2017 ILLINOIS DEPARTMENT OF TRANSPORTATION RESEARCH PEER EXCHANGE— SUMMARY REPORT

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PREPARED FOR ILLINOIS DEPARTMENT OF TRANSPORTATION
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INTRODUCTION

The transportation research program at the Illinois Department of Transportation (IDOT) hosted a peer exchange to discuss program management practices, effective staffing, technology transfer, and increasing the utilization of the research program.

The host state contributed to the funding of the Support Services for Peer Exchange Pooled Fund (TPF-5[301]) to engage the Texas A&M Transportation Institute to assist with peer exchange planning, facilitate meetings, take notes of the discussion at each session, and prepare the peer exchange final report.

This report documents the discussions, outcomes, and takeaways of the peer exchange participants. It also includes brief summaries of each agency's research program.

This peer exchange report is structured as follows:

- Peer exchange background.
- Peer exchange participants.
- State research program overview, successes, and challenges.
- Peer exchange session summaries.
- Key takeaways from the research peer exchange.
- Research peer exchange agenda (Appendix A).
- State transportation research program representatives (Appendix B).
- State transportation research program presentations (Appendix C).

PEER EXCHANGE BACKGROUND

The use of peer exchanges was established to provide state departments of transportation (DOTs) with the opportunity to examine and evaluate their own research, development, and technology programs through a collaborative team of peers, experts, and persons involved in the process. The idea was that the exchange of vision, ideas, and best practices could benefit both the hosting department's programs and the programs of the peer team participants. Peer exchanges may also be used to examine more focused areas of the state DOT's research program. The importance of peer exchanges is clear, as regular peer exchanges are required by the Code of Federal Regulation.

PEER EXCHANGE PARTICIPANTS

The peer exchange participants included staff members from research programs in the Illinois, Florida, Minnesota, New Jersey, and Wisconsin DOTs. Other guest participants included the U.S. Department of Transportation Federal Highway Administration (FHWA), Illinois Division and the Transportation Research Board (TRB). Appendix B provides contact information for participants.

2017 IDOT Research Peer Exchange Participants

From left to right: LaDonna Rowden (IDOT), Megan Swanson (IDOT), Karen Waters (IDOT), Nancy Whiting (TRB), Diane Gurtner (Wisconsin Department of Transportation), Linda Taylor (Minnesota Department of Transportation), John Senger (IDOT), Dan Brydl (FHWA), Amy Schutzbach (IDOT). Not pictured: Jessica VanDen Bogaert (Florida Department of Transportation), Kimbrali Davis (New Jersey Department of Transportation), Ryan Culton (IDOT), Erin Aleman (IDOT).

STATE RESEARCH PROGRAM OVERVIEW, SUCCESSES, AND CHALLENGES

Each state participating in the IDOT Research Peer Exchange discussed its research program structure, processes, research activities, successes, and challenges. This section summarizes the presentations by state. Appendix C provides presentations by each research program.

ILLINOIS DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation

The Bureau of Research at IDOT is within the Office of Planning and Programming and includes the Technical Research Unit, the IDOT Library, and the Pavement Technology Unit. The Technical Research and Pavement Technology Units separated from the Central Bureau of Materials in the IDOT reorganization in 2016. The Technical Research Unit has two full-time employees. Thirty-six employees represent IDOT on 60 different national level research efforts, including National Cooperative Highway Research Program (NCHRP) panels and TRB standing committees. IDOT also participates in the FHWA Transportation Pooled Fund Program with approximately 30 studies currently underway. The program includes a Pooled Fund Approval Form, an Annual Evaluation, and a Close-out Evaluation.

IDOT recently carried out a Safety Project Outreach webinar series to showcase implementation projects. The series included three presentations: Pavement Markings, Right Turn Skew, and Flashing Yellow Arrows. Over 450 attendees from 60 Illinois cities and local jurisdictions, as well as registrants from Arkansas, Missouri, and Iowa, have participated. A total of 452 professional development hours (PDH) certificates were issued. The webinars are available on IDOT's YouTube channel.

IDOT receives approximately $7 million annually in State Planning and Research (SPR) Part 2 funds from FHWA and $400,000 annually in state funding toward state research activities. The total fiscal year 2018 research work program is $10.1 million, which consists of SPR Part 2 funds from current and prior years. Contract research at IDOT is administered by the Illinois Center for Transportation (ICT) through an intergovernmental agreement between IDOT and the University of Illinois Board of Trustees.

IDOT has three types of research projects:

- Regular projects that are part of the annual program cycle. These projects do not have a time or cost limit and are selected through the process explained below.
- Special projects, which require a deliverable to be provided within six months, and which have a funding limit of $36,000. These projects may be approved by the Bureau Chief of Research.
- Off cycle projects, which are projects too urgent to wait for the regular cycle. These projects do not have a time or cost limit and are approved by a vote of the IDOT/ICT Executive Committee.

As of June 2017, IDOT had 23 active research projects and will have an additional 14 projects started by January 2018. The contract research cycle begins in May when technical advisory groups (TAGs) begin discussing research and ideas for implementation. Research needs are posted to the ICT website in August, and problem statements must be submitted by October 1 using the online form. TAGs review and vote on problem statements in October as well, identifying a Technical Review (TRP) chair to lead the research panel. The IDOT/ICT Executive Committee approves projects for funding in February, and researchers and TRP members are selected from February through July. The work plans and budgets are also finalized during this time. Work on funded research projects typically begins in August and January. IDOT and ICT have an online system to meet the Code of Federal Regulations requirement for reporting. ICT Project Management (PM) staff complete quarterly reports, time and budgets extensions, implementation planning, and close-out evaluations in this system.

All deliverables are subject to a three-month editing process. A technical editor, paid for through the intergovernmental agreement with ICT, is required to ensure the quality of reports, and to streamline the project close-out process. Project managers send reminders to principal investigators (PIs) and TRP chairs at six months and four months prior to the project end date. The PI provides a draft report to the technical editor three months prior to the project end date for the initial edit for spelling, grammar, punctuation, and missing information. The edited draft is then submitted to the TRP for several iterations of review to address any issues, concerns, or needed clarification. The final edit incorporates all changes and includes the technical report documentation page.

IDOT discussed projects currently in the implementation phase. These include:

- R27-128 Illinois Flexibility Index Test (I-FIT): selected as an AASHTO Research Advisory Committee (RAC) Sweet 16 project (IDOT has had projects selected 6 of last 8 years), and AASHTO provisional test specification TP-124 (result of R27-128) was approved in March of 2016.
- R27-137 Evaluation of PCC Pavement and Structure Coring and In Situ Testing Alternatives: results of this study established a testing procedure that accurately estimates in-situ strength of concrete, which can be used for pay-for-performance specifications, and Illinois implemented their own IL modified version of AASHTO T-24 this year.
- R27-146 Ultrasonic Imaging for Concrete Infrastructure (MIRA): MIRA uses ultrasonic shear wave imaging to locate rebar in PCC pavements and can accurately determine slab thickness. MIRA is easily deployable and useful for spot inspections on bridge decks and forensic analysis.
- R24-142 Virtual Road Weather Information System (vRWIS): results of this study integrated climatic models and existing road weather information stations to predict pavement surface temperatures. vRWIS is used by operations staff to make data driven decisions on salt and other anti-icing applications, which saves money and is better for the environment.

IDOT Headquarters Building

FLORIDA DEPARTMENT OF TRANSPORTATION

The Florida Department of Transportation (FDOT) Research Center is a cost center within the Department. The Research Center recently was reorganized to report to the Assistant Secretary of Strategic Development (previously reporting to the Chief Engineer). FDOT funds approximately $14 million in applied research annually, through a combination of federal and dedicated state funding. The Research Center also oversees the Internship and Recruitment Program in cooperation with Human Resources. The Research Center is staffed by five full-time employees and two time-share employees. The Research Center works closely with the other functional areas to both identify research objectives and problem statements as well as project manage the individual research

projects. Each functional area within Central Office and each District is assigned a research coordinator. These coordinators are the main point of contact between the Research Center and the practitioners. In October each year, a Call for Projects is sent to these research coordinators to identify projects for funding in the next fiscal year. Each functional area and District within FDOT determines its needs, ranks and prioritizes those needs within the functional area, coordinates with any affected stakeholders, and sends ranked problem statements to the Research Center in January. The list of problem statements undergoes peer and executive reviews and the approved list of research projects for federal funding is submitted to FHWA for approval as SPR Part 2. Mid-cycle requests and pilot/demonstration projects are available throughout the year based on available funding. Proposals are only accepted from within FDOT functional areas.

FDOT has Master Agreements with each of Florida's universities and the majority of individual projects are written as Task Work Orders from these agreements. The Research Center also uses a modified Request for Proposal (RFP) process, the Request for Research Proposal, where proposals are solicited from Florida universities based on a problem statement. The traditional RFP process is also available to solicit research proposals from all vendors registered to do business in Florida.

In addition to the slate of state-sponsored projects, FDOT also participates heavily in national-level research including many pooled fund studies, cooperative research panels, and TRB committees. FDOT noted several successful aspects of its research program, including:

- Engagement and executive support.
- Communication between functional areas.
- Implementation and performance analysis.
- Internship and Recruitment Program. There have been 349 intern hires at FDOT since 2013, with 29 hired into full-time positions.

FDOT identified several challenges the research program faces, including:

- Consistent, effective PM and the need for an effective program/PM system. Currently, the Research Center portfolio includes 149 active projects being managed and conducted, respectively, by 80 FDOT PMs and 81 PIs.
- Resources required to effectively manage implementation and performance analysis.
- Loss of project champions.
- Succession planning due to loss of expertise.

MINNESOTA DEPARTMENT OF TRANSPORTATION

The Minnesota Department of Transportation (MnDOT) Research Services is within the Transportation System Management program in the Division of Modal Planning and Program Management. Under the supervision of the Director of Research Programs, research projects are managed by four project advisors and four project coordinators. Research Services also has four staff

in Finance and Contracting, three in Marketing and Communications, and five full-time staff dedicated to the Transportation Library.

In FY 2016, MnDOT Research Services had a budget of $12.9 million, funded 38 percent through the Local Road Research Board, 34 percent from the state research program, 25 percent from FHWA SPR Part 2 funds, and the remaining 3 percent from MnDOT and other states or agencies. Of the $3.2 million SPR Part 2 funds, 41 percent is dedicated to multistate pooled fund studies, 30 percent to single-state planning and research projects, and 29 percent to federal program support. The majority of funding for research projects at MnDOT is for dedicated programs such as the Local Technical Assistance Program (LTAP) and University of Minnesota Center for Transportation Studies, traffic and safety projects, and materials and construction projects. MnDOT Pooled Fund Projects include: National Road Research Alliance, Clear Roads, Regional Roadside Turf Grass Performance Testing Program, Enhancements to Intelligent Construction Data Management System, Mileage-Based Use Fee, National Accessibility Evaluation, North West Passage, National Center for Asphalt Technology, Maintenance Decision Support System, the Influence of Vehicular Live Loads on Bridge Performance, and Traffic Impacts on Bike Facilities. MnDOT participates in 31 pooled fund projects and leads seven.

Regarding funding authority, the Transportation Research Innovation Group, District Engineers and office directors, Minnesota Local Road Research Board (LRRB) City and County representatives, and the research director all have some form of authority to decide on funding. Funding guidance comes from guidelines for new research projects and funding amendment request authority.

MnDOT has University Master Agreements with the University of Minnesota, Texas A&M University, Montana State University, North Dakota State University, Michigan Technological University, Iowa State University, University of New Hampshire, Pittsburgh University, University of Wisconsin, and Minnesota State Colleges and Universities. These contracts are five-year agreements, allow for a quicker contracting process, and billing is based on task deliverables. MnDOT has a Transportation Research Assistance Program (TRAP) to help researchers with tasks such as research technical writing and editing, research marketing and technology transfer, research digital and multimedia production, research event coordination, research program support, outreach and research data information analysis, and library services support. For a workplan of a project using the pre-certified consultant list, the funding is limited to less than $100,000.

MnDOT program level initiatives include strategic planning tasks that focus on research risk analysis, marketing and communication plan, department research strategic plan, and a library strategic plan. Next, MnDOT will look into a Work Assessment Study, currently in progress, which identifies staffing levels and skills and determines a workload assessment model.

State and national research activities are broken down into two types: responsibilities covered and activities not covered. Under responsibilities covered are:

- SPR Part 2 Program: NCHRP Ballot and Pooled Fund Program.

- TRB and AASHTO Representative: TRB Annual Visit, participate in AASHTO-RAC Taskforces, Peer Exchange, Distribute AASHTO-RAC surveys, and distribute webinar announcements and news reports.
- LRRB Program.

Activities not covered include:

- SPR Part I Program Coordination.
- Every Day Counts Initiatives.
- Submit Grant Applications: Advanced Transportation and Congestion Management Technologies Deployment Program and Every Day Counts Program.
- State Transportation Innovation Council.

The Research Database and Tools provides information of finances and contracting, technical advisory panel, media tracking, implementation status, performance measures, and pooled fund projects. The database has a customized user interface, auto notices for tasks, distribution lists, extensive reporting capabilities, online help, clients/contractors/vendors, and project folders. Project benefits can be tracked, including items identified in research proposals, tasks added to a work plan, tracked in the Automated Research Tracking System (ARTS) database, used in marketing efforts, and for the future-annual research investments report.

The annual research solicitation process includes four steps:

- Solicit for Need Assessment: needs statements (NS) entered in IdeaScale or identified through LRRB Focus Groups, conduct literature review, and Governing Boards prioritize and select NS for RFP.
- Research RFP posted: universities develop research proposals, multiple proposal review, and Governing Boards review and select proposals for presentation.
- Proposal Selection: Governing Boards hear proposals and approve funding and suggest changes to work plan and identify Technical Advisory Panel members.
- Finalize Work Plan.

Successful implementation factors include: dedicated funding, address a problem or need, has a research connection, demonstrate application, scaled appropriately, department priority, identification of an internal champion, district and/or specialty office support, and technology transfer.

Implementation ideas and sources can be specialty offices or project champions, research proposals, research project updates, project close-out/evaluation, and out-of-state-trip reports. Implementation projects are separated into four categories: maintenance, materials, bridges, and traffic.

Core marketing materials include full-length research reports, two-page technical summaries, Transportation Research Syntheses (TRS), research summary at-a-glance annual report, and the Accelerator Newsletter. MnDOT also maintains a YouTube channel with different videos on projects. Best practices for marketing include:

- Newsletters: keep information timely using short infographics that tell a story, and correlate stories with seasons and agency core services.
- Social media/blogs: the new norm, easily disseminate information about new and completed projects, attracts national publications.
- YouTube videos: visually more interesting and include interviews with field personnel.
- Research website: keep materials and information on current project pages. Project pages feature descriptions, report, tech summary, contact information for pertinent staff, and related materials (videos, articles, software, etc.).
- Utilization of consultants.

Annually, the MnDOT Research Program publishes between 40–50 reports and technical summaries, between 5–15 transportation report syntheses, and between 5–10 guidebooks, handbooks, software tools, and other related materials. Reports are distributed through MnDOT's website, blog, social media channels, email and print newsletters, press releases, and Transport Research International Documentation (TRID)/state transportation libraries email distribution list.

The report publication process is well documented at MnDOT, and includes language indicating requirements for Universities and consultants. Universities are required to comply with MnDOT report publishing guidelines and use the MnDOT report template and cover. All reports should be free of spelling and grammatical errors, checked for plagiarism, and include a summary and technical documentation page. Any software produced as a result of the research project must comply with MnDOT guidelines, and MnDOT must be notified of any presentations related to the research project. Consultants do not have report requirements in their contracts, only what is outlined in the specific work plan. They can choose to use MnDOT's report template or use their own; the MnDOT User Manual was developed for consultants without a guidebook template.

The publication process includes separate tasks for draft and final reports, four months for draft report preparations, two months for editorial and technical review, and two months for project close-outs. MnDOT provides a report template and guidelines for all projects and sends automatic reminders to PIs for draft and final report due dates. MnDOT has recently improved the report template to include the new agency logo and color scheme, as well as use a modern, web-friendly font. MnDOT has a contract with the University of Minnesota to coordinate technical and editorial reviews, ensure ADA compliance, and review executive summaries and technical documentation pages.

For each project, MnDOT uses a consultant to write a two-page technical summary. The summaries include the project purpose, outcomes, recommendations, costs, and sponsors. For the summary, the project PI, technical liaison, and DOT PM are interviewed for quotes related to the project. The technical summary process begins when the draft report is submitted to MnDOT and is paid for through the MnDOT marketing department. The technical advisory committee reviews the summary prior to publishing. Once published, the summary is converted to a blog post and advertised through MnDOT social media channels.

The TRS are short turnaround synthesis papers that address a specific research topic. These documents include summaries of completed and in-progress research, reports about the state-of-the-practice across the country, and go beyond the scope of literature searches. The resources used in a TRS are clearly organized and summarized, with contact names, web links, and other specifications. A template is available for a TRS report.

Each research project is evaluated upon completion. The project evaluation identifies the expected benefits of the research, how the research will be used, additional recommended research, who should receive the results, and roadblocks for deployment. The project evaluation and technical summary are completed concurrently.

MnDOT noted that areas of their program that work well are:

- Contracting process: University Master Agreements and Professional/Technical Contract using the TRAP.
- PM: Work plan with deliverables by task and project chair and PI training.
- Marketing and Communications: Blogging for new and completed projects, project YouTube videos, and research newsletters (Accelerator).
- Research Database – ARTS.

Areas that need improvement in MnDOT include: quantifying benefits, tracking final results, retention and recruiting for staff, key project staff leave (champion or PI), lack of buy-in, and long-term funding for full deployment. MnDOT recognizes the following ongoing challenges:

- High percentage of Amendments for publication delays.
- Reports turned in after contract ends, but prior to editorial review.
- Copyright permission questions, different rules for different universities and consultant contracts.
- Report template can be tricky to use.
- In the future, MnDOT plans to provide HTML versions of technical summaries, expand the research project pages on the MnDOT website, add relevant research from other MnDOT offices, add topic-level pages with a short summary, contact information, and links to past and current research, and the ability to subscribe to project updates.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

The New Jersey Department of Transportation (NJDOT) research department falls under the deputy director of capital investment planning and grant administration. There are eight program managers overseeing all research projects. The main research customers are NJDOT, NJ Transit, NJ Motor Vehicle Commission, NJ Law and Public Safety, NJ State Police, and NJ State Legislature. Funding comes from SPR federal funds and state funds.

Research PM duties include: reviewing and approving deliverables, attending project meetings, updating project status in the NJDOT reporting system, and managing processes from solicitation to

implementation. Quarterly and final reports, and technical briefs, are required to operate efficiently. Invoices are required to be complete and include payment voucher and invoice summary pages, match with quarterly report expenditure, break down travel expenditures, and be submitted with supporting documents.

The Omni Circular Objective is a document that streamlines the language from eight U.S. Office of Management and Budget (OMB) circulars to one consolidated set of guidance. The purpose of this guidance is to increase efficiency, drive performance by establishing a reduced or streamlined regulatory process, and to reduce improper payments. If federal program statute or regulation differs from OMB Circular, then the federal statute/regulation governs. The document combines cost principles for educational institutions, cost principles for state, local, and Indian Tribal Governments, federal domestic assistance program information, awards and cooperative agreements with state and local governments, uniform administrative requirements for awards and other agreements with institutions of higher education, hospitals, and other non-profit organizations, cost principles for non-profit organizations, audits of state and local governments and non-profit organizations, and an audit follow-up (as related to single audits).

The pre-award phase includes a risk assessment at the University and PI level, research needs solicitation, RFP process with a two-step blind review, Disadvantaged Business Enterprise goals, proposal submission, and debriefing. The Risk Assessment focuses on assessing capabilities of the organization such as: internal controls, staffing, expressed work, and history of the PI's previous projects and deliverables. There is a risk pre-qualification form and a pre-award form. NJDOT solicits problem statements via email in lieu of meeting. RFPs are then developed and selected from website posting. Research studies are monitored and conducted through automation of forms using prompts: RFP, SPR reporting, performance reports, and departmental/financial forms. In order to ensure technology transfer, training, and implementation, NJDOT follows up on implementation, and closeout forms were added. NJDOT uses a procurement claw separated into five sections: micro purchases, small purchases, sealed bids, competitive proposals, and sole source. The last step includes a proposal evaluation form identified in the RFP process.

Staffing plans should include documentation on planning/research qualifications and detailed information about titles, salaries, totals on grants, and the breakdown of federal and non-federal shares. Cost-sharing and matching should be verifiable from non-Federal entity's records not included as contributions for other federal award. Cost-sharing is necessary to accomplish objectives, allowable under cost principles, not paid by another federal award, and provided for in the approved budget. Another article in the task order that NJDOT discussed was period of performance/schedule. Consequences for not staying on schedule are over commitment, underperforming, sacrifice in quality, and impact on other staff schedules. Alternatives include additional labor, delay of other projects, and incomplete projects and activities. The performance period is the time from authorization to closeout. Start and end dates of the period of performance must be included in the federal award form. Program period and performance period are mutually linked to comply with sections of the form. NJDOT grants a

one-time extension for 12 months. The PI calculator must include level of commitment on other projects.

NJDOT lists requirements for scope and budget as:

- Allowable – eligible.
- Allocable – chargeable and assignable.
- Consistent – applied the same (i.e., direct vs. indirect).
- Reasonable – fair, sensible, workable for the performance of that award objective.

The budget justification should be extensive, and should justify salary or personnel, materials and supplies, renovations/alterations, etc. These justifications are for sole source, only used on specific projects, and granular in oversight. Budget documentation such as payroll records, catalogs and vendor quotes, and other documents evidencing costs for like projects should be filed.

The post-award phase is focused more on internal controls. There must be a formal manner when quantifying or documenting the process and system. Measures for implementation, knowledge transfer, marketing, policy, etc., should be taken to enhance efficiency, environment, and safety, and for cost savings and economic impact. The evaluation process should include financial data related to performance accomplishments (quarterly and annual report), extensions of time, and performance period. A risk implementation and closeout form should be included. During closeout, the final report should be drafted three months prior to contract end date. Federal government agencies will want to close awards bilaterally within 90 days after which recipient submits all eligible incurred costs, performance and financial reports, and specified project reports. These are NJDOT project closure procedures.

WISCONSIN DEPARTMENT OF TRANSPORTATION

The Wisconsin Department of Transportation (WisDOT), officially established in 1967 when the state combined various agencies, is comprised of five divisions: Business Management, Motor Vehicles, Transportation Investment Management, Transportation System Development, and State Patrol, and three executive offices: General Counsel; Policy, Finance, and Improvement; and Public Affairs. WisDOT's research program is within the Office of Policy, Finance, and Improvement. WisDOT managed a $4.2 million program for research, library, and technology transfer services during federal fiscal year 2016. The SPR 2 federal program funded 89 percent ($3.73 million) of the research program, while state funds covered the remaining 11 percent. Funding is distributed into four sections: state research (44 percent), pooled fund research (22 percent), national research (23 percent), and staff functions and technology transfer (12 percent). Most state research funding ($1.5 million) is distributed to the Wisconsin Highway Research Program (WHRP), established in 1998 for applied research for pavements, materials, and structures. There are four Technical Oversight Committees within the WHRP: flexible pavements (asphalt), rigid pavements (concrete), structures (bridges, signs, etc.), and geotechnics (soils and foundations). The annual RFP cycle ranges in funding from $850,000 to $1 million.

The WHRP research cycle is broken down into a 1.5-year process starting in May and ending in October of the following year. From May to September, research ideas are generated. From October to November, the RFP is developed, and solicitation for the RFP is carried out from November to January. Proposal review and researcher selection is conducted February through March, and from May to August, work plans are developed. Contract and agreement negotiation is carried out through July and September, and anticipated project start dates are in October. The policy research program for applied research for planning, traffic, safety, etc., is overseen by internal WisDOT committees. The variable RFP cycle depends on funding availability and research needs. Examples of recent policy research projects include: identifying highly correlated variables relating to the potential causes of reportable Wisconsin traffic crashes, materials laboratory design guidelines, and vehicle registration compliance in Wisconsin.

National Research programs include the TPF program, which allows federal, state, and local agencies, and other organizations to combine resources. WisDOT is currently the lead state for four pooled fund projects and participates in an additional 39 pooled fund projects. Other national research programs provide opportunities for research idea submission. WisDOT participates in NCHRP project panels (36 positions held by WisDOT staff), TRB committees (25 positions held by WisDOT staff), and AASHTO committees (45 positions held by WisDOT staff). Some individuals participate in more than one type of committee.

Technology transfer services include:

- Project reports: final reports and project briefs.
- Literature searches and identification of published materials such as reports, papers, and articles.
- Synthesis reports and identification of current practices through surveys and other methods.

- Peer exchanges that enable WisDOT staff to discuss key issues directly with experts and counterparts from other state transportation agencies.
- Research Annual Report.

The WisDOT Library began in 1968 as a collection of Wisconsin city, village, and town comprehensive planning documents. A library science graduate was hired to manage the collection in 1971. In fiscal year 2016, there were 887 customer inquiries, 2,165 items circulated (books, reports, periodicals, and articles), and 1,007 records added to the library database. Outreach programs in the library include promotional cards and a LearnCenter module (Transportation Databases and Beyond). WisDOT also maintains a research website.

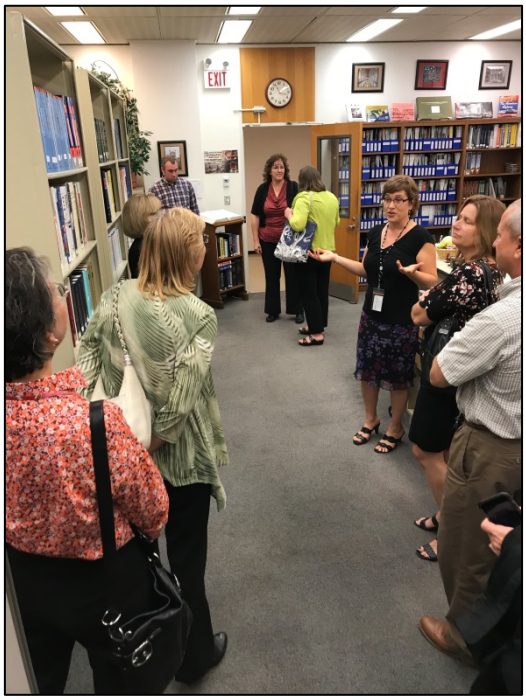
TRANSPORTATION RESEARCH BOARD

The TRB is part of the National Academies of Sciences, Engineering, and Medicine. In 1863, President Abraham Lincoln signed a congressional charter forming the National Academy of Sciences. The National Advisory Board on Highway Research was established in 1920. The TRB is a non-profit institution, and the independent, non-partisan, objective is research-convene-advise. TRB strives to implement innovative ideas related to contracting methods, safety improvements, accelerated bridge construction, traffic management, and other areas discussed at TRB meetings. An example of these projects is TRB's Innovative Bridge Designs for Rapid Renewal project, which provided a design toolkit for prefabricated bridges, which helped to reduce road closures and bridge outages.

TRB's NCHRP responds to the practical needs of DOTs with ready-to-implement, sustainable solutions; $58 million is invested annually in the Cooperative Research Programs. TRB has over 200 publications annually, more than 300 projects currently being managed, more than 900 peer-reviewed papers in the *Transportation Research Record* annually, and six editions of the *TRNews* annually. TRB controls TRID, the largest transportation research database in the world. TRID contains over one million records of published and on-going transportation research, and is publicly accessible on TRB's website trid.trb.org. TRB fosters networking through convening activities like the TRB Annual Meeting. These meetings allow researchers to join a passionate and devoted worldwide transportation community, and strengthen personal and professional connections. There are currently over 200 standing committees, over 7,000 active volunteers, over 12,000 attendees at the TRB Annual Meeting every year, more than 750 sessions and workshops at the TRB Annual Meeting, more than 90 webinars annually, and over 70 TRB meetings and conferences every year. TRB advises experts on transportation policy in an objective and interdisciplinary manner. Research reports are independent, objective, evidence-based, thorough and fair, and non-partisan.

TRB connects with over 7,000 engineers, scientists, and researchers each year. They are seeking the best and brightest to join them. There are opportunities to volunteer for TRB. Volunteers can become members or friends of TRB committees that identify research needs, share research possibilities, review papers, promote application of research findings, and develop conferences and workshops. TRB resources allow researchers to stay informed by attending the TRB Annual Meeting or one of the 70 conferences offered each year around the world, TRB webinars, subscribing to the TRB E-Newsletter,

TRNews Magazine and other publications, or following TRB on social media. Webinars are free to all state DOTs, FHWA, TRB committee chairs, and employees of tribal governments. Professional Engineers can earn PDH through webinars. The Research Pays Off (RPO) section featured in *TRNews* was recently rated as a favorite in a survey. RPO features implemented agency research. TRB recognizes the many challenges with implementation, from strategic packaging and branding; technical assistance; standards, specifications, guidebooks, and manuals; follow-up on research, testing, and evaluation; lead users and demonstration projects; training and education; and long-term stewardship many of which can be facilitated though TRB products and activities.



