

Management of National Research Programs WisDOT 2013 Research Peer Exchange

Peer Exchange hosted by the Wisconsin Department of Transportation,
Research & Library Unit on October 15-16, 2013

WisDOT ID no. 0092-13-16

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RESEARCH & LIBRARY UNIT

WISCONSIN DOT
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16. Abstract The Wisconsin Department of Transportation (WisDOT) Research Program hosted a peer exchange on October 15-16, 2013 in Madison, Wisconsin. Representatives from five states (Florida, Michigan, Pennsylvania, Utah and Washington) joined WisDOT staff to share experiences relating to effective participation in national research activities. Representatives from the Transportation Research Board (TRB) and the Federal Highway Administration (FHWA) also participated in the peer exchange. This report presents the key observations from the peer exchange presentations and group discussions.					
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WisDOT Research Program Peer Exchange

October 15-16, 2013

Madison, Wisconsin

EXECUTIVE SUMMARY

The Wisconsin Department of Transportation (WisDOT) Research Program hosted a peer exchange in October 2013 in Madison, Wisconsin to discuss effective state DOT participation in national transportation research activities. The primary objective of the peer exchange was to determine best practices for managing and maximizing what is a significant and growing investment by WisDOT (and other state DOTs) in national research programs such as the Transportation Research Board (TRB), national cooperative research programs and the Strategic Highway Research Program 2 (SHRP2).

WisDOT funded the peer exchange through the federal State Planning & Research Part 2 (SPR2) program. The event fulfills the requirements of CFR 23.E.420.209 to conduct a periodic peer exchange to review the state DOT's Research, Development & Technology Transfer program.

Background

WisDOT's Research Program conducts a wide range of research, development and technology transfer activities using federal SPR2 dollars. In federal fiscal year 2014, WisDOT's planned \$3.7 million program called for several different expenditures:

- About 26% of funds were designated for state-based research projects, typically involving stand-alone empirical research of about 12-24 months in duration.
- WisDOT plans to fund about 40 different projects in the federal Transportation Pooled Fund (TPF) program, accounting for about 18% of the planned expenditures.
- Technology transfer activities – primarily through surveys, literature searches, synthesis reports and library services – account for about 13% of expenditures.
- Program management and administration requires 9% of expenditures.

- The largest portion of WisDOT's Research Program dollars goes to support national activities, including TRB, the National Cooperative Highway Research Program (NCHRP) and SHRP2. Combined, these account for 32% of WisDOT research expenditures.

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Objectives

To help WisDOT examine how to best manage this significant investment in national programs, the peer exchange convened several participants to identify best practices in four key areas:

1. Getting state DOT personnel involved in national research
2. Getting state DOT projects submitted and accepted for national research
3. Disseminating national research results in state DOTs
4. Implementing national research results in state DOTs

The peer exchange focused on these national research programs that are funded at least in part by contributions from state DOT research programs:

- Transportation Research Board – Core Program Sponsors, including the state DOTs, are the major source of financial support for TRB's core technical activities. State DOTs each have an official representative to provide liaison with the Board. State DOT sponsors collectively contribute more than \$7 million annually to the TRB Core Programs. State DOT opportunities for involvement with TRB include the ability to serve on committees that guide TRB activities in various topical areas.
- National Cooperative Highway Research Program – NCHRP conducts research in problem areas that affect highway planning, design, construction, operation, and maintenance nationwide. State DOTs are the sole sponsors of the NCHRP, with each state's allocation amounting to 5.5% of its SPR apportionment. State DOTs play a direct role in NCHRP project submission and selection, and state DOTs have the opportunity to nominate representatives to project panels that select researchers, guide research and review and disseminate findings.
- Other cooperative research programs – state DOTs do not have a direct role in funding the national cooperative research programs for air, transit, freight, hazardous materials and rail. However, state DOTs may submit projects and have the opportunity to sit on project panels to select researchers, guide research and review and disseminate findings.
- Strategic Highway Research Program 2 – In federal fiscal years 2013 & 2014, the state DOTs agreed to provide a combined \$60 million to support SHRP2 implementation efforts at FHWA, with funds coming primarily from the SPR program. State DOTs have the opportunity to apply for SHRP2 funding assistance for various implementation activities.

Participants

In addition to Wisconsin, representatives of five state DOT research programs – Florida, Michigan, Pennsylvania, Utah and Washington – participated in the peer exchange. The peer exchange also included representatives from the Transportation Research Board and the Federal Highway Administration Office of Research & Technology.

WisDOT also had department participants from outside the research program. Secretary Mark Gottlieb, a member of the AASHTO Standing Committee on Research, opened the event. Two staff from the Division of Transportation System Development attended the entire peer exchange and provided the perspectives of non-research staff who have served as project representatives to national programs and panels. Several WisDOT managers who oversee or are involved with the research program heard a closeout presentation.

Peer exchange format

The exchange involved two days of meetings. To introduce the event, the state DOT participants provided overviews of their research programs and how they managed and benefitted from national research activities. The bulk of the event centered on discussion of the aforementioned key topical areas. The participants then developed a short presentation on best practices and discussed initial findings with WisDOT managers.

Key findings

The peer exchange revealed several best practices, pointers and other information that WisDOT and other state DOTs can use to enhance participation in national research efforts.

