New Jersey
Department of Transportation

Research
Peer Exchange
October 25-28, 2011
Report

Foran Building, Training Center
NJDOT Main Office Complex
1035 Parkway Avenue
Trenton, NJ 08625

Research Peer Exchange

Managing with Reduced Resources:
Best Practices in Streamlining Processes; Knowledge and Technical Transfer and Collaboration
Within a Dynamic Workforce Environment

Research Showcase &
TRB Field Visit Agenda

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INTRODUCTION

The State Department of Transportation (DOT) research peer exchange process facilitates the positive exchange of knowledge, which enhances States' management plans and work programs.

Formerly known as peer review, peer exchanges provide an instrument for sharing knowledge among professionals in the field. Each State is expected to conduct a peer exchange of its research program. This can be an exchange that examines either the full management process or a focused area within the State's program. The peer exchange panel of four to five people should include participants from other State research programs, Federal Highway Administration (FHWA) staff, universities, or others; at least one or two of the panel members.

As per the September 20, 1996, memo

The regulations (23 CFR 420 Subpart B) require that each State must agree to peer reviews of its Research, Development, and Technology Transfer (RD&T) management process to be eligible for the Federal Highway Administration's (FHWA) planning and research funds. A peer review (exchange) is to be conducted at least once every 3 years. The State is responsible for selecting and organizing the peer exchange team.

The Bureau of Research and Demonstration at New Jersey Department of Transportation is an active participant in the federally mandated peer review (exchange) program. By both hosting and participating in peer exchanges the Bureau gains knowledge of other states' practices.

PEER EXCHANGE TEAM

Camille Crichton-Sumners | Manager, Bureau of Research
New Jersey Department of Transportation

Camille Crichton-Sumners, manager, Bureau of Research, NJDOT, champions and sponsors the implementation of transportation research to improve working conditions, as well as the "quality of life" for NJDOT employees and the residents of New Jersey.

Chris Hedges | Senior Program Officer, Cooperative Research Programs
Transportation Research Board

Chris Hedges is a Senior Program Officer for the National Cooperative Highway Research program within TRB. With more than twenty years of experience in transportation research program management, he manages a diverse portfolio of research in the areas of policy, environment, economics, planning, finance, traffic engineering and geometric design.

Cameron Kergaye | Director of Research
Utah Department of Transportation

Cameron Kergaye is Director of Research at the Utah Department of Transportation where he has worked for over twenty years in design, construction, materials and project management. He is a Professional Engineer in the State of Utah, a Project Management Professional with the Project Management Institute, and a past Engineering Management Fellow at AASHTO. He holds a PhD in civil engineering from the University of Utah and is author of numerous publications on adaptive traffic signal control and transportation system operations.

Leni Oman | Director, Office of Research and Library Services Washington Department of Transportation

Leni is the Director of the Office of Research and Library Services with the Washington State Department of Transportation (WSDOT). She is responsible for managing an innovative research program and library resources affecting all aspects of all modes of transportation in the state. She is the Executive Director of the Washington State Transportation Center, a partnership of the University of Washington, Washington State University, and WSDOT. She is also the Chair of the AASHTO Research Advisory Committee Task Force on Transportation Knowledge Networks and a member of RAC Region 4 and the RAC Task Groups on Collaboration and Coordination.

Leni serves as the Transportation Research Board (TRB) State Representative for WSDOT and is Chair of the new Task Force on Knowledge Management (AB010T), and a member of the Conduct of Research Committee (ABG10) and Policy and Organization Group (AB000) as well as the panel for the National Cooperative Highway Research Project titled Improving Management of Transportation Information (NCHRP 20-90). Leni's career

includes a mix of fish health, spill response, watershed, and information management. She has been employed by the State of Washington since 1989.

Gene Shin | Program Manager
Virginia Department of Transportation

Dr. Gene Shin has been with Knowledge and Information Transfer since 2004. He brings extensive educational experience and expertise to the position, having worked from high school to the graduate school level on curriculum design and development, educational training and instruction, and pedagogical theory and practice. He also has several years' experience with qualitative research and Business Process Management methodology, having worked to develop process analysis and improvement at PRA, a multi-national contract research organization. He has served on TRB Project 17-36: National Highway Safety Manual, and NCHRP Synthesis 365: Preserving and Using Institutional Memory through Knowledge Management Practices. He co-authored two publications for the National Education Association, as well as the VTRC report "A Qualitative Study of the Core Functions of Smart Traffic Centers at the Virginia Department of Transportation". Dr. Shin leads the business process management work that has resulted in improved environmental processes, as well as defining VDOT's command and control approach to emergency response.

Linda Taylor | Director of the Research Services
Minnesota Department of Transportation

Linda Taylor is director of the Research Services for the Minnesota Department of Transportation. She manages Federal and State Research Program, the Transportation Library, and Contract/Financial Services unit. Linda is also administers the Local Road Research Program. She is the state TRB representative, member of Region three ASHTOO Research Advisory Committee (RAC), and active member of RAC Value of Research, and Program Management and Quality (PM & Q) taskforces.

Linda is a graduate of the University of Minnesota with a bachelor's degree in Civil Engineering and is a registered professional engineer in the State of Minnesota. She has 29 years of experience in the transportation field and held numerous positions within MnDOT (Bridge, Construction, Traffic, Freeway Operations, Maintenance, and ITS

Richard Woo | Director of Policy and Research
Maryland State Highway Administration

Dr. Woo began his transportation career in the early 1970s in Taiwan where he was involved with the design and construction of the nation's first national highway. In 1977 he came to the United States to pursue his graduate studies. In 1979 he received a Master's of Science in Civil Engineering from the South Dakota School of Mines and Technology. Dr. Woo went on to receive a Ph.D. in Transportation Engineering from Iowa State University in 1984.

In 1991, he joined the Maryland State Highway Administration (SHA) as a bridge hydraulics design engineer, senior project team leader, and later as Chief of SHA's Research Division. He currently serves as the Director of Policy and Research and is responsible for activities related to the American Association of State Highway and Transportation Officials, federal and state legislation, transportation reauthorization and appropriations, ADA Title II compliance, management of SHA's research program, university partnerships and international activities.

Dr. Woo has been a registered Professional Engineer in the State of Maryland since 1986. He lives in Clarksville, Maryland with his wife and five children.

Additional Participants
Bethany Allinder, NJ LTAP, Scribe
Sandra Brillhart*, FHWA-NJ Division*
Janet Leli, NJ LTAP, Observer

FOCUS

"Managing with Reduced Resources: Successful Practices in Streamlining Processes; Knowledge and Technical Transfer and Collaboration within a Dynamic Workforce Environment"

PRESENTATIONS

Each participant was required to present on the organization structure of his/her department, change and transition within the department, and best practices for knowledge transfer and establishing collaborative relationships. The presentations (Appendix C) were followed by a roundtable discussion of best practice takeaways for the three topics.

GOALS

Camille Crichton-Sumners: Goals for the Peer Exchange include exchanging ideas for addressing transportation research unit challenges, including reduced funding and workforce challenges, as well as sharing ideas for improving efficiency and effectiveness depsite increasing public need for officialism. Discussion will touch upon exploring benefits of social media, helping with forms and contracting processes, strategies for getting authorization for training and research conferences. Overall, the desired outcome is to increase NJDOT research involvement on national committees and panels despite travel restrictions and economic challenges.

SUMMARY OF DISCUSSIONS

U.S. Department of Transportation
Federal Highway Administration

FHWA Introduction

This is a federal requirement but it is more than that. FHWA's vision is for the country to have the best transportation system in the world. We might be falling behind, but research programs are something worth investing in and state DOTs need to help realize this goal. FHWA is looking for performance-based metrics from a sound research program.

Every Day Counts (innovation, ingenuity, invention, imagination)

Looking ahead, FHWA will focus on Everyday Counts, a new initiative which employs new technology to accelerate project delivery. Examples are interactive webinars with topics like reinforced soils, warm mix asphalt. The program is always soliciting ideas for new initiatives.

New Jersey Department of Transportation Summary

Organizational Structure

The Bureau of Research has a current goal of being a critical business unit within the NJDOT.

The research office is staffed with 6 Research Project Managers (RPMs) and 2 administrative professionals. Goal is to eventual have each RPM manage research studies in respective subject areas. Research is outsourced to several in-state universities, including Rutgers University, a Tier 1 UTC. There are 60 active contracts with universities and the Bureau of Research is comprised of essentially project managers.

2 full-time librarians are on staff under a state library contract. Recently, they were relocated to another building, which can present challenges for sharing resources.

- **Reactive/proactive strategy to allocate funds**
  Reactive strategy is categorized by Long -Range Plan Goals, a Capital -Investment Strategy, as well as by FHWA. Proactive strategy has been to implement a Strategic Plan (2005) and a Program Assessment (2011).

- **How research is conducted**
  Automated voting documents are used for ranking projects; however the reduced amount of meetings is not always beneficial for new employees or individuals in new positions.

  Problem statements are sent by email. For RFPs, there are no proposal meetings and Q & R is done on the website. An automated program called PROMPTS is being used for RFPs, SPR reporting, performance reports, and departmental/ financial forms.

- **Challenges**
  There are benefits of current technology for transportation and in sharing research and right now NJDOT is not able to access popular services, even though it is used by universities and research partners to share information in a current and dynamic way.

  Main challenges are getting right the people into the research unit based upon targeted competencies, difficulties that arise when a customer /champion retires or is promoted/responsibilities change, and receiving permission to attend off-site events due to a required ethics form and lengthy approval process.

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  Finding time to train new people, working through a hiring freeze and motivating current employees, as well as adequately overseeing outsourced work have all been challenges.

  One response has been to reduce a Research Project Manager's workload by allowing the PI to hire technical editor, which reduces review time.

- **Response to reduced funding**
  NJDOT holds quarterly stakeholder meetings, so there is less need to travel. However, diminished resources lead to reduced services, which in turn lead to a reduction in customer participation and lack of innovation and continuity. The end result at this time is that NJ is not able to compete or not meet Federal requirements (80/20 Federal vs. State Share).

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  NJDOT utilizes Transporter/Newsletter articles, Intranet/Website Notices, the Research Library, Principal Investigators, and University/Consultant to disperse information.

- **Best practices for communication**
  There are automated documents in PROMPTS and the each fall, the Bureau of Research hosts the Annual Research Showcase with NJLTAP and there are occasional Brown Bag Luncheons. In addition, they either host or participate in visiting scholar lectures or webinar via UTC and LTAP.

Transportation Research Board Summary

Organizational Structure

TRB is one of six divisions that make up the National Research Council, and is compromised of about 120 employees. TRB expects and tracks ideas from people who travel to the annual TRB conference and encourage states try to represent something in your own area. They are looking to promote agendas for specific areas of transportation: reliability, renewal, expanding capacity for socio-economic areas, and safety.

- **Reactive/proactive strategy to allocate funds**
  There is a system in place, but a variation in practice, funds allocated based on tracks and discussion. There is informal discussion to make sure all areas are properly represented.

- **How research is conducted**
  There are functional areas/ components that are divided. TRB implements a cost benefit and feasibility analysis for ranking and it works to identify problems that are causing the most damage. Questions asked: “Will the project provide a feasible and implementable solution?”

  For research contracting, sole source contracting with PIs need to be justified, and for non- PI ideas, it goes to the RFQ pool.

- **Challenges**
  Research programs are dependent on state funding and federal legislation. As a result, research programs are planned on a year to year basis with no guarantee of continued support. The ongoing delays in the highway bill reauthorization make planning particularly difficult, as well as individual state travel restrictions.

  Maintaining level of service to members with lack of funding and stability is a challenge. Maintaining TRB’s own staff continuity is also challenging, with balancing workload amongst staff and little opportunity for promotion.

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  Challenges include expanding and improving programs and services with existing staff and budgets and maintaining staff continuity. Resolutions have been to defer projects and incremental project funding to manage cash flow.

- **Response to reduced funding**

There is a greater emphasis on revenue generation than ever before as well as a greater use of communications technologies, such as webinars, virtual meetings, E-newsletter). All annual meeting content is now available online, as well as all publications.

The Cooperative Research Programs are managing cash flow to deal with state and federal funding delays and uncertainties. They are delaying the start of some projects, and putting funding caps on projects when they are initiated. These caps are removed when funds become available.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  TRB develops research products in appropriate formats to facilitate implementation and that is most accessible to the public. There is tracking for the implementation of NCHRP products.

- **Best practices for communication**
  "Impacts on Practice" series is now available, which is a series on how DOTs have been impacted and benefited from research. All research is posted on TRID and RiP and enhancements have been made to TRID and RiP. Internally, TRB has a once a month staff meeting with occasional guest speakers.

Utah Department of Transportation Summary

Organizational Structure

With 6 people on staff, the focus of the research department is to support UDOT goals, work with multiple divisions, identify research needs, and then seek innovative solutions. There is not a lot of emphasis on internal research; however UDOT maintains a national connection. To date, there are 17 new projects, 17 continuing across 10 subject areas.

- **Reactive/proactive strategy to allocate funds**
  To ensure that funds are being put to their best use, there has been a reduction in the amount of categories for funding. When you involve experts, you should promote implementation. For continuing projects, the best practice utilized is if champion is not vested, then you don't waste money and time. There has also been a push to get funding from other divisions at UDOT—groups will fund projects that they want and then they are vested.

- **How research is conducted**
  There is a Contract Planning Checklist, which shows how you run a project from start to finish and a tracking spreadsheet to help with transparency. Research evaluations are conducted with the materials division. There is a constant focus on customizing and looking at the impact of distribution of information. When you only send the specific, there is a better chance of it being read.

- **Challenges**
  More project management training is needed as well as better communication with senior leaders for greater and more effective implementation: "Get them on the hook and on record."

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  Utah has implemented many streamlined processes, including a Contract Planning Checklist, Project Tracking Spreadsheet, Contract Docs Review, and a simplified website. The website has a "3 click rule": if you can't find what you are looking for in 3 clicks or less, the user will lose interest.

- **Response to reduced funding**
  There is more of a focus on big ticket items at project planning workshops, specifically, Construction & Materials, Maintenance, Traffic Management & Safety, and Geotechnical Structures.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  There are final report presentations, and research booths at certain events. A simplified and accessible website draws people in, and an exploration of social media has yielded new ways to present research.

- **Best practices for communication**
  A newly hired technical writer is able to help effectively communicate research results. Regular region field visits and visits to universities help build confidence and ensure good communication on both ends.

Washington Department of Transportation Summary

Organizational Structure

The Office of Research & Library Services (ORLS) at WSDOT recently moved from reporting to the Chief Engineer to the Strategic Planning Division. Within ORLS, there are two primary functions: Research Office and WSDOT Library. WSDOT has an incredibly robust research library. There are 4 on staff that support both functional areas. ORLS manages research contracts for WSDOT, including 8 master agreements and 12 agreements with other institutions.

- **Reactive/proactive strategy to allocate funds**
  Funding allocations are led by driving organizations— and funding bodies. There is an executive committee and advisory committee. The research executive committee allocates new funding, and it reserves the right to make necessary changes/ adjustments. The director also makes suggestions to the research allocation committee.

- **How research is conducted**
  WSDOT employs a system called TRAC, which is a partnership between WSDOT, University of Washington and Washington State. TRAC provides a link among government, university researchers, and the private sector, and acts as a liaison—connecting those who need applied research with those best suited to conduct it.

- **Challenges**
  All the innovation in the department should be internal. That is a challenge, but client-sponsored research should be at least be programmed by ORLS. Although the department is a recognized part that brings value, there are accountability and performance issues.

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  In the last 10 years, WSDOT has transformed business practices by providing enhanced reporting transparency to the public, legislature and governor and implementing efficient project and program delivery methods. WSDOT has also institutionalized a climate of cost saving and innovative transportation solutions.

- **Response to reduced funding**
  Responses to reduced funding have been to consolidate management, use shared services, prioritize what they do, while eliminating low priority activities and extending equipment replacement cycles. WSDOT also released “WSDOT’s Workforce Business Strategy” in September 2011.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  WDOT utilizes the following best practices: Research folios (11x17), a project summary document, a strategic implementation plan, TRAC biennial report, use of a bulletin board, viral messaging, project close-out presentations, and prepared elevator speeches. The Research Office worked with the Research Advisory Committees to identify research activities that support achievement of the strategic plan. This is not a prescriptive list but helps shape the understanding of the connections to the strategic plan and improve awareness of where research has contributed.

- **Best practices for communication**
  TRAC provides a link between government, university researchers, and the private sector. Another key initiative that supports the communication of WSDOT's Mobility Goal is *Moving Washington*. The initiative has transit partners working together to fight congestion and combat climate change.

  WSDOT also actively participates in several national research groups, most prominently, TRB. 42 WSDOT employees are on 62 TRB standing committees and WSDOT employees chair or co-chair 7 committees.

Minnesota Department of Transportation Summary

Organizational Structure

MnDOT's Research Services department houses approximately 20 people, many funded and shared with other departments within MnDOT. MnDOT Research Services supports Minnesota's transportation industry by meeting the innovation and information needs of transportation practitioners and the transportation community.

Strategic Directions are as follows:

• Safety –Promote and maintain a safe, reliable and modern transportation system
• Mobility – Improve access and enhance the movement of people and freight.
• Innovation – Promote a culture of innovation in the organization
• Leadership- Become the transportation leader and employer of choice for Minnesota's diverse population.
• Transparency – Build public trust in MnDOT

- **Reactive/proactive strategy to allocate funds**
  There is a voting system by board members. The strategy used is to make sure high priority needs are met, but also that each is balanced.

- **How research is conducted**
  MnDOT uses Ideascale, an application for solicitation of project proposals and an Automated Tracking System (ARTS). The Governing Board Voting shares funding recommendations, proposal feedback and evaluation results, looks for SP &R program opportunities and will expand proposals to address local or state needs.

  To streamline the proposal process, there are university master contracts, multiple proposal reviews and an elimination of problem statements without champion.

- **Challenges**
  Employee challenges (HR), funding, reauthorization, turnover, and record retirement due to recent government shutdown have lowered morale considerably. Getting people to be vested in research is a challenge (bringing up people into research rather than having to have a PhD. to begin with).

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  The government shutdown led to many suspended contracts and contracting mechanisms, as well as changes in the contracting process. There have been leadership changes, and as a result, retirements, also more shared (administrative) positions. Overall, staff motivation is an issue.

- **Response to reduced funding**
  For the SP & R Program, there has been a re-evaluation of Pool Fund Projects and reduced implementation.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  Minnesota provides an "Annual Report" & "At-A-Glance" which includes information regarding their Research Program, Local Road Research Board, and State Planning and Research (SP&R).

- **Best practices for communication**
  Ideas submitted by employees during the E-magination JAM last fall are becoming reality. These ideas are geared toward improving Mn/DOT processes, making the department more efficient and creating an environment that people want to work in.

Virginia Department of Transportation Summary

Organizational Structure

The Virginia Center for Transportation Innovation and Research (VCTIR) is partnership of the Virginia Department of Transportation and the University of Virginia since 1948. VCTIR specializes in basic and applied research to support VDOT, its primary customer. It also provides technical consulting and training of future transportation professionals through its work with U.Va. and other Virginia universities. The corporate tenets of VDOT recognize research as one of its core businesses, a rarity for a state transportation department. This means VDOT will develop and deliver a robust transportation research program that results in saving lives, saving time and saving money.

Virginia manages the 3rd highest number of road miles in the country. All primary, rural, local roads outside municipalities are handled by VDOT, and there are 18,000 miles of critical roads.

- **Reactive/proactive strategy to allocate funds**
  VCTIR acts independently—no one outside of research allocates funds. The research director allocates funds to associate directors and reports directly to the commissioner of VDOT.

- **How research is conducted**
  Long-term relationships with scientists and the rest of VDOT are key to the function of the program. University partnerships are an effective balance of practical and academic approaches. With 50 on staff, there are rules to keep work internal before going external, and it is up to associate directors to manage projects. VCTIR also works closely with the Knowledge Management office, which collects, organizes, preserves and shares the expertise and institutional knowledge of the agency and its employees to benefit current and future projects.

- **Challenges**
  There have been staff reductions internally. There was an agency-wide reduction of 9500 in 2009 to 6900 2011. There was also a recent audit for viability of existence. The outcome was the creation of the Virginia Center for Transportation Innovation and Research (VCTIR). Due to this change, internal

processes are not clearly documented and streamlined, and practices vary across teams and researchers. One solution has been to employ Business Process Methodology (BPM) to capture and manage all existing processes.

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  There was a loss of the publication team, and lack of common templates. There has been a shift of focus to emergency response processes—helps define VDOT as a business "ER" agency.

- **Response to reduced funding**
  Reduced funding has led to a development of a business process methodology—to provide a common platform for talking to one another.

  Maintenance and operations with two linked but different missions had not been integrated. A BPM helps to create meaningful information.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  There is a dedicated knowledge management division, which assists in learning to manage what you know and the result is that research is related in more dynamic and productive ways. For example, new ER concepts have been needed, but the first attempt at institutionalizing them failed. The solution was to identify people and meet on a weekly basis and map process and give guidance.

- **Best practices for communication**
  The BPM helps to promote better communication, because it draws upon on basic concepts on how the brain retrieves information and create meaningful information and helps to distinguish critical questions for one another.

Maryland State Highway Administration

Organizational Structure

The Office of Policy & Research (OPR) supports SHA's business plan by developing expertise and functioning as a liaison on policy development, research, and federal and state legislative issues. With 2 ½ people on staff, and the research staff being cut in half in 2005, there have been many obstacles to overcome, yet OPR continues to be a very visible unit and has an emphasis on project diversity.

- **Reactive/proactive strategy to allocate funds**
  There is annual appropriation of the Federal-Aid Program, as well as mandatory spending of the 25% of the State SPR funding on Research. The director reports directly to the administrator and follows federal legislation: earmarks and working with congressional delegation, etc. All dues (TSB, LTAP, AASHTO, and TRB) are paid with research dollars, and while OPR is a 3 million dollar program, after costs there is only 1.2 million left for research.