IDOT Library Tour.

PEER EXCHANGE SESSION SUMMARIES

This section summarizes discussions at the peer exchange group by topic—management practices and effective staffing, technology transfer and information management, volunteer recruitment and recognition, and a strengths, weaknesses, opportunities, threats (SWOT) Analysis of the IDOT Research Program.

MANAGEMENT PRACTICES AND EFFECTIVE STAFFING

Participants discussed various management practices used within their research programs. There are many approaches to managing the research process, which leads to different challenges. IDOT is experiencing administrative level staffing challenges and has experienced some issues with outsourced management. However, in the most recent Intergovernmental Agreement (IGA), IDOT was able to make adjustments to the contract to ensure more control and alleviate some of the issues with PM. IDOT will dictate the technology transfer process and is encouraging PMs from the University to be at meetings in

person for more effective communication. The Bureau of Research is investigating methods for more effective technology transfer, and how to have oversight in a collaborative effort.

The functionality of the DOT in managing different aspects of research projects varies among participants. With the support of upper management, WisDOT shifted away from the university managing the WHRP to track projects more effectively and ensure on-time deliverables. WisDOT now feels like they have a better handle on their research projects. NJDOT serves as the PM from beginning to the end of a project, but outsources management to the University and a technical editor is incorporated into all RFPs. One DOT suggested doing more management in-house, but doing so may result in excess work if there is not adequate staff. One DOT suggested reaching out to the RAC to ask other states about their business practice model and how they have achieved balance between what is managed in-house versus overseen. FDOT has historically managed projects in-house, while the technical editing and some technology transfer support is outsourced to University of Florida. MnDOT completed a risk assessment to identify high priority areas within the research department and identify items the university is not covering at the appropriate level, such as needs statements not being addressed; these issues were addressed with upper management at MnDOT.

Several DOTs have a project tracking database in place and offered advice for those planning to implement one in the future. It is important to know, and understand, what is being tracked in the database and what fields are available to use. One DOT suggested working backward when developing the database—first think about reporting and how your agency wants projects tracked. Consider the scale on what is being tracked when developing the database. Agencies may consider using a professional to develop the database and determine the appropriate fields and information needed to meet the needs of the agency. Placing an IT staff member on the committee to select a consultant to develop the database can ensure the needs of the agency are adequately addressed during the selection and development process.

Many states expressed concerns about accurately determining research commitments for PIs at University research centers. NJDOT requires PIs to breakdown 10-month (academic school year) commitments and summer months commitments for professors on all proposals. WisDOT does not have a formal process. Table 1 is a commitment table often included in research proposals that identifies other obligations by principal investigator and lead researchers. DOTs can require a table similar to this to aid in prioritizing proposals or in the final work plan submittal.

Table 1. Example Table of Commitments of the Lead Researchers (provided by TTI)

Commitment	Researcher	Researcher	Researcher	Researcher
Other National Academy of Sciences Research	0%	0%	10%	10%
State/Local Projects	40%	40%	25%	20%
Federal Projects	20%	0%	0%	20%
Other Projects	20%	10%	0%	0%
Total Committed	80%	50%	35%	50%
Uncommitted	20%	50%	65%	50%
Total % Time	100	100	100	100

Several DOTs mentioned successful communications and outreach efforts. FDOT recently overhauled the one-page summary created for each completed project to include smaller, more digestible sections. This enabled FDOT to provide a baseline message about the project. MnDOT repurposes materials and information blurbs so that they can be used on several publications ("two-for," "three-for"). MnDOT's annual report presents information graphically when possible to increase readability for upper management and legislative staff. MnDOT also pushes interesting, relevant research information based on season. Posting relevant project videos to YouTube has been a successful marketing effort for IDOT.

NJDOT hosts an annual showcase with keynote speakers and poster sessions. NJDOT uses the LTAP, contracted out to a university, to disseminate research information and how to participate in the showcase. WisDOT hosted the Mid-continent Transportation Research Symposium in partnership with University of Wisconsin at Madison in 2016. Attendees were able to showcase research from Wisconsin, and surrounding states.

A staffing strategy is a key factor for an agency to meet its goals, including adequate and appropriate staff to complete projects, the decision to outsource specific pieces of the project, and to promote research efforts within and outside of the agency. Staff turnover creates issues with knowledge transfer, training, and organizational awareness, thereby making succession planning more valuable and necessary. It is important to expand the pool of staff participants in research projects and committees.

Many DOTs participating in the peer exchange felt their research program was not adequately staffed and would hire additional positions to fulfill the needs of their program. These positions include:

- Implementation coordinator for PM, assigning staff to specific tasks/aspects of the project, and assisting with actual implementation.
- Research coordinators used for organizing meetings, taking notes, keeping the dialogue moving, incorporating pooled fund/NCHRP, and connecting with national research that would assist/complement local effort.
- Technical editor in-house.

One participant suggested revising job titles and descriptions to combine roles. Position descriptions are difficult to write for people not familiar with specific positions (e.g., engineers writing job descriptions for a technology transfer coordinator), and sometimes connotations can be misleading. An example is to revise a job title "Technology Transfer Coordinator" to "Research Communications Coordinator," to incorporate communication efforts from throughout the agency, not just related to technology transfer.

Participants discussed different aspects of using internal staff or outsourcing for specific project needs. Some DOTs suggested outsourcing aspects of the research process to smooth out busy times with the department; however, there can be a hybrid of internal staff and outsourcing depending on the in-house skillset and workload needs. The department can assess and project workloads to determine the level of outsourcing needed. MnDOT commissioned a workload assessment for the research department to determine the appropriate number of staff needed to support the workload. An external department

with Minnesota state services that provides support functions for other state agencies at a flat rate conducted the assessment. At the time of the peer exchange, MnDOT did not have the results of the assessment, but will make them available to interested participants once released.

Participation from the FHWA varies by state. MnDOT has a stewardship agreement with FHWA, and MnDOT is rated very low risk and their state representative is kept informed and is invited to key meetings, approves work plans, and approves funding in advance. In New Jersey, the FHWA representative is very active. The FHWA representative in Wisconsin attends periodic, typically quarterly, meetings with the DOT. IDOT works closely with their division office and includes FHWA staff on the TRP for each project.

TECHNOLOGY TRANSFER AND INFORMATION MANAGEMENT

According to the Code of Federal Regulations (23 CFR § 420.203), technology transfer refers to, "those activities that lead to the adoption of a new technique or product by users and involves dissemination, demonstration, training, and other activities that lead to eventual innovation." Effective technology transfer enables research programs to promote research efforts and to publicize the most important parts of the research. Funding dedicated for technology transfer can also be used for purchasing equipment needed for implementation and several types of training, such as webinars and beta classes/pilot tests (cannot be ongoing).

Participants discussed ways their DOTs identify the tangible benefits or impacts of research. In 2016, IDOT launched a gainsharing pilot program to identify opportunities to improve operational efficiency and enhance the quality of services it delivers. The gainsharing program financially rewards employees

who bring forward tangible cost-saving ideas the department can implement.[1] The IDOT Bureau of Research would like to investigate methods in which the research program can be incorporated into the process.

DOTs have various methods of providing effective technology transfer, and it is often tailored for specific audiences. For example, for every project completed MnDOT creates a sound bite of information targeted to a specific audience. Although MnDOT prioritizes the distribution of information, the agency pointed out that an effective joint distribution list does not exist. People have different methods to receive information and not all groups are embracing technology or have computers to easily access information only available online. MnDOT is currently seeking a more efficient and effective way to broadly disseminate the information and ensure it is received by the targeted audiences.

In 2016, NJDOT implemented an annual research showcase to recognize innovative research projects. Staff can submit their own ideas or nominate others. Projects are evaluated and selected for awards. In the future, NJDOT plans to tie this in with the State Transportation Innovation Council incentive program. FDOT promoted research efforts within the agency by making presentations at scheduled district and state meetings. These large meetings provided large, diverse audiences from around the state that were able to learn how the research program benefits FDOT and the State of Florida.

A concise, fast-paced presentation series to showcase different aspects of the research program, sometimes referred to as “Pecha Kucha” or “Fast and Furious,” was discussed among peer exchange participants. Each presenter has seven minutes for the actual presentation, and seven minutes for questions. Each session has two presentations. This presentation style is used to encourage researchers to focus on clear messaging, storytelling, and presentation skills in an informal setting. Presenters gain practice giving presentations, participate in idea sharing, increase the use of technology, network, foster collaboration between researchers, and improve communication for broad audiences. There is a three-step process for this presentation style:

1) Preparation. A steering committee works with presenters ahead of time to prepare and offer presentation tips such as providing additional background information on the topic, explaining why the topic matters, and telling a story.
2) The Event. This presentation style is casual and fun, but all aspects have been prepared and rehearsed ahead of time. Agencies can determine how often the series should occur, but typically once a month during the lunch hour. Conference calls, video, and WebEx are used for remote attendees.
3) Follow up. The steering committee is typically highly responsive to attendee and presenter feedback via regular surveys.

Several DOTs pointed out that technology transfer and implementation go hand-in-hand to be effective. One participant described implementation as a square peg in round hole. Effective technology transfer is

[1] Illinois Department of Transportation, 2016 Annual Report.
http://www.idot.illinois.gov/Assets/uploads/files/About-IDOT/Reports/2016%20Annual%20Report.pdf

often derived from quality content created during implementation. It is important to understand how implementation feeds into technology transfer, and how marketing and promoting the research program can enhance this effort.

Research libraries play various roles within DOTs. IDOT has a physical library with a degreed, full-time librarian. This library is part of the state library system in Illinois. The Bureau of Research at IDOT is focused on improving the library and is in the process of determining the best method to secure historical information. IDOT plans to enhance the research library by adding information to the agency internet site, creating a shared collection for literature searches for IDOT and within the entire transportation library community, and improving the library kiosk located in the IDOT cafeteria. FDOT has implemented a paperless initiative and plans to educate and instruct employees to use library resources online.

VOLUNTEER RECRUITMENT AND RECOGNITION

Many states expressed concerns with low participation from staff in the research process or that staff are not interested in serving as project champions. One DOT mentioned it is difficult to encourage participation because anyone who suggests something becomes the technical lead, a commitment for which they may not have time available.

MnDOT pointed out that a project cannot move forward without a champion. In Minnesota, the DOT discusses who needs to be part of the group/advisory committee and actively seeks staff to participate. Participation is incentivized; a letter of recognition is sent to the technical liaison when a project is completed. If a research effort is implemented, researchers receive a mug with MnDOT's innovation logo, and if the project is selected for the Sweet 16, the DOT funds the PM to present the poster in Washington, D.C. MnDOT includes stories about research and library resources in every newsletter and suggests that research departments be timely with publicizing research. For example, if something happens in the news, the department can send out information about relevant research underway or projects that have already been implemented.

IDOT recognizes projects selected for the Sweet 16 and projects identified as high value by providing funding to Washington, D.C., to present information on the research efforts. IDOT also presents awards in conjunction with ICT. TRP chairs vote to recognize high impact projects not selected for the Sweet 16; if selected, the project team is awarded with a plaque. TRP chairs and panel members vote for the TRP Chair of the Year; the winner receives a plaque. IDOT has also recognized TRP participation at the annual conference for highway engineers. FDOT, NJDOT, and WisDOT would like to find more ways to incorporate recognition for participation into their research programs.

Recruiting staff to participate on national committees and panels is another important aspect of a research program. The process for recruiting staff to be involved at the national level varies by state. For example, IDOT notifies staff about NCHRP panel participation and counts on bureau chiefs to identify the appropriate staff to participate. In the future, IDOT plans to post information on the agency intranet, encourage interested staff to discuss participation with their supervisors, and use targeted email lists to

disseminate information. When program officers reach out to fill available positions on national committees, IDOT would like the TRB program officer to notify the research coordinator/research division of the DOT. In addition to sending Sweet 16 project TRP chairs and PIs to TRB, IDOT also provides funding for committee chairs and for staff with accepted papers (both lectern and poster sessions).

MnDOT strongly encourages interested staff to notify their supervisors and the director of the research, so that an endorsement/recommendation letter can be provided for the official submitter. WisDOT has a DOT weekly bulletin that includes information about panel nominations at the appropriate time. FDOT uses targeted email lists for panel nominations, sent to people that have served on committees in the past. The DOT does not rely on the director level to disseminate information. Staff that are panel or committee members must actively participate. FDOT requires staff to provide a trip report to the innovators committee after attending the TRB annual meeting. NJDOT has many active participants in TRB panels. Attendance has to be specific to projects on which staff is currently working. NJDOT holds a TRB debriefing panel discussion where all employees are required to present on topics discussed and sessions/meetings attended to share information in hopes that it encourages others to apply and senior leadership to support involvement.

One method to engage staff and encourage participation is to incentivize research by recognizing the subject matter experts (SMEs), TAG Chairs, PIs, and PMs, or by providing internal research project awards. Various other ways to show appreciation were discussed among participants, including:

- Words of affirmation from managers or project team.
- Personally acknowledging contributions rather than in a group setting.
- Recognizing accomplishments among peers at program meetings or in department correspondence such as an employee spotlight section in new agency newsletter.
- Handwritten notes.
- Meaningful gifts.
- Decorating office or cubicle.
- Provide additional opportunities to attend conferences and participate in regional, state, and national meetings.
- Treating the project team to lunch after project completion.

SWOT ANALYSIS OF THE IDOT RESEARCH PROGRAM

Participants at the IDOT Peer Exchange took part in a SWOT analysis of the IDOT Research Program. A SWOT analysis identifies the following four criteria:

- Strengths – *internal* characteristics that give an advantage to achieve performance goals.
- Weaknesses/Challenges – *internal* characteristics that place you at a risk for not achieving performance goals.
- Opportunities – *external* opportunities to improve performance.
- Threats – *external* elements that could cause issues.

The following sections summarize strengths, weaknesses/challenges, opportunities, and threats to the IDOT Bureau of Research as noted by peer exchange participants.

STRENGTHS

The strengths of the IDOT research program include:

- IDOT Staff is passionate about the research program, highly involved, and promote the research program within the agency; staff includes a dedicated implementation engineer and unit leaders help keep the focus of the Bureau.
- Involvement of TRP and TAG chairs, members.
- Interaction with FHWA and willingness to communicate with and inform Division Office representative.
- Including industry in the solicitation of research ideas, oversight of project research activities, and assistance with implementation.
- Involvement/participation in national organizations, panels, committees.
- Ability to adapt to change.
- Establishing a Bureau of Research.
- Research library is strongly supported within the agency, including top management, and effectively interwoven into program.
- Detailed Research Process Manual.
- Relevant Peer Exchange topics.
- Strong peer relationships.

WEAKNESSES/CHALLENGES

The possible weaknesses of the IDOT research program include:

- Number of staff members makes it difficult to plan and execute initiatives for the future, contributes to burn out, and does not allow time for strategic planning.
- Relationship with ICT is disconnected and potential liability to IDOT research program, due in part to the distance between the ICT (located in Rantoul) and IDOT (located in Springfield) and, difficulty determining high value projects. It is also a challenge to communicate to ICT the fact that contract research is one facet of a multifaceted research program.
- Project coordination – linking back to report and project.
- Recruitment.
- Staff involvement – many staff are not interested in serving as TRP chairs, resulting in an unwillingness to submit research ideas or proposals.
- IDOT's inability to lead run pooled fund projects.
- Length of projects (often 2–3 years long).
- Performance measurement and not achieving performance goals.
- Struggle showcasing the research program; translating benefits of research program to top management and legislature.
- Lack of fiscal responsibility in Illinois; political climate in Illinois.

OPPORTUNITIES

The potential opportunities for the IDOT research program include:

- Ability to develop organizational chart to support initiatives of the research program.
- Ability to incorporate feedback into process manual.
- Spread culture of passion and excitement.
- Sell benefits of research and improving the footprint of the research bureau within agency. Upper management is open to ideas on how to improve processes, facilities, etc.
- Work with communication/marketing departments to promote research, showcase experimental features.
- Continue collaboration with other Bureaus and staff in other IDOT locations.
- New software and tools for technology transfer/communication – leverage better technology, program management software.
- Promote program/results in a national forum.
- Show appreciation for staff.
- Succession planning provides the opportunity to bring on new, young engineers and staff, ensuring knowledge management.
- Enhance the relationship with ICT by defining roles and changing the program to meet the needs of IDOT.
- Expand and leverage state funds for more flexibility within department.
- Contract management – opportunities for growth, define expectations, and consider outsourcing and utilizing consultants.
- Take advantage of existing research from other states.

THREATS

The possible threats to the IDOT research program include:

- Political climate/uncertainty, including the upcoming gubernatorial election in Illinois and the potential change of administration.
- Attrition due to retirement and job changes. This has a real impact on hiring needed staff.
- Relationship with ICT, for example, the current PM and technology efforts transfer do not meet the needs of IDOT. These issues are being more fully addressed in the current IGA.
- IGA contract negotiations for the future could result in higher overhead rates.
- Poor public perception of the state employee union.
- Obligation of federal funds, such as lapsed funds and annual rescissions.
- Succession planning and knowledge capture.
- Lack of customer survey.
- Retention.
- State of the budget in Illinois.
- Translating the value of the research program.
- Logistics of adding new staff.

- Fear of change.
- Fear of a lack of future at IDOT.
- Training at universities in pavement and transportation engineering; fewer students interested in engineering/sciences.

KEY TAKEAWAYS

Key takeaways from the research program representatives participating in the IDOT Research Peer Exchange include:

- Introducing and incorporating a concise, fast-paced presentation series to showcase different aspects of the research program. It is suggested that presentations be kept to a maximum of seven minutes, with seven minutes for questions. The IDOT Research Bureau will solicit presenters and work with other departments within IDOT to market and film the presentations.
- Enhancing the IDOT research library by adding information to the IDOT research bureau internet site, creating a shared collection for literature searches for IDOT and within the entire transportation library community, seeking alternative repositories for literature searches, creating a leadership or subject-matter book club, and improving the library kiosk located in the IDOT cafeteria.
- Increasing and improving staff appreciation and recognition efforts by initiating SME/PM appreciation, recognizing PMs, TRP, and TAG volunteers, and introducing awards for innovation.
- Improving the process for soliciting research ideas and proposal selection by: investigating external input and collaboration on research ideas, reaching out to districts to incorporate entire state into research process, considering the role of Area PMs, developing lists of pooled fund technical contacts and other useful information to ease ability to reach out; soliciting research ideas outside university, incorporating other commitments into proposal process, and considering the requirement of technical editorial services in the RFP/task order.
- Outsourcing aspects of the research process to smooth out busy times with the department. The department can assess and project workloads to determine the level of outsourcing needed.
- Enhancing communication and marketing for research projects by creating key media pieces, leveraging existing media pieces for additional uses, and potentially creating a SharePoint-type site to share information about research projects.
- Realizing the value of a SWOT analysis for individual research programs.
- Completing the IDOT research process manual based on comments, feedback, and suggestions from the peer exchange participants.
- Completing the organizational chart and implementing naming convention for positions, writing job descriptions that define what IDOT wishes to achieve at each position, and considering the addition of technical area project managers.

APPENDIX A. RESEARCH PEER EXCHANGE AGENDA

This appendix contains the agenda for the IDOT Research Peer Exchange.

ILLINOIS DEPARTMENT OF TRANSPORTATION
RESEARCH PEER EXCHANGE AGENDA

Wednesday, October 4, 2017

8:00 – 8:30 Breakfast and Welcome

8:30 – 8:45 Introductions Welcome from Leadership – Erin Aleman/LaDonna Rowden

8:45 – 9:00 Overview of Goals and Schedule

9:00 – 9:45 Overview of IDOT Research Bureau and Federally Funded Research Program

*** Overview of Attendee's Research Programs ***

9:45 – 10:30 Attendee 1

10:30 – 10:45 Break

10:45 – 11:30 Attendee 2

11:30 – 12:15 Attendee 3

12:15 – 1:00 Lunch

1:00 – 1:45 Attendee 4

1:45 – 2:30 Nancy Whiting TRB – Best Practices from Other States

2:30 – 3:30 Focus Area 1 - Incorporating best management practices from other DOTs into our Research Program and Process Manual (Facilitated Round Table Discussion)

3:30 – 3:45 Break

3:45 – 4:30 Focus Area 1 - Incorporating best management practices from other DOTs into our Research Program and Process Manual (Continued)

Thursday, October 5, 2017

7:45 – IDOT pick up at Statehouse for breakfast at IDOT

8:00 – 8:30 Breakfast and Networking

8:30 – 10:30 Focus Area 2 - Effective Research and T2 Staffing (Facilitated Round Table Discussion)

10:30 – 10:45 Break

10:45 – 12:00 Focus Area 3 - Technology Transfer and Information Management Best Practices (Facilitated Round Table Discussion)

12:00 – 1:00 Lunch

1:00 – 2:00 Technology Transfer and Information Management Best Practices, continued (Facilitated Round Table Discussion)

2:00 – 3:00 Focus Area 4 - Brainstorming and Best Practices for Volunteer Recruitment and Recognition

3:00 – 3:15 Break

3:15 – 4:00 Focus Area 4 - Brainstorming and Best Practices for Volunteer Recruitment and Recognition (Continue)

4:00 – 4:30 Wrap-up and Announcements

4:45 Drop Off at State House Inn

Friday, October 6, 2017

7:45 – IDOT pick up at Statehouse for breakfast at IDOT

8:00 – 8:30 Breakfast and Networking

8:30 – 9:45 SWOT Analysis of IDOT Research Program

9:45 – 10:00 Break

10:00 – 11:00 Takeaways

11:00 – 11:30 Travel Expenses, Other Admin Activities, Closing Remarks

11:30 – Adjourn/Box Lunch

APPENDIX B. TRANSPORTATION RESEARCH PROGRAM REPRESENTATIVES

ILLINOIS DEPARTMENT OF TRANSPORTATION:

Megan Swanson, Technical Research Coordinator
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LaDonna Rowden, Acting Bureau Chief of Research
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Erin Aleman, Director Office of Planning and Programming
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Karen Waters, Librarian
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John Senger, Engineer of Pavement Technology
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Amy Schutzbach, Engineer of Physical Research (Retired)

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APPENDIX C. PEER STATE SLIDE PRESENTATIONS

This appendix contains the peer state slide presentations used during the IDOT Research Peer Exchange in the following order:

- Illinois Department of Transportation.
- Florida Department of Transportation.
- Minnesota Department of Transportation.
- New Jersey Department of Transportation.
- Wisconsin Department of Transportation.
- Transportation Research Board.

Bureau of Research

- Part of the Office of Planning and Programming
- Includes the:
  - IDOT Library,
  - Pavement Technology Unit, and
  - Technical Research Unit.
- Technical Research Unit manages IDOT's State Planning and Research Part 2 Funded Research Program and State Funded Physical Research Projects

Illinois Department of Transportation

FY18 Work Program: $10,112,000

- **Funding Sources**
  - Federal SPR, Part 2 funds (FY18 est.)
    - $6,500,000M for Contract Research (includes 20% match)
    - $386,500 for AASHTO Technical Service Programs
    - $227,000 for annual TRB contribution
    - $1.578M for annual NCHRP contribution
    - $990,500 for current Pooled Funds
    - $500,000 contingency for new Pooled Funds
  - State funds (FY18)
    - Administrative expenses for contract research program ($430,000 for FY18)

Illinois Department of Transportation

Contract Research

- Contract research is administered by the **Illinois Center for Transportation (ICT)** in Rantoul, IL

- Intergovernmental agreement (IGA) between IDOT and University of Illinois Board of Trustees
  - 4 Intergovernmental Agreements since 2005
  - Current IGA FY18 – FY20 with one optional 2 year renewal
  - $6M annually
  - Federal and State funds
  - Negotiated F&A rate of 40% requested by University

Illinois Department of Transportation

Contract Research at ICT

- **Research Project Types**
  - Regular – Part of the annual program cycle, approved by Exec. Comm.
  - Special - $36,000 and results in 6 months, approved by BR
  - Off Cycle – bigger than a SP but too urgent to wait for the regular cycle, approved by Exec. Comm.
- **Active Projects**
  - 23 Active Projects as of 6/30/17
  - 14 new projects starting in FY18

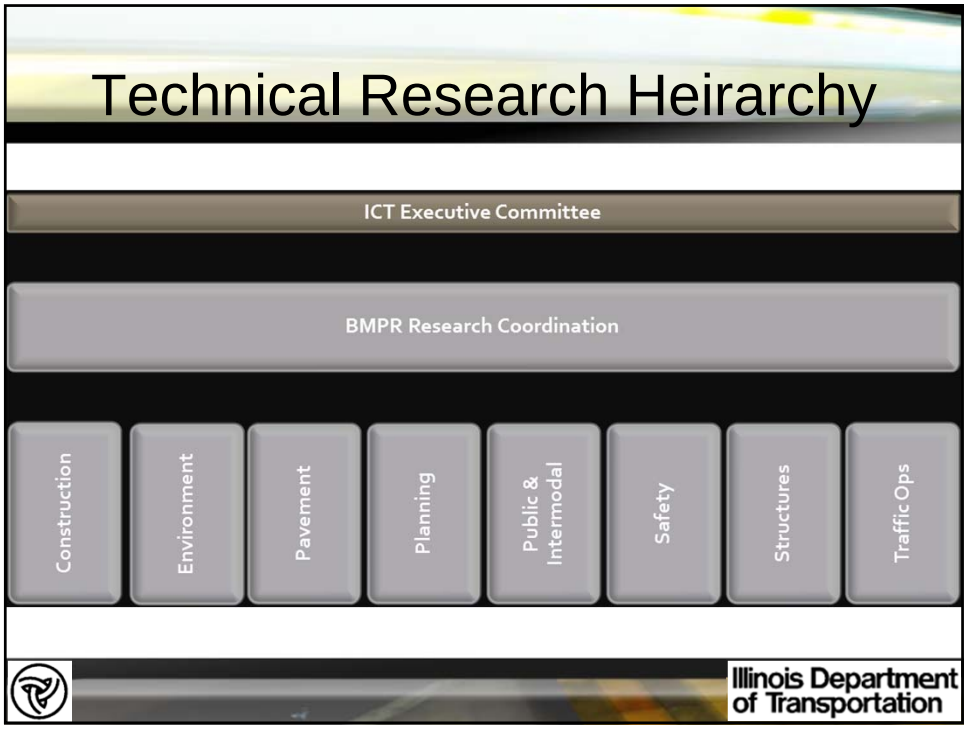
Illinois Department of Transportation

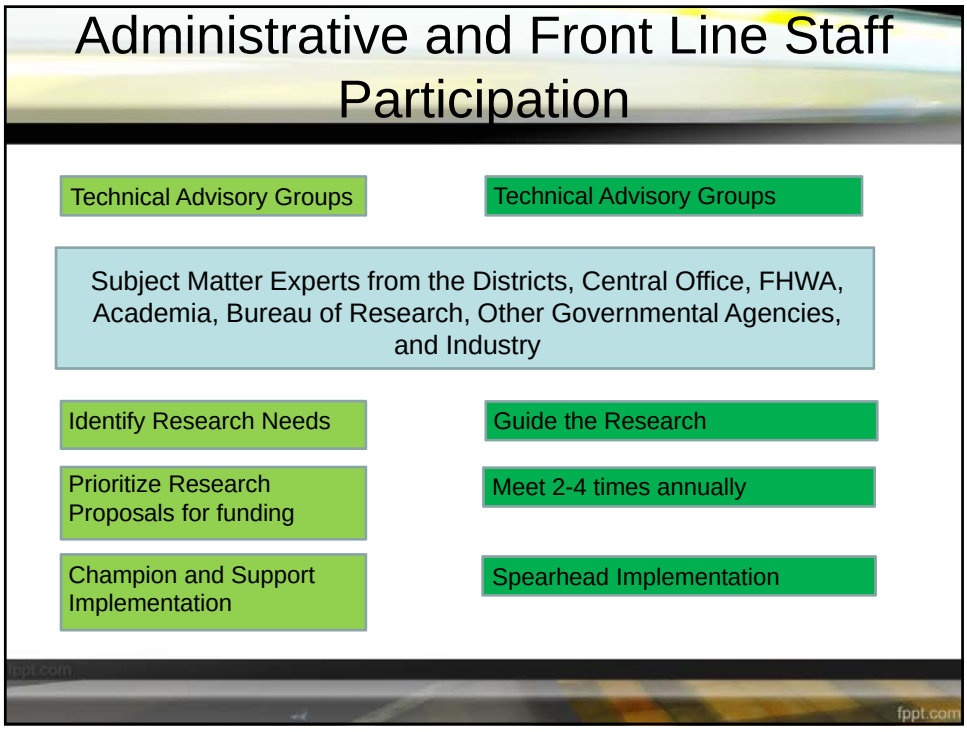
Contract Research Cycle

Annual Cycle

- May -July: Technical Advisory Groups (TAGs) discuss research needs and implementation
- August: Research needs posted to ICT website
- October 1: Deadline for problem statement submittal for current cycle (problem statements accepted year-round)
- October – November: Technical Advisory Groups review and vote on problem statements
- February: ICT Executive Committee approves projects for funding
- February – July: Select researcher, Technical Review Panel; sign off on work plan and budget
- August/January: Start work

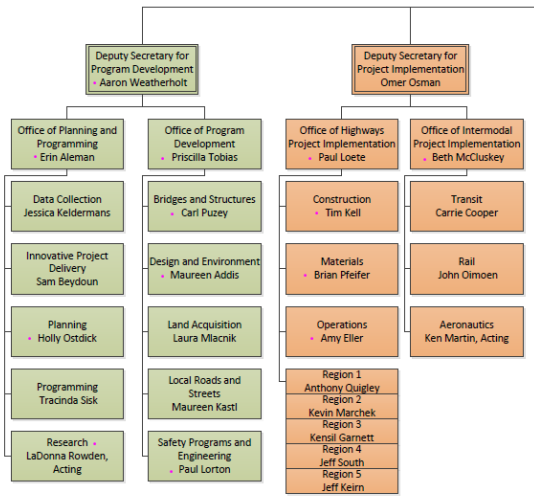
Illinois Department of Transportation


Technical Research Heirarchy
ICT Executive Committee
BMPR Research Coordination
Construction
Environment
Pavement
Planning
Public & Intermodal
Safety
Structures
Traffic Ops
Illinois Department of Transportation


Administrative and Front Line Staff Participation
Technical Advisory Groups
Technical Advisory Groups
Subject Matter Experts from the Districts, Central Office, FHWA, Academia, Bureau of Research, Other Governmental Agencies, and Industry
Identify Research Needs
Guide the Research
Prioritize Research Proposals for funding
Meet 2-4 times annually
Champion and Support Implementation
Spearhead Implementation
fppt.com

IDOT/ICT Executive Committee

- Approves funding for selected projects that align with IDOTs needs and goals.
- Directors and TAG Chairs



Illinois Department of Transportation

Research Needs

IDOT RESEARCH NEEDS

Home > IDOT Research Needs

The Illinois Department of Transportation's (IDOT's) nine Technical Advisory Groups (TAGs) have identified research needs for the upcoming research cycle. The purpose of these needs is to solicit potential researchers to submit research ideas that might fulfill these needs. TAGs will consider these ideas and write up formal RFPs based on these ideas. TAGs update these needs annually on August 15.