1. Getting state DOT personnel involved in research
 - a. A key to DOT staff involvement in national research is to focus on the priority issues or topics as identified by that DOT's management.
 - b. Research programs should understand and communicate the value of participating on national committees and panels. These benefits include the following:
 - i. Ability to steer the research, shape the project and set the research approach
 - ii. Opportunity to help determine national research priorities
 - iii. Better data relevance to state DOT needs
 - iv. Increased expert staff knowledge
 - v. Stronger network of program connections
 - vi. Access to information that may not be included in published materials
 - vii. Better likelihood of research implementation in the state DOT

- c. State DOTs should know that committee and panel involvement is not one-size fits all. There are differences in the structure of opportunities, primarily in that TRB Committees are three-year appointments with a wide-range of strategic topics, while NCHRP project panels focus on an individual project over 18-30 months.
 - d. Research programs and use exposure opportunities like the TRB staff state visits, the TRB Annual meeting, and webinars provided by TRB, FHWA and SHRP2 (among others) as springboards to encourage participation in national research from their DOTs.
2. Getting state DOT projects submitted and accepted for national research
- a. States can increase return on investment in national programs when they have research ideas accepted and funded, especially if the research can address a state need without having to use state funding.
 - b. Research programs should be prepared to assist the other business units in the DOT in writing problem submissions. The NCHRP has a guide to help to write effective research problem statements.
 - c. Persistence can pay off. If a project is not initially accepted, cooperative research program staff can debrief the submitter so that the problem statement may be improved and resubmitted for future cycles.
 - d. States that want to submit ideas should consult other states to obtain feedback and tailor statements to provide national benefits. States should also utilize the existing research needs database, Research in Progress database and other TRB or national tools to review and refine ideas.
 - e. There may be other opportunities to submit national research ideas beyond TRB and the cooperative research programs. The FHWA RD&T program may have opportunities, and the state FHWA division offices may be able to provide assistance. Other opportunities include the National Science Foundation or other US DOT agencies. Some of these options may call for an academic partnership.
 - f. Research programs are already coordinating SHRP2 implementation applications, and there may be similarities in how to be successful with research idea submittals.
3. Disseminating national research results in state DOTs
- a. Several states use proactive measures to disseminate national research results, with a focus on “freshness” of information. Techniques and tips include the following:
 - i. States will forward materials using RSS feeds or other distribution methods.

- ii. It is most effective to customize information and send it to the right DOT contacts based on topics or requests.
 - iii. Research programs should seek feedback from recipients to ensure that information is fresh and is provided effectively.
 - iv. State DOT management can help by prioritizing issues important to the department; research programs can respond with key national information.
- b. After the proactive dissemination of research, states must undertake steps to ensure access and “findability” of national information when it is needed:
 - i. States should employ knowledge management competencies and standard operating procedures, especially in a library setting.
 - ii. There remains a need for national strategy and network solutions to coordinate dissemination of research. This includes the need for better delivery tools and a formal, permanent repository with adequate resources to meet national needs.
 - iii. Research programs and libraries can help educate users about how to seek information and also on how to utilize knowledge management professionals.
- c. The peer exchange participants also discussed how to maximize state DOT involvement and benefits from attending the TRB Annual Meeting or similar events:
 - i. DOTs should send staff who can implement ideas obtained at the meeting.
 - ii. An effective plan for the TRB Annual Meeting is for the state DOT to hold a pre-meeting, encourage communication during the meeting, conduct a short-term follow-up and then continue long-range follow-up focusing on implementation.

4. Implementing national research results in state DOTs

- a. Effective implementation of national research in the states requires a continuum involving people, project results and dissemination of information. State DOTs should develop tools to monitor steps from research toward implementation (see resource page in this report).
- b. Research programs should maintain contact, communication and support with AASHTO committees to help encourage implementation of national research.
- c. Support from state DOT leaders is essential to implementation, starting with a culture of innovation and continuing with the identification of champions with topical awareness and ability to implement.
- d. TRB and the cooperative research programs should provide effective communication to states about research projects to help encourage implementation. State DOTs should in turn help pass on information to different audiences.

- e. A useful best practice is to provide references to research projects within the state DOT and national standards and manuals. This documents the data and information that led to development of the particular standard.

Conclusions

WisDOT's peer exchange on national research participation proved to be a productive exchange of ideas, experiences, tips and concerns. Many of the participants had tools, resources and best practices that can easily be shared and adopted by the other states. These resources ranged from helpful tips to forms and reports. WisDOT is already utilizing some of the ideas regarding the TRB Annual Meeting to enhance its experience for the 2014 conference. WisDOT is seeking to better anticipate the timelines for national research submission, understanding that the agency needs to identify and develop project ideas well ahead of cooperative research program announcements.

Overall, it is clear that state DOTs have a significant investment in national research programs and are continually seeking ways to benefit from that investment. The practices identified in this peer exchange will help WisDOT and all of the participants in their continual improvement efforts.

Introduction

The Wisconsin Department of Transportation Research Program hosted a peer exchange October 15-16, 2013 in Madison, Wisconsin. Representatives from five states joined WisDOT staff to share experiences relating to effective participation in national research activities. Representatives from the Transportation Research Board (TRB) and the Federal Highway Administration (FHWA) also participated in the peer exchange.

This report presents the key observations from the peer exchange presentations and group discussions.

Objectives

More than one-quarter of the WisDOT Research Program budget is used for contributions to national research opportunities with the Transportation Research Board (TRB), the National Cooperative Highway Research Program (NCHRP) and implementation of the Strategic Highway Research Program 2 (SHRP2). Another quarter supports multi-state pooled funds and AASHTO operations programs.