- **How research is conducted**
  Research staff is under University of Maryland payroll and is conducted under the Office Policy and Research. There is a Business Plan (SHA plan) and any research proposal needs to explain why this research complies with the business plan.

  Factors considered in prioritizing projects include:
  1. Relevance
  2. Merit

3. The likelihood that the results can/will be implemented
4. Potential benefits to the Administration
5. Previous related research efforts.

- **Challenges**
  Retirees are not being replaced and workload increases. There has been a 10% decrease in overall SHA employees. Research funding tied to federal and state transportation funds and reductions and uncertainty affect budgets. Maryland's longtime Highway Administrator, who was very supportive of research, retired in June. Staff has had to rethink its approach on how to engage top leadership on research issues.

Dynamic Work Environment: Organizational Change and Transition

- **Organizational changes that have impacted research**
  Changes at the top of an agency require education and possible changes in focus. Balancing objective research with policy priorities have been a challenge. Further, the Research Division is one division within the Office of Policy and Research and is being assigned more work on matters outside of research project management.

- **Response to reduced funding**
  With reductions in the state operating budget, employees have found it difficult to review research material and take part in many research activities. So to activate a streamlined process, opportunities have been identified by focusing on knowledge management and they have been documenting various processes to ensure future employees have access to key knowledge.

Knowledge Transfer & Collaborative Relationships Best Practices

- **Best practices for sharing research**
  There are on-going updates/enhancements to OPR's Intranet site and OPR maintains a link to up-to-date state information for all active projects. The Research division also uses SharePoint to set up a SharePoint list and when new information is posted, an automatic email is sent to the subject matter customer group. In addition, all quarterly and final project reports are posted on the Administration's Share drive.

- **Best practices for communication**
  One ways of improving internal and external communications is to meet with key project/stakeholder teams at least once or twice a year to discuss what is going well and what needs to be improved. OPR also makes it a priority to show support for project/stakeholder teams by attending programs that highlight collaborative projects as well as other initiatives

Our Programs

- Communication and library programs
- Having a technical writer on staff
- Targeting distribution of research information and delegating that responsibility
- Involving upper management, such as having them facilitate research groups, provides strength
- Reviewing how other organizations are formed and operating
- Leveraging Transportation Pooled Funds and documenting the value our agencies leverage
- Employee Strategies:
  - Intern programs: Cost sharing with UTCs and look for other opportunities.
  - Rotation programs for graduate students help to anchor program.
  - Mentoring for new employees to leverage value of research and understand bigger programs.
  - Identifying options for developing staff—climate and lack of motivation and ability to choose staff to better the program
- MnDOT's "At a Glance"
- Quantifying savings and investments
- Better define research and what to filter: get upper management to see value of research—then better staff will want to come and be involved in research.

Dynamic Work Environment: Organizational Change and Transition

- How NJ editors work?
- No champion, no project
- VA: Implementation of projects—brand new initiative
- What TRB can do to facilitate?
- Streamlining contract process
- How to help staff submit research and strategically identify projects
- Library functions: How to justify services and expand collection.
- How to use opportunity to advocate for research with upper management—what to push, what to request?
- Applications—IdeaScale and ARTS, send out deadline reminders, how to automate more processes?
- Washington State shared services
- Signature authorization for under $100,000
- Business process management
- How to handle budget reductions
- Use of remote meeting software such as GoToMeeting or JoinMe
- Marketing the program
- The 20-24 report on organizational change
- Providing Project Management training for research managers
- Using a Contract checklist

Knowledge Transfer & Collaborative Relationships Best Practices

Getting the most out of our resources

- Business Process Management and leadership training program
- Internal risk assessment
- Field visits to see institutions and see new equipment—because of retirements and turnovers
- Getting a 50% match out of UTC

Outreach activities and research products

- Market to the specific research discipline—a critical component
- Using Viral messaging
- Capturing national research participants—breakdown into functional area
- Get people to bring back clips from conferences and presentations
- Elevator speeches and how to simplify complex content
- Videos that can be embedded on the website: Research in 60 seconds
- Using a picture of road or bridge segment to identify the contribution of research, consider making this interactive
- Re-vamp website—3 click rule
- Investigate different project summary formats— for short technical and non-technical audiences
- Using posters as a research tool—background on on-going projects
- Research guidelines (best practices)
- Recognize the Metropolitan Policy Organizations (MPOs) as an audience and marketing partner. They may also be able to help with implementation
- SharePoint—how to use to post reports

Gathering Feedback

- Surveys and follow-up evaluation—talking to groups to see what is helpful and what is valuable, to help justify and evaluate importance of certain programs. Surveying every other year and get feedback on website
- E-Jam—helpful in getting feedback
- Anonymous suggestion box

Appendix A: Peer Exchange Agenda

Research Peer Exchange

Managing with Reduced Resources:
Best Practices in Streamlining Processes; Knowledge and Technical Transfer and Collaboration
within a Dynamic Workforce Environment

Research Showcase &
TRB Field Visit Agenda

October 25-28, 2011

Confirmed Peer Exchange Team

Camille Crichton-Sumners, NJDOT Host Leni Oman, Washington DOT, Team Leader Linda Taylor, Minnesota DOT, Participant Richard Woo, Maryland SHA, Participant	Cameron Kergaye, Utah DOT, Participant Gene Shin, Virginia DOT, Participant Chris Hedges, NAS TRB Senior Program Officer Sandra Brillhart, FHWA-NJ Division

Additional Participants

Bethany Allinder, NJ LTAP	Scribe
Janet Leli, NJ LTAP	Observer

Schedule

October 25, 2011 NJDOT Foran Building

1:00 P.M.
Introductory Session

a.	Welcome	Host
b.	Team introductions	All
c.	Official welcome from NJDOT Senior Leadership	Dave Kuhn
d.	Comments from FHWA-NJ Division	Sandra Brillhart
e.	Housekeeping	NJ LTAP
f.	Peer exchange objectives/Review of agenda	Leni Oman

1:45 P.M.
Organizational Information All

Participants should be prepared to provide a PowerPoint presentation or electronic package of 10—15 minute presentations

a. Organizational structure and function of the Research Unit including any staff that conduct and manage research and staff, manage knowledge and technology transfer initiatives, fund source
b. Specific resource challenges in current organizational climate

4:30 P.M.
Adjourn

5:30 P.M.
Dinner Runway Inn Mercer County Airport

October 26, 2011 NJDOT Foran Building

8:00 A.M.
Tour of NJDOT Headquarters Complex
Snow Room, Research Library, Bureau of Research/Planning, Commissioner's Wing

8:30 AM
Breakfast with Commissioner, James S. Simpson Commissioner's Conference Room

Peer Exchange Team Introductions, perhaps mentioning briefly the value of research in each state.

9:30 AM NJDOT Foran Building

Participants should be prepared to provide a PowerPoint presentation or electronic package of 10—15 minute presentations

Dynamic Work Environment: Organizational Change and Transition
How has your organization responded to the following?

a. Organizational changes impacting the Research Function
b. Increased or decreased responsibilities due to attrition, outsourcing?
c. Reduced funding?
d. Have you implemented activities to streamline processes in light of diminished resources?

10:15 A.M.
Midmorning Break

12:00 Noon
Lunch

1:00 P.M.

Participants should be prepared to provide a PowerPoint presentation or electronic package of 10—15 minute presentations

Knowledge Transfer & Collaborative Relationships Best Practices

a. Best Practices for sharing research
b. Ways of improving internal and external communications
c. Enhancing intra-organizational and inter-organizational team efficiency
d. Ten minute presentations from each participant
e. Recap of the Day

4:30 P.M.
Adjourn

5:30 PM
Dinner On Your Own

October 27, 2011

7:30 A.M.
13th Annual NJDOT Research Showcase **Conference Center at Mercer**

Carpool meets in Marriott Lobby

Showcase Agenda	
8:15	**Registration, Poster Session, and Refreshments**
9:00	**Welcome and Opening Remarks** E. David Lambert, P.E. Director, Design Services New Jersey Department of Transportation (NJDOT)

9:15	**Keynote Address** Ernie Blais Division Administrator Federal Highway Administration (FHWA), New Jersey Division
9:45	Chris Hedges Senior Program Officer, Cooperative Research Program Transportation Research Board of the National Academies
10:00	**Poster Session and Break**
10:30	**Presentation of Outstanding Student in Transportation Award and 2011 NJDOT Research Implementation Award** Andrew R. Swords, AICP, PP Acting Director NJDOT, Division of Statewide Planning Camille Crichton-Sumners Manager NJDOT, Bureau of Research
11:45	**Technical Solutions in Transportation: Here and Abroad** Ted Green, P.E. New Jersey Local Technical Assistance Program (NJ LTAP) at Rutgers' Center for Advanced Infrastructure and Transportation (CAIT)
11:45	**Sandwich Buffet Lunch and Poster Session**
1:00	**Concurrent Breakout Sessions** Sessions in four main transportation categories will be presented: **Multimodal/ITS, Safety, Environment,** and **Infrastructure**. There will be structured times for four concurrent breakouts by topic area. Each breakout session will have three presentation times: 1:00 p.m. - 1:40 p.m. 1:45 p.m. - 2:20 p.m. 2:25 p.m. - 3:00 p.m.
3:00	**ADJOURNMENT**

October 28, 2011 NJDOT Foran Building

8:30 A.M.
Research Showcase Comments All

9:15 A.M.
Peer Exchange Document Finalization All

9:45 A.M.
Peer Exchange Closeout Session All

State/organizations approach to research programming to meet agency's strategic mission

a. Comments
b. Discussion with Senior leadership Dave Kuhn
c. Miscellaneous housekeeping items/Final thoughts

11:30 a.m.
Adjourn Peer Exchange

LUNCH (Order in- all welcome to attend) Foran Building

1:00 pm
TRB Field Visit

National Academies
Transportation Research Board
Annual Field Visit

About the Field Visit Program
Specialists in the Transportation Research Board Technical Activities Division identify the current concerns and learn about the activities of the transportation community through its the annual field visit program, through which TRB staff meet on site with each state transportation department, many universities, transit and other modal agencies, and industry representatives. The objectives of the program are to (1) learn of problems facing these organizations and transmit information from state, industry, or educational institutions that can help solve those problems; (2) learn of research activities that are in progress or contemplated, and exchange information on similar research being carried out elsewhere, thus preventing duplication of efforts; (3) identify new methods and procedures that may be applicable elsewhere; (4) identify innovative or experimental work that may not be widely published, but is worthy of broader attention; (5) describe the Board's range of services to new staff at transportation agencies that support TRB; and (6) identify potential candidates for TRB committees.

TRB Visitor Ann Purdue is the Senior Program Officer for the Rail and Freight in the Technical Activities area of TRB. She is an attorney whose most recent position was as the High Speed Intercity Passenger Rail Program Manager in the New York State Department of Transportation. She previously served with the Virginia Attorney General, responsible for all legal matters pertaining to public-private transportation projects and design-build projects undertaken by the Virginia Department of Transportation. Ann also served CSX Transportation as both in-house and outside counsel for several years, covering a broad range of activities in business practice in real estate and other commercial transactions and negotiating commuter rail agreements in Maryland and Virginia.

TRB Visitor Chris Hedges is a Senior Program Officer for the National Cooperative Highway Research program within TRB. With more than twenty years of experience in transportation research program management, he manages a diverse portfolio of research in the areas of policy, environment, economics, planning, finance, traffic engineering and geometric design.

I. Introductions
II. Organizational Overview/ Partnership Relationships
http://njdotintranet.dot.state.nj.us/charts/orgchart.pdf page 6
- *Dave Kuhn,* Assistant Commissioner, Capital Investment Planning & Grant Administration, NJDOT
- Talvin Davis, Director Multimodal Services, NJDOT
- Janice Pepper, Director of Research, NJ Transit
- Sandra Brillhart, Team Leader, FHWA NJ

III. Opportunities New Jersey's perspective
- Overweight/Oversized trucks
- 286

IV. TRB's Perspective on Critical Issues
V. NCHRP
- TCRP

VI. Final Thoughts

Appendix B: Contact Information

Peer Exchange Panel

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Appendix C: Minnesota's Research Services Program-at-a-Glance and Peer Exchange Power Points

RESEARCH SERVICES

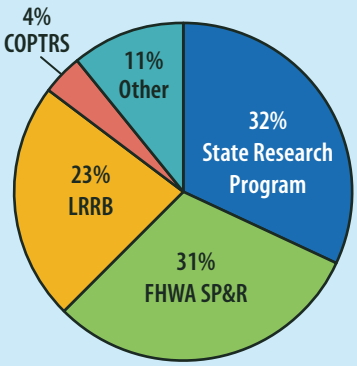
Office of Policy Analysis, Research & Innovation

FY2011 At-A-Glance

July 1, 2010, through June 30, 2011

This publication provides key research and library statistics, a directory of Research Services staff and a list of research contracts active during Minnesota Fiscal Year 2011. This list includes all reports produced during the year as well as the multi-state pooled funds to which MnDOT has contributed.

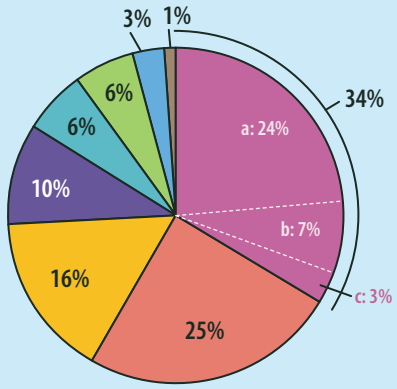
FY2011 Research Funds by Funding Source



State Research Program	$3,245,222
FHWA State Planning and Research (Part II)	$3,190,840
Local Road Research Board	$2,308,800
Cooperative Program for Transportation Research and Studies	$357,929
Other*	$1,117,087
Total	**$10,219,878**

*Includes federal funding sources and contributions from other MnDOT offices (Maintenance, Traffic, Materials, Investment Management and Policy Analysis, Research & Innovation); MnDOT districts; other state agencies; the Twin Cities Metropolitan Council; and the University of Minnesota Intelligent Transportation Systems Institute.

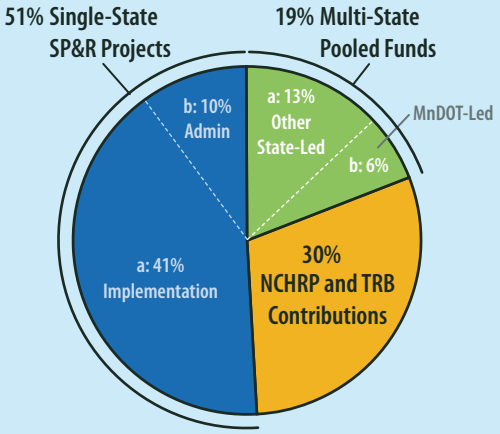
FY2011 Research Funds Allocated by Topic Area*



Administrative	
a: Dedicated Programs (CTS & LTAP)	$ 1,731,505
b: Research Administration	$ 501,374
c: LRRB/RIC Administration	$ 244,303
	$ 2,477,182
Materials & Construction	$ 1,813,507
Traffic & Safety	$ 1,135,410
Policy & Planning	$ 727,182
Bridge & Structures	$ 435,308
Environmental	$ 406,888
Maintenance Operations & Security	$ 224,353
Multimodal	$ 91,650
Total	**$ 7,311,480**

*Includes only projects with contracts maintained by MnDOT Research Services.

2011 SP&R Part II Funding Distribution*



Single-State SP&R Projects	
a: Implementation	$ 1,127,764
b: Program and Administrative Support	$ 272,000
	$ 1,399,764
Multi-State Pooled Funds	
a: Participation in Pooled Funds Led by Other States	$ 368,710
b: MnDOT-Led Pooled Funds	$ 151,700
	$ 520,410
NCHRP and TRB Contributions	$ 829,690
Total	**$2,749,864**

*SP&R commitments are tracked by calendar year.

Your Destination...Our Priority

MnDOT 2011 Research

THESE TABLES ARE ORGANIZED BY RESEARCH TOPIC AREA:

RESEARCH PROJECTS:

- Completed research reports and and transportation research syntheses that were released in fiscal year 2011: July 2010 to June 2011
- Research contracts with end dates during FY2011 that did not result in a final report
- Other research contracts active during FY2011, including some tasks or contracts that are part of larger programs that MnDOT tracks individually

POOLED FUND TABLES*:

- Multi-state transportation pooled fund studies led by MnDOT
- Other multi-state transportation pooled fund studies in which MnDOT participates, either through a calendar year 2010 or 2011 contribution or through past contributions that are still producing value for Minnesota

*Project titles are active hyperlinks in the online PDF version of this document.

FUNDING SOURCE KEY

COPTRS	Cooperative Program for Transportation Research and Studies
LRRB	Local Road Research Board
SRP	MnDOT State Research Program
SP&R	State Planning and Research (FHWA)
PF	Partnership Funds

Click the blue "X" in the "TS" column for a PDF download of the Technical Summary for the project. Technical Summaries are also found in the 2010 Annual Report or at www.research.dot.state.mn.us.

"Participating States" for some pooled funds includes Canadian provinces and agencies such as FHWA.

Bridges & Structures

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-14	89261 WO112	Bridge Scour Monitoring Technologies: Development of Evaluation and Selection Protocols for Application on River Bridges in Minnesota	University of Minnesota	Jeff Marr	Andrea Hendrickson	Shirlee Sherkow	9/26/08	1/31/11	SRP	$60,000	$60,000	100%	X
2010-39	89261 WO144	Development of an Advanced Structural Monitoring System	University of Minnesota	Arturo Schultz	Moises Dimaculangan	Shirlee Sherkow	6/25/09	12/31/10	SRP	$79,925	$79,925	100%	X
2011-19	89261 WO152	INV 891: Performance Assessment of Oversized Culverts to Accommodate Fish Passage	University of Minnesota	John Nieber	Petronella DeWall, Nicole Danielson-Bartelt	Nelson Cruz	8/7/09	8/31/11	LRRB, SRP, COPTRS	$83,428	$78,917	95%	
N/A	97466	Implementing a Database Classification of MnDOT Steel Bridges with Fracture/Fatigue Critical Details	University of Minnesota	Arturo Schultz	James Pierce	Bruce Holdhusen	8/31/10	5/31/11	SRP	$5,000	$5,000	100%	
N/A	89261 WO142	Full Depth Precast Concrete Bridge Deck System—Phase II (inverted tee)	University of Minnesota	Cathy French	Keith Molnau	Daniel Warzala	7/30/09	10/31/12	SRP	$165,000	$0	0%	
N/A	89261 WO145	Wakota Bridge Monitoring Program	University of Minnesota	Arturo Schultz	Arielle Ehrlich	Shirlee Sherkow	6/19/09	5/31/12	SRP	$195,000	$111,697	57%	
N/A	89261 WO183	Development of an Advanced Warning System for Fracture Critical Steel Bridges—Phase II	University of Minnesota	Arturo Schultz	Moises Dimaculangan	Shirlee Sherkow	9/24/10	3/30/12	SRP	$68,000	$21,674	32%	
N/A	89261 WO192	Inspection of In-Place Bridges Constructed with Grouted Post-Tensioning Ducts	University of Minnesota – Duluth	Andrea Schokker	Paul Kivisto	Shirlee Sherkow	7/8/10	5/31/12	None	$123,195	$41,886	34%	
N/A	89261 WO200	Validation of Prestressed Concrete I-Beam Deflection and Camber Estimates	University of Minnesota	Cathy French	Brian Homan	Daniel Warzala	5/11/10	7/31/12	None	$100,000	$5,000	5%	
N/A	89261 WO244	A Research Plan and Factors Effecting Service Life for Culvert Pipe Materials in Minnesota	University of Minnesota	Jeff Marr	Andrea Hendrickson	Shirlee Sherkow	4/18/11	9/30/12	SRP	$29,999	$4,842	16%	
N/A	89261 WO261	MPR-0(004): Scour Monitoring Technology Implementation	University of Minnesota	Jeff Marr	Andrea Hendrickson	Shirlee Sherkow	4/18/11	5/31/14	SP&R, SRP	$38,233	$2,045	5%	
N/A	95439	MPR-9(002): Concrete Bridge Deck Crack Sealant Evaluation and Implementation	Braun Intertec Corporation	Matthew Oman	Edward Lutgen	Daniel Warzala	9/30/09	3/31/13	SP&R, SRP	$80,918	$16,672	21%	
N/A	96271	Synthesis of Bridge Approach Panel Best Practices	Minnesota State University, Mankato	Farhad Reza	Paul Rowekamp	Shirlee Sherkow	7/15/10	5/31/13	SRP	$25,000	$15,304	61%	

cont. ➡

Bridges & Structures [cont.]