IDOT and the Illinois Center for Transportation (ICT) encourage potential researchers to review the research needs of each TAG and submit research ideas to address those needs. Proposed research ideas that are aligned with TAG research needs have an improved chance of being approved and funded.

Historically, research ideas that meet IDOT's needs or have an IDOT sponsor have a greater chance of being funded than those without an IDOT sponsor. Therefore, ICT strongly encourages each submitter to contact IDOT and secure an IDOT sponsor for the proposed research idea before submission.

If you need assistance identifying a potential IDOT sponsor, please contact the appropriate **Technical Advisory Group**.

The nine TAGs are listed below. Click on the name of each TAG to view the TAG's most recent research needs:

- Construction TAG Research Needs
- Environment TAG Research Needs
- Pavement Design, Management, and Materials TAG Research Needs
- Planning TAG Research Needs

Illinois Department of Transportation

Research Problem Statements

Illinois Department of Transportation

ILLINOIS CENTER FOR TRANSPORTATION

Request of Research Ideas – Due October 1, 2015

1. **Research Idea Title:**

2. **Research Literature Review:** Please describe the current state of knowledge and state of practice in this field, including studies underway in the TRID (http://trid.trb.org) and Research in Progress (http://rip.trb.org/search) databases, and how this relates to the research need. Limit: 1300 characters.

3. **Objective and Scope of the Proposed Research Idea:** Clearly state the objective of the proposed research and briefly describe how the proposed work will address the research needs. Limit: 975 characters.

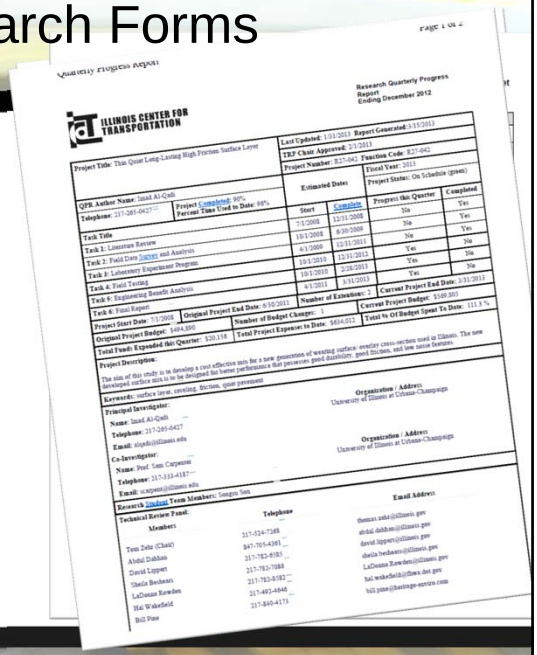
4. **Justifications for the Proposed Research:** Please be specific as to how the research will benefit IDOT and the state of Illinois. Limit: 325 characters.

5. **Expected Implementation Outcome:** Describe the expected quantitative outcomes in terms of policy advances, cost savings, increased life cycle, safety, environmental impacts and sustainability, user benefits, and/or other appropriate metrics. At minimum, explicitly list the benefits to IDOT regarding life-cycle cost and sustainability. Please note that IDOT is interested in immediate implementation of research outcomes. Limit: 650 characters.

Illinois Department of Transportation

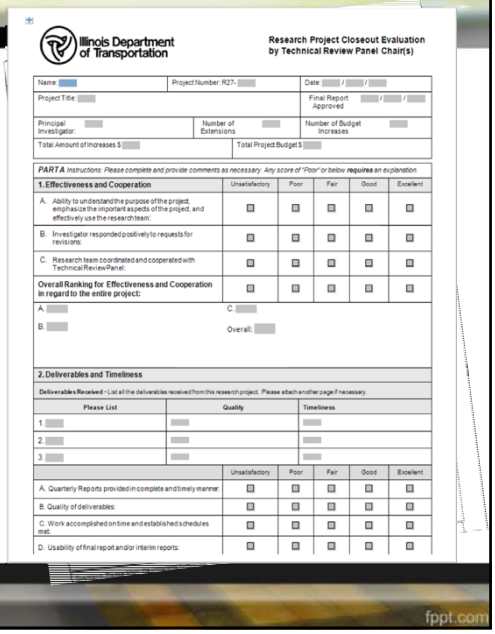
Research Forms

- Online Quarterly Reporting
- Time and Budget Extensions



Research Forms

- TRP Close-out Evaluation



Illinois Department of Transportation

Research Project Closeout Evaluation by Technical Review Panel Chair(s)

Name:	Project Number: R27-	Date: / /
Project Title:		Final Report Approved / /
Principal Investigator:	Number of Extensions	Number of Budget Increases
Total Amount of Increases $	Total Project Budget $	

PART A *Instructions: Please complete and provide comments as necessary. Any score of "Poor" or below* ***requires*** *an explanation.*

1. Effectiveness and Cooperation	Unsatisfactory	Poor	Fair	Good	Excellent
A. Ability to understand the purpose of the project, emphasize the important aspects of the project, and effectively use the research team:	☐	☐	☐	☐	☐
B. Investigator responded positively to requests for revisions:	☐	☐	☐	☐	☐
C. Research team coordinated and cooperated with Technical Review Panel:	☐	☐	☐	☐	☐
Overall Ranking for Effectiveness and Cooperation in regard to the entire project:	☐	☐	☐	☐	☐

A. C.

B. Overall:

2. Deliverables and Timeliness

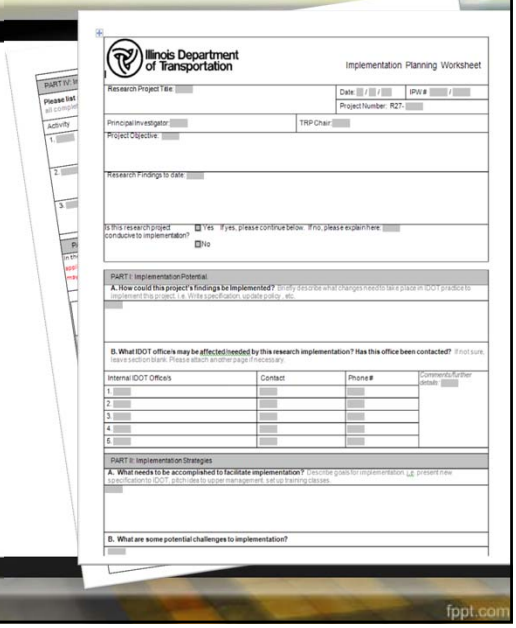
Deliverables Received - List all the deliverables received from this research project. Please attach another page if necessary.

Please List	Quality	Timeliness
1.		
2.		
3.		

	Unsatisfactory	Poor	Fair	Good	Excellent
A. Quarterly Reports provided in complete and timely manner:	☐	☐	☐	☐	☐
B. Quality of deliverables:	☐	☐	☐	☐	☐
C. Work accomplished on time and established schedules met:	☐	☐	☐	☐	☐
D. Usability of final report and/or interim reports:	☐	☐	☐	☐	☐

Research Forms

- Implementation Planning Worksheet



Illinois Department of Transportation

Implementation Planning Worksheet

Research Project Title:	Date: / /	IPW # /
	Project Number: R27-	
Principal Investigator:	TRP Chair:	

Project Objective:

Research Findings to date:

Is this research project conducive to implementation? ☐ Yes If yes, please continue below. If no, please explain here: ☐ No

PART I: Implementation Potential

A. How could this project's findings be implemented? Briefly describe what changes needs to take place in IDOT practice to implement this project, i.e. Write specification, update policy, etc.

B. What IDOT office/s may be affected/needed by this research implementation? Has this office been contacted? If not sure, leave section blank. Please attach another page if necessary.

Internal IDOT Office/s	Contact	Phone #	Comments/further details
1.			
2.			
3.			
4.			
5.			

PART II: Implementation Strategies

A. What needs to be accomplished to facilitate implementation? Describe goals for implementation, i.e. present new specification to IDOT, pitch idea to upper management, set up training classes.

B. What are some potential challenges to implementation?

Deliverables

Three Month Editing Process

- ICT Technical Editor paid through IGA (Technology Transfer and Editorial Support)
- ICT Project Managers send reminders at 6 months and 4 months prior to project end date
- PI provides draft report to Technical Editor 3 months before the project end date for initial edit (1 month)
  - Spelling, Grammar, Missing Information
- TRP review
  - "Back and forth" to address any issues, concerns or to provide clarifications
- Final editing
  - Incorporating all changes, complete pagination, table of contents and Technical Report Documentation Page

Implementation

- R27-128 Illinois Flexibility Index Test (IFIT):
  - Selected as an AASHTO RAC Sweet 16 project (IDOT projects selected 6 of last 8 years)
  - AASHTO provisional test specification TP-124 (result of R27-128) was approved in March of 2016
- R27-137 Evaluation of PCC Pavement and Structure Coring and In Situ Testing Alternatives
  - Results of this study establishes a testing procedure that accurately estimates in-situ strength of concrete
  - Can be used for pay-for-performance specifications
  - Illinois implemented our own IL modified version of AASHTO T-24 this year.

Implementation

- R27-146 Ultrasonic Imaging for Concrete Infrastructure (MIRA):
  - MIRA uses ultrasonic shear wave imaging to locate rebar in PCC pavements and can accurately determine slab thickness
  - MIRA is easily deployable and useful for spot inspections on bridge decks and forensic analysis
- R27-142 Virtual Road Weather Information System (vRWIS)
  - Results of this study integrated climatic models and existing road weather information stations to predict pavement surface temperatures
  - vRWIS is utilized by Operations staff to make data driven decisions on salt and other anti-icing applications
  - Saves money and better on the environment

Illinois Department of Transportation

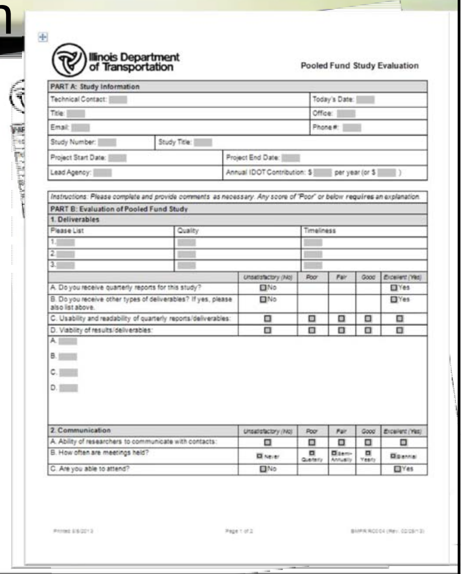
Accomplishments

- The Safety Project Outreach webinar series.
  - Pavement Markings
  - Right Turn Skew
  - Flashing Yellow Arrows
- 450+ attendees (some represented a group of viewers)
  - ~60 Illinois cities and local jurisdictions, as well as registrants from Arkansas, Missouri and Iowa.
  - 452 PDH certificates were issued
- Webinars are available on IDOT's YouTube channel.

Illinois Department of Transportation

Pooled Funds - Tracking & Evaluation

- Participation in FHWA Transportation Pooled Fund Program (~30 studies underway)
  - Pooled Fund Approval Form
  - Annual Evaluation
  - Close-out Evaluation



Illinois Department of Transportation

Pooled Fund Study Evaluation

PART A: Study Information	
Technical Contact:	Today's Date:
Title:	Office:
Email:	Phone #:
Study Number:	Study Title:
Project Start Date:	Project End Date:
Lead Agency:	Annual IDOT Contribution: $ per year (or $)

Instructions: Please complete and provide comments as necessary. Any score of "Poor" or below requires an explanation.

PART B: Evaluation of Pooled Fund Study

1. Deliverables

Please List	Quality	Timeliness
1.		
2.		
3.		

	Unsatisfactory (No)	Poor	Fair	Good	Excellent (Yes)
A. Do you receive quarterly reports for this study?	☐No				☐Yes
B. Do you receive other types of deliverables? If yes, please also list above.	☐No				☐Yes
C. Usability and readability of quarterly reports/deliverables:	☐	☐	☐	☐	☐
D. Viability of results/deliverables:	☐	☐	☐	☐	☐

A.
B.
C.
D.

2. Communication	Unsatisfactory (No)	Poor	Fair	Good	Excellent (Yes)
A. Ability of researchers to communicate with contacts:	☐	☐	☐	☐	☐
B. How often are meetings held?	☐ Never	☐ Quarterly	☐ Semi-Annually	☐ Yearly	☐ Biennial
C. Are you able to attend?	☐No				☐Yes

Page 1 of 2

fppt.com

National Level Involvement NCHRP, SHRP2, RAC and TRB

- 36 employees representing IDOT on 60 different national level research efforts
  - 40 National Cooperative Highway Research Program panels (6 serving as Chair of the panel)
  - 20 Transportation Research Board Standing Committees
  - 11 of the 36 employees serve on multiple panels and committees

Illinois Department of Transportation

NCHRP, SHRP2, RAC and TRB

- Participation in National Cooperative Highway Research Program (NCHRP)
  - We leverage approximately **$28** in research-related activity for every **$1** we invest in NCHRP activities
- Participating in SHRP 2 Implementation
  - Very limited involvement
- AASHTO – RAC
  - Active in Region 3, Value of Research, and Program Management and Quality Task Forces
- Participation in Transportation Research Board (TRB)
  - 10 Employees attended TRB
  - We leverage approximately **$76** in research-related activity for every **$1** we invest in TRB activities

Illinois Department of Transportation

Questions?

LaDonna Rowden, P.E.
Acting Bureau Chief of Research
(217) 782-2631

Megan Swanson
Technical Research Coordinator
(217) 782-3547

Ryan Culton, P.E.
Research Implementation Engineer
(217) 784-4888

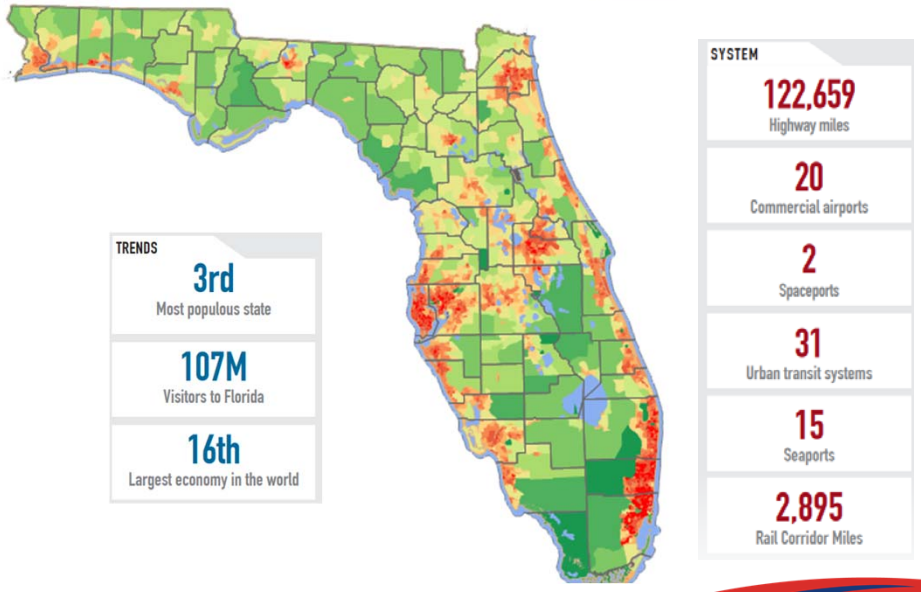
Illinois Department of Transportation

ILLINOIS PEER EXCHANGE

From my couch with my foot propped up

Jessica VanDenBogaert
Florida Department of Transportation
Research Center

Florida Department of Transportation



Florida Department of Transportation

RESEARCH CENTER

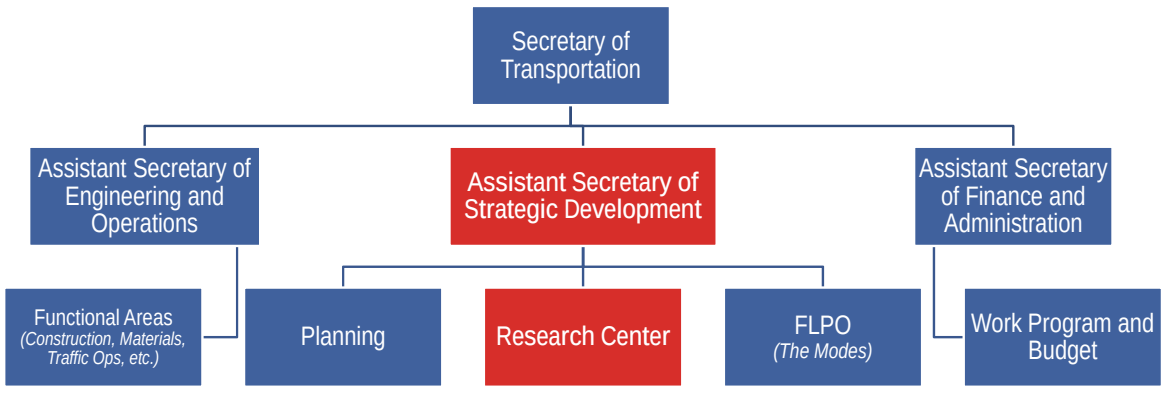
FDOT Research Center:

- Currently contracts over $14 million in applied research projects
  - Dedicated state funding
- Partners with state universities and other research providers to further knowledge and practice in all areas of transportation
- Active national participation
  - NCHRP, Pooled Fund, SHRP2

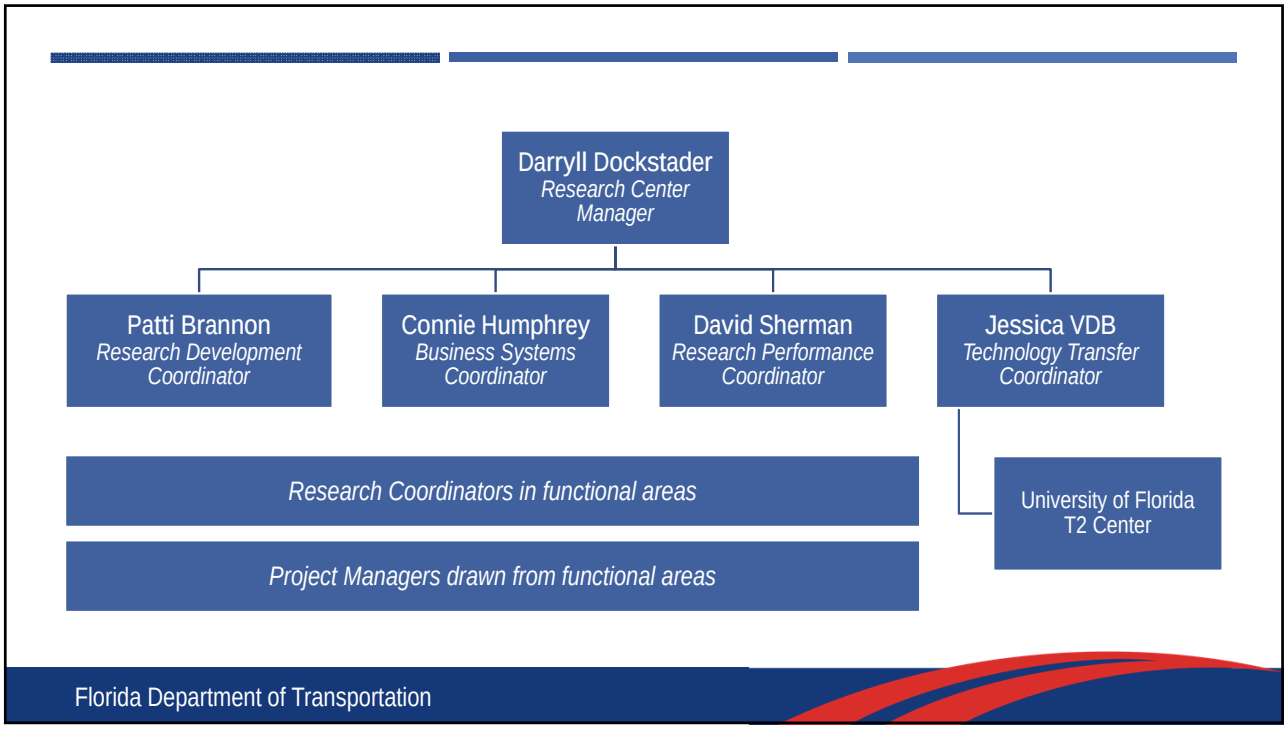
Other FDOT Research:

- Structures Research Lab
- State Materials Office

Florida Department of Transportation



Florida Department of Transportation



PROJECT SELECTION

- October: Call for Research Proposals
  - Includes ranking of "implementability" and potential benefits
  - To submit projects, previous projects must have completed deployment plan
- January: Prioritized Research Needs by Functional Area due
- February/March: Research Center, Functional Area, and Management Review
- March: FHWA Review
- July 1: Contracting begins
  - Direct selection
  - Competitive selection

THE TOOLS OF THE TRADE:

Annual Research Solicitation

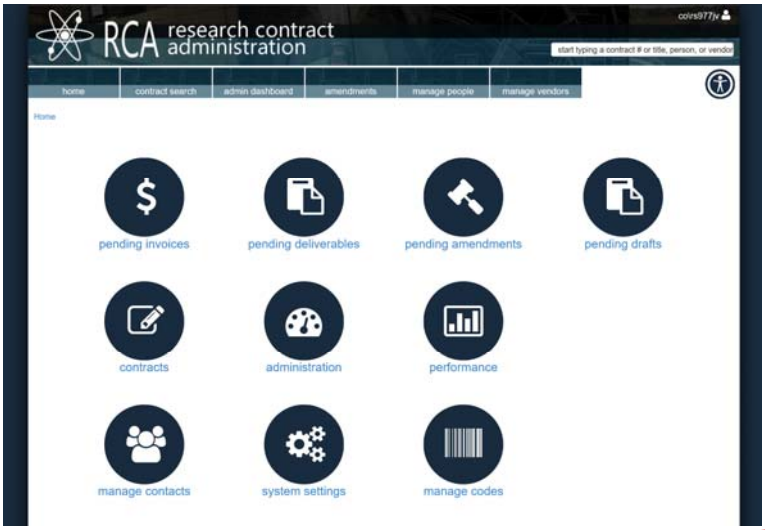
Request for Research Funding for FY 2017-2018			
Requesting Office	Or District	**Priority**	# of # (projects may not have the same ranking – no ties)
Anticipated timeframe for submitting project scope (if approved)			Month/Year
Proposed Title	All projects must have a title		
Justification	Describe the current situation, why the research is needed, and the anticipated benefits of the research.		
Impact	How shall the results impact practice? Consequences of not doing the research?		
Affected Offices	Identify any office that will need to be involved in the scoping or conduct of the research, will be affected by implementation of the results, or will need to participate in the implementation process—including OTIT, if enterprise/network software application will be a deliverable, and district staff, as appropriate, e.g., through statewide meetings.		
Existing Work	As a minimum, the Transportation Research International Documentation (TRID) and the Research in Progress (RIP) online databases should be reviewed by an expert in the research subject matter to assure research effort and resources shall not duplicate prior or ongoing work. Links to TRID and RIP are available at http://www.fdot.gov/research/Related_Sites.shtm		
Funding Request	Estimated cost	**Anticipated Duration**	Estimated length of time to complete work
Project Manager	Proposed technical manager to oversee research	**Contracting Method**	Anticipated procurement method (e.g., supplement to existing project, RFKP to universities only, RFP to all registered vendors, direct contract with university)
Urgency	Score 1-5 1= highest, most immediate need	Comments* (elaborate as appropriate on justification/impact comments to explain the urgency of the need . . . is a solution needed immediately; needed within a certain period of time or by a known or anticipated deadline, desired for enhancement, etc.)	
Implementability	Score 1-5 1=greatest likelihood of and proximity to implementing results	Comments* (consider both the likelihood of implementation and the length of time and resources required to implement the results of the research.) Identify any prerequisites to, requirements for, or barriers to implementing the anticipated results of this research (e.g., new or change to existing specifications, development of production units of prototype device, legislative change); please indicate if multiple phases of work shall be required	
Project Benefits (Select all that apply and explain)			
Project Benefits	**Quantifiable Benefits (units, dollars, etc…if applicable)**	**Methodology or Data Sources Used to Determine Quantifiable Benefits. If not applicable, please give justification of project benefits**	
o Materials Enhancement			
o Materials Savings			
o Time Savings			
o Lives Saved/Injuries Prevented			
o Other (Explain)			

*Comments should explain and support urgency, financial benefit, and implementability scores

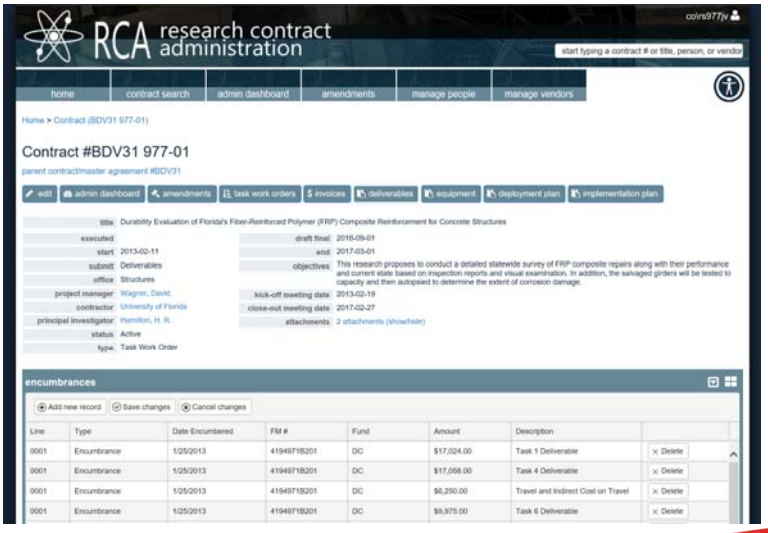
DURING THE PROJECT

- Initial Project Kickoff Meeting
  - Research Performance Coordinator, PM, PI, any potential stakeholders
- Project Managers work closely with Principal Investigators
- Deliverables and invoicing are routed through Research Center
  - All projects are deliverables-based; no progress reports
- Closeout Meeting

