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NORTHEAST TRANSPORTATION RESEARCH CONSORTIUM

New York State DOT and Vermont AOT 2026 Research Peer Exchange

FINAL REPORT

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New York State Department of Transportation
Peer Exchange Co-Host Agency

and

Vermont Agency of Transportation
Peer Exchange Co-Host Agency
Lead Agency, Northeast Transportation Research Consortium (NTRC)
Transportation Pooled Fund Study TPF-5(549)

Submitted by:

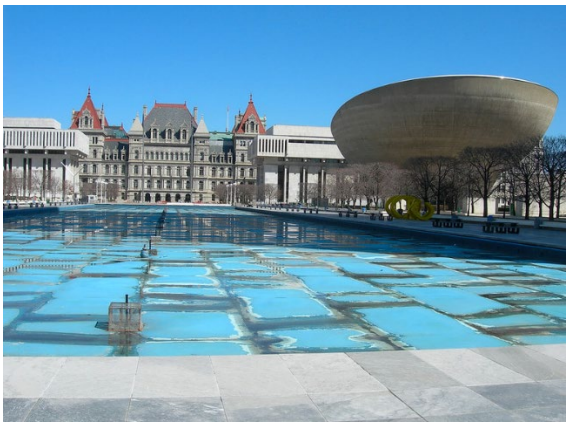
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September 2026



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16. Abstract

New York State Department of Transportation and Vermont Agency of Transportation, in collaboration with the Northeast Transportation Research Consortium (NTRC), hosted a peer exchange on June 9, 10, and 11, 2026, in Albany, New York. The publication of this report fulfills the agencies' obligations to conduct a periodic peer exchange as part of the federal State Planning & Research program. The event focused on three main topics: internal sharing of research from other states and the National Cooperative Highway Research Program, research workforce development, and setting up external research contracts. Additionally, attendees engaged in roundtable discussions on how research failure is perceived and how to implement guidelines for research that uses artificial intelligence. Participants of the two-and-a-half-day event included staff from NTRC members (the states Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Vermont). Based on presentations and group discussions, participants shared what they saw as the strengths, challenges, and opportunities for the host agencies, and takeaways for their home agencies.

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The information contained in this report was compiled for the use of the Vermont Agency of Transportation and New York Department of Transportation and all State Departments of Transportation. Conclusions and recommendations contained herein are based upon the peer exchange discussions and the expertise of the participants and are not necessarily to be construed as Agency policy. This report does not constitute a standard, specification, or regulation. The Vermont Agency of Transportation and New York Department of Transportation assume no liability for its contents or the use thereof.

This material is based upon work supported by the Federal Highway Administration under the TPF-5 (549) Pooled Fund Study. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Federal Highway Administration.

Artificial Intelligence (AI) was not used in the report, for any image, or during the conduct of the project.

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PEER EXCHANGE AT-A-GLANCE

Host Agencies: New York State Department of Transportation (NYSDOT) and Vermont Agency of Transportation (Vermont AOT).

Participating Agencies: Connecticut Department of Transportation (CTDOT), Delaware Department of Transportation (DelDOT), Maine Department of Transportation (MaineDOT), Maryland Department of Transportation, State Highway Administration (MDOT SHA), Massachusetts Department of Transportation (MassDOT), New Jersey Department of Transportation (NJDOT) and Pennsylvania Department of Transportation (PennDOT).

PEER EXCHANGE TOPICS

Internal Sharing of Research from Other States and NCHRP: Recognizing the value of research sponsored by state DOTs and the National Cooperative Highway Research Program (NCHRP), peer exchange participants shared how external research is identified and shared within their agencies. Discussions included when and how NCHRP or other state research is adapted and implemented.

Research Workforce Development: Peer exchange participants discussed strategies and tools for research staff development and highlighted interdisciplinary skills needed to address complex research projects and activities. Discussions included career paths for research staff and civil service and other human-resources challenges.

Setting Up External Research Contracts: Participants addressed several issues relating to the research contracting process, including contract mechanisms and provisions and researcher relationships. Discussions highlighted effective and efficient contracting tools, as well as challenges with procurement processes, staff capacity for contracting, and accessing out-of-state or specialized researchers.

ROUNDTABLE DISCUSSIONS

How Research Failure is Perceived and What to Do with These Outcomes: Participants discussed what their agencies consider to be "failed" research, how it varies by agency and project type, and how agencies communicate and move forward after a research project doesn't meet its original objectives.

How to Implement Artificial Intelligence (AI) Guidelines for Doing Research: Attendees highlighted the need for AI guidelines and data governance and discussed the need for AI literacy, research program uses of AI, and managing external researchers' use of AI tools.

TOP FINDINGS AND TAKEAWAYS

Internal Sharing of Research from Other States and NCHRP

- Create broad awareness among agency staff of national research and potential implementation opportunities with **quarterly emails or "Information Announcements" with relevant NCHRP and other external research** and accompanying context.
- Widely share project information and spark implementation ideas with **Tech Talks or Lunch and Learns with multi-state attendance** and include NCHRP panel members or pooled fund champions.
- Consider **building or improving relationships between research programs and other agency program areas**.

- Promote subject matter expert (SME) and project champion accountability for external research with **justification and commitment forms** approved by a supervisor or director.
- **Support SMEs and project champions** with a range of strategies:
    - Co-project champions or advisory panels ensure continuity if an SME leaves a project.
    - Travel approval forms and other tools ease the burden of administrative restrictions and processes.
    - SMEs and project champions can be recognized through awards and titles like "technical advisors."
- Gather **yearly reporting on pooled fund or NCHRP studies and ongoing justification for participation** through surveys, in-person meetings with SMEs, or other mechanisms.
- Illustrate research value, limitations, and next steps with **close-out documentation for external studies. Follow up with project champions** at regular intervals such as six, 12, and 18 months, and note contexts that may change the usefulness of the research.
- Through **a potential pooled fund project, develop and implement tools for states to monitor external research**.
- **Survey states to learn how they track pooled fund or other external research projects and implementation**, as well as the value that SMEs, NCHRP panel members, and others place on research results and implementation, including statuses of projects with highly rated proposals.

Research Workforce Development

- **Consider strengths of both engineers and planners** in research programs for interdisciplinary needs in project management, in-house research, interfacing with SMEs, and administrative tasks.
- **Expose staff to a variety of agency functions and concepts** through training mechanisms.
    - Offer **cross-training** with research or other programs to explore different topics and roles.
    - Provide **onboarding** to new employees in research programs.
    - Create **opportunities for newer agency staff** to be involved in research projects.
- **Explore strategies for knowledge management, mentorship, and succession planning** to support continuity, such as Maryland DOT SHA's Knowledge Book of pilot projects.
- **Offer continuing education credits or professional development hours** as incentives, including for research showcases, tech talks, and other presentations.
- **Recognize and reward engagement in research** projects and functions across the agency.
- **Strengthen relationships and collaboration** between research and other agency programs.

Setting Up External Research Contracts

- Consider adding **AI language to research contract provisions governing reports** and as a disclaimer on research report templates. Consider **shared AI and Section 508 compliance templates**.
- Promote **close coordination among research, technical, legal, and procurement staff** early in project development.
- **Consider streamlining the request for proposal (RFP) process with a qualified vendor list** to increase competition while maintaining reasonable timeframes.
- **Incorporate implementation planning and technology transfer expectations** into contracts.

- **Track what principal investigators are working on,** including in other states, before engaging them to ensure they have the capacity for new research projects.
- Explore what **research projects other states with sufficient funding are planning** or implementing for potential collaboration.
- Clarify the research program's **research process with standard operating procedures** for program consistency.

How Research Failure is Perceived and What to Do with These Outcomes

- There is usually **something to learn from projects, even when they don't meet their original objectives**. Negative findings, for example, can prevent future costly mistakes.
- How the **story of the research project is told will impact how the results are perceived**. Understanding not every project is implementable may require a cultural change.
    - Communicate with the project champion throughout the project to **build the story**.
    - **Consider the audience** (SMEs, agency leadership, or the public) when describing results.
    - **Reframe a research failure into impacts** by asking "how do we use these outcomes?"
- **Document results, lessons learned, and considerations** upon a project's conclusion and follow up with project champions at regular intervals to ask what needs to change to consider further outreach or implementation.
- To **support research project success**:
    - Discuss implementation from the beginning and require an implementation plan.
    - Set clear expectations and have well-designed objectives at the project's outset.
    - Recruit multiple project panel members to account for attrition or uninterest.
    - Motivate champions through recognition like research showcases, awards, and tech talks.
    - Conduct regular follow-ups with investigators to ensure that research projects stay on track.

How to Implement AI Guidelines for Doing Research

- Research program and other agency staff need a **common understanding of the benefits and risks of using AI in the research process**.
    - The State DOT Council for Strategic AI Adoption pooled fund brings states together to decide how to move forward with AI in research programs and assist with agency communication.
    - Research programs may be using or exploring using AI tools such as **large language models** for regular staff tasks. AI tools like **machine learning models** may be a part of research. Participants discussed the need to **treat these two use-case types separately**.
    - **Training can be targeted** to staff categories (administrative, technical, leadership, etc.)
- **AI has the capacity to change how research staff spend time**, allowing for expanded analysis, collaboration, and policy-oriented work. Potential uses of AI in research programs include conducting literature reviews, analyzing research proposals or project risks, developing contracts, managing projects, summarizing reports, drafting emails and memos, and taking notes.
- Participants discussed the **pros and cons of enforcing limits on generative AI in research**. Specific ideas included requiring researchers to disclose use of AI, and adding standard language added to final reports prohibiting using the report for training AI.

MEETING INTRODUCTION AND OVERVIEW

NYSDOT and Vermont AOT, in collaboration with the Northeast Transportation Research Consortium (NTRC) hosted a peer exchange on June 9, 10, and 11, 2026 in Albany, New York. The publication of this report fulfills the agencies' obligations to conduct a periodic peer exchange as part of the federal State Planning & Research program. The peer exchange was funded by the NTRC pooled fund (TPF-5(549).

The peer exchange focused on three topics:

- Internal Sharing of Research from Other States and NCHRP
- Research Workforce Development
- Setting up External Research Contracts

For each topic, participants shared their own agency's experiences and noted the host agencies' strengths and opportunities for enhancement.

Peer exchange participants also engaged in roundtable discussions on two additional topics:

- How Research Failure is Perceived and What to Do with These Outcomes
- How to Implement AI Guidelines for Doing Research

Finally, several peer exchange participants shared projects of interest in a brief show-and-tell session.

PEER EXCHANGE PARTICIPANTS

The peer exchange included representatives from across the northeast region of the United States to represent a variety of interests and perspectives.

The following individuals participated in one or more of the sessions.

Host State Agencies

New York State Department of Transportation

- Lisa Cataldo, State Planning & Research Program Administrator
- Sue Rahn, Librarian
- Salma Sultana, Assistant Engineer, Transportation Research
- Thomas Kane, Materials Bureau Director
- Kimberly Lorenz, Statewide Planning Bureau Director
- Brendan Rock, Materials Bureau Assistant Director
- Liz Rodriguez-Sowek, Associate Administrative Analyst

Vermont Agency of Transportation

- Matt DiGiovanni, Materials and Research Section Manager
- Ashlie Mercado, Research Engineer
- Emily Parkany, Research Manager
- Aaron Schwartz, Pavement Materials and Research Engineer
- Mladen Gagulic, Construction and Materials Bureau Director
- Chad Greenwood, State Maintenance Engineer

Participating NTRC Member States

Connecticut Department of Transportation
- Mauricio Garcia-Theran, Research Manager
- John (Tom) Russell, Senior Planner

Delaware Department of Transportation
- Austin Gray, Planning Assistant Director

Maine Department of Transportation
- Ulrich Amoussou-Guenou, Transportation Engineer
- Dawn Bickford, Innovation Coordinator
- Colby Fortier-Brown, Director, Research and Innovation

Maryland Department of Transportation
- Sharon Hawkins, Office of Policy and Research Division Chief
- Saskia Herrera Riggs, Research Project Manager
- Hua Xiang, Office of Policy and Research Deputy Director

Massachusetts Department of Transportation
- Anil Gurcan, Transportation Program Planner
- Hao Yin, Research Program Manager
- Michael Flannery, Transportation Planner
- Austin Sanders, Transportation Planner

New Jersey Department of Transportation
- Pragna Shah, Manager, Bureau of Research and Innovation
- Giri Venkiteela, Research Scientist

Pennsylvania Department of Transportation
- Patrick McVeigh, Transportation Planning Manager
- Evan Zeiders, Transportation Planning Specialist

Federal Highway Administration

- Benjamin Fischer, New York Division
- Paul Maloney, New Hampshire and Vermont Divisions
- Connie Tang, Office of Research, Development, and Technology

Staff from consulting firm CTC & Associates coordinated, facilitated, and documented the peer exchange.

FORMAT

Participants attended the peer exchange in Albany, New York (Figure 1). The meeting agenda for the two-and-a-half-day event is included as Appendix A to this report.



Figure 1. In-person Meeting Participants

From left to right: Hua Xiang, Mauricio Garcia-Theran, Emily Parkany, Patrick McVeigh, Saskia Herrera-Riggs, Evan Zeiders, Austin Gray, Liz Rodriguez-Sowek, Lisa Cataldo, Salma Sultana, Ashlie Mercado, Benjamin Fischer, Pragna Shah, Giri Venkiteela, Tom Russell, Anil Gurcan and Hao Yin.

TOPIC DISCUSSIONS

Participants discussed research-related topics of specific interest to the host agencies. Each session included prepared presentations from the hosts, as well as additional presentations from participating states.

Topic 1: Internal Sharing of Research from Other States and NCHRP

Topic 2: Research Workforce Development

Topic 3: Setting Up External Research Contracts

NOTABLE QUOTES AND CONCEPTS

Throughout the peer exchange, participants from host states shared several memorable quotes, which are noted in orange italicized text.

PEER EXCHANGE TOPIC 1—INTERNAL SHARING OF RESEARCH FROM OTHER STATES AND THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP)

OVERVIEW

On the first day of the peer exchange, participants discussed how their agencies interact with research from other state transportation agencies and the NCHRP, including how they learn of external research and how they share it with SMEs and other agency staff. Attendees also discussed the lifecycle of incorporating external research and benefits, challenges, and strategies to adapt research from other states and the NCHRP.

PRE-MEETING PARTICIPANT SURVEY

Prior to the peer exchange meeting, participants were asked to complete a survey related to each of the three focus topics. The responses to Topic 1 are included as Appendix B.

PRESENTATIONS AND MATERIALS

The peer exchange host states presented overviews of how they share and use external research within their agencies, which are included as the following appendices:

Appendix C. New York State DOT – Learn and Share Research, Salma Sultana, Lisa Cataldo and Sue Rahn, NYSDOT

Appendix D. Vermont AOT – Use of Other States' and NCHRP Research, Emily Parkany, Vermont AOT

DISCUSSIONS AND FINDINGS

Attendees discussed highlights from co-host state presentations on using other states' and national research such as NCHRP including strategies and challenges of sharing external research within the agencies. Discussions also included benefits and challenges with tracking SME participation in pooled funds and NCHRP panels, and ways to maximize investments in external research.

Below are the best practices, challenges, and strategies presented by the host states. **TOP IDEAS** are those that were highlighted by several participants in group discussions and in report-out forms that participants completed and submitted after the session. Related highlights from NYSDOT and Vermont AOT are featured in Strengths and Opportunities for Host States.

Practices, Challenges, and Strategies

- New York State DOT
    - The research program learns about external research through several sources:

        The Transportation Research Board's e-newsletter, *TRB Weekly*

Literature reviews completed by staff or agency librarian

Professional networks such as AASHTO committees

Conferences and peer exchanges

- Research staff and the agency librarian collect and compile NCHRP reports and other research into a quarterly email for agency-wide distribution. The research program is considering strategies to provide more context for the reports shared, including why the research matters, potential applications within NYSDOT, and recommended next steps.
- Sharing external research throughout NYSDOT provides a starting point for project scopes and budgets, or NYSDOT-specific applications. Outside research also supports development of design standards, updating construction standards, and improving asset management and safety practices.
- Challenges in adapting external research include:

  Funding for piloting new practices and full-scale implementation.

  State-to-state differences such as climate, population and traffic, and regulatory frameworks.
- The research program employs strategies to prioritize high-impact research, leverage existing projects to test concepts, and seeks alternative funding sources.
- NYSDOT staff participate in external research through 26 pooled funds. Travel approval can be a challenge so staff often attend meetings virtually.

- Vermont AOT
  - The Vermont AOT research program is interested in adapting other states' research and maximizing resources invested in NCHRP and pooled fund research. A quick survey of selected AOT staff found that 65% and 75% of respondents read NCHRP and other states' research reports, respectively, and close to 30% have adopted external research.
  - To explore research adaptability in Vermont, the research program hosts quarterly webinars by AASHTO region with presentations by state DOT champions. Vermont AOT offers professional development hours for the webinars.
  - External research and innovations are widely shared throughout Vermont AOT through:

    Lunch and Learn sessions

    Outreach from pooled funds such as No Boundaries, Clear Roads, and research from other states

    AASHTO high value research

    Vermont AOT Research and Innovation Symposium (see Show-and-Tell Session)

    Adapting other state research to local conditions, including Virginia DOT's stormwater mitigating grasses research, demonstrating how states can adapt existing core scopes rather than starting from scratch.

- Tracking and maximizing NCHRP and pooled fund research involves challenges such as agency NCHRP panel members and pooled fund champions not communicating updates and project statuses to the research program.

  To improve project tracking, the research program uses the following language to ask Activity Managers/SMEs to provide annual project status updates:

  > *Research is working on our Federal Work Program narrative, and we need your input on the attached Pooled Fund. To get this activity approved in the Research Work Program we need to explain how we benefited and what was accomplished. Please update the highlighted sections for FFY25 Accomplishments and what we expect to happen next year (the FFY26 Work Program). We may need to cut some of these commitments, so we need your input to better understand what we're getting out of our participation with this Pooled Fund*.

  - A success story is Vermont AOT's adaptation of a Minnesota DOT's (MnDOT's) Hydraulic Inspection Vehicle Explore (HIVE) project in which Vermont created a tank out of the original car design for culvert inspection (Figure 2).



Figure 2. Vermont AOT's Hydraulic Inspection Vehicle Explorer for Culvert Inspections

- Pennsylvania DOT
  - Ask agency staff who voted for NCHRP projects if they want to do anything with projects they rated a 4 or 5. Remind voters why they voted for specific projects and ask if the projects would be applicable to the state and/or if it would be worthwhile for the agency to use the results.

TOP IDEAS:

- *Sharing Strategies*
    - Create broad awareness among agency staff of national research and potential implementation opportunities with **quarterly emails or "Information Announcements" with relevant NCHRP and other external research** and accompanying context.
    - Widely share project information and spark implementation ideas with **Tech Talks or Lunch and Learns with multi-state attendance** and include NCHRP panel members or pooled fund champions.
- *Sustaining Engaged DOT Staff*
    - Consider **building or improving relationships between research programs and other agency program areas**.
    - **Establish succession thresholds for research panels.** Require agency SMEs who are within three years of retirement to onboard a co-champion or team lead to shadow panels and encourage the transfer of institutional knowledge.
    - Promote SME and project champion accountability for external research with **justification and commitment forms** approved by a supervisor or director.
    - **Support SMEs and project champions** with strategies including:

        Ensuring continuity with co-project champions or technical advisory panels in case lead SME leaves.

        Incorporating tools, such as travel approval forms, to help with burdens of administrative restrictions and processes.

        Recognizing efforts of SMEs and project champions through awards or titles such as "technical advisors."
- *Tracking Agency Participation in National Efforts*
    - Gather **yearly reporting on pooled fund or NCHRP studies and ongoing justification for participation** through surveys, in-person meetings with SMEs, or other mechanisms.
    - Illustrate research value, limitations, and next steps with **close-out documentation for external studies. Following up with project champions** at regular intervals such as six, 12, and 18 months, and contexts that may change the usefulness of the research.
    - Adopt a three-stage pooled fund **accountability cycle** modeled on practices from NYSDOT: (1) an upfront Justification/Application Form approved by leadership, (2) an annual renewal survey assessing ROI for continued funding, and (3) a formal closeout documentation form.
    - Consider **a pooled fund to develop and implement tools for states to monitor external research, or survey states to learn**:

        How states track pooled fund or other external research projects and implementation.

The value that SMEs, NCHRP panel members, and others place on research results and implementation, including statuses of projects with highly rated proposals.

PEER EXCHANGE TOPIC 2—RESEARCH WORKFORCE DEVELOPMENT

OVERVIEW

The second topic of the peer exchange focused on workforce development of research staff. Subtopics included desired workforce capacities and tools to enhance and support the research workforce. Participants also highlighted interdisciplinary skills needed to address complex research projects and activities and career paths for research staff.

PRE-MEETING PARTICIPANT SURVEY

Prior to the peer exchange meeting, participants were asked to complete a survey related to each of the three focus topics. The responses to Topic 2 are included as Appendix E.

PRESENTATIONS

Host state Vermont AOT and two participating agencies—MDOT SHA and NJDOT--presented research workforce development highlights in their agencies. Presentations are reproduced as appendices to this report.

> Appendix F. Maryland DOT SHA – Research Workforce Development, Saskia Herrera-Riggs, MDOT SHA
>
> Appendix G. New Jersey DOT – Research Workforce Development, Pragna Shah and Giri Venkiteela, NJDOT
>
> Appendix H. Vermont AOT – Research Workforce Development, Ashlie Mercado, Vermont AOT

DISCUSSION AND FINDINGS

Attendees discussed common challenges with developing and maintaining the research workforce and potential solutions applicable across participating agencies.

Below are the best practices, challenges, and strategies identified by presenting agencies. **TOP IDEAS** are those that were highlighted by several participants in group discussions and in report-out forms that participants completed and submitted after the session. Related highlights from NYSDOT and Vermont AOT are featured in Strengths and Opportunities for Host States.

Practices, Challenges, and Strategies

- Maryland DOT SHA
    - Recent SHA workforce development projects with applicability to the research workforce include developing a system to emphasize transparent career pathways within MDOT SHA and an exploration into the impacts of technology on the future workforce.

- Agency workforce development strategies include technical, supervisory, managerial, and cross-functional career tracks identified by SHA Office of Policy and Research (OPR). OPR encourages training, peer exchanges, conference participation, and partnerships for staff and program development.
- MDOT SHA's Knowledge Management efforts include:

  Succession planning

  Documentation of roles and responsibilities

  Mentoring and shadowing

  Additional other one-on-one support
- Hiring procedures and bottlenecks, legacy job classifications, and organizational silos present challenges for SHA-OPR, in addition to the growing need for digital skills.
- OPR considers AI as a "staff amplifier" and is exploring using it for repetitive tasks like literature reviews, while keeping human review and technical judgment. OPR's goal is not fewer staff, but rather to allow staff to focus more on analysis, relationships, and strategy.