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	96272	Load and Resistance Factor Design (LRFD) Pile Driving Project-Phase II Study	Minnesota State University, Mankato	Aaron Budge	Paul Rowekamp, Gary Person	Nelson Cruz	8/18/10	10/31/12	SRP	$120,000	$0	0%	
N/A	97835	Bridge Deck Delam Inspection Technology Evaluation and Development of Best Practices	EVS	Paul Keranen	Duane Green	Bruce Holdhusen	11/4/10	9/30/11	SRP	$52,026	$31,409	60%	
N/A	97918	Clarification of NBIS Laws and MnDOT Bridge Policies	HDR Engineering	Nick Sovell	Thomas Styrbicki	Bruce Holdhusen	12/10/10	7/31/12	SRP	$19,971	$6,411	32%	
N/A	98166	MPR-9(004): Load and Resistance Factor Design (LRFD) Pile Driving Static Load Test Data Collection (LRFD Implementation)	American Engineering Testing, Inc.	Gregory Reuter	Derrick Dasenbrock	Bruce Holdhusen	1/21/11	1/31/12	SP&R, SRP	$99,750	$50,710	51%	
N/A	98511	MPR-0(005): Bridge Deck Cracking TRS	American Engineering Testing, Inc.	Dave Rettner	Ronald Mulvaney	Shirlee Sherkow	3/22/11	11/30/11	SP&R, SRP	$5,000	$0	0%	
N/A	98640	MPR-0(005): Analysis of Bridge Deck Cracking Data	American Engineering Testing, Inc.	Dave Rettner	Ronald Mulvaney	Shirlee Sherkow	5/25/11	7/31/12	SP&R, SRP	$45,599	$0	0%	

Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(174)	Construction of Crack-Free Bridge Decks, Phase II	Paul Kivisto	Debra Fick	KS	14	2011	$995,000	$75,000	$15,000	$15,000	
TPF-5(179)	Evaluation of Test Methods for Permeability (Transport) and Development of Performance Guidelines for Durability	Bernard Izevbekhai	Debra Fick	IN	11	2011	$883,000	$87,000	$25,000	$12,000	
TPF-5(202)	HY-8 Culvert Analysis Program—Phase Three of Development Efforts	Petronella DeWall	Debra Fick	FHWA	8	2011	$155,000	$30,000	$10,000	$0	
TPF-5(221)	Accelerated Bridge Construction (ABC) Decision Making and Economic Modeling Tool	Kevin Western	Debra Fick	OR	7	2010	$110,000	$10,000	$10,000	$0	

Environmental

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-20	92929	MPR-6(032): Site Specific Native Grassland Seed Mix Design Methodology for Minnesota	Scale Tec LTD	L. Peter MacDonagh	Kenneth Graeve	Shirlee Sherkow	10/23/08	9/30/10	SP&R, SRP, PF, Other State Funds	$123,840	$123,840	100%	X
2010-38	89261 W054	INV 875: Improved Automatic Sampling for Suspended Solids	University of Minnesota	John Gulliver	Marilyn Jordahl-Larson	Shirlee Sherkow	12/4/07	2/28/11	LRRB	$55,000	$55,000	100%	X
2011-06	89261 W061	Evaluation of Buffer Width on Hydrologic Function, Water Quality and Ecological Integrity of Wetlands	University of Minnesota	John Nieber	Kenneth Graeve	Shirlee Sherkow	12/11/07	2/28/11	SRP	$158,872	$158,872	100%	X
2011RIC01	93463 Task 1	Decision Tree for Stormwater BMPs	SRF Consulting Group, Inc.	Mike Marti	Michael Sheehan	Bruce Holdhusen	2/19/09	12/31/11	LRRB	$51,748	$51,748	100%	
N/A	97321	Inventory of Ash Tree Attributes Along MnDOT Right of Way Within a 10-Mile Radius of TH280 and I-94	S&S Tree Specialists, Inc.	Gail Nozal	Daniel Gullickson	Sandra McCully	10/8/10	6/30/11	SRP	$86,639	$86,614	100%	
2011-08	89261 W0100	Assessment and Recommendations for the Operation of Standard Sumps as Best Management Practice for Stormwater Treatment (Vol. I)	University of Minnesota	Omid Mohseni	Barbara Loida	Shirlee Sherkow	7/8/08	5/31/12	SRP	$257,000	$201,000	78%	

cont. ➡

Environmental [cont.]

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
TBD	89261 WO157	Research and Assess the Farmer and MnDOT Economic and Environmental Costs and Benefits of Living Snow Fences, Including Carbon Impacts	University of Minnesota	Gary Wyatt	Daniel Gullickson	Daniel Warzala	6/15/09	2/28/12	SRP, COPTRS	$99,000	$96,426	97%	
N/A	89261 WO187	INV 892: Develop Outreach Program for a Thoughtful Street Tree Master Plan	University of Minnesota	Gary Johnson	Daniel Gullickson	Sandra McCully	4/8/10	9/30/11	LRRB	$20,000	$19,000	95%	
N/A	89261 WO207	INV 894: Assessing and Improving Pollution Prevention by Swales	University of Minnesota	John Gulliver	Barbara Loida	Bruce Holdhusen	7/30/10	9/30/13	LRRB, SRP	$314,000	$46,000	15%	
N/A	89261 WO211	INV 897: Developing Salt-Tolerant Sod Mixtures for Use as Roadside Turf in Minnesota	University of Minnesota	Eric Watkins	Adam Popenhagen	Daniel Warzala	6/8/10	8/31/14	LRRB	$176,516	$44,128	25%	
N/A	89261 WO250	Development of Turbid Water Effluent Monitoring Methods for Linear Construction	University of Minnesota	Bruce Wilson	Dwayne Stenlund	Bruce Holdhusen	6/27/11	7/31/13	SRP	$193,500	$0	0%	
N/A	89261 WO252	Wetland Mitigation in Abandoned Borrow Areas	University of Minnesota – Duluth	Kurt Johnson	Sarma Straumanis	Shirlee Sherkow	3/28/11	8/31/14	SRP	$142,023	$27,311	19%	
TBD	89421	Use of Highway Underpasses by Vertebrates in Minnesota	Minnesota State University, Mankato	John Krenz	Jason Alcott	Daniel Warzala	9/14/06	7/31/11	SRP	$79,937	$71,837	90%	
N/A	96273	Concrete Slurry, Wash and Loss Water Mitigation	Minnesota State University, Mankato	Stephen Druschel	Dwayne Stenlund	Bruce Holdhusen	5/11/10	8/31/12	SRP	$104,945	$45,010	43%	
N/A	LAB914	INV 914: Research Using Waste Shingles for Stabilization or Dust Control for Gravel Roads and Shoulders	MnDOT Office of Materials	Thomas Wood	Tim Stahl	Daniel Warzala	5/11/11	5/11/12	LRRB, SRP	$77,000	$0	0%	

Pooled Fund Study

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(187)	Precipitation Frequency Estimates for the Midwestern Region	Andrea Hendrickson	Debra Fick	FHWA	8	2010	$1,315,572	$300,001	$66,667	$0	X

Maintenance Operations & Security

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-13	89261 W094	MPR-6(014): Evaluation of the SafeLane Overlay System for Crash Reduction on Bridge Deck Surfaces	University of Minnesota – Duluth	John Evans	Farideh Amiri	Nelson Cruz	2/29/08	8/31/10	SP&R, SRP	$35,400	$35,400	100%	X
2010RIC03	93463, Task 3	INV 645: RIC Task 3: Best Management Practices for Promoting Maintenance Roadway Safety	SRF Consulting Group, Inc.	Mike Marti, Renae Kuehl	Rick West	Clark Moe	2/19/2009	12/31/2011	LRRB	$40,863	$40,863	100%	
2011-03	89795 WO1	Optimal Workforce Planning and Shift Scheduling for Snow and Ice Removal	St. Louis County	Diwakar Gupta	Jim Foldesi	Alan Randals	7/17/07	4/30/10	LRRB	$45,000	$45,000	100%	X
TRS1101	N/A	Snow Plow Cutting Edges for Improved Plowing Performance, Reduced Blade Wear, and Reduced Surface Impacts	EVS	Paul Keranen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	93463 Task 4	INV 645: RIC Task 4: Pavement DVD/Video	SRF Consulting Group, Inc./ Greer & Associates/ Minnesota State University, Mankato	Mike Marti, Richard Kronick, W. James Wilde	Gary Danielson	Farideh Amiri	2/19/09	12/31/11	LRRB	$80,752	$80,752	100%	

cont. ➡

Maintenance Operations & Security [cont.]

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	93463 Task 5	INV 645: RIC Task 5: Best Practices for Recreation Trails	SRF Consulting Group, Inc.	Mike Marti	Tom Behn	Bruce Holdhusen	2/19/09	12/31/11	LRRB	$27,608	$27,608	100%	
N/A	93463 Task 8	INV 645: RIC Task 8: Winter Maintenance Equipment Calibration Workshop	SRF Consulting Group, Inc.	Mike Marti	Rich Sanders	Farideh Amiri	2/19/09	12/31/11	LRRB	$50,933	$50,933	100%	
N/A	94758	MPR-8(006): Anti-icing Technology Implementation	EVS	Paul Keranen	Susan Lodahl	Bruce Holdhusen	6/12/09	4/30/11	SP&R, SRP	$98,348	$97,364	99%	
N/A	96037	TPF-5(218): Clear Roads Administration and Information Services	CTC & Associates LLC	Patrick Casey	Thomas Peters	Debra Fick	1/19/10	1/31/11	SP&R, PF	$80,714	$76,475	95%	
N/A	96739	TPF-5(218): Developing a Training Video for Field Testing of Deicing Materials	MLT Group, LLC	Ted St Mane	None	Debra Fick	9/17/10	6/1/11	SP&R, PF	$20,465	$19,865	97%	
N/A	89258 WO2	Wetblade to Control Canada Thistle and Phragmites Along Roadways	Michigan Technological University	Catherine Tarasoff	Kenneth Graeve	Nelson Cruz	6/25/09	5/31/14	SRP	$139,966	$48,960	35%	
N/A	89261 WO191	Comparative Performance Study of Chip Seal and Bonded Wear Course Systems Applied to Bridge Decks and Approaches	University of Minnesota – Duluth	John Evans, PhD	Thomas Peters	Farideh Amiri	7/8/10	8/31/14	COPTRS	$90,872	$0	0%	
N/A	89261 WO199	Estimation of Winter Snow Operation Performance Measures with Traffic Flow Data	University of Minnesota	Eil Kwon	Curtis Pape	Daniel Warzala	8/20/10	6/30/12	SRP, COPTRS	$58,000	$27,000	47%	
N/A	89261 WO230	INV 906: LTAP Gravel Road Maintenance Independent On-line Distance Training (ODL)	University of Minnesota	Jim Grothaus	Richard West	Daniel Warzala	11/3/10	12/31/11	LRRB	$40,000	$0	0%	
N/A	94079	INV 886: Cost-Effective Pavement Preservation Solutions for the Real World	Minnesota State University, Mankato	W. James Wilde	Gregory Coughlin	Nelson Cruz	9/8/09	2/29/12	LRRB, SRP	$94,984	$3,411	4%	
N/A	95099	TPF-5(153) INV 863: Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in HMA Pavements	Asphalt Institute	Mike Anderson	Thomas Wood	Bruce Holdhusen	3/30/10	11/30/13	LRRB, SP&R, Other Federal Funds	$286,185	$27,633	10%	
N/A	96319	Salt Brine Blending to Optimize Deicing and Anti-Icing Performance and Cost-Effectiveness	Minnesota State University, Mankato	Stephen Druschel	Gordon Regenscheid	Daniel Warzala	7/12/10	7/31/13	None	$69,600	$38,400	55%	
N/A	98203	TPF-5(218): Clear Roads Winter Highway Operations—Phase 2	CTC & Associates LLC	Patrick Casey	Thomas Peters	Debra Fick	1/19/11	9/30/11	SP&R, PF	$69,526	$54,161	78%	
N/A	LAB886	INV 886: Cost-Effective Pavement Preservation Solutions for the Real World	MnDOT Office of Materials	Thomas Wood	None	Nelson Cruz	9/10/09	2/29/12	LRRB, SRP	$15,000	$0	0%	
N/A	LAB904	INV 904: Stripping of Hot Mixed Asphalt Pavements under Chip Seals	MnDOT Office of Materials	Thomas Wood	Thomas Tesch	Daniel Warzala	7/19/10	9/30/12	LRRB	$40,000	$22,000	55%	

Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(218)	Clear Roads Winter Highway Operations Phase 2	Tom Peters	Debra Fick	MN	22	2013	$1,220,000	$75,000	$25,000	$25,000	
TPF-5(153)	Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in HMA Pavements	Thomas Wood	Bruce Holdhusen	MN	5	2011	$405,000	$131,205	$15,000	$15,000	

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Pooled Fund Studies [cont.]

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
SPR-3(042)	Aurora Program	Curtis Pape	Debra Fick	IA	18	2011	$3,122,500	$375,000	$25,000	$0	X
TPF-5(054)	Maintenance Decision Support System (MDSS)	Curtis Pape	Debra Fick	SD	18	2012	$3,120,884	$200,000	$25,000	$0	X

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Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-26	89261 W052	INV 872; TFP-5(148): Improving MnROAD Temp	University of Minnesota	Randal Barnes	Thomas Burnham	Shirlee Sherkow	4/7/08	7/31/10	LRRB, SP&R, SRP	$63,500	$63,500	100%	X
2010-28	89261 W0171	TPF-5(165): Air Voids Testing for MnROAD Cells	University of Minnesota	Mihai Marasteanu	Timothy Clyne	Nelson Cruz	10/27/09	9/30/10	SP&R, PF, Other State Funds	$14,800	$14,800	100%	
2010-31	89218	INV 843-1: Predicting the Occurrence of Bumps in Overlays	Minnesota State University, Mankato	W. James Wilde	John Brunkhorst	Daniel Warzala	8/8/06	9/30/10	LRRB	$31,040	$31,040	100%	X
2010-32	93627	TPF-5(148): 2008 MnROAD Unbound Quality Control Construction Report	CNA Consulting Engineers, Inc.	D. Lee Petersen	John Siekmeier	Bruce Holdhusen	3/30/09	8/31/10	LRRB, SP&R, SRP, PF	$49,656	$49,656	100%	
2010-35	89423	INV 855: A Property-Based Specification for Coarse Aggregate in Pavement Applications	North Dakota State University	Magdy Abdelrahman	John Grindeland	Daniel Warzala	11/6/06	10/31/10	LRRB	$92,624	$92,624	100%	X
2010-40	94527	TPF-5(134) MPR-6(029) MPR-6(021): Influence of Pavement on Traffic Noise—Statistical Pass-By Measurements of Traffic on Several Interstate Pavements	HDR Engineering	Tim Casey	Bernard Izevbekhai	Nelson Cruz	6/16/09	9/30/10	SP&R, LRRB, Other State Funds	$64,107	$62,118	97%	X
2011-02	89261 W09	INV 851: Allowable Axle Loads on Pavements	University of Minnesota	Lev Khazanovich	Gerard Geib	Clark Moe	11/14/06	1/31/11	LRRB, SRP	$126,042	$126,042	100%	X
2011-15	92107	MPR-6(012): Development of New Test Roller Equipment and Construction Specifications for Subgrade Compaction Acceptance	Minnesota State University, Mankato	Aaron Budge	Timothy Andersen, Terrence Beaudry	Daniel Warzala	1/24/08	6/30/11	SP&R, SRP	$253,300	$253,300	100%	
2011-16	89258 W01	TPF-5(165): Field Evaluation of Built-In Curling Levels in Rigid Pavements	Michigan Technological University	Jacob Hiller	Thomas Burnham	Bruce Holdhusen	5/14/09	6/30/11	SP&R, PF, Other State Funds	$64,000	$64,000	100%	
2011-18	89261 W0173	INV 893: Optimal Contract Mechanism Design for Performance-Based Contracts	University of Minnesota	Diwakar Gupta	Richard Kjonaas	Daniel Warzala	11/10/09	10/31/11	SRP	$30,000	$30,000	100%	
N/A	89258 W03	Transportation Enterprise Warm Mix Asphalt Synthesis Technology Transfer	Michigan Technological University	George Dewey	Timothy Clyne	None	1/21/11	9/30/11	SRP	$5,000	$5,000	100%	
N/A	89450 W07	MPR-6(033): TRACS Research and Implementation Project	Project Information Services	Timothy Malagon	Thomas Wiener	Clark Moe	3/12/08	6/30/11	SP&R, SRP, Other State Funds	$350,000	$336,235	96%	
N/A	98638	ELMOD 6—Dynatest Deflection Analysis Software Training	Dynatest Consulting Inc	Gabriel Bazi	Maureen Jensen	Benjamin Worel	4/22/11	7/31/11	SRP	$13,631	$13,631	100%	
N/A	98686	Seismic Research Data Analysis Support	Carr Geophysical Consulting LLC	Bradley Carr	Jason Richter	Bruce Holdhusen	4/29/11	7/31/11	SRP	$5,000	$5,000	100%	
N/A	95336	MPR-9(001): Stabilized Full Depth Reclamation (SFDR) Implementation	American Engineering Testing, Inc.	Dave Rettner	Steven Adamsky, Gerard Geib	Clark Moe	9/18/09	2/28/11	SP&R, SRP	$50,111	$50,111	100%	

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Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	95647	GPS Extension to MnDOT GPR Production	American Engineering Testing, Inc.	Joe Korzilius	Matthew Lebens	Bruce Holdhusen	10/27/09	7/31/10	SRP	$4,972	$4,972	100%	
N/A	96661	An Integrated Pavement Management System Loading Additional Data into MN Pavement Management System	Stantec Consulting, Inc.	Khaled Helali	Shongtao Dai	Bruce Holdhusen	5/21/10	1/31/11	SRP	$9,544	$9,544	100%	
N/A	INV 843-2	INV 843-2: Predicting the Occurrence of Bumps in Overlays	MnDOT Office of Materials	Eddie Johnson	None	Daniel Warzala	7/13/06	9/30/10	LRRB	$33,500	$25,401	76%	
N/A	LAB676-11	INV 676: FY2011 Support of MnROAD Low Volume Road	MnDOT Office of Materials	Maureen Jensen	None	None	7/1/10	6/30/11	LRRB	$570,000	$285,000	50%	
2010-30	LAB016	MPR-6(016): Construction Report for MnROAD Thin Unbonded Concrete Overlay Test Cell 5 (Sub-Cells 105-405)	MnDOT Office of Materials	Mark Watson	Bernard Izevbekhai	Bruce Holdhusen	12/29/08	2/28/14	SP&R, Other State Funds, PF	$126,100	$0	0%	
2011-05	93028	TPF-5(134): Innovative Diamond Grinding on MnROAD Cells 7, 8, 9 and 37	Minnesota State University, Mankato	W. James Wilde	Bernard Izevbekhai	Bruce Holdhusen	7/23/08	11/30/12	SP&R	$118,760	$5,000	4%	X
2011-12	MPR-6(021)	MPR-6(021): Evaluation of Skid Resistance of Turf Drag Textured Concrete Pavements	MnDOT Office of Materials	Bernard Izevbekhai	Benjamin Worel	Bruce Holdhusen	12/19/08	1/1/13	SP&R	$100,882	$0	0%	
N/A	89261 W0189	TPF-5(215): TERRA Pooled Fund Support--Transportation Engineering and Road Research Alliance	University of Minnesota	Laurie McGinnis	Maureen Jensen	Linda Taylor	4/30/10	3/31/12	SP&R	$45,000	$25,714	57%	
N/A	89261 W0220	INV 869: TERRA Board Support (FY2011)	University of Minnesota	Laurie McGinnis	Julie Skallman, Mark Maloney	Benjamin Worel	7/20/10	11/30/11	LRRB	$35,000	$26,400	75%	
N/A	89256 W011	Construction Manager General Contractor Risk Assessment	University of Iowa	Jennifer Shane	Jay Hietpas	Nelson Cruz	5/31/11	7/31/12	SRP	$80,000	$0	0%	
N/A	89260 W01	Best Value Granular Material for Road Foundations	University of Illinois	Erol Tutumluer	John Siekmeier	Nelson Cruz	9/15/08	12/31/11	SRP	$192,000	$86,000	45%	
N/A	89260 W02	Cost-Effective Base Type and Thickness for Long Life Concrete Pavements	University of Illinois	Erol Tutumluer	Terrence Beaudry	Shirlee Sherkow	6/20/11	1/31/14	SRP	$136,000	$0	0%	
N/A	89261 W079	TPF-5(148) INV 854: Effects of Implements of Husbandry on Pavement Performance	University of Minnesota	Lev Khazanovich	Shongtao Dai	Bruce Holdhusen	10/12/07	11/30/11	LRRB, SP&R, SRP, PF	$275,239	$113,124	41%	
N/A	89261 W090	TPF-5(149), INV 867: Composite Pavements Design and Construction Guidelines for Thermally Insulated Concrete Pavements	University of Minnesota	Lev Khazanovich	Timothy Clyne	Nelson Cruz	1/30/08	7/31/12	SP&R, LRRB	$438,980	$219,490	50%	
N/A	89261 W0101	TPF-5(148): Vibrating Wire and Horizontal Clip Data Analysis	University of Minnesota	Ahmed Tewfik	Thomas Burnham	Bruce Holdhusen	6/10/08	12/31/11	LRRB, SP&R, SRP, PF	$70,000	$63,000	90%	
N/A	89261 W0103	TPF-5(132), INV 865: Low Temperature Cracking in Asphalt Phase II	University of Minnesota	Mihai Marasteanu	Timothy Clyne	Bruce Holdhusen	6/17/08	1/31/12	LRRB, SP&R, SRP	$475,000	$133,570	28%	
TBD	89261 W0140	Mechanistic Modeling of Unbonded Concrete Overlay Pavements	University of Minnesota	Roberto Ballarini	Shongtao Dai	Daniel Warzala	6/29/09	3/31/12	SRP	$110,000	$5,500	5%	
N/A	89261 W0156	INV 887: Structural Evaluation of Asphalt Pavements with Full-Depth Reclaimed Base	University of Minnesota	Joseph Labuz	Merle Earley	Daniel Warzala	6/4/09	11/30/12	LRRB, Other State Funds	$38,260	$1,000	3%	
N/A	89261 W0190	INV 896: Quantifying Moisture Effects in DCP and LWD Tests Using Unsaturated Mechanics	University of Minnesota	Kimberly Hill	John Siekmeier	Nelson Cruz	9/24/10	11/30/12	LRRB	$109,900	$28,574	26%	
N/A	89261 W0254	INV 889: Performance of Recycled Asphalt & High RAP Asphalt Mix	University of Minnesota	Mihai Marasteanu	Gregory Coughlin	Daniel Warzala	2/8/11	3/31/12	LRRB	$30,000	$0	0%	
TBD	89261 W0269	Synthesis of Performance Testing of Asphalt Concrete	University of Minnesota – Duluth	Eshan Dave	Timothy Clyne	Alan Rindels	5/19/11	9/30/11	SRP	$19,924	$0	0%	