THE TOOLS OF THE TRADE: *Research Contracts Administration (RCA)*



THE TOOLS OF THE TRADE: *Research Contracts Administration (RCA)*

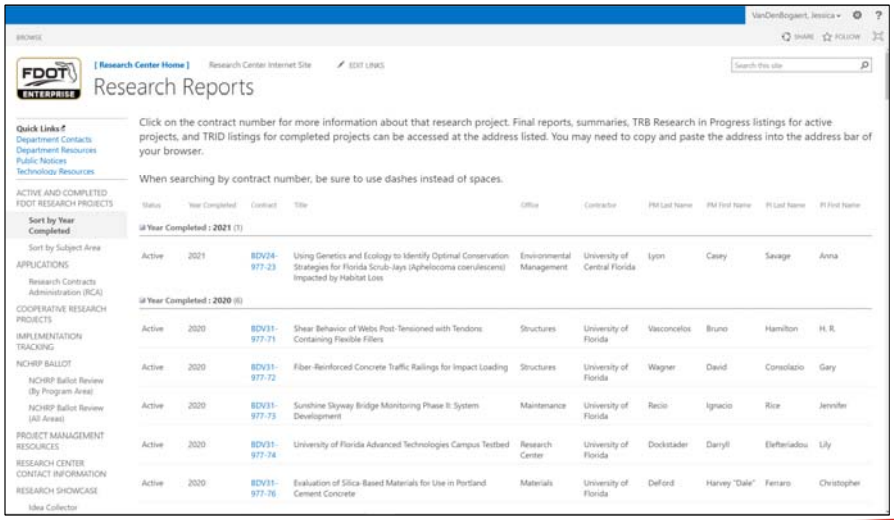


WORKING TOGETHER: *Implementation Tracking and T2*

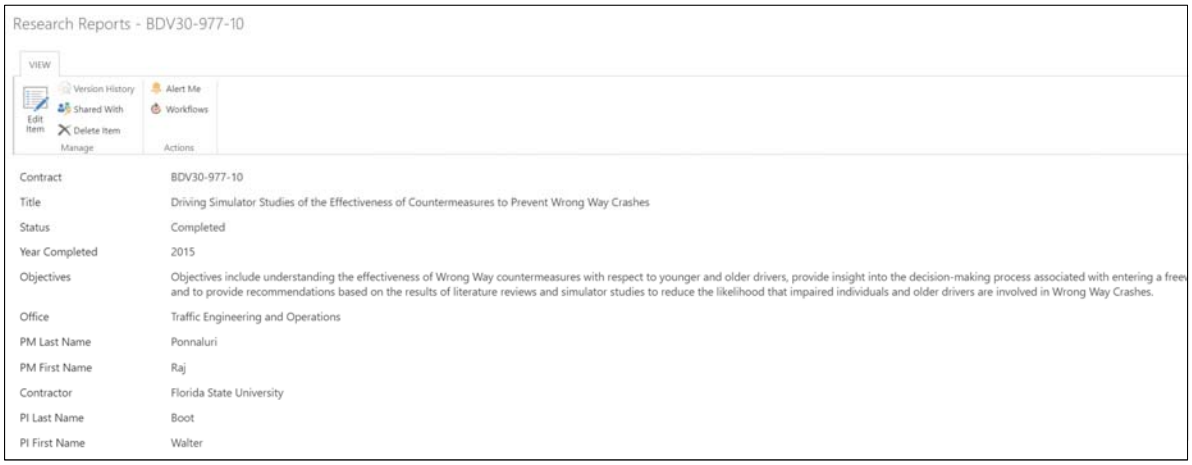
Implementation Tracking feeds T2

- Facilitation of implementation
  - Training
  - Coordination among areas
  - Meetings about meetings with a side of meetings
- Finding the best stories to tell
  - High Value Research

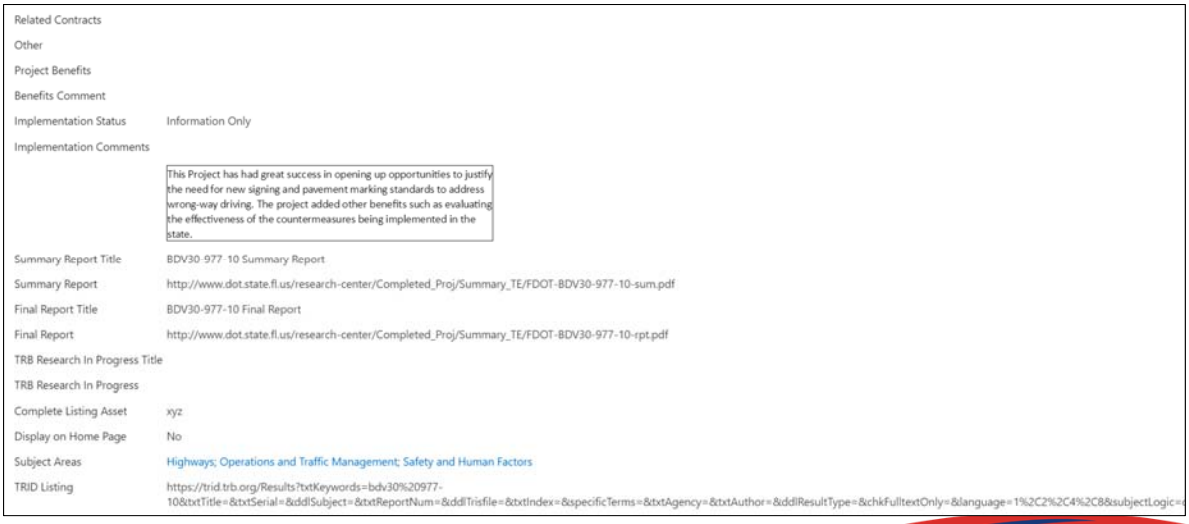
TOOLS OF THE TRADE: *SharePoint and Implementation Tracking*



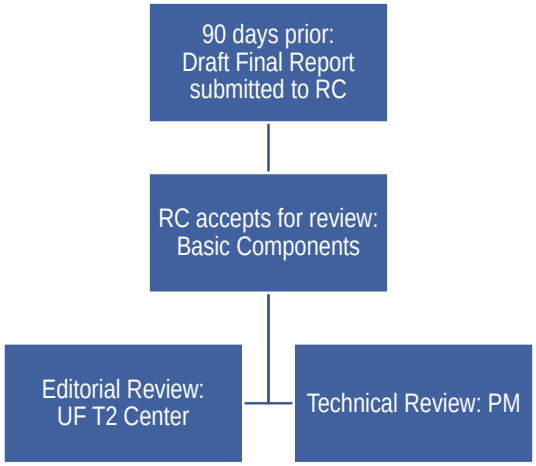
TOOLS OF THE TRADE: *SharePoint and Implementation Tracking*



TOOLS OF THE TRADE: *SharePoint and Implementation Tracking*



DRAFT FINAL AND FINAL REPORT REVIEW



Final reports are expected to incorporate technical and editorial comments. The project manager provides final review and approval of final report before distribution.

AFTER THE PROJECT: *Publicizing the Results*

- Editorial Review
- Final Report Distribution
- One-Page Summary


Florida Department of Transportation Research

Environmental Suitability of Weathering Steel Structures in Florida – Materials Selection, Phase 2

September 2017

Current Situation

Weathering steel (WS) is a steel alloy which was first formulated in the 1930s so that rust that normally forms on steel does not flake off, but adheres to the steel, thus forming a protective oxide layer. WS does not need painting and can require less maintenance than other types of steel. Once the oxide layer has completely formed, it has been estimated to provide corrosion protection for more than 100 years. If WS could be used in Florida bridges, substantial cost savings could be realized. Repainting Florida bridges alone costs over $30 million a year.

Research Objectives

Florida Atlantic University researchers tested WS to support development of Florida Department of Transportation (FDOT) guidelines for the appropriate use of WS for bridges and other structures.

Project Activities

The research team brought more than 25 years of experience with WS to this project, supplementing this with additional literature review. To realize the potential benefits, the interaction of specific WS formulations with local environmental conditions, such as humidity, rain, and local air and water pollutants, must be understood.

The researchers chose 30 sites where monitoring stations could be located in southeast Florida, from Key Biscayne to Ft. Pierce. Historical environmental data for the sites were collected from public sources. The monitoring stations collected similar data during the project period using sensors for wind speed and direction, humidity, temperature, rainfall, and wetness.

Deposits from existing structures in the area were examined for chloride and sulfur content in order to determine corrosion levels. Second, at monitoring stations, samples of conventional carbon steel, aluminum, and WS were exposed to the elements for periods of time from 200 days to over 900 days. Samples were in the form of plates, bolts, and wire. After the exposure period, corroded material was removed from the sample and preserved for further analysis. The samples were cleaned in a three-stage process and then weighed to determine weight loss.

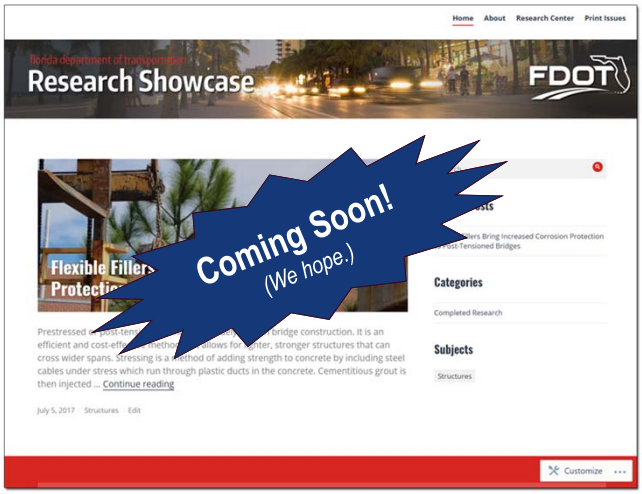
The researchers found that sites farther from the coast (chloride exposure) or from ports (sulfur exposure) showed less corrosion. Even close to the ocean, shielding by foliage or structures lowered corrosion rates. In general, chloride showed a higher influence on corrosion than sulfur. Time of wetness did not appear to strongly influence corrosion; however, salt deposits can retain moisture and distort time of wetness measurements. These findings support wider use of WS in Florida.

Project Benefits

The results of this project may increase the opportunities to use weathering steel in transportation structures, which offers significant cost savings due to lower maintenance and longer service life.

For more information, please see www.fdot.gov/research/.

RESEARCH SHOWCASE



WHAT WORKS AND WHAT COULD USE IMPROVEMENT

What Works

- Close relationship with functional areas
- Flexibility of state funds
- Dedicated implementation tracking feeds both beginning and end of cycle
- National-level participation

Could Use Improvement

- Premium staff time
- Technical expertise – graphic design
- Enhanced RCA capabilities
- Need to bring some functional areas “into the fold”

CH-CH-CHANGES

- Position Staffing
- Pursuing consultant support
  - Implementation facilitation
  - Editorial support

FOR MORE INFORMATION

Research Center

www.fdot.gov/research

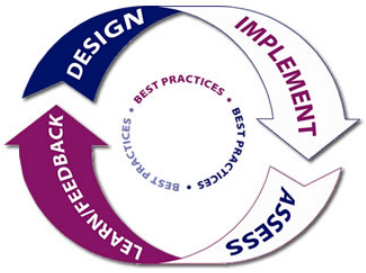
Jessica.VanDenBogaert@dot.state.fl.us

850.414.4631

Florida Department of Transportation

Illinois DOT Peer Exchange

Program Management best practices, effective staffing and information management

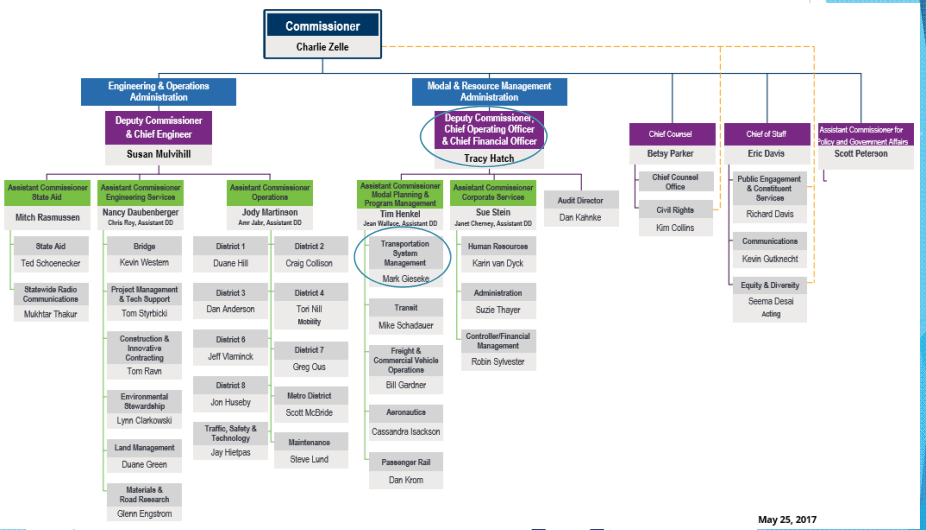


Linda Taylor, PE
Director, Research Services & Library
Oct. 4-6, 2017

Discussion Topics

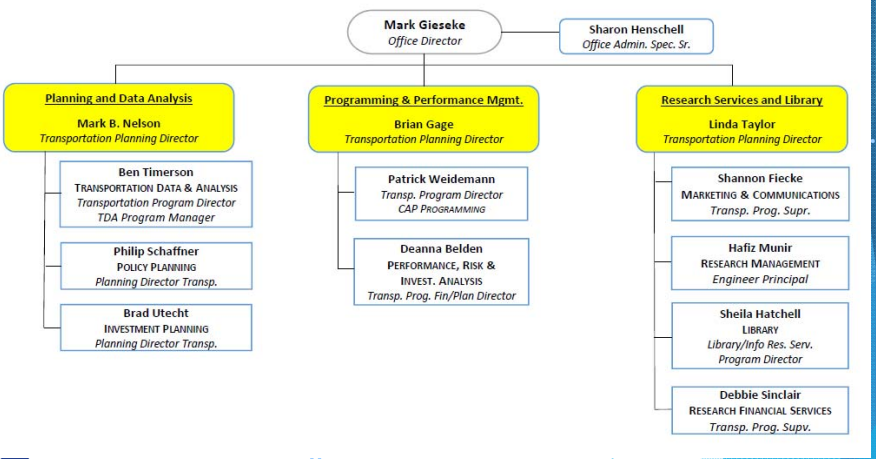
- Program Overview
  - Research Funding
  - Contracting Mechanisms
  - Staffing
- Research Database
- Implementation
- Benefit Quantification
- Technology Transfer

Organizational Structure



May 25, 2017

Organizational Structure cont.



Research Services & Library

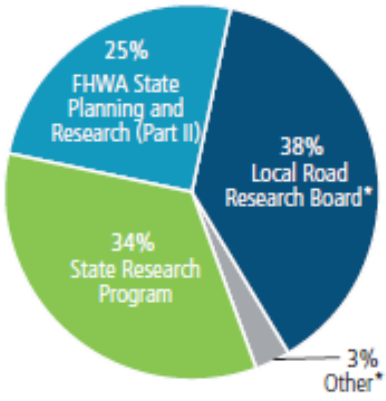
Research Management
4 Project Advisors – Senior Engineers
4 Project Coordinators

Finance & Contracting
Contract Specialist Senior
2 Contract Specialists
SP & R Coordinator

Marketing & Communications
Information Officer
Publication Coordinator
Office & Administrative Support

Transportation Library
4 Librarians
Library Technician
PT Contract Librarian

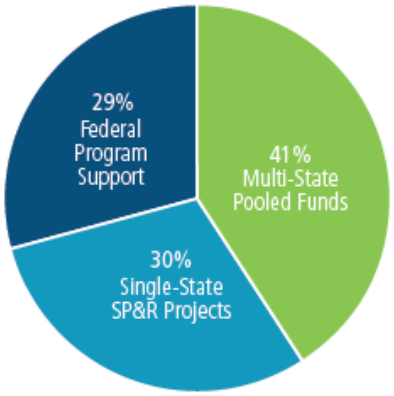
FY16 Research Funds Source



State Research Program	$ 4,396,001
FHWA State Planning and Research (Part II)	$ 3,237,249
Local Road Research Board*	$ 4,904,258
Other**	$ 425,429
Total	$ 12,962,937

*Includes $1,410,045 carried over from FY2015.
**Funding from MnDOT and other states or agencies.

FY16 SP & R Part II Funding

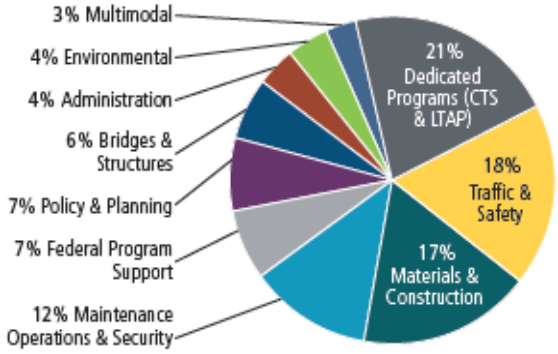


Multi-State Pooled Funds	$	1,322,703
a: Participation in Pooled Funds Led by Other States	$	1,037,703
b: MnDOT-Led Pooled Funds	$	285,000
Single-State SP&R Projects	$	973,558
Federal Program Support	$	940,988
a: NCHRP	$	805,987
b: TRB	$	128,001
c: AASHTO	$	7,000
Total	$	3,237,249

*Excludes 2016 commitments that were paid in advance with FY2015 funds.

- Leverage Research Funds
- Support Federal Program
- Invest heavily in Pooled Fund Program

MnDOT's Research by Topic Area



Total: $10,061,997

- *Invest research dollars in your DOT's core business areas*
- *Help research address legislative and environmental changes*
- *Invest in quick, short term, low cost research*

MnDOT Pooled Fund Projects

- **National Road Research Alliance (NRRA)**
- **Clear Roads**
- Regional Roadside Turf Grass Performance Testing Program
- Enhancements to Intelligent Construction Data Management System (VETA)
- Mileage-Based Use Fee (MBUF)
- National Accessibility Evaluation
- **North West Passage**
- National Center for Asphalt Technology (NCAT)
- Maintenance Decision Support System (MDSS)
- The Influence of Vehicular Live Loads on Bridge Performance
- Traffic Impacts on Bike Facilities

MnDOT participates in 31 pooled fund projects & leads 7

Funding Authority

Who Decides on Funding?

- Transportation Research Innovation Group (TRIG)
  District Engineers and Office Directors
- Minnesota Local Road Research Board (LRRB)
  City and County Representatives
- Research Director has discretionary authority

Funding Guidance

- Guidelines for New Research Projects
- Funding Amendment Request Authority

Contracting Mechanism
Universities Master Agreements

- University of Minnesota
- Texas AM University
- Montana State University
- North Dakota State University
- Michigan Technological University
- Iowa State University
- University of New Hampshire
- Pittsburgh University
- University of Wisconsin
- Minnesota State Colleges and Universities (MnSCU)

Five Year Agreements
Quicker contracting process
Billing based on tasks deliverables

Transportation Research Assistance Program (TRAP)

- Research Technical Writing and Editing
- Research Marketing and Technology Transfer
- Research Digital and Multimedia Production
- Research Event Coordination
- Research Program Support
- Outreach and Research Data Information Analysis
- Library Services Support

Pre-certified consultant list
Work Plan < $100,000

Program Levels Initiatives

- Strategic Planning
  - Research Risk Analysis
  - Marketing & Communication Plan
  - Department Research Strategic Plan
  - Library Strategic Plan
- What's Next?
  - Workload Assessment Study (in progress)
    - Identify Staffing Levels & Skills
    - Determine Workload Assessment Model

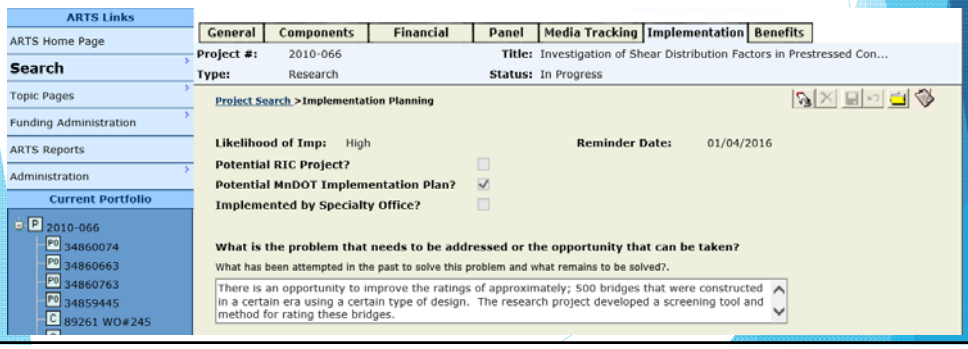
Distributed Staff Funding Across Programs

State & National Research Activities

- Responsibilities Covered
  - SP & R Part II Program
    - NCHRP Ballot
    - Pooled Fund Program
  - TRB and AASHTO Representative
    - TRB **Annual Visit**
    - Participate on AASHTO-RAC Taskforces
    - Peer Exchange
    - Distribute AASHTO RAC Surveys
    - Distribute Webinar Announcements & News Reports
  - LRRB Program
- Activities Not Covered
  - SP & R Part I Program Coordination
  - Every Day Count Initiatives
  - Submit Grant Applications
    - Advanced Transportation And Congestion Management Technologies Deployment Program
    - Every Day Count Program
  - State Transportation Innovation Councils (STIC)

Research Database & Tools

- Financial Information
- Contracting Information
- Technical Advisory Panel
- Media Tracking
- Implementation Status
- Performance Measures
- Pooled Fund Projects

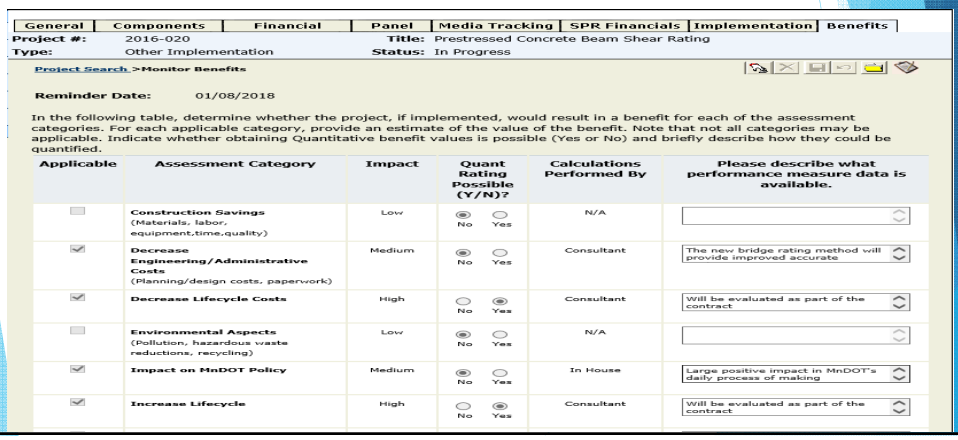


Research Database & Tools

- Customized User Interface
- Auto Notices for Tasks
- Distribution Lists
- Extensive Report Capabilities
- On-line Help
- Clients/Contractors/Vendors
- Project Folders

Project Benefits

- Identified in Research Proposals
- Task Added to Work Plan
- Tracked in ARTS Database
- Use in Marketing Efforts
- Future-Annually Research Investments Report



General | Components | Financial | Panel | Media Tracking | SPR Financials | Implementation | Benefits

Project #: 2016-020 **Title:** Prestressed Concrete Beam Shear Rating
Type: Other Implementation **Status:** In Progress

Project Search >Monitor Benefits

Reminder Date: 01/08/2018

In the following table, determine whether the project, if implemented, would result in a benefit for each of the assessment categories. For each applicable category, provide an estimate of the value of the benefit. Note that not all categories may be applicable. Indicate whether obtaining Quantitative benefit values is possible (Yes or No) and briefly describe how they could be quantified.

Applicable	Assessment Category	Impact	Quant Rating Possible (Y/N)?	Calculations Performed By	Please describe what performance measure data is available.
☐	**Construction Savings** (Materials, labor, equipment,time,quality)	Low	◉ No ○ Yes	N/A	
☑	**Decrease Engineering/Administrative Costs** (Planning/design costs, paperwork)	Medium	◉ No ○ Yes	Consultant	The new bridge rating method will provide improved accurate
☑	**Decrease Lifecycle Costs**	High	○ No ◉ Yes	Consultant	Will be evaluated as part of the contract
☐	**Environmental Aspects** (Pollution, hazardous waste reductions, recycling)	Low	◉ No ○ Yes	N/A	
☑	**Impact on MnDOT Policy**	Medium	◉ No ○ Yes	In House	Large positive impact in MnDOT's daily process of making
☑	**Increase Lifecycle**	High	○ No ◉ Yes	Consultant	Will be evaluated as part of the contract

Annual Research Solicitation Process

Solicit for Need Statement

- Needs statements entered in IdeaScale or identified through LRRB Focus Groups
- Conduct Literature Review
- Governing Boards prioritize & select NS for RFP

Research RFP posted

- Universities develop research proposals
- Multiple proposal review
- Governing boards review & select proposals for presentation

Proposal Selection

- Governing boards hear proposal and approve funding
- Suggest changes to work plan and identify TAP members

Finalize Work Plan

Successful Implementation Factors

- Dedicated Funding
- Address a Problem or Need
- Has a Research Connection
- Demonstrate Application
- Scaled Appropriately
- Department Priority
- Identify Internal Champion
- District and/or Specialty Office Support
- Technology Transfer

Implementation Ideas Sources

- Specialty Offices or Project Champions
- Research Proposals
- Research Project Updates
- Project Close-Out/Evaluation
- Out of State Trip Reports

Implementation Projects

- Maintenance
  - **GPS Mower Pilot Project**
  - Living Snow Fence using Willow Shrubs
  - Lidar Guardrail Inventory
- Bridge
  - 3D Underwater Laser Scanner Equipment
  - Bridge Maintenance Painting & Test Site Implementation
  - **UAV/Drones for Bridge Inspection**
- Materials
  - **Disc-Shaped Compact Tension Test for Asphalt Pavements**
  - Design Guide for Ultra-thin and thin concrete overlays
- Traffic
  - **Sinusoidal Rumble Strip Design**
  - Smart Signal System Implementation
  - Automatic Flagger Assistance Devices (AFADs)

GPS Mower Pilot Project

Reduces Paperwork, Spread of Noxious Weeds

Demonstration Project (underway)

- More than 40 tractors equipped with Automated Vehicle Location System
- Tracks mower activity
- In-cab touchscreen map shows location of noxious weeds (previously tracked using paper maps)
- Automated Reporting System

Benefits

- Reduces paperwork since crews can automatically track their progress
- Easier to avoid weeds
- Reduces spread of noxious weeds
- Potential to reduce herbicide use by 50 percent ($100,000+ per year savings)
- Can use AVL monitor to mark location of guardrail hits, potholes, washed-out culverts and debris

Video available at YouTube.com/MnDOTResearch

Drones for Bridge Inspection

Safer, Faster, More Details

Demonstration Project (2015)

- Reduced inspection time from 8 to 5 days
- 66% equipment cost savings
- High-quality infrared, 3D imagery
- Switched to specialized, Sensefly eXom (right) inspection drone

Next Steps (under way)

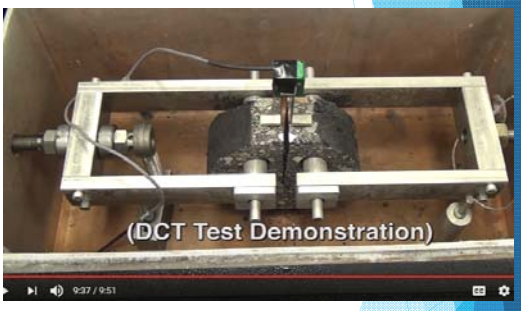
- Investigate use for confined space inspection and emergency response to bridge hits
- Develop best practices guidebook
- Implement a statewide fleet contract (leasing or buying) to inspect bridges on four-year cycle

More Online:
bit.ly/MnDOTDrones

Disc-Shaped Compact Tension Test for Asphalt Pavements

Predicts Cracking Potential of Asphalt Mixes

- Multi-state effort
- 10 years of research
- Pilot test performed on 5 asphalt construction projects; three mixes adjusted because didn't meet fracture energy requirement
- MnDOT currently developing guidelines and specs for adding testing requirement to construction contracts