- New Jersey DOT
  - The research unit is structured to overcome perception of a siloed program and highlight staff as technical experts. In addition to an Innovation Program and LTAP, a two-tiered Technology Transfer and Implementation Program focuses on internal stakeholder education and information dissemination, both within and outside NJDOT.
  - Examples of the research unit's workforce development efforts include:

    Guidance to project managers such as building relationships with SMEs, integrating support staff early and creating communication plans and documentation (see Figure 3).

    Training staff, involving senior staff and SMEs, for complex research projects; site visits; and communication plans.

    Developing interdisciplinary skills through cross-training and team projects, workshops, and collaboration tools to manage and share knowledge.
  - Senior management advocates help overcome the program's hiring limitations such as civil service restraints, long hiring timelines, outdated job classification systems, and limited advancement opportunities.

    Mobility among research unit positions creates multiple career path options in program management, SME positions or administrative/policy roles within the agency.

    A hybrid approach evaluates research staff performance on broader contributions such as TRB and AASHTO committees, in addition to civil service performance criteria.

- The unit seeks to strengthen workforce skills such as project management and cross-functional collaboration techniques and builds capacity through leadership programs, mentorship initiatives, and succession planning.

- The research unit sees AI as fundamentally changing what researchers do day-to-day, from data collection and processing to analysis, creativity, and innovation, requiring the workforce to acquire new skills and shift mindsets. AI can also support literature reviews, data analysis and modeling, experiment design and communications. To prepare, the research unit will adopt policies and protocols and workforce training programs.



Figure 3. New Jersey DOT's Guidance to Research Project Managers

- Vermont AOT

  - Vermont AOT's research program accomplishes many things with a small team of staff with complimentary skills. Nimble and adaptable, the program receives support from contract administration, business support, the Agency of Digital Services, and others.

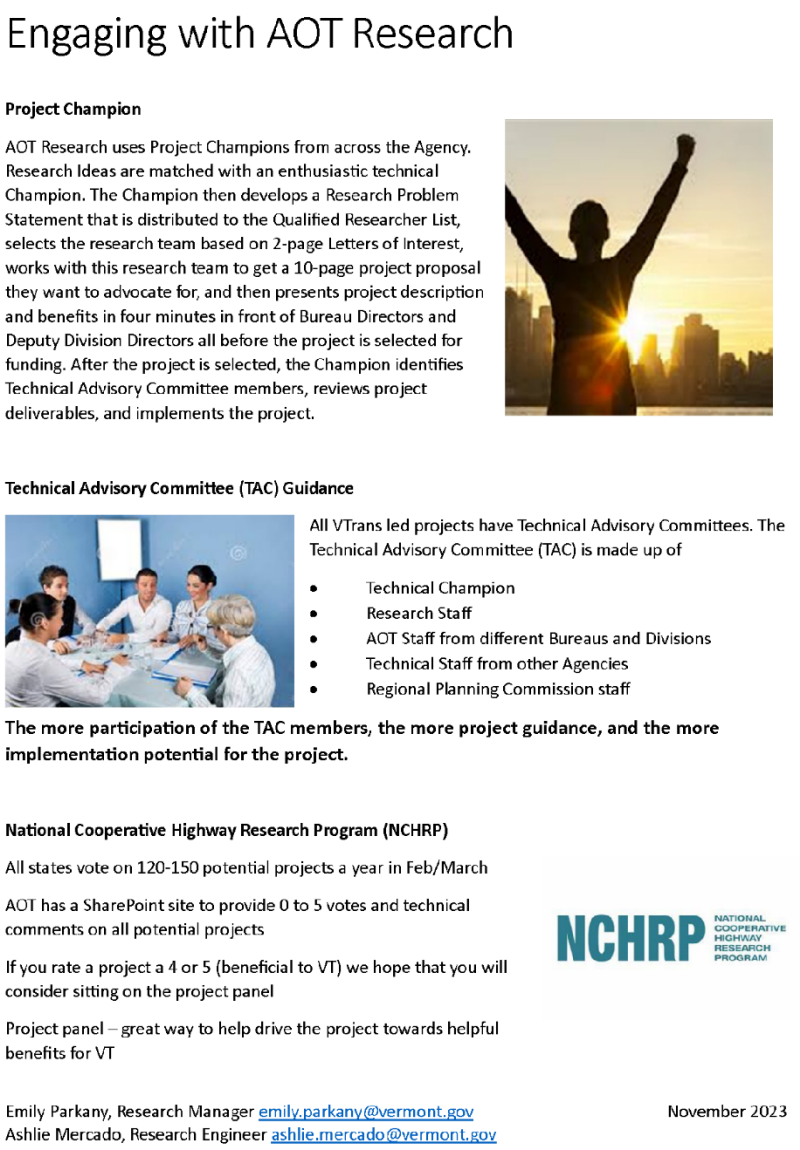
  - Vermont AOT's culture of learning encourages employees to engage in trainings, conferences and peer exchanges, technical advisory committees, and certification study programs.

    The Agency's Transportation Leadership Institute offers a year-long course for a cross-agency cohort to learn leadership skills and networking, Agency operations, and change management and continuous improvement concepts.

    The Transportation Pooled Fund Ahead of the Curve offers core and elective courses.

  - The research program's Engaging with AOT Research Fact Sheet (Figure 4) motivates staff to get involved and provides information for NCHRP project champions and AASHTO Technical Advisory Committee participation.

- The Agency's culture of innovation is illustrated through the Innovation Strategic Workforce Committee, which is currently surveying Agency staff to learn how innovation influences daily work and how to enhance innovative efforts.



Engaging with AOT Research

Project Champion

AOT Research uses Project Champions from across the Agency. Research Ideas are matched with an enthusiastic technical Champion. The Champion then develops a Research Problem Statement that is distributed to the Qualified Researcher List, selects the research team based on 2-page Letters of Interest, works with this research team to get a 10-page project proposal they want to advocate for, and then presents project description and benefits in four minutes in front of Bureau Directors and Deputy Division Directors all before the project is selected for funding. After the project is selected, the Champion identifies Technical Advisory Committee members, reviews project deliverables, and implements the project.

Technical Advisory Committee (TAC) Guidance

All VTrans led projects have Technical Advisory Committees. The Technical Advisory Committee (TAC) is made up of

- Technical Champion
- Research Staff
- AOT Staff from different Bureaus and Divisions
- Technical Staff from other Agencies
- Regional Planning Commission staff

The more participation of the TAC members, the more project guidance, and the more implementation potential for the project.

National Cooperative Highway Research Program (NCHRP)

All states vote on 120-150 potential projects a year in Feb/March

AOT has a SharePoint site to provide 0 to 5 votes and technical comments on all potential projects

If you rate a project a 4 or 5 (beneficial to VT) we hope that you will consider sitting on the project panel

Project panel – great way to help drive the project towards helpful benefits for VT

Emily Parkany, Research Manager emily.parkany@vermont.gov
Ashlie Mercado, Research Engineer ashlie.mercado@vermont.gov

November 2023

Figure 4. Vermont AOT Research Fact Sheet

TOP IDEAS:

Consider strengths of engineers, planners, and project managers in research programs for interdisciplinary needs in project management, in-house research, interfacing with SMEs, and administrative tasks.

Expose staff to a variety of agency functions and concepts through training mechanisms.

- Offer **cross-training** with research or other programs to explore different topics and roles.
- Provide **onboarding** to new employees in research programs and general new agency employees about research.
- Create **opportunities for newer agency staff** to be involved in research projects.

Explore strategies for knowledge management, mentorship, and succession planning to support continuity, such as Maryland DOT SHA's Knowledge Book of pilot project.

Offer continuing education credits or professional development hours as incentives, including for showcases, tech talks, and other presentations.

Recognize and reward agency staff for their engagement in research projects and functions across the agency.

Strengthen relationships and collaboration between research programs and other agency programs.

Incorporate technology transfer by **hosting project-specific Tech Talks and establishing formal recognition** (such as Research Champion Awards or Innovation Showcases) to motivate SME participation and maintain visibility across divisions.

The whole challenge of research project managers is the range of skills needed. It's hard to find the right people. — Vermont AOT

PEER EXCHANGE TOPIC 3—SETTING UP EXTERNAL RESEARCH CONTRACTS

OVERVIEW

Peer exchange attendees discussed several issues relating to research contracting processes, including contract mechanisms, researcher relationships, and various contract provisions. While some participants described effective and efficient contracting tools, many identified challenges with procurement processes, staff capacity for contracting, or accessing out-of-state or specialized researchers.

PRE-MEETING PARTICIPANT SURVEY

Prior to the peer exchange meeting, participants were asked to complete a survey related to each of the three focus topics. The responses to Topic 3 are included as Appendix I.

PRESENTATIONS

Both host states and six participating states presented on their agencies' practices regarding setting up and implementing external research contracts. Presentations are reproduced as appendices to this report.

Appendix J. New York State DOT – NYSDOT External Research Contracts, Lisa Cataldo and Salma Sultana, NYSDOT

Appendix K. Vermont AOT – VT AOT's Qualified Researcher List, Emily Parkany, Vermont AOT

Appendix L. Connecticut DOT – Setting Up External Research Contracts, John (Tom) Russell, CTDOT

Appendix M. Delaware DOT – DelDOT Research Program Basics and Setting Up External Research Contracts, Austin Gray, DelDOT

Appendix N. Maine DOT – MaineDOT Research Contracts, Ulrich Amoussou-Guenou and Colby Fortier-Brown, MaineDOT

Appendix O. Maryland DOT SHA – Setting Up External Research Contracts, Hua Xiang, MDOT SHA

Appendix P. Massachusetts DOT – MassDOT Research Contracting, Anil Gurcan, MassDOT

Appendix Q. Pennsylvania DOT – Setting Up External Research Contract, Patrick McVeigh, PennDOT

DISCUSSION AND FINDINGS

Attendees discussed mechanisms and management of external research contracts and challenges and strategies related to working with legislative or procurement requirements, illustrating a wide range of

state practices. Participants highlighted the value of clear deliverable-based payment milestones to enforce compliance with state standards, including Section 508 accessibility and report revisions.

Below are the research contracting best practices, challenges, and strategies of presenting states. **TOP IDEAS** are those that were highlighted by several participants in group discussions and in report-out forms that participants completed and submitted after the session. Related highlights from NYSDOT and Vermont AOT are featured in Strengths and Opportunities for Host States.

Practices, Challenges, and Strategies

- New York State DOT
    - The University Transportation Center (UTC) partnership, a consortium with many universities, is an established, streamlined mechanism for engaging academia and providing access to multidisciplinary expertise.

        UTC Master Agreements include pre-established terms and requests for proposals can be issued for research tasks. Maintenance periods provisions allow for no-cost extensions of up to three years.

        A quick response consultation provision allows for short-term technical assistance on emerging issues.

        Challenges with the UTC include time-consuming procurement procedures and difficulty reaching smaller institutions or specialized research groups.
    - Open RFPs are also used in the NYSDOT research program, though they are slower than UTC agreements.
    - The research program could benefit from enhanced coordination across offices.
    - NYSDOT Contract Management assists with any contract performance issues. The deliverables-based payment structure allows enforcement of contract requirements.
- Vermont AOT
    - The research program developed the Qualified Researcher List (QRL) of academics, consultants and other researchers as a competitive process that technical champions can easily work with.

        The QRL is administered by the Agency's Contract Administration Grants Unit.

        Research problem statements are sent to entities on the QRL, who respond with letters of interest.

        The project champion can choose a contractor or not, redistribute a problem statement or repackage the project proposal into a simplified bid.
    - Vermont AOT research program recommends:

        Using all federal funds through a competitive process.

        Considering a consultant when funds are limited.

        Ensuring enthusiastic champions for successful research.

- Connecticut DOT
    - In addition to in-house research and pooled funds, CTDOT conducts research via two mechanisms:

        A 10-year Master Memorandum of Understanding (MOU) with Land Grant Research University (UConn). This MOU allows for flexibility, including contracts with third parties, and streamlines the contracting process.

        Submitting needs to outside universities or other programs for consideration. Agreements are completed on a per-project basis. Active working relationships with other universities are maintained and third-party subcontracts may be allowed with restrictions.

    - Challenges CTDOT faces include:

        Limited administrative and clerical capacity for drafting MOUs, Project Authorization Letters (PALs) and other contracting documents, requiring research staff to be involved in contract drafting.

        Delays or reallocation of funds necessitate contract amendments.

        Misalignment between the state's fiscal year and the fiscal years of partner universities.

- Delaware DOT
    - DelDOT has no formal research office or dedicated research staff other than three Statewide and Regional Planning Section staff working on research part-time.
    - A five-year Master Agreement with the University of Delaware includes planning and legislatively directed tasks, LTAP and Delaware Center for Transportation Administration, and other tasks as requested by other DOT sections.
    - Delaware law includes a preference for in-state universities for transportation research; however, no agreements currently exist with Delaware State University or Delaware Technical Community College.
    - Delaware's universities may not have the expertise or are otherwise unsuited to meet DelDOT's research interests and university-initiated research is often not responsive to an agency need. Relationships between DelDOT and university faculty can be further developed.

Maine DOT

- MaineDOT has a Cooperative Agreement with the University of Maine. The research program often scopes projects with PIs and can contract with them directly.
- The research program also uses a five-year Request for Qualification with open qualification for pre-qualified vendors for up to $250,000.
- Recent University contracts are lump sum by time or deliverable.

- Maryland DOT SHA
    - Research projects are carried out by consultants, in-state public universities, and out-of-state public universities if no in-state researchers are appropriate (Figure 5).

        The research program implements agreements directly with in-state public universities, which are generally processed in less than four weeks.

        The Office of Procurement and Contract Management implements MOUs with out-of-state universities, usually taking eight weeks with long delays possible.

        It is difficult to work with private university researchers; however, sole source contracts are usually needed and are rarely done.
    - In-state university agreements are generally timely and flexible, allowing for no-cost extensions.
    - A challenge for the research program is not having access to appropriate researchers for a particular research idea.

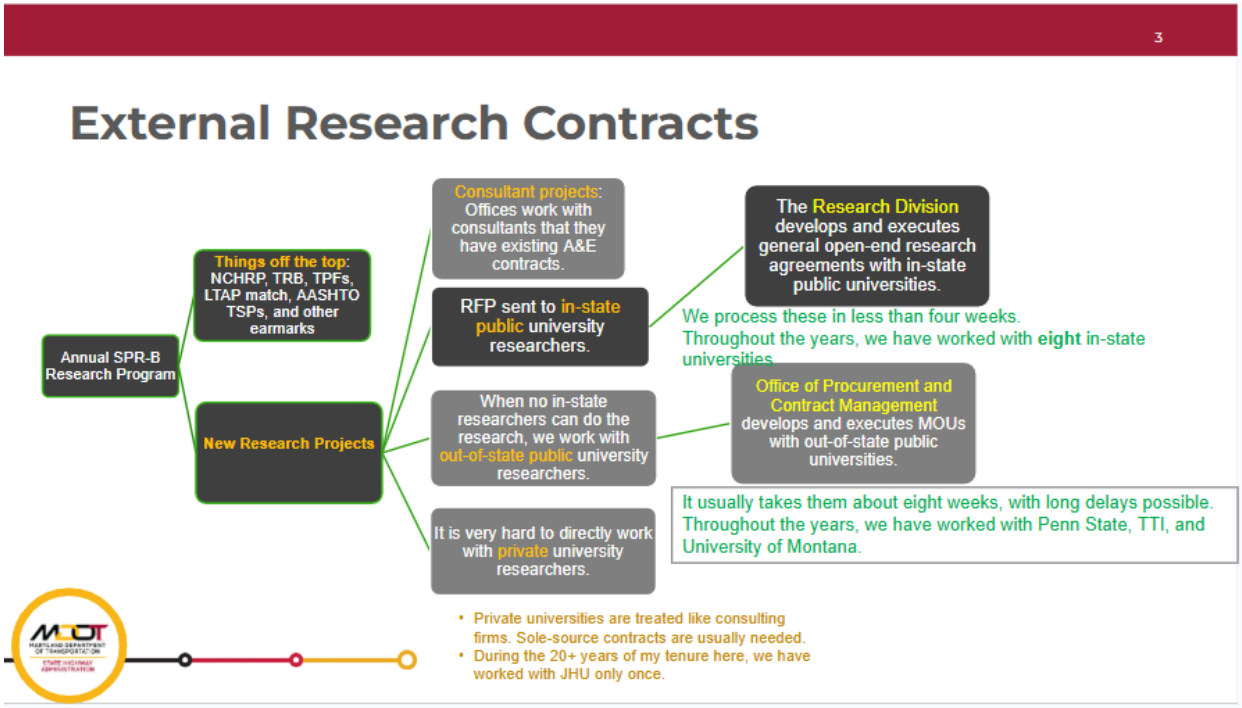


Figure 5. Maryland DOT SHA Research Contracting Process

- Massachusetts DOT
    - Research proposals are submitted through the state procurement system COMMBUYS; an evaluation committee chooses a vendor and the research program negotiates a project scope and budget.
    - The research program uses Interdepartmental Service Agreements (ISAs) for state entities like UMass and proposals are evaluated on “best value” basis.

- The research program has historically relied on UMass for vendor selection but will take a more active role going forward.
- Standard contracts are used with non-state entities, including a Special Provisions document which outlines details and are developed by the project manager.

- Pennsylvania DOT
  - PennDOT has access to 43 pre-approved vendors across nine categories. External research contracts are handled by the Bureau of Office Services and research staff assist in scope development. The project selection committee is all technical staff.
  - Master Agreements with universities are generally reserved for special circumstances or non-SPR projects.
  - PennDOT is the lead agency for the Advancement of Tools for Transportation Asset Management Pooled Fund (TPF-5(568)) to maintain and advance an open-source asset management system, AssetFox.
  - The Impactful Resilient Infrastructure Science & Engineering (IRISE) is a research consortium in the University of Pittsburgh's Swanson School of Engineering. The IRISE website describes the research process and governance as follows:

    > IRISE operates through a structured and collaborative research process, involving all consortium members from idea generation to project development, execution, and implementation of results. This inclusive approach ensures that the research is aligned with the practical needs of our members and fosters a continuous exchange of knowledge and expertise. The IRISE Steering Committee plays a crucial role in guiding the consortium's activities, setting research priorities, and ensuring that projects are relevant and impactful. Regular brainstorming sessions and collaborative meetings facilitate the identification of emerging challenges and the development of innovative solutions.

- ***Note: It was suggested to include in this report a table comparing contracting mechanisms by state, but the discussion would be insufficient to populate the table in a meaningful way. Doing and developing this table would be a potential synthesis activity if NTRC is interested in doing this.***

TOP IDEAS:

Consider adding **AI language to research contract provisions governing reports** and as a disclaimer on research report templates. It may be helpful to develop **shared AI and Section 508 compliance templates**.

Promote **close coordination among research, technical, legal, and procurement staff** early in project development.

Consider streamlining RFP process with a qualified vendor list to increase competition while maintaining reasonable timeframes.

Consider **incorporating implementation planning and technology transfer expectations** into research contracts.

Track what principal investigators are working on, including in other states, before engaging them more to ensure they have the capacity for new research projects.

Explore what **research projects other states with sufficient funding are planning** or implementing for potential collaboration.

Clarify research program's **research process with standard operating procedures** for program consistency.

Incorporate Section 508 compliance and deliverable revision funds directly into **contract scopes and budgets to ensure final deliverables meet state standards** without requiring post-project contract extensions.

Standardize project administrative requirements in task agreements, such as requiring PIs to submit routine meeting minutes and establishing agency policies regarding recording virtual project meetings.

Explore federal/peer guidance on SPR funding flexibility to help states **navigate restrictive state-level procurement codes** (e.g., Code of Maryland Regulations) when engaging out-of-state or specialized university researchers.

ROUNDTABLE DISCUSSIONS

In addition to the three main topics, peer exchange participants engaged in roundtable discussions on two additional topics:

- How Research Failure is Perceived and What to Do with These Outcomes
- How to Implement AI Guidelines for Doing Research

While originally planned for breakout group discussion, peer exchange participants decided at the meeting to discuss each topic as a whole group. Highlights of the roundtable discussions, each facilitated by a peer exchange participant, are provided below.

HOW RESEARCH FAILURE IS PERCEIVED AND WHAT TO DO WITH THESE OUTCOMES

NYSDOT's Salma Sultana provided questions and facilitated a group discussion on what agencies consider to be failed research, and how agencies discuss and move forward from research not meeting original objectives. Questions included:

1. What does "research failure" mean to you?
2. Can research ever truly fail if it generates knowledge? Why or why not?
3. How is research failure perceived within your organization?
4. What factors make stakeholders view a research project as successful or unsuccessful?
5. How does the pressure to demonstrate tangible outcomes influence research project selection and management?
6. Are organizations sufficiently willing to discuss unsuccessful research efforts? What barriers exist?
7. How can agencies create a culture where lessons from unsuccessful projects are openly shared?
8. What are some examples where a project did not achieve its original goals but still produced valuable insights?
9. How should agencies document and communicate lessons learned from unsuccessful research?
10. What mechanisms exist (or should exist) to ensure lessons from past research inform future projects?
11. How can negative or inconclusive findings be used to improve policy, practice, or future research investments?
12. How should agencies evaluate the return on investment of research that did not produce expected outcomes?
13. Should funding organizations be more willing to support high-risk, high-reward research? Why or why not?
14. How can agencies balance accountability for public funds with the inherent uncertainty of research?
15. If a research project fails to achieve its objectives, what should happen next?

16. What would an ideal framework for learning from research failure look like in a transportation agency?
17. Have you encountered transportation research projects that were not implemented? What were the reasons, and what was learned?
18. How should agencies handle research findings that contradict current practices or assumptions?
19. What is more valuable: a successful implementation or a clear finding that prevents an agency from investing in an ineffective solution?
20. What is one change your organization could make tomorrow to better capture and learn from research outcomes that are perceived as failures?

Discussions highlighted that the meaning of research failure may vary by agency and project type. Themes discussed are summarized below and revolved around how to communicate research findings and how to avoid research "failures." These represent different outcomes and may warrant different approaches to documentation, communication, and follow-up. Themes discussed are summarized below and revolved around how to communicate research findings and how to avoid research "failures."

Research can't always be "successful." If it is, it isn't research. — New York State DOT

- While research may be perceived as an absolute failure for reasons such as equipment failure, some agencies avoid using the word "failure" noting there is usually something to learn from projects not meeting original objectives. Negative findings, for example, can prevent future costly mistakes.
- How the story of the research project is told will impact how the results are perceived. Understanding not every project is implementable may require a cultural change.
    - Communicate with the project champion throughout the project to build the story.
    - Consider the audience, e.g., SMEs, agency leadership, or the public, when describing research results.
    - Reframe a research failure into project impacts by asking "how do we use these outcomes?"
- Document results, lessons learned, and considerations upon a project's conclusion and follow up with project champions at regular intervals to ask what needs to change to consider further outreach or implementation.
    - A feedback form could highlight results in terms of the initial scope of the work and other potential impacts.
    - Revisit project results at a later time when conditions or receptivity changes.
- To support research project success:
    - Discuss implementation from the beginning and require an implementation plan.
    - Set clear expectations and have well-designed objectives at the project's outset.
    - Recruit multiple project panel members to account for attrition or uninterest.