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Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	89264 WO2	TPF-5(129): Recycled Unbound Materials	University of Wisconsin – Madison	Tuncer Edil	John Siekmeier	Nelson Cruz	6/4/08	11/30/12	SP&R	$349,910	$90,000	26%	
N/A	89264 WO5	Cost-Effective Means of Managing Pavements in Poor Condition	University of Wisconsin – Madison	Teresa Adams	Mark Watson	Nelson Cruz	6/7/11	7/31/12	SRP	$139,953	$0	0%	
TBD	92965	TPF-5(165): Development of Design Guide for Thin and Ultra-Thin Concrete Overlays of Existing Asphalt Pavements, Task 2 Report: Review and Selection of Structural Response Models	University of Pittsburgh	Julie Vandenbossche	Thomas Burnham	Nelson Cruz	9/12/08	1/31/12	SP&R, PF, Other State Funds	$330,000	$93,000	28%	
N/A	93103 W016	INV 645: Best Value Procurement Development	HNTB Corporation	Steve Howe	None	Farideh Amiri	8/5/09	7/30/12	LRRB, PF	$179,074	$52,936	30%	
N/A	93263	MPR-6(033): Construction Project Management Software Evaluations	Minnesota State University, Mankato	Brian Wasserman	Thomas Wiener	Farideh Amiri	9/24/08	4/30/12	SP&R, SRP, Other State Funds	$190,932	$53,432	28%	
N/A	94262	MPR-8(004): Development of a Concrete Maturity Test Protocol	Minnesota State University, Mankato	W. James Wilde	Alexandra Akkari	Sandra McCully	4/2/09	9/30/12	SP&R, SRP	$113,952	$61,944	54%	
N/A	94288	INV 645: Integrated Tools for Pavement Design and Management	Minnesota State University, Mankato	W. James Wilde	Rich Sanders	Farideh Amiri	4/21/09	1/31/12	SRP	$54,531	$33,683	62%	
N/A	95937	INV 895: Traffic Generating Developments and Roadway Life Consumption	Minnesota State University, Mankato	W. James Wilde	Gary Danielson	Farideh Amiri	1/22/10	5/31/12	LRRB	$37,038	$22,772	61%	
TBD	96033	INV 901: Concrete Delivery Time Study	American Engineering Testing, Inc.	Dan Vruno	Maria Masten	Shirlee Sherkow	3/29/10	1/31/12	None	$99,998	$88,492	88%	
N/A	96885	INV 902: Material Control Testing Rates for Low Volume Roads	Minnesota State University, Mankato	Brian Wasserman	Julie Skallman	Farideh Amiri	6/1/10	8/31/11	LRRB	$25,000	$10,000	40%	
N/A	97281	Lump Sum Estimating: Discovery and Simulation	Mankato State University	Brian Wasserman	Thomas Wiener	Shirlee Sherkow	7/30/10	7/31/12	SRP	$17,000	$3,000	18%	
N/A	97334	MPR-6(011): Intelligent Compaction	None	None	None	Clark Moe	9/13/10	12/31/11	SP&R, Other State Funds, SRP	$225,000	$194,453	86%	
N/A	97388	Validation of DOT600 Soil Moisture Device	American Engineering Testing, Inc.	Dave Rettner	John Siekmeier	Daniel Warzala	8/26/10	7/31/11	SRP	$29,982	$17,472	58%	
N/A	98108	INV 907: Impact of Garbage Haulers on Pavement Performance	Minnesota State University, Mankato	W. James Wilde	Deb Bloom	Daniel Warzala	2/22/11	8/31/12	LRRB	$54,000	$2,000	4%	
N/A	98109	Use of Recycled Brick in Aggregates	Minnesota State University, Mankato	Farhad Reza	Terrence Beaudry	Nelson Cruz	5/26/11	8/31/13	SRP	$77,811	$0	0%	
N/A	98110	Cost-Effective Base Type and Thickness for Long Life Concrete Pavements	Minnesota State University, Mankato	W. James Wilde	None	Shirlee Sherkow	6/24/11	1/31/14	SRP	$63,000	$0	0%	
N/A	98488	Impact of Vibratory Equipment to Surrounding Environments during Construction	CNA Consulting Engineers, Inc.	D. Lee Petersen	Charles Howe	Shirlee Sherkow	5/4/11	9/30/11	SRP	$9,487	$1,617	17%	
N/A	98783	Assessment of Weather Effects on Construction Activities	Professional Engineering Services, Ltd	Ann Johnson	Thomas Wiener	Alan Rindels	4/29/11	7/31/11	SRP	$15,001	$13,627	91%	
2011-20	INV768	INV 768: Monitoring Geosynthetics in Local Roadways (LRRB 768) 10-Year Performance Summary	MnDOT Office of Materials	Timothy Clyne	Luane Tasa	Daniel Warzala	10/1/00	9/1/11	LRRB	$30,000	$25,000	83%	
N/A	INV 885	INV 885: Research Test Section Tracking—Phase II	MnDOT Office of Materials	Melissa Cole	Luane Tasa	Farideh Amiri	12/21/09	12/21/14	LRRB	$55,000	$5,000	9%	
N/A	LAB840	INV 840-1: Performance of PG 52-34 Oil on Local Roads	MnDOT Office of Materials	Shongtao Dai	Brian Noetzelman	Daniel Warzala	6/22/06	12/31/11	LRRB	$56,200	$45,600	81%	

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Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	LAB864	MPR-6(022), INV 864: Recycled Asphalt Pavements	MnDOT Office of Materials	Eddie Johnson	Gregory Johnson	Bruce Holdhusen	1/4/08	12/31/12	SP&R, LRRB, Other State Funds	$275,000	$25,000	9%	
N/A	LAB868	MPR-6(029), INV 868: HMA Surface Characteristics	MnDOT Office of Materials	Timothy Clyne	Gregory Johnson	Bruce Holdhusen	9/18/07	6/30/13	SP&R, LRRB, Other State Funds	$326,632	$84,625	26%	
N/A	LAB878	INV 878: Porous Asphalt Pavement Performance in Cold Regions	MnDOT Office of Materials	Matthew Lebens	Larry Matsumoto	Bruce Holdhusen	7/26/07	4/30/12	LRRB, SP&R, Other State Funds	$71,000	$22,400	32%	
2010-16, TBD	LAB879	INV 879 MPR-6(027): Drainable Pavements at MnROAD Pervious Concrete and Porous Concrete Overlay Cells 39, 85, and 89	MnDOT Office of Materials	Bernard Izevbekhai	Mark Maloney	Bruce Holdhusen	7/30/07	9/30/11	LRRB, SP&R, Other State Funds	$46,000	$39,000	85%	
N/A	LAB887	INV 887: Structural Evaluation of Asphalt Pavements with Full-depth Reclaimed Base	MnDOT Office of Materials	Shongtao Dai	Merle Earley	Daniel Warzala	10/5/09	3/31/13	LRRB, Other State Funds	$41,548	$8,960	22%	
N/A	LAB889	INV 889: Performance of Recycled Asphalt & High RAP Asphalt Mix	MnDOT Office of Materials	Eddie Johnson	Gregory Coughlin	Daniel Warzala	2/22/10	2/28/13	LRRB	$30,000	$0	0%	
N/A	LAB899	INV 899, INV 825: Perf. Monitoring of Olmsted CR 117/104 and Aggregate Base Material Update	MnDOT Office of Materials	Matthew Lebens	None	Alan Rindels	6/8/10	2/28/15	LRRB	$36,000	$0	0%	
N/A	MPR-1(002)	MPR-1(002): Development of a Spatial-Time-Domain Acoustic Device for Rapid Concrete Evaluation	MnDOT Office of Materials	Bernard Izevbekhai	Maureen Jensen	Daniel Warzala	4/5/11	3/30/14	SP&R, SRP	$98,000	$0	0%	
N/A	MPR-6(031)	MPR-6(031): Concrete Pavement Optimization, Determining the Lower Threshold of Slab Thickness for High Volume Roadways	MnDOT Office of Materials	Thomas Burnham	Bernard Izevbekhai	Bruce Holdhusen	1/3/08	7/31/14	SP&R, Other State Funds	$126,100	$0	0%	

Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(129)	Recycled Unbound Pavement Materials	Andrew Eller	Nelson Cruz	MN	6	2011	$718,120	$120,000	$15,000	$15,000	
TPF-5(132)	Low Temperature Cracking in Asphalt Pavements (Phase II MnROAD Study)	Timothy Clyne	Bruce Holdhusen	MN	7	2011	$475,000	$100,000	$20,000	$20,000	
TPF-5(134)	PCC Surface Characteristics—Rehabilitation (MnROAD Study)	Bernard Izevbekhai	Bruce Holdhusen	MN	3	2010	$330,000	$75,000	$15,000	$0	
TPF-5(148)	The Effects of Implements of Husbandry "Farm Equipment" on Pavement Performance (MnROAD Study)	Shongtao Dai	Bruce Holdhusen	MN	6	2008	$433,000	$105,000	$0	$0	
TPF-5(149)	Design and Construction Guidelines for Thermally Insulated Concrete Pavements (MnROAD Study)	Timothy Clyne	Nelson Cruz	MN	5	2011	$455,000	$100,000	$20,000	$20,000	
TPF-5(165)	Development of Design Guide for Thin and Ultrathin Concrete Overlays of Existing Asphalt Pavements (MnROAD Study)	Thomas Burnham	Nelson Cruz	MN	6	2011	$406,000	$69,200	$0	$9,200	
TPF-5(215)	TERRA Pooled Fund Support--Transportation Engineering and Road Research Alliance	Maureen Jensen	Debra Fick	MN	5	2014	$157,500	$37,500	$7,500	$7,500	
SPR-3(074)	Pavement Research and Technology	Roger Olson	Debra Fick	WA	4	2010	$625,000	$280,000	$15,000	$0	

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Pooled Fund Studies [cont.]

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(159)	Technology Transfer Concrete Consortium	Maria Masten	Debra Fick	IA	20	2012	$537,500	$30,000	$5,000	$5,000	
TPF-5(177)	Improving Resilient Modulus (MR) Test Procedures for Unbound Materials	Shongtao Dai	Debra Fick	FHWA	10	2010	$300,000	$40,000	$20,000	$0	
TPF-5(197)	The Impact of Wide-Base Tires on Pavement Damage: A National Study	Shongtao Dai	Debra Fick	FHWA	7	2012	$675,000	$100,000	$25,000	$25,000	
TPF-5(213)	Performance of Recycled Asphalt Shingles in Hot Mix Asphalt	Roger Olson	Debra Fick	MO	9	2010	$765,000	$85,000	$42,500	$0	
TPF-5(224)	Investigation of Jointed Plain Concrete Pavement Deterioration at Joints and the Potential Contribution of Deicing Chemicals	Bernard Izevbekhai	Debra Fick	IA	9	2013	$390,000	$60,000	$15,000	$15,000	
TPF-5(225)	Validation and Implementation of Hot-Poured Crack Sealant	Jim McGraw	Debra Fick	VA	9	2013	$775,000	$100,000	$25,000	$25,000	

Multimodal

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-34	89256 WO5	MnDOT Truck Parking Study—Phase 2	Iowa State University	Omar Smadi	Robert Gale	Shirlee Sherkow	12/5/08	8/31/10	SRP	$79,441	$79,441	100%	X
2011-14	89261 WO221	Potential Viability of Automated Rapid Transit at the Minneapolis-St. Paul Airport	University of Minnesota	Lee Munnich	Mukhtar Thakur	Shirlee Sherkow	7/18/10	5/31/11	Multimodal PRT, Modal Planning & Program Management	$19,000	$19,000	100%	X
N/A	89261 WO209	Assessing Neighborhood and Social Influences of Transit Corridors	University of Minnesota	Yingling Fan	Robert Vockrodt	Daniel Warzala	5/18/10	1/31/12	SRP	$12,500	$12,500	100%	
N/A	89261 WO136	Procedures for Highway Cost Allocation and Determination of Heavier Freight-Truck Permit Fees	University of Minnesota	Diwakar Gupta	John Tompkins	Daniel Warzala	3/26/09	1/30/12	SRP, COPTRS	$179,752	$80,888	45%	
N/A	89261 WO193	Bike, Bus, and Beyond: Extending Cyclopath to Enable Multi-Modal Routing	University of Minnesota	Loren Terveen	Greta Alquist	Shirlee Sherkow	7/6/10	3/31/12	SRP	$60,627	$50,000	82%	
N/A	89261 WO204	Benefits of Distance-Based Fees for the Trucking Industry	University of Minnesota	Ferrol Robinson	Kenneth Buckeye	Shirlee Sherkow	2/8/11	3/31/12	SRP	$50,000	$4,264	9%	
2011-17	89261 WO215	TH50501: Rationale for Funding a Feasibility Study for an Automated Rapid Transit Application in the Twin Cities	University of Minnesota	Ferrol Robinson	Mukhtar Thakur	Alan Rindels	6/8/10	9/30/11	Multimodal PRT, Modal Planning & Program Management	$46,000	$0	0%	
N/A	89261 WO239	Transportation, Environmental and Health Impacts of Transitways: A Case Study of the Hiawatha Line	University of Minnesota	Jason Cao	Robert Vockrodt	Daniel Warzala	2/15/11	3/31/13	SRP	$37,500	$0	0%	
N/A	89264 WO4	INV 911: Best Practices Synthesis and Guidance in At-Grade Trail Crossing Treatments	University of Wisconsin – Madison	David Noyce	Lisa Austin	Bruce Holdhusen	6/14/11	10/31/12	SRP, LRRB	$96,866	$0	0%	

Pooled Fund Study

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(156)	Mid America Freight Coalition Pooled Fund	John Tompkins	Debra Fick	WI	10	2011	$1,175,000	$125,000	$25,000	$25,000	X

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Policy & Planning

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-21, TRS0803	89261 WO102	Traffic Flow and Road User Impacts of the Collapse of the I-35W Bridge Over the Mississippi River	University of Minnesota	David Levinson	Edward Idzorek	Alan Rindels	6/12/08	9/30/10	SRP	$200,502	$200,502	100%	X
2010-27	89261 WO147	Study of Public Acceptance of Tolling with New Capacity and Credits/Concepts of FAST miles and FEE lanes	University of Minnesota	Adeel Lari	Kenneth Buckeye	Shirlee Sherkow	4/16/09	7/31/10	SRP, Fast Miles Pricing	$75,000	$75,000	100%	X
2010-33	89261 WO78	MPR-6(007): Hear Every Voice Public Engagement Initiative	University of Minnesota	Jim Grothaus	Scott Bradley	Rebecca Lein	7/16/07	8/31/10	SP&R, SRP, Other State Funds	$230,798	$230,798	100%	X
TRS1008	N/A	Potential Benefits to the Freight Industry of Distance-Based Road User Fees	Ferrol Robinson	Ferrol Robinson	Ken Buckeye	Shirlee Sherkow	N/A	N/A	N/A	N/A	N/A	N/A	
2011-07	89261 WO214	Review of Workplace Wellness Program Options to Reduce Musculoskeletal Disorders in Laborious Work	University of Minnesota – Duluth	Robert Feyen	Todd Haglin	Bruce Holdhusen	5/28/10	4/30/11	SRP	$11,312	$11,312	100%	X
2011-09	89261 WO141	Advancing Public Interest in Public-Private Partnership of State Highway Development	University of Minnesota	Zhirong Jerry Zhao	Kenneth Buckeye	Daniel Warzala	6/8/09	2/28/11	SRP	$74,966	$74,966	100%	X
TRS1102	89261 WO273	Estimating Non-Automobile Mode Share	University of Minnesota	Carol Becker	Lynne Bly	Shirlee Sherkow	6/2/11	6/30/11	SRP	$7,500	$7,500	100%	
TRS1103	89261 WO274	Small MPO Funding	University of Minnesota	Carol Becker	None	Shirlee Sherkow	6/2/11	6/30/11	SRP	$7,500	$7,500	100%	
N/A	89261 WO114	Development of a Weigh-Pad Based Portable WIM System	University of Minnesota – Duluth	Taek Kwon	Benjamin Timerson	Nelson Cruz	12/30/08	5/31/12	SRP	$160,000	$98,550	62%	
N/A	89261 WO196	Case Studies of Transportation Investment to Identify the Impacts on the Local and State Economy	University of Minnesota	Michael Iacono	Matthew Shands	Bruce Holdhusen	8/27/10	2/28/12	SRP, COPTRS	$89,378	$35,751	40%	
N/A	89261 WO197	Economic Benefits of Telework for Employers	University of Minnesota	Adeel Lari	Kenneth Buckeye	Shirlee Sherkow	6/30/10	8/31/12	COPTRS	$145,600	$36,400	25%	
N/A	89261 WO198	Quality of Life: Assessment and Evaluation to Develop Transportation Performance Measures	University of Minnesota	Ingrid Schneider	Karla Rains	Shirlee Sherkow	7/14/10	8/31/12	SRP, COPTRS	$218,913	$101,913	47%	
N/A	89261 WO201	Using Twin Cities Destinations and Their Accessibility as a Multimodal Planning Tool	University of Minnesota	David Levinson	Brian Gage	Alan Rindels	9/24/10	2/28/12	COPTRS	$100,000	$95,000	95%	
N/A	89261 WO227	MPR-0(003): Reporting Capabilities for Continuous Vehicle Class and WIM Data	University of Minnesota – Duluth	Taek Kwon	Benjamin Timerson	Nelson Cruz	11/18/10	6/30/12	SRP, SP&R	$35,268	$8,298	24%	
N/A	89261 WO251	What is the Risk to the Traveling Public and MnDOT Operations from Transmission Lines Along Our ROW?	University of Minnesota – Duluth	Seraphin Chally Abou	Valerie Svensson	Shirlee Sherkow	3/22/11	11/30/12	SRP	$67,511	$0	0%	
N/A	89261 WO258	INV 913: LRRB Workshop: Shaping Research on Systems Planning for Local Roads	University of Minnesota	Linda Preisen	Susan Miller	Farideh Amiri	2/4/11	11/30/11	LRRB	$22,093	$11,047	50%	
N/A	89264 WO7	INV 915: Implications of Modifying State Aid Standards; Urban, New or Reconstruction (Mn Rules 8820.9936) to Accommodate Various Roadway Users	University of Wisconsin–Madison	David Noyce	Paul Stine	Bruce Holdhusen	6/28/11	11/30/12	LRRB	$117,700	$0	0%	
N/A	95029	TPF-5(192): Loop and Length Based Classification Pooled Fund	SRF Consulting Group, Inc.	Erik Minge	Gene Hicks	Debra Fick	1/27/10	5/31/12	SP&R, PF	$469,191	$176,442	38%	
N/A	95667	MPR-8(008): Right of Way Mapping Process Improvement, Phase 3 (Prioritize Mapping Backlog, Develop Highest Priority Data and Assist in Training and Support - Task 2)	Widseth, Smith, Nolting and Associates, Inc.	Bryan Balcome	Jay Krafthefer	Clark Moe	1/28/10	7/31/11	SP&R, SRP	$429,798	$335,856	78%	
N/A	97137	MPR-8(008): Essentials Web ADF Tool Customizations	Latitude Geographics Group, Ltd	Jed Harrison	Paul Weinberger	Alan Rindels	11/22/10	7/31/11	SP&R, SRP	$19,900	$2,760	14%	

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Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(192)	Loop and Length Based Classification Pooled Fund	Gene Hicks	Debra Fick	MN	14	2011	$485,000	$40,000	$10,000	$15,000	
TPF-5(198)	Urban Mobility Study, 2009 Continuation	Paul Czech	Debra Fick	TX	9	2012	$295,000	$165,000	$70,000	$60,000	

Traffic & Safety

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
2010-25	95976	MPR-9(003): Design of Turn Lane Guidelines	CH2M Hill	Howard Preston	Glen Ellis	Shirlee Sherkow	1/11/10	7/31/10	SP&R, SRP	$37,512	$37,512	100%	
2010-36	93097	TPF-5(171): Evaluation of Non-Intrusive Technologies for Traffic Detection	SRF Consulting Group, Inc.	Erik Minge	Jerry Kotzenmacher	Debra Fick	9/24/08	9/30/10	SP&R	$185,020	$184,987	100%	X
2010RIC02	93463 Task 2	INV 645: RIC Task 2: Minnesota Sign Retroreflectivity Toolkit	SRF Consulting Group, Inc.	Mike Marti, Renae Kuehl	Michael Sheehan	Clark Moe	2/19/09	12/31/11	LRRB	$25,992	$25,992	100%	X
2010RIC10	96011	INV 645: Best Practices Guide for Removing Traffic Signs 2009-2011 RIC Task 10	CH2M Hill	Howard Preston	Mark Vizecky	Clark Moe	1/13/10	1/31/11	LRRB	$70,327	$70,327	100%	
2011-04	89261 W091	INV 877: Advanced LED Warning Signs for Rural Intersections Powered by Renewable Energy	University of Minnesota – Duluth	Taek Kwon	Brian Boder	Alan Rindels	2/15/08	2/28/11	LRRB	$125,476	$125,476	100%	X
2011-10	89256 W09	Minnesota Department of Transportation Traffic Safety Analysis Software State of the Art	Iowa State University	Reginald Souleyrette	Bradley Estochen	Shirlee Sherkow	3/12/10	2/28/11	SRP	$28,403	$28,403	100%	X
2011-13	89261 W0115	MPR-8(002): Usability Evaluation of a Smart Phone-Based Novice Teen Driver Support System (TDSS)	University of Minnesota	Max Donath	Susan Sheehan	Daniel Warzala	12/9/08	5/31/11	SP&R, SRP	$500,000	$500,000	100%	X
TRS1009	N/A	Effects of 24-Hour Headlight Use on Traffic Safety	CTC & Associates LLC	Patrick Casey	Gordy Pehrson	Jake Akervik	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	89261 W0224	Integration of New Ramp Metering Formula in RTMC IRIS System	University of Minnesota	John Hourdos	None	Shirlee Sherkow	7/8/10	2/28/11	COPTRS	$17,662	$17,662	100%	
N/A	89261 W0262	ITS Institute MnDOT Match—2011	University of Minnesota	Max Donath	Linda Taylor	Linda Taylor	3/22/11	6/30/11	SRP	$100,000	$100,000	100%	
N/A	92751	Crash Mapping and Analysis Tool (MnCMAT)	None	Michael Scanlon	Richard Kjonaas, Mark Vizecky	Clark Moe	9/21/09	8/31/10	SP&R, Other State Funds	$162,720	$162,720	100%	
N/A	94522	TPF-5(190): North/West Passage Project 4.1 Traveler Information Website Phase 3 and Project 4.3 Center to Center Communications Concept of Operations	Open Roads Consulting	Jeffrey Adler	Matthew Gjersvik	Debra Fick	12/1/09	9/30/10	SP&R, PF	$75,000	$75,000	100%	
TBD	89256 W07	Marking Performance Under Challenging Pavement Surface Condition	Iowa State University	Neal Hawkins	Mitchell Bartelt	Alan Rindels	3/1/10	10/31/11	SRP	$39,991	$33,000	83%	
N/A	89256 W08	Implementation, Training and Outreach for MnDOT Pavement Marking Tool—Phase II	Iowa State University	Omar Smadi	Mitchell Bartelt	Alan Rindels	5/7/09	12/31/11	SRP	$86,970	$27,970	32%	
N/A	89256 W010	Rumble Strip: Evaluation of Retroreflectivity and Installation Practices	University of Iowa	Neal Hawkins	Kenneth Johnson	Nelson Cruz	5/26/11	7/31/13	SRP	$65,000	$0	0%	
N/A	89261 W0139	INV 890: Speed Impacts of Occasional Hazard Residential Street Warning Signs	University of Minnesota	John Hourdos	Amy Marohn	Shirlee Sherkow	6/30/09	2/28/12	LRRB	$79,647	$58,939	74%	
N/A	89261 W0143	Portable Non-Intrusive Advanced Warning Devices for Work Zones With Or Without Flag Operators	University of Minnesota	John Hourdos	Randy Reznicek	Daniel Warzala	7/30/09	3/31/12	SRP	$61,986	$9,297	15%	

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Traffic & Safety [cont.]

