NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION RESEARCH PEER EXCHANGE

Increasing the Impact:
Program Management Strategies and Opportunities

September 27 to 29, 2016
Concord, New Hampshire

Prepared by
CTC & Associates LLC

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Introduction

The New Hampshire Department of Transportation (NHDOT) Research Program hosted a peer exchange in Concord, New Hampshire from September 27 to 29, 2016. The peer exchange was aimed at identifying effective strategies and opportunities for improving the visibility and impact of the agency's research program. Representatives from four other state DOTs, FHWA, and local universities joined NHDOT staff to share experiences and lessons learned.

Objectives and Structure

To support the peer exchange focus on improving the visibility and impact of the research program, the agenda (Appendix A) was structured around five key topic areas presented below. The NHDOT planning team developed amplifying questions for each topic (Appendix B) and provided them to the participants in advance to aid in their preparation. Using a combination of formal presentations by NHDOT and visiting agencies, round table discussions, and NHDOT management staff feedback on existing practices, the group explored each topic in detail.

Topic #1: Increasing Awareness and Use of Research Services and Studies

- Educating internal stakeholders about services and opportunities that exist.
- Boosting use of the program's services, including access to research resources outside of NHDOT.
- Encouraging submission of problem statements from all Divisions of the Department, especially outside of Materials and Research Division.
- Encouraging more NHDOT involvement in TRB.
- Planning for implementation—the use of the research results to achieve agency goals.

Topic #2: Aligning Program Activities with Department Goals

- Developing research projects that address high-priority information needs.
- Creating a balanced, effective, and responsive portfolio of services – including traditional research, quick turnaround efforts, national involvement, technology transfer, etc.
- Managing the research life cycle to ensure responsiveness to needs and timeliness of results.
- Ensuring leadership and support for research development and implementation among executives and managers.

Topic #3: Coordination and Collaboration with Internal Stakeholders

- Maintaining strong staff involvement and leadership on project oversight panels.
- Maintaining strong staff involvement and leadership with implementing research results.
- Strengthening relationships with executives.

Topic #4: Leveraging Local Partnerships for Research and Implementation

- Effectively partnering with universities and LTAPs to deliver research, training and other resources.

- Disseminating research at the municipal level.

- Collaborating with industry.

Topic #5: Leveraging Regional and National Partnerships

- Regional and national collaboration: pooled fund projects or other initiatives.

- Collaborating on FHWA and AASHTO initiatives, such as the State Transportation Innovation Councils.

- Educating staff on participating in pooled funds.

- Preparing for and leveraging TRB site visits.

Peer Exchange Participants

The peer exchange brought together representatives from four visiting state DOTs, multiple offices within NHDOT, FHWA's New Hampshire Division office, and local universities. Below is list of all participants.

Peer Exchange Planning Team

Ann Scholz, P.E., New Hampshire Department of Transportation
Beth Klemann, P.E., New Hampshire Department of Transportation
Kim Linsenmayer, CTC & Associates LLC
Kirsten Seeber, CTC & Associates LLC

Visiting State DOT Research Programs

Ken Chambers, Research Chief, Nevada Department of Transportation
David, Jared, P.E., Assistant State Research Engineer, Georgia Department of Transportation
Michelle Lucas, Research Contract Manager, Ohio Department of Transportation
Brad Overturf, Transportation Supervising Planner, Connecticut Department of Transportation
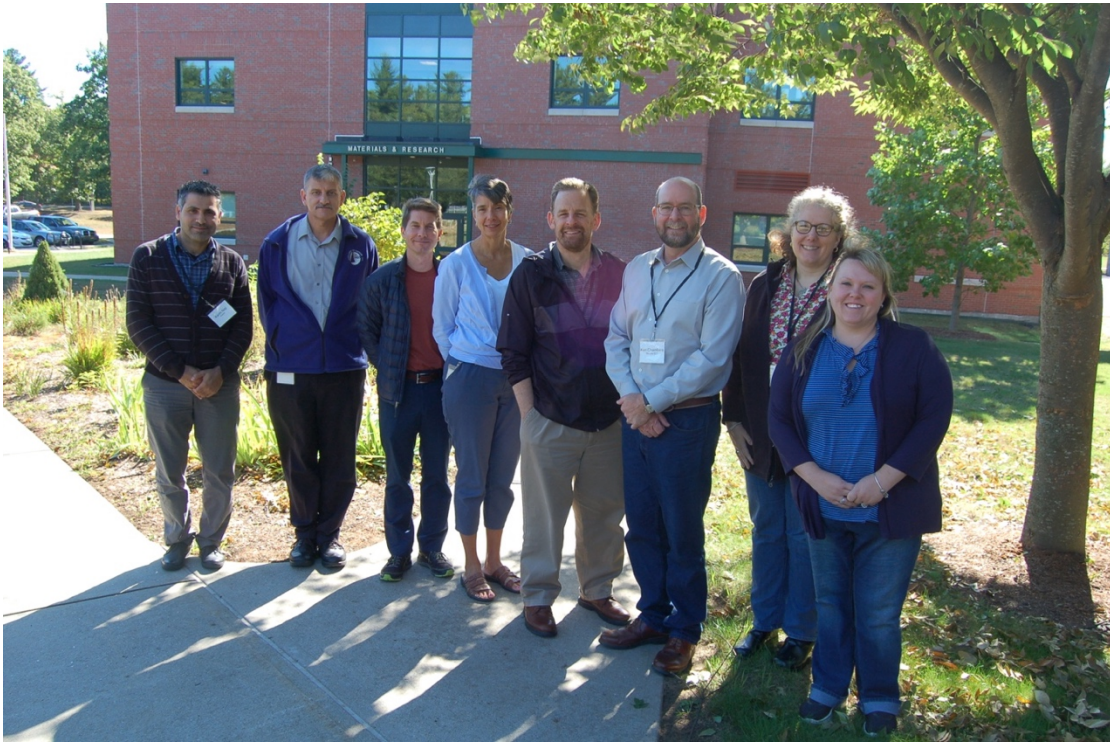
Left to right: Karim Naji, Chuck Dusseault, Brad Overturf, Ann Scholz, David Jared, Ken Chambers, Beth Klemann, Michelle Lucas

Additional Guest Presenters/Participants

Joe Ayotte, United States Geological Survey
Jim Degnan, United States Geological Survey
Cameron Wake, University of New Hampshire