To help the WisDOT Research Program examine how to best manage this significant investment the following questions were considered:

- What is an appropriate level of investment in national and/or multi-state programs versus state-based research projects?
- What direct or indirect benefits do states receive from these programs?
- How do states achieve greater participation and benefits from the cooperative research programs representing other modes and topics?
- What are effective models for management and participation in national and multi-state research efforts? How can these models be replicated?
- How can states impact national or multi-state programs to improve accountability?

Participants

State DOT team members

Steven Bower, Engineer of Research, Michigan Department of Transportation
Darryll Dockstader, Research Center Manager, Florida Department of Transportation
Cameron Kergaye, Director of Research, Utah Department of Transportation

State DOT team members (participating remotely)

Michael Bonini, Research Division Manager, Pennsylvania Department of Transportation
Leni Oman, Director, Office of Research and Library Services, Washington Department of Transportation

National organization team members

Kimberly Fisher, Associate Division Director, Transportation Research Board
John Moulden, Manager, R&T National Partnership Program, Federal Highway Administration

WisDOT team members

Erik Emerson, Roadway Design Standards Unit
Diane Gurtner, Program & Policy Analyst – Technology Transfer
Jacqueline Kamin, Program & Policy Analyst – National Programs
Barry Paye, Materials Lab Supervisor
Daniel Yeh, Research & Library Program Manager

WisDOT managers attending closeout presentation

Rebecca Burkel, Bureau of Technical Services
John Corbin, Bureau of Traffic Operations
Patricia Jackson-Ward, Bureau of Business Services
Jon Kranz, Bureau of Business Services
Patty Mayers, Office of Public Affairs
Aileen Switzer, Division of Transportation Investment Management

Agenda

Tuesday, October 15

- 8:30 – 9:15 am Welcome from Mark Gottlieb, Secretary, WisDOT
Introductions / Agenda goals
- 9:15 – 10:30 am State presentations
Florida – Darryll Dockstader
Michigan – Steven Bower
Pennsylvania – Michael Bonini
- 10:45 – 11:45 am State presentations
Utah – Cameron Kergaye
Washington – Leni Oman
Wisconsin – Daniel Yeh
- 12:45 – 2:00 pm TRB and FHWA presentations
TRB – Kimberly Fisher
FHWA – John Moulden
- 2:15 – 4:30 pm Group discussion
Getting your state DOT people involved in national research
Getting your state DOT to actively submit national research projects

Wednesday, October 16

- 9:00 – 9:15 am Day 1 recap
- 9:15 – 10:30 am Group discussion
Disseminating national research results
- 10:45 am – 12:00 pm Group Discussion
Implementing national research results in your state DOT
- 1:15 – 2:30 pm Finalize findings / prepare presentation
- 2:30 – 4:00 pm Presentation to WisDOT managers
State-by-state closing remarks

State Participation Summary

State	Budget contribution to national/multi-state projects	Management panels	Staff panels	CRP project submittals	TRB annual meeting attendance
Florida	\$13 million 10% to DC (not including SHRP2) 4% TPF	29 managers 26 CRP panels 15 committees 6 SHRP panels	17 staff 15 CRP panels 5 TRB committees 1 SHRP panel	Since 2010, 16 submitted or co-submitted 6 accepted	~30 requests to attend 2014
Michigan	\$12 million 15% DC 5% UTC 5% TPF		20-25 total on TRB panels and NCHRP panels	Over last 3 years 3 project proposals 1 selected 5 synthesis proposals 1 selected	~25-30 attendees 70% managers 30% staff
Pennsylvania	\$9.7 million 32% to DC 5% TPF	19 managers on TRB committees 17 staff on CRP project panels	3 staff on TRB committees 5 staff on CRP project panels	4 total SHRP2 proposals 1 currently accepted 1 NCHRP project idea submitted 0 submitted	~40 attendees
Utah	\$3 million 14% DC 13% TPF	12 managers on TRB, CRP or other project panels	14 staff on TRB, CRP or other project panels	Multiple project submissions, at least 1 project selected each year	~12 attendees
Washington	\$7.9 million 10% to DC (not including SHRP2) 4% TPF	11 managers	64 staff	Multiple submissions and acceptances	~20 attendees
Wisconsin	\$3.7 million 18% TPF 32% to DC (including SHRP2)	7 managers 31 TRB committees	34 staff	WisDOT has submitted very few projects and has not centrally tracked them	~25 attendees

Notes:

Day 1

Welcome from Sec. Gottlieb:

Agenda right on point. Disseminating research. Challenged by the policymakers to show that the research is finding its way into projects to optimize operations. Has been on the standing committee on research to select projects (one of two CEOs on that committee) twice. There are a lot of projects that are candidates. It's valuable to have engineers in the agency suggest research projects for the national level. Research departments need good relationships with operations areas. It's challenging during the recession for out of state travel. The secretary has to sign off on all out of state travel. Need to assess whether it provides value to the agency, not just the dollars spent on the travel (which are often 3rd-party paid) but the time away from regular job duties.

Introduction by Daniel Yeh:

Contributions to national programs are now the largest part of the WisDOT research program. The amounts are formula-based. Because it's a key part of program there is a need to maximize the investment.

#1 People – Erik Emerson and Barry Paye are both representatives on national research programs/panels. How do we encourage others to participate?

#2 Projects – WisDOT has only had one project that was submitted nationally (airport related).