- Keep project champions motivated through recognition such as showcases, awards, and tech talks.
- Regular follow-up with principal investigators is critical for ensuring that research projects stay on track.

HOW TO IMPLEMENT AI GUIDELINES FOR DOING RESEARCH

Giri Venkiteela, NJDOT and lead study contact for TPF-5(573): State DOT Council for Strategic AI Adoption, provided discussion questions and facilitated a group discussion on how agency research programs are managing the use of AI in the research processes. The questions included:

1. How does AI influence research programs?
2. Is AI being handled by an existing office (Policy, IT, emerging technologies, etc.) or are states setting up new offices for AI specific work? Is generative AI focused or handling all of the various AI-related tasks, including models developed via research? (PA)
3. What is the role of Research offices in AI at DOTs
4. Who is responsible for AI literacy in your agency?
5. Where in a Research project is AI acceptable?
6. What are your opinions on encouraging the use of generative AI with a human in the loop during literature reviews to reduce cost?
7. How do we enforce generative AI limits?
8. How do we ensure that there are proper reviews being completed and that researchers are doing their own critical thinking during report generation by generative AI? Should we require a submission of all AI input and outputs to see the changes from beginning to end?
9. Do you enforce data security when researchers are using generative AI?
10. How can we be sure that cost savings from the use of generative AI is being passed down to the funding agency?

Peer exchange participants agreed that AI guidelines are needed, and data governance is crucial. Below are highlights of the group discussion regarding the need for AI literacy, research program uses of AI, and managing external researchers' use of AI tools.

Research program and other agency staff need a common understanding of the benefits and risks of using AI in the research process.

- TPF-5(573) brings states together to decide how to move forward with AI in research programs and assisting with agency communication. Two peer exchanges are currently planned; the first is planned by the end of 2026.
- Research programs may be using or exploring using AI tools such as large language models for drafting administrative documents, summarizing reports, or literature reviews. Principal investigators may use AI tools like machine learning models to conduct research. Participants discussed the need to treat these two use-case types separately.

- State-developed training can be targeted to staff categories (administrative, technical, leadership, etc.)

Many participants agreed that AI has the capacity to change how research staff spend time, allowing for expanded analysis, collaboration, and policy-oriented work. Potential uses of AI in research programs include:

- Conducting literature reviews
- Analyzing research proposals or project risks
- Developing contracts
- Managing projects
- Summarizing reports
- Drafting emails and memos
- Taking notes

Participants discussed the pros and cons of enforcing limits on generative AI in research. Specific ideas included:

- Requiring researchers to disclose its use.
- Guidance for adding language into contracts about the use of AI in research projects would be helpful.
- Standard language can be added to final reports prohibiting using them for training AI. MDOT SHA adds the following language on the page where users can search for research reports under the heading "**No Generative Artificial Intelligence Training"**:

  > *Without any way limiting the author or other copyright owner's exclusive right under copyright, the owners of the below listed reports, which includes authors, contractors and MDOT SHA, do not consent to the content being used or downloaded for the purposes of developing, training, or operating any artificial intelligence (AI) tool or model, or other machine learning systems operated by any generative artificial intelligence (GAI) model, which could include but is not limited to machine learning (ML) tools, large language models (LLM), generative adversarial networks (GAN), open AI programs (OpenAI), generative pre-trained transformers (GPT), or their sublicensees. Any use of any of listed reports to train generative AI technologies or their sublicenses is expressly prohibited. The owners of any of the listed reports reserve all rights to license uses of this work and any artificial intelligence tool that can generate works must obtain the owner's specific and express permission to generate any works using data and information from this report.*

- Participants acknowledge that agencies' legal requirements and processes are unique to each agency. These are suggestions for consideration and potential next steps.

SHOW-AND-TELL SESSION

OVERVIEW

Three states presented details on agency projects of interest.

Connecticut DOT – Wrong-Way Driving

An increase in wrong-way driving crashes motivated CTDOT research to identify countermeasures to eliminate or mitigate wrong-way driving. A series of detection video equipment installations collects wrong-way driving incidents on the CTDOT website (Figure 6). Researchers use computer vision to analyze videos to understand variables and considerations in identifying effective counter measures.



Figure 6. Connecticut DOT Wrong Way Driving Detection

New Jersey DOT – Safety Service Patrol Flash Cards

NJDOT was motivated by significant number of international visitors for the FIFA 2026 World Cup in which New Jersey is hosting eight matches including the final. The Safety Service Patrol has new photo flash cards, described in this video, to help non-English speakers communicate a vehicle issue to the patrol. On the back of the photos, each card has a description of the issue in 11 different languages (Figure 7).

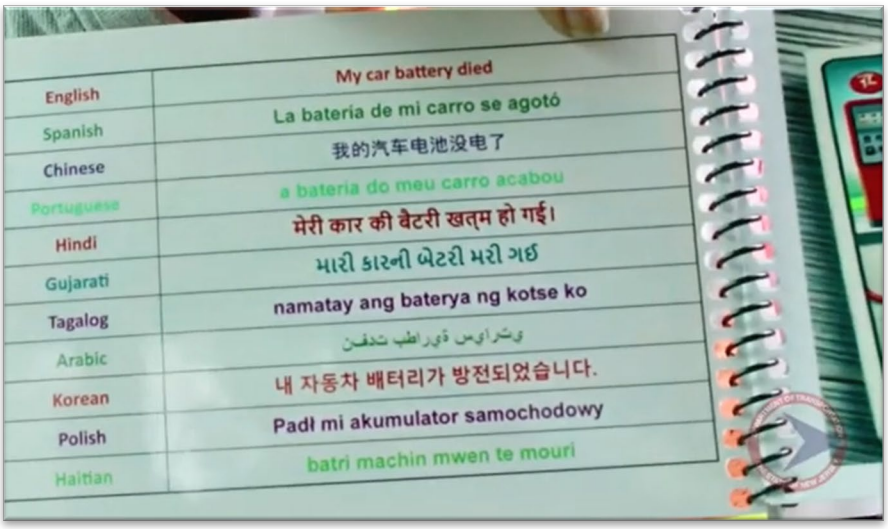


Figure 7. NJDOT Safety Service Patrol Flash Cards

Vermont AOT – 2025 Research & Innovation Symposium Booklet

Vermont AOT presented its 2025 Symposium brochure highlighting 35 projects in four categories, 10 of which Vermont funded (Figure 8). Research outside Vermont can be included in the Symposium if it has relevance to Vermont and the researchers develop certain tech transfer materials and present the project in person.

The research program contracts with a communications firm to produce the booklet for approximately $13,000.



Figure 8. Vermont AOT 2025 Vermont Symposium Booklet

Vermont's research booklet is amazing, especially the QR code that goes to fact sheets. We should do it too! — New York State DOT

STRENGTHS AND OPPORTUNITIES FOR HOST STATES: NEW YORK STATE DOT AND VERMONT AOT

A measure of a successful peer exchange is how the host states learn from others and identify the tools and strategies to address their challenges and help grow their programs. Throughout the peer exchange and in submitted report-out forms, attendees highlighted the hosts' successful and innovative practices and offered opportunities for enhancement.

NEW YORK STATE'S STRENGTHS

Attendees noted the many ways that NYSDOT's research program excels:

- New York State DOT has **effective mechanisms to inform and engage subject matter experts** and other staff to build broad awareness.
    - The agency librarian is a great asset to help organize and disseminate information including national research.
    - NYSDOT has prioritized supporting and implementing NCHRP results.
    - Significant participation in pooled funds is supported by virtual meeting attendance, justification forms for SME participation requiring director approval, and plans to implement new approaches to strengthen internal communication.
- New York State DOT's **external contracting practices are well-established** and effective in supporting a diverse research portfolio.
    - NYSDOT's strong relationship with University Transportation Centers (UTCs) allows flexible and streamlined Master Agreements and Task Agreements, including maintenance periods for no-cost extensions to complete task assignments and quick response mechanisms.
    - There is effective, well-defined coordination between research staff, technical program areas, and procurement offices at NYSDOT.
- New York State DOT's **research program includes a balanced workforce** with a good mix of planning and engineering expertise, providing strong technical expertise across multiple disciplines.
    - Staff capabilities include in-house research, literature reviews, and contracting knowledge.
    - New York State's civil service GOT-IT website is a search tool providing employee opportunities across agencies and occupations.

OPPORTUNITIES FOR NEW YORK STATE

Attendees offered suggestions to enhance NYSDOT's research program:

- To **strengthen internal sharing of other states' and NCHRP research**, NYSDOT's research program could provide:

- Summaries or other contextual information regarding national and other states' research reports.
- Literature reviews of other states' research to support a starting point for state specific applications.

- To **enhance SME engagement in the research process,** NYSDOT could:
  - Strengthen relationships with other agency programs.
  - Streamline travel approval, potentially with forms like Maryland DOT SHA uses.
- To **enhance its external research contracting process,** NYSDOT could strengthen inter-office coordination.
- To **improve understanding of the benefits from national research investments**, NYSDOT could improve tracking of NCHRP panel and pooled fund participation and monitor implementation with annual outreach or standardized follow-up procedures.

VERMONT'S STRENGTHS

With a small team, it's quick and easy to adopt and adapt.
— Vermont AOT

Attendees noted the many ways that Vermont AOT's research program excels:

- Vermont AOT's research program's strong efforts into **tracking external research and engaging agency staff** include:
  - Hosting monthly lunch-and-learns and quarterly webinars on national research; webinars include multi-state attendance and professional development hours.
  - A research program SME survey that provided good feedback on who is considering and utilizing research.
  - Proactive promotion of technology transfer, resulting in SME-driven exploration and implementation of other states' research.
  - A focus on voting to choose the most promising NCHRP proposals and encouraging service on panels to maximize participation.
- Vermont AOT's **Qualified Researcher List is a competitive, efficient and flexible contracting process** for external research.
- Vermont AOT supports the **research program's small but effective workforce** through agency culture, training, and national opportunities.
  - The research program's small staff is efficient with complimentary skills, supported by other Agency programs such as Contract Administration and Business Support Services.
  - Vermont AOT's Transportation Leadership Institute brings cross-agency cohorts together for skill building, networking and leadership training.

- Vermont AOT's culture of innovation includes an Innovation Strategic Workforce Committee which produced the DRIVES poster (Figure 9) and promotes innovation through other efforts.



Figure 9. Vermont AOT Innovation Strategic Workforce Committee Poster

OPPORTUNITIES FOR VERMONT

Attendees offered suggestions to enhance Vermont AOT's research program:

- To improve the **return on investment in national research**, the Vermont AOT research program could develop mechanisms to better track:
  - Staff participation in NCHRP and pooled fund projects.
  - Project results and implementation.
  - Challenges in tracking projects and staff participation levels
- **To enhance its research workforce, Vermont AOT** could:
  - Provide research-specific onboarding for new employees.
  - Consider guidance to research project managers like NJDOT presented in the workforce development discussion.
  - Continue to develop "Knowledge Management Sheets/Fact Sheets" for different research processes.

APPENDIX A. NEW YORK STATE DOT-VERMONT AOT 2026 PEER EXCHANGE AGENDA

New York State DOT–Vermont AOT 2026 Research Peer Exchange Agenda

Albany, NY – Hampton Inn Albany-Western Avenue

All times are Eastern – Breaks will be taken as needed

Day 1: Tuesday, June 9, 2026

Morning Session

9:00 a.m. **Welcome, Meeting Goals and Agenda Review**
Salma Sultana, New York State DOT
Emily Parkany, Vermont AOT, NTRC Lead State
Connie Tang, FHWA, Office of Research, Development, and Technology
Benjamin Fischer, FHWA, New York Division
Kirsten Seeber, CTC & Associates

9:15 a.m. **Introductions**

- Ice breaker
- Name, Agency, Role

9:45 a.m. **Topic 1. Sharing Research from Other States and NCHRP Internally**

- *Describe the ways in which you learn of other states' research.*
- *Describe the ways you share research from other states and NCHRP with agency staff.*
  - *How is context given when sharing, e.g., describing why it's important to whom you are sharing with?*
- *How does your agency incorporate NCHRP research results? (Following a project through its lifecycle.)*
- *How have you used research from other states and NCHRP?*
  - *What are challenges with using research from other states/NCHRP and how have you addressed them?*
  - *Who is responsible for implementation of this other research at your agency?*
  - *Please share NCHRP 20-44 (NCHRP Implementation Support Program) success stories.*
  - *What agency or external funding sources are available to assist with implementation of external research of interest?*

Presentations (15 minutes each plus Q-and-A)

- Vermont (Emily Parkany)
- New York State DOT (Salma Sultana and Sue Rahn)

Discussion

- Group Q&A and round table discussion

12:00 p.m. Group Discussion – Working Lunch

New York State DOT–Vermont AOT 2026 Research Peer Exchange Agenda

Albany, NY – Hampton Inn Albany-Western Avenue

All times are Eastern – Breaks will be taken as needed

Afternoon Session

1:00 p.m. **Topic 3. Setting Up External Research Contracts**

- *Briefly identify strengths and challenges in your current research contracting process.*
- *What other staff or resources are needed at your agency for research contracting?*
- *Using fair and open competition standards, how do you work with a specific entity or university system?*
- *Discuss contracts, mechanisms and relationships with UTCs and other research facilities and universities.*
    - *Provide examples of contract language between a state DOT and other entities such as university/university system, research facilities, consultants.*
- *Share examples of state DOT language, cooperative or master agreement, etc. for working with universities. (Texas, Delaware, Connecticut may have agreements and legislative language about working with in-state universities.)*
- *What contract language is used for copyright, Section 508 Accessibility compliance or AI?*
    - *How are these contract provisions enforced?*
- *Do you have deliverable-based payment structures?*
- *Discuss possible changes with new federal rules.*
- *How are research funding and contracts being used in innovative ways (e.g., to meet federal requirements)?*

Presentations (5 minutes each, except for host states, plus Q-and-A)

- New York State (Lisa Cataldo and Salma Sultana)
- Vermont (Emily Parkany)
- Connecticut (John (Tom) Russell)
- Maine (Ulrich Amoussou-Guenou and Colby Fortier-Brown)
- Delaware (Austin Gray)
- Pennsylvania (Pat McVeigh and Evan Zeiders)
- Massachusetts (Anil Gurcan)
- Maryland (Hua Xiang)

Discussion

- Group Q&A and round table discussion

4:15 p.m. **Complete Day 1 Report Out Worksheet**

4:30 p.m. Adjourn afternoon session

New York State DOT–Vermont AOT 2026 Research Peer Exchange Agenda

Albany, NY – Hampton Inn Albany-Western Avenue

All times are Eastern – Breaks will be taken as needed

Day 2: Wednesday, June 10, 2026

Morning Session

9:00 a.m. **Review of Peer Exchange to Date and Goals**

9:05 a.m. **Breakout Groups**

- *How research failure is perceived, and what to do with these outcomes.*
- *How to implement AI guidelines for doing research.*

Report Out

- Report from each group and round table discussion

Additional Topics

- *The role of research in knowledge management.*
- *Using research money in innovative ways to meet federal requirements.*
- *How do you balance funding research and pooled funds?*
- *Have you been successful in doing quick turnaround synthesis studies? Have you used SPR funds for these syntheses?*
- *Where does research end and consulting begin?*

11:15 **Show and Tell**

- *Vermont – 2025 Symposium brochure*
- *Connecticut – Wrong-Way Driving*

12:00 p.m. Group Discussion – Working Lunch

New York State DOT–Vermont AOT 2026 Research Peer Exchange Agenda

Albany, NY – Hampton Inn Albany-Western Avenue

All times are Eastern – Breaks will be taken as needed

Afternoon Session

1:00 p.m. **Topic 2. Research Workforce Development**

- *Describe the workforce capacities (positions added, skills developed, etc.) you want to strengthen.*
- *What strategies, resources or tools can improve development of the research workforce?*
  - *Are knowledge management principles used, such as succession planning, documenting the research process for new hires or mentorship or shadowing opportunities?*
  - *Describe staff training or other strategies to improve retention.*
  - *Describe incentives for research staff or projects.*
- *What barriers have you overcome in developing your research workforce?*
- *How does AI influence research staff and activities?*
- *How do you develop staff interdisciplinary skills and capacity to address complex research projects?*
- *How do research managers interact with technical SMEs and other agency support staff such as financial/contract and compliance regulation staff?*
- *What career paths are DOTs providing for their research staff, such as other positions or staff levels? Are they evaluated on a DOT, research project or other basis?*

Presentations (15 minutes each plus Q-and-A)

- New Jersey (Giri Venkiteela and Pragna Shah)
- Vermont (Ashlie Mercado)
- Maryland (Saskia Herrera-Riggs)

Discussion

- Group Q&A and round table discussion

4:15 p.m. **Complete Day 2 Report Out Worksheet**

4:30 p.m. Adjourn afternoon session

New York State DOT–Vermont AOT 2026 Research Peer Exchange Agenda

Albany, NY – Hampton Inn Albany-Western Avenue

All times are Eastern – Breaks will be taken as needed

Day 3: Thursday, June 11, 2026

Morning Session

9:00 a.m. **Review of Day 1 and Day 2 of Peer Exchange and Plans for Final Day**

9:10 a.m. **Discussion of Parking Lot / High Priority Topics**

10:00 a.m. **New York State and Vermont**

- What we are doing well
- Opportunities for improvements
- Great ideas from peers

Peer Agencies

- Where New York State and Vermont excel
- Where New York State and Vermont can grow
- "Aha moments" and ideas to take home

11:00 a.m. **Reflections on Findings from New York State and Vermont AOT Executives**

11:30 a.m. **Complete Day 3 Report Out Worksheet**

12:00 pm Adjourn meeting

APPENDIX B. TOPIC 1 SURVEY RESPONSES

NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	ISR*-1. Describe the ways in which you learn of other states' research.	ISR*-2. How often do you monitor other states' completed research?	ISR*-3. When reviewing external research, do you have access to paywalled reports?
CT	Mauricio Garcia-Theran	We learn of other states' research through a mix of sources including TRB publications and newsletters, AASHTO RAC, NCHRP project announcements, TRID, pooled fund study websites.	We wait for other states to send their research to us. If we come across something interesting, we pass it along to the appropriate staff.	Yes. We have access through our memberships in TRB, NCHRP, and AASHTO, and recently gained access to the Transportation Research Record.
DE	Austin Gray	We do not currently have a formal process for learning about other state's research. Typically our staff learn about what other states are doing/leading through email lists or connections to network contacts from conferences, social media, or other studies/projects.	We wait for other states to send their research to us. If we come across something interesting, we pass it along to the appropriate staff.	No
MA	Anil Gurcan	AASHTO RAC meetings Peer Exchanges TRB Annual Meeeting	If we come across something interesting, we pass it along to the appropriate staff.	Yes
NJ	Pragna Shah	Peer exchange, AASHTO RAC Summer and Regional Meetings, email, TRB, literature search, and NCHRP	If we come across something interesting, we pass it along to the appropriate staff.	No
VT	Emily Parkany and Ashlie Mercado	Webinars, TRB Weekly, Regional conversations, UTC newsletters, some state DOT mailings	If we come across something interesting, we pass it along to the appropriate staff.	No. We can use a state library Inter-Library Loan service.

*ISR=Identifying and Sharing Research
*IER=Implementing External Research
*AQER=Additional Questions External Research

NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	ISR*-4. How is context given when sharing external research, e.g., describing why it's important to whom you are sharing with?	5. Is research shared:	ISR*-6. What formats of external research do you share with staff?	ISR*-7. Is there a specific frequency for internally sharing research from other states or does this occur automatically?)
CT	Mauricio Garcia-Theran	Context is generally provided by the person sharing, often in the form of a brief note tying the research to a relevant project, asset, or area of responsibility. The level of context varies depending on who is sharing.	Both proactively and reactively.	Final Reports, Report Summaries or Briefs, Syntheses, Articles on Research, Webinars, Presentations	We share individual research write ups reports with appropriate staff as we receive them.Sharing occurs primarily by email as relevant research is identified, with occasional posting to SharePoint. There is no set frequency.
DE	Austin Gray	The research will be shared with staff who can inherently understand why they are receiving research based on their job responsibilities.	Both proactively and reactively.	Final Reports, Report Summaries or Briefs, Articles on Research, Webinars,	We share research via a newsletter that is published on a regular basis.
MA	Anil Gurcan	depends on the research project managers discretion.	Reactively, such as upon request.	Whatever type is requested.	No
NJ	Pragna Shah	SME as well as providing the benefits, implementation, etc.	Reactively, such as upon request.	Final Reports, Report Summaries or Briefs, Syntheses, Articles on Research, Webinars, Presentations	
VT	Emily Parkany and Ashlie Mercado	Often no context, sometimes limited context	Both proactively and reactively.	Final Reports, Report Summaries or Briefs, Syntheses, Articles on Research, Webinars, Presentations	We share individual research write ups reports with appropriate staff as we receive them.