Allison Watts, University of New Hampshire
Donna Shea, University of Connecticut LTAP
Karim Naji, FHWA New Hampshire Division

Additional New Hampshire DOT Participants

Beran Black, Materials & Research
Denis Boisvert, Materials & Research
William Cass, Executive Office
Keith Cota, Highway Design
Glenn Davison, Planning
Chuck Dusseault, Materials & Research
Mark Hemmerlein, Environment
Steve Johnson, Bridge Maintenance
Ted Kitsis, Construction
William Dusavitch, Mechanical Services
Chuck Schmidt, Right of Way
Caleb Dobbins, Highway Maintenance
Tricia Lambert, Aeronautics

Bob Landry, Bridge Design
Jim Marshall, Highway Design
Nancy Mayville, Planning
Krystle Pelham, New Hampshire DOT
Peter Stamnas, Executive Office
Susan Soucie, TSMO
Shelley Winters, Rail & Transit
Dale O'Connell, Environment
David Scott, Bridge Design
Bill Saffian, Bridge Design
Jon Evans, Environment
Mark Kirouac, Highway Maintenance
Alan Hascom, Highway Maintenance

Peer Exchange Findings

Topic #1: Increasing Awareness and Use of Research Services and Studies

NHDOT Introduction

NHDOT has implemented a number of outreach efforts aimed at increasing the visibility of the program and encouraging use of research results: program newsletters, summaries of research project results, research results posters, RAC Sweet 16 award displays next to research posters, and a GIS Research Project Viewer (which allows users to click on a map to view the location and details of completed research projects). However, they're hoping to improve engagement of NHDOT staff outside of the Materials and Research Bureau. They want the Department to take advantage of the research services offered and actively lead efforts to implement the results of both state and national research in New Hampshire. How can NHDOT make outreach efforts more engaging and active?

Effective Practices Shared

Key themes

- Think of communications as part of your research agenda so it's not an afterthought.

- Co-production of knowledge – Engage stakeholders (researchers, end users) in creating and using the research. It's a time and money commitment, but it pays off.

Disseminating research results – print and online materials

- Tear off pads of one-page technical research briefs on the research. Can be used by the agency's public information officer and training development manager at state functions and job fairs to promote a career with DOT. (New Hampshire)

- Research posters are created by the PI as a required deliverable. Hang them in the hallways near the sponsoring Bureau. (New Hampshire)

- GIS Research Project Viewer (New Hampshire)

- Circulars that feature multiple projects on the same topic aimed at the general public. (USGS)

- Connecticut DOT plans to start featuring students' writing in a new research newsletter every six months to strengthen the connection with

them. The civil engineering department has a writer on staff at University of Connecticut who is writing articles on research results for wide distribution.

- The University of Connecticut recently put together a video about a new research project. The research program hopes to produce more videos for new projects to promote early engagement.

Disseminating research results – face-to-face

- Lunch-n-learn/brown bag presentations at the DOT to share research results with other parts of the agency. (New Hampshire, University of New Hampshire)

- Share research results at stakeholder meetings and conferences. (USGS)

- Ask the researchers to present findings during a live or recorded webinar. (University of New Hampshire)

- Georgia DOT holds an annual poster session for academic researchers on active research projects to showcase their research. The showcase is in GDOT's central office, making it easier for executives to attend. After the event, GDOT research staff meets with the university leaders to discuss mutual priorities.

Building relationships that support implementation

- Reward researchers for communicating well. Tie their communication efforts to receiving the funding for research by formalizing it in the proposal requirements. (University of New Hampshire)

- Get to know the researchers and their expertise. Help connect them to the appropriate people at the DOT. (Georgia)

- Bring in the end users at the beginning of research projects to get their buy in.

- Personal contact is key for encouraging implementation. The scientists need to sit down with users to find out their questions and issues. (University of New Hampshire)

- Work with the state's LTAP Center to market research results. They can help develop materials, post information online and push results directly to locals. (Ohio, Connecticut)

Planning for implementation during project development

- Consider requiring an implementation plan as part of each research proposal. (Connecticut, Georgia, Nevada)

- Define the end user first to know the form the results should take. (FHWA)

- Georgia DOT has a dedicated implementation manager in the research program who is involved with the research projects from beginning to end and post-project.

Communicating implementation successes

- Georgia DOT distributes an annual implementation plan that documents successes in implementation. The report is aimed at executive management, but is shared with the universities to let them know what's important to the agency. The report is also available to the public on the GDOT website.

- Implementation can also be about demonstrating feasibility, which is a positive outcome of a research project. Georgia DOT's Office of Research clarified with agency executives what is meant by implementation, which can include failures (what not to do).

- Georgia DOT also plans to track the level of implementation using a tool that Georgia Tech is developing for them. The tool shows the level of implementation for each project. The focus is on whether or not the results can be used versus a dollars and cents return on investment.

Principal investigator deliverables that support dissemination

- For research projects taking longer than a year, Connecticut DOT requires an interim report.

- USGS works with their communications office to produce fact sheets of individual projects and groups of projects when technical papers are published. In the process of extracting a summary of findings, the office provides feedback for the researchers on whether or not the report was clearly written and got across what it intended.

- For each final report, Ohio DOT requires an accompanying standalone fact sheet aimed at the general public and decision makers. They also have some of the final reports technically edited to make them more readable.

- Be flexible about what specific deliverables are required beyond the basic final report to make sure they fit with the research results – training, software, instruction guidebooks, etc. (Nevada, Georgia, New Hampshire)

- Georgia DOT requests post-project implementation meetings to provide a handoff of the research to users. The researchers present their findings to the research staff and staff from the office requesting the research (intended end users).

- Invite researchers to present their research. They appreciate the opportunity to receive face-to-face feedback on their findings. (University of New Hampshire)

- USGS invites multiple researchers in the same topic area to present their findings at the same time. These popular events bring together everyone interested in the same area of research.

Opportunities for NHDOT

The peer exchange participants identified the following strategies and practices shared by the visiting agencies as potentially valuable for NHDOT to incorporate into its research program:

- Brown bags, seminars, webinars – person-to-person outreach to share research results.
  - Engaging folks is far more important than simply notifying them of findings.
  - Speak to internal stakeholders about the value of results.
  - Provide public presentations of university research.
  - Personal contact is key.
- Co-production of knowledge. Work with both researchers and stakeholders to communicate the research need and plan for implementation.
- Develop stronger partnerships with academics. Keep in mind that university researchers are motivated by papers published, not implementation.
- Consider statewide "working groups" based on topics.
- Consider expanding newsletter distribution.
- Think about communication early as part of development of the research agenda. Look for ways to move from passive to active communications.
- It takes time and money to promote implementation. Save some resources for this effort.
- Include implementation planning in the research work plan.
- Request interim reports from the researchers.
- Hold monthly project update calls with the Technical Advisory Groups (TAGs).
- Provide an implementation update post project.
- Consider a program level implementation report.