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
TBD	89261 WO169	Development of Freeway Operational Strategies with IRIS-In-Loop Simulation	University of Minnesota – Duluth	Eil Kwon	Brian Kary	Daniel Warzala	10/1/09	1/31/12	SRP	$86,000	$78,000	91%	
N/A	89261 WO178	MPR-9(006): Research Implementation of the SMART Signal System on TH 13	University of Minnesota	Henry Liu	Steven Misgen	Alan Rindels	12/17/09	2/2/12	SP&R, SRP	$239,000	$55,000	23%	
N/A	89261 WO195	INV 898: Estimating the Crash Reduction and Vehicle Dynamic Effects of Flashing LED Stop Signs	University of Minnesota	Gary Davis	Bradley Estochen	Shirlee Sherkow	6/28/10	12/31/11	LRRB, ITS Institute	$74,667	$37,333	50%	
N/A	89261 WO202	Improving Traffic Signal Operations for Integrated Corridor Management (ICM)	University of Minnesota	Henry Liu	Steven Misgen	Alan Rindels	2/2/11	9/30/13	COPTRS	$163,000	$0	0%	
N/A	89261 WO240	Investigating the Effects of Two-Panel Overhead Changeable Message Signs and Intelligent Lane Control Signals (ILCS) on Driver Behavior	University of Minnesota	Kathleen Harder	Jesse Larson	Daniel Warzala	5/12/11	7/31/12	SRP	$144,500	$995	1%	
N/A	89261 WO247	Evaluation of the Effect MnPASS Lane Design has on Mobility and Safety	University of Minnesota	John Hourdos	Julie Johnson	Daniel Warzala	5/31/11	11/30/13	SRP	$169,000	$0	0%	
N/A	89261 WO271	INV 917: Two-Lane Roundabout Field Research Regarding Signing and Striping	University of Minnesota	John Hourdos	Kristin Asher	Shirlee Sherkow	6/30/11	10/31/13	LRRB	$105,000	$0	0%	
N/A	89264 W06	TPF-5(190): North/West Passage Corridor-Wide Commercial Vehicle Permitting—Phase 2	University of Wisconsin – Madison	Teresa Adams	Cory Johnson	Debra Fick	2/15/11	3/31/12	SP&R, PF	$24,968	$0	0%	
N/A	91150	TPF-5(093): North/West Passage Program Support and Phase II Work Plan Projects	Athey Creek Consultants, LLC	Dean Deeter	Cory Johnson	Debra Fick	9/14/07	8/31/12	SP&R, PF	$346,325	$311,553	90%	
N/A	91150A	TPF-5(093): North/West Passage Program Support and Phase II Work Plan Projects	None	None	Matthew Gjersvik, Todd Kramasz	Debra Fick	9/14/07	8/31/12	SP&R	$99,898	$0	0%	
N/A	96125	TPF-5(093): North/West Passage Website Maintenance	None	None	Todd Kramasz	Debra Fick	3/24/10	3/1/12	SP&R	$6,039	$755	13%	
N/A	96737	INV 900: Hennepin/Minneapolis LED Light Study	None	Robb Luckow	Julie Skallman	Shirlee Sherkow	6/25/10	9/30/12	LRRB	$50,000	$46,000	92%	
N/A	97078	MPR-9(005): Changeable Message Signs (CMS)/Digital Message Signs (DMS) Manual of Practice Development, Implementation and Training	Iteris, Inc	Lisa Raduenz	Jesse Larson	Alan Rindels	11/3/10	11/30/12	SP&R, SRP	$96,302	$38,553	40%	
N/A	98039	INV 903: Best Practices for Sign Reduction on the Local System 2009-2011 RIC Task 15 (Phase 2 of Task 10)	CH2M Hill	Howard Preston	Mark Vizecky	Farideh Amiri	6/6/11	9/30/11	LRRB	$47,969	$1,480	3%	

Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(093), TPF-5(190)	North/West Passage—Phase 3	Matt Gjersvik	Debra Fick	MN	8	2011	$750,000	$200,000	$25,000	$25,000	X
SPR-2(207)	Transportation Management Center Pooled Fund Study	Brian Kary	Debra Fick	FHWA	28	2012	$5,407,267	$400,000	$50,000	$50,010	X
TPF-5(029)	High Occupancy Vehicle	Janelle Anderson	Debra Fick	FHWA	11	2013	$1,940,000	$225,000	$25,000	$25,000	X
TPF-5(193)	Midwest States Pooled Fund Crash Test Program	Michael Elle	Debra Fick	NE	16	2011	$2,009,155	$1,320,863	$66,700	$66,700	X
TPF-5(231)	ITS Pooled Fund Program (ENTERPRISE)	Jon Jackels	Debra Fick	MI	11	2011	$1,385,000	$60,000	$30,000	$30,000	

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Administrative

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	89261 WO159	CTS Operations FY10-11	University of Minnesota	Laurie McGinnis	None	Linda Taylor	7/31/09	6/30/11	SRP, PARI	$2,400,000	$2,400,000	100%	
N/A	89261 WO162	INV 998: Operational Research Program for Local Transportation Groups, FY2010	University of Minnesota	Jim Grothaus	Mark Maloney	Clark Moe	6/19/09	11/30/10	LRRB	$88,000	$88,000	100%	
N/A	89261 WO168	INV 999: RSS Report Publication Services, 2010	University of Minnesota	Gina Baas	Jake Akervik	Sandra McCully	7/17/09	7/31/10	LRRB, COPTRS	$49,597	$49,597	100%	
N/A	89261 WO184	Execution of Library 2009 Library Business Plan	University of Minnesota	Arlene Mathison	Sheila Hatchell	None	3/5/10	4/30/11	SRP	$30,414	$30,414	100%	
N/A	89261 WO219	INV 999: RSS Report Publication Services, FY2011	University of Minnesota	Arlene Mathison	Jacob Akervik	Sandra McCully	7/15/10	8/31/11	SRP, LRRB, COPTRS	$35,913	$35,913	100%	
N/A	89261 WO225	INV 668 LTAP 0001(210): Local Technical Assistance Program (LTAP), FY 2011	University of Minnesota	Jim Grothaus	Julie Skallman	Farideh Amiri	8/30/10	10/31/11	LRRB, Other Federal Funds	$440,500	$440,500	100%	
N/A	89261 WO210	INV 998: FY 2011 Operational Research Program for Local Transportation Groups (OPERA)	University of Minnesota	Jim Grothaus	Mark Maloney	Farideh Amiri	9/9/10	9/30/11	LRRB	$90,000	$90,000	100%	
N/A	92724	MPR-6(004): Implementation Plan Development, Closeout Memos, and Implementation Communication Products	Darlene Gorrill	Darlene Gorrill	Jacob Akervik	Benjamin Worel	4/28/08	8/31/10	SP&R, SRP	$28,380	$28,380	100%	
N/A	92843	MPR-6(004): Implementation & Closeout Program Administration Support	Micky Ruiz	Micky Ruiz	Shirlee Sherkow	Alan Rindels	5/30/08	8/31/10	SP&R, SRP	$97,500	$97,500	100%	
N/A	95283	MPR-6(019): Technical Transfer Material Development—Phase IV	CTC & Associates LLC	Patrick Casey	Jacob Akervik	Benjamin Worel	9/24/09	4/30/11	SP&R, SRP	$99,880	$99,880	100%	
N/A	96047	MPR-6(019): Technology Transfer Material Development—Phase V	CTC & Associates LLC	Patrick Casey	Jacob Akervik	Benjamin Worel	2/8/10	10/31/10	SP&R, SRP	$99,763	$99,763	100%	
N/A	96048	Library Development	Law Library Consultants, Inc.	Kathleen Bedor	None	None	4/7/10	7/31/11	SRP	$59,995	$59,995	100%	
N/A	97585	MPR-6(019): Technology Transfer Material Development	CTC & Associates LLC	Patrick Casey	None	Sandra McCully	9/17/10	9/30/11	SP&R, SRP	$99,825	$99,791	100%	
N/A	98007	MPR-6(019): Research Services Brochure	Modern Design Group	Chris Foote	Jacob Akervik	Jacob Akervik	11/30/10	1/31/11	SP&R, SRP	$3,138	$3,138	100%	
N/A	INV 675	INV 675: FY2011 Research Services Positions	None	None	None	None	7/1/10	6/30/11	LRRB	$160,000	$160,000	100%	
N/A	INV 745	INV 745: FY2011 Library Services	None	Sheila Hatchell	None	None	7/1/10	6/30/11	LRRB	$70,000	$70,000	100%	
N/A	89261 WO219	INV 999: RSS Report Publication Services, FY2011	University of Minnesota	Arlene Mathison	Jacob Akervik	Sandra McCully	7/15/10	8/31/11	SRP	$49,468	$35,913	73%	
N/A	89261 WO263	Librarian Services 2011-2012	University of Minnesota	Arlene Mathison	Sheila Hatchell	None	3/21/11	7/31/12	SRP	$58,255	$11,651	20%	
N/A	93463	INV 645: RIC Implementation of Research Findings (FY2009-2011)	SRF Consulting Group, Inc.	Michael Marti	Rich Sanders	Farideh Amiri	4/17/09	12/31/11	LRRB	$497,697	$449,234	90%	
N/A	93463 Task 6	INV 645: RIC Task 6: LRRB Product Evaluation/Roadmapping	SRF Consulting Group, Inc.	Mike Marti	Rick Kjonaas	Clark Moe	2/19/09	12/31/11	LRRB	N/A	N/A	N/A	
N/A	93463 Task 7	INV 645: RIC Task 7: LRRB Outreach and Marketing	SRF Consulting Group, Inc.	Mike Marti	Tom Colbert	Clark Moe	2/19/09	12/31/11	LRRB	$45,976	$30,647	67%	
N/A	94156	MPR-6(005): Next Generation of ARTS Tech Support and Maintenance Services	ArchWing Innovations, LLC	Ryan Anderson	Nelson Cruz	Benjamin Worel	5/13/09	4/30/12	SP&R, SRP, Other State Funds	$122,540	$98,050	80%	

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Administrative [cont.]

Report Number	Contract Number	Title	Contractor	Investigator	Technical Liaison	Administrative Liaison	Start Date	End Date	Funding Source	Total Cost	Amount Paid	% Paid	TS
N/A	94376	MPR-6(003): Business Assessment of RSS Processes and Tools	Trissential	Steve Beise	Ann McLellan	Benjamin Worel	11/4/09	12/31/11	SP&R, SRP, Other State Funds	$109,920	$74,970	68%	
N/A	95501	INV 999: Research Services and Local Road Research Board Web Site Hosting and Maintenance 2010-2011	MIS Sciences Corp	Jeff Willis	Farideh Amiri	Sandra McCully	3/17/10	1/31/12	SRP	$16,150	$11,900	74%	
N/A	95936	MPR-6(003): Strategic Program Development	David Johnson	Dave Johnson	Linda Taylor	Nelson Cruz	12/22/09	3/31/12	SP&R, SRP	$50,000	$42,165	84%	
N/A	98383	INV 645: RIC Implementation of Research Findings 2012-2014	SRF Consulting Group, Inc.	Michael Marti	Rich Sanders	Farideh Amiri	6/20/11	7/31/14	LRRB	$465,497	$11,782	3%	
N/A	98725	INV 916: LRRB Technical Transfer Materials Development	CTC & Associates LLC	Patrick Casey	Julie Skallman	Sandra McCully	5/20/11	9/30/11	LRRB	$71,804	$7,880	11%	
N/A	98726	MPR-6(019): Technology Transfer Material Development	CTC & Associates LLC	Patrick Casey	Linda Taylor	Sandra McCully	4/29/11	3/31/12	SP&R, SRP	$99,973	$26,499	27%	
N/A	98727	MPR-6(019): Technology Transfer Material Development—2011 Annual Reporting	CTC & Associates LLC	Patrick Casey	Linda Taylor	Sandra McCully	4/28/11	3/31/12	SP&R, SRP	$35,102	$3,392	10%	

Pooled Fund Studies

Study #	Title	Technical Liaison	Administrative Liaison	Lead State or Agency	Number of Participating States	Current MN Commitment End Date	Total Cost	Total MN Commitment	MN 2010 Commitment	MN 2011 Commitment	TS
TPF-5(109)	Core Program Services for a Highway Research, Development and Technology Program (TRB)	Linda Taylor	Debra Fick	FHWA	21	2011	$7,108,855	$510,820	$127,705	$127,705	
TPF-5(209)	Support of the Transportation Curriculum Coordination Council (TCCC)	Catherine Betts	Debra Fick	FHWA	10	2012	$750,000	$60,000	$15,000	$15,000	X
TPF-5(410)	National Cooperative Highway Research Program (NCHRP)	Linda Taylor	Debra Fick	FHWA	All	Ongoing	N/A	N/A	$658,602	$701,985	

TRANSPORTATION RESEARCH INNOVATION GROUP (TRIG) DIVISION REPRESENTATIVES

MnDOT's Transportation Research Innovation Group (TRIG) is the governing board for Minnesota's State Research Program. TRIG is composed of representatives from each MnDOT office and district and meets quarterly to recommend research investments.

Name	Office	Notes
Central Office		
Jim Close	Information and Technology Services	Replaced Kathy Hofstedt
Nancy Daubenberger	Bridges and Structures	Replaced Duane Hill
Mike Ginnaty	Construction and Innovative Contracting	Replaced Jon Chiglo
Susan Groth	Traffic, Safety and Technology	
Steve Lund	Maintenance Operations	
Mark Nelson	Statewide Multimodal Planning	Replaced Jonette Kreideweis
Frank Pafko	Environmental Stewardship	
Keith Shannon	Materials and Road Research	
Linda Taylor	Research Services	
Jean Wallace	Policy Analysis, Research and Innovation	Replaced Nick Thompson
District		
Lee Berget	District 4	
Amr Jabr	Metro District	
Nelrae Succio	District 6	Replaced Mike Robinson
Jim Swanson	District 7	
FHWA		
Bill Lohr		

Research Services Support Staff

- Nicole Peterson—Research Engineer
- Ann McLellan— Finance & Contract Services
- Bruce Holdhusen, Alan Rindels, Farideh Amiri—Roadmap Managers

FY2011 Key Research Services Statistics

RESEARCH MANAGEMENT

Total active contracts for research and implementation managed by MnDOT	205
Completed reports	40
Technical Summaries	53
Transportation Research Synthesis reports	5
Research Services website hits	210,133

FINANCIAL AND CONTRACT SERVICES

Contract closeouts	54
New contracts	65
Contract amendments	39
Interoffice agreements	13
Interagency or partnership agreements	7
Purchase orders	27
Total SP&R funded projects	51
-Active MnDOT-led pooled funds	11
-Other pooled funds with MnDOT contributions	23
-Single-state SP&R projects	17

LIBRARY

Total circulation	17,045
New library materials	556
Reference services provided	1,457
Literature searches	640
Interlibrary loans	687
Library website hits	205,401

Awards:
- 2011 Northern Lights merit award in visual design
- Special Libraries Association Innovation in Action award

Mission

MnDOT Research Services supports Minnesota's transportation industry by meeting the innovation and information needs of transportation practitioners and the transportation community. Research and Library Services provides service leadership, financial management, informational services and administrative support to the Federal Highway Administration (FHWA) State Planning and Research program, MnDOT's State Research Program, the Local Road Research Board and leading industry collaborations.

MnDOT Research Services Vision

Research Services fosters a professional and productive environment that leads innovative research by serving global and regional collaboration.

Our Core Values

Customer Service · Collaboration · Accountability Productivity · Results-Oriented

Tell Us About Your Research Needs

MnDOT and the Local Road Research Board welcome your research ideas for improving transportation in Minnesota. MnDOT's Transportation Research Innovation Group (TRIG), consisting of MnDOT district engineers and office directors, meets several times each year to review and select projects for funding by Research Services. For more information, please contact Linda Taylor at Linda.Taylor@state.mn.us.

Follow Us Online:

www.research.dot.state.mn.us

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Produced by CTC & Associates LLC for:

Minnesota Department of Transportation
Office of Policy Analysis, Research and Innovation
Research Services Section
MS 330, First Floor
395 John Ireland Blvd.
St. Paul, MN 55155-1800

(651) 366-3780

BUREAU OF RESEARCH

New Jersey Department of Transportation

Research Peer Exchange

October 25-28th, 2011

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Research Peer Exchange

Managing with Reduced Resources: Successful Practices in Streamlining Processes; Knowledge and Technical Transfer and Collaboration within a Dynamic Workforce Environment

Peer Exchange Team

- **Camille Crichton-Sumners**, NJDOT Host, Participant
- **Leni Oman**, Washington DOT, Team Leader
- **Linda Taylor**, Minnesota DOT, Participant
- **Richard Woo**, Maryland SHA, Participant
- **Cameron Kergaye**, Utah DOT, Participant
- **Gene Shin**, Virginia DOT, Participant
- **Chris Hedges**, NAS TRB Senior Program Officer, Participant
- ***Sandra Brillhart***, *FHWA-NJ Division, Participant*

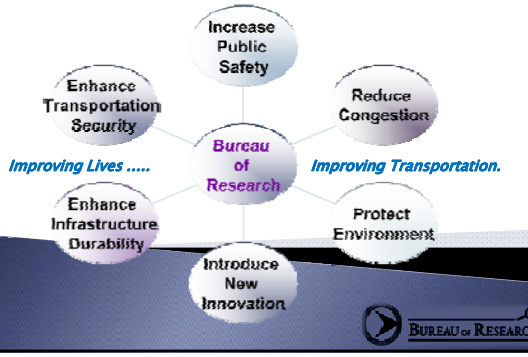
Additional Participants

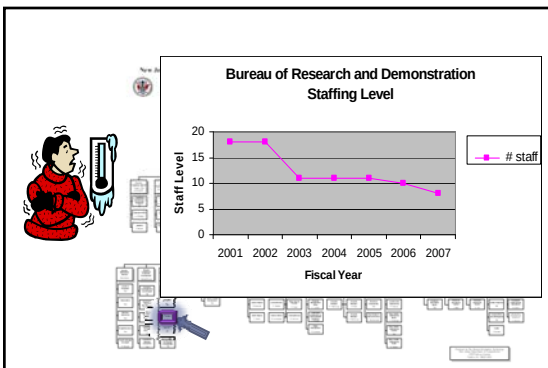
- **Bethany Allinder**, NJ LTAP, Scribe

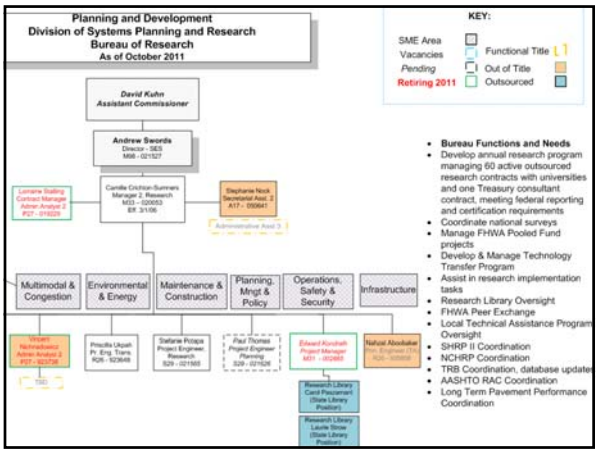
About the Research Program

- Organizational structure
  - Research Unit Function
  - Research Staff
- Organizational climate
- Resource challenges

The Bureau of Research delivers customer focused quality research and technology transfer solutions that:



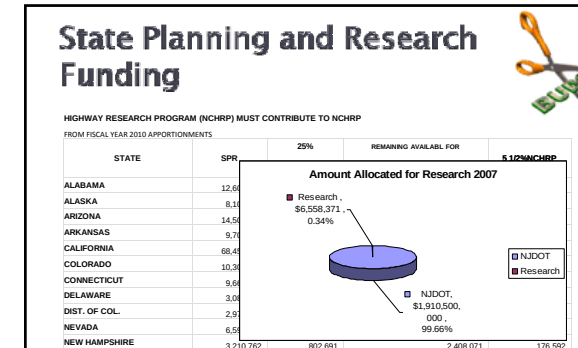




State Planning and Research Funding

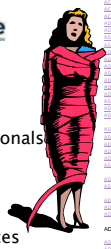
HIGHWAY RESEARCH PROGRAM (NCHRP) MUST CONTRIBUTE TO NCHRP FROM FISCAL YEAR 2010 APPORTIONMENTS

STATE	SPR	25%	REMAINING AVAILABL FOR	5.12%NCHRP
ALABAMA	12,66			
ALASKA	8,16			
ARIZONA	14,58			
ARKANSAS	9,70			
CALIFORNIA	68,48			
COLORADO	10,36			
CONNECTICUT	9,66			
DELAWARE	3,06			
DIST. OF COL.	2,97			
NEVADA	6,58			
NEW HAMPSHIRE	3,210,762	802,691	2,408,071	176,592
NEW JERSEY	19,392,090	4,848,023	14,544,067	1,066,565
NEW MEXICO	7,006,060	1,751,515	5,254,545	385,333
NEW YORK	31,787,652	7,946,913	23,840,739	1,748,321
NORTH CAROLINA	20,040,399	5,010,100	15,030,299	1,102,222

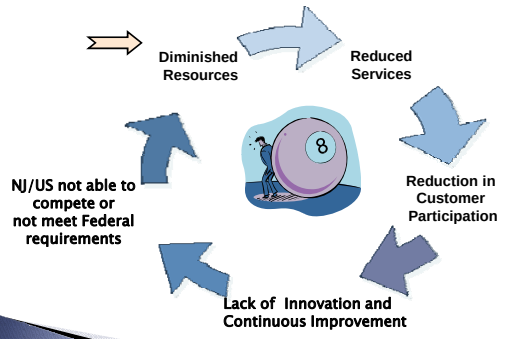


Resource Challenges

- Officialism
  - Process
    - Forms
  - Policy
    - Internet
    - Travel
- Staffing
  - 6 RPM's
  - 2 Librarians
  - 2 Administrative Professionals
- Funding
  - 2M to 0.5M TTF
  - Federal?
  - Cycle diminished resources



Resource Availability



BUREAU OF RESEARCH

New Jersey Department of Transportation

Research Peer Exchange

October 26th, 2011

October 26th, 2011

- **Dynamic Work Environment Organizational Change &Transition**
  - How has your organization responded to the following?
    - Organizational changes impacting the Research Function
    - Increased/decreased responsibilities due to attrition, outsourcing?
    - Reduced funding?
    - Have you implemented activities to streamline processes in light of diminished resources?