Video demonstration of DCT Test at YouTube.com/MnDOTResearch

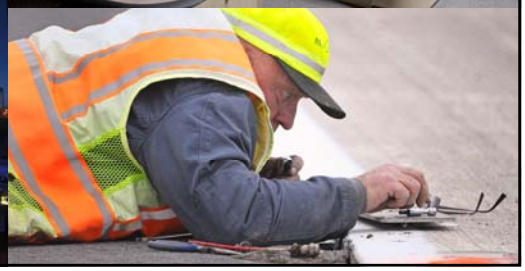
Sinusoidal 'Mumble' Rumble Strips

European-Style Design Less Intrusive

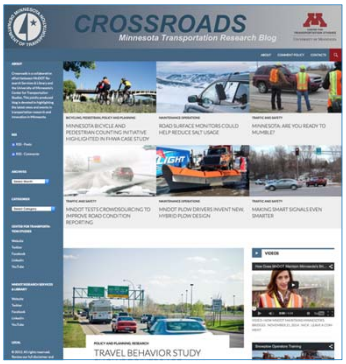
- Sine-wave-shaped rumble strip greatly reduces exterior noise while sufficiently warning drivers
- 7 different designs tested at MnROAD track and 4 designs in field; bike/motorcycle impact evaluated
- Being installed with some road construction projects, even though design specs not final
- MnDOT debating between a single- (motorcyclist-preferred) or split- (material engineer preferred) rumble design
- Decision TBD on whether to install only in noise-sensitive areas or on all centerlines and edge lines
- Revised Technical Memorandum expected to be published later this year

Noise differential video: YouTube.com/MnDOTResearch

Innovation saves money

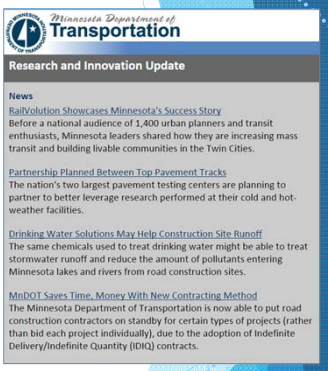


The Research "News Bureau"



Blog

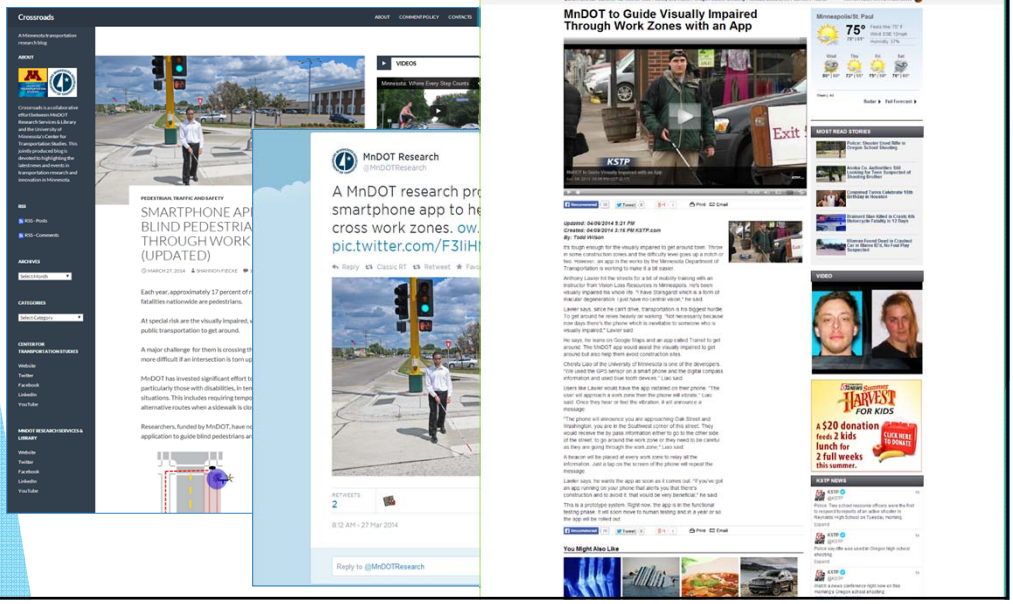
Newsletter



Email

Social Media

Effective Marketing



New Videos

AFADs

FYA Tool & Video

- AFADs: Automatic Flagger Assistance Devices
- Roundabout Myths
- Rumble Strips: Saving Lives in Minnesota
- Flashing Yellow Arrows Time-of-Day Tool
- Rumble Strips: Noise Difference from Traditional vs. Sinusoidal Designs

YouTube.com/MnDOTResearch

Core Marketing Materials

- Research Reports (full length)
- Technical Summaries (two pages)
- Transportation Research Syntheses (TRS)
- RS AT-A-Glance Annual Report
- Accelerator Newsletter

On the web: *mndot.gov/research*

Marketing Best Practices

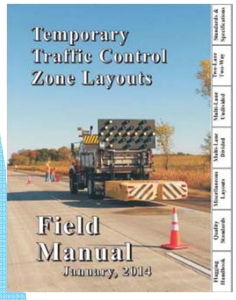
- **Newsletters**
  - Keep information timely => use short info graphics that tell a story
  - Correlate stories with seasons and agency core services
- **Social Media/Blogs**
  - This is the new norm
  - Push out new and completed projects
  - Attract national publications, TRB News and media to pickup stories
  - Be prepared with videos, photographs, and contact names

Marketing Best Practices cont.

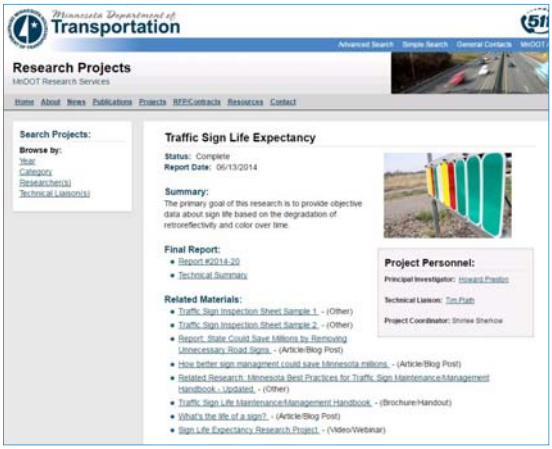
- **YouTube Videos**
  - Visually more interesting, make sure to include field personal
- **Outreach Activities**
  - Reduce costs, go electronic
  - Conferences/Booths: Include interactive & innovative demonstrations
- **Research Website**
  - Keep materials and information current
  - Project pages
- **Contract Out work**

Technology Transfer Products

- Best Practices for Traffic Sign Maintenance/Management Handbook
- Culvert Repair Best Practices
- Best Practices for Pedestrian Bike Safety
- Flashing Yellow Arrow Decision Tool
- How to build a multilane roundabout
- Guide for rural intersection safety technologies
- Guidelines for choosing work zone layout for low volume roads



PROJECT PAGES



"Projects" at mndot.gov/research

Each page features:

- Description
- Report
- Tech Summary
- PI, TL, PC Info
- Related Materials (Videos, Articles, Software, etc.)

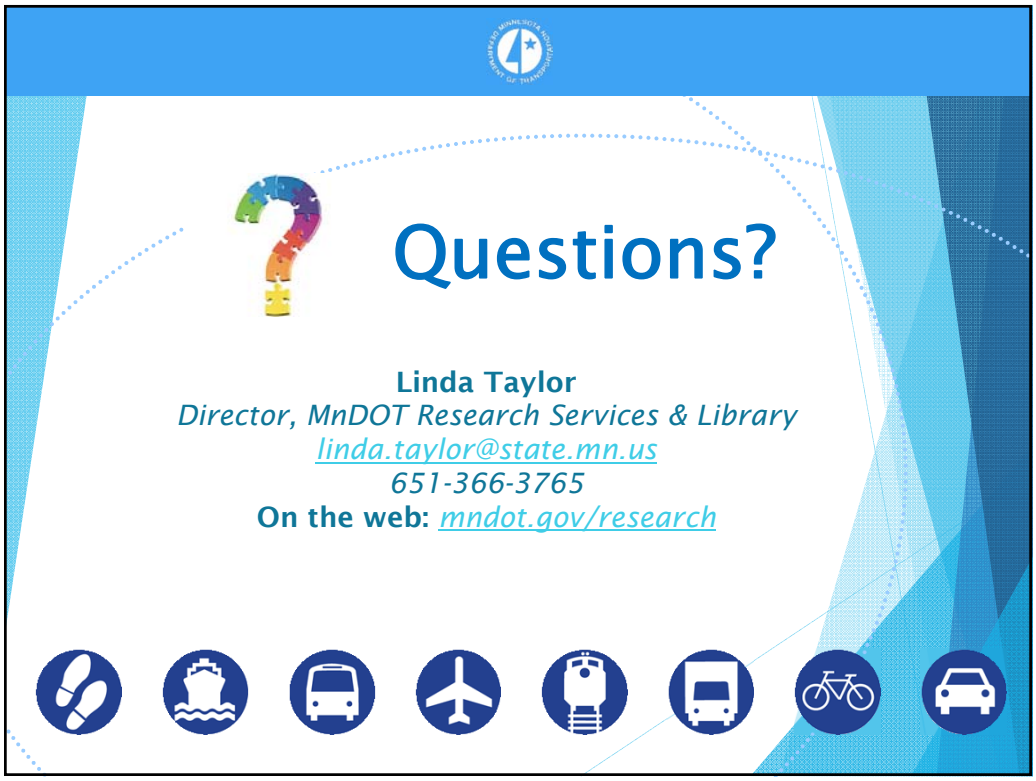
(Demo)

What are areas of your program that work very well?

- Contracting process
  - University Master Agreements
  - Professional/Technical Contract using the TRAP
- Project Management
  - Work plan with deliverables by task
  - PC and PI Training
- Marketing & Communications
  - Blogging for new and completed projects
  - Project YouTube Videos
  - Research Newsletters- Accelerator
- Research Database – ARTS

What are areas in your program that need improvement?

- Quantifying Benefits
- Tracking Final Results
- Retention & Recruiting of Staff
- Key Project Staff Leave (Champion or PI)
- Lack of Buy-in
- Long Term Funding for Full Deployment


Questions?
Linda Taylor
Director, MnDOT Research Services & Library
linda.taylor@state.mn.us
651-366-3765
On the web: mndot.gov/research

U.S. Department of Transportation
Federal Highway Administration

State of New Jersey
Department of Transportation
Chris Christie, Governor | Kim Guadagno, Lieutenant Governor

University Workshop
Implementing 2 CFR 200
& other
Process Updates
September 15th, 2016

Calvin Edghill
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Camille Crichton-Sumners
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New Jersey Department of Transportation
Trenton, New Jersey
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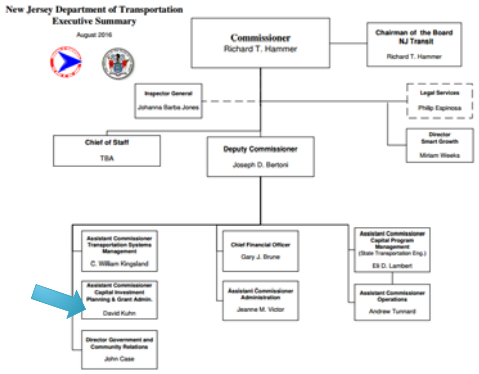
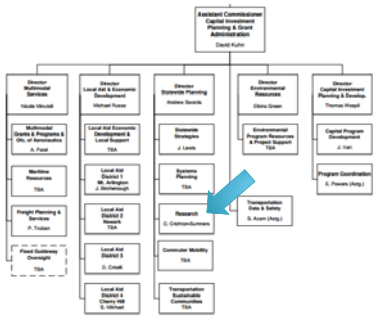
About Research



About Research



About Research

Research Project Managers and Emphasis

- Amanda Gendek, Environmental
- Kimbrali Davis, Materials
- Stefanie Potapa, Energy, Infrastructure
- Priscilla Ukpah, Structures
- Pragna Shah, Mechanical
- Giri Venkiteela, Pavement, Concrete,
- Mamun Rashid, Structures, Contracts
- Tineen Howard, Planning

About Research

Staff and Emphasis

- Administration
  - Stephanie Nock
- Contracts
  - Sue Rizzo
- Research Library
  - Carol Paszamant
  - Laurie Strow

About Research

Customers

- NJDOT
- NJ Transit
- Motor Vehicle Commission
- Others
  - Law and Public Safety
  - State Police
  - State Legislature

About Research

Funding

- Apportionment
  - SPR federal funds
- State Funds

Research Governance

- New Jersey State Laws & Statutes
  - New Jersey Statutes Annotated
    - Title 52 State Government, Departments & Officers
    - Title 40 Procurement
  - New Jersey Administrative Code
    - Title 16 Transportation
  - Executive Orders

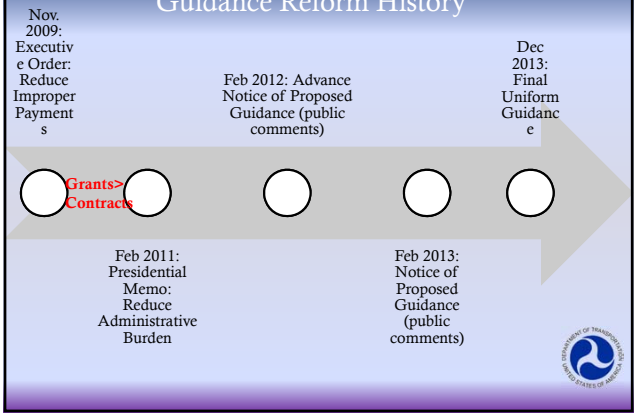
Research Governance

- Federal Program Requirements
  - FAST Act
  - 23 CFR 420
  - 23 USC 505
  - Contract Authority with Organizations only (not individuals)
- Cost Principles & Administrative Requirements
  - 2 CFR 200
  - 49 CFR 18 &19

Agenda

- 2 CFR 200 Implementation
- Pre-Award
- Award
- Post-Award Monitoring & Internal Controls
- Implementation, Evaluation & Closeout

Guidance Reform History



Guidance Reform History

December 2013: Uniform Guidance Published

January-April 2014: Training Webcasts, Publish 2014 Single Audit Compliance Supplement

June 2014: Agencies Submit Draft Rules to OMB, Continued Outreach on Implementation

Fall 2014: Metrics, Additional FAQs and Webcast

December 2014: Final Guidance Effective, Baseline Metrics Collected, Case Studies of Best Practices Published

FAMILY OF COMMON RULES

OMB Circulars and Title 2 CFR

If you are a: Then follow these Circulars: *Note: if you are a pass-through entity you are required to possess functional knowledge of the circular applicable to your subrecipient*	State, Local and Indian Tribal Governments	Institutions of Higher Education, Hospitals, and other Nonprofit Organizations	For Profit Organizations
Uniform Administrative Requirements	**A-102**; Common Rule 2 CFR 200.300	**2CFR Part 215** (formerly OMB Circular A-110) 2 CFR 200.200	**FAR 31.2**
Cost Principles	**2CFR Part 225** (formerly OMB Circular A-87) 2 CFR 200.400	**Higher Ed**: **2CFR Part 220** (formerly OMB Circular A-21) **Nonprofits**: **2CFR Part 230** (formerly OMB Circular A-122) **Hospitals** (*research & other activities*): **45CFR 74, Appendix E** **Hospitals** (Medicare): **Title XVIII of the Social Security Act** 2 CFR 200.400	**48CFR 31.2**
Audit Requirements	**A-133** 2 CFR 200.500	**A-133** 2 CFR 200.500	**FAR 31.2**

2 CFR 200 - Omni ("Super")Circular OBJECTIVE

The document streamlines the language from **eight OMB circulars** to one consolidated set of guidance. The following have been combined in this document:

- **A-21**, Cost Principles for Educational Institutions
- **A-87**, Cost Principles for State, Local and Indian Tribal Governments
- **A-89**, Federal Domestic Assistance Program Information
- **A-102**, Awards and Cooperative Agreements with State and Local Governments
- **A-110**, Uniform Administrative Requirements for Awards and Other Agreements with Institutions of Higher Education, Hospitals and other Non-Profit Organizations
- **A-122,** Cost Principles for Non-Profit Organizations
- **A-133**, Audits of States, Local Governments and Non-Profit Organizations
- **A-50**, Audit Follow-Up, (as related to Single Audits)

Uniform Guidance

2 CFR 200 Omni-Circular purpose:

- **Increase Efficiency**
- **Drive performance (and or outcomes) by establishing a reduced or streamlined regulatory process or system for federal aid,**
- **To reduce improper payments.**

2 CFR 200 -Basic Layout

- 6 Subparts A through F
  - Subpart A, 200.XX – Acronyms & Definitions
  - Subpart B, 200.1XX – General
  - Subpart C, 200.2XX – Pre Award - *Federal*
  - Subpart D, 200.3XX – Post Award – *Recipients*
  - Subpart E, 200.4XX – Cost Principles
  - Subpart F, 200.5XX – Audit
- 11 Appendices - I through XI

Deviations

- 23 USC 150 use of Program Performance Management Measures
- Use of OMB Financial and Performance report forms waiver for FHWA funded work
- Performance measurement as per MAP 21 & FAST Act

Inconsistency Between Program Statute & Circular

- If federal program statute or regulation differs from Omni Circular, then statute/regulation governs.
  - 23 CFR
  - FAST Act

UG Top 10

- **Effective date (200.110)**
- **Conflict of interest (200.112)**
- **Procurement (200.317 – 200.326)**
- **Internal Controls (200.303) 46X**
- **Indirect F&A (facilities and administrative) costs (200.414)**
- **Indirect F&A cost recovery for sub recipients (200.331 and 200.414)**
- **Sub recipient monitoring (200.331)**
- **Compensation – personal services (200.430)**
- **Required certifications (200.415)**
- **Audit considerations – Subchapter F**

	Pre-award	Award	Monitor	Implement	Close
Risk assessment	✔	✔	✔		✔
Procurement	✔				
Performance period		✔			✔
Monitoring			✔		
Reporting			✔		
Relate financial data to performance accomplishments			✔	✔	✔
Extensions of time			✔		
OMB notification of termination for cause and debarment			✔		

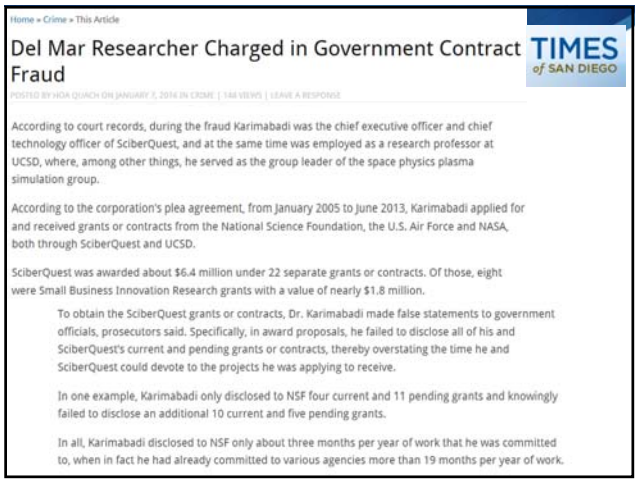
Agenda

- 2 CFR 200 Implementation
- **Pre-Award**
- Award
- Post-Award Monitoring & Internal Controls
- Implementation, Evaluation & Closeout

Pre-Award

- Risk Assessment §200.205
  - **Research Risk assessment** process
- Research Needs Solicitation ***+MPO's***
- RFP process ***2 step blind review***
- DBE Goals **NJDOT average**
- Proposal submission ***web based***
- Debriefing

RISK ASSESSMENT



Home » Crime » This Article

Del Mar Researcher Charged in Government Contract Fraud

TIMES of SAN DIEGO

According to court records, during the fraud Karimabadi was the chief executive officer and chief technology officer of SciberQuest, and at the same time was employed as a research professor at UCSD, where, among other things, he served as the group leader of the space physics plasma simulation group.

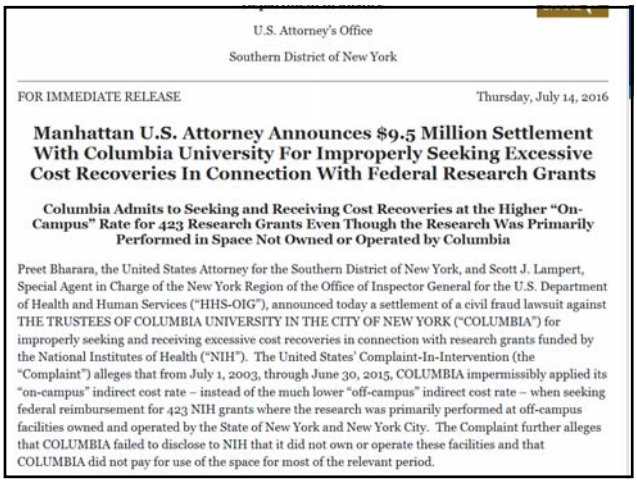
According to the corporation's plea agreement, from January 2005 to June 2013, Karimabadi applied for and received grants or contracts from the National Science Foundation, the U.S. Air Force and NASA, both through SciberQuest and UCSD.

SciberQuest was awarded about $6.4 million under 22 separate grants or contracts. Of those, eight were Small Business Innovation Research grants with a value of nearly $1.8 million.

To obtain the SciberQuest grants or contracts, Dr. Karimabadi made false statements to government officials, prosecutors said. Specifically, in award proposals, he failed to disclose all of his and SciberQuest's current and pending grants or contracts, thereby overstating the time he and SciberQuest could devote to the projects he was applying to receive.

In one example, Karimabadi only disclosed to NSF four current and 11 pending grants and knowingly failed to disclose an additional 10 current and five pending grants.

In all, Karimabadi disclosed to NSF only about three months per year of work that he was committed to, when in fact he had already committed to various agencies more than 19 months per year of work.



U.S. Attorney's Office

Southern District of New York

FOR IMMEDIATE RELEASE — Thursday, July 14, 2016

Manhattan U.S. Attorney Announces $9.5 Million Settlement With Columbia University For Improperly Seeking Excessive Cost Recoveries In Connection With Federal Research Grants

Columbia Admits to Seeking and Receiving Cost Recoveries at the Higher "On-Campus" Rate for 423 Research Grants Even Though the Research Was Primarily Performed in Space Not Owned or Operated by Columbia

Preet Bharara, the United States Attorney for the Southern District of New York, and Scott J. Lampert, Special Agent in Charge of the New York Region of the Office of Inspector General for the U.S. Department of Health and Human Services ("HHS-OIG"), announced today a settlement of a civil fraud lawsuit against THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK ("COLUMBIA") for improperly seeking and receiving excessive cost recoveries in connection with research grants funded by the National Institutes of Health ("NIH"). The United States' Complaint-In-Intervention (the "Complaint") alleges that from July 1, 2003, through June 30, 2015, COLUMBIA impermissibly applied its "on-campus" indirect cost rate – instead of the much lower "off-campus" indirect cost rate – when seeking federal reimbursement for 423 NIH grants where the research was primarily performed at off-campus facilities owned and operated by the State of New York and New York City. The Complaint further alleges that COLUMBIA failed to disclose to NIH that it did not own or operate these facilities and that COLUMBIA did not pay for use of the space for most of the relevant period.

U.S. Attorneys » District of Massachusetts » News

SHARE

Department of Justice

U.S. Attorney's Office

District of Massachusetts

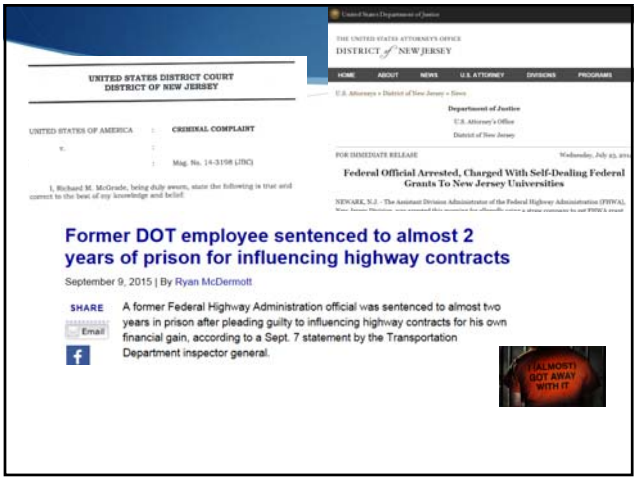
FOR IMMEDIATE RELEASE — Tuesday, August 18, 2015

Northeastern University to Pay $2.7 Million for Failing to Account for Federal Research Funds

BOSTON – The United States reached a settlement today with Northeastern University resolving allegations that, over a period of nine years, Northeastern failed to properly account for federal research funds that it received from the National Science Foundation (NSF). NSF awarded the funds to support high-energy particle physics research under the direction of Stephen Reucroft, formerly a Northeastern physics professor, at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland.

According to the settlement agreement, Northeastern University agreed to pay $2.7 million and to submit to a five-year compliance agreement to ensure that proper oversight and safeguards are in place for future research awards.

"Universities that receive federal research funds have a duty to ensure that their researchers use those funds only for their intended purposes," said United States Attorney Carmen M. Ortiz. "In this matter, Northeastern failed to adequately safeguard National Science Foundation grant money that had been awarded for the sole purpose of supporting important scientific research."



UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

UNITED STATES OF AMERICA : CRIMINAL COMPLAINT

v. :

: Mag. No. 14-3198 (JBC)

I, Richard M. McGrade, being duly sworn, state the following is true and correct to the best of my knowledge and belief:

DISTRICT of NEW JERSEY

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U.S. Attorneys » District of New Jersey » News

Department of Justice

U.S. Attorney's Office

District of New Jersey

FOR IMMEDIATE RELEASE

Federal Official Arrested, Charged With Self-Dealing Federal Grants To New Jersey Universities

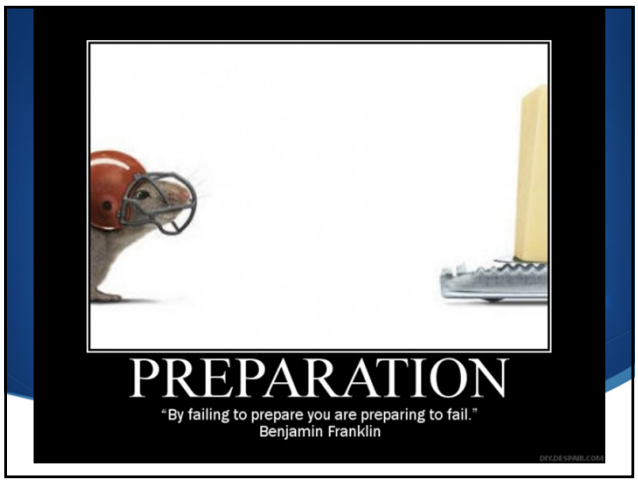
NEWARK, N.J. – The Assistant Division Administrator of the Federal Highway Administration (FHWA),

Former DOT employee sentenced to almost 2 years of prison for influencing highway contracts

September 9, 2015 | By Ryan McDermott

SHARE Email

A former Federal Highway Administration official was sentenced to almost two years in prison after pleading guilty to influencing highway contracts for his own financial gain, according to a Sept. 7 statement by the Transportation Department inspector general.



BE PREPARED

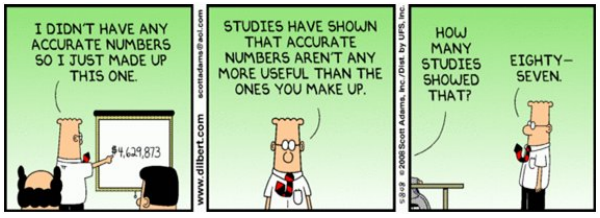
- Know the federal and state laws
- Disclose all research commitments
- Create and distribute written policies
- Adequate documentation
- Address latent conditions

LATENT CONDITIONS

- Diminished resources
- Attrition
- Roles & Responsibility not delineated
- Conflicts of interest
- Misinterpretation of the law, systems, Policies, Procedures
- Management Decisions

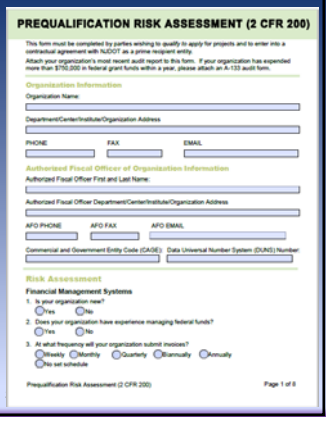
RISK ASSESSMENT PROCESS

- **Pre-Award -- Assess capabilities of the organization: INTERNAL CONTROLS, Staffing (persons listed), Expressed Work, and History--If past experience with entity, factor in the history and the entities 'risk' based upon your knowledge**



RISK ASSESSMENT PROCESS
2 CFR 200

RISK PRE-QUALIFICATION FORM



PREQUALIFICATION RISK ASSESSMENT (2 CFR 200)

This form must be completed by parties wishing to qualify to apply for projects and to enter into a contractual agreement with NJDOT as a prime recipient entity.
Attach your organization's most recent audit report to this form. If your organization has expended more than $750,000 in federal grant funds within a year, please attach an A-133 audit form.