Topic #2: Aligning Program Activities with Department Goals

NHDOT Introduction

Ann Scholz provided an overview of NHDOT's process for soliciting research ideas and prioritizing them for funding. Using a two- to three-year cycle established in 1993, the research program solicits for problem statements both internally and externally. Problem statements submitted by non-NHDOT personnel must identify a NHDOT Sponsor (bureau administrator, district engineer, section chief, or other manager) prior to submittal. This requirement is intended to ensure that external problem statements are consistent with department needs and goals. The submitters present their ideas to NHDOT's Research Advisory Council (RAC) for rating and then ranking by need.

The process has yielded problem statements that tend to be geared toward applied research, and NHDOT Administrators appreciate the opportunity to participate in the process. However, most problem statements submitted relate to traditional research areas despite efforts to promote research related to policy, finance, personnel and information technology. In addition, a relatively low submittal rate of problem statements means that a high percentage of the project ideas get funded. It's not clear if they're funding too many projects and if all of the projects funded are worthwhile.

Effective Practices Shared

Soliciting and developing problem statements

- Georgia DOT fundamentally changed their research development approach in 2008, moving from an externally driven process (with most research ideas provided by the universities) to an internally driven one (with most research ideas coming from staff). The change has made a huge difference in the quality of the research ideas and the impact of the projects that get funded. They still do one solicitation of problem statements externally per year, but the focus is on the agency's needs. There's also an open door policy with researchers so that they can talk to Georgia DOT staff about priorities. David noted that when the problem statements come from employees, the researchers have a much better idea of what is actually needed versus supporting projects that may not be useful.

- Georgia DOT created four research TAGs to cover each of the four major

Department goals—policy/workforce, asset management, mobility and safety. They develop research needs, provide project oversight, and support implementation.

- Ohio DOT solicits ideas from employees during a six-week window. The ideas received are organized and brought to OSCOR (Ohio Standing Committee on Research), which includes representatives from all areas of the Department, for review and ranking. OSCOR meets together to discuss and rank the problem statements. Their Governing Board provides final approval on which projects receive funding.

- Ohio DOT funds project in three main topics, per the director's guidance—safety, innovation, preservation. All projects must fit in one of these three areas to be funded.

- In Ohio, the only avenue for researchers to submit ideas for problem statements is through student project ideas. These are individual projects that only last 16 months. Only a few of these projects are selected each year.

- Ohio DOT holds a research summit every two years. Researchers attend to learn about the Department's research program and participate in networking sessions with other offices.

- Nevada DOT uses strict criteria for evaluating problem statements and proposals. They accept problem statements from everyone, as long as there is a Department project champion identified who supports the project. This helps to ensure that the project is worth pursuing in the first place.

- Nevada DOT created seven Expert Task Groups (ETGs) to develop and oversee research by agency goals:
  - Planning for Zero Fatalities
  - Better Design of Roads and Bridges
  - Sustainable Infrastructure and Maintenance
  - Efficient and Safer Traffic Operations
  - Efficient Multimodal Mobility
  - Better Project Delivery
  - Transformative Transportation Technologies (basic research)

Quick-turnaround projects

- Ohio DOT's research-on-call projects are quick turnaround studies (six months) that are completed on a task basis using a $250K blanket two-year contract. The contracts use state and federal funds and can be extended with an additional $100k for up to 5 years.

- Georgia DOT has some flexibility to address research needs that come up between solicitation periods. They can initiate quick response projects with budgets up to $100K. This category of projects is approved as part of the annual work program, so it's not necessary to set up funding for each project. Since contracts are all completed electronically now, it only takes a couple weeks to get the project started. Keep in mind this is not a master contract approach.

- Connecticut can access the Connecticut Advanced Pavement Lab (CAPLAB) at the University of Connecticut, which is funded by SPR for full projects and also for materials testing if needed by CTDOT. The Research Section also works with Connecticut Academy of Science and Engineering on projects that require study by a neutral voice and need national technical expertise brought on board.
- Encourage staff that solutions don't always have to be full research projects. (Connecticut)

Keeping projects on track

- At Georgia DOT, the project champion for each project is called a technical/implementation manager. This person has ownership of the project (with research office support) and is responsible for getting the results implemented.
- Georgia DOT's Office of Research built more meetings into the project timelines. There is a midpoint recovery meeting to see what needs to be adjusted. They also hold a 90-day wrap-up meeting before the project ends to plan for the final steps and deliverables.

Addressing district and local needs

- Ohio DOT created a district research program about five years ago to address the research needs of district staff. Now it's half of the overall research program in terms of the number of active projects.
- The Ohio Research Initiative for Locals (ORIL) program is also part of the overall Ohio DOT research program and is focused on the research needs of locals. The program is in its third year and has been very successful. ORIL's 15-member board meets four times per year to solicit and select projects to fund using the $500K available to them.

Opportunities for New Hampshire

The peer exchange participants identified the following strategies and practices shared by the visiting agencies as potentially valuable for NHDOT to incorporate into its research program:

- Consider a more strategic, DOT-driven solicitation for research ideas (as in Ohio and Georgia). Limit problem submissions to those that will be beneficial to NHDOT.
- When scoring proposals, give the ability to choose "not worthy of funding."
- Consider on-call research contracts to respond to time-sensitive and short-duration projects.
- Get involved in department committees to better understand their needs and invite their participation in the research process.
- Consider elimination of tuition payments.
- Consider meeting briefly with new RAC members to describe and discuss roles, goals and expectations.

NHDOT Introduction

Beth Klemann provided an introduction to the structure of NHDOT's Technical Advisory Groups (TAGs) which oversee NHDOT's research projects. At a minimum, the TAGs include a NHDOT champion, who supports the research, research staff for coordination, and the principal investigator. Staff from multiple bureaus get involved when a research topic requires broader stakeholder involvement. In addition, contractors sometimes serve on the TAGs, which supports buy-in on the research results. NHDOT also encourages the inclusion of interested younger professionals in the agency.