Organizational changes impacting Research

ATTRITION
- Challenge: Finding time to train new people
- Challenge: Hiring Freeze & Motivation
- Challenge: Adequate oversight of outsourced work

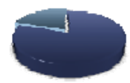
Dynamic list of stakeholders
- Challenge: Customer /champion retires or is promoted, responsibilities change
- Challenge: Leadership change with administration

- Increased or decreased responsibilities due to attrition, outsourcing?
  - All research outsourced

Reduced funding: *Reaction*

TTF

80/20 Federal vs. State Share



- Fewer new starts
- Unexpended balances
- *Spend more on each*

Streamlined processes

- Reduce Research Project Manager's workload
  - Allow PI to hire technical editor reducing review time
  - Reduce the number of meetings (RUC, pre-proposal meetings)
  - Request that all stakeholders attend quarterly meetings at our HQ
  - Automated documents in PROMPTS
- Reduce Research User's Committee Review Time
  - Automated voting document
  - E-votes

To see a project description, please place curser on each title and left click. To return to this page left click on "Home" button.

Source	Capital Investment Strategy	Long Range Planning Goal	2010 Research Problem Statements	Enter Score "0" to"3"
NJ Transit	Environmental	Respect the Environment	Adaptation of NJ Transit Infrastructure to Climate Change	1
Multimodal	Aviation	Increase Safety and Security	Aircraft Counter	2
Operations/Maintenance	Environmental	Maintain and Renew Transportation Infrastructure	Culvert Information Management Implementation Analysis	3
Multimodal	Goods Movement	Improve Mobility, Accessibility, Reliability	Elimination of Weight Restrictions on Amtrak Lines	3
Other	Environmental	Respect the Environment	Feasibility Analysis of Solar Powered Facilities	3
CPM	Bridge	Maintain and Renew Transportation Infrastructure	High Performance Concrete vs. Class A Concrete in Bridge Decks	3
Operations/Maintenance	Economic Development	Operate Efficiently	Junction Box Lid Redesign	2
NJ Transit	Environmental	Increase Safety and Security	Mitigation of NJ TRANSIT Impacts on Climate Change	2
Planning	Local Aid	Continue To Improve Agency Effectiveness	Municipal Bonding for Public Bid Contracts	2
NJ Transit	Expand Capacity/Frequency	Improve Mobility, Accessibility, Reliability	Off-Peak Rail Transit Service Study- Importance for Auto Reduction and Peak ridership growth	2

KEY:

Color	Organization
	Planning
	CPM
	Operations/ Maintenance
	Other
	NJ Transit
	MVC
	Multimodal
	Traffic Operations

How We Do It…

- Solicit problem statements
- Develop RFP's
- Review and select winning proposals
- Monitor/Conduct research studies
- Ensure technology transfer, training, and implementation

•Email solicitation in lieu of meeting
•need statement review deferred until after ranking by RUC

Website posting: RFP's, Q&R vs proposal meeting

Automation of forms using PROMPTS: RFP, SPR reporting, performance reports, departmental/ financial forms

Implementation follow up and closeout forms added

Knowledge Transfer Practices

- Sharing research results
  - **Standardized** Knowledge transfer
    - Annual Research Showcase
    - Brown Bag Luncheon/Visiting scholar lectures (UTC, LTAP)
    - Final report, technical briefs
    - Quarterly meetings/reports
  - **Targeted** knowledge transfer
    - Training
    - Special presentations
    - *Project Specific Videos?*

Knowledge Transfer

- Internal & external communications
  - Transporter/Newsletter articles
  - Intranet/Website Notices
  - Department Wide Emails
  - Research Library
  - RPM's
  - Principal Investigators
  - University or Consultant Point of Contact

Collaborative Relationships

- Intra-organizational
  - Universities
  - Consultant
  - AASHTO RAC
  - TRB
- Inter-organizational
  - Research & Library
  - Research User's Committee
  - Senior Leadership
  - SME's/Customers, NJDOT, NJ Transit, MVC
    - Research Selection and Implementation Panel

BUREAU OF RESEARCH

New Jersey Department of Transportation

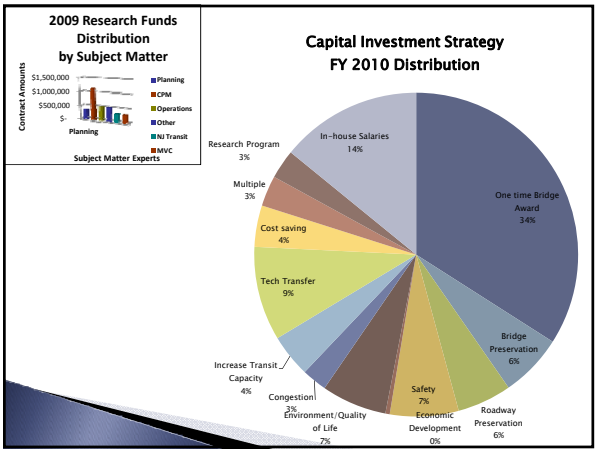
Research Peer Exchange

October 28th, 2011

Approach to Strategic Mission Alignment

Friday October 28th, 2011

- Reactive
  - Categorization by Long Range Plan Goals
  - Categorization by Capital Investment Strategy
  - Categorization by FHWA Goals
- Proactive
  - Strategic Plan 2005
  - Program Assessment 2011
  - *Specified Goal, % for each category*



BUREAU OF RESEARCH

New Jersey Department of Transportation

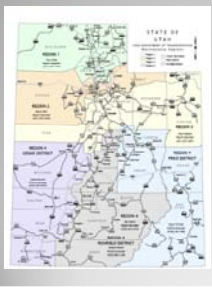
Research Peer Exchange

October 28th, 2011

Organizational information

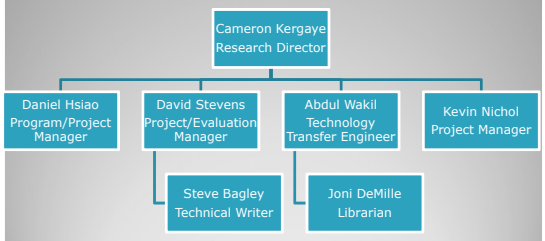
Cameron Kergaye
UDOT Research Division
2011

Utah Facts



- Population 2.8 Million
- Land Area: 84,900 Sq Miles (11th Largest State)
- 1,640 UDOT Employees
- 5,840 Miles (13% of State)
- 16,250 Lane Miles

Structure



Function

- Support UDOT Goals
- Work with Multiple Divisions
- Identify Research Needs
- Seek Innovative Solutions
- Involve the Experts
- Promote Implementation
- Maintain National Connection
- Share National Research
- Pay Research Fees

Managing / Conducting Research

- Manage Research Projects
  - 17 New Projects for FY 2012
  - 17 Continuing Projects
  - 10 Subject Areas
- Conduct Research Projects
  - 3 Universities & 5 Consultants
- Conduct Research Evaluations
  - 13 Active Evaluations
  - Coordinate with Materials Div.

Research Contracting

- Principal Investigator's Idea
  - Sole Source
  - Public University
- Not Principal Investigator's Idea
  - RFQ/Pool
  - Public University

Knowledge Management & Technology Transfer

- Website
- Shared Drive on Server
- Library
- Reports
- Newsletter
- Webinars
- Literature Searches

Funding Sources

- About $2 Million Annually
- Federal SPR
- State Matching Funds
- State Administration & Construction Funds
- FHWA TPF
- University Matching Funds
- Other Division Funds
- Soft Match

Resource Challenges

- Small Division
- Linear Leadership Support
- Continuing Projects
- Communication with Champions
- Supporting Implementation
- Website Limitations
- Exploring New Technologies

Questions

Dynamic Work Environment: Organizational Change and Transition

Cameron Kergaye
UDOT Research Division
2011

Response to Organizational Changes

- Changes
  - New Group and Leaders
  - Research Director and Staff Changes
  - New Products to Materials Div.
- Educate Group Leaders
- Relevant, Accessible & Responsive
- Improve Communication
- Improve Transparency
- Improve Project Management

Response to Changed Responsibilities

- Changes
  - Connection with Structures Division
  - Cancel Writing/Graphics Contract
  - Projects to Other Managers
- Share HfL Knowledge
- Hire Technical Writer
- Project Tracking Spreadsheet
- Project Manager Training
- Research Evaluations with Materials Div.

Response to Reduced Funding

- Effect of Continuing Projects on New Projects
- Clean Up the Budget
- Communicate with Senior Leaders
- Big-Ticket Items at Workshop
  - Construction & Materials
  - Maintenance
  - Traffic Management & Safety
  - Geotechnical
  - Structures
- Funding by Other Divisions
- Soft Resource Matching
- TPF

Streamlined Processes

- Revised Workshop
- Contract Planning Checklist
- Project Tracking Spreadsheet
- Contract Docs Review
- Contract Signature
- Simplified Website
- Resource Matching (Soft & Hard)
- Small Projects/Initiatives (Fast-Track)
  - Lit. Summary, Policy, State-of-Practice, Scan Tour, Pooled Fund

Questions

KNOWLEDGE TRANSFER & COLLABORATIVE RELATIONSHIPS BEST PRACTICES

Cameron Kergaye
UDOT Research Division
2011

Best Practices For Sharing Research

- Library
- Poster Session
- Breakout Sessions
- Website
- Newsletter
- Blog
- Exploring Social Media

NEWSLETTER

ONLINE REPORT

WEBSITE

Ways of Improving Internal & External Communications

- Final Report Presentations
- Email List Serve
- Research Booth
- Hired Technical Writer
- Website
- Exploring Social Media

Enhancing Intra-organizational & Inter-organizational Team Efficiency

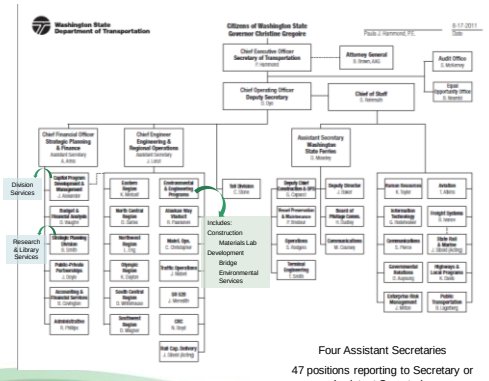
- Visit Universities & Group Leaders
- Project Team:
  - Project Manager
  - Principal Investigator
  - Project Champion
  - Technical Advisory Committee
- Region Field Visits


Questions

WSDOT
Research & Library Services

Leni Oman
Director
Office of Research & Library Services
Washington State Department of Transportation

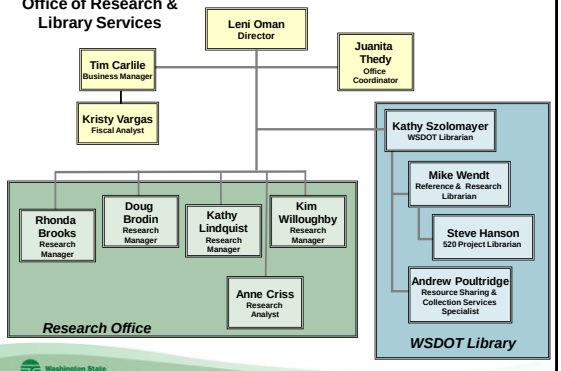
October 25-28, 2011
New Jersey Department of Transportation Peer Exchange



Four Assistant Secretaries

47 positions reporting to Secretary or Assistant Secretaries

Office of Research & Library Services

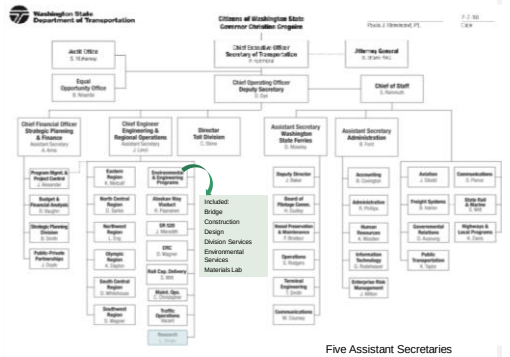


Research Office Functions

New Quality Assurance Test Method to Detect Drilled Shaft Defects

- Assist with Research Study Design
- Conduct Simple Surveys
- Connect staff to past and ongoing research
- Collate and Market Agency Research Needs
- Contract with Universities
- Fund Research Activities
- Direct and Managing Research Activities
- Support Implementation of Research Results
- Synthesis of practice

Research Program folio



Five Assistant Secretaries

52 positions reporting to Secretary or Assistant Secretaries

Research Programs

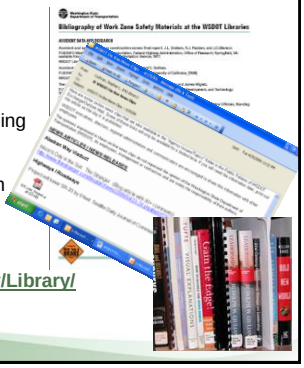
Crash test conducted in Roadside Safety TPF project

- SPR Projects (biennial selection)
- Transportation Pooled Fund Program
- Quick Response Research
- Student Studies/Public Service Workshop
- Client Sponsored Research
- Synthesis Reports
- Reference/Literature Research
- National Programs (CRP, FHWA, SHRP 2)

WSDOT Library Services

- Ready Reference
- Literature Reviews
- Search Technique Training
- News Alerts
- Information Organization
- Lending Books
- Indexing support

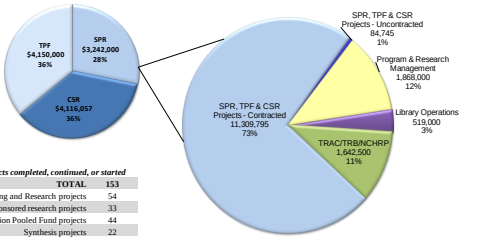
http://www.wsdot.wa.gov/Library/



Washington State Department of Transportation

09-11 BN Total Budget & Contract Value

$15,537,557



# of Projects completed, continued, or started

	TOTAL 153
State Planning and Research projects	54
Client-Sponsored research projects	33
Transportation Pooled Fund projects	44
Synthesis projects	22

TRB: Transportation Research Board
TRAC: Washington State Transportation Center
NCHRP: National Cooperative Highway Research Program
SPR: State Planning and Research
TPF: Transportation Pooled Fund Program
CSR: Client Sponsored Research

Washington State Department of Transportation

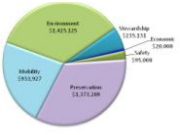
Other ORLS Functions

- Manage research contracts for WSDOT including 8 master agreements and > 12 agreements with other institutions
- Coordinate National Research Program nominations and TRB Annual Meeting participation. Support participants.
- Collate information on transportation award programs, serve as repository for national and regional awards.
- Review travel for TRB Annual Meeting and Transportation Pooled Fund project participants
- Coordinate AASHTO committee membership changes, technical service program contributions (none from SPR currently), and AASHTOWare licenses. Distribute the AASHTO publications received by WSDOT.

Washington State Department of Transportation

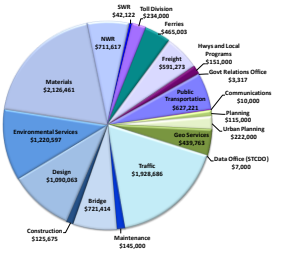
09-11 Research Project Investments

by Strategic Goal



74% of research contracts addressed needs of the Engineering & Regional Operations Division

by WSDOT Organization



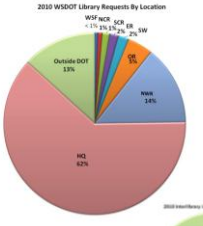
Washington State Department of Transportation

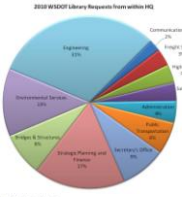
Washington State Transportation Center (TRAC)

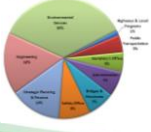
- TRAC is a partnership between WSDOT, University of Washington, and Washington State University
- TRAC provides a link among government, university researchers, and the private sector
- TRAC acts as a liaison, connecting those who need applied research with those best suited to conduct it

Washington State Department of Transportation

2010 WSDOT Library Usage (Main Library)







2010 WSDOT Library Circulation Activity

1803 Items Total

1633 items loaned from WSDOT Library
170 items obtained via Interlibrary Loan and circulated to WSDOT staff

Of the 170 Interlibrary loans, 151 items were for HQ staff and 19 were for Regional staff

2010 Online Resource Usage
(selected sample)

Civil Engineering NetBASE
(collection of 400+ eBooks)
1725 sections downloaded

ASCE Journals Online
610 articles downloaded

Charts do NOT capture all of the online resource usage or circulation/use of the physical collection.

Washington State Department of Transportation

WSDOT Research Management

Research Executive Committee

WSDOT Library Content

- Over 40,000 items in the physical collection
- Over 100 full text journals available online
- Some bibliographic databases available:
  - LexisNexis
  - CivilEngineering Netbase
  - BioOne
- Many standards, manuals and texts available online
- Provide topical information "Toolkits" on our Intranet
  - Legislative
  - Climate Change
  - Reauthorization
- Special collections for Staff Development Office & Wellness Programs
- Collect and catalog agency publications

Research Pays Off –examples from our portfolio

- Of 920 bridges in high risk seismic zones, at least 545 have been improved with the products of research projects
- Over 300 miles of Portland Cement Concrete Pavement have been retrofitted using dowel bars. Saves ~$90K per lane mile compared to asphalt overlay
- Several miles of cable median barrier have been installed, preventing crossover accidents and saving lives
- Stormwater flow control research led to exemptions that have saved over $200 million in pond-related construction costs
- Research on incident patterns guided the deployment of incident research teams, minimizing incident-induced delay & optimizing deployment
- Developed software to analyze freeway usage and performance providing a foundation for the WSDOT flow map found on the agency website
- 500 miles of state highway serve as main streets, research found that applying community-design and visioning considerations during project development helped avoid costly changes to the project's scope and schedule and improved project delivery times

Challenges: Buying Power is Down

Trend in Budgeted Program

FUND TYPE		1999-2001	2001-2003	2003-2005	2005-2007	2007-2009	2009-2011	% change over 10 years
Federal		$3,480,058	$3,279,182	$3,697,751	$4,102,521	$4,424,000	$4,273,400	22.8%
State		$990,014	$1,171,670	$1,304,438	$1,362,507	$1,253,000	$1,355,600	36.9%
TOTAL		**$4,470,072**	**$4,450,852**	**$5,002,189**	**$5,465,028**	**$5,677,000**	**$5,629,000**	**25.9%**
Annual Change	***Federal***		***-5.77%***	***12.76%***	***10.95%***	***7.84%***	***-3.40%***	
	State		***18.35%***	***11.33%***	***4.45%***	***-8.04%***	***8.19%***	

17

WSDOT Library

Library Advisory Board

Transportation Building (WSDOT Library)

Materials Lab Library

There are four physical libraries in WSDOT that comprise the WSDOT Library Network

Ferries Division Vessel Engineering Library

Ferries Division Terminal Engineering Library

Reasons for the reduction in buying power

- Cost increases at research institutions
  - Tuition, Overhead, Indirect, Salaries
- ORLS salary increases
  - 05-07 BN – class adjustment increases Transportation Planning Supervisors 7.5% and bumps up WMS position
  - 07-09 BN – Step L increase
- Increased ORLS staff
  - 05-07 BN – Half time library position added with S2 funding
  - 05-07 BN - REC approves addition of full-time Fiscal Analyst and 0.7 FTE Librarian
  - 05-07 BN – one of the part time library positions shifted to full time through funding from Communications and SPR
- Diversification of research program
  - 03-05 BN - REC approves addition of the Quick Response Research Program
  - 07-09 BN - REC approves pilot for Student Research Program (planned to include it in 09-11)
- Federal fund balance spent down so Transportation Pooled Fund Program contributions allocated
- 05-07 BN - Library Services moves to Research Office
  - State funding that came with the Library ebbs and flows but doesn't keep up with inflation

Cost increases at research institutions

Projects typically include:
- Tuition for the Graduate Student(s)
- Salary for the Principal Investigator(s)
- Indirect (F&A) costs
- Travel
- Materials and equipment

	WSU			UW				
	Indirect	Salary	Tuition	Indirect	Salary Faculty	Salary Profess	Salary RA/TA	**Tuition
	46.80%	4%	$4,494	52.00%	5%	8%	4%	$3,761
	46.80%	4%	$6,296	52.00%	1%	4%		$4,636
	46.80%	4%	$6,327	52.00%	5%	6%	3%	$5,286
	49.50%	4%	$7,546	55.50%	10%	7%	4%	$5,985
	49.50%	4%	$7,546	55.50%	11%	8%	6%	$6,802
	49.50%	4%	$8,497	56.00%				$7,692
% change over 10 years	5.77%	27%	89.07%	7.69%	36%	38%	18%	104.52%

What are we requesting?