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NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	IER*-1. How have you used research from other states and NCHRP? (Following a project through its lifecycle.)	IER*-2. How does your agency incorporate NCHRP research results?	IER*-3. What types of research do you directly implement from other states?
CT	Mauricio Garcia-Theran	We've reviewed other states' research during RAC meetings where high-value research projects were presented, and taken insights from those projects to share with other members of the department.	Within the research unit, we distribute potential NCHRP projects to our internal SMEs for ranking. Beyond that, I am not aware of a formal process for incorporating NCHRP results. This is something we want to better understand.	I do not have specific examples of research directly implemented from other states.
DE	Austin Gray			Staff enjoy participating in and implementing research from pooled fund studies as they are usually actionable and implementable and/or can be tailored to our specific needs.
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	To understand the topic and implement if funding is available	varies by units. We are not capturing how many NCHRP research results were incorporated	Pooled fund
VT	Emily Parkany and Ashlie Mercado	Our initial HIVEs (culvert robots) came from MnDOT; a current structures project is using NCHRP Live Load variables derived in a recent project	Not sure, hoping to investigate in the next week	Open to all; eager for our staff to learn of other research they may be interested in and how it could benefit Vermont

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NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	IER*-4. What are challenges with using research from other states/NCHRP and how have you addressed them?	IER*-5. Are you able to directly implement any research without further study specific to your state?	IER*-6. Who is responsible for implementation of this external research at your agency?
CT	Mauricio Garcia-Theran	This is something our research unit is still working through as we develop our processes.	No	The relevant SME and their unit own implementation; the research unit serves as a conduit.
DE	Austin Gray	Information from NCRHP and/or TRB can sometimes be too lengthy to read and attempt to implement and there may not always be real-world examples.	Yes. Not usually, but prior research or collaborative efforts tends to significantly reduce how much a study will cost and provides a good foundation for beginning.	Subject matter experts through project managers that are utilizing the research in their everyday responsibilities
MA	Anil Gurcan	N/A	Would probably need to do further study to see if it is applicable to MA.	Various Departments depending on the subject topic
NJ	Pragna Shah			Everyone
VT	Emily Parkany and Ashlie Mercado	We may not know of all relevant research; limited state resources may prevent some adoption, but as a small state we are more open to innovation and better processes than some other states. STIC Incentive funds are an option for adopting innovations from elsewhere	Yes. We could, but Vermont's climate and smallness may require study.	Anyone: Research staff, technical SMEs

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NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	IER*-7. Please share NCHRP 20-44 (NCHRP Implementation Support Program) success stories.	IER*-8. What agency or external funding sources are available to assist with implementation of external research of interest?	AQER*-1. Do you generate ideas and new research based on the work of other states?
CT	Mauricio Garcia-Theran		No specific funding source for implementation at this moment	Yes. External research informs our thinking on potential new projects, particularly when it surfaces approaches or technologies that may apply to Connecticut.
DE	Austin Gray		No specific funding sources other than what is already available to conduct the research.	No
MA	Anil Gurcan	we are in the process of developing a more robust implementation follow up program		No. Project Champions apply with research ideas
NJ	Pragna Shah			Sometimes
VT	Emily Parkany and Ashlie Mercado	20-44 manager (Sid) helped us get 20-44 funds for a UAS training and regional interactions. A SME is using 20-44 funds to pilot a recent NCHRP project he served on the panel for in Vermont	STIC. Limited SPR-B funds for small implementation	Yes. Sometimes

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NTRC - 2026 NYS DOT-T AOT Peer Exchange - Survey Responses - Topic 1. Internal Sharing of Research from Other States and NCHRP

State	Respondent	AQER*-2. Does your agency find the external research appealing or cumbersome?	AQER*-3. Is your NCHRP ballot person the same person you contact about completed projects, or do you have different levels of SMEs depending on the NCHRP action?	AQER*-4. Does your required SPR management process review evaluate the value of participation in NCHRP/TRB vs. state-funded research initiatives?
CT	Mauricio Garcia-Theran	External research is generally appealing and useful when it aligns with a known need. It can be cumbersome when reports are long, when applicability to Connecticut conditions is unclear, or when there is no clear path to implementation. It could be cumbersome when it is too much to review or to respond to	Different levels of SMEs depending on the NCHRP action.	No
DE	Austin Gray	Both - depending on who/cost/outcomes, it can be appealing or cumbersome. Appealing if done by other States in a pooled fund especially because the cost is low. Cumbersome if the ability to implement is especially difficult.	Different levels of SMEs depending on the NCHRP action.	No. Not currently, but would like this to be something we do in the future.
MA	Anil Gurcan	appealing as it applies	Both. Different levels of SMEs depending on the NCHRP action.	No
NJ	Pragna Shah	Depends on project	Different levels of SMEs depending on the NCHRP action.	No
VT	Emily Parkany and Ashlie Mercado	Appealing	Same person.	No

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*AQER=Additional Questions External Research

APPENDIX C. NEW YORK STATE DOT – LEARN AND SHARE RESEARCH

NYSDOT
Learn and Share Research

New York State DOT–Vermont AOT 2026 Research Peer Exchange

Albany, NY

Salma Sultana
Assistant Engineer
Materials Bureau

Lisa Cataldo
SPR Program Administrator
Office of Policy, Planning & Performance

Sue Rahn
Senior Librarian
Transportation Research Library

June 9, 2026

Learn and Share Research



Learn and Share Research: Where

- **Transportation Research Board Research Weekly**
  - Primary source of newly published research, including NCHRP studies
  - Regularly reviewed to stay current on national practices
- **Literature Reviews**
  - Conducted by program areas and research staff
  - Includes peer-reviewed journals, DOT reports, and national databases
- **Professional Networks**
  - Engagement with AASHTO committees, TRB committees, and peer DOTs.

    Informal knowledge sharing and benchmarking
- **Conferences and Peer Exchanges**

Learn and Share Research: How

❑ Current Practice:

Relevant NCHRP reports identified via TRB Research Weekly are:

- ❖ Collected and compiled into a single summary email
- ❖ Distributed by the NYSDOT Librarian to the appropriate program area
- ❖ Distribution was targeted by subject area, ensuring relevance to specific divisions. The distribution has expanded based on feedback.

Learn and Share Research: How (cont.)

- **Identified Gap:**
  - Limited contextualization
- **Potential Improvement:**
  - Why the research matters
  - Potential applications within NYSDOT
  - Recommended next steps

Learn and Share Research: Implementation Life Cycle

Subject Matter Experts (SMEs) within each program area incorporate research through a general lifecycle:

- **Awareness**

Identification via TRB Weekly, literature, peer exchange, and Final Reports

- **Screening**

SMEs evaluate relevance to NYSDOT priorities

- **Evaluation**

Technical review, feasibility assessment, and alignment with standards

- **Pilot / Testing**

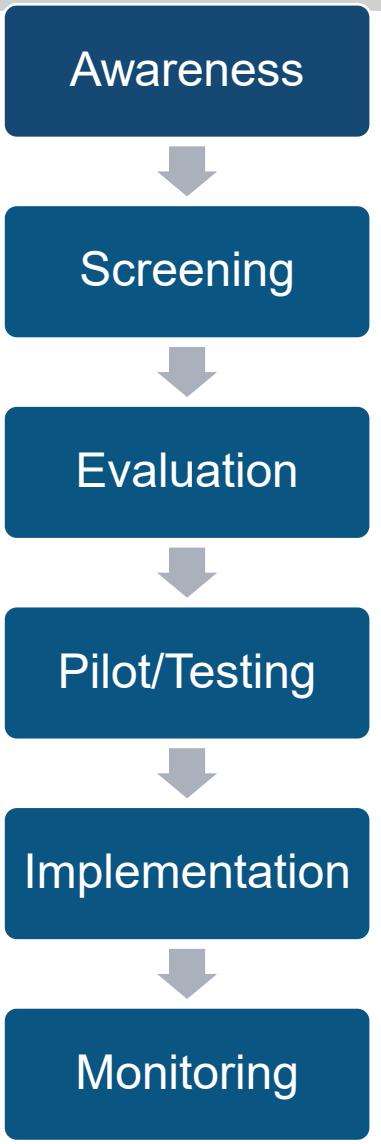
Limited implementation (if applicable)

- **Implementation**

Integration into: Design manuals, Specifications, Policies

- **Monitoring**

Performance tracking and feedback



Learn and Share Research: Implementation Funding

❑ Funding

❖ Internal

- NYSDOT Research Program funds
- Program-area budgets

❖ External

- National Cooperative Highway Research Program Implementation Support (20-44)
- Federal Highway Administration programs
- Implementation grants
- Pooled fund studies with other states

Learn and Share Research: Benefits

- **Benefits:**
  - Literature review, scope, budget schedule
  - Development of design standards
  - Updates to construction specifications
  - Improvements in asset management and safety practices
  - Often used as: Benchmarking tool, Starting point for NY-specific adaptation

Learn and Share Research: Challenges

- **Primary Challenge: Funding**

  Limited resources for: Piloting new practices, Full-scale implementation

- **Other Challenges:**

  Differences in: Climate, Traffic conditions, Regulatory frameworks

- **Mitigation Strategies:**
  - Prioritizing high-impact research
  - Leveraging existing projects to test concepts
  - Seeking alternative source of funding

?

Questions?



Thank You



Department of Transportation

APPENDIX D. VERMONT AOT – USE OF OTHER STATES' AND NCHRP RESEARCH

Use of Other States and NCHRP Research

Emily Parkany

June 9, 2026

VERMONT
AGENCY OF TRANSPORTATION
RESEARCH PROGRAM

Today

- Why this topic?
- Other states' research
  - MnDOT's HIVE
  - Quarterly webinars
  - Quick survey responses
- Other states' innovations
- NCHRP Research

Why This Topic

1. Seems like an appropriate next step. We work towards using our own research and sharing it. So are we taking advantage of what other states are doing and adapting it to our states?
2. I'm eager to maximize the giant chunk of our budget that goes to NCHRP

This is not required, but there should be some “easy wins”

- Over time, we can get more exposure to what other states and NCHRP are doing
  - Webinars
  - No Boundaries and Clear Roads emails
  - Info from other states/NCHRP
  - HVR
- We’re probably not sharing all of it; but we can start sharing some of it
- I’ll give a few examples: MnDOT HIVE, No Boundary email about stormwater mitigation with grasses, VT’s Lunch and Learns
- Hopefully our researchers are building on NCHRP and other states

Giant Payment to NCHRP

- VT spends $300,000 a year. Full SPR-B allocation is $1.2M
- At least NCHRP payment of a % of SPR-B seems more fair then the random amount paid as the TRB Core Programs “fee”
- To maximize our NCHRP payment
  - We spend a lot of effort on voting on potential projects
  - We try to get people excited about serving on panels.
    - Mixed results: often Exec Staff does not want people to be on the panel; TONS of travel scrutiny; often great nominees are not selected
    - Often NCHRP Program Managers reach out to people that have served before; Research is not in the loop

NCHRP Challenges

- NOT good about tracking projects
  - Even if we have staff on the panel, their participation is a mystery
    - Will the project results be useful to us?
    - Have they enjoyed panel service?
    - So much time between last panel meeting and report availability—confusion about what to share and when
  - If we're not on the panel
    - Difficult to "track" projects of interest
    - NCHRP notifications—official project deliverables!
      - We may not be systematic about notifying appropriate SMEs
      - Limited acknowledgements from SMEs
    - REALLY not aware of ongoing projects

MnDOT HIVE

- Someone in Asset Management wanted to emulate MnDOT's HIVE and organized a workshop to build one for all of our Districts (District staff did the building)—2018?
- We have had TWO research projects with UVM to improve the HIVEs. No longer a remote-controlled car but a tank.
  - Improved retrieval
  - Getting the HIVE to operate from drop inlets and around corners (still need to communicate the images)
- Implementation workshop in January 2026

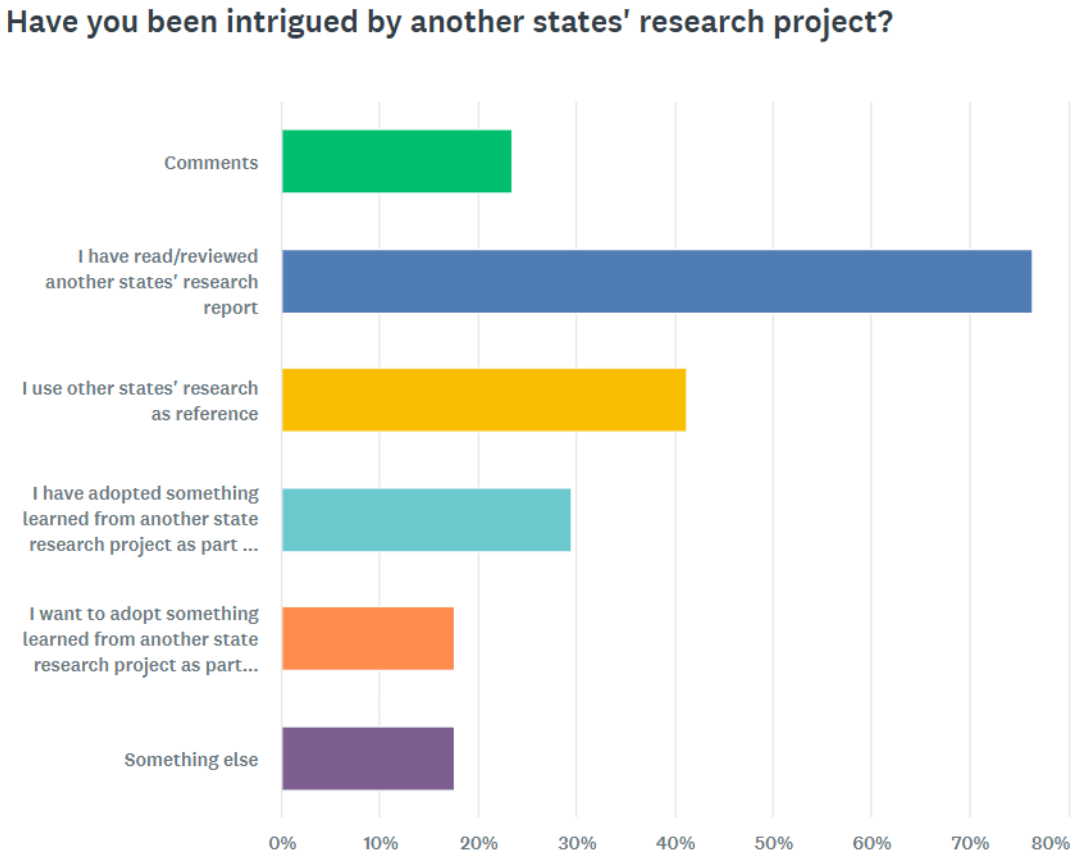
Virginia Stormwater: Mitigating with Grasses

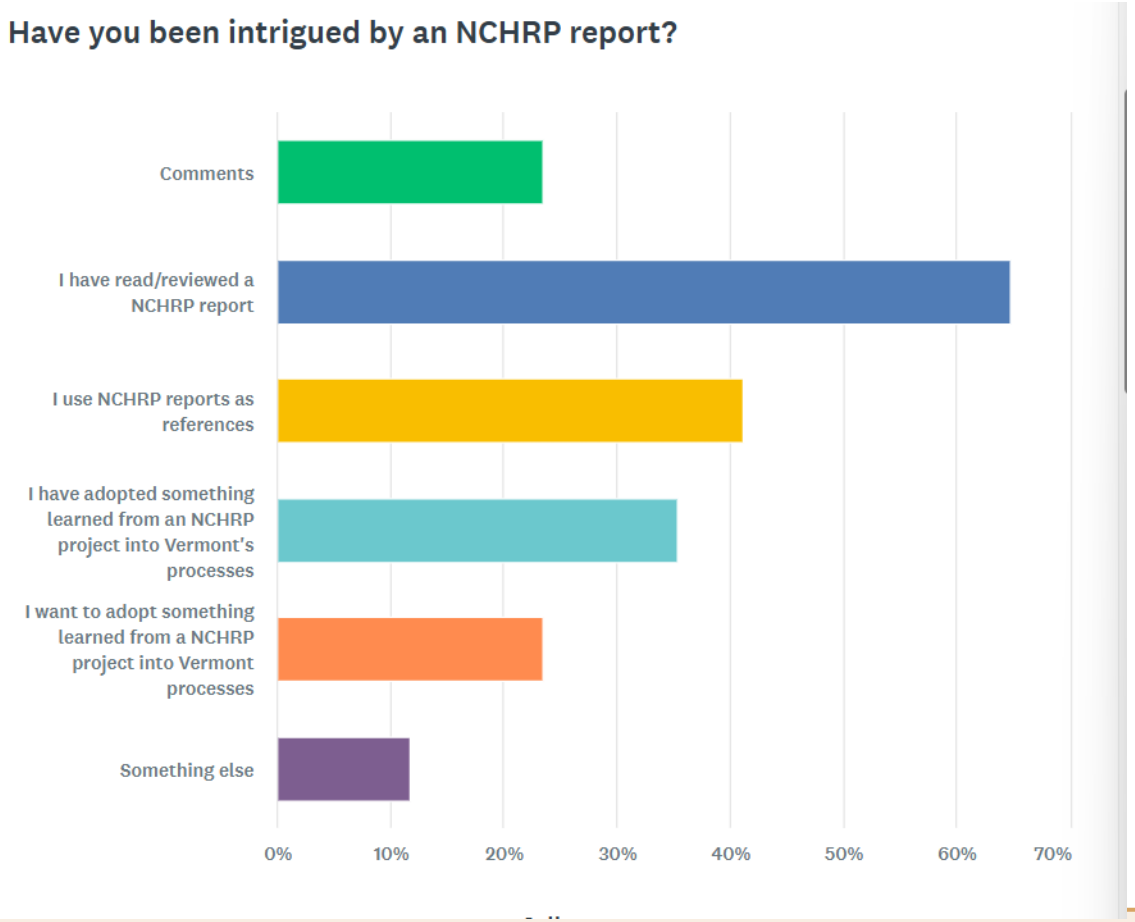
- NoBoundaries mailing about Virginia's project (2024?)
- Forwarded to our Stormwater/Green Infrastructure staff
- They were intrigued by the good results with grass swales (simpler than most stormwater mitigation)
- We arranged with VDOT to meet with the researchers
- →In VT, we can not implement a practice that is not in our VT Stormwater Manual; unsure when the manual will be updated
- IMPLEMENTATION BARRIER

Quarterly Webinars

- New boss said “do monthly webinars, we need PDH opportunities”
- We can learn from research projects shared by other states (webinar from each AASHTO Region should not be a giant lift)
  - Can we adapt in VT?
  - Not all implementation is “traditional”; varying examples of success
  - Brief exposure to the project
  - State DOT Champion is supposed to present—why is this project meaningful to the state?
- Region 1 presented May 4; Region 2 will be August 3

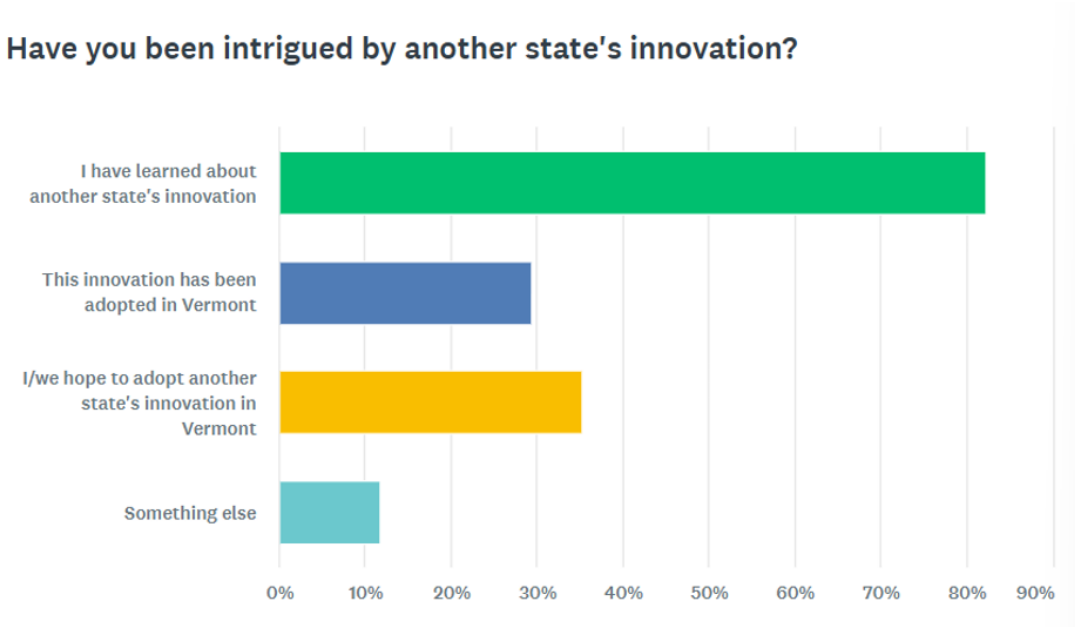
VT Quick Survey Responses





VT Quick Survey Responses

- 17 responses from AOT SMEs
- 75% have read another state's research report, 65% have read a NCHRP report, over 80% have learned about another states' innovation
- Close to 30% have adopted research, a little lower want to adopt research



Survey Comments

- Minimal comments, not all useful
- Only one provided specific reports that they have used
- No one provided details about adopting research or an innovation
- But we received more responses than I had expected and more folks suggest that they have reviewed research reports and use them as references than I had expected

Current project building on recent NCHRP Structures Bridge Loading Research

- Researcher volunteered during a May TAC meeting about how they are using NCHRP load factor research as baselines for their analysis of bridge joints
- NCHRP reports are referenced in many lit reviews but this is one of the only projects that so clearly is building on recent NCHRP work
- A post-meeting summary from the PI:
  - By way of brief context, **NCHRP Project 12-26, *Distribution of Wheel Loads on Highway Bridges***, provided the technical basis for the live-load distribution factor provisions incorporated into the early AASHTO LRFD bridge specifications. **NCHRP Report 592, *Simplified Live Load Distribution Factor Equations***, later revisited these provisions and proposed simplified, more transparent equations for routine bridge design and evaluation. The attached **Eom and Nowak paper is a concise and useful field-validation reference** that illustrates the same general approach on which these NCHRP efforts are based: combining field measurements, calibrated finite-element analysis, and comparison with AASHTO-specified girder distribution factors.

What I have learned over nine years

- VT is a small, rural state with extreme weather and low densities and traffic volumes
- Not easy to directly transfer another state's results to Vermont
- More interest in what neighboring states are doing: NY, MA, NH, ME (weather first; NH and ME are also relatively small)
- VT is hampered by fewer contractors (potentially higher prices and less innovation)

Example Innovation that Really Intrigues Us

- Project-specific specification packages
  - In lieu of multi-volume spec books accompanying every project RFP, PA and maybe NY issue project-specific spec packages with each RFP
    - Does this resonate with PA and NY?
    - I think that this is a BIG ENOUGH INNOVATION that it would be an ideal Symposium keynote address for September 2026

So…is this enough to spur conversation?

- Do you have examples of how you have used other states' research?
- What about NCHRP in your state?
- What about an innovation?
- What can we do to foster more use/adoption?
- Is the effort on this worth it? Should we just concentrate on managing our own projects?