Several of NHDOT's TAG members joined this peer exchange discussion, providing some thoughts on current practices:

- Beran Black: Being on a TAG is very useful and gives her broader knowledge that helps her with her job. However, it's a challenge time-wise. The projects are hard to schedule and don't always stay on track. It's best if the commitments/energy for the research could happen during the winter (outside of the construction season).

- Mark Hemmerlein: It is a challenge to fit in research responsibilities with the regular duties. Providing written information to the TAG about project progress (through quarterly reports or other communication) is most valuable because it's hard to get TAG members together. The NCHRP model for project panels works well; meet only once or twice and get the rest of the project information via email. There are a lot of staff hours for research projects that can't be charged back to the feds.

- Tricia Lambert: She encourages her staff to participate in NHDOT research. It is the only program in the building where they act like one DOT because the projects can cross all bureaus/modes. She sees this as the beauty of the program. Her bureau embraces the research program.

- Denis Boisvert: When the ideas come from the districts, because they are more hands-on and have practical application, the projects have stronger support. Often, the districts will start implementing results before a project is officially complete because they can use the results. This involvement begets repeat involvement because their issues are being solved and they want to solve other problems.

Effective Practices Shared

Research panels and champions

- Ohio DOT requires at least two people to support a research idea for it to move forward. Those two individuals can decide on who should serve as the lead. The project panels have an average of five people plus the research project manager. For the research program aimed at locals, the panels are bigger because of the wide interest. Panel members don't have to be a certain staff level but they need to be a subject matter expert (SME) and have the approval of their manager to be on the panel. Sometimes staff will bring along interns to participate and get exposure to the process.

- Georgia DOT lets the needs of each research project dictate the size of the panel. Usually one person (the champion) can do the job with assistance from the Office of Research. Note that Georgia DOT renamed the "champion" role to be called "technical/implementation manager." This clarified their role and fostered a sense of ownership as the technical and implementation lead.

- Georgia DOT projects won't go forward without office head approval. They also encourage younger staff to get involved in research projects by letting them know that they can ask their office heads for guidance if needed (they don't have to know everything). Non-DOT staff sometime serves on their Technical Advisory Councils (TACs) from other agencies. No industry representatives are on their TACs, but Georgia DOT will listen to their concerns.

- Nevada DOT identifies a champion for each panel, and they play a strong leadership role. Problem statements aren't even accepted for consideration until a Department person is named as champion. The champion role continues through the life of project if it is selected. The champion acts as the SME and helps with implementation. Buy-in goes up dramatically if they bring in outside stakeholders/agencies and involve them on the panel.

Research office support for the projects

- Georgia and Nevada provide a one-page guidance document to project champions (technical/implementation managers in Georgia), which outlines expectations before the project starts.

- At Ohio DOT, the champions serve in an advisory role, and the research office takes care of the administrative details (scheduling meetings, receive the reports, coordinating review of reports, budget/contract issues, etc.)

- Nevada's research office handles the vast majority of the administrative work for the projects, including keeping close tabs on finances.

Opportunities for New Hampshire

The peer exchange participants identified the following strategies and practices shared by the visiting agencies as potentially valuable for NHDOT to incorporate into its research program:

- Change the "champion" title to "technical/implementation manager" to emphasize the lead role they should play in implementation and as subject matter experts. (Georgia)

- Hold a monthly call between the TAG and the PI to discuss project progress.

- Utilize district engineers to identify research needs and provide implementation leadership.

- Consider part-time staff for administrative activities in the program and engineering staff for research development and oversight.

- Provide better documentation for the TAG to communicate roles and expectations.

- Help the TAG see research as an opportunity versus an obligation. Redefine TAG and member roles. Communicate that "Research is here to help."

- Consider giving champions a stronger role from the very beginning by requiring their acceptance and support for problem statements prior to consideration.

- Develop training for younger TAG members and for project champions about their roles and how SPR2 funding works.

- Encourage external participation on TAGs. This increases buy-in, credibility, project effectiveness and program value.

- Coordinate maintenance installations with research projects.

- Investigate Nevada DOT's incorporation of Qualified Products Lists in the research program.

Topic #4: Leveraging Local Partnerships for Research and Implementation

NHDOT Introduction

The New Hampshire LTAP program is not currently connected to the NHDOT research office. Instead, the program is managed by the NHDOT planning office. Nancy Mayville and Glenn Davison with NHDOT Planning presented on the LTAP program in New Hampshire:

- Runs on two-year contract (about $400K per year).

- NHDOT uses turnpike toll credits as the 20% match requirement.

- Staffed by an executive director, training coordinator, two training instructors, and many students at University of New Hampshire.

- Housed in the UNH engineering department.

- Advisory board (DOT, FHWA, municipal representatives) meets three times per year.

- Conducts surveys to see what locals want for services.

- Primary focus is on providing face-to-face training for transportation professionals in the field. They conduct 80 workshops annually using DOT, local and contract instructors.

- Provides support for using technology and asset data collection to inform decision-making.

- Includes an active Road Scholar program that recently instituted an advanced master program.

- Participates in New Hampshire's STIC.

Effective Practices Shared

- Involve LTAP throughout the research process (when soliciting research ideas, as participants on project panels, to help with implementation). View LTAP as bridge from research to practice. (University of Connecticut LTAP)

- Ohio DOT's LTAP is housed within the agency's planning group, which works well. There is a close tie to the research office. ODOT's research program for locals (ORIL) relies on heavy involvement from the LTAP, which handles MOUs with the county organizations to provide board members for the program. The LTAP conducts more than 200 training sessions annually and participates in the state's STIC.

- Nevada DOT has a very large and engaged advisory committee for the LTAP. Only two members from the DOT serve on the committee, including Ken Chambers in the research office. The priority is local involvement. Participation in LTAP classes is very high, and the LTAP director is on Nevada's STIC.

- Big LTAP committees can represent many topical and geographic areas. Utilize subcommittees for specific projects. (University of Connecticut LTAP)

- At Georgia DOT, the LTAP is part of human resources, but there is a strong connection to research thanks to Georgia DOT's dedicated implementation engineer. The implementation engineer keeps the LTAP informed of implementable products and partners with them to deliver training to a broader audience. An example of this is the pavement condition training that was tailored for locals thanks to a partnership between Georgia DOT, Georgia Tech and LTAP.