Near Term
- Awareness of the budget constraints

Longer Term
- Funding to restore "buying power"
- Serious consideration of additional resources
  - To do similar applied research and better meet agency needs
  - To more efficiently manage contracts and office processes
  - To proactively scan technology and practice
  - To better manage department information and knowledge
  - To improve technical transfer of research results
  - To more proactively partner with research institutions

Non-Project Cost Increases

- ORLS salary rate increases
- Upgraded 5 positions
- Increased ORLS staff
- TRAC & TRB increases

CATEGORY	1999-2001	2001-2003	2003-2005	2005-2007	2007-2009	2009-2011	% change over 10 years
			7.5% class adjustment for TP Sup & increased WMS	Unfunded Step L increase			
TRB Core Services	$216,410	$108,205	$227,330	$233,010	$266,000	$266,000	22.9%
TRAC	$289,000	$350,000	$315,000	$315,000	$230,000	$345,000	19.4%
Research Admin & Implementation	$974,890	$1,066,987	$1,339,824	$1,595,718	$1,826,000	$1,868,000	91.6%
FTE		7.0	7.0	8.0	8.0	8.0	
Library	$172,500	$172,500	$172,500	$369,984	$543,000	$519,000	200.9%
FTE			1.5	2.6	3.0	2.6	
ORLS Management Sub-Total	**$1,147,390**	**$1,239,494**	**$1,512,331**	**$1,965,710**	**$2,369,011**	**$2,387,008**	**108.0%**
	Adjusted to include Library in base calculation		S2 Funds and 1 FTE moved to Research Office	REC approves 1.0 FTE for FA & 0.7 for Librarian			

Dynamic Work Environment: Organizational Change and Transition

Leni Oman
Washington State Department of Transportation

Session 2
New Jersey Department of Transportation Peer Exchange

Summary of Cost Trends

Biennium	IPD	Library & Research Inflated	Actual Revenue
99-01			
01-03		$4,623,352	4,450,852
03-05	0.0411	$4,813,372	5,002,189
05-07	0.0600	$5,102,174	5,465,028
07-09	0.0570	$5,392,998	5,677,000
09-11	0.0262	$5,534,295	5,629,000
11-13	0.0338	$5,721,354	

- Changes in revenue indicate our "buying power" should be the same
- But cost increases have outstripped revenue increases

Revenue Up	25.90%
Costs Up	
NCHRP	22.19%
TRB Cores Services	22.9%
TRAC	19.40%
Program Mgmt	108.0%
Tuition	89.07-104.52%
University Salary	18%-38%+
Indirect	5.77-7.69%

Washington's Transportation System - a valuable asset

Highways
- Carry 86 million vehicle miles/day *(on 18,500 state highway lane miles)*
- 225 lane miles of a planned 320-mile HOV freeway system
- More than 3,600 bridges and structures

Ferries
- Carry 23 million passengers/year *(on 21 ferry vessels, 20 terminals, and 505 daily sailings)*

Passenger rail
- Carries over 800,000 passengers/year *(Partner in Amtrak Cascades state passenger rail)*

Aviation
- 17 WSDOT managed airports, 138 public use airports

Freight rail
- Grain Train delivers over 1.2 million tons of grain *(Since 1994, grain train runs 118 cars including 29 added in 2010)*
- WSDOT owns 296 miles of PCC railroad *(Shipping during 2010 on the PCC rail system increased 20% over 2009 to 8,000 car loads.)*
- 3,600 miles of public and private freight railroad moves 116 million tons of freight. *(2008 data)*

Transit support
- Commute programs support more than 810,000 commuters statewide *(170 million vehicle miles traveled reduced annually)*
- Vanpool program includes more than 2,400 vans *(Washington has the largest public vanpool fleet in the nation)*

Washington's primary transportation revenue source is limited, committed, and doesn't keep up with inflation and growing demand.

76% of all state transportation investments are financed by the gas tax.

37½¢ Per gallon Washington state gas tax rate as of July 1, 2008

-9½¢ **261 specific transportation projects statewide*** (2005 Transportation Partnership Projects) — **Funded**

-5¢ **160 specific transportation projects statewide** (2003 Nickel Package projects) — **421 projects**

23¢ Base Gas Tax

-11¢ Supports **cities and counties** for local roads

-4¢ Supports debt service to reduce **bond debt** that funded past highway and ferry projects

8¢ Remains for **maintenance and operations** as well as **preservation, safety improvements,** and **congestion relief** projects for state highways and ferries

* Of the 9½ cents, 8½ cents is used by the state for highway projects, 1 cent goes to cities and counties for improvements to streets and roads.

Washington State Department of Transportation

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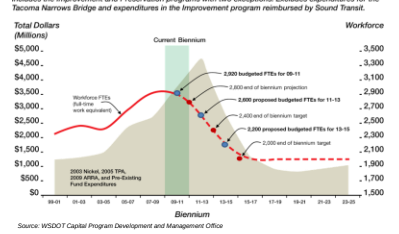
WSDOT's Workforce Business Strategy

Includes the Improvement and Preservation programs with two exceptions: Excludes expenditures for the Tacoma Narrows Bridge and expenditures in the Improvement program reimbursed by Sound Transit.



WSDOT's Workforce Business Strategy

Source: WSDOT Capital Program Development and Management Office

The shift in the program phase between 2009-2011 and 2011-2013 is:

	2009 – 11	2011 – 13	Change
PE	694,982,000	406,972,000	-41%
RW	427,060,000	215,834,000	-49%
CN	2,457,346,000	4,165,236,000	70 %

Washington State Department of Transportation

In the last 10 years, WSDOT has transformed business practices

- Provided enhanced reporting transparency to the public, Legislature and Governor
- Implemented efficient project and program delivery methods.
- Institutionalized a climate of cost saving and innovative transportation solutions.
- Reducing $65 million in 09-11 and 11-13 in administrative and overhead reductions
  - Reduced labor costs from health benefit, compensation, and pension changes in Governor's 2011-13 budget will result in an additional $33 million in savings

WSDOT is a nationally recognized leader in project delivery, **accountability reporting, performance measurement development and tracking and innovative communications.**

Washington State Department of Transportation

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Highway Construction Program Capital Delivery Staffing 2008–2015

Capital Delivery	2008 WMS	2008 classified	2008 total	2011 WMS	2011 classified	2011 total	2015 WMS	2015 classified	2015 total
NCR	16	92	108	11	67	78	8	42	50
SWR	16	228	244	19	197	216	17	133	150
CRC	5	9	14	4	14	18	8	32	40
NWR	89	613	702	71	524	595	46	347	393
520	9	52	61	23	85	108	10	40	50
AWV	9	29	38	28	123	151	18	78	96
ER	20	167	187	13	140	153	11	64	75
OR	52	417	469	49	350	399	30	249	279
SCR	21	205	226	17	175	192	14	116	130
Region totals	**237**	**1812**	**2049**	**235**	**1675**	**1910**	**162**	**1101**	**1263**
Program Management	15	56	71	7	39	46	4	39	43
Development	56	382	438	42	332	374	33	267	300
Construction	28	160	188	22	170	192	20	126	146
Traffic Operations	2	5	7	2	2	4	2	0	2
Headquarters total	**101**	**603**	**704**	**73**	**543**	**616**	**59**	**432**	**491**
Total all	**338**	**2415**	**2753**	**308**	**2218**	**2526**	**221**	**1533**	**1754**

Workforce staffing levels reflect 2011 current law budget. Based on the 2008 staffing levels, this represents a reduction of WMS positions by more than 34 percent and of classified positions by more than 36 percent.

Washington State Department of Transportation

Change in WSDOT Staffing

	2006 DOT (not ferries fleet staff)	2006 Ferries Fleet Staff	June 2006	2011 DOT (not ferries fleet staff)	2011 Ferries Fleet Staff	August 2011	Change DOT (not ferries fleet staff)	Change Ferries Fleet Staff	Total
Permanent Full Time	5448	1318	**6766**	5308	1552	**6860**	-140	234	94
Permanent Part-time	109	0	**109**	77	9	**86**	-32	9	**-23**
Non-Permanent	474	329	**803**	314	54	**368**	-160	-275	**-435**
	6031	1647	**7678**	5699	1615	**7314**	-332	-32	**-364**

Washington State Department of Transportation

WSDOT Strategies for Reductions

- Consolidate Management
- Soft regional boundaries
- Shared services
- Use of technology
- Streamlining processes
- Prioritizing what we can do, eliminating low priority activities
- Extending equipment replacement cycles
- More

Washington State Department of Transportation

Funding Reductions in Research & Library Services

- -$120,000 Eliminated Student Research
- - $ 30,000 Res. & Tech Transfers reduced from $50K to $20,000
- - $13,000 Travel reduced by $12K to $21,000
- - $ 20,000 Report printing reduced
- - $ 26,000 Reduced on Library position to 60%
- - $ 53,000 Moved TRB Core Services to 100% Federal

- Reduce or eliminate Quick Response Research
- Reduce Washington State Transportation Center contribution
- Reducte National Cooperative Highway Research Program contribution
- Reduce Library resources

Washington State Department of Transportation

Strategic Research Goals

Safety	Preservation	Environment
Design Safety	Highway Pavement Preservation	Highway Stormwater Practices
Driver Behavior	Bridge Preservation & Replacement	Fish Passage Through Culverts
Vulnerability to Risks	Highway & Bridge Maintenance	Wildlife Connectivity
Accident Analysis	Ferry Maintenance & Preservation	Protecting Species
Pedestrian/Bicycle Safety	Airport Runway Preservation	Cultural Resources
Construction Safety	Legacy Computer Systems	Climate Change
Driver Behavior		Noise Reduction

Mobility	Stewardship	Economic Vitality
Traffic Management	Project Management & Delivery	Freight Mobility
Traveler Information	Advocate for System Needs	Public Private Partnerships
Variable Tolling	IT & Decision Support	Contracting
Demand Management	Accountability & Communications	Intercity, Rural & Special Needs
Highways & Ferries Operations	Workforce	Transportation
Non-Motorized Transportation	Enterprise Risk Management	
Intercity, Rural & Special Needs	Planning & Prioritization	
Transportation	Equitable Access & ADA	
	Sustainability	

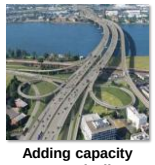
Knowledge Transfer & Collaborative Relationships Best Practices

Leni Oman
Washington State Department of Transportation

Session 3
New Jersey Department of Transportation Peer Exchange

Washington State Department of Transportation

Moving Washington is our three-pronged approach to fight congestion and combat climate change



Adding capacity strategically

Adding new capacity to our currently over-stressed transportation system removes choke points and bottlenecks, completing critical corridors; improve reliability, throughput for freight, commuters and transit partners.

Operating roadways efficiently

Maximizing the use of the existing system and using available technology to communicate with and direct traffic, improves the system's performance and generates revenue through variable pricing and other traffic management tools.

Managing demand

Providing more travel choices and options for people and freight helps improve the efficiency and effectiveness of our transportation system.

Washington State Department of Transportation

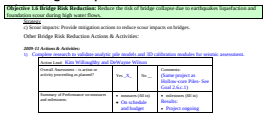
Speaking the Common Language: Strategic Connections

Objective 5.10 Research and Knowledge Management:
Support cutting-edge research and seek innovative solutions to transportation system issues. Retain key information and knowledge needed to support ongoing transportation system management within WSDOT.

a) Conduct short- and long-term research to support critical agency functions and emerging needs.

b) Improve retention and dissemination of key information and knowledge, particularly in areas at high risk of losing knowledge and agency expertise through retirements.

Strategic Implementation Plan



Annual Gray Notebook Article

Washington State Department of Transportation

Sustainable Transportation Directives

The Washington State Legislature Passed laws in 2008 and 2009 that:

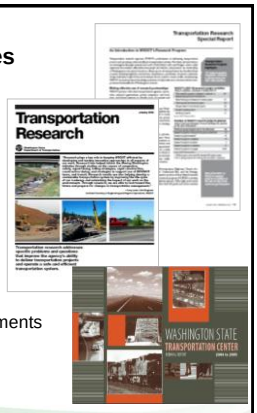
- Established GHG emission reduction goals for the state.
- Established vehicle miles traveled (VMT) reduction benchmarks and assigned specific implementation, monitoring, economic assessment and analysis tasks to us.
- Directs us to report energy usage to assess the need for energy audits.
- Requires us to install outlets for electric vehicle charging in our state's fleet parking and maintenance facilities
- Instructs us to participate in the development of a statewide integrated climate change response strategy.
- Directs us to quantify and reduce our GHG emissions to achieve state agency's mandatory targets
- Directs state agencies to develop strategies to reduce fuel consumption and emissions from state vehicle fleet and phase in fuel economy standards

Sustainable Transportation Directives web links

Washington State Department of Transportation

Program Outreach Activities

- Research folios
- WSDOT Research website
- Project summary document
- Gray Notebook Annual Summary
- Strategic Implementation Plan
- LTAP Newsletter
- TRAC Biennial Report
- Bulletin Board
- Viral messaging
- Project close-out presentations
- Elevator speeches
- Value of Research resource documents
- Webinars
- Briefings



John Milton

Director, Enterprise Risk Management

Funding Source
Sponsored by TRB

Days Attended
Sat Sun Mon Tues Wed Thurs

Roles
Committee Chair
Session Presenter (1)
Session Moderator (3)
Member 3 TRB Committees

Benefit to WSDOT/Washington

Ability to influence national priorities and policy related to highway safety

Potential Funding for WSDOT efforts, Influenced National Research Priorities

Funding Opportunities

FHWA on funding MIRE Data Collection Efforts

FHWA on behalf of NTSB on funding Development and Implementation of Weather Based Algorithm for Variable Speed Limits

Emerging or Evolving Federal Policies

Development of AASHTO Strategic Safety Plan, AASHTO Safety Research Plan, AASHTO Safety Performance Measures, AASHTO Highway Safety Manual, FHWA Highway Safety Implementation Plan, Safety Edge

WSDOT Research Proposals

Development of Serious Injury Performance Measures, Two Lane Rural Highways, Freeways and Interchanges, Development of Simulation Models in Road Safety, Human Factors in Road Safety, Development of Crash Modification Factors

Partnerships Formed/Continuing

Meetings with AASHTO, TRB and FHWA on Safety Policy and Plans, Potential Research and Implementation Strategies

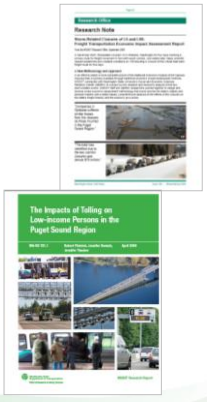
Implementation Actions

Identify Additional Funding Opportunities with FHWA

Evaluate Policy on HSM and Sustainable Safety Implementation

Project Outreach Activities

- Research Reports
- Research Notes
- Workshop/Seminars
- Webinars
- Videos
  - Hoh River and Cable Repair
- Subject Area Meetings
  - Traffic and Freight Meetings
  - Quarterly Forums
- Role of the Champion



Knowing What We Know

- Creating a Plan for ORLS Information Management
  - Process
  - Decision History
  - Reports and Products
  - Uses of Research and Library Services
  - Work process information
  - Reminding
- Planned Redundancy
- Challenges
  - Changing roles around us
  - So many projects, so little time
  - Need for PIO

Serving: National Research Participation

Technical Activities

- 42 WSDOT Employees on 62 TRB Standing Committees.
  - WSDOT employees Chair or Co-Chair 7committees.

Cooperative Research Programs

- 56 Employees on 79 Cooperative Research Project panels.
  - WSDOT employees Chair 14 panels

SHRP2

- 9 WSDOT Employees on 12 SHRP2 Panels.
  - WSDOT employees Chairs 2 Expert Task Groups.

- 3 WSDOT Employees on 4 Other TRB Committees.
  - A WSDOT employee is Vice-Chair of one.

TRB TRANSPORTATION RESEARCH BOARD

82 unique WSDOT Employees participate in 236 committees, panels and task groups

January 2011 Data

For More Information:

Leni Oman
Director, Office of Research & Library Services
Washington State Department of Transportation
OmanL@wsdot.wa.gov
360-705-7974

NJDOT Peer Exchange

Managing with Reduced Resources: Best Practices in Streamlining Processes; Knowledge and Technical Transfer and Collaboration within a Dynamic Workforce Environment
October 25-28, 2011

Linda Taylor, Director
MnDOT Research Services
651-366-3765
Linda.taylor@state.mn.us

Your Destination...Our Priority

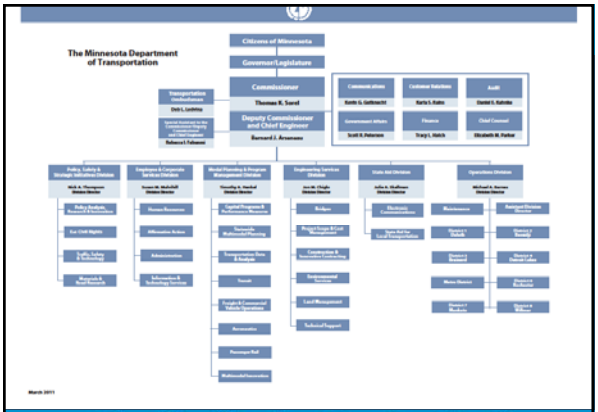
What does Research Services do?

Mission: ***MnDOT Research Services supports Minnesota's transportation industry by meeting the innovation and information needs of transportation practitioners and the transportation community.***

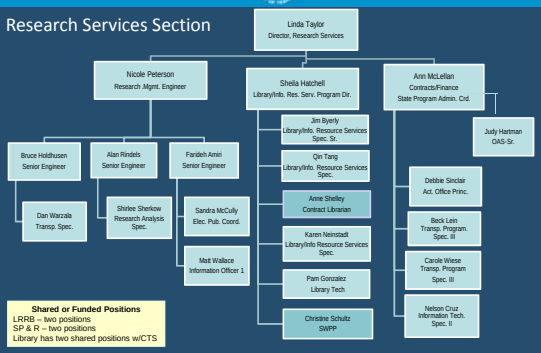
- Research Administration
  - Federal Research Program
  - State Research Program (S P & R Part I & II)
  - Administer the Local Road Research Board
- Finance & Contracting Program
- MnDOT Transportation Library

MnDOT's Strategic Directions-SMILT

- *Safety –Promote and maintain a safe, reliable and modern transportation system*
- *Mobility – Improve access and enhance the movement of people and freight.*
- *Innovation – Promote a culture of innovation in the organization*
- *Leadership- Become the transportation leader and employer of choice for Minnesota's diverse population.*
- *Transparency – Build public trust in MnDOT*



Research Services Section



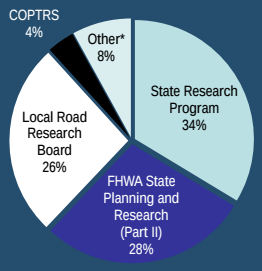
Managing with Reduced Resources:

- Finance & Contracting Unit
  - 1 position funded by SP & R program
  - 1 position funded by LRRB
  - Shared Office Administrative Support Position
- Transportation Library
  - 2 shared positions with Center for Transportation Studies
    - Contract Librarian works work ½ time at MnDOT
    - SWPP that is shared CTS and MnDOT
  - LRRB Funding Support

Managing with Reduced Resources:

- Research Administrative Unit
  - 1 position funded SP&R program – research/implementation
  - 1 position funded LRRB program – administration research program
- Other MnDOT and Public Agency Staff
  - Research Services requires MnDOT champion on all research projects
  - LRRB requires board member or city/county representative on technical advisory committee for research projects

Program Funding Overview (2010 budget)



FY2010 Research Funds by Funding Source	
State Research Program	$3,245,222
FHWA State Planning and Research (Part II)	$2,742,215
Local Road Research Board	$2,525,135
Cooperative Program for Transportation Research and Studies (COPTRS)	$357,929
Other*	$773,752
Total	$9,644,253

* Includes contributions from other MnDOT offices (Maintenance, Traffic, Materials, Investment Management and Policy Analysis, Research & Innovation) and districts along with the Twin Cities Metropolitan Council and the University of Minnesota Intelligent Transportation Systems Institute.

Research Cycles

- Implementation Cycle (Spring)
  - 1 million SP&R (80-20)
  - Equipment and Software (State)
- Academic RFP Cycle (Fall)
  - 8-10 Projects / Funding Program
- Funding Programs
  - Federal (SP&R)
  - State (State & COPTRS)
  - Local Road Research Programs
- Governing Boards (TRIG and LRRB)

Organizational Changes Impact Research Functions

- Government Shutdown
  - Suspended contracts
  - Contracting mechanisms
- Leadership Changes => Retirements
- Funding
- Changes in Contracting Process

Increase & decrease responsibilities due to attrition, outsourcing?