Organization Information

Organization Name:

Department/Center/Institute/Organization Address

PHONE FAX EMAIL

Authorized Fiscal Officer of Organization Information

Authorized Fiscal Officer First and Last Name:

Authorized Fiscal Officer Department/Center/Institute/Organization Address

AFO PHONE AFO FAX AFO EMAIL

Commercial and Government Entity Code (CAGE): Data Universal Number System (DUNS) Number:

Risk Assessment

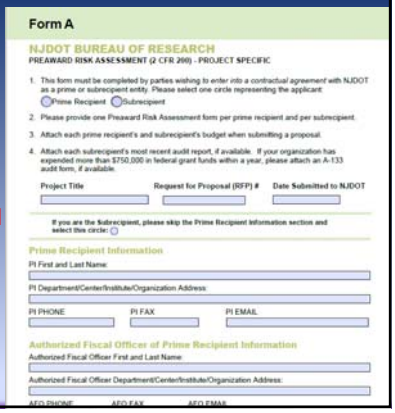
Financial Management Systems

1. Is your organization new?
   Yes No
2. Does your organization have experience managing federal funds?
   Yes No
3. At what frequency will your organization submit invoices?
   Weekly Monthly Quarterly Biannually Annually
   No set schedule

Prequalification Risk Assessment (2 CFR 200) Page 1 of 8

RISK ASSESSMENT PROCESS
2 CFR 200

PRE-AWARD FORM



Form A

NJDOT BUREAU OF RESEARCH

PREAWARD RISK ASSESSMENT (2 CFR 200) - PROJECT SPECIFIC

1. This form must be completed by parties wishing to enter into a contractual agreement with NJDOT as a prime or subrecipient entity. Please select one circle representing the applicant:
   Prime Recipient Subrecipient
2. Please provide one Preaward Risk Assessment form per prime recipient and per subrecipient.
3. Attach each prime recipient's and subrecipient's budget when submitting a proposal.
4. Attach each subrecipient's most recent audit report, if available. If your organization has expended more than $750,000 in federal grant funds within a year, please attach an A-133 audit form, if available.

Project Title Request for Proposal (RFP) # Date Submitted to NJDOT

If you are the Subrecipient, please skip the Prime Recipient Information section and select this circle:

Prime Recipient Information

PI First and Last Name:

PI Department/Center/Institute/Organization Address:

PI PHONE PI FAX PI EMAIL

Authorized Fiscal Officer of Prime Recipient Information

Authorized Fiscal Officer First and Last Name:

Authorized Fiscal Officer Department/Center/Institute/Organization Address:

AFO PHONE AFO FAX AFO EMAIL

Pre Qualification Risk Form

Item	weight	Responses	Score	Tabulation
1	2	no	0	0
2	2	yes	4	8
3	3	quarterly	0	0
4	1	yes	0	0
5	1	yes	0	0
6	1	yes	4	4
7	1	yes	4	4
8	2	Off the self program/other	1	2
9	3	yes	0	0
10	4	yes	0	0
11	1	yes	0	0
12	3	yes	0	0
13	1	yes	0	0
14	3	yes	0	0
15	3	yes	0	0
16	2	no	4	8
17	1	yes	0	0
18	3	no	4	12
19	3	yes	0	0
20	2	yes	0	0
50	1	yes	0	0
51	2	yes	0	0
52	0	no	4	0
53	1	no	4	4
54	4	no	4	16
55	3	no	4	12
56	3	yes	0	0
				156

Pre-Qual Pre award Post award Close -Out

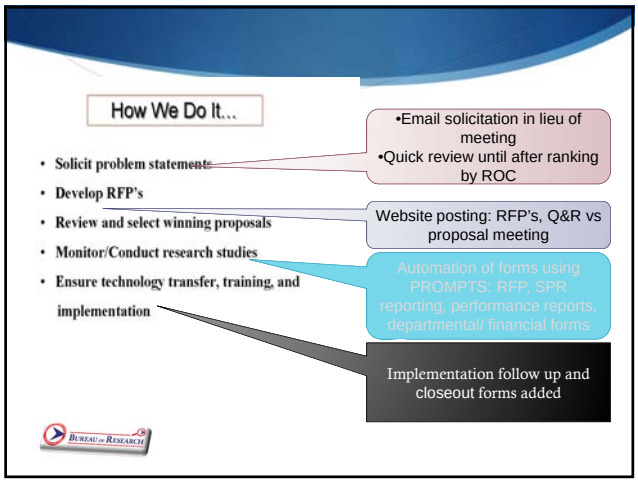
Pre award Risk Form A

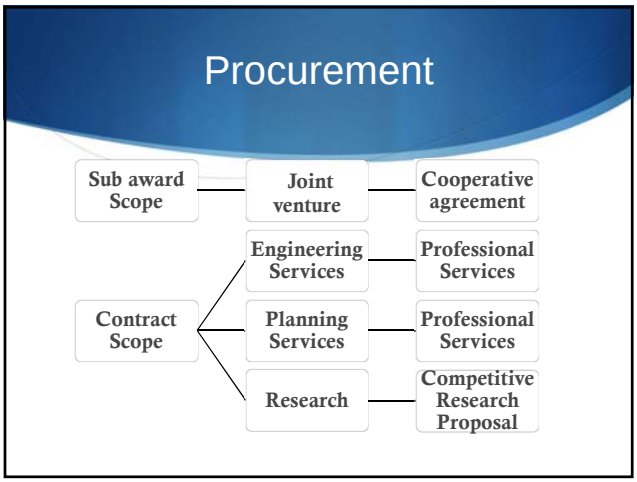
Item	weight	Responses	Score	Tabulation
1	n/a			
2	1	no	0	0
3	2	yes	0	0
4	3	yes	0	0
5	3	quarterly	0	0
6	3	yes	0	0
7	2	All	0	0
8	1	5	0	0
9	2	75% staffed	2	4
10	3	Insufficient but have a plan	2	6
11	3	licensed	0	0
12	2	capable	0	0
13	3	yes	0	0
14	2	yes	0	0
15	2	yes	0	0
				10

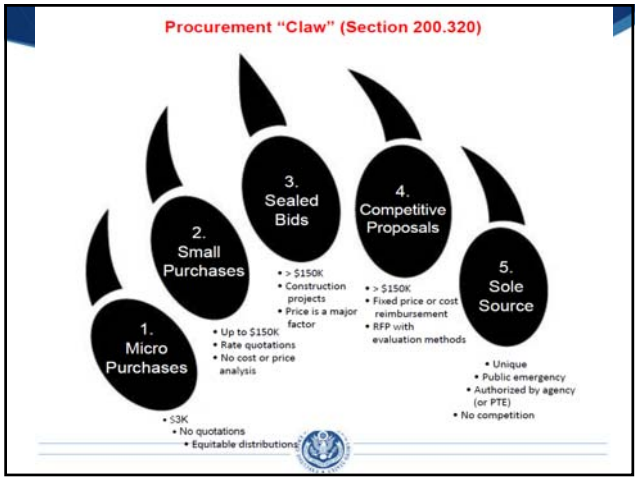
Pre-Qual Pre award Post award Close -Out

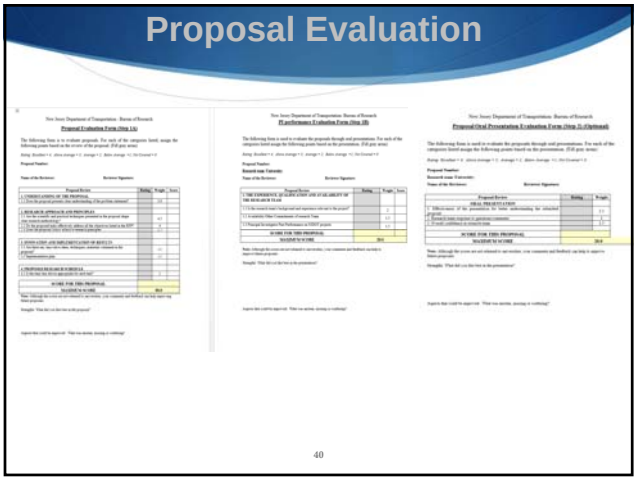
RISK ASSESSMENT PROCESS
2 CFR 200

36


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
•Quick review until after ranking by ROC
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
Bureau of Research


Procurement
Sub award Scope
Joint venture
Cooperative agreement
Contract Scope
Engineering Services
Professional Services
Planning Services
Professional Services
Research
Competitive Research Proposal


Procurement "Claw" (Section 200.320)
1. Micro Purchases
• $3K
• No quotations
• Equitable distributions
2. Small Purchases
• Up to $150K
• Rate quotations
• No cost or price analysis
3. Sealed Bids
• > $150K
• Construction projects
• Price is a major factor
4. Competitive Proposals
• > $150K
• Fixed price or cost reimbursement
• RFP with evaluation methods
5. Sole Source
• Unique
• Public emergency
• Authorized by agency (or PTE)
• No competition


Proposal Evaluation
40

Agenda

- 2 CFR 200 Implementation
- Pre-Award
- **Award Process**
- Post-Award Monitoring & Internal Controls
- Implementation, Evaluation & Closeout

Legal Instruments

- Basic Agreement
- Consultant Contract
- Cooperative Agreement
- Grant Agreement
- Memorandum of Understanding
- Memorandum of Agreement
- Treasury Contract
- Term Agreement

CONTRACT vs GRANT

CONTRACTS	GRANTS
• A binding agreement between a buyer and a seller to provide goods or services in return for consideration (usually monetary).	• A flexible instrument designed to provide money to support a public purpose.
• Governed by Federal Acquisition Regulations	• Governed by the terms of the grant agreement
• Relatively inflexible as to scope of work, budget, and other changes	• Flexible as to scope of work, budget, and other changes
• Significant emphasis placed on delivery of results, product, or performance	• Diligent efforts are used in completing research and the delivery of results
• Payment based on deliverables and milestones	• Payment awarded in annual lump sum
• Frequent reporting requirements	• Annual reporting requirements
• High level of responsibility to the sponsor for the conduct of the project and production of results	• Principal Investigator has more freedom to adapt the project and less responsibility to produce results

SF-424A

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		$	$	$	$	$ 0
2.						0
3.						0
4.						0
5. Totals		$ 0	$ 0	$ 0	$ 0	$ 0

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
a. Personnel	$	$	$	$	$ 0
b. Fringe Benefits					0
c. Travel					0
d. Equipment					0
e. Supplies					0
f. Contractual					0
g. Construction					0
h. Other					0
i. Total Direct Charges *(sum of 6a-6h)*	0	0	0	0	0
j. Indirect Charges					0
k. TOTALS *(sum of 6i and 6j)*	$ 0	$ 0	$ 0	$ 0	$ 0
7. Program Income	$	$	$	$	$

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Standard Form 424A (Rev. 7-97)
Prescribed by OMB Circular A-102

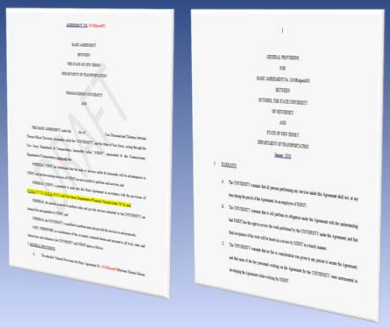
Cooperative Agreements

NJDOT intends to transfer a thing of value to the [recipient] to carry out a public purpose of support or stimulation authorized by 31 USC 6101(3) instead of acquiring ... property or services."

The COOPERATIVE AGREEMENT instrument has been selected because:

- ✓ This task will enable the procured entity/persons to provide support or stimulates a public purpose.
- ✓ [redacted] this program or task
- ✓ This task will not be used to acquire (by purchase, lease, or barter) property or services for the direct benefit or use" of the government.
- ✓ This task is not intended for a Research and Development tasks as defined in 15 USC 3710a
- ✓ This is not an agreement that provides US Government direct cash assistance to an individual; a subsidy; a loan; loan guarantee or insurance.

BASIC AGREEMENT & GENERAL PROVISIONS



CONTRACT EXECUTION & NOTICE TO PROCEED

Contract

- Provides authority to spend funds
- Basis for payment

- **•Legal Instrument**
- **•Approved Scope of Work**
- **•Negotiated Budget**
- **•Task Order- AD-12**

EXECUTED WHEN SIGNED BY THE ASSISTANT COMISSIONER

CRITICAL ELEMENTS OF A FEDERAL NON-CONSTRUCTION GRANT AWARD

- Scope of Work
  - Background/Objectives
  - Responsibilities
  - Deliverables
  - Schedule/Performance Period
- Budget
  - Key Staff & Staffing Plan
  - Allowable costs
    - Direct Labor
    - Indirect Cost
    - Match/Cost Share

Contract Development

Lump Sum/Fixed Price	Cost Plus Fixed Fee
Routine projects	High risk
Plenty of qualified vendors	Qualified vendors are scarce

Key Staff & Staffing Plan

- Documentation
  - Planning/Research Qualifications
  - Roles, Titles & Responsibilities

Key Staff (Principal Investigator/Program Manager)

Titles, Annual Salaries, totals on grant, includes breakdown of federal and non-federal shares

Cost breakdown to Task/Activity Levels

Cost Sharing or Matching 2 CFR 200.306

- **Verifiable from non-Federal entity's records;**
- **Not included as contributions for other** Federal award;
- Necessary, reasonable to accomplish objectives;
- Allowable under Cost Principles
- Not paid by another Federal Award
- Provided for in the approved budget
- In kind match --3rd party contribution

TASK ORDER

ARTICLE III - COST

The total reimbursable cost for the performance of work under this Task Order No. shall not exceed $. Subsequent years may be funded by contract modification on an annual basis, based on appropriation of funds, for the period of performance as stated below and in accordance with the approved budget. All payments made pursuant to this Task Order No. are subject to appropriations and the availability of funds.

ARTICLE IV - PERIOD OF PERFORMANCE

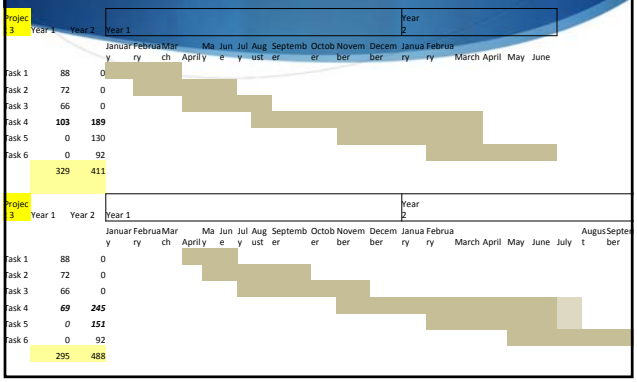
The performance of work under this Task Order No. is authorized as of , 2016 and shall be completed by .

ARTICLE V - PROJECT DIRECTION

Schedule
Project #3

	PI	2080	Year 1		Year 2	End
	Dr. Delay	1644	hr/project			
NJDEP	Project 1	15%	247	20%	329	
NJDOT	Project 2	15%	247	5%	82	
NJDOT	Project 3	20%	329	25%	411	1-Jun
NJ University	Teaching	50%	822	50%	822	
		100%		100%		

Schedule



Schedule
Project #3 Widget

	PI	2080	Year 1		Year 2		End	Revised
	Dr. Delay	1644	hr/project					
NJDEP	Project 1	15%	247	20%	329	20%		
NJDOT	Project 2	15%	247	5%	82	5%		
NJDOT	Project 3	20%	329	25%	411	30%	1-Jun	17-Sep
NJ University	Teaching	50%	822	50%	822	50%		
		100%		100%		105%		

Schedule

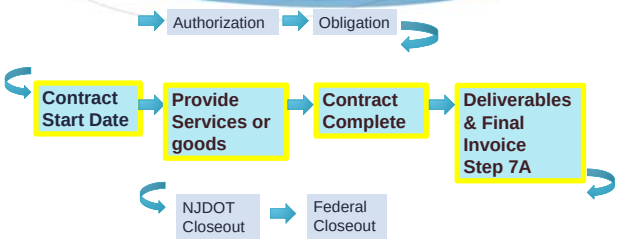
CONSEQUENCES
- **Overcommitted**
- **Underperforming**
- **Sacrifice quality**
- **Impact other staff schedules**

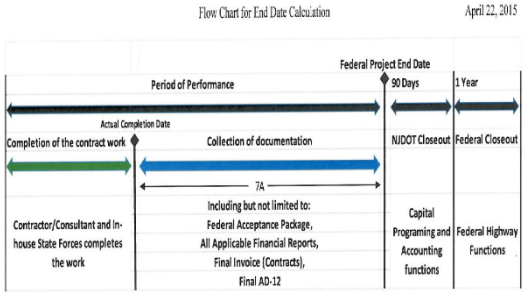
ALTERNATIVES
- **Additional Labor**
- **Delay Other Projects**
- **Do not complete all /projects activities**

Performance Period

- **From Authorization to Closeout (FATC)**
- Start and end dates of the period of performance must be included in the Federal award 2 CFR 200.77
- Program Period and Performance Period are mutually linked to comply with Sections 200.301 and 200.309. The SCHEDULE COUNTS!!!!!
- 1 time extension for 12 months

Performance Period





SCHEDULE

TASK ORDER 93 days

Date to University	Task Order From University	d	Date to DAG	d	Date Executed Task Order to NJDOT	d	Date Letter to University	d
3/19/2012	4/2/2012	14	4/2/2012	59	7/2/2012	32	7/2/2012	0
4/5/2012	5/4/2012	29	5/4/2012	33	6/28/2012	22	6/28/2012	0
5/24/2012	6/4/2012	11	6/4/2012	120	1/2/2013	92	1/3/2013	1
5/24/2012	7/3/2012	40	7/3/2012	21	9/18/2012	56	9/19/2012	1
6/25/2012	7/2/2012	7	7/2/2012	35	9/10/2012	35	9/10/2012	0
6/25/2012	7/3/2012	8	7/3/2012	15	9/10/2012	54	9/10/2012	0
7/20/2012	3/5/2013	228	3/5/2013	9	4/25/2013	42	4/29/2013	4
8/27/2015	9/16/2015	20	9/16/2015	15	11/4/2015	34	11/6/2015	2
8/27/2015	9/21/2015	25	9/22/2015	9	11/4/2015	34	11/6/2015	2
8/28/2015	9/2/2015	5	9/2/2015	2	9/14/2015	10	9/15/2015	1
9/2/2015	9/9/2015	7	9/9/2015	14	10/29/2015	36	11/2/2015	4
2/8/2016	2/10/2016	2	2/10/2016	22	4/11/2016	39	4/11/2016	0
2/8/2016	2/10/2016	2	2/10/2016	22	4/11/2016	39	4/11/2016	0
3/22/2016	3/29/2016	7	3/29/2016	23	6/27/2016	67	6/28/2016	1
9/1/2016								
		21	University	**28**	DAG signs	**44**	AD 12	**2**

MODIFICATION — 83 days

Date to University	Task Order From University	d	Date AD-12 Circulate	d	Date Executed Contract Modification to NJDOT	d	Date Letter to University	d
11/20/2013	12/12/2013	22	12/17/2013	5	2/12/2014	57	2/27/2014	15
12/17/2013	1/15/2014	29	1/23/2014	8	4/24/2014	91	4/24/2014	0
12/17/2013	12/27/2013	10	1/23/2014	27	4/10/2014	77	4/21/2014	11
6/4/2014	6/18/2014	14	6/19/2014	1	7/22/2014	33	8/4/2014	13
10/14/2014	10/24/2014	10	11/5/2014	12	12/4/2014	29	12/22/2014	18
10/24/2014	11/17/2014	24	12/4/2014	17	1/12/2015	39	1/13/2015	1
12/5/2014	12/9/2014	4	12/11/2014	2	1/5/2015	25	1/6/2015	1
12/22/2014	12/24/2014	2	1/6/2015	13	1/26/2015	20	1/29/2015	3
6/28/2016	7/14/2016	16	7/15/2016	1	8/30/2016	46	9/1/2016	2
7/13/2016	7/28/2016	15	8/16/2016	19				
8/16/2016				0		0		
8/16/2016	8/25/2016	9	9/8/2016	14				
8/31/2016	9/6/2016	6						
			20-University		18-Research		45-AD-12	5

Schedule

		RFP activity	Research Solicitation: days	Research Solicitation: no additional authorization	days	additional authorization
Pre-RFP	Pre RFP	University submits pre-Risk Assessment Form				
Pre-award	RFP	RFP posting date	0	9/15/2016	0	9/15/2016
		PI request a meeting	10	9/25/2016	10	9/25/2016
	Proposals Due	proposal due date & risk form A	20	10/15/2016	20	10/15/2016
		review proposal due date	35	11/19/2016	35	11/19/2016
		negotiate final SOW/budget	30	12/19/2016	30	12/19/2016
		request additional auth from FHWA if needed	0		5	12/24/2016
		request federal project number FPN	3		3	1/26/2017
		request NJDOT job number	3		3	1/29/2017
		receive additional authorization	0		30	1/23/2017
		University approval	20	1/8/2017	20	2/12/2017
		DAG approval	28	2/5/2017	28	3/12/2017
		circulate AD12	45	3/22/2017	45	4/26/2017
Monitoring		contract start task order date	5	3/27/2017	5	5/1/2017
			199		234	
			Duration of study (mos)			
	Performance Period monitoring			24		
		draft final report due	0	12/26/2018	0	1/30/2019
		review draft final report	30	1/25/2019	30	3/1/2019
		task completion finalization	30	2/24/2019	30	3/31/2019
		report finalization	15	3/11/2019	15	4/15/2019
		final deliverables acceptance	15	3/26/2019	15	4/30/2019
		University contract end date	1	3/27/2019	1	5/1/2019

Scope & Budget Requirements

- **Allowable - eligible**
- **Allocable – chargeable, assignable**
- **Consistent – applied the same (i.e. direct vs indirect)**
- **Reasonable – fair, sensible, workable for the performance of that award objective**

Budget Justification

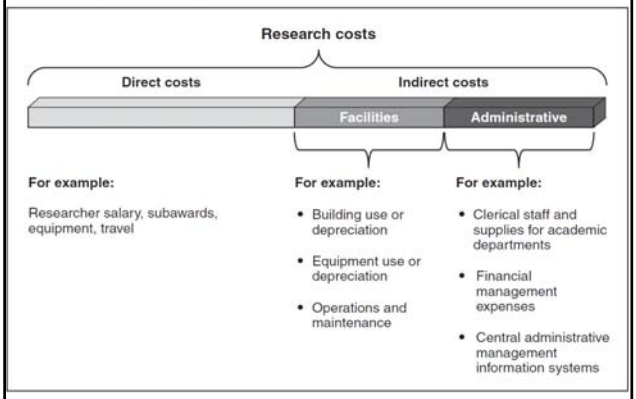
Budget Justifications should justify

- Salary or Personnel Category:
  - Employee's role
  - What tasks they will perform
  - Effort required (person months or % effort)
    - Many, if not the majority of proposals will need effort listed in person months
  - Roles not defined in technical narrative
  - Increases in personnel costs based on UC Policies (merits, range adjustments, composite benefit rates)

Budget Justifications should justify

- Materials and supplies; equipment
  - Specific products and potential vendors should be identified whenever possible.
- Renovation/Alterations, Rental Space, Subawards
- Items ordinarily covered by F&A
  - furniture, telephones, mailing, secretarial
- Costs that fluctuate from year to year (increase or decrease) or appear only in a single year
- Unusual items
- Remember, budget and justification dictated by sponsor guidelines
  - Always document the files with good documentation

Figure 2: Types of Research Costs



Source: GAO analysis of OMB Circular A-21.

Direct Costs (Allowable as Budgeted Items)	Indirect Costs (Not Allowable as Direct Costs)
Salaries/Wages & Fringe Benefits: Faculty, other professionals, technicians, post doc associates, research associates, graduate and undergraduate students	**Salaries/Wages & Fringe Benefits:** Clerical and administrative assistants, fiscal manager, secretaries, and directors (see Considerations for Administrative Salaries on Sponsored Awards)
Materials and Supplies: Project related research and scientific supplies. Any equipment or software that does not qualify under the equipment definition	**Office Supplies/Books & Journals:** Pens, pencils, paper, staples, transparencies, toner cartridges, diskettes, printer paper, word processing and spreadsheet programs (see Considerations for Books & Journals)
Equipment: Equipment used for scientific, technical, and research purposes that costs greater than $5,000 and has a useful life of at least one year (see Direct Charges for Computing Devices)	**Equipment:** General office equipment such as copiers, printers, office computers, and fax machines
Facilities: Project specific space rental for off-campus facilities from a third party. Use of specialized equipment for which there is a commonly applied charge	**Facilities:** Utilities, building use, grounds maintenance, renovations, and alterations of University property whether on- or off-campus

Direct Costs (Allowable as Budgeted Items)	Indirect Costs (Not Allowable as Direct Cos
Travel: Transportation, lodging, subsistence, and related items incurred by employees who are in travel status on official business of the institution related to the project	**Travel:** Costs of entertainment, and any costs directly associated with such costs (such as tickets to shows or sports events, meals, lodging, rentals, transportation, and gratuities)
Telephone: Long distance calls, phone surveys or calls to project participants	**Telephone:** Local calls, cell phones, installation and maintenance
Maintenance & Repairs: Requires justification that the expenditures are required and directly related to the specific award (e.g., less expensive than buying new)	**Maintenance & Repairs:** Maintenance and repairs to general purpose equipment, buildings, and grounds
Advertising: Recruitment of research subjects or for job openings approved for a specific project	**Advertising:** Public relations to promote unit/department/college
Publications: Project specific and project related. Copying included only when charges can be tracked	**Publications:** General printing and copying
Memberships, subscriptions and professional activity: Membership in business, technical, and professional organizations; related to and supportive of the project. Subscriptions to business, professional, and technical periodicals; related to and supportive of project	**Memberships, subscriptions and professional activity:** Membership in any civic or community organization Membership in any country club or social/dining club or organization (see Considerations for Subscriptions, Dues & Memberships)

Direct Costs (Allowable as Budgeted Items)	Indirect Costs (Not Allowable as Direct Cost
Freight/express deliveries and Postage: Justification required that cost needed to transport project material in a timely way	**Freight/express deliveries and Postage:** Routine or internal courier
Consulting: Project specific	**Consulting:** General, management, financial
Miscellaneous Costs: Subcontract costs, recharge center charges, and training costs	**Miscellaneous Costs:** Computer network charges and utilities.
Participant Support Costs: Participant support costs were traditionally allowed only by certain federal agencies or funding announcements. Under the Uniform Guidance, these costs are allowed with prior written approval of the funding agency, provided they are programmatically justified. The budget justification should describe the purpose for the costs and the way in which they will directly benefit the proposed project's scope of work. These costs must be excluded when calculating the Modified Total Direct Costs (MTDC) to determine the overall project's F&A costs.	

UNALLOWABLE COSTS

- Alcoholic beverages
- Entertainment
- Fines and penalties
- Fund raising/alumni activities
- Internal interest charges
- Subscription
- Advertisement and public relations costs
- Travel tickets in excess of coach

- Salaries for administrative and clerical staff
  - should not be included in the salaries or personnel category
  - treated as F&A costs and not direct costs
- General office supplies
  - paper, pens, pencils, etc.
  - treated as F&A costs and not direct costs

DOCUMENTATION

Budget documentation for the files!

- Source documents
  - Payroll records
  - Approved composite fringe benefit rate
  - Published merit increases and range adjustment
  - Catalogs, vendor quotes, proposals, etc
  - Documents evidencing historical costs for like projects
- When obtaining documentation from web sources, print them and place in file

BUREAU OF RESEARCH

Invoice Breakdown Sheet

Fee Proposal Breakdown		NJDOT Bureau of Research University Task Order for:													
		Name of Research Study													
		Name of Institution													
			Task 1		Task 2		Task 3		Task 4		Task 5		Task 6		
Name	**Title**	**Hrly Rate**	**Hours**	**$**	**Hours**	**$**	**Hours**	**$**	**Hours**	**$**	**Hours**	**$**	**Hours**	**$**	**Total Hrs**	**Total $**
Faculty 1	Professor			$0.00		$0.00		$0.00		$0.00	0	$0.00	0	$0.00	0	$ -
Faculty 2	Associate Professor			$0.00		$0.00		$0.00		$0.00	0	$0.00	0	$0.00	0	$ -
Graduate Assistant	Supporting Role			$0.00		$0.00		$0.00		$0.00	0	$0.00	0	$0.00	0	$ -
Total Hours and Direct Labor Cost			0	0	0	0	0	0	0	0	0	0	0	0	0	$0
Fringe Benefits																$0
% Fringe Benefit rates 1	0.00%														$ -	
% Fringe Benefit rates 2	0.00%														$ -	
% Fringe Benefit rates 3	0.00%														$ -	
Direct Expenses (Itemize and explain in detail)																
Supplies	Name all the supplies with unit cost, Quantity, and total cost on a separate sheet															
Travel	Breakdown the travel according to mileage															
Tuition	Breakdown needed for tuition															
Subcontract Expenses																$0
Subcontract 1	Subcontractors need to breakdown their budget similar to the prime															
Subcontract 2																
Total Direct Expenses																$0
Indirect Cost/Overhead																$0.00
Grand Total																$0

Agenda

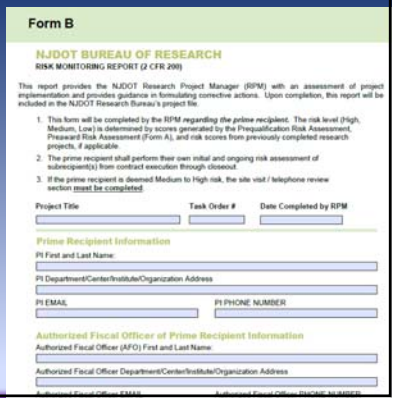
- 2 CFR 200 Implementation
- Pre-Award
- Award
- Post-Award Monitoring & Internal Controls
- Implementation, Evaluation & Closeout

RESEARCH PROJECT MANAGEMENT

- Review /Approve Deliverables
  - Budget
  - Invoices
  - Tech memos/Reports
- Meetings (RT, pre-proposal, debriefing)
- Update Project Reporting System
- Manage process from solicitation to implementation

RISK ASSESSMENT PROCESS 2 CFR 200

RISK MONITORING REPORT



Form B

NJDOT BUREAU OF RESEARCH

RISK MONITORING REPORT (2 CFR 200)

This report provides the NJDOT Research Project Manager (RPM) with an assessment of project implementation and provides guidance in formulating corrective actions. Upon completion, this report will be included in the NJDOT Research Bureau's project file.