- Connecticut's LTAP is housed at the University of Connecticut but works closely and collaboratively with Connecticut DOT's research office. Their public works academy (covering topics such as road fundamentals, safety, snowplows, etc.) has been very popular.

Opportunities for New Hampshire

The peer exchange participants identified the following strategies and practices shared by the visiting agencies as potentially valuable for NHDOT to incorporate into its research program:

- Engage the LTAP to assist in developing implementation materials and distributing research results at the local level.

- Involve the LTAP in submitting research ideas.

- Add research information to the LTAP manual so they know that research is being done and how they can get involved.

- Work with the LTAP to find locals interested in completing installations with materials left over from research projects.

Topic #5: Leveraging Regional and National Partnerships

NHDOT Introduction

Ann Scholz provided an overview of NHDOT's current participation in regional and national partnerships:

- New England Transportation Consortium (NETC): NHDOT contributes to this regional cooperative (through the Transportation Pooled Fund Program) involving six New England transportation agencies, six New England state land-grant universities, and FHWA that collaborates to address research ideas of mutual interest.

- Transportation Pooled Fund Program: NHDOT currently participates in four additional projects besides the NETC.

- Transportation Research Board: NHDOT staff participate as research project panelists, synthesis project panelists and on standing committees. Since 2011, NHDOT has sent up to five individuals to participate in the TRB Annual Meeting.

- AASHTO: NHDOT currently participates in 61 committees or subcommittees, chairs two of them and provide the vice-chair for another. The agency also participates in five AASHTO Technical Service Programs.

- State Transportation Innovation Council (STIC): New Hampshire's STIC formed in 2014 and includes NHDOT, FHWA, UNH, DCR, consultants, and RPCs. The group has successfully developed a process, procedure and implementation for e-construction and purchased high-end CAD computers to support machine automation in the field during construction.

Involvement by NHDOT's research office in these regional and national partnerships has helped them keep their small program viable and relevant to the agency, allowing them to access resources and technical support on specific issues. However, the program faces the challenges of limited funding for participation in regional or national efforts, staff retirements and transfers that interrupt the flow of information into and out of the agency, and getting travel approval to fully participate by attending meetings in person.

Effective Practices Shared

Facilitating DOT voting on the NCHRP ballot

NCHRP problem statements are sent to DOTs for review and ranking in January. The research office takes the lead in soliciting and compiling their agency's votes for returning to NCHRP. The peer exchange participants discussed potential approaches for streamlining this process and encouraging strong participation within the agencies.

- At New Hampshire DOT, Ann sends the ballots with problem statements to the appropriate offices based on the topic areas addressed. If she doesn't hear from an office, she rates them herself.

- Sometimes there are a large group of projects to review in the same topic area. Provide guidance on how to get through them all, such as by delegating them to staff in their office. (Georgia)

- Send out the whole ballot to all reviewers, so everyone who gets them sees all of the projects (and not just those in their purview. That way they can weigh in on them, too, which provides a cross-sectional review. (Georgia and New Hampshire)

- Consider getting everyone involved in rating together for 30 minutes to discuss what's on the ballot and what might be important to the Department. Then they can go back to the individual bureaus and discuss further and rate.

- Some bureau chiefs distribute to their staff to get their bureau's perspective as a whole.

- If staff provide conflicting ranks, the research office can let the voters know what the others have voted and asks them to come to a consensus. (Nevada)

- Consider the TRB staff recommendations when voting.

- When sending out an email with the ballot, remind staff of the money the agency spends on NCHRP participation. Encourage them to get the most out of the investment by participating in the voting process. (Georgia)

Encouraging awareness of and participation in NCHRP

- Educate new hires about what NCHRP is and what participation means. Emphasize that you don't have to be an expert and that interest is sufficient. This is helpful for younger folks to want to be involved and not intimidated by those who are older and have lots of experience on panels. (New Hampshire)

- Incorporate information about NCHRP and TRB in training for new engineers. Let them know about the research office as a resource and the opportunity they have to influence national transportation policy and projects. (Georgia)

- Encourage the committees that develop and oversee research within the DOTs to spend time on national programs. In Georgia they end up submitting one or two problem statements to NCHRP per year and David wants to increase that number.

- Make it clear that there is a travel component (and support) for NCHRP participation so that managers are aware of this when they choose someone from their area to participate in project panels. (Connecticut)

TRB Annual Meeting planning and participation

- It's important that the CEO knows what TRB is and how important it is. Once they are on board, then it's easier to get the staff involved. In Georgia, they have seen their TRB participation levels keep climbing as a result of informing the CEO.

- Georgia conducts a TRB pre-meeting (TRB 101) to explain how the meeting works, best practices, etc.

- Nevada encourages their research students to include annual meeting attendance in the project budget.

- Ohio will pay for researchers or DOT staff to attend the annual meeting if their attendance is tied to a research project. It comes out of SPR funds and goes into the travel category.

- Complete a report of TRB takeaways and provide it to upper management. Georgia also includes the takeaways in their annual implementation plan.

- Some states (Utah and California) coordinate attendance at the annual meeting based on the topics that are important to the department. They may ask one attendee to attend a session for someone else who can't go to make sure the important topics are covered.

State Transportation Innovation Councils

- A liaison with Connecticut's research office provides the state's STIC coordinator with updates on all active research projects.

- In Nevada, the research office participates in the STIC as a non-voting attendee to make sure the research office is not duplicating efforts. Nevada uses STIC money to shore up weaknesses in what the national efforts support.

- In Georgia, the research office leads the STIC, and the Research Implementation Manager (member of Office of Research staff) is the lead for the DOT.

- Ohio's LTAP office participates in the STIC for ODOT, and they communicate with the research office when there are things they should know.

Opportunities for New Hampshire

The peer exchange participants identified the following strategies and practices shared by the visiting agencies as potentially valuable for NHDOT to incorporate into its research program:

- Encourage staff to work with the research office when submitting panelist nominations. Submissions that come from the research office may have more weight than those submitted independently.

- Add information about research services and opportunities for participation to the orientation for all employees.

- Ask each bureau in the department to identify their top three priorities. Then use this information to identify sessions that will be of most interest at the TRB Annual Meeting.

- Meet with staff after sending out the NCHRP ballot to discuss the process.

- Communicate to staff the difference between NCHRP ballot votes that come directly from the state DOTs and those that are submitted by the AASHTO subcommittees.

- Improve internal communication regarding the NCHRP ballot process.