APPENDIX E. TOPIC 2 SURVEY RESPONSES

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	1. What do you consider research workforce development?	2. How is your agency redefining “research staff”?	3. How many staff members do you have that spend more than 50% of their time working on research or the research program?
CT	Mauricio Garcia-Theran	Training, Webinar, Conference, Peer Exchange, SME Meeting, On-the-job learning, and mentoring within the unit.	I don't think we are formally redefining research staff at this time. Roles within our unit involve coordination across units.	Three staff members spend more than 50% of their time on the research program.
DE	Austin Gray	Training, Webinar, Conference, and Peer Exchange.	N/A	0
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	Training, Webinar, Conference, Peer Exchange, and SME Meeting.	Hybrid roles across departments.	4
VT	Emily Parkany and Ashlie Mercado	Training, Webinar, Conference, Peer Exchange, SME Meeting, Service on research project Technical Advisory Committees, AOT's agency-wide Transportation Leadership Institute, agency available certification study programs.	In VT, Research staff do everything, including event planning, contract and financial support, webpage development and accessibility.	2

*NEI=Needed Improvements to Research Workforce Capacities
*SRT=Strategies, Resources or Tools to Improve the Research Workforce
*STI=Staff Training to Improve Research Workforce
*RWKM=Research Workforce and Knowledge Management

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	4. How do research managers interact with technical SMEs and other agency support staff such as financial/contract and compliance regulation staff?	*NEI-1. Which critical skill gaps are currently limiting your research program's effectiveness?	*NEI-2. How do you identify the research workforce development needs within your Research program?
CT	Mauricio Garcia-Theran	Research managers coordinate with technical SMEs across units throughout the project lifecycle, from idea generation through review and acceptance of deliverables. We also interact with financial and legal staff as needed during project administration.	Process knowledge around FHWA guidance, CFR requirements, and contracting mechanisms. We are fairly new in our roles, and a lot of institutional knowledge was lost.	Workforce development needs are identified informally through team discussions and as gaps become apparent in day-to-day work. We customize research workforce development needs based on each individual background
DE	Austin Gray	The research program staff primarily currently lead the project selection, program coordination, and financial/budgeting aspects. Research managers interact with technical SMEs to determine if a proposed project is aligned with their needs and to ensure a project has pathway to completion.	How to implement, how to determine research priorities	No current policy or plan in place, most needs are currently established through being a part of regular email chains and understanding where there are knowledge gaps that need to be acted on.
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	Research projects - quarterly meetings, invoicing, communication	Engineers - technical expertise across multiple disciplines.	Staff meetings
VT	Emily Parkany and Ashlie Mercado	We do everything and interact with everyone.	Current staff are always expanding our skills.	If there is a need, we figure out how to fill it.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*NEI-3. Do you have a research workforce development plan for your staff? If so, can you share it with the NTRC members?	*NEI-4. What barriers have you overcome in developing your research workforce?	*NEI-5. How does AI influence research staff and activities?
CT	Mauricio Garcia-Theran	No	My Research staff is too new to fairly answer this question. The primary challenge has been loss of institutional knowledge as the unit transitioned. We are rebuilding that knowledge base, though in a different form than before, since many processes have evolved and the prior approaches were outdated. We view this as an opportunity rather than a setback.	Not much influence yet. The main influence it has had is that change is coming.
DE	Austin Gray	Yes	Lack of structure/guidance about how to run program	Not explicitly at this time, but I'm sure it does to an extent that I am currently unaware of as I do not oversee the SMEs or project managers usually.
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	No	Heavy lifting with minimum workforce	Better understanding of problem statement
VT	Emily Parkany and Ashlie Mercado	No	Current staff are always expanding our skills.	We strive to determine how AI may make things easier. A new research project will identify AI prompts that are repeatable and help us capture staff knowledge.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*SRT-1. What research workforce development investments have that has delivered the highest retrun?	*SRT-2. Please explain how your choice in the previous question delivered the highest return.	*SRT-3. What other strategies, resources or tools can improve development of the research workforce?
CT	Mauricio Garcia-Theran	Partnerships	CTDOT's research unit administers research projects that are conducted by our university partners. Our partnerships with UConn and the other in-state research universities are central to how research gets done, and developing those relationships has been a high-value investment.	Better guidelines, templates and processes
DE	Austin Gray	Training; Research peer exchanges	Direct engagement with other States to learn about their programs and to be able to use their knowledge/skills to bring back to our program.	N/A
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	Partnerships	Networking with SMEs and other agencies, exposure to various types of research and innovation products	N/A
VT	Emily Parkany and Ashlie Mercado	Staffing models; Culture of innovation	Important to hire the right people .	Open to learning and acquiring what's needed.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*SRT-4. What has been your most successful non-traditional recruitment strategy for research talent?	*SRT-5. Please explain your choice from the previous question.	*SRT-6. Describe incentives for research staff or projects.
CT	Mauricio Garcia-Theran	I have not done this	Before posting the two available positions in the research unit, Individuals were given the option to transfer from other units in the Department.	Exposure to different topics and people in the Department. Conferences and travel for professional development and networking are available and can be valuable. Beyond that, the primary incentive is the opportunity to do meaningful work.
DE	Austin Gray	N/A	N/A	N/A
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	N/A	N/A	N/A
VT	Emily Parkany and Ashlie Mercado	N/A	N/A	Few. Supervisors can submit merit paperwork to HR (beyond Agency)

*NEI=Needed Improvements to Research Workforce Capacities
*SRT=Strategies, Resources or Tools to Improve the Research Workforce
*STI=Staff Training to Improve Research Workforce
*RWKM=Research Workforce and Knowledge Management

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*STI-1. How do you develop staff interdisciplinary skills and capacity to address complex research projects?	*STI-2. How are you preparing your workforce for emerging areas such as: AI	*STI-2. Advanced Analytics:	*STI-2. Digital Transformation:	*STI-2. Other Emerging Areas:
CT	Mauricio Garcia-Theran	Our small research unit interacts with SMEs across multiple business units by necessity, which builds interdisciplinary exposure naturally. Coordination with technical staff in different areas, along with participation in peer exchanges and conferences, contributes to building that capacity.	Connecticut released a statewide Responsible AI Framework in 2024, and the Connecticut Artificial Intelligence Responsibility and Transparency Act recently passed both chambers of the legislature and is expected to be signed. CTDOT also launched DOTBOT in October 2025, an internal AI assistant that provides citation-backed answers from a curated set of agency documents.	Not a formal focus area for our research unit at this time. There is already another office dedicated to serve the Department	CTDOT recently restructured the bureau that houses the research unit from the Bureau of Policy and Planning to the Bureau of Planning, Technology and Innovation, reflecting a broader agency emphasis on technology and innovation.	
DE	Austin Gray	No currently plans or programs in place to build interdisciplinary skills.	N/A	N/A	N/A	N/A
MA	Anil Gurcan	N/A	N/A	N/A	N/A	N/A
NJ	Pragna Shah	N/A	N/A	N/A	N/A	N/A
VT	Emily Parkany and Ashlie Mercado	Hire learners	N/A	N/A	N/A	Hire open learners

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*STI-3. What career paths are DOTs providing for their research staff, such as other positions or staff levels?	*STI-4. Are research staff evaluated on a DOT, research project or other basis?
CT	Mauricio Garcia-Theran	CTDOT research staff career paths follow standard state job classifications. Right now all research staff is assigned to the Transportation Planner series. A Trainee progresses to Planner 1, then Planner 2. Advancement beyond Planner 2 generally requires moving into a supervisor role who is the Research Manager. The next roles available are director levels overseeing different groups not only research. The research unit used to include Engineer classifications (which progress through Engineer 3), but it has been decided to make them all planners even if they have engineering backgrounds to make it consistent with other sections in the bureau. As a union shop, classification changes apply agency-wide rather than being adjusted for a single unit. A dedicated technical track within research, such as a data scientist classification, could be a useful future addition but would require broader changes.	All CTDOT staff are evaluated through the agency's service rating process, which is occurs annually. Evaluation is based on standard DOT criteria rather than research project outcomes specifically. Our research staff is evaluated on project management tasks.
DE	Austin Gray	N/A	Not clear on what this question is looking for.
MA	Anil Gurcan	N/A	N/A
NJ	Pragna Shah	N/A	DOT - ePAR
VT	Emily Parkany and Ashlie Mercado	In VT, Research Engineer is on the engineering series (I-V). Research Manager has been in same position for nine years.	Annual performance evaluations

*NEI=Needed Improvements to Research Workforce Capacities
*SRT=Strategies, Resources or Tools to Improve the Research Workforce
*STI=Staff Training to Improve Research Workforce
*RWKM=Research Workforce and Knowledge Management

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 2. Research Workforce Development

State	Respondent	*RWKM-1. Are knowledge management principles used, such as succession planning, documenting the research process for new hires or mentorship or shadowing opportunities?	*RWKM-2. How do you maintain continuity and institutional knowledge when key research staff leave?	*RWKM-3. Please use this space to provide any comments or additional information about your previous responses.
CT	Mauricio Garcia-Theran	Formal succession planning is not currently in place. This is the main reason why we have struggled since we are all fairly new.	This has been a challenge, and we are working on this. I hope if one day I leave, my predecessor will be in a better place.	N/A
DE	Austin Gray	Yes, working on documenting and standardizing all processes now.	No defined process for doing so, making improvements now.	N/A
MA	Anil Gurcan	N/A	N/A	N/A
NJ	Pragna Shah	Yes	N/A	N/A
VT	Emily Parkany and Ashlie Mercado	Some documentation for new hires. RAC mentoring is encouraged	We cry. We do what we can	N/A

*NEI=Needed Improvements to Research Workforce Capacities
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*STI=Staff Training to Improve Research Workforce
*RWKM=Research Workforce and Knowledge Management

APPENDIX F. MARYLAND DOT SHA – RESEARCH WORKFORCE DEVELOPMENT



SERIOUS ABOUT SAFETY
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

2026 NTRC NYS-VT Research Peer Exchange

Research Workforce Development

Office of Policy and Research (OPR)

Saskia Herrera-Riggs

June 10, 2026

Why This Work Matters Now

SHA has clearly recognized the need to strengthen workforce development. In recent years, SHA initiated three workforce-related research projects:

- Study of Impacts of Technology on the Future Workforce at MDOT SHA
- Evaluating MDOT SHA's Facility Maintenance Technician (FMT) Training Program
- Developing a Comprehensive System to Illustrate the Career Pathways within MDOT SHA

These initiatives were requested by the Offices of Human Resources and Organizational Development and reflect SHA’s commitment to employee training, career development, professional growth, and workforce planning systems designed to meet current and future organizational needs. Collectively, the studies respond to staffing shortages, retention challenges, unclear advancement pathways, and the need for more robust workforce development systems.

Development Strategies

- Build transparent career pathways tied to training, competencies, and internal mobility rather than leaving growth to informal networks.
- Use Learning Management System (LMS) tools like Cornerstone to connect job classifications, responsibilities, related roles, and learning resources in one place.
- Pair formal leadership programs with technical, communication, and project-delivery training so staff can grow beyond narrow specialties.
- Pilot user groups, orientation sessions, and supervisor coaching can help normalize the use of workforce tools and improve adoption.
- Targeted support matters because unclear growth paths and skill gaps are major drivers of attrition in public agencies.

Knowledge Management

- Succession planning should be embedded in workforce systems by showing realistic next roles, timelines, and skills needed for progression.
- Documenting role descriptions, responsibilities, qualification thresholds, and adjacent positions helps new hires understand how the organization works.
- Mentorship and shadowing are recurring needs; staff and trainers both identified one-on-one support as valuable for confidence, skill transfer, and advancement.
- Orientation videos, standardized role pages, and plain-language documentation reduce knowledge loss when staff transfer or retire.
- Career tools are strongest when used in onboarding, supervisor training, and everyday workforce planning rather than as a static HR reference.

Training and Retention

- Retention improves when staff see clear advancement routes, accessible training, and timely reclassification after they meet requirements.
- Training quality matters: SHA research found a positive relationship between training satisfaction and overall job satisfaction.
- Year-round scheduling and microlearning can reduce access barriers and keep learning continuous.

Incentives

- Strong incentives include pay progression linked to certification, recognition for trainers, tuition reimbursement, and visible mobility into higher roles.
- External credentials such as PMP, CAPM, PMI-ACP, Six Sigma Green Belt/Black Belt, or other industry certifications can make development more motivating.
- Project incentives can also include visibility, pilot leadership, conference participation, and credit for implementation outcomes.
- Data dashboards that show training completion, promotion rates, or readiness can help justify investment and reinforce program credibility.
- Career development itself is an incentive because employees often leave when advancement is opaque or stalled.

Barriers to Overcome

- DOTs face staffing shortages, salary competition, slow hiring, promotion bottlenecks, and long backfill times for technical and managerial roles.
- Career-path opacity is a major barrier; SHA addressed this by mapping classification relationships and integrating pathway content into Cornerstone.
- Training barriers include outdated materials, inconsistent scheduling, delays between training and certification, and limited access to role-specific content.
- Communication barriers also matter, such as employee under-appreciation, limited visibility into opportunities, and inconsistent development planning.

AI Influence

- AI can help research staff summarize literature, draft scopes, organize documentation, support training content creation, and improve knowledge retrieval.
- It also raises the need for stronger digital skills because workforce studies note rapid digitalization and analytics as part of the public-sector skills gap.
- Career systems are already moving toward skills-based matching, gap analytics, and AI-assisted development planning in commercial platforms.
- For DOT research offices, the practical opportunity is to use AI as a staff amplifier while keeping human review for policy, compliance, and technical judgment.
- The workforce implication is not fewer staff, but staff with broader analytical, communication, and technology fluency.

Career Paths and Evaluation

- DOT career paths should include both vertical ladders and lateral lattices: technical expert, project manager, supervisor, program manager, and cross-functional transitions.
- SHA research identified technical, supervisory, managerial, and cross-functional tracks and encoded related jobs directly into the LMS.

SHA-OPR Perspective

- Workforce Development

At OPR, research workforce development is driven by training, peer exchanges, conference participation, and partnerships. These opportunities help staff build technical skills, learn from peers, and bring back ideas that strengthen our program.

- AI and Emerging Skills

Research roles are becoming more technical, analytical, and collaborative as staff engage more with data, AI, and cross-functional work. At SHA, we are beginning to explore how AI can support tasks like literature reviews and other repetitive activities so staff can focus more on analysis, relationships, and strategy.

SHA-OPR Perspective

- Barriers and Challenges

One of our biggest challenges is the mismatch between traditional infrastructure-focused roles and the growing need for digital skills such as data analytics, AI, and data science. We also continue to navigate barriers such as legacy job classifications, lengthy hiring processes, and organizational silos.

- Knowledge Management and Continuity

Mentoring, shadowing, and keeping knowledge-management materials current are important ways we support continuity as staff roles change. At the same time, we are thinking about how to future-proof job descriptions and strengthen the systems that support long-term workforce development.



QUESTIONS?

Resources

- Study of Impacts of Technology on the Future Workforce at MDOT SHA

MD-23-SHA-TU-3-1_Impacts-Of-Technology_Report.pdf

- Evaluating MDOT SHA's Facility Maintenance Technician (FMT) Training Program

MD-26-SHA-UM-6-24_FMT-Training-Program_Final-Report.pdf

- Developing a Comprehensive System to Illustrate the Career Pathways within MDOT SHA

MD-26-SHA-UM-6-25_Career-Pathways_Final-Report.pdf

APPENDIX G. NEW JERSEY DOT – RESEARCH WORKFORCE DEVELOPMENT

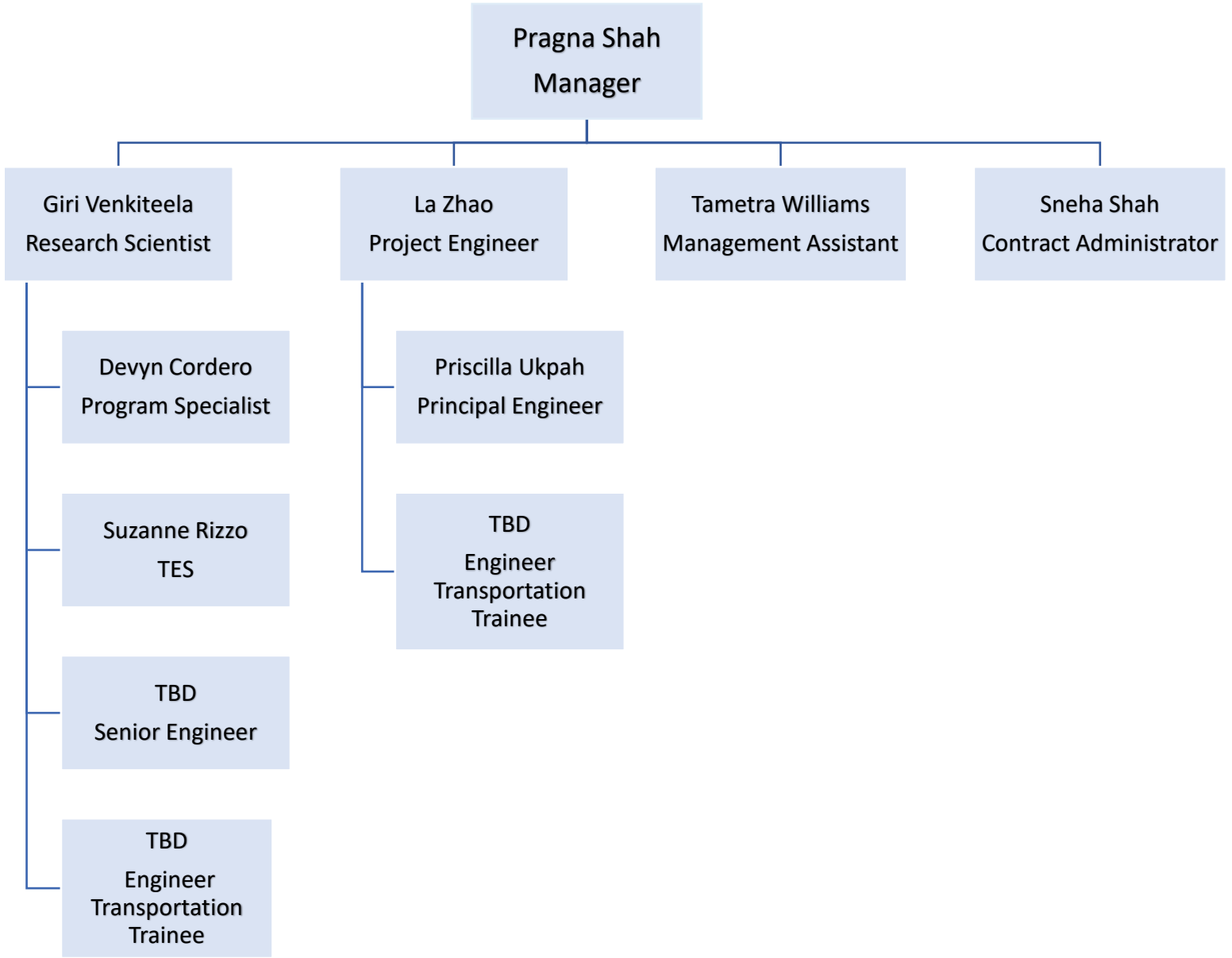
NJDOT BUREAU OF RESEARCH, INNOVATION & INFORMATION TRANSFER

Research Workforce Development

Pragna Shah and Giri Venkiteela
NTRC NYDOT and Vermont AOT Peer Exchange
JUNE 2026

NJDOT Research Organizational Structure

Bureau of Research, Innovation & Information Transfer



2026 Work Program	Average Annual Budget	Funding Source
Research Program Management		
Salaries (90% of time)	$ 2,064,742	SPR
Research Studies	$ 2,350,000	SPR
Pooled Fund Studies	$ 633,033	SPR
TRB Core Program	$ 235,000	SPR
NCHRP Contributions	$ 1,500,000	SPR
AASHTO Technical Service Products	$ 101,000	SPR
Annual Research Showcase (hybrid event)		
University Contract	$ 150,000	SPR
Tech Transfer Program		
Salaries (10% of time)	$ 208,528	SPR
University Contract	$ 900,000	SPR
Equipment	$ -	SPR
Conference Travel & Accomodations	$ 13,200	SPR
Local Technical Assistance Program		
University Contract	$ 750,000	SPR
National LTAP Funding	$ 210,000	SPR
Conference Travel & Accomodations	$ 3,000	SPR
Innovation Program		
New Technologies & Product Evaluation	$ 100,000	SPR
University Innovation Program Support	$ 600,000	SPR
		SPR
On-Call Consultant Services	$ 1,000,000	TTF
Special Grant Projects		
STIC Incentive Grant	$ 125,000	FHWA
TOTAL ANNUAL BUDGET	$ 10,943,503	

BUREAU OF RESEARCH, INNOVATION & INFORMATION TRANSFER

Research Funding

Research Partners

Bureau of Research, Innovation & Information Transfer

Universities

KEAN

NJIT New Jersey Institute of Technology

Rowan University

RUTGERS THE STATE UNIVERSITY OF NEW JERSEY

STOCKTON UNIVERSITY

TCNJ THE COLLEGE OF NEW JERSEY

TESU THOMAS EDISON STATE UNIVERSITY

Consultant

GPI Greenman-Pedersen, Inc.

Research Programs

Bureau of Research, Innovation & Information Transfer

- **Local Technical Assistance Program**
- **Innovation Program**
- **Technology Transfer and Implementation Program 1**
  - Identify and Evaluate Needs
  - Engage SMEs and Stakeholders
  - Survey and Evaluate User Needs
  - Facilitate tech talks
  - Support NJ State Transportation Innovation Council (STIC) Activities
  - Documentation and Reporting
  - Peer Exchange Support
- **Technology Transfer and Implementation Program 2**
  - Website Maintenance and Updates
  - Develop Information Architecture
  - Content Creation and Posting
  - Technical & Staff Support
  - Documentation and Reporting

Barriers and Solutions to Developing Research Workforce

- **Hiring and other constraints** – Agencies face widespread issues such as civil service salary limitations, extended recruitment timelines, restrictive job classification systems, and career structures with limited vertical advancement.
  - *Advocacy by senior management*

- **Limited training and development budgets** - Research staff often lower priority than operations for professional development funding. Lack of prioritization and resources for conferences, certifications, or advanced training.

- **Organizational structure challenges** - Research unit siloed from other units; difficulty demonstrating value/impact; staff treated as administrative support rather than technical experts.
  - *Incorporated requirements for resource centers*
  - *Technology Transfer Program*

- **Retention difficulties** – Limited promotional opportunities lead to staff attrition despite investment in their development.
  - *Offer research-focused roles and more visibility*



Career Pathways and Performance Evaluation

- **Hybrid evaluation approach** - Staff assessed on civil service performance criteria, broader contributions (TRB, AASHTO committees, technology transfer)
- **Multiple career path options** – Mobility between various roles within unit: program management, subject matter expert positions, or administrative/policy roles within the DOT



NJDOT BRIIT-Research Workforce Development

- Self learning resources
- Mentorship by senior research staff
- Shadow senior staff projects
- Onsite visits to the universities
- Attendance to the LTAP courses and FHWA online training
- Meetings with SMEs
- Encourage participation in committees/panels
- Attendance to TRB, AASHTO RAC Summer meetings



NJDOT BRIIT - Guidance to Research Project Managers

- **Build relationships early and proactively** - Establish relationships with SMEs and finance staff proactively, before a crisis occurs; learn about their limitations and challenges.
- **Serve as translator and bridge** Translate across technical terminology, fiscal requirements, and regulatory language; foster cross-functional understanding of duties, accountabilities, perspectives, and timeframes.
- **Integrate support staff into project planning upfront** - Involve finance staff frequently in progress meetings to prevent problems rather than fix them
- **Create clear communication plan and documentation** - Regular check-ins, shared systems, templates, and decision-making frameworks (who does what, when)
- **Balance approach**- Navigate between **research speed vs. innovation vs. rules**; advocate for researchers while respecting necessary boundaries



Training Staff for Complex Research Projects

- Involve senior staff
- Breakdown the complex project
- Engage with SMEs
- Conduct meetings based on their needs (monthly, biweekly)
- Site visits
- Communication plan



Developing Interdisciplinary Skills

- **Cross-training programs** - Rotate staff across programs and projects
- **Team-based projects** - Mix disciplines on research initiatives
- **Workshops & seminars** - External experts, joint learning sessions
- **Collaboration tools** - Shared platforms, knowledge repositories



AI Influence on Research

AI is fundamentally changing what researchers do day-to-day. **Rather than spending 80% of time on data collection and processing**, AI handles these tasks, allowing researchers **to spend 80% of time on analysis, creativity, and innovation**. However, this shift requires new skills. The research workforce must adapt through training and a mindset shift - viewing AI as a powerful collaborator rather than a threat.