#3 Dissemination – how to best – libraries; regional offices; etc.

#4 Implementation – making sure that the research gets used.

Presentations:

Florida – Darryll Dockstader

FDOT research program -- \$13 million

Research reports to the Chief Engineer. The majority of FDOT research is contracted with state universities – currently have work with over half a dozen state universities in addition to work with other research institutions.

There is strong executive support and involvement (Chief Engineer and Assistant Secretary). The Secretary is very aware and involved in programs. The Secretary is looking for bold and innovative ideas – and also CPR performance (Consistent, Predictable, Repeatable).

Fed funds follow SPR formula. State funding programmed at \$4M.

Pooled fund studies -- \$500K programmed.

When travel wasn't paid, there was little participation on panels. More recently, increased involvement in committees and on panels.

*Research Center coordinates panel nominations with management and executive approvals.
2014 TRB attendees are required to identify and report takeaways, including implementable ideas.
The Research Center also coordinates NCHRP proposals.
NCHRP approved projects: 2010 & 2012 – none; 2011 & 2014 – one; 2013 – four.
Need to keep communication and awareness going.
Research office of 5 people – do not accept unsolicited projects, but liaise with research community and FDOT subject matter experts. Universities and private sector need to take ideas to Florida DOT and work with someone there to have ideas submitted.
New solicitation cycle research needs request is linked to implementation status report request.
Regions are decentralized.
Whenever there is a call for projects, Darryll distributes to Research Coordinators (11) and districts.

Michigan – Steven Bower (Engineer of Research)

Research Priorities: Bridges & structures; Transportation safety; Pavements/materials, Environment & water resources; Asset management; Mobility/operations/signals; Transit; Construction/geotech; Maintenance; ITS, Rail.

(Pavement marking practices and performance)
(Regional transit – not just Detroit)

UAVs (unmanned aerial vehicles), aka drones for bridge inspection, etc.

2014 -- \$12 million program. (Huge strides – 2011 was \$5.2 million; 2013 \$7.3 million.)

15 pooled funds

There is an understanding by managers and technical staff that use services that federal funds are being spent down. They need to know it's a temporary surge.

Steven has a lot of communications with the top executives. Help identify research ideas, etc.

The COO is the chief engineer. (Research is on the Operations side in the office of field services.)

Decentralized/centralized – the pendulum in the right place now.

Office of Research – 9 people total (10 now but one is retiring and they will probably lose the FTE).

The 2015 program almost filled. Call for ideas in Nov. A Research Summit will be held in early May 2014 to review ideas.

The Research program includes a Research executive committee (REC), Research advisory committees (RAC), and Research advisory panels (RAP).

There are also Focus area managers (FAMs) – technical experts from throughout the department (who have other “day jobs”).

TRB Annual meeting – 25-30 people attend (pretty consistent). MDOT's TRB attendance template stipulates the number of people from different areas.

<http://wisdotresearch.wi.gov/wp-content/uploads/MDOT-TRB-Attendance-Template-2014.pdf>

TRB participation (annual meeting attendees and panels) – 70% managers; 30% staff

NCHRP proposals (3 submitted; 1 selected). The research office coordinates the proposals.

The executive committee sets strategic priorities. Focus area managers facilitate. Universities and consultants are not involved in setting strategic priorities. (Trying to change the tone of the relationship so that universities don't feel entitled.) FHWA is only involved at the program level – this is changing to include more involvement at project level. SPR Part 2 is being moved to engineering side.

Pennsylvania – Michael Bonini

Align the research program with PennDOT's strategic plan – Modernization.

Top two priorities – employer of choice, funding increase. Can't ask for additional funding without streamlining, etc.

Research is located in the Deputy Secretary's planning office (Bureau of Planning and Research).

The Research Program has 10 people (2 positions are open). They are making a push to get a librarian position reinstated.

The two core activities are program management and technology transfer (any outreach activities).

TT includes – State Transportation Innovation Council (STIC) and Technical Advisory Groups (TAG).

There are 10 TAGs – scan research environment – national, other states, etc.

Overmatch – PennDOT LTAP

Executive level participation is high. Michael has an open invitation to executive staff meetings.

Ideas are only solicited internally -- university partners need an internal champion to for consideration.

STIC includes multi-stakeholders (industries, contractors, etc.) There are quarterly meetings. Pre and post mtgs. Debriefings with executive staff. *Need to be good listeners.

Research division budget – approximately \$6 million.

\$500,000 for pooled funds.

No support for AASHTO memberships.

37% of budget goes to national programs.

TRB participation – 22 staff on TRB committees; 22 on CRP project panels. (Maybe 3-4 that overlap)

The Research division coordinates the panels.

Submission of project ideas -- One submitted last year, it was not selected.

At idea solicitation, there may be 50 ideas, 25 may be funded. Have them "tiered".

They just started a workshop (by end of this calendar year) for NCHRP panelists. What will you do with results? What can be brought home? What can be implemented? The Research division can assist.

They will focus on the process of implementation. "Closing the loop"

PennDOT is the driver of the STIC. TAGs make recommendations to STIC – very highway centric, direct spinoff of Everyday Counts. The TAGs have 2 facilitators: 1 PennDOT and 1 FHWA. The central office and district level have more participation than the field staff.

Link to PennDOT's STIC site:

<http://www.moderndot.pa.gov/Internet/pdCommissCommitt.nsf/STICHomepage?OpenFrameset>

Link to PennDOT's STIC Member Guidance document:

<http://wisdotresearch.wi.gov/wp-content/uploads/STIC-TAG-Member-Guidance-Document.pdf>

FHWA's participation on the research side is just to review. FHWA does have participation on about 50% of projects.

