to state budget or contracting requirements.
- ODOT's Strategic Business Plan (2018 - 2022) has 4 strategic priorities including: Optimize and Modernize Technology and Data. UDOT needs to follow up on their final metrics used to measure performance in this area.

Washington Department of Transportation

- Excellent discussion on how ODOT structures its two year SPR Work Program. Good example is the work programs Appendix A – SPR Subpart B Program Compliance references. Will discuss this with our business office and incorporate this table (Appendix A) into Washington State DOTs future SPR Part B work program.
- Communication Tool Kit Idea: Delivering Research (communiques) to the Agency - Alaska DOT has/uses a ListServ for Research Blasts. Will definitely incorporate this type of messaging for WSDOTs senior managers, SMEs, NCHRP panel members, etc. moving forward into the next year.
- AASHTO Fellowship: Great information for future fellowship opportunities for identified WSDOT staff. Need to start this process now for next year's nomination
- Future Peer Exchange topic: Administering and leading a large Transportation Pooled Fund study. (Note Minnesota DOT did a peer exchange on pooled funds in 2007.)
- Contractual management: Issues were discussed around Indirect Rates and GTA tuition; WSDOT does include in the master agreement language on graduate student tuition; not sure if we pay the indirect rate on this tuition but will pursue this once I return to WSDOT.
- Research Symposium: Evaluation on the benefits to holding a future WSDOT DOT Research Symposium.

References

- Deen , T. B., & Harder, B. T. (1999). *Synthesis of Highway Practice 280: Seven Keys to Building a Robust Research Program*. Washington: National Academies Press.
- FHWA. (2010). *FHWA-HRT-10-048: State Planning and Research, A Guide for Peer Exchanges*. Washington D.C.: Federal Highway Administration.
- Ludlow, D., Sakhrani, V., & Wu, C. (2019). *NCHRP Synthesis 522: Managing State Transportation Research Programs*. Washington D.C.: National Academies Press.
- ODOT. (2017). *ODOT Research Procedures Manual*. Salem: Oregon Department of Transportation.
- ODOT. (2018). *2018 – 2022 ONE ODOT: Positioned for the Future* . Salem: Oregon Department of Transportation.
- ODOT. (2019, August 13). *Transportation Research Program*. Retrieved from Oregon Department of Transportation Website: <https://www.oregon.gov/odot/programs/pages/research.aspx>

Appendix 1 – Exchange Agenda

MONDAY, NOVEMBER 4:

Time/Location	Activity
9:20 to 9:30 AM	Van Pick Up From Hotel
10:00 AM –Noon TLC-Alsea Conference Room	Peer Exchange Kickoff
Noon to 1:00 PM	Lunch (Provided)
1:00 to 3:00PM TLC-Alsea Conference Room	Identifying Research Priorities and Needs Presentation: Oregon Strategic Context, Jess McGraw
3:00 to 3:15	Break
3:15 to 4:45 PM TLC-Alsea Conference Room	Published Research Priorities of Guidance for Research Proposers Presentation: ODOT Research Staff Presentation On Priority Process And Stage 1 Development, Kira Glover Cutter, Josh Roll, Jon Lazarus
3:15 to 4:45 PM TLC-Alsea	Recap and Planning for Day 2
5:00 PM	Adjourn for day
6:00 PM	Dinner

TUESDAY, NOVEMBER 5:

Time/Location	Activity
7:55 to 8:05	Van Pick Up From Hotel
8:30 to 10:00 AM TLC-Diamond Lake Conference Room	Research Problem and Project Solicitation Presentation: Input from ODOT ETG Members. Justin Moderie, Matthew Barnes, Mike Kimlinger, Susan Ortiz, Galen McGill
10:00 to 10:10 AM	Break
10:10 to 11:45 AM TLC-Diamond Lake Conference Room	Subject Matter Expert Reviews
11:45 AM to 1:15 PM	Lunch – Off Site
1:15 to 3:00PM TLC-Diamond Lake Conference Room	Proposal Review and Ranking

TUESDAY, NOVEMBER 5 (Continued):

3:00 to 3:15	Break
3:15 to 4:30 PM TLC-Diamond Lake Conference Room	Research Project Final Approvals
4:30 to 5:00 PM TLC-Diamond Lake	Recap and Planning for Day 3
5:00 PM	Adjourn for day
6:00 PM	Dinner

WEDNESDAY, NOVEMBER 6:

Time/Location	Activity
7:55 to 8:05	Van Pick Up From Hotel
8:30 to 10:00 AM TLC-Diamond Lake Conference Room	Key Takeaway Discussions Incorporating Changes to a Research Program
10:00 to 10:10 AM	Break
10:10 to Noon TLC-Diamond Lake Conference Room	Recap and Review of the Peer Exchange
Noon to 1:00 PM	Lunch (Provided)
1:00 to 3:00PM TLC-Diamond Lake Conference Room	Report Out
3:00 PM	Adjourn