Participant Takeaways

Although the peer exchange was geared toward addressing the needs of New Hampshire DOT, all participants learned from the ideas and experiences shared throughout the two and a half days of the event. Each participant identified a number of practices that they plan to consider for improving the effectiveness of their research programs, as listed below.

New Hampshire DOT – Ann Scholz

- Consider moving to an internally driven versus externally driven model for selecting which projects to fund. (Georgia)

- Move toward a technical advisory council structure (versus a research advisory council) for selecting research projects so that the experts are deciding on what gets funded.

- Consider producing a program implementation report. (Georgia)

- Consider limiting the number of pages allowed in final reports to make them more user friendly. (Ohio)

- Consider on-call studies when an answer is needed in six months.

- Explore Ohio DOT's model for student study projects and phased projects.

- In one-page direction provided to the TAG, note that younger members can be mentored by the seasoned experts.

- Reposition the role of the project champion to be a technical/implementation manager. (Georgia)

- Ask the project champion to provide a post-project update to upper management (six months and one year after project completion).

- Provide updates to the project selection committees/groups at six months, 12 months and at the completion of the project.

- Require an implementation plan as part of the proposal submitted by researchers.

- Consider formalizing the role of an implementation manager in the research office.

- Investigate using FHWA's webinar service for close-out presentations.

- When sending out the NCHRP ballots, emphasize the investment the DOT makes in NCHRP.

- Request time during new employee orientation to talk about research.

- During the summer, survey the bureaus about their issues of concern. Review session opportunities at the TRB Annual Meeting with these concerns in mind.

- Consider a pre-TRB planning meeting to coordinate session attendance and post-TRB follow-up with upper management. Share the benefits and ideas gathered as documented by attendees.

- Work with New Hampshire's LTAP program to send out research results to external stakeholders.

- Try to participate in the LTAP advisory group.

- Use the LTAP listserv for sending research newsletters, and submit research articles to the LTAP newsletter.

New Hampshire DOT – Beth Klemann

- Focus on fostering relationships between researchers.

- Consider post project implementation meetings. (Georgia)

- Consider producing an annual implementation report. (Georgia)

- Look for projects with multiple facets to present to a larger audience. (Nevada)

- Work with LTAP to share information more widely. (Ohio)

- Consider additional opportunities for project updates (monthly conference calls, quarterly reports).

- Organize researcher presentations of related completed projects.

- Secure a sponsor for every research project – statement of support and not just a name.

- Consider ODOT's Research on Call (ROC) approach to quick turnaround, topic-specific research using task orders.

- Consider using student researchers (Ohio) – ODOT phased projects that involve a deep literature review (6 months), then decide if you want to proceed. Allows research to adapt to findings. Also encourages students to become DOT employees post graduation.

- Look for ways to increase TAG diversity (including other agencies) to encourage buy-in.

- Consider changing the title of the project champion to technical/implementation manager as a way to change the perception and understanding of the champion's role. Be more prescriptive about their responsibilities. (Georgia)

- Provide updates to the project selection committees/groups at six months, 12 months and at the completion of the project.

- Asking TAGs to vet research ideas that matter to the DOT and turn them into proposals for researchers to bid on.

- Hold post-project implementation meetings for TAGs to decide what will happen with the research results.

- Require interim reports for projects over two years long to see where the project is at—Is it still viable? Does it need redirection? (Connecticut)

- Consider ODOT's requirement that two supporters are needed for a project to move forward.

- Engage locals as a resource for research ideas and as an advocate/partner.

- Try to become a member on the LTAP Advisory Board, which would help strengthen the relationship between LTAP and research.
- Try to change the conversation so that all employees know that Research is a resource. If they have a question, ask Research.
- Look at TRB staff recommendations too when reviewing the NCHRP ballot. They can provide national context.
- Share information about NCHRP/TRB and research services in general during training for new engineers.
- Consider the connection between state interests and national interests when thinking about which projects to fund.
- Encourage and facilitate documentation of TRB participation. Consider requiring reports of takeaways by participants.
- Consider requiring an after-travel memo of takeaways for any research related out-of-state travel.
- Consider coordinating TRB Annual Meeting session attendance in advance and based on agency priorities.

Connecticut DOT – Brad Overturf

- Think about a suite of webinars on research results.
- Consider post-project implementation meetings three months after the close of the project.
- Consider producing an annual implementation report.
- Expand on JHRAC's responsibility.
- Recognize that project panel members see their involvement as a challenge scheduling-wise. Timing is critical to project input. Adjust for when staff are experiencing peak workloads.
- Provide a guide for subject matter experts regarding their role in guiding the research project.
- Consider primary (experienced/mentor) and secondary (younger/learner) roles on project panels.
- Keep in mind that technical expertise is not critical for all aspects of research administration.
- Georgia's 90-day wrap-up meeting—see where the project is at 90 days ahead of completion and what needs to be done to wrap it up.
- Formalize guidance for SMEs or TAG.
- Look more closely at product evaluation – what more can we get out of it.
- Consider piggy backing on existing projects – start with a shorter project.

- Hold a meeting with staff and managers after announcing the NCHRP ballot to explain the process and emphasize the importance of participation.

- Add information about research (including national participation) to new employee orientation.

- Coordinate post-TRB meeting documentation and reporting on takeaways for the agency.

- Attend the TRB workshop on STICs on Sunday, January 8.

- Revisit the STIC in Connecticut and see if there should be a role for the research office.

Georgia DOT – David Jared

- Permanently display Sweet 16 awards and other recognitions at GDOT.

- Explore stronger partnerships with USGS and others.

- Communication *must* be part of the research process. Survey stakeholders about the R&D program.

- Stress practice-ready papers to academic partners.

- Allow ample time for research need statement review before fall TAG meeting.

- Look into using the "ROC" (research on call) process more extensively.

- Include a post-project briefing in the project requirements.

- Explore simplifying quarterly progress reports.

- Review and edit, if needed, guidelines for technical/implementation managers.

- Invite more industry participation in core projects, as possible.

- Explore opportunities to improve outreach to districts.

- Invite myself to more meetings to better understand agency needs and educate others about research services. (Nevada)

- Think about when to schedule research projects so they infringe less on DOT staff during their peak work season.

- Strike a balance between larger and smaller TACs.

- Use research to grow the staff—include younger staff on TACs to get them experience and exposure.