TRB annual meeting – approximately 40 people attend. Due to the proximity to DC, they have a daily shuttle.

Other comments:

*Michigan has an implementation document (accountability piece).

Erik, WisDOT – sometimes very hard to get people to do what's in the manual, specs – changing course.

Utah – Cameron Kergaye

Total program funds – \$3.7 million

Employees – 7 (including a technical writer)

Research division is in Program Development (which also includes planning).

Every year, anyone can submit a problem statement. The Research Workshop process has been going on for about 20 years.

26 people from UDOT are members of TRB standing committees or CRP project panels.

(12 are division leaders or higher and 14 are staff)

NCHRP projects 2014 – 4; 2013 – 3; 2012 – 2; 2010 & 2011 – 1 each.

(Some are submitted by universities through UDOT.)

TRB annual meeting – sending 12 people this year (depending on year, 6-20 people attend). They have people report back on what was learned; need to keep track of implementation for several years out.

*Monthly email that sends out new journals / books from the library (includes hyperlinks).

Washington – Leni Oman

SHRP2 funded “off the top”

Received a little state funding when the library became part of Research

Washington manages the money biennially.

They have interagency agreements with universities.

The library is 7% of budget.

The Research program is about \$8 million.

WSDOT leverages other money – just under \$10 for every WSDOT dollar spent.

The Research program used to report to the chief engineer; now under planning area.

There are 11 employees in Research, including 6 librarians (3 aren't in the headquarters location).

The research program has good executive support.

They have research project involvement from all modal divisions.

Challenges: time, focus is on tactical issues, “business as usual” practices.

Research Executive Committee (REC)

Leni recommended a link regarding innovation: Speaking to the Board about Innovation.

<http://www.whatifinnovation.com/greenhouse/observations-for-business-leaders-driving-growth-through-innovation>

75 WSDOT employees participate in 152 committees, panels and task groups; 18 employees are chairpersons.

Frequently asked for info – kind of a pain to extract info (not all updated at the same time)

NCHRP – 2012-2015 (4-6 submitted; 1-4 funded)

Annual meeting attendance – 20 travelers approved for funding from WSDOT. There are 3 categories of funding (pay on own, WSDOT paid, 3rd-party paid).

ORLS (Office of Research and Library Service) would like to strengthen outreach program.
Implementation – technical people – user acceptance

Wisconsin – Daniel Yeh

Organization chart – Research program is part of Division of Business Services (for the past 8-9 years)
We serve all of the DOT divisions.

WisDOT includes DMV and State Patrol (sometimes we do research for these areas)

Daniel is only half Research (the other half of his responsibilities are for Creative Communications).

Research program is \$3.7 million (national programs are the greatest share).

Executive office support is strong – The Secretary is on AASHTO SCOR; involved in NCHRP annual ballot

The Secretary reviews all TRB and CRP panel, project and committee nominations (for past couple years).

Division management level support is pretty good – some better than others (panel nominations go through division management).

Research & Library Advisory Committee (RLAC) sets overall budget and oversees policy research.

Wisconsin Highway Research Program (WHRP) – The steering committee has internal and external members.

Have contracted with UW for administration of WHRP (provide technical expertise). None of the 7.5 WisDOT Research & Library employees are engineers.

TRB committees & NCHRP panels have 41 staff representatives.

TRB annual meetings -- approximately 20 people attend.

Strategic direction comes from the program manager and the 2 steering committees (WHRP & RLAC).

2-3 FHWA people serve on technical oversight committees (TOC) as non-voting members.

FHWA division level people sometimes don't know as much about the national level research programs.

Transportation Research Board (TRB) – Kimberly Fisher

National research is important -- Keeping up with rate of change; problems facing states are rarely unique; pooling resources and experiences can lead to better research.

National research is becoming more important as funding is shrinking. Types/topics of research are increasing. As the questions become more complex, it's difficult to do as many one-off projects.

Staffing, recruiting – many state DOTs have rapid transitions of staff. Problem-solving and communications skills are needed.

Kimberly recommended the book, *Drive: The Surprising Truth about What Motivates Us* by Daniel Pink which says that what motivates employees is autonomy, mastery, and purpose.

The benefits of serving on panels: staff can meet peers (not just other DOTs but industry, academics, etc.); an opportunity to have a seat at the table on national research; diverse approaches to issues.

People serving on standing committees are there as individuals. (National academies – sponsors can't influence the committees.) People can self-nominate.

People on project panels are assembled from lists provided by State DOTs and self-nomination.

The role of state research program staff is very important for identifying people for panels.

Fostering better cooperation and information sharing between AASHTO committees and TRB/CRP committees is necessary.

TRB would like to do a better job of explaining the story of the benefits of national research and it working on approaches to do that.

RNS (research needs statements) database.

Serving on a panel or committee offers great opportunities for new employees.

National Science Foundation (NSF) research opportunities – the transportation topics generally are focused on more basic research.

Need to spend time to write a really good research statement.

TRB has a document on the website on how to write a good research statement.

How to Write an Effective Research Statement: <http://www.trb.org/Research/Blurbs/161771.aspx>

Federal Highway Administration (FHWA) – John Moulden

FHWA Turner-Fairbank Highway Research Center (TFHRC) started in 1940s. They have approximately 110 federal positions and about 20 labs. Part of US DOT.