1. This form will be completed by the RPM *regarding the prime recipient*. The risk level (High, Medium, Low) is determined by scores generated by the Prequalification Risk Assessment, Preaward Risk Assessment (Form A), and risk scores from previously completed research projects, if applicable.
2. The prime recipient shall perform their own initial and ongoing risk assessment of subrecipient(s) from contract execution through closeout.
3. If the prime recipient is deemed Medium to High risk, the site visit / telephone review section must be completed.

Project Title | Task Order # | Date Completed by RPM

Prime Recipient Information

PI First and Last Name:

PI Department/Center/Institute/Organization Address

PI EMAIL | PI PHONE NUMBER

Authorized Fiscal Officer of Prime Recipient Information

Authorized Fiscal Officer (AFO) First and Last Name:

Authorized Fiscal Officer Department/Center/Institute/Organization Address

REQUIRED PRIOR APPROVALS

- Publication
- Presentations
- Scope modifications
- Budget modifications
- Changes to match
- Key staff change
- Transfer of Title

➢2 CFR 200.308

Personnel Expenses

- Accurate , allowable, properly allocated
  - 2 CFR 200.430
  - *Timesheets…..*

REPORTING
FFATA

Award Information:
- Name of entity
- Amount of award
- Funding agency
- NAICS/CFDA
- Program source
- Award title description
- Location
- Place of performance
- Unique identifier

- 2 CFR 200.210
- Historical dates of FFATA
  - 2006
  - 2010
  - 2014
- USA Spending
- System of Award Management, SAM

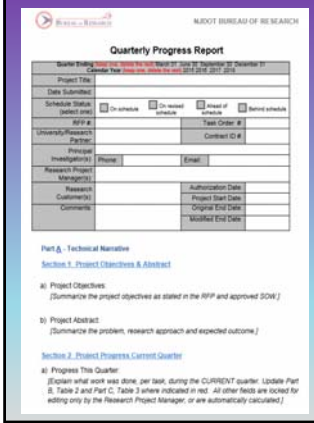
Reporting

Quarterly Progress Reports

In accordance with 2 CFR 200.301 …the Federal awarding agency must require the recipient to:

- **relate financial data to performance accomplishments** of the Federal award.
- use OMB-approved standard information collections when providing financial and performance information.
- when applicable, provide cost information to demonstrate cost effective practices

COMING SOON!


NJDOT BUREAU OF RESEARCH

Quarterly Progress Report

Project Title	
Date Submitted	
Schedule Status (select one)	On schedule / On revised schedule / Ahead of schedule / Behind schedule
RFP #	Task Order #
University/Research Partner	Contract ID #
Principal Investigator(s)	Phone: / Email:
Research Project Manager(s)	
Research Customer(s)	Authorization Date
Comments	Project Start Date
	Original End Date
	Modified End Date

Part A - Technical Narrative

Section 1 Project Objectives & Abstract

a) Project Objectives:
[Summarize the project objectives as stated in the RFP and approved SOW.]

b) Project Abstract:
[Summarize the problem, research approach and expected outcome.]

Section 2 Project Progress Current Quarter

a) Progress This Quarter:
[Explain what work was done, per task, during the CURRENT quarter. Update Part B, Table 2 and Part C, Table 3 where indicated in red. All other fields are locked for editing only by the Research Project Manager, or are automatically calculated.]

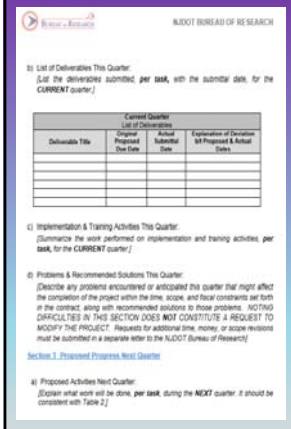
Updated
Quarterly Report Format

3 PARTS:
PART A – Technical Narrative
PART B – Progress
PART C – Budget

Part A – Technical Narrative

Section 1 –
- Project Objectives
- Abstract

Section 2 –
- Progress This Quarter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b) List of Deliverables This Quarter:
[List the deliverables submitted, per task, with the submittal date, for the CURRENT quarter.]

Current Quarter List of Deliverables			
Deliverable Title	Original Proposed Due Date	Actual Submittal Date	Explanation of Deviation b/t Proposed & Actual Dates

c) Implementation & Training Activities This Quarter:
[Summarize the work performed on implementation and training activities, per task, for the CURRENT quarter.]

d) Problems & Recommended Solutions This Quarter:
*[Describe any problems encountered or anticipated this quarter that might affect the completion of the project within the time, scope, and fiscal constraints set forth in the contract, along with recommended solutions to those problems. NOTING DIFFICULTIES IN THIS SECTION DOES **NOT** CONSTITUTE A REQUEST TO MODIFY THE PROJECT. Requests for additional time, money, or scope revisions must be submitted in a separate letter to the NJDOT Bureau of Research]*

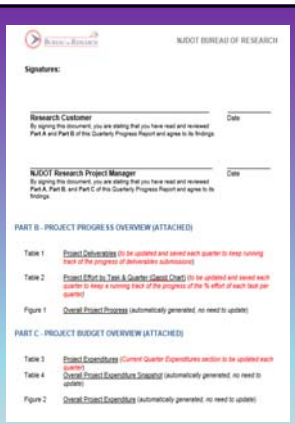
Section 3 Proposed Progress Next Quarter

a) Proposed Activities Next Quarter:
[Explain what work will be done, per task, during the NEXT quarter. It should be consistent with Table 2.]

PART A

Section 2 cont. –
- Current Quarter Deliverables Table
- Implementation & Training Activities
- Problems & Recommended Solutions

Section 3 –
- Proposed Progress NEXT Quarter

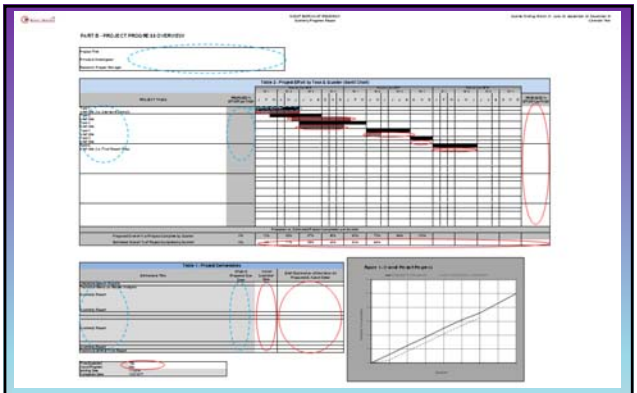


PART A cont.

- Signature Page for Customer and RPM

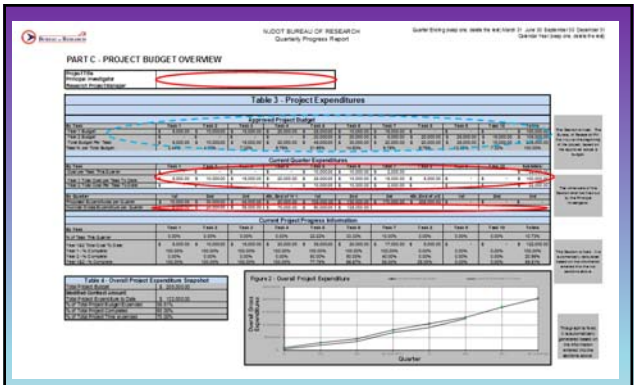
PART B – Project Progress Overview

PART C – Project Budget Overview



Research Partners are only responsible for filling out the sections in RED.

All other areas are either PRE-FILLED by the RPM at the start of the project or AUTO-CALCULATED by formulas.



Research Partners are only responsible for filling out the sections in RED.

All other areas are either PRE-FILLED by the RPM at the start of the project or AUTO-CALCULATED by formulas.

Reporting

Final Reports & Technical Briefs

- Importance of QA/QC
- Hire a technical editor if necessary
- Must get permission from Bureau of Research for publication of project information
- Do NOT Speak to or Reach out to the Press

Reporting

ONGOING RESEARCH POSTED ON

- **RIP** is TRB's Research In Progress (RIP) Database and data-entry system that allows users in State Departments of Transportation, the U.S. Department of Transportation, University Transportation Centers and other US DOT funded universities to add, modify and delete information on their current research projects.

If you are uploading your projects, thank you!
PLEASE ENSURE ACCURACY OF PROJECT SPONSORS, FUNDING SOURCES, AND YOUR PARTNERS HERE AT NJDOT.

Reporting

FINAL REPORTS POSTED ON

- **TRID** is an integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and the OECD's Joint Transport Research Centre's International Transport Research Documentation (ITRD) Database. TRID provides access to more than one million records of transportation research worldwide.

If you are uploading your projects, thank you!
PLEASE ENSURE ACCURACY OF PROJECT SPONSORS, FUNDING SOURCES, AND YOUR PARTNERS HERE AT NJDOT.

Invoicing

- Submit Invoices to expedite draw down of funds
- Invoice Backup
- QA/QC

Invoice Guideline

Fig: NJDOT Payment Voucher Summary Sheet

Fig: Invoice

Invoice Guideline (contd…)

- Invoice shall include both payment voucher (PV) and invoice summary page
- Invoice shall match with the quarterly report expenditure
- Travel shall be broken down
- All the supporting documents shall be submitted with the invoice i.e. supply/equipment purchase, effort certification, travel documents, sub contractor's cost breakdown. 49 CFR 19.52

IMPROPER PAYMENTS

Improper Payments **means any payment that should not have been made or that was made or that was made in an incorrect amount…..**

"…and any payment where insufficient or lack of documentation prevents a reviewer from discerning whether a payment was proper."

Reporting, both financial and programmatic must be submitted together, given the Non-Federal entity "must relate Financial data to performance Accomplishments" to avoid Improper Payments and demonstrate cost effective practices!!!!!

Not all improper payments are fraud (i.e., an intentional misuse of funds) majority of improper payments are due to unintentional errors

IMPROPER PAYMENTS

"Improper payments" can be:
•Incorrect amounts paid to eligible recipients,
•Payments made to ineligible recipients,
•Payments for goods or services not received,
•Duplicate payments, or
•Payments for which insufficient or no documentation was found

Performance Based Reporting
Critical Compliance Considerations

- **Post Award - Greater Focus on INTERNAL CONTROLS,**

Quantify or document your Process and System - it must be formalized

Audit Requirements

- 2 CFR 200.500
  - A-133
  - A-50
  - Other Audits, Reviews & Investigations

Repercussions for noncompliance

- Government Oversight and New Efficiency (GONE) Act January 28, 2016
  - Termination **OMB terminations 2 CFR 200**
  - Withhold future awards
  - Loss of funding
  - Suspension
- FAPIIS - Federal Awardee Performance & Integrity Information System

Agenda

- 2 CFR 200 Implementation
- Pre-Award
- Award
- Post-Award Monitoring & Internal Controls
- **Implementation, Evaluation & Closeout**

Implementation

T/2 Measures
Knowledge Transfer (Findings/Dissemination)
Marketing/Media
Policy/Process Change
Demonstrations
Implementation Benefits
Enhancement (Efficiency, Environment, Safety)
Cost Savings/Economic Impact

Implementation

How useful were the research findings/products/outcome? The research study resulted in:

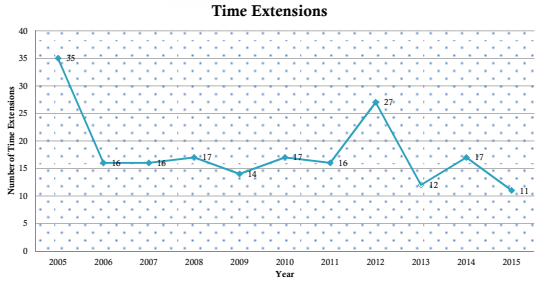
- ❑ **implementable changes with quantifiable benefits. Please Specify:** _____
- ❑ **implementable changes with no quantifiable benefits. Please Specify:** _____
- ❑ **knowledge transfer with no quantifiable benefits. Please Specify:** _____
- ❑ **no implementation. Explanation:** _____

Evaluation

- Financial Data related to performance accomplishments
  - Quarterly and annual report
- Extensions of Time
- Performance period

Performance Measures

Time Extensions 2005-2015



RISK ASSESSMENT PROCESS 2 CFR 200

RISK IMPLEMENTATION & CLOSEOUT FORM

100

Closeout

- Draft final report 3 months prior to contract end date
- Federal government agencies want to close awards bilaterally within **90 days**
- UG §200.343 90 days after the contract end date recipient submits:
  - All Eligible Incurred Costs
  - Performance and Financial Reports
  - Specified Project Records
- NJDOT Project Closure Procedures

Questions?

THANK YOU!

WisDOT Research Program Overview

Diane Gurtner, Research & Library Services

Illinois DOT Research Peer Exchange

October 4, 2017

WisDOT agency overview

- The Wisconsin Department of Transportation was officially established in 1967 when the state combined various agencies.
- WisDOT's organization includes five divisions and three executive offices.

Executive offices

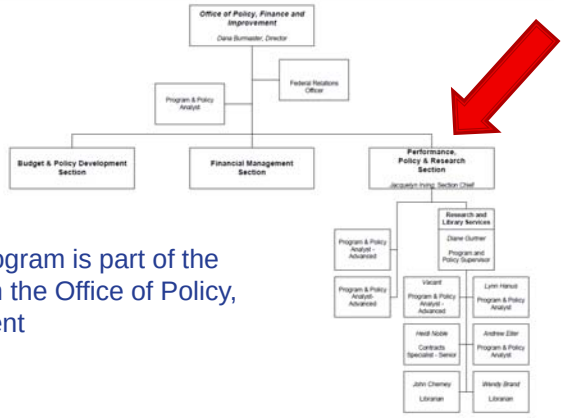
- General Counsel (OGC)
- Policy, Finance and Improvement (OPFI)
- Public Affairs (OPA)

Divisions

- Business Management (DBM)
- Motor Vehicles (DMV)
- Transportation Investment Management (DTIM)
- Transportation System Development (DTSD)
- State Patrol (DSP)

2

Where is Research in the WisDOT organization structure?



WisDOT's Research Program is part of the Executive Offices, within the Office of Policy, Finance and Improvement

3

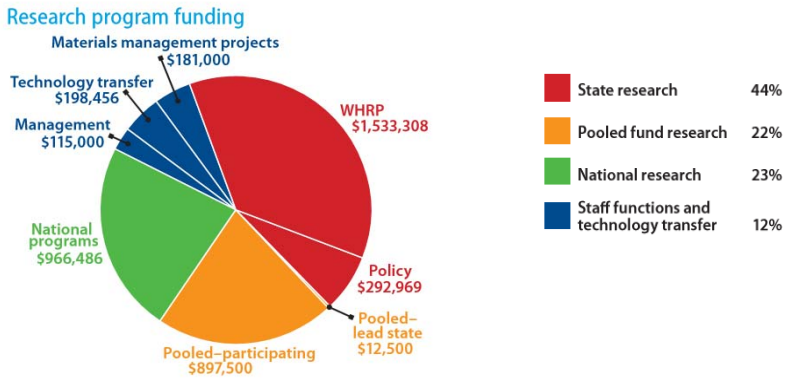
Who's who in WisDOT Research

- WisDOT Research Program staff
  - Jacquelyn Irving – Performance, Policy & Research section chief
  - Diane Gurtner – Research & Library Services unit supervisor
  - Lynn Hanus – National programs coordinator
  - Andrew Eiter – Research communications coordinator
  - Heidi Noble – Contracts specialist
  - Vacant – Financial manager / Policy research coordinator
- WisDOT Library
  - John Cherney – Librarian
  - Wendy Brand – Cataloging librarian *(half-time)*

Research program funding

- WisDOT managed a **$4.2 million** program for research, library and technology transfer services during federal fiscal year 2016.
- The State Planning and Research Part 2 (SPR2) federal program funded 89 percent ($3.73 million) of the program, while state funds covered the remaining 11 percent.

Funding distribution



Wisconsin Highway Research Program (WHRP)

- WHRP was established in 1998
- Applied research for pavements, materials and structures
- Four technical committees:
  - Flexible pavements (asphalt)
  - Rigid pavements (concrete)
  - Structures (bridges, signs, etc.)
  - Geotechnics (soils and foundations)
- Annual RFP cycle -- approx. $850,000 - $1 million

WHRP research cycle

Timeframe	Activity
May – Sept	Generate research ideas
Oct – Nov	Develop request for proposal (RFP)
Nov – Jan	RFP solicitation
Feb – Mar	Proposal review / researcher selection
May – Aug	Work plan development
July – Sept	Contract / agreement negotiation
October	Anticipated project start dates

Policy research program

- Applied research for planning, traffic, safety, etc.
- Overseen by internal WisDOT committees
- Variable RFP cycle depending on funding availability and research needs
- Examples of recent Policy research projects:
  - Identifying Highly Correlated Variables Relating to the Potential Causes of Reportable Wisconsin Traffic Crashes (DSP)
  - Materials Laboratory Design Guidelines (DBM)
  - Vehicle Registration Compliance in Wisconsin (DMV)

National research

- Transportation Pooled Fund (TPF) program

  Allows federal, state, and local agencies and other organizations to combine resources
  - WisDOT is currently the lead state for 4 pooled funds
  - WisDOT currently participates in 39 pooled funds
- Other national research programs

  Provides opportunities for research idea submission
  - WisDOT participation
    - NCHRP project panels: 36 positions held by WisDOT staff*
    - TRB Committees: 25 positions held by WisDOT staff*
    - AASHTO Committees: 45 positions held by WisDOT staff*

*(*some individuals on more than one)*

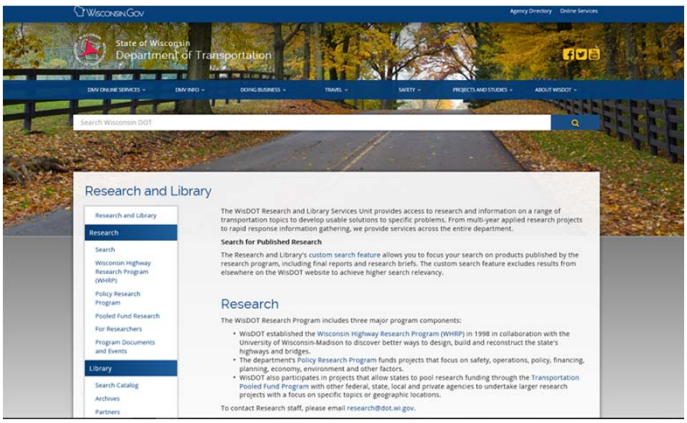
Technology transfer

- Project reports
  - Final reports & project briefs
- Literature searches
  - Identify published materials – reports, papers, articles
- Synthesis reports
  - Identify current practice through surveys and other methods
- Peer exchanges
  - Allow WisDOT staff to discuss key issues directly with experts and counterparts from other state transportation agencies
- Research Annual Report

WisDOT library

- History
  - The WisDOT Library began in 1968 as a collection of Wisconsin city, village and town comprehensive planning documents
  - Hired library science graduate to manage the collection in 1971
- Statistics (FFY2016)
  - 887 customer inquiries
  - 2,165 items circulated (books, reports, periodicals and articles)
  - 1,007 records added to the library database
- Outreach
  - Promotional cards
  - LearnCenter module (Transportation Databases and Beyond)

WisDOT research website



Contact information

Diane Gurtner
WisDOT Research & Library Services Supervisor
diane.gurtner@dot.wi.gov
(608) 267-1842

website: http://wisdotresearch@dot.wi.gov


TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES
Illinois Department of Transportation Research Peer Exchange
our new video overview
Nancy Whiting
Sr. Program Officer - Soils, Geology and Foundations
Transportation Research Board
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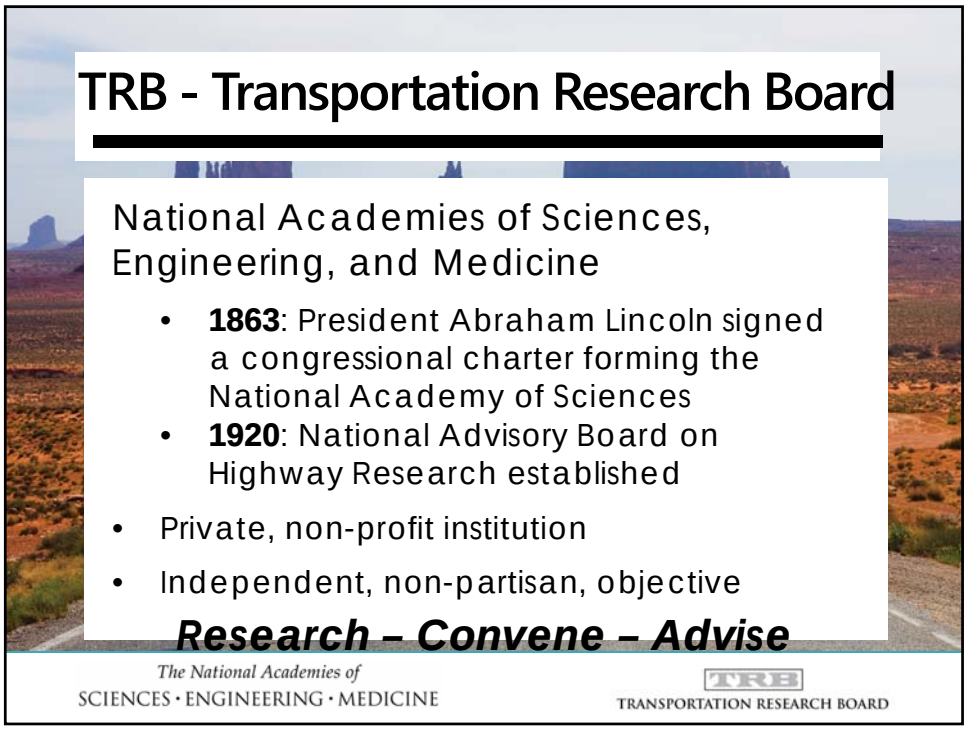
TRB - Transportation Research Board
National Academies of Sciences, Engineering, and Medicine
• 1863: President Abraham Lincoln signed a congressional charter forming the National Academy of Sciences
• 1920: National Advisory Board on Highway Research established
• Private, non-profit institution
• Independent, non-partisan, objective
Research – Convene – Advise
The National Academies of
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Innovation for Results

"Since 2003, we have implemented 199 innovative ideas related to contracting methods, safety improvements, accelerated bridge construction, traffic management, and other areas discussed at TRB meetings. As a result, we have realized more than $198 million in savings."

Carlos Braceras, Executive Director, UTAH DOT

"With the pace of innovation increasing daily, the research provided by TRB helps inform investments and guide decisions as we look to stay ahead of the curve."

Shailen P. Bhatt, Executive Director, COLORADO DOT

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Example: Bridge Innovation

TRB's ***Innovative Bridge Designs for Rapid Renewal*** project provided a design toolkit for prefabricated bridges which helped to reduce road closures and bridge outages:

- **Arizona- "***Road closures reduced from months to 11 days"*
- **Kentucky** – "*Road closure limited to less than 3 weeks"*
- **Maine –"***Bridge replacement project completed in 29 days"*
- **Rhode Island – "***Road closure limited to only 21 days"*
- **Wisconsin – "***Construction time reduced by 3 weeks"*

Real Savings in Time and Money

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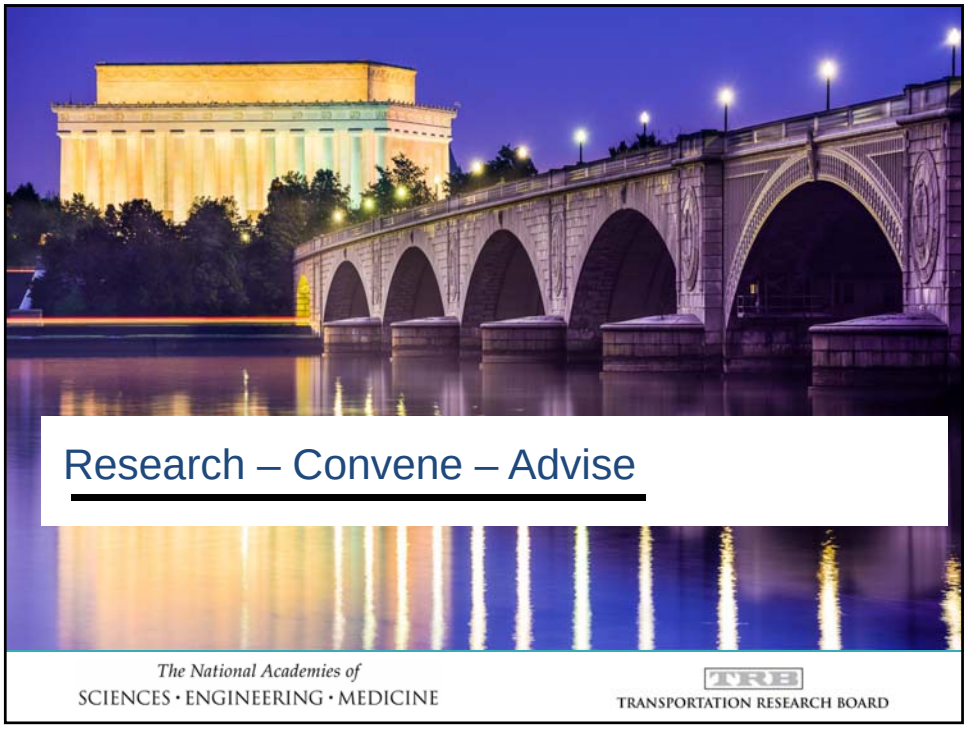

Research – Convene – Advise

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Cooperative Research: NCHRP
TRB's National Cooperative Highway Research Program
• Responds to the practical needs of DOTs
• Ready-to-implement, sustainable solutions
• $58 million invested annually in the Cooperative Research Programs
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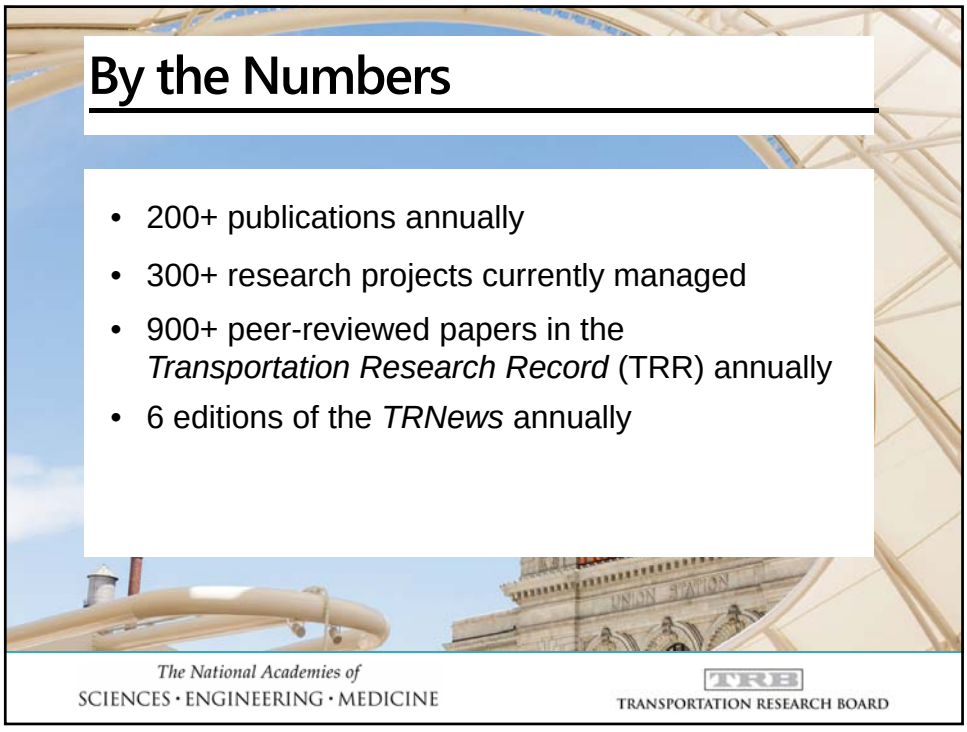
By the Numbers
• 200+ publications annually
• 300+ research projects currently managed
• 900+ peer-reviewed papers in the *Transportation Research Record* (TRR) annually
• 6 editions of the *TRNews* annually
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World's Largest Transportation Research Database
• TRID contains 1 million+ records of published and on-going transportation research
• Publicly accessible on TRB's web site trid.trb.org
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Convene
Transportation Research Board
97th Annual Meeting
January 7–11, 2018 ▪ Washington, D.C.
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Convene

- TRB fosters networking through convening activities
- Join a passionate and devoted worldwide transportation community
- Strengthen your personal and professional connections

Transportation Research Board
97th Annual Meeting

January 7–11, 2018 ▪ Washington, D.C.