- Involve LTAP earlier in the research process, inviting their research ideas, including them on the TAG agenda and involving them in proposals as applicable.

- Explore FHWA's seminar room (available for use for free by LTAP).

- Mention LTAP in the research manual.

- Explore adding a technical person to LTAP staff (using Highway Safety Improvement Funds).

- Make TRB 101 at GDOT more strategic—who will attend which session and why those sessions matter to the agency or to an area of the DOT. Discuss how takeaways will be captured and shared.

- Communicate more effectively with GDOT's senior management about the NCHRP ballot process.

- Use an app/myTRB to determine topical "tracks" that would justify attendance at the TRB Annual Meeting.

- Update AASHTO rosters to better understand GDOT participation.

Nevada DOT – Ken Chambers

- Ask the PIs to deliver posters, fact sheets and brown bag presentations on their research results.

- Provide better feedback on final reports.

- Consider using competitive solicitations after moving away from master agreements with universities. (Georgia)

- Charge indirect costs only on salaries. (Ohio)

- Consider changing the title of the project champion to technical and implementation manager as a way to change the perception and understanding of the champion's role. (Georgia)

- Send NVDOT's document called Champion's Top Ten Questions (FAQs) to New Hampshire for review.

- Provide updates to the project selection committees/groups at six months, 12 months and at the completion of the project.

- Provide updates to leadership (the groups that selected the projects).

- Discuss industry involvement in research process (problem statements, selection, panels).

- Leverage LTAP more formally in research proposals or less formally through the research office.

- Develop technical briefs and distribute to state and local agencies.

- Talk to our product evaluation coordinator about working with locals on field tests.

- HSAP and CMAC funds to support technical assistance through LTAP.

- Let LTAP staff know about FHWA's seminar room service.

- Review FHWA's SPR-101 web-based training.

- Add TRB/NCHRP deadlines to the central agency calendar.

- Include an introduction to NCHRP in new employee orientation (covering myTRB, the NCHPR ballot, the agency's investment in NCHRP, the opportunity to guide national efforts, etc.)

- Request an opportunity to introduce the research program (including TRB and NCHRP) to rotating engineers in the agency.

- Look for upcoming webinars about getting the most out of TRB.

- Attend the TRB workshop on STICs on Sunday, January 8.

Ohio DOT – Michelle Lucas

- Post project implementation meetings. (Georgia)

- Consider including younger people in the research committees.

- Consider incorporating the role of an implementation manager in the research office.

- Consider requiring that the TAC provide an implementation update to OSCOR after a project is completed at six months and one year after project completion.

- Georgia's 90-day wrap-up—see where the project is at 90 days ahead of completion and what needs to be done to wrap it up.

- Consider using consultants as administrative project managers.

- Try producing short quarterly research program updates (like NHDOT's two-page quarterly Research Post publication). Combine this with a longer annual newsletter that incorporates all research activities throughout the year.

- Brown bag sessions to informally talk about the program and share research results.

- Consider the reframing of the champion role to be a technical and implementation manager. (Georgia)

- Send ORIL project results to the LTAP for inclusion in their newsletter.

- Investigate FHWA's seminar room for LTAPs.

- Consider including LTAP at the beginning of the project (RFP process) to help plan for technology transfer or implementation.

- Consider including LTAP or ORIL members on the project TACs.

- Have research project fact sheets printed on notepads and send to locals for passing out.

- Include a section on research services and TRB in new employee orientation.

- Explore ways to encourage staff to think on a national level when it comes to getting involved in research.

- Consider a pre-TRB meeting with staff to coordinate which sessions they'll attend and how they'll document their takeaways.

New Hampshire DOT Research Peer Exchange

Increasing the Impact: Program Management Strategies and Opportunities

AGENDA

September 27 to 29, 2016
New Hampshire Department of Transportation
7 Hazen Drive, Concord, NH

Tuesday, September 27

7:45 a.m.	*Meet in hotel lobby for ride to NHDOT*
7:55 to 8:45 a.m.	*Breakfast and networking*
9:00 to 9:30 a.m.	**Welcome by NHDOT** **Introductions and Agenda Overview**
9:30 to 10:00 a.m.	**NHDOT Research Program Overview and Peer Exchange Goals** • Ann Scholz, NHDOT Research
10:00 to 10:30 a.m.	**Visiting State Presentations – Program Overviews** • David Jared, Georgia DOT
10:30 to 10:45 a.m.	*Break*
10:45 a.m. to 12:15 p.m.	**Visiting State Presentations – Program Overviews (continued)** • Michelle Lucas, Ohio DOT • Ken Chambers, Nevada DOT • Brad Overturf, Connecticut DOT
12:15 to 1:15 p.m.	*Lunch on site*
1:15 to 2:45 p.m.	**Topic #1: Increasing Awareness and Use of Research Services and Studies** • NHDOT topic introduction (Beth Klemann) • USGS presentation on disseminating research results • University of New Hampshire presentation on implementation • Roundtable Discussion
2:45 to 3:00 p.m.	*Break*

3:00 to 4:30 p.m.	**Topic #2: Aligning Program Activities with Department Goals**
	• NHDOT topic introduction
	    o Ann Scholz, NHDOT Research
	    o NHDOT Administrators on NHDOT Research Advisory Council
	• Roundtable discussion

4:30 to 5:00 p.m.	**Wrap up and Takeaways**
5:00 to 5:10 p.m.	*Travel back to hotel*
6:00 p.m.	*Meet in hotel lobby to walk to dinner at Angelina's*

Wednesday, September 28

7:30 a.m.	*Meet in hotel lobby for ride to NHDOT*
7:40 to 8:20 a.m.	*Breakfast and networking*
8:30 to 8:40 a.m.	**Recap of Tuesday and Agenda Overview**
8:40 to 10:30 a.m.	**Topic #3: Coordination and Collaboration with Internal Stakeholders** • NHDOT topic introduction (Beth Klemann) • Roundtable discussion
10:30 to 10:45 a.m.	*Break*
10:45 a.m. to 12:15 p.m.	**Topic #4: Leveraging Local Partnerships for Research and Implementation** • Topic introduction • University of Connecticut LTAP presentation (Donna Shea) • Visiting state informal presentations on collaboration with LTAPs • NHDOT informal presentation on collaboration with LTAPs
12:15 to 1:15 p.m.	*Lunch on site*
1:15 to 2:00 p.m.	**Topic #4: Leveraging Local Partnerships for Research and Implementation (continued)** • Visiting state informal presentations on collaboration with LTAPs (continued if needed) • Roundtable discussion
2:00 to 2:45 p.m.	**Wrap up and Takeaways**
3:00 p.m.	*Depart for optional group excursion:* • *Plan A (weather dependent): Cannon Mountain Aerial Tramway/dinner* • *Plan B: Portsmouth informal walking tour and dinner*