State Planning & Research (SP&R)

FHWA coordinates with AASHTO.

They do exploratory research and safety research.

FHWA Research & Technology Agenda website

<http://www.fhwa.dot.gov/research/fhwaresearch/agenda/index.cfm>

Improve coordination and collaboration with state DOTs.

Potential action: Submit “top 5” state needs to HRTM (Highway Research & Technology Management)

Previously all money was earmarked, now there is more opportunity to allocate funds based on needs.

There is a survey to ask states about the most pressing highway problems, etc.

They are trying to have a minimum level of competency for FHWA Division research coordinators. In the process of developing an NHI class. Different division administrators have been handling differently (only 5-10% of division’s time).

Need to tell the research story.

Group Discussion: Getting your state DOT people involved in national research

- There is a need to get management to identify priority issues.
- It can be a challenge getting younger people involved.
- NCHRP panels can be more of a coaching opportunity.
- TRB committee structure is more for policy experts.
- Value-added from being on the panel/committee over reading the final report. Allows participants to understand background that doesn’t make it into reports. Committee members can help direct the research.
- Workload issues are never going to go away.
- People are overwhelmed by national research alphabet soup. Michigan presentation helps to explain. <http://wisdotresearch.wi.gov/wp-content/uploads/MDOTS-TRM-AM-pre-planning-PowerPoint-presentation.pdf>
- WIIFM – What’s in it for me? It helps to identify that to get people to participate.
- Michigan has a pre-meeting for TRB attendees to let people know what’s available.

- Double-message challenge – top leaders want participation but supervisors don't want people to participate due to workload.
- The Research Program can help people sort through what national opportunities are best. Find out what motivates them. Think of the form as a job application.
- Research Program should have nominations flow through them.
- Research Program tries to help with the writing of the forms. May need a link for how to write an effective nomination.
- TRB understands the issue of state DOT employees not being able to travel. They are trying to make it possible for remote/electronic participation.
- Panel members are nominated by states or are self-nominated. Standing committees -- people represent themselves (3-yr terms, can be renewed up to a maximum of 9 years). Often people are appointed to committees because they have done work for the committee (as friend, etc.).
- People are not in the same positions as long now – there is more job changing in order to move up.
- Project panels are looking for regional representation. Need to remember to look outside your building.
- Coordination is needed between AASHTO, TRB, etc. in scheduling meetings.
- TRB is rolling out a new membership database, which will include subcommittees. TRB does webinars on functional parts of TRB. Can also do webinars for specific groups as well.

Group Discussion: Getting your state DOT to actively submit national research projects

- Can use “left-over” state research ideas; provide more info regarding ideas that would fit.
- If something needs to be changed at the AASHTO standard level, then it could be a good idea for a national research project.
- Leverage resources, larger datasets, get money's worth out of SPR money that goes to national programs.
- People don't have time to write the problem statements (research programs can help with that; DOT libraries can help with the literature search part).
- TRB's Cooperative Research Program (CRP) staff can do a debrief on needs statements that don't get accepted.
- Persistence can pay off. Proposals can be resubmitted.
- AASHTO committee endorsement can be a help in getting CRP approval.
- Take proposals to AASHTO committees in April/May timeframe. Leni – depends on the committee and when they have their meetings.
- TRB has a research funding document: <http://trb.org/ResearchFunding/ResearchFunding.aspx>
- WisDOT could look at all problem statements that don't get WHRP funding and see which CRP options might be available. Also check with FHWA.
- More questions from the legislature, etc. regarding where every dollar is going. There is a need for more coordinated information at the national level.

Day 2

Day 1 recap

- Prioritization among different applications. Coordinated by sending out a letter under cover of the Secretary.
- Executive leadership is getting a lot of the same information as the Research department. Sometimes they take the lead, other times it is expected that the Research Department will take the lead. Utah did have a couple of the SHRP2 applications accepted.
- There can be some coordination challenges. Different areas may have different questions on the application forms. Sometimes there is a lack of ownership on who's doing what.
- The Research area has the responsibility for communication. In some states, Research also has the coordination responsibility.
- If FHWA is going to require the Secretary's endorsement and prioritization, more time may be needed for submissions.
- Standardize the process as much as possible.
- FHWA has programs like the Exploratory Advanced Research (EAR) program that put calls out (accept ideas from academia as well as state DOTs).
- It's OK to call the contact person listed on the FHWA website agenda for particular research programs.
- Any research that has federal funds should also be listed in Research in Progress.
- FHWA division processes can be onerous.
- Lots of opportunity, but lack of synchronization of programs working together.
- Need to know what paperwork needs to be done when.
- Funding guide could be used to find opportunities.
- DOTs are being asked to explain how research dollars are used and to make sure research isn't being duplicated at the federal and state levels. Any databases we could use would be great. The depository for FHWA is the National Transportation Library (NTL). TRID doesn't have full reports for all items in the database.

Group Discussion: Disseminating national research

- NTL was given the mandate to be the repository for research reports, but not other materials. These issues can cause problems with finding what is there.
- The best way to find the information is in TRID.
- Document management systems are often siloed and they don't have good "findability" tools.
- It would be good to combine taxonomy and controlled vocabularies with natural language searching.
- Is there an expectation to be proactive? If nothing is ever sent out, will you be asked to justify existence?
- Anyone can set up RSS feeds from TRID search results.
- Need people with the expertise in information management to solve these issues.
- Users are looking for reliability. See TRB's Special Report 284 (Transportation Knowledge Networks). <http://onlinepubs.trb.org/onlinepubs/sr/sr284.pdf>
- State legislators have higher expectations. They do Google searches and then don't look for additional information. Management of information at the national level is something to talk about at national RAC level.