By the Numbers

- 200+ standing committees
- 7,000+ active volunteers
- 12,000+ attendees at the TRB Annual Meeting every year
- 750+ sessions and workshops at the TRB Annual Meeting
- 90+ webinars annually
- 70+ TRB meetings and conferences annually

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Advise

Advise experts on transportation policy in an objective and interdisciplinary manner

Key characteristics of study reports:

- Independent
- Objective
- Evidence-based
- Thorough and fair
- Non-partisan

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• Review papers
• Promote application of research findings
• Develop conferences and workshops
DOT volunteers become involved with committees and research panels
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- Attend TRB webinars – 100+ each year
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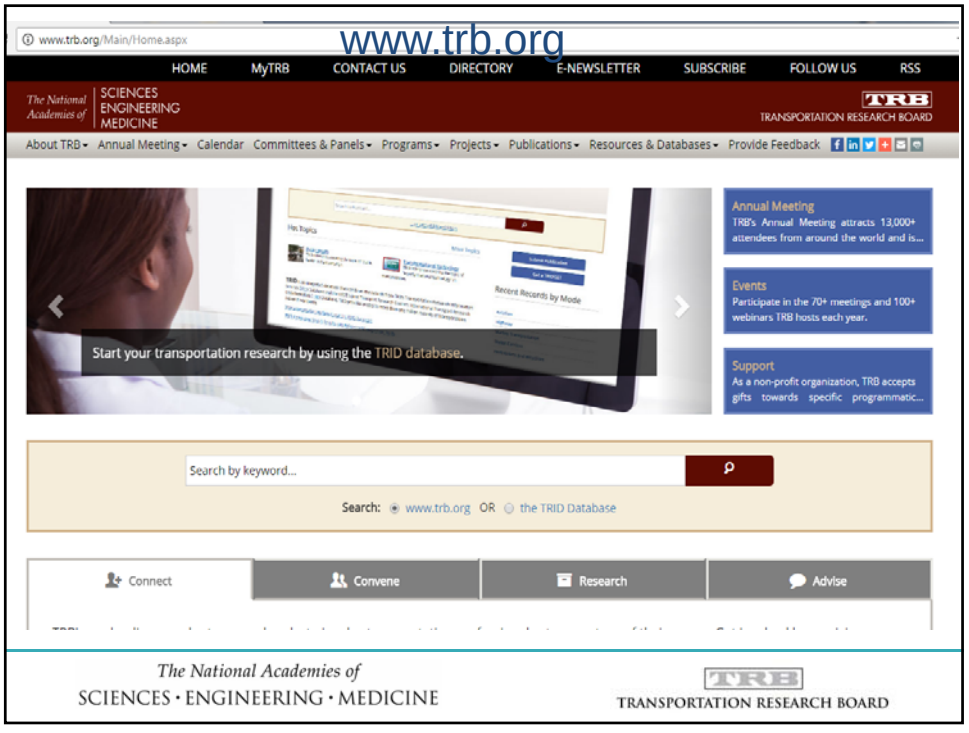

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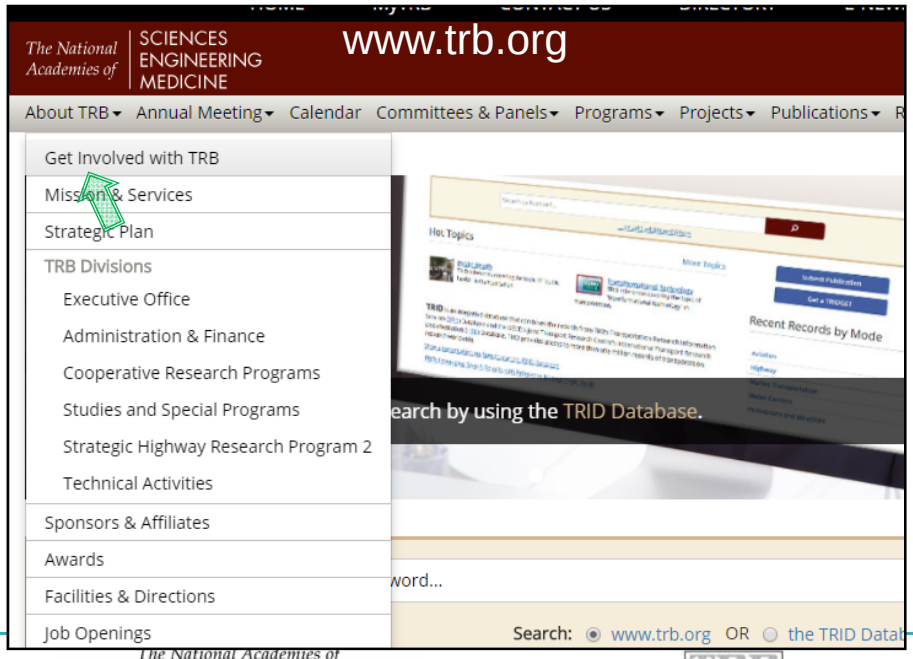
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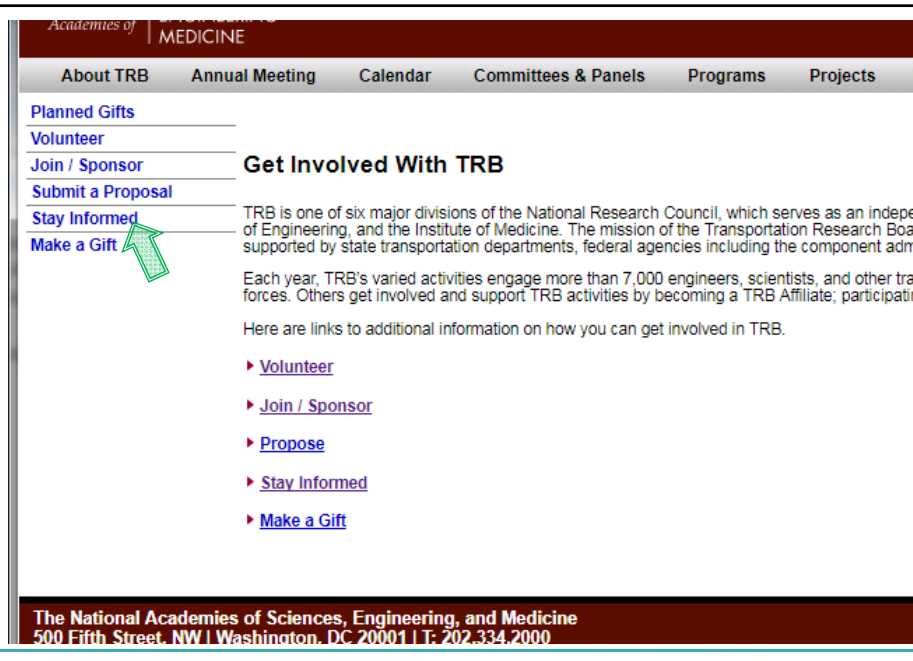
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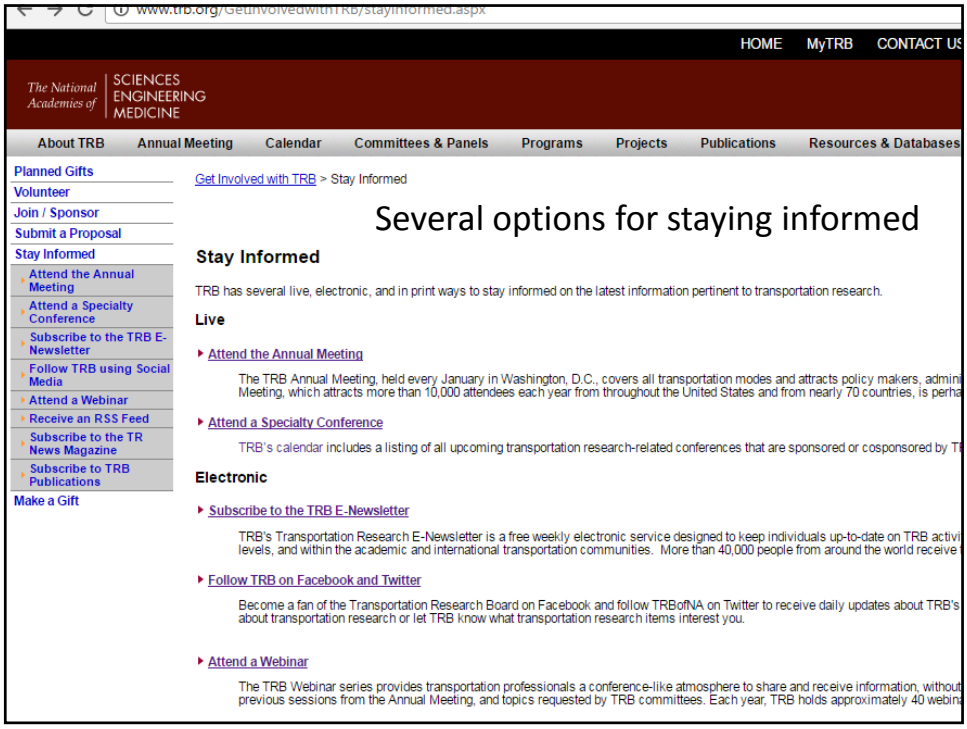
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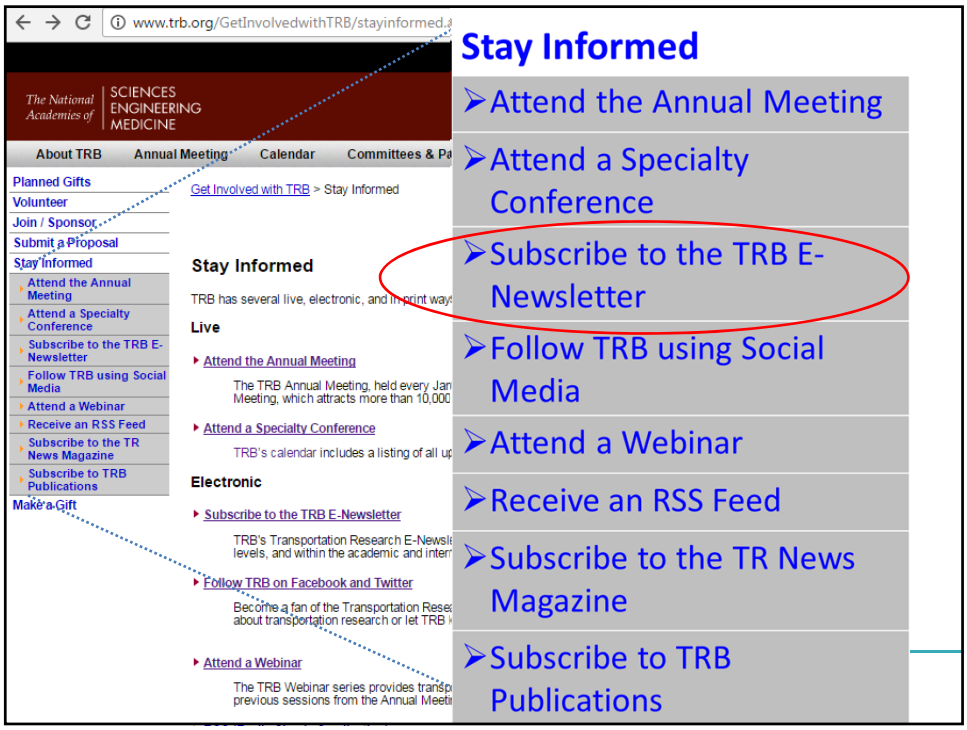
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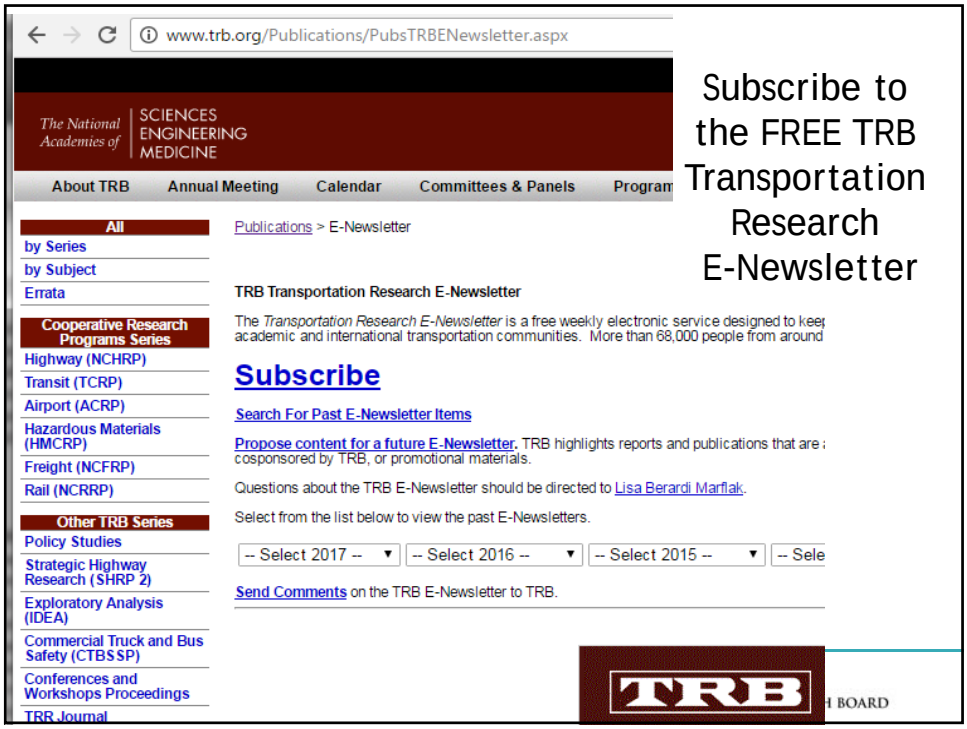

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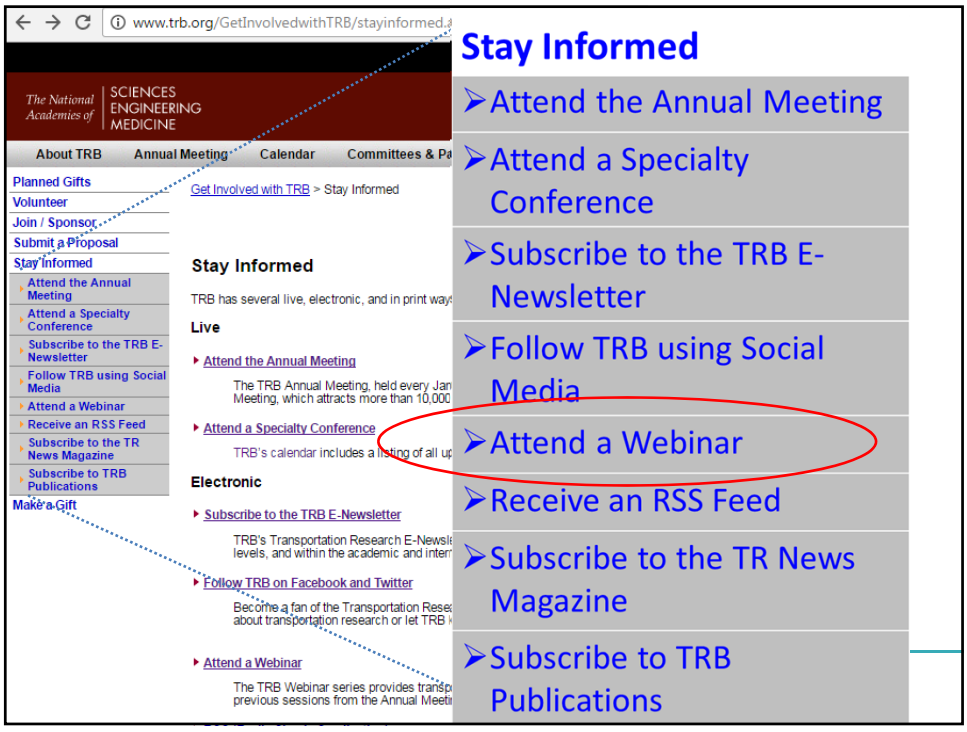

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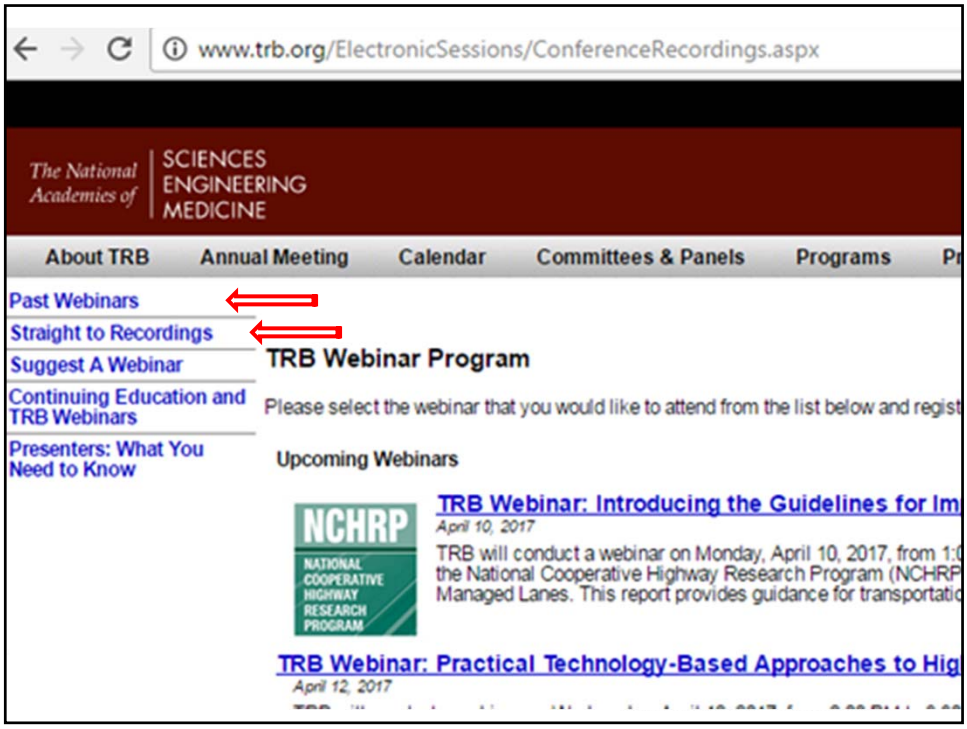
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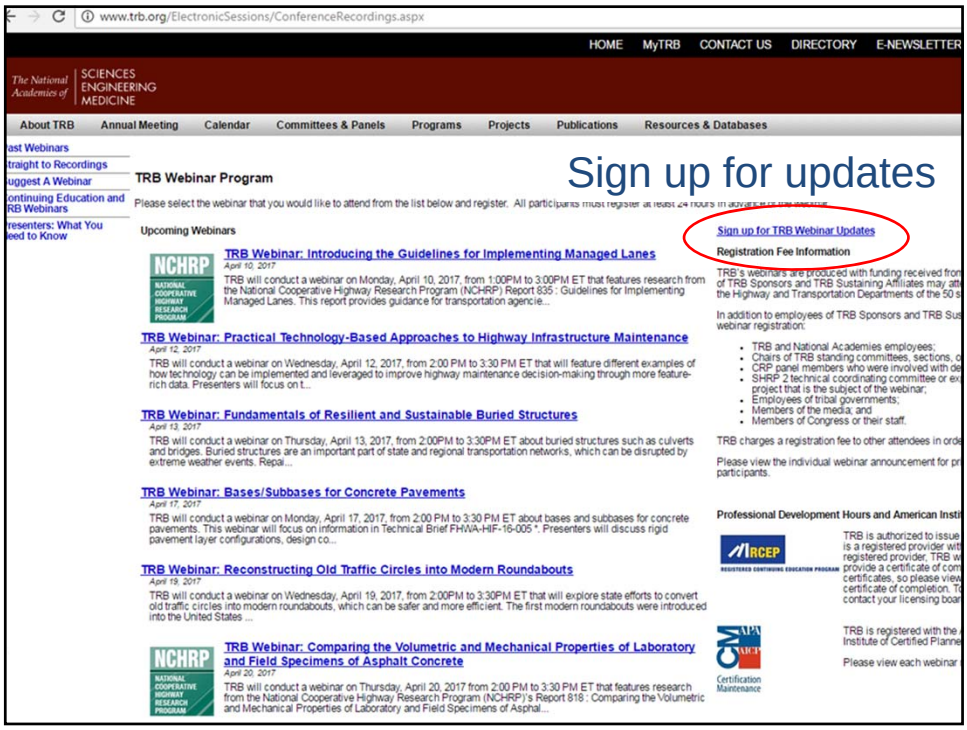
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FREE to:

- all State DOTs
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- Research Pays Off (RPO)
  - Featured in TR News
  - Recent survey rated RPO as their favorite part of the publication

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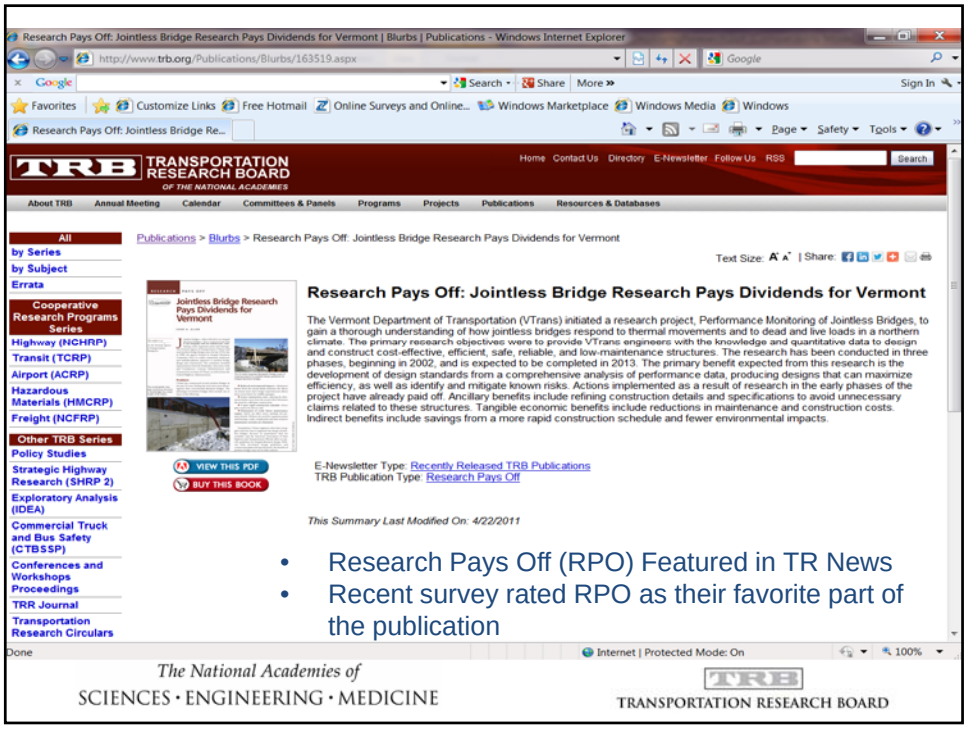

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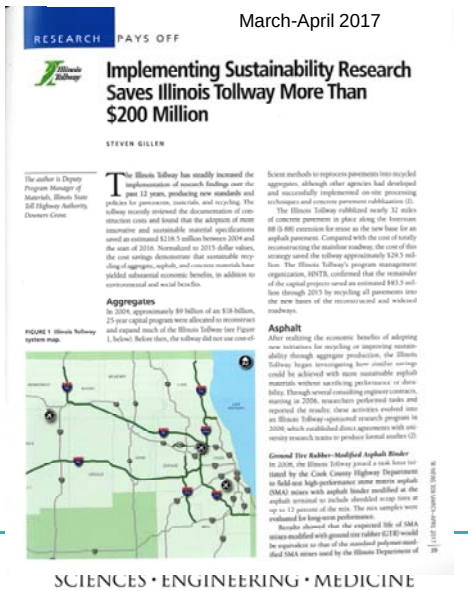
RPO Features Implemented Agency Research

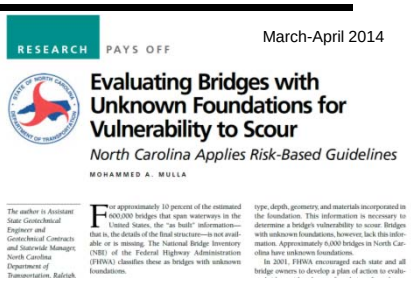


RESEARCH PAYS OFF

March-April 2017

Implementing Sustainability Research Saves Illinois Tollway More Than $200 Million

STEVEN GILLEN



RESEARCH PAYS OFF

March-April 2014

Evaluating Bridges with Unknown Foundations for Vulnerability to Scour

North Carolina Applies Risk-Based Guidelines

MOHAMMED A. MULLA

- NCHRP Research
- FHWA Guidelines
- NCDOT verification

Instead of years, it took months to complete assessments

lion total. As noted, the NCHRP risk-based approach to evaluate the 3,752 bridges cost North Carolina DOT $21,000—achieving nearly $7 million in savings or benefits.

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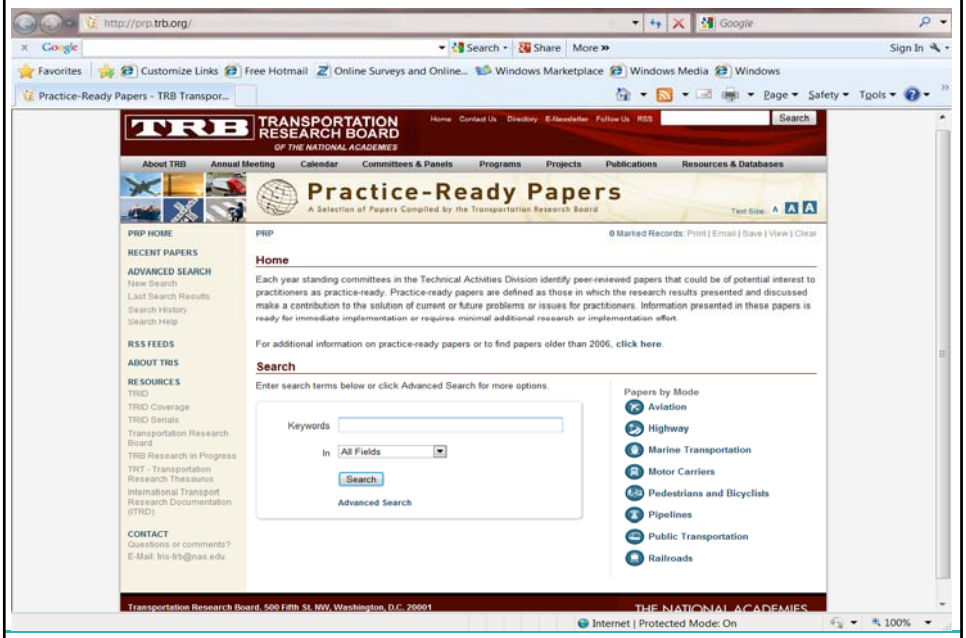

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Implementation

"An 'off-the-record' estimate from a major U.S. firm set the cost of the implementation phase of new product development at approximately 10 times the cost of research."

- Strategic packaging and branding;
- Technical assistance;
- Standards, specifications, guidebooks, and manuals;
- Follow-on research, testing, and evaluation;
- Lead users and demonstration projects;
- Training and education; and
- Long-term stewardship