Thursday, September 29

7:30 a.m.	*Meet in hotel lobby for ride to NHDOT*
7:40 to 8:20 a.m.	*Breakfast and networking*
8:30 to 8:40 a.m.	**Recap of Wednesday and Agenda Overview**
8:40 to 10:30 a.m.	**Topic #5: Leveraging Regional and National Partnerships** • NHDOT topic introduction (Ann Scholz and Beth Klemann) • Roundtable discussion
10:30 to 10:45 a.m.	*Break*
10:45 to 11:30 a.m.	**Final Takeaways and Wrap Up**
11:30 a.m.	*Box lunches/depart for airport*

New Hampshire DOT Research Peer Exchange

Increasing the Impact: Program Management Strategies and Opportunities

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Peer Exchange Topics and Discussion Questions

Topic #1: Increasing Awareness and Use of Research Services and Studies

- Educating internal stakeholders about services and opportunities that exist.

- Boosting use of the program's services, including access to research resources outside of NHDOT.

- Encouraging submission of problem statements from all Divisions of the Department, especially outside of Materials and Research Division.

- Encouraging more NHDOT involvement in TRB.

- Planning for implementation—the use of the research results to achieve agency goals.

Discussion Questions

1. What outreach do you conduct to raise awareness of your services within your agency?

2. Have you conducted surveys or otherwise gathered information regarding awareness and opinion of your program?

3. How do your track and document use of research services?

4. How do you make sure new hires in the agency are aware of your program and the services you offer?

5. What role, if any, does your research office play in educating agency staff about TRB and AASHTO?

6. How and when do you solicit research problem statements? What do you do to encourage the submission of research ideas from across the department? What about from districts/regions (outside of headquarters)?

7. Do you hold stakeholder workshops or outreach events (internal or external) to encourage use of your services or involvement in the research process?

8. Do you communicate research project outcomes and impacts to raise the visibility of your program? If so, how?

9. Do you consider the feasibility of implementing the research results when deciding which projects to fund?

10. When in your research process do you start planning for implementation? Do you require implementation plans from the investigator?

11. What deliverables beyond the final report do you require/encourage/develop to support implementation of the results?

Topic #2: Aligning Program Activities with Department Goals

- Developing research projects that address high-priority information needs.

- Creating a balanced, effective, and responsive portfolio of services – including traditional research, quick turnaround efforts, national involvement, technology transfer, etc.

- Managing the research life cycle to ensure responsiveness to needs and timeliness of results.

- Ensuring leadership and support for research development and implementation among executives and managers.

Discussion Questions

1. What factors/structures/documents guide your process for identifying and prioritizing research needs?

2. Who submits research ideas for funding consideration? Staff? Managers? Universities? Industry?

3. Who prioritizes and ultimately selects which research topics get funded?

4. Does your agency have a strategic plan? If so, does your research program consider it when developing and funding research?

5. Do you fund/conduct research across the functional areas of a DOT? Have you taken deliberate steps to broaden the topics that you address?

6. How do you know you're funding the right/best projects?

7. What, if any, services do you offer beyond the traditional research project?

8. Do you set aside implementation funds specifically for follow-up projects or as a portion of a research project budget?

9. What are the biggest challenges you face in making your research program relevant within your agency?

10. Does your program use performance measures to track and document impact?

Topic #3: Coordination and Collaboration with Internal Stakeholders

- Maintaining strong staff involvement and leadership on project oversight panels.

- Maintaining strong staff involvement and leadership with implementing research results.

- Strengthening relationships with executives.

Discussion Questions

1. What role(s) do research program staff play in guiding/managing/leading research projects?

2. How do you recruit staff in the department to serve on project panels?

3. Is serving on a project panel considered a formal part of staff job descriptions?

4. Do you have formal or informal guidance/procedures/expectations/training for project panels/champions?

5. How do you define "project champion"? What is their role? (Identify research need? Facilitate partnerships between DOT and external researchers? Lead the research project panel? Lead implementation of the research results? Other?)

6. How do you get management support for staff involvement in research projects?

7. How do you identify/assign project champions and retain their involvement through implementation?

8. Who is responsible for implementing research results within NHDOT?

9. How do you involve your executives in identifying and prioritizing research needs or in championing use of the results?

Topic #4: Leveraging Local Partnerships for Research and Implementation

- Effectively partnering with universities and LTAPs to deliver research, training and other resources.

- Disseminating research at the municipal level.

- Collaborating with industry.

Discussion Questions

1. Do you involve external stakeholders in your research development process? If so, how?

2. In what ways do you collaborate with your state universities? On research projects only? On training for staff? On outreach to municipal agencies? Other?

3. Do you have an LTAP program in your state? Where is it housed and operated?

4. How does your research program collaborate with your state's LTAP? Do you work together to disseminate state research results? Does your LTAP provide training to DOT staff? Does your LTAP assist with research implementation at the local level?

5. In what ways do you collaborate with industry? On research projects? On the development of new specifications? Identifying research needs in the field? Other?

Topic #5: Leveraging Regional and National Partnerships

- Regional and national collaboration: pooled fund projects or other initiatives.

- Collaborating on FHWA and AASHTO initiatives, such as the State Transportation Innovation Councils.

- Educating staff on participating in pooled funds.

- Preparing for and leveraging TRB site visits.

Discussion Questions

1. Do you distribute the findings of other state or national research within your agency?

2. Do you distribute your agency's research results to other states?

3. Does your agency have a STIC? Is your research office involved with it?

4. What role, if any, does your research office play in coordinating and documenting your agency's involvement in TRB and AASHTO?

5. What role does your research office play in coordinating the ranking of NCHRP problem statements? How aggressively do you advocate for problem statements developed by AASHTO committees that your agency staff serve on?

6. How involved is your agency in the pooled fund program? How do pooled fund projects complement your state projects? Do you have a formal or informal process for soliciting funding requests for pooled funds?

7. What is your experience with leading pooled fund projects?

8. How do you determine goals for the TRB site visits?

9. How have you involved agency staff in the TRB site visits