- TRB is moving toward distributing more reports in e-format. Only the DOT libraries will receive hard copies. The Research program works through their FAMs to distribute information.
- TRB e-newsletter is a good place for information. Supervisors can forward information to staff.
- Info-user education is important.
- At the first meeting after TRB people are excited about what they learned.
- Utah has another meeting nine months later which is more difficult because there is follow-up about implementation plans. They use a spreadsheet with who has gone to TRB (past 10 years worth of info). Communicate to attendees before the meeting and let them know what is expected of them.
- Need to work through the chain of internal processes to get to implementation.
- Getting involved in TRB committees is important at the annual meeting.
- Having Secretary's office discuss priorities with attendees at pre-TRB meeting is very helpful.
- There can sometimes be a disconnect between who is on TRB committees and who actually goes to the annual meeting.

Group Discussion: Implementing national research results in your state DOT

- MDOT has a new Innovations Report publication that provides detail (160 pages).
- Have to have executive buy-in to get responses from people.
- Try to link to specification change, etc. It's a long and winding road to change a spec.
- In specs have to have the why (reference past research).
- Florida is considering a SharePoint site for this type of tracking/monitoring information.
- At TRB pre-meeting, let people know that there is a responsibility for attendees to report back. Have top leadership at the pre-meeting. People know they are in the spotlight to show they look good in their roles.
- AASHTO could do a better job of referencing research in their guidelines.
- Champions are needed.
- NCHRP has an annual report which lists of projects, but it doesn't have much on implementation.
- There is a need for an easy way to get a look at what a state DOT has. WSDOT has about 100 research projects going on at one time.
- TRB is trying to put a study together with CTC to look at improvements for NCHRP products. They want to present to SCOR in December. The researchers are talking to NCHRP panel members and RAC members for information. They will feature up to 10 case studies.
- For some state DOT people, other committees may be more important than TRB attendance.
- Leadership may change every four years. Have to think about what the agency needs long-term, as well as what current leadership needs.

Finalize findings

Staff involvement in national research: panels, committees and project ideas

- Management identification of priority issues or topics is key to staff involvement
- Communicating the value of participation
- Committee and panel involvement is not one-size fits all.
- Using exposure opportunities (TRB state visits, webinars FHWA and SHRP-2) as a spring board for staff interest
- Steering the research
 - National research priorities
 - Shaping the project / setting research approach
 - Data relevance
 - Increasing staff expert knowledge
 - Building the network
 - Access to info that doesn't make the report
 - Better likelihood of implementation

Project submission

- Selling the case of ROI and leveraging funds – get your money's worth
- Research Program should provide assistance in writing the statements and use NCHRP guide
- Persistence can pay off
- Poll states and get feedback to see how you can tailor or rewrite statements
- CRP staff can provide debrief on unselected proposals to learn for future
- FHWA opportunities may exist – might require some division or personal assistance
- Other opportunities may exist – NSF, RITA, broad agency announcements; may need academic partnership
- Research programs are coordinating SHRP2 financial applications
- Utilize research needs database / search tool

Getting the word out: Disseminating research results and participation opportunities

- Proactive measures – what's fresh
 - RSS feeds
 - Forwarding of materials
 - Customization of information
 - Send it to the right customers
 - Seek feedback
 - Management prioritization helps
 - Necessary but not sufficient
- Findability & access issues – what is needed
 - Need for national strategy, intent & network to coordinate information (also other levels)
 - Need for formal, permanent repository
 - Delivery tools for dissemination
 - Still can use more resources
 - Enhance and employ competencies and standard operating procedures
 - Educate users

- TRB Annual Meeting or similar events
 - Send people who can implement
 - Pre-meeting
 - Communication at the meeting
 - Post-meeting (short term)
 - Post-meeting (long term) focusing on implementation

Putting research to work: Implementation of research

- Continuum of people, project, dissemination
- Michigan DOT example to track results
 - Web tools may also be useful
- Research programs responsibility for tech transfer
- Need role, support, communication with AASHTO committees
- Need culture of innovation and leadership support
- Need champions – top level and subject level
- Need to know when national projects end
- Need to communicate to different audiences
- Reference research in standards & products

What WisDOT managers should know and how you can affect involvement

- Research needs to listen closely to you
- Management support is key
 - People
 - Projects
 - Dissemination
 - Implementation

Presentation to WisDOT managers

Periodic peer exchanges (last one was three years ago).

WisDOT managers attending: John C., Pat J-W, Patty M., Jon Kranz, Rebecca B., Aileen S.

Increasing national investments (NCHRP, SHRP2, TRB) - are now about \$1.1million. 32% of the WisDOT Research Program.

Jacqueline was hired 2.5 years ago to lead the national programs. Now that the program is organized, we would like to focus on excelling in this area.

Value of Research document.

National Academies/TRB benefits documents.

People:

Expansion of the network allows for finding out about other funding opportunities.

Questions/comments:

John Corbin – Are there more clear strategic frameworking tools? Proactively recruiting?

All states present had process for coordinating nominations, centralize through Research, get endorsements by Secretary's office.