AI Influence on DOT Research Projects

- **Literature Discovery & Review**
- **Data Analysis & Modeling**
- **Experiment Design**
- **Collaboration & Writing**



Research units can now leverage AI to simulate **project scenarios, predict success probabilities based on historical data, identify methodological risks and mitigation strategies, and optimize research designs** before project initiation—significantly reducing costly mid-project pivots and failures

AI Readiness by DOT Research Units

- **AI Governance**
  - implementing agency-wide AI disclosure and validation protocols.
- **Workforce Development Programs**
  - Design training curricula for research managers and AI consultation services
- **Collaboration-AASHTO RAC**
  - Sharing lessons learned across State DOT research units.



Bureau of Research, Innovation & Information Transfer

Workforce Capacities to Strengthen

DOT Research Staff:

- **Skills Development:**
  - Resource building
  - Thinking like a researcher (now with AI help)
  - Project management
  - Cross-functional collaboration techniques
- **Capacity Building:** Leadership programs, mentorship initiatives, succession planning
- **New Positions:** AI specialists, interdisciplinary workforce

University/Consultant Research Staff:

- **Develop New Programs/Tools to:**
  - Bridge the gap between Fundamental research vs Implementable research
  - Collaboration in Identify and Evaluate Needs
  - Brainstorm sessions to Engage SMEs and Stakeholders

Things we would like to learn from Peer Exchange

- Proactive Strategies in Guiding Research Workforce
- Communication Plan
- Effective Use of Resources



peer learning

BUREAU OF
RESEARCH, INNOVATION
& INFORMATION TRANSFER

Thank you

APPENDIX H. VERMONT AOT – RESEARCH WORKFORCE DEVELOPMENT

Research Workforce Development

Ashlie Mercado

NTRC NY-VT Peer Exchange

June 2026

Albany, NY

VERMONT

AGENCY OF TRANSPORTATION

RESEARCH PROGRAM

VT Research Workforce Development

- We are always open to learning and acquiring what's needed
- Trainings, webinars, conferences, peer exchanges, Technical Advisory Committee (TAC) meetings, Agency available certification study programs (PMP, FE, PE, etc.)
- Transportation Leadership Institute (TLI)
- Culture of Innovation
- Monthly VT Training Center newsletters
- RAC Activities (Regional, Task Forces, mentoring, etc.)
- Ahead of the Curve

Fulfilling FHWA Requirements

- Compliant with everything – guidance from Division Office employee who supported Research for over 20 years
- Annual SPR-B work program is delivered together with the other FHWA work programs from the Agency every September
  - Support with formatting, budget, and certification
- Monthly budget comes from AOT Federal Programs office for all FHWA funds received by the Agency
- Research collects Quarterly Reports from our researchers, but they are only shared on demand with the Division Office
- We are currently getting very little attention from the Division Office (either VT or NH)

Knowledge Management, Incentives, and Growth

Knowledge Management:

- We have some documentation for new hires
- RAC mentoring is encouraged
- New research project will identify repeatable AI prompts to help capture Agency staff knowledge

Incentives and Growth:

- Monthly one-on-ones; yearly Performance Reviews
- We have few incentives for research staff. Supervisors can submit merit paperwork to HR
- Research Engineer is on the engineering series (I-V). Research Manager has been in same position for nine years

Developing Research Workforce

- We do many things as a small team: project management, tech transfer and communication, Symposium, webpages and accessibility, monthly Lunch and Learns, etc.
- We fortunately have complementary skills and are efficient (small team = quicker/easier to implement changes)
- We are always expanding our skills
- We communicate with technical SMEs and other agency staff through project lifecycle and beyond
- We do a lot, but we get some support from Contract Administration, Business Support Services, Agency of Digital Services for web pages and NCHRP SharePoint balloting, accessibility training, etc.

Transportation Leadership Institute (TLI)

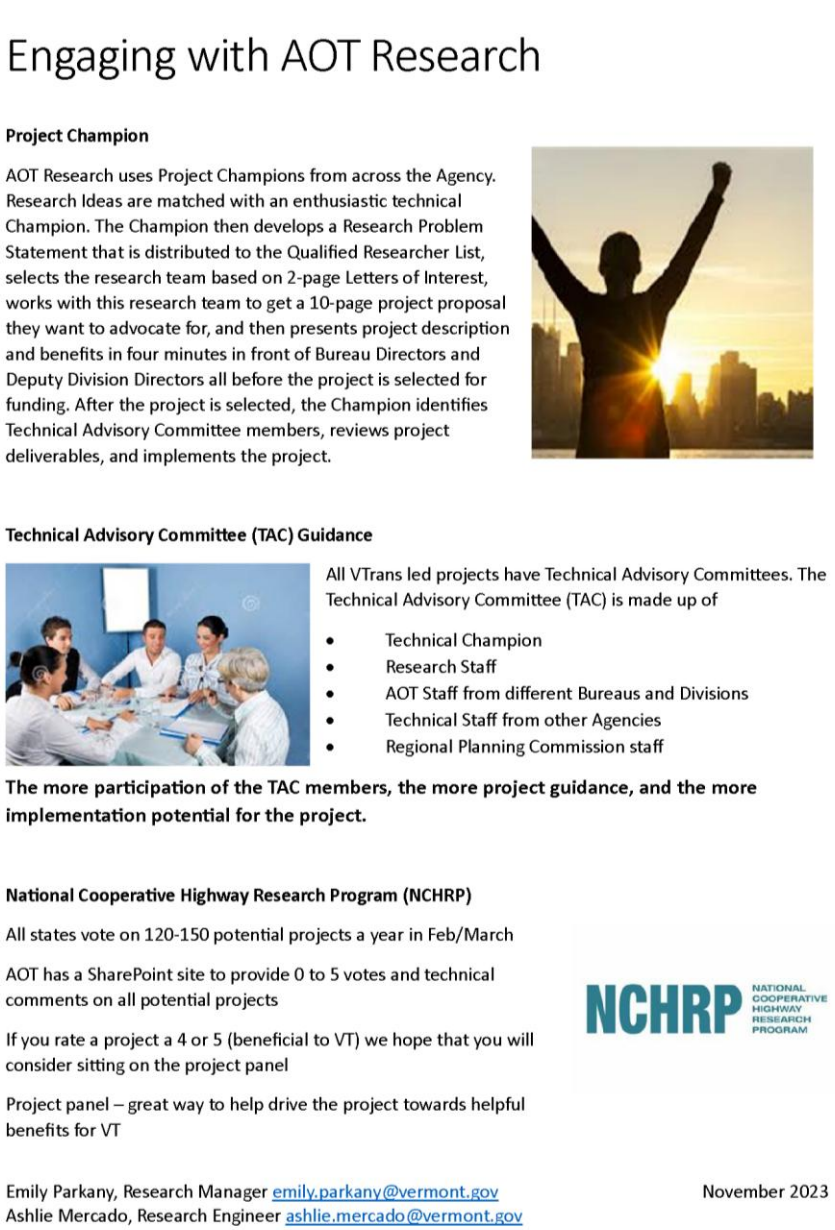
- Year-long leadership program
- Develop leadership skills, networking, growth as a leader
- Cross-agency cohort
- Learn more about the agency and what others do
- Change Management, Continuous Improvement, presentations from leaders in the Agency, site visits

VERMONT
TLI 2025
Agency of Transportation

Culture of Innovation

- Innovation Strategic Workforce Committee
- Big push for innovation across the Agency
- DRIVES poster
- Current survey to learn how innovation influences daily work and how to enhance innovative efforts across the agency





Engaging with AOT Research

Project Champion

AOT Research uses Project Champions from across the Agency. Research Ideas are matched with an enthusiastic technical Champion. The Champion then develops a Research Problem Statement that is distributed to the Qualified Researcher List, selects the research team based on 2-page Letters of Interest, works with this research team to get a 10-page project proposal they want to advocate for, and then presents project description and benefits in four minutes in front of Bureau Directors and Deputy Division Directors all before the project is selected for funding. After the project is selected, the Champion identifies Technical Advisory Committee members, reviews project deliverables, and implements the project.

Technical Advisory Committee (TAC) Guidance

All VTrans led projects have Technical Advisory Committees. The Technical Advisory Committee (TAC) is made up of

- Technical Champion
- Research Staff
- AOT Staff from different Bureaus and Divisions
- Technical Staff from other Agencies
- Regional Planning Commission staff

The more participation of the TAC members, the more project guidance, and the more implementation potential for the project.

National Cooperative Highway Research Program (NCHRP)

All states vote on 120-150 potential projects a year in Feb/March

AOT has a SharePoint site to provide 0 to 5 votes and technical comments on all potential projects

If you rate a project a 4 or 5 (beneficial to VT) we hope that you will consider sitting on the project panel

Project panel – great way to help drive the project towards helpful benefits for VT

Emily Parkany, Research Manager emily.parkany@vermont.gov
Ashlie Mercado, Research Engineer ashlie.mercado@vermont.gov

November 2023

Engaging with AOT Research Fact Sheet

- Get others involved in Research
- Champion information, Technical Advisory Committee (TAC) guidance, NCHRP information
- Enthusiastic Champions and more participation from TAC members help lead to more implementation potential for the project

RAC Opportunities

- Regional Peer Exchanges
- Summer and Winter meetings
- Task Forces
- RAC Chats
- Mentoring
- Leadership roles (Region/Task Force Chairs, Vice Chairs, etc.)
- Ahead of the Curve

Ahead of the Curve

- **Four core courses**
  - Making Research Relevant
  - Running the Program
  - Delivering the Program
  - Program Quality Improvement
- **14 Elective Courses**
  - Effective Problem Statements
  - Performance Management
  - Knowledge Management
  - Building a Champion Driven Research Program
  - Innovation Management and Risk Management
  - Funding
  - Scientific Methods
  - Intellectual Property
  - Implementation
  - Strategic Planning for Research
  - Building Trusted Research Partnerships
  - Continuous Quality Improvement
  - Program Design
  - Accessibility Fundamentals for Research Programs

More ideas?

- What is needed for research workforce development beyond Ahead of the Curve, RAC Activities, and the Leadership and Soft Skills training we can get in our states?
- Do other states take advantage of their agency-offered learning opportunities? (Leadership, Continuous Improvement, Artificial Intelligence and Knowledge Management discussions, etc.)—are these sufficient for “soft skills”?

APPENDIX I. TOPIC 3 SURVEY RESPONSES

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-1. Briefly identify strengths and challenges in current research contracting process.	*CMR-2. What other staff or resources are needed at your agency for research contracting?	*CMR-3. How do you gauge whether conducting or participating in a certain research project is “worth it”?	*CMR-4. Are quantitative measures used to determine if a research project is “worth it”?
CT	Mauricio Garcia-Theran	Strengths: -Master Agreement with the University of Connecticut has helped to streamline the process -Active working relationships with four research universities Challenges: -The contracting process with universities that can't have or do not have master agreements is less streamline and require more coordination with legal staff -Master agreement alone is not the only step in the contracting process. Each individual research project requires additional documentation such as project authorization letters, extension letters, which require more staff time -There are some restrictions in the agreements in terms of project extensions, modifications, amendments that requires frequent amendments. More automation would be ideal. -Our research projects typically need to start at the beginning of State fiscal years (July 1) which is not ideal for universities.	The research unit is largely new and we are working to standardize and document our processes. We are developing an internal manual and continuing to build clarity. We are a small unit and all contracting documentation and preparation fall on us. It would be good to have additional resources in the Department so that we can focus more on the projects.	We assess whether the project addresses a critical infrastructure need or failing asset, mitigates a safety risk, leverages technology to generate cost savings, or produces usable tools or reports. We also consider whether an in-house SME needs the work, whether results can be applied broadly across the state, and whether the cost is justified by the expected benefit.	None
DE	Austin Gray	With a well-defined and structured process, DelDOT Contract Administration is able to execute the most basic needs of a research contracting process. However, the Contract Administration process in general is not designed to support research contracting, as least not how it has historically worked. In particular, proposal scoring and agreement structure/execution are weaknesses. Scoring is based on standard consultant bid scoring language which is usually not applicable/relevant when there only one or two bidders.	The current structure of DelDOT Contract Administration is fine as long as procedural steps are well-defined and are being enforced and followed.	DelDOT does not have a great process for determining overall research priorities, however, we are in the process of re-establishing a research advisory committee that will help us determine the overall value of participating in one project over another.	None
ME	Colby Fortier-Brown	We can use expedited processes that are similar to hiring consultants for many projects. We also have a cooperative agreement with the University of Maine. Challenges are around enforcing contract language and we do not have great RFP process or an RFP research template.	-	We take all research projects to our Research Advisory Council.	Yes. We have a scoring system.
MD	Hua Xiang	We establish general open-end research agreements with in-state public universities, which cover five years. No-cost extensions are also possible. Individual research projects are placed under these master agreements as task orders. If in-state university researchers are a good fit for our research projects, the "contract" can be executed timely, almost without any delay. The challenges arise when there are no such researchers available for a specific research idea. We have a project that has not received a responsive proposal after three rounds of RFPs to both in-state and out-of-state public universities (Aquatic Organism Passage Design Methods for Culverts: Effectiveness and Sustainability Phase II).	SHA's Office of Procurement and Contract Management handles agreements with out-of-state public universities and contracts with private universities & A/E consultants.	It's "worth it" if it's submitted/requested by technical offices, and selected according to technical merits and strategic alignments. We only ask for a preliminary cost estimate from offices if they know. The actual cost of one of the factors when selecting a proposal through RFP.	None

*CMR=Contracts, Mechanisms and Relationships with UTCs and Other Research Facilities and Universities
*RFP=RFP Processes
*SFR=State and Federal Requirements and Regulations

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-1. Briefly identify strengths and challenges in current research contracting process.	*CMR-2. What other staff or resources are needed at your agency for research contracting?	*CMR-3. How do you gauge whether conducting or participating in a certain research project is “worth it”?	*CMR-4. Are quantitative measures used to determine if a research project is “worth it”?
MA	Anil Gurcan	-	Administration, Records and Contracts, Legal and Finance	Projects are weighted by their relevance to MassDOT needs.	No. We are currently in the process of developing a metric to "value" projects
NJ	Praga Shah	Strengths - templates, guidance, dedicated staff for invoicing and other contract administration. Challenges: Prior to contracting - is this research double dipping? Can the research be covered under the resource centers?	One main division or unit should oversee all department research activities.	SMEs interest, outcomes whether it is implementable, return on investment	Yes
NY	Salma Sultana	Strengths 1. University Transportation Center (UTC) partnership – Long-standing relationship working with UTCs. Challenges - 1. Limited university reach: Existing mechanisms may not fully engage a) Smaller institutions, b) Specialized research groups outside the network 2. Regular RPF Process – Time Consuming	1. Materials Bureau - Transportation Research: Technical Support 2. Office of Policy, Planning & Performance - Alignment with agency goals, federal requirements, contract development 3. Office of Contract Management - Procurement, contract support, and compliance 4. Subject Matter Expert (SMEs) Additional Needs 1. Dedicated research contracting specialists 2. Legal support familiar with research agreements 3. Enhanced coordination across offices	We select projects based on NYSDOT’s needs, having a strong project champion, and alignment with agency strategic priorities and operational needs.	No, anything eligible for SPR-B funding is considered.
PA	Pat McVeigh	We are locked into using our states procurement offices, which itself is both a strength and a challenge. One big strength is the amount of vendors included in our Research ITQ as well as the variety. The largest weakness is the time it takes to get the project from solicitation to kickoff and the amount of effort needed from technical contacts	We have our Bureau of Office Services that advertise and initiate our research contracts	We generally will proceed as long as our technical advisor/champion is willing. We hardly ever would make that determination as a research staff	No
VT	Emily Parkany and Ashlie Mercado	We rely on the Grants team in Contract Administration. It's a strength that templates and legal issues are not Research responsibility, but it's a weakness that we are subject to their timeline and their changing processes.	Grants team in Contract Administration	Participation is not a Research-only decision. For Research projects, our Decisionmakers choose. Pooled Fund participation requires multiple SME interest.	None. We have new project selection criteria that the Decisionmakers use: Need/Urgency, Innovative, Implementation Potential, Realistic Timeline/Budget, Project Value

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*RFP=RFP Processes
*SFR=State and Federal Requirements and Regulations

NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-5. Do you have a DOT research advisory committee that helps set priorities regarding studies to fund, conduct, and/or participate in.	*CMR-6. Does the Research Office manage research contracting and university partnerships?	*CMR-7. What is your general timeframe for your contracting process from beginning to end?	*CMR-8. Who is eligible to contract directly with agency for research?
CT	Mauricio Garcia-Theran	Yes. We use an advisory committee for one portion of the program (Connecticut Cooperative Transportation Research Program). For the other portion which is most of the SPR-B projects, the Department Bureau Chiefs and the Commissioner review the proposed research ideas and provide input. This is something that in built in our current process, but it is not a formal advisory committee in the Department.	Yes	It depends on the university and if they have a master agreement, Memorandum of Understanding or agreement. From two to six months.	In-state universities, out-of-state universities, and private universities. However, currently only in-state universities (public and private)
DE	Austin Gray	No	No. The research office manages the University partnership. DelDOT's Contract Administration section is centrally located in the agency.	Approximately eight months - RFP prepared in October, agreements executed in February, Notice to Proceed issued in late June.	In-state universities, out-of-state universities, private universities, and consultants/private companies
ME	Colby Fortier-Brown	Yes	Yes	Anywhere from 1 month to a longer RFP process.	In-state universities, out-of-state universities, private universities, and consultants/private companies
MD	Hua Xiang	Yes. Our agency leadership (Administrator and Chiefs).	Yes, only university partnerships.	Master agreements - four to six weeks; task orders (projects) - several days.	In-state universities, out-of-state universities, private universities, and consultants/private companies. We can access private universities, but very hard to contract. We work with consultants only when the technical office needing the research has an existing A&E contract with the consultant.

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State	Respondent	*CMR-5. Do you have a DOT research advisory committee that helps set priorities regarding studies to fund, conduct, and/or participate in.	*CMR-6. Does the Research Office manage research contracting and university partnerships?	*CMR-7. What is your general timeframe for your contracting process from beginning to end?	*CMR-8. Who is eligible to contract directly with agency for research?
MA	Anil Gurcan	No.	Yes.	Two months mostly unless there are unforeseen delays.	In-state universities, out-of-state universities, private universities, and consultants/private companies. While we mainly work with in-state universities we are looking to diversify.
NJ	Praga Shah	Yes. Moved from Research Advisory Committee to direct approach to meet the units' needs.	Yes.	1-2 years	in-state universities, but also, have a designated consultant for quick turnaround research and innovation projects. To clarify, in-state universities must be public institutions who have a Basic Agreement with NJDOT
NY	Salma Sultana	No.	Yes.	Open RFP – Approximately 1 year UTCs – Prime Contract – up to 1 year, after prime contract is established, Task Orders – 1 to 2 Months	After the prime contract is established with a UTC, the university under that UTC can directly work with NYSDOT.
PA	Pat McVeigh	No. Not formally, but we are in the process of establishing meetings 2 times a year with Bureau directors and district leadership to discuss highlights and research needs	Yes	From problem statement solicitation to a NTP is generally about 9-12 months	In-state universities, out-of-state universities, private universities, and consultants/private companies
VT	Emily Parkany and Ashlie Mercado	Yes. Meets once a year; minimal decisions about Pooled Funds or small projects	No. Research Office is responsible for university liaising.	Grants for our External Research Process take 1-4 months from Contract Administration receiving Grant Package from Research. Simplified Bid contracts (Symposium support, Research communications) take 1-2 days to process.	In-state universities, out-of-state universities, private universities, and consultants/private companies. We tried to work with USGS; they are not able to compete for funds.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-9. Using fair and open competition standards, how do you work with a specific entity or university system?	*CMR-10. If you are able to pick research partners directly, what allows that to occur with your FHWA Division Office?	*CMR-11. List the percentage of your research by each entity: In-state universities	*CMR-11. List the percentage of your research by each entity: Out-of-state universities	*CMR-11. List the percentage of your research by each entity: Consultants
CT	Mauricio Garcia-Theran	The Department follows the current approved research manual and the governing stewardship and oversight implementation plan between CTDOT and the FHWA Division Office.	The Department follows the current approved research manual and the governing stewardship and oversight implementation plan between CTDOT and the FHWA Division Office. This document specifies how the Department can conduct research and with whom.	100%	-	-
DE	Austin Gray	DelDOT has a master agreement with the University of Delaware, as there are several other regularly identified needs. DelDOT only regularly contracts with the University of Delaware for research needs so this has not been an issue yet.	N/A	40-45%	0%	N/A
ME	Colby Fortier-Brown	We have a cooperative agreement with the University of Maine. We also have pre-qualified consultant lists that we can hire off of.	We use previously-approved procurement processes.	55%	10%	35%
MD	Hua Xiang	Our RFPs are sent to in-state public universities. If no responding proposals are received, we then sent the RFP to out-of-state public universities. Private universities and consultants are not included in the RFP.	We have switched to an RFP process about 15 years ago to comply with FHWA Division office requirement.	FY 2025 88% (previous years usually 75%)	FY 2025 0% (previous years usually 5%)	FY 2025 0% (previous years usually 10%)

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-9. Using fair and open competition standards, how do you work with a specific entity or university system?	*CMR-10. If you are able to pick research partners directly, what allows that to occur with your FHWA Division Office?	*CMR-11. List the percentage of your research by each entity: In-state universities	*CMR-11. List the percentage of your research by each entity: Out-of-state universities	*CMR-11. List the percentage of your research by each entity: Consultants
MA	Anil Gurcan	-	We would have to submit a justification memo.	About 95%	About 2-3%	Less than 1%
NJ	Praga Shah	Basic Agreement and merit of the proposal	Proper justification for sole source contract	80%	-	10%
NY	Salma Sultana	1. Open RFP 2. UTCs after they are awarded by the USDOT.	-	-	-	-
PA	Pat McVeigh	We have a Research ITQ which prequalifies any institution to bid on projects in predetermined research categories. We don't have an easy way to utilize SPR-B funding with a specific entity	-	50%	-	50%
VT	Emily Parkany and Ashlie Mercado	We cannot.	Federal funds should be competitive.	25%	40%	35%

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*CMR-11. List the percentage of your research by each entity: Other types of entities	*CMR-12. Does your state have formal or informal preference for in-state public universities?	*CMR-13. Are joint proposals between in-state and out-of-state institutions encouraged?	*CMR-14. How often do university research project ideas align with DOT research priorities?	*CMR-15. If there is a preference for lead research organizations, who or what would it be and why?
CT	Mauricio Garcia-Theran	-	Formal preference	No. it is not encouraged but it has happened in a few specific instances.	We are working to have research ideas originate internally. Proposals are most useful when universities are responding to a known agency need. Unsolicited ideas during open solicitations are often not well-aligned, though some are.	Academic, Transportation pooled funds led by other state DOTs FHWA
DE	Austin Gray	TRB, NCHRP, Pooled Funds (other States and FHWA): Remaining 55-60%	Formal preference. *Language regularly included in state budget legislation provided.	Not encouraged or discouraged.	Not often.	Transportation pooled funds led by other state DOTs FHWA. DelDOT, being a smaller agency, benefits greatly from the amount of collaborative research being produced through a joint effort with other state's where results can be applied and implemented across the board.
ME	Colby Fortier-Brown	-	Formal preference. We have a cooperative agreement.	Yes	We try to scope research projects with interested researchers.	N/A
MD	Hua Xiang	In-house research. FY 2025 12% (previous years usually 10%)	Formal preference	Yes. "Allowed," not "encouraged."	Usually	Technical office decides on the preference based on their research need.