- Automated Processes
- Contracted Services
- Shared Positions
- Difficult to get staff involvement

Reduced Funding

- SP & R Program
  - Re-evaluate Pool Fund Projects
  - Reduce Implementation
  - Add Research Projects
- Leveraging Funding
- Reduce number & cost of projects
- Increase # TRS

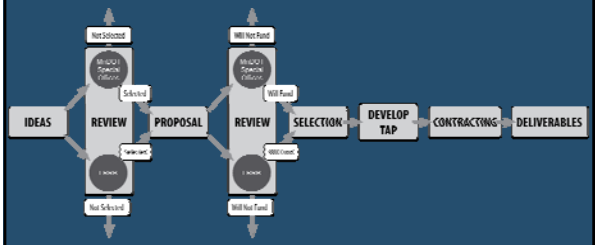
Best Practices in Streamlining Processes

- Automating processes
  - Solicitation problem statements => Ideascale
    - Joint solicitation for both State & Local programs & use same process
    - Review problem statements –global application, TRS, State of Practice
    - Feed other programs – Pool Fund projects etc.
  - Governing Board Voting
    - Utilize same spreadsheet but sort by different funding programs

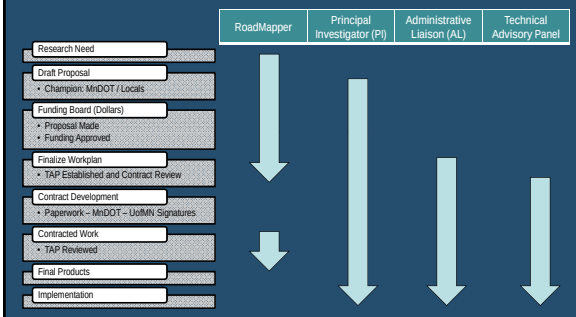
Best Practices in Streamlining Processes

- Governing board voting & priorities cont.
  - Share funding recommendations
  - Share proposal feedback and evaluation results
  - Look for SP &R program opportunities (MPR project)
  - Expand proposal to address local or state needs
- Streamlining proposal process
  - University Master Contracts
  - Multiple proposal review
  - Eliminating problem statements w/o champion

MnDOT and LRRB Research Process

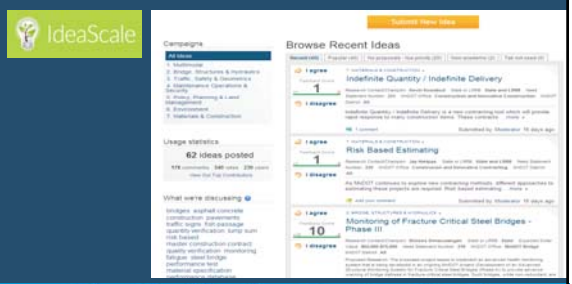


Research Process – Project Development



Stakeholder Involvement: User Input

MnDOT's Research Needs Gathering Website



Proposal Evaluation

Proposal Review

- Author of Problem Statement
- Specialty Office
- Research Services

Evaluation Criteria	
Significance and Understanding of the problem	5
Research Methodology and Uniqueness of Approach	10
Qualifications of Research Team	10
Expected Benefits, User of Research and Implementation Opportunities	10
Schedule and Budget	10
Benefits to the State of MN	5
Total	50

Automated Research Tracking System (ARTS)

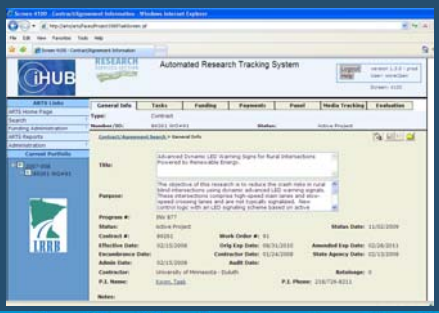
Project Management
- TAPS, AL, TL, PI
- Reporting (Tracking Progress)
- Deliverables

Financial
- Contracts Documents
- Task Due Dates / Comments
- Financial Reports

ARTS Database
- Project Information
- Contract Information
- Work Plan Tasks
- Funding & Payment
- Media Tracking
- Evaluation Forms

Other Features
- File Folders
- Reports
- Client Lists

Automated Research Tracking System



Contracting Methods

- Master Agreements (5 Universities)
- Minnesota State Universities (MnSCU)
- Professional/Technical Contracts
- Technical Research Assistance Program (TRAP)

Marketing & Technology Transfer

- Annual Report & At-A-Glance
  - Research Program
  - Local Road Research Board
  - State Planning and Research (SP&R)
- Technical Summaries
- Transportation Research Synthesis
- Research & Innovation Presentation Series
- Other Resource Materials
- Website
- Database

Marketing & Technology Transfer

- Social Media
  - Facebook
  - Twitter
  - LinkedIn
  - Blog
  - YouTube
- Conferences
- Newsline articles & professional publications

Collaboration within a Dynamic Workforce Environment

- *MnDOT*
  - *Enterprise Risk Management*
  - *E-Jam – MnDOT Efficiencies*
- *Research Services*
  - *Risk Assessment => next steps Research Marketing Plan*
  - *CTS Collaboration /Partnership New Employee Letter*
  - *Commissioner's Reading Corner*

Crowdsourcing / Collaboration
E-Magination Jam & Proposal Voting

Service: www.UserVoice.com

Additional Information

MnDOT Research Website

http://www.dot.state.mn.us/research/index.html

Connect with MnDOT Research:

www.facebook.com/MnDOTResearch
www.twitter.com/MnDOTResearch
www.linkedin.com Group: Mn/DOT

Linda Taylor, P.E
MnDOT Director of Research Services
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651-366-3765

Research at SHA

2009 GETP Presentation

Our Goal for Today

- Provide an overview of SHA's Research Program
- Provide an overview of national research programs
- Present resources available to you

❖ **Overall – demonstrate the value of research**

2

Why Research?

- Progress does not just happen

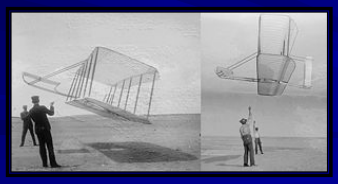
Innovation

↑

Research and technology (R&T).

3

- Can you imagine the exchange of words between aviation innovators Orville and Wilbur Wright after their first plane crashed?



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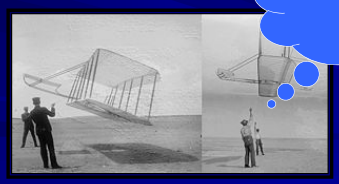
- Our Guess:



"We Need More Research!"

5

- Progress in the highway field, although not quite so dramatic and obvious, has been tremendous too.
- The U.S. highway system has been a model for the rest of the world.

R&T has played a critical role.

6

The phrase "**we need more research**" has been fully embraced by the highway research community.

It can be found on the final page of almost every research report.

7

- The call needs to come from a broader representation of the highway community: the owners and operators of the highways, "us."
- SHA's own research program needs strong support from our engineers, planners, and support functions.

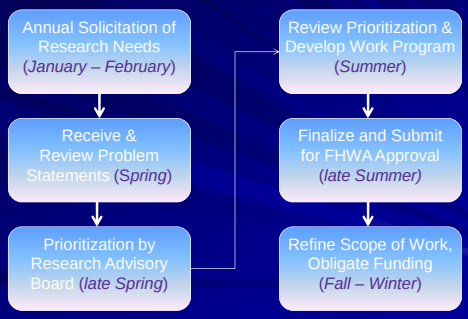
8

How is SHA's Research Program Funded?

- Annual Appropriation of the Federal-Aid Program
- Mandatory Spending of the 25% of the State SPR funding on Research

9

Formulation of Annual Research Work Program



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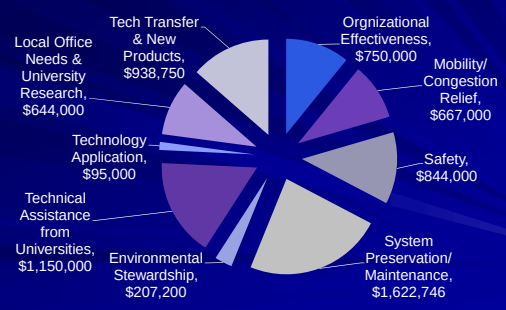
Categories of Projects Funded ($)(2006-2008)



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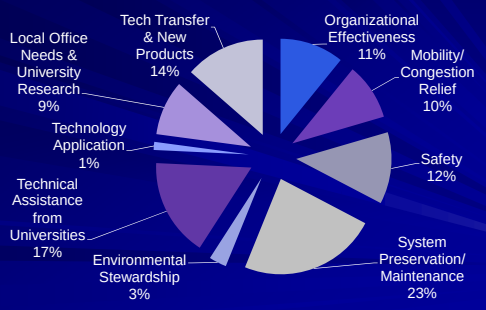
Categories of Projects Funded (%)(2006-2008)



12

Which Offices Receive the Most Funding?

- OOTS and OMT

Why?

- They have the most active participation.
- Problem statements are aligned with the KPA's

13

Examples of Projects

Maryland Research Projects
Highway Safety & Development KPA

- Modeling Review and Enhancement for Crash Analysis and Prediction (Two Phases)
- Comprehensive Review of Motorcycle Crashes in MD
- Social Network Analysis of Impaired Drivers in MD
- Accident rates and Dilemma Zones & Signal Yellow Time
- Integration of Variable Speed Control and Dynamic Late Merge for Work Zone Operations

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Maryland Research Projects
Mobility and Congestion Relief KPA

- Bluetooth Traffic Detectors for Use as Permanently Installed Travel Time Instruments
- Real-Time Traffic Simulator Development for I-695
- Estimation of Traffic Recovery Time for Flow Regimes on Freeways
- Concurrent Flow Lanes (Two Phases)
- Real-Time Travel Time Estimation

16

Maryland Research Projects
System Preservation & Maintenance KPA

- Design\Evaluation of Foamed Asphalt Base Course
- Correlation between Aggregate Properties and Pavement Friction
- Line Striping Life Cycle Analysis
- Sampling Protocol for Condition Assessment
- Development of Material Management System Strategic Plan
- Automated Bridge Anti-Icing/De-icing System

17

Maryland Research Projects
Organizational Effectiveness KPA

- Strategic Workforce Planning and Staffing
- Performance Excellence Best Practices
- Online Tool for the Training & Certification of Technicians
- Research Value of Database Application for Invoice Generation by Consultants

18

Maryland Research Projects
Environmental Stewardship KPA

- Evaluating Channel Degradation of Maryland Streams
- Investigation into the Use of Drainage Structures by Wildlife
- Development of Native Seeds for Soil Stabilization
- Grass Swale Pollutant Removal Efficiency Study
- Fish Passage in Large Culverts with Low Flows

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Maryland Research Projects
Customer, Communications, Service and Satisfaction KPA

- Customer Communication and Business Plan Research
- External Customer Survey
- Maryland Policy Choices Survey
- Communications Audit
- Web-based Communication Strategies

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Summary

- Diversity is emphasized in SHA.
- Project diversity is also emphasized in SHA's research program.
- We need the support from all of you to make it a diverse and healthy program!

21

National Research Programs

- Transportation Research Board
- National Cooperative Highway Research Program
- Administrator's Role in National Programs

22

Transportation Research Board (TRB)

- Mission - "to promote innovation and progress in transportation through research"
- Serve as a resource to transportation organizations and the country.
- Manage various research programs including five cooperative research programs.
- Operating budget of over $50 million/year.

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TRB

- Annual Meeting - http://www.trb.org/meeting/2009/default.asp
- Conferences and Workshops
- Committees and Task Forces

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

24

TRB

- State Visits
- Databases for completed and on-going transportation research (TRIS/RiP) - http://ntlsearch.bts.gov/tris/index.do

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

25

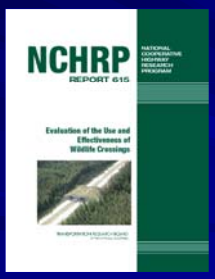
National Cooperative Highway Research Program (NCHRP)

- Created in 1962 as a means to accelerate research
- Sponsored by state DOTs and FHWA
- Project selection process

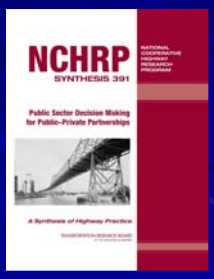
26

NCHRP Reports

Report



Synthesis Report



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Administrator/ Research Division's Roles

Advocate for Maryland's research priorities and support of national research that will benefit the transportation industry

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Administrator's Role

How?

- TRB Executive Committee
- AASHTO Standing Committee on Research

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Research Division's Role

How?

- TRB State Representative
- AASHTO Research Advisory Committee

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Cost to SHA

Program	Cost (FFY 2009)
TRB	$125,870
NCHRP	$586,661
Total	**$712,531**

31

Why You Should Get Involved

- Learn about the State-of-the-art, State-of-the-practice
- Become an expert in a technical area
- Network with experts/counterparts in other states and transportation organizations

32

Technology Transfer Activities

What is technology transfer?

The sharing of knowledge, best practices, and new technologies, to ensure that they are accessible to the transportation community.

33

Technology Transfer Activities

- Speaking at conferences
- Participating in peer exchanges
- Participating in pilot training courses
- Participating in webinars
- Completing survey requests

34

Technology Transfer

Tools available at SHA:

- Survey Monkey

http://www.surveymonkey.com/Default.aspx

35

University Partnerships

- Research
- Agreements
- Advisory Boards
- Internship programs

UNIVERSITY OF MARYLAND

University of Baltimore

MORGAN STATE

36

University Partnerships

- SHA Internship programs - http://170.93.42.173/opr/internship.html

37

What is the Value of these activities?

- Creates new knowledge to improve existing and develop new products and processes
- Helps achieve DOT goals and objectives
- Helps address customers needs

38

Future Investment

- Investment in research is more critical than ever:
  - Aging infrastructure
  - Climate Change
  - Decreased funding/revenue and increasing costs and needs

39

Your help will be **crucial**!

- Think about challenges that are worth of exploring;
- Do a literature search!
- Write the problem statement;
- Sell it to your senior manager;
- Provide technical support;
- Participate in the on-going "related" projects!

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Resources

- Transportation Research Board - http://www.trb.org/default.asp
- Literature searches using TRIS - http://ntlsearch.bts.gov/tris/index.do
- Literatures searches using the Research In Progress database - http://rip.trb.org/
- OPR Intranet Site - http://170.93.42.173/opr/index.html

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Activity

- Work alone or with someone else from your office to identify one issue or challenge you and/or your office is dealing with that could potentially benefit from a research study. Please write one-to-two paragraphs describing the issue.

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Dynamic Work Environment – Organizational Change and Transition

Richard Y. Woo, Ph.D
Director of Policy and Research
Maryland State Highway Administration

Organizational Changes Impacting Maryland's Research Function

- Leadership
  - Changes at the top of an agency require education and possible changes in focus
  - Balancing objective research with policy priorities
- Personnel
  - Retirees are not being replaced and workload is increasing
  - Increasing need to focus on knowledge management and project management skills

Organizational Changes Impacting Maryland's Research Function

- Economy and Budgets
  - Research funding tied to Federal and state transportation funds
  - Reductions and uncertainty in economic conditions affect research program and budgets
- External Events
  - External events can often drive research. These may include:
    - Serious crashes or incidents, reports, legislation, technological advancement, and changes in the transportation field, among others
  - For Maryland, such examples include: truck parking, variable message signing, transit-oriented development, and automated speed enforcement

Change in Responsibilities Due to Attrition or Outsourcing

- Maryland's Research program has lost over 50% of its full-time staff, from 5 permanent positions to 2.5, since 2005.
- However, the expected workload has increased with over 60 state and national research projects.
- Further, the Research Division is one division within the Office of Policy and Research and is being assigned more work on matters outside of research project management.
- As a result, review of project reports and materials will take longer and project managers will have to rely on technical leads from other offices
- Increased focus will be placed on cultivating strong relationships with technical leads

Reduced Funding

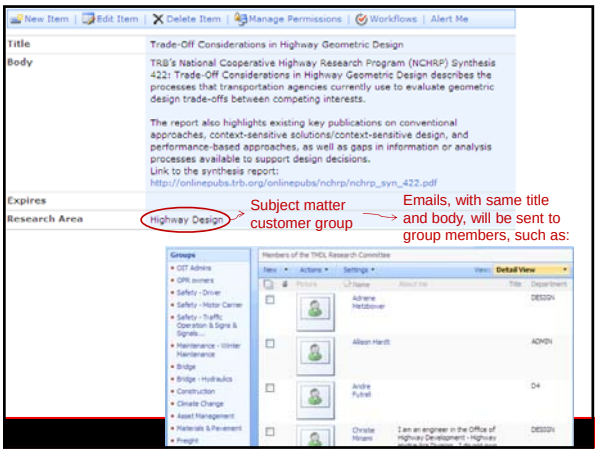
- The SPR program has largely remained the same
- However, with reductions in the state operating budget, employees have found it difficult to review research material and take part in many research activities
- As stated earlier, uncertainty in the economy and in Washington can make it difficult to plan for research programs

Streamlining Processes

- Finding opportunities to streamline processes can be difficult
- One way have identified such opportunities is by focusing on knowledge management wherein we have been documenting various processes
- Examples:
  - Tracking expenditures using a new program rather than manually going through FMIS
  - Embracing SharePoint as it was deployed throughout the agency

Knowledge Transfer & Collaborative Relationships

Richard Y. Woo, Ph.D
Director of Policy and Research
Maryland State Highway Administration



Best Practices for Sharing Research

Focus on facilitating information dissemination and sharing research results:

- On-going updates/enhancements to the Research Division's Intranet site.
- Maintain a link to up-to-date state information for all active projects.
- Post all quarterly and final project reports on the Administration's Shared drive.

Ways of Improving Internal and External Communications

Focus on maintaining communication with customers and asking for feedback:

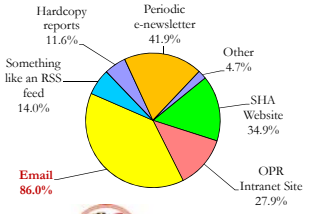
- Maintain communication with research team members and principal investigators through regular phone, e-mail, and in-person meetings.
- Survey internal/external customers every two years to identify their preferences for receiving information from the Research Division. For example, the following is a 2010 survey finding:

Best Practices for Sharing Research (Continue)

- The Research Division set up a SharePoint list and when new information is posted, an automatic email is sent to the subject matter customer group (example on the next slide).
- The Division has been using the list to:
  - Disseminate two-page summaries of completed Maryland research projects.
  - Share related national and other States' research.

Ways of Improving Internal and External Communications (continue)

- (From 2010 Customer Survey) How would you like to get new information from us in the future?



Ways of Improving Internal and External Communications (continue)

- Identify a target audience when sharing research.
- Present research clearly to integrate findings and benefits with agency's core functions.
- Find a champion within each technical office.
- Tailor projects to fit technical offices' needs.

Enhancing Intra-Organizational & Inter-Organizational Team Efficiency

- Focus on relationship building with project/stakeholder teams.
- Meet with key project/stakeholder teams at least once or twice a year to discuss what is going well and what needs to be improved.
- Show support for project/stakeholder teams by attending programs that highlight collaborative projects as well as other initiatives.

RESEARCH DIVISION STAFF

Allison Hardt – Chief, Research Division, Research Program Manager

Hua Xiang - Project Manager, Assistant to Chief of Research, OPR SharePoint Administrator

Matt Garbark - Project Manager, National Programs Coordinator - 50% of time June – Dec., 10% during the legislative session

CORE FUNCTIONS

Over 60 active projects over five program years

SPR Program Management

- Develop annual program (February - September)
- Obligate funds and set up projects in FMIS
- Write and Execute open-end university agreements and interagency MOUs
- Monitor program expenditures
- Demonstrate SPR compliance (i.e. 25% of SPR spent on research)
- Obtain FHWA approval for technical services projects and technology transfer activities
- Coordinate/administer participation in pooled fund studies
- Federal-aid close out for completed programs
- FMIS close out for completed projects
- Participate in SPR Title VI Compliance Reviews
- Complete Reporting Requirements:
  - Annual SPR report for FHWA
  - **Annual Federal Funding Accountability & Transparency Act (FFATA) Subaward Reporting**
  - **Annual Interagency Agreement Report for the legislature**
  - Annual HBCU Planned Awards Report
  - Bi-annual US Census R&D Report
  - Annual Consultant Ratings

University Partnerships

- Morgan State Summer Internship Program
- LTAP program oversight
- Serve on T2 Advisory Board
- Mid-Atlantic UTC (MAUTC) Committee member
- Contract Administrator for university projects funded by other offices (OOTS, OHD, OPPE)
- Administer the contract with Morgan State's National Transportation Center for the $500K they received in the 2006 Federal Appropriations Bill

SPR Project Management

- Review project proposals
- Issue notices-to-proceed/no-cost extensions
- Facilitate line of communication between P.I. and SHA technical offices
- Identify and resolve issues along the project life related to development, execution, and implementation
- Request, review, and distribute quarterly reports
- Review and process project invoices
- Develop a monthly expenditure report
- Monitor project expenditures
- Review, edit , prepare reports for publication
- Disseminate research results to SHA, RAB, RAC, and post in TRB's TRIS database

National Research Program Coordination

- TRB State Representative for MD
  - Promote TRB services and programs
  - Annual meeting support
  - Annual TRB State Visit Coordination
  - Upload project information to TRB's Research in Progress (RiP) database
- NCHRP Program Coordination
  - Annual Ballot rating process
  - Problem statement submission coordination
  - Panel nomination coordination
  - Synthesis, Domestic Scan, and other NCHRP programs coordination
- Serve as the SHRP II Coordinator for MD
- AASHTO Research Advisory Committee Member
- Coordinate SHA's participation in AASHTO Technical Services Programs

ADDITIONAL FUNCTIONS

Technology Transfer

- Survey Monkey Assistance (over 100 surveys have been administered)
- Dissemination of information
- Conduct best practices/literature searches upon request
- Distribute AASHTO, and TRB Survey Requests
- Research FTP site Administration

OPR Office-wide Functions

- Performance Excellence duties
- OPR SharePoint Site Administration
- Provide support for basic IT related questions to OPR staff (occasionally also Chief Engineers' Office)
- Approve invoices and BPOs in FMIS
- Provide back-up for credit card and MTrack approvals

SHA-Wide Functions

- Survey Analysis Assistance (internal/external customer surveys)
- Construction and Engineering Career Day Planning Committee member
- SHA Workforce Planning and Development Committee member
- Provide staff support to the Customer Service KPA Council