Steve, MDOT – It's a challenge going to the same people all the time. They get push-back from managers that the technical people have other responsibilities with their "day jobs". Prioritization is an issue.

Erik – It's necessary to make sure it's the right people, with the right skills.

Were there any examples of coordination between TRB, NCHRP and AASHTO?

It's good if TRB/AASHTO committees are coordinating.

Leni – 75 unique people on TRB committees, panels; some overlap with AASHTO. Areas where it is less so are in the non-core areas (transit). Upper-level managers are on standing committees, technical-level people are more often on panels.

John C. – WisDOT is continuing an era of regional organization; sounds like other states grapple with the challenge. Executive office and senior managers may have different views on research participation.

Leni – Chief engineers lately are coming from regions. They would agree that regional participation is good. Regions are generally project-funded, so they don't have other project codes to charge their time.

Erik – another consideration is churning/transfers.

Leni – should have an exit strategy for people when they change positions.

Steve – has worked in both regional and central office positions. Research is not a matter of where a person resides geographically. MDOT has a structure for research (not necessarily connected to the organization chart). It is important to have top executive prioritization.

John C. – New Innovation theme. How do we link innovation to R&D? Prioritized strategic engagement.

Project submission:

Persistence can pay off.

Other opportunities may exist for research funding.

See a role for the Research Program to coordinate response to SHRP2 (w/endorsement from Sec. office)

Questions/comments:

Cameron – one benefit is a self-interest in national programs.

Barry – good to know about national research in relation to WHRP projects as well.

Erik – find out about a lot of info through side conversations, draft reports, QPRs, etc.

Dissemination:

Proactive and reactive. Seek feedback from people. Management prioritization is helpful for proactive dissemination.

Findability & access issues. Educate users and provide expertise.

TRB annual meeting – models for dissemination. Pre & post (short and long term) meetings.

Questions/comments:

Kimberly – From TRB’s perspective, they also struggle with the issues of dissemination and how to do better.

WSDOT, MDOT, FDOT all are going to electronic-only receipt of reports with only the library getting hard copies. TCRP is going to electronic-only publishing.

John C. – Are other industry or private-sector representative participating on committees? Statewide partners, e.g. Milwaukee and Madison city transportation officials.

Leni – WSDOT has received a data dump of committee members who are from Washington State (not just WSDOT). It includes academia and other agencies.

Barry -- MnDOT has a very active local roads program.

Daniel – mentioned our upcoming outreach meetings to universities.

Wis. TRB meeting guide also points to non-WisDOT participants.

Implementation:

MDOT has a good draft document. Need to know when national program projects are completed. Document research both ways.

Questions/comments:

Erik – Need champions but also need people to understand the process.

Leni – More scrutiny of the funding sources. Need partnership with the technical experts.

What WisDOT managers should know and how you can affect involvement:

Research needs to listen closely to management for strategy, priorities, etc.

Management support is key.

Closing remarks

Washington – Takeaways: better documentation of activities; information management issues & productivity.

Florida – Implementation is important. They are developing a more strategic structure for national participation. Need to do same kind of follow-through with national programs as with state research programs. Pre & post meetings. This is a key issue. Exceptional peer exchange. Appreciated the thoughtfulness and purpose of the peer exchange.

TRB – A lot of states struggle with submitting research statements. Project submission – getting state DOTs to submit is critical to the continuation of the program. TRB is willing to provide help. TRB, maybe in conjunction with FHWA, can do a better job of explaining how states can interact with the national programs. Regarding quantifying the impact of research -- favorite quote – “Not everything that counts

can be counted, not everything that can be counted counts.” Can’t measure the intangibles but they are often very beneficial.

Michigan – Wis. does a lot of good things at the national level, even though they are not submitting problem statements.

Information management issue is not just in the Research area. It also is a factor when working with political leaders. There is a need for technical writing assistance. A library is not just the books on the shelf -- staff is critical to help manage information. Outreach communication is important; marketing in a concise way. They have a national research pre-meeting which helps educate people about the alphabet soup (TRB, AASHTO, NCHRP, etc). It’s important to make people comfortable before we ask them to participate at the national level.

Utah – It made an impression that the first person presenting at the peer exchange was the WisDOT Secretary. Leadership support is huge. Funding – look at the calendar to plan ahead. TRB has a debrief process to help you learn about why.

FHWA – It’s good to get out of DC to learn about how things work in the states. FHWA has a lot of areas they can improve. Local feedback is appreciated. A bigger effort is needed to get out information about research. There is an effort at FHWA to get division Research & Technology people to be a support as well as approver of state research programs.

Erik – hopes he contributed from the research-user perspective.

Barry – State Transportation Innovation Council (mentioned by Michael at PennDOT). Good eye-opener about looking at the bigger picture.

Patty M. – See the good stuff that comes out of the Research area. Have stories to tell to the legislature and public. Talk to your communication areas.

Rebecca – good to hear about challenges. How can she play a bigger role in these things and tie them to the innovation initiative?

John C. – Recently attended a department innovation event. Not one person at the event knew the agency’s vision statement. Innovation is the center of it.

Pat – already knew Daniel and staff do a good job. Nice to hear the kudos from others.

Jon – interesting to hear about research challenges (has previous background in research).

Daniel – More than half of funding in the program runs through Jacqueline.

Peer Exchange Acronyms

AASHTO – American Association of State Highway and Transportation Officials

DOT – Department of Transportation

FHWA – Federal Highway Administration

IT – Information Technology

NCHRP – National Cooperative Highway Research Program