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State	Respondent	*CMR-11. List the percentage of your research by each entity: Other types of entities	*CMR-12. Does your state have formal or informal preference for in-state public universities?	*CMR-13. Are joint proposals between in-state and out-of-state institutions encouraged?	*CMR-14. How often do university research project ideas align with DOT research priorities?	*CMR-15. If there is a preference for lead research organizations, who or what would it be and why?
MA	Anil Gurcan	-	We choose the best candidate to perform on the project	They are not encouraged but they are not dismissed either.	-	N/A
NJ	Praga Shah	Pooled fund	Formal preference. Based on state legislation.	No. Only if out-of-state institution is a sub consultant.	Mostly.	Academic, Transportation pooled funds led by other state DOTs FHWA
NY	Salma Sultana	-	NYSDOT has no preference.	NYSDOT selects proposals based on its merits.	Sometime. In our experience, most of the research priorities are initiated by the agency.	NYSDOT has no preference.
PA	Pat McVeigh	-	There is no built in preference.	Yes. We encourage sub-consultants on the bids.	Pretty often, especially as it relates to PSU, Pitt, and Temple.	No preference.
VT	Emily Parkany and Ashlie Mercado	-	-	No but not discouraged. Organizations on the Qualified Researcher List can have any entity as sub-recipients.	All research projects fit within DOT strategic priorities (not hard).	No preference.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*RFP-1. What percentage of research projects are contracted through an RFP process?	*RFP-2. Do you have an RFP template or are they unique from project to project?	*RFP-3. How do you get the word out to qualified researchers when advertising an RFP?	*SFR-1. What state procurement regulations govern external research contracts?
CT	Mauricio Garcia-Theran	-	-	Emailed announcement to those on a notification list. An e-mail goes out to our four current participating universities requesting research project ideas or sharing internal ideas originated within the Department.	Our research contracting follows applicable federal requirements under 23 CFR Part 420 Subpart B, and again the stewardship and oversight implementation plan between CTDOT and the FHWA Division Office, and the Research Manual
DE	Austin Gray	On average 15-20% of all research activities every year are contracted through an RFP process.	We have a template.	Procurement notifies vendors on a pre-qualified list. Emailed announcement to those on a notification list. Related organizations share RFP announcements.	-
ME	Colby Fortier-Brown	0%	RFPs are unique for each project.	Announcement posted on the Research website.	DOT procurement purview rules and Federal procurement rules.
MD	Hua Xiang	FY 2025, of the 88% research with in-state universities, about 68% went through RFP and the remaining 20% is Phase II/continuation with the original P.I.	We have a template.	Announcement posted on the Research website. Emailed announcement to those on a notification list. Related organizations share RFP announcements.	COMAR, Code of Maryland Regulations https://dsd.maryland.gov/Pages/COMARHome.aspx

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*RFP-1. What percentage of research projects are contracted through an RFP process?	*RFP-2. Do you have an RFP template or are they unique from project to project?	*RFP-3. How do you get the word out to qualified researchers when advertising an RFP?	*SFR-1. What state procurement regulations govern external research contracts?
MA	Anil Gurcan	All of them with few exceptions.	We have a template.	We use UTC to reach out the PIs but we are working on taking that responsibility in house.	Mass General Law Chapter 7 Section 58
NJ	Praga Shah	80%	We have a template.	Announcement posted on the Research website. Emailed announcement to those on a notification list.	-
NY	Salma Sultana	Mostly UTCs.	-	Announcement posted on the Research website. Emailed announcement to those on a notification list. All RPFs have to be published in the NYS Contract Reporter.	All procurements have to follow the state finance law and regulations set by the State Comptroller's office.
PA	Pat McVeigh	We call it RFQ (Request for Quotes), but 100%.	We have a template.	Procurement notifies vendors on a pre-qualified list.	Unsure, as our procurement office handles this.
VT	Emily Parkany and Ashlie Mercado	Zero. We work with organizations on our Qualified Researcher List.	We have Problem Statement templates and a proposal template.	Emailed announcement to those on a notification list.	All procurements fit federal and state requirements, for example State Attachment C and Agency of Digital Services attachments as appropriate.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*SFR-2. Please choose the issues to which state requirements apply.	*SFR-3. Can research agreements bypass standard procurement rules?	*SFR-4. Please indicate how indirect cost rates are negotiated determined:	*SFR-5. Does your agency recognize federally negotiated university overhead rates?
CT	Mauricio Garcia-Theran	Cooperative agreements, Qualification-based selection	No	-	Yes
DE	Austin Gray	Competitive bidding	No	-	No, I do not believe so anymore.
ME	Colby Fortier-Brown	N/A	No. Cooperative agreement meet standard procurement rules.	Negotiated individually	-
MD	Hua Xiang	Competitive bidding, Sole source awards, Cooperative agreements. fix asset definition - any equipment over $500, not the federal $5,000.	Yes, with in-state public universities.	Negotiated individually. Maryland DBM requires us to try our best to cap it at 15% by negotiating individually. Most of them give us a rate around 26%, with a couple at 15%.	No

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*SFR-2. Please choose the issues to which state requirements apply.	*SFR-3. Can research agreements bypass standard procurement rules?	*SFR-4. Please indicate how indirect cost rates are negotiated determined:	*SFR-5. Does your agency recognize federally negotiated university overhead rates?
MA	Anil Gurcan	Competitive bidding, Sole source awards, Cooperative agreements, Qualificaction-based selection	Yes. Sole source is used when it is applicable.	Negotiated individually	Yes
NJ	Praga Shah	Competitive bidding, Qualification-based selection	No	Capped by the state	-
NY	Salma Sultana	Competitive bidding, Sole source awards, Cooperative agreements, Qualificaction-based selection	No	N/A	Yes
PA	Pat McVeigh	Competitive bidding, Cooperative agreements, We do have a consortium out of UPitt in addition to our competitive bid.	No. Unsure, but I do not think so	Negotiated individually	Yes
VT	Emily Parkany and Ashlie Mercado	Competitive bidding, Sole source awards	No	All external research grant agreements are deliverables-based fixed-costs. Any indirect cost rates (university and others) are invisible to us.	Yes. Research grants are independent of what indirect cost rates are used.

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*SFR-6. Who owns the resulting intellectual property produced in your research contracts?	*SFR-7. What contract language is used for copyright, Section 508 Accessibility compliance or AI?	*SFR-8. How are these contract provisions referenced in the previous question enforced?	*SFR-9. Do you have deliverable-based payment structures?
CT	Mauricio Garcia-Theran	Both agency and contracting entity.	All deliverables (progress, interim, and final reports) must be Section 508 compliant per 36 CFR 1194.94.	-	No
DE	Austin Gray	Your agency	Not currently addressed in DelDOT research contracts.	N/A	Yes
ME	Colby Fortier-Brown	Both agency and contracting entity. Depends.	None yet.	N/A	Yes
MD	Hua Xiang	Both agency and contracting entity. It depends on whether it's university research (through master agreements) or consultant tasks (A&E contracts). They are under different governing terms.	We are evaluating languages on Section 508 and AI languages. Copyright language is under General Conditions article XII on Pages 29-30 of example provided.	-	No

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State	Respondent	*SFR-6. Who owns the resulting intellectual property produced in your research contracts?	*SFR-7. What contract language is used for copyright, Section 508 Accessibility compliance or AI?	*SFR-8. How are these contract provisions referenced in the previous question enforced?	*SFR-9. Do you have deliverable-based payment structures?
MA	Anil Gurcan	Both agency and contracting entity.	All electronic and information technology deliverables rendered under this contract shall comply with Section 508 of the Rehabilitation Act (29 U.S.C. § 798 SECTION 508) and the Access Board Standards available for viewing at http://www.section508.gov.	MassDOT will consider deliverable not complete	Payments are on a monthly invoice basis but MassDOT reserves the right to payment if deliverables are not met.
NJ	Praga Shah	Contracting entity (university or other)	-	-	No. Payment based on quarterly progress.
NY	Salma Sultana	-	-	Certain contract provisions are added to the project scope of work as a deliverable. Deliverables-based payments are withheld if the deliverable is not complete.	Yes.
PA	Pat McVeigh	Both agency and contracting entity. Unsure, but I think both?	None that I am aware, but I will confirm/follow up.	-	Yes. We allow it but discourage it for Annual Work Program budgeting reasons.
VT	Emily Parkany and Ashlie Mercado	Both agency and contracting entity. State always has access to IP generated or related to the project.	In VT, our final report disclaimer page includes this language. Final Report template: https://vtrans.vermont.gov/sites/aot/files/Research/VT%20AOT%20508%20Compliant%20Research%20Report%20Template.docx	Requires Research Section checking and negotiation at the end of projects.	Yes

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NTRC - 2026 NYS DOT-VT AOT Peer Exchange - Survey Responses - Topic 3. Setting Up External Research Contracts

State	Respondent	*SFR-10. Do you foresee any possible changes with new federal rules?	*SFR-11. How are research funding and contracts being used in innovative ways (e.g., to meet federal requirements)?	*SFR-12. Additional comments or information about your previous responses.
CT	Mauricio Garcia-Theran	No	Our research unit is relatively new, and we are continuing to develop our processes. Innovative approaches are an area of interest as the unit matures.	-
DE	Austin Gray	No	None at the moment.	DelDOT's research program is very disorganized and unstructured. We are currently working on a project with a consultant to provide more structure to it where we hope to address many of these topic areas.
ME	Colby Fortier-Brown	Yes. Interested in tracking reauthorization progress, though the new bill doesn't change SPR.	#VALUE!	-
MD	Hua Xiang	Yes. The ADA Accessibility (508 compliance) is mandatory (deadline extended to April 2027 in Maryland).	-	-

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State	Respondent	*SFR-10. Do you foresee any possible changes with new federal rules?	*SFR-11. How are research funding and contracts being used in innovative ways (e.g., to meet federal requirements)?	*SFR-12. Additional comments or information about your previous responses.
MA	Anil Gurcan	No	We are in the process of creating a follow up process to see implementations	-
NJ	Praga Shah	-	-	-
NY	Salma Sultana	Yes. Increased flexibility to use the funds in various activities.	-MASH (Manual for Assessing Safety Hardware Regulation) tests -Emerging Technologies to be explored	-
PA	Pat McVeigh	No	We have a research consortium (IRISE) that functions like a UTC but with public and private partnership. We utilize a open end agreement to do implementation testing related to completed research.	-
VT	Emily Parkany and Ashlie Mercado	No	We do what Contract Administration tells us to do.	-

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APPENDIX J. NEW YORK STATE DOT – NYSDOT EXTERNAL RESEARCH CONTRACTS

NYSDOT
External Research Contracts

New York State DOT–Vermont AOT 2026 Research Peer Exchange
Albany, NY

Salma Sultana
Assistant Engineer
Materials Bureau

Lisa Cataldo
SPR Program Administrator
Office of Policy, Planning & Performance

June 9, 2026

Setting Up External Research Contracts

Briefly identify strengths and challenges in your current research contracting process.

- **Strengths**
  - University Transportation Center (UTC) partnership
  - Established mechanism for engaging academia
  - Provides access to multidisciplinary expertise
  - Streamlines contracting through an existing framework

Setting Up External Research Contracts 2

Briefly identify strengths and challenges in your current research contracting process.

- **Challenges**
  - Procurement procedures can be time-consuming
  - Limited university reach: Existing mechanisms may not fully engage: Smaller institutions, Specialized research groups outside the network

Setting Up External Research Contracts 3

What other staff or resources are needed at your agency for research contracting?

- **Key internal stakeholders involved:**
  - Materials Bureau - Transportation Research: Technical Support
  - Office of Policy, Planning & Performance - Alignment with agency goals, federal requirements, contract development
  - Office of Contract Management - Procurement, contract support, and compliance

Setting Up External Research Contracts 4

What other staff or resources are needed at your agency for research contracting?

- **Additional Needs**
  - Dedicated research contracting specialists
  - Legal support familiar with research agreements
  - Enhanced coordination across offices

Setting Up External Research Contracts 5

Using fair and open competition standards, how do you work with a specific entity or university system? Discuss contracts, mechanisms and relationships with UTCs and other research facilities and universities.

- **Master Agreements with UTCs: Pre-established terms with universities and assign specific research tasks under the master agreement**
- **Open RFPs**

Setting Up External Research Contracts 6

Provide examples of contract language between a state DOT and other entities such as university/university system, research facilities, consultants.

- **UTC agreements contain a "maintenance period" to complete task assignments**
- **Specific provisions for technical data; proprietary rights; publicity**
- **The Task Assignment process is formally included into the UTC contract scope of work**

Setting Up External Research Contracts 7

Provide examples of contract language between a state DOT and other entities such as university/university system, research facilities, consultants.

- **The agreement includes a quick-response consultation mechanism that allows NYSDOT to obtain short-term technical assistance on emerging issues**
- **Task Assignment contracts are issued for each approved research activity or project**

Setting Up External Research Contracts 8

What contract language is used for copyright, Section 508 Accessibility compliance or AI?

- **Copyright language is included in research contracts and UTC Task Assignment contracts**
- **Research contracts and UTC Task Assignment contracts include language that states deliverables must be Section 508 compliant**
- **AI is an emerging field, and discussions are underway on a path forward**

Setting Up External Research Contracts 9

How are these contract provisions enforced? Do you have deliverable-based payment structures?

- **If there is an issue with contract performance, NYSDOT Contract Management is engaged for assistance and next steps**
- **The deliverables-based payment structure acts as a way to enforce the requirements (i.e., Section 508 compliance)**

Setting Up External Research Contracts

Discuss possible changes with new federal rules.

- **Changes to 2 CFR 200 effective as of FFY25 allow for additional uses of federal funds**
- **Currently evaluating future project needs on a case-by-case basis to see if activities that were not eligible in the past may be as a result of this change**

Setting Up External Research Contracts 11

How are research funding and contracts being used in innovative ways (e.g., to meet federal requirements)?

- **Safety example – MASH (Manual for Assessing Safety Hardware) Testing projects**
- **MASH Tests are a set of standardized crash testing guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO) in collaboration with the Federal Highway Administration (FHWA) to evaluate the safety performance of roadside safety devices**
- **Other ideas?**

?

Questions?



Thank You



Department of Transportation

APPENDIX K. VERMONT AOT – VT AOT'S QUALIFIED RESEARCHER LIST

VT AOT's Qualified Researcher List

Emily Parkany

NY VT Peer Exchange
Albany, NY
June 9, 2026

VERMONT
AGENCY OF TRANSPORTATION
RESEARCH PROGRAM

Motivation

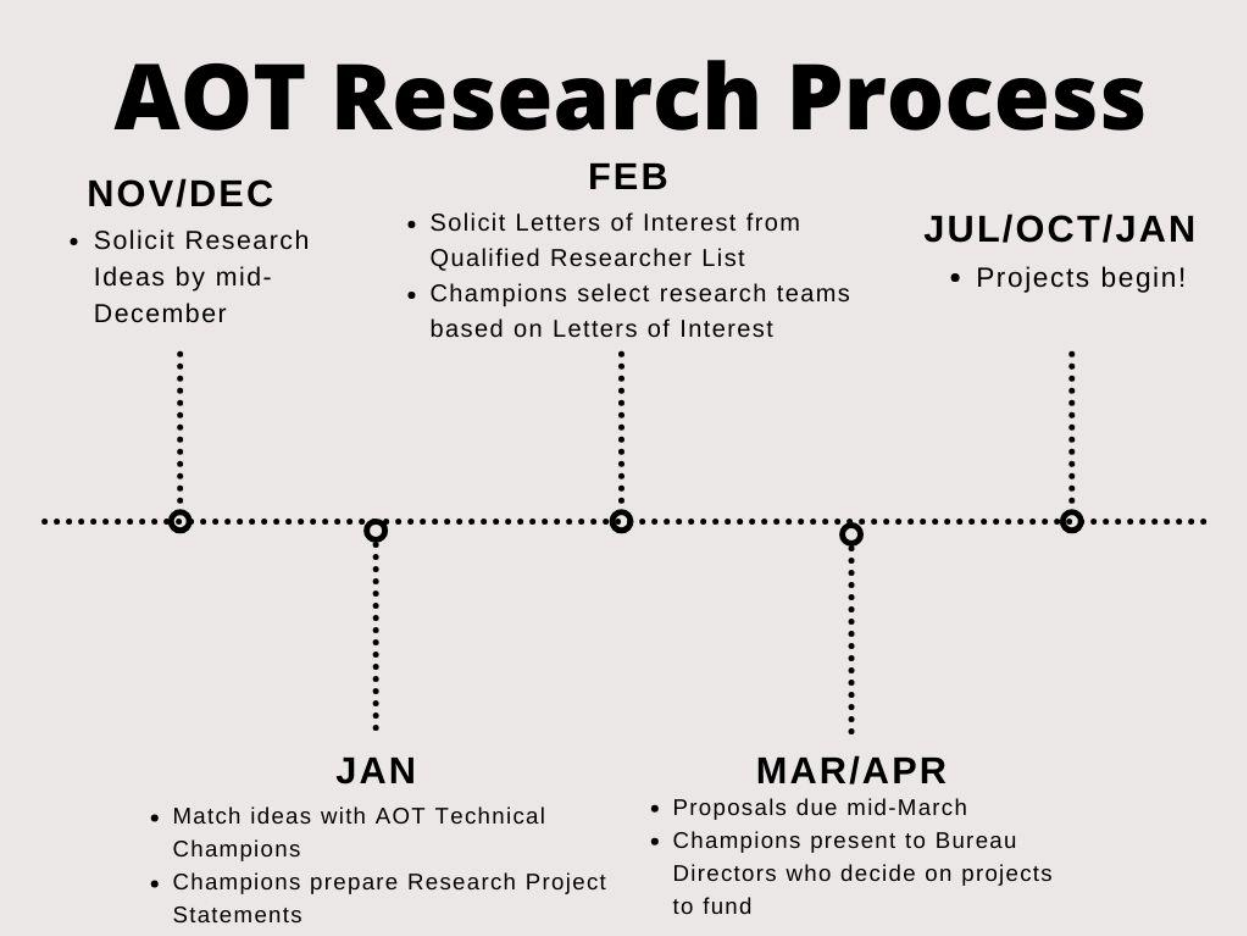
Largely we want a competitive process that is not a large lift on the AOT side, at least for the technical Champions

We want a list of researchers (academic, consultant, other) that will get our Research Problem Statements

As much as possible in VT is competitively bid

No Master Agreements with universities	There are Task Order Retaining Agreements

VT AOT External Research Process



FFY 2023 External Research Process Cycle

40 Research Project Ideas Submitted

11 Ideas Matched to AOT Champions

9 Letters of Interest Received From 8 Organizations on Qualified Researcher List

9 Projects Presented to Decisionmakers

4 Projects Selected

VT AOT QRL History

First we were looking for VIHE

Research asked for VT universities (VIHE) to submit potential research ideas, resumes of potential researchers (up to 10), past experience examples (funded and unfunded)

Research managed: submitted to Research, Research kept list on Research website

QRL 2025-2028

- Now all universities and consultants, lots of discussion with USGS
- Four years with on-ramp
- Administered by Contract Admin/Grants Team
- Now each submission is scored by three people; needs formal comments

Current Organizations:

https://vtrans.vermont.gov/contract-admin/results-awards/notice-funding-opportunities-awards

- Universities
  - **Clarkson University**
  - Norwich University
  - **University of Vermont**
  - **University of Massachusetts, Amherst**
  - **University of Massachusetts, Lowell**
  - University of Massachusetts, Dartmouth
  - **University of New Hampshire**
- Consultants
  - **Applied Pavement Technology**
  - **Applied Research Associates**
  - CTC & Associates
  - CRO Planning & Design
  - DNP Infrastructure
  - Environmental Science Associates (ESA)
  - Resource Systems Group (RSG)
  - Stantec Consulting Services
  - Toole Design Group
  - **VHB**
- Other
  - The MassINC Polling Group

Complaints

- UVM whines—SPR-B funds in other states remain in state
- USGS can’t compete with others
- From NJ Peer Exchange: SOV IT requirements are prohibitive

Letters of Interest (LOI) Difficulties

- If we don't receive Letters of Interest
  - Re-send to QRL
  - Repackaged the work into Simplified Bid
- If the Champion is not excited by the LOI
  - Project does not have to go forward
- Some Champions feel like they should pick the letter of idea submitter
  - Buyer's Remorse

Lessons for Other Peers

All federal funds should be competitive

Sometimes a consultant is a better way to use limited funds

Relies on enthusiastic Champion

Need to balance Contract Admin vs Research roles

QRL for other procurements

APPENDIX L. CONNECTICUT DOT – SETTING UP EXTERNAL RESEARCH CONTRACTS

Setting Up External Research Contracts

Research Unit, Connecticut Department of Transportation
NYSDOT and Vermont AOT 2026 Research Peer Exchange
Albany, NY, June 9, 2026

How Do We Conduct Research?

From the CTDOT and FHWA Division Office Stewardship and Implementation Plan Document – Research Section :

"The CTDOT considers how to address research needs and may at its option":

- Conduct research with in-house personnel
- Conduct research through a pooled fund study
- **Conducts research through agreement with its Land Grant State Research University**
- **Submit needs to outside universities** and/or other outside transportation research programs for consideration

Research Partners and Contracting Mechanisms

Institution	Type	Mechanism	Notes
University of Connecticut (UConn)	**Public**	• Master Memorandum of Understanding (10-year term) • Project Authorization Letter (PAL) issued per project	• PAL issued per term (State Fiscal Year) • PAL serves as "extension" letter
Central Connecticut State University	**Public**	• Memorandum of Understanding per project	• Extension letter issued after a performance period • Legal support for review
University of New Haven	**Private**	• Agreement per project	• Require Office of Attorney General approval/signature • More involvement with legal and finance/agreement offices • Extensions letter issued after a performance period • Structure of the document is a little different
University of Hartford	**Private**	• Agreement per project	• Same as above

Key Contractual Elements of the Documents

- Scope of the Project and budget
- Terms and funding
- Invoices and Payments
- Subcontracts
- Ownership of products of research and intellectual property
- Amendments and terminations
- Regulations (e.g. 23 CFR Part 420 Subpart B)

MOUs and agreements can span different fiscal years (Duration of the project) but are budgeted by fiscal year

Strengths and Challenges

Strengths

- Master MOU with UConn allows some flexibility and streamline the process
- Active working relationships with three other in-state universities
- With approval, Master MOU allows entering in any contract with a third party (contractor) to perform all or a part of the Research Project
- Subcontracts for agreements is also allowed but may be more restrictive

Challenges

- Limited administrative and clerical capacity for drafting MOUs, agreements, PALs, amendments and extension letters
- In addition to other reporting requirement, staff are pulled into contracts drafting
- Amendments are often required due to delays or reallocation of funds from year to year
- State fiscal year (Jul-Jun) does not align that well with Partner Universities

CTDOT

Thank You

Mauricio Garcia-Theran
Research Manager
Connecticut Department of Transportation
Bureau of Planning, Technology and Innovation

APPENDIX M. DELAWARE DOT – DELDOT RESEARCH PROGRAM BASICS AND SETTING UP EXTERNAL RESEARCH CONTRACTS

DelDOT Research Program Basics and Setting Up External Research Contracts

Austin Gray

Assistant Director, Planning

6/4/26

DELDOT

DELAWARE DEPARTMENT OF TRANSPORTATION



Excellence in Transportation

Every Trip.

We strive to make every trip taken in Delaware safe, reliable and convenient for people and commerce.

Every Mode.

We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails and walking paths.

Every Dollar.

We seek the best value for every dollar spent for the benefit of all.

Everyone.

We engage our customers and employees with respect and courtesy as we deliver our services.


DEATH AND SERIOUS INJURIES ARE UNACCEPTABLE • HUMANS MAKE MISTAKES • HUMANS ARE VULNERABLE • RESPONSIBILITY IS SHARED • SAFETY IS PROACTIVE • REDUNDANCY IS CRUCIAL •
SAFE SYSTEM APPROACH
Safer People
Safer Vehicles
Safer Speeds
Safer Land Use
Safer Roads
Post-Crash Care

Structure/Organization

- Housed within Division of Planning, Statewide and Regional Planning Section
- Three staff that work on research part-time, no formal research office/dedicated research staff.

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Agreements with Universities

- 5-Year Master Agreement with University of Delaware
  - Typically includes:
    - Planning tasks
    - Legislatively-directed research tasks
    - Delaware Center for Transportation administration
    - LTAP administration
    - Other annual tasks as requested by other sections (Bridge, Maintenance, Environmental, etc.)
  - Work initiated on an on-call task order basis.
- Currently no Master Agreements with Delaware State University or Delaware Technical Community College
- Language exists in Delaware legislation to formally prefer in-state Universities for research
- Competitively bid process for projects in which a researcher is not identified (described on next slide)

Competitively Bid Research Program Administrative Process

- Process begins about one full year before project intiiation
  - Setting research priorities
  - Receiving and processing ideas
  - Initiating procurement
  - Project award notices
  - Executing contracts
  - Preparing funding

Strengths and Challenges

- Procurement process can burdensome and often extremely backlogged
  - Competitively bid scoring system does not lend itself to a research program
- Fundamental differences between university-initiated research and DelDOT needs
- Underdeveloped relationships between DelDOT staff and University faculty.
- Lack of transportation-related programs available at Delaware State University and Delaware Technical Community College
- Rsesearchers at all Universities not always suited to meet Department needs but no apparent means of conducting work otherwise that would be able to be initiated in a timely manner.

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QUESTIONS &
COMMENTS

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https://linktr.ee/delawaredot

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THANK YOU!

https://linktr.ee/delawaredot

APPENDIX N. MAINE DOT – MAINEDOT RESEARCH CONTRACTS

MaineDOT Research Contracts

Colby Fortier-Brown
Director of Research and Innovation
Bureau of Project Development
Maine Department of Transportation
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University of Maine

- Cooperative Agreement
- Often scope projects with PIs
- Can contract with them directly

Contracting Process

- Typically use Consultant process
- 5-year RFQ with open qualification between for pre-qualified vendors
- Choose vendor and assign up to $250,000
- Looking to add research-specific service number

Contracts

- Recent University contracts have been lump sum by time or deliverable
- Consultant-based contracts use specific rate structures

APPENDIX O. MARYLAND DOT SHA – SETTING UP EXTERNAL RESEARCH CONTRACTS



MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

Topic 3: Setting Up External Research Contracts

Hua Xiang, Deputy Director
Office of Policy and Research
Maryland State Highway Administration

General Information

Annual Budget:

- Research program is approximately $4.4M/year (FY 2026)
- Approximately $3.9M in federal funds
- Approximately $500K in state matching funds

External Research Contracts

Annual SPR-B Research Program

Things off the top: NCHRP, TRB, TPFs, LTAP match, AASHTO TSPs, and other earmarks

New Research Projects

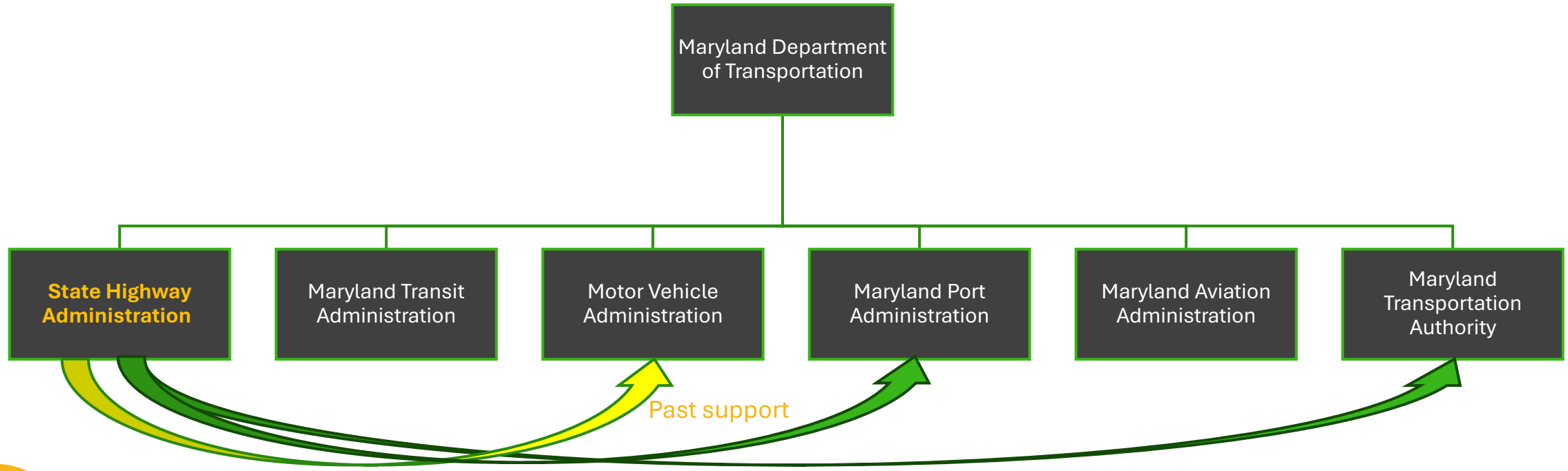
- Consultant projects: Offices work with consultants that they have existing A&E contracts.
- RFP sent to in-state public university researchers.
  - The Research Division develops and executes general open-end research agreements with in-state public universities.
  - We process these in less than four weeks.
  - Throughout the years, we have worked with **eight** in-state universities.
- When no in-state researchers can do the research, we work with out-of-state public university researchers.
  - Office of Procurement and Contract Management develops and executes MOUs with out-of-state public universities.
  - It usually takes them about eight weeks, with long delays possible.
  - Throughout the years, we have worked with Penn State, TTI, and University of Montana.
- It is very hard to directly work with private university researchers.

- Private universities are treated like consulting firms. Sole-source contracts are usually needed.
- During the 20+ years of my tenure here, we have worked with JHU only once.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

General Information

DOT Organizational Structure:



One of our current university master agreements supports two sister modal administrations' tasks.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Briefly identify strengths and challenges in your current research contracting process.

- We establish general open-end research agreements with in-state public universities, which cover five years. No-cost extensions are also possible. Individual research projects are placed under these master agreements as task orders. If in-state university researchers are a good fit for our research projects, the "contract" can be executed timely, almost without any delay. The challenges arise when there are no such researchers available for a specific research idea. We have a project that has not received a responsive proposal after three rounds of RFPs to both in-state and out-of-state public universities (Aquatic Organism Passage Design Methods for Culverts: Effectiveness and Sustainability Phase II).

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

APPENDIX P. MASSACHUSETTS DOT – MASSDOT RESEARCH CONTRACTING

MassDOT Research Contracting

Northeast Transportation Research Consortium
NYS-VT Peer Exchange
June 9, 2026

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7 Special Provision
8 508 Compliance and AI
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General Process – 1

- Scope Development
- Getting FHWA approval
- Vendor selection
    - ◇Proposals are submitted through COMMBUYS (Massachusetts state procurement system)
    - ◇Proposals are reviewed
    - ◇Evaluation Committee reviews the proposals, conducts interviews (optional) and recommends the preferred bidder
    - ◇Research negotiates the scope and budget with the selected vendor

General Process – 2

- MassDOT utilizes a cloud-based work management platform called Wrike
- Following documents need signatures
  - Standard Contract (or ISA)
  - Standard Provisions
  - Special Provisions
  - Contractor Authorized Signatory Listing
- PMs use “Contracting Intake” through Wrike and follow the prompts to submit a new contract request.
- PMs provide names, titles, email addresses of all the vendor contacts also drafts FHWA memos.
- Once PMs provide all the required contract documents, Administration creates an Adobe Sign package, and Contracts and Records office sends it to the vendor.

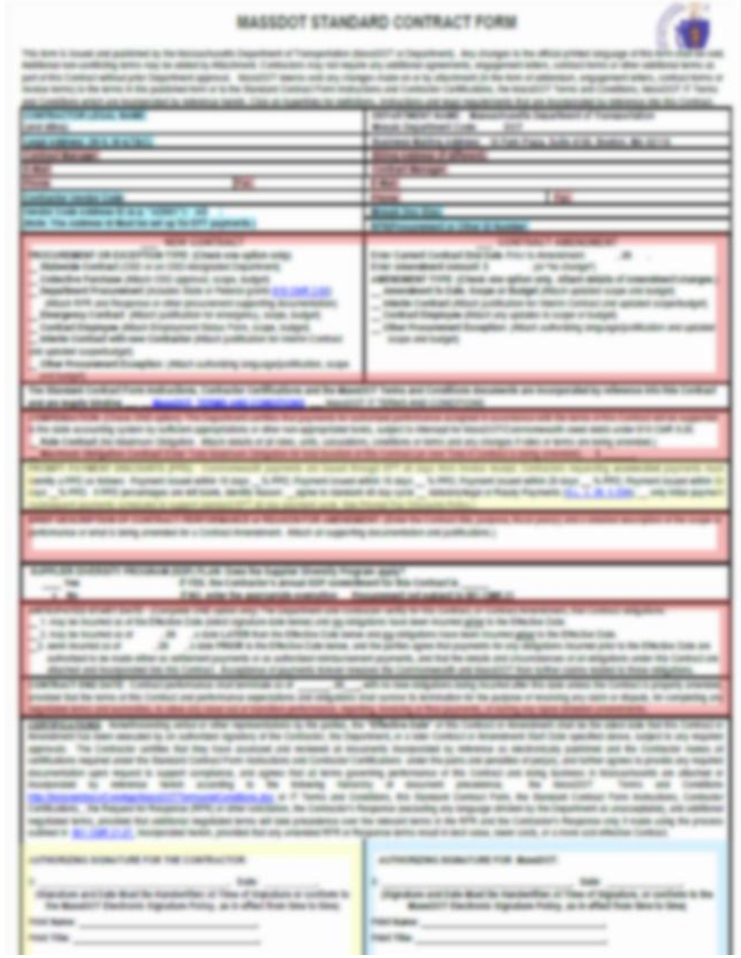


wrike

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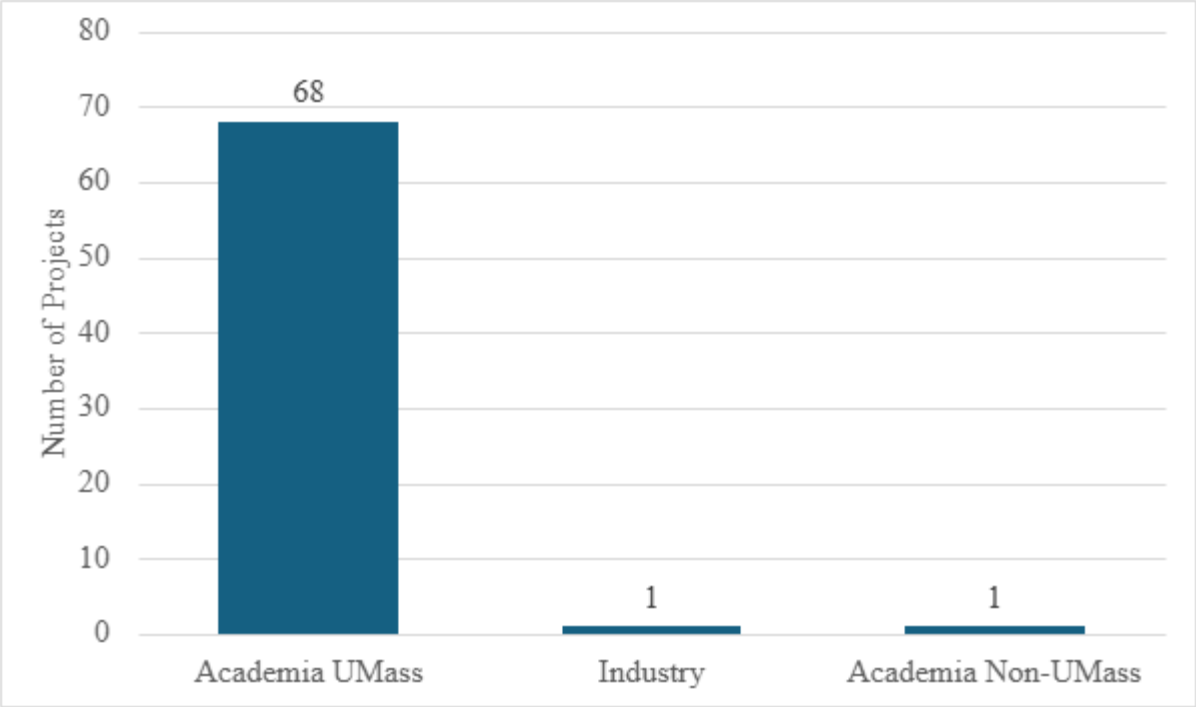
Standard Contracts

- Standard Contracts are used in contracting non-state entities such as MPOs, private vendors, private or out of state universities.
- Research contracts are competitively procured under MGL Ch 7C section 58
- Contracts use the “MassDOT Standard Contract Form” and related backup documentation
- Red filled by admin
- Blue filled by the PMs
- Yellow filled by the vendor



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Interdepartmental Service Agreements (ISAs)



Last 10-year period

- ISA are agreements between state entities
- ISAs are used to transfer funding, split costs, or pay for services rendered to a state entity by another state entity
- ISAs are not competitively procured but are evaluated upon a “best value” basis
- ISAs use the “ISA Form” and related backup documentation
- MassDOT Research has relied on UMass for vendor selection in the past but going forward will take a more active role

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Special Provisions

- The Special Provisions document is required for all new contracts with consulting firms or private or out of state universities or MPOs/RPAs
- The Special Provisions outline the contract performance period, maximum obligation, overhead rates for prime and sub-contractors, and various terms of payment.
- PMs must update the Special Provisions with information related to the contract before submitting to Administration.
- If vendor request any edits to the Standard Provisions, it will be addressed here on the Special Provisions
- Special Provision require a review and approval by MassDOT legal

508 Compliance and AI

- MassDOT contracts have special language for Section 508 Accessibility compliance

n. SECTION 508 COMPLIANCE /ACCESSIBLE ELECTRONIC DOCUMENTS

All electronic and information technology deliverables rendered under this Agreement shall comply with Section 508 of the Rehabilitation Act (29 U.S.C. § 798 SECTION 508) and the Access Board Standards available for viewing at http://www.section508.gov. Unless otherwise indicated, the Consultant represents by signature on this Agreement that all deliverables shall be in compliance with all applicable Access Board Standards.

Further, the Consultant shall comply with the following standards to ensure accessibility of electronic deliverables under the Commonwealth's Enterprise Information Technology Accessibility Policy:

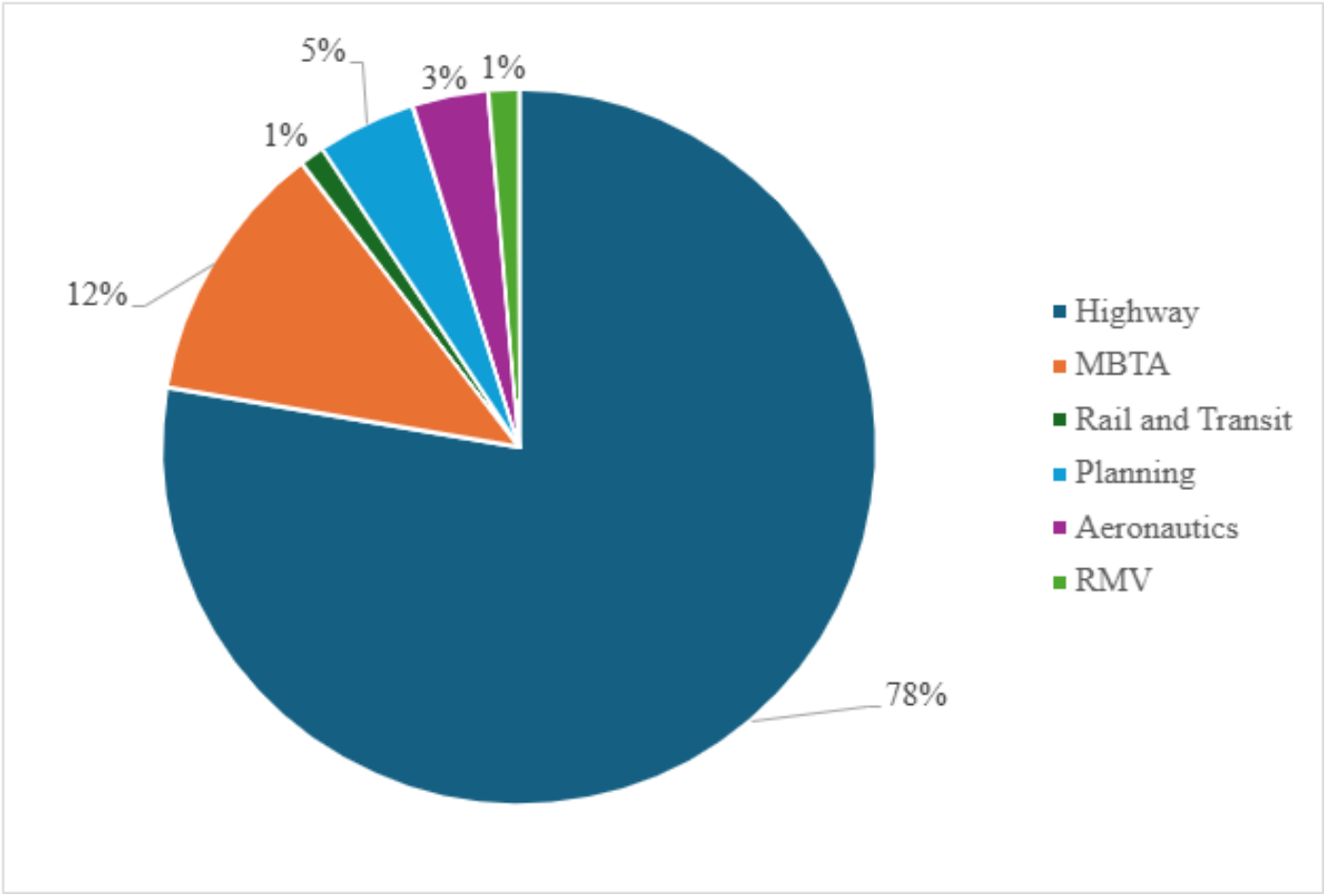
- Web Content Accessibility Guidelines 2.1 (WCAG), level A and AA Guidelines
- Portable Document Format (PDF) documents, PDF/UA-1 (ISO 14289-1)

- MassDOT currently does not have any specific language for the use of Artificial Intelligence models.

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Breakdown of Projects

- MassDOT Research section recently completed a Project Portfolio Analysis of the projects completed within the last 10 years
- Breakdown shows majority of the research going to Highway projects with MBTA and Planning coming second and third
- Research team also completed an Implementation Survey Report of the same time period



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ThankYou

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APPENDIX Q. PENNSYLVANIA DOT – SETTING UP EXTERNAL RESEARCH CONTRACTS

SETTING UP EXTERNAL RESEARCH CONTRACTS

PAT MCVEIGH – NTRC PEER EXCHANGE 6.9.26

Pennsylvania
Department of Transportation





Pennsylvania
Department of Transportation











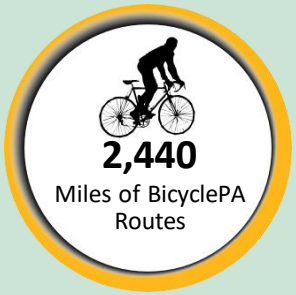












*Total miles on all PA roadways

LB (1-26)

PENNDOT'S CONTRACTING

Overview

- Research ITQ
  - Handled by our Bureau of Office Services (BOS)
  - Pre-approved vendors (43) across 9 categories
  - BOS does advertisement & contract creation
    - Research staff assists in scope development
  - Selection Committee
    - All technical staff
- DGS Master Agreements
  - Only universities
  - Generally reserved for special circumstances or non-SPR projects
- Research Consortium
  - Impactful Resilient Infrastructure Science & Engineering (IRISE)

PENNDOT'S CONTRACTING

Discussion Points

- Working with specific entity
  - This is either difficult or time consuming, but possible
- UTC/Other Mechanisms
  - We don't have an active UTC, but the IRISE consortium was built out of one that was not successful
  - Assist with program areas in their discussions with Universities
- Master Agreements are per institution, can provide examples
- Deliverable-based is an option, discouraged for budgetary reasons
- Open End Agreement for Implementation & Tech Transfer
  - SPR-B specific tasks & projects
- Asset Management Pooled Fund – our contribution

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