



Research, Development and Technology (RD&T) Program Development for Federal Fiscal Year 2013 (FFY 2013)

Requests for In-House Research Projects and Pooled Fund Research Studies are accepted until May 4, 2012!

NDOT Research Section has begun the annual program development process for Federal Fiscal Year 2013 (covering October 1, 2012 through September 30, 2013).

The Research Section opened the solicitation for research problem statements for FFY 2013 on December 23, 2011 and has received a total of 64 problem statements up from 51 statements last year.

Though problem statements will be accepted throughout the year, submittals to be considered for FFY 2013 were closed by January 30, 2012.

The annual research program at NDOT is part of the national Research, Development and Technology Transfer (RD&T) program funded by FHWA's State Planning and Research (SPR) program. The State Planning and Research (SP&R) Program is intended to solve problems identified by the State.

A summary description of the SPR Program is available at the FHWA SPR Website <http://www.fhwa.dot.gov/research/partnership/spr/>.

State DOTs develop, establish, and implement RD&T programs that anticipate and address transportation concerns before they become critical problems. High priority is given to applied research on State or regional problems, transfer of technology from researcher to user, and research for setting standards and specifications. RD&T programs typically involve research on new areas of knowledge; adapting findings to practi-

cal applications by developing new technologies; and the transfer of these technologies, including the process of dissemination, demonstration, training, and adoption of innovations by users.

For FFY 2013, NDOT Research identified priority areas of research critical to NDOT's mission as below:

1. **Systemwide Performance Monitoring and Performance Measurement Methods and Tools:** especially for non-recurring congestion and safety performance using ITS and data from ITS elements.
2. **Improving Freeway/Highway Operations:** special emphasis on congestion mitigation with effective operational strategies including travel time reliability improvements, geometric design methods/tools and driver education and information programs.

The 64 problem statements submitted were reviewed by the Research Advisory Committee (RAC). A selected number of Section Chiefs serve on the Research Advisory Committee and met in early March to finalize the ranking of the problem statements and selected the top 15 problem statements for which request for full proposals will be advertised.

RAC evaluated the submitted problem statements on the following five criteria:

- **Implementation Potential** – Five general stages of research implementation are in accepted practice. The submitted problem statement is rated on its potential for implementation based on what stage of the research deployment the proposed research falls under and also whether the proposed research will result in deliverables that are ready for implementation (Score 1 for Stage 1 Research and Score 10 for Stage 5 Research).
- **2013 NDOT Critical Areas** – The submitted problem statements have been evaluated for their alignment with identified 2013 NDOT Critical Areas as

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above. For the problem statements that are aligned with the Critical Areas, a score of 10 has been awarded and also for the problem statements submitted by NDOT personnel, a score of 10 has been awarded based on the expressed critical nature of the problem.

- **Methodology** –The research plan including the methodologies and the justification for the specific methodology selected are rated. Does the Research Plan directly address the identified problem? (Score 1 if Proposed Methodology is NOT Outlined Clearly or Not Sound and Score 10 if Proposed Methodology is Described Clearly and is Sound).
- **Urgency** – The submitted problem statement is rated for its urgency to be pursued based on the cost of postponement as explained in the problem statement (1- Least Urgent, 5 - Neutral, 10 - Most Urgent).
- **Pay-off Potential** – The submitted problem statement is rated for its overall potential benefit (as described in the statement) when successfully completed and implemented (Score 1 - Least Pay-off, 5-Neutral, 10- Most Pay-off).

When a request for full proposals for selected top problem statements is announced in March 2012, researchers from the universities and consultants may be contacting you to champion one or more of their research problem proposals. If their research proposals interest you and will benefit your section or division, please respond to their requests.

When full proposals are received, RAC will meet again to select a final list of research proposals to be recommended to the Research Management Committee (RMC). The Deputy Directors and Assistant Directors serve on the Research Management Committee. RMC makes the final approval of selected research projects after which the selected proposers are notified of their selection and an agreement is entered into.

When new research projects are started, the Research Section solicits NDOT personnel to serve on the project panels for the life of the research project; please let us know if you are interested in serving on these panels.

IN-HOUSE RESEARCH

If you are an NDOT employee and are interested in doing a research project in-house by yourself or with help of others within the Department, Research Management Committee (RMC) considers requests when they meet to approve the research projects recommended by RAC. RMC is expected to meet in late May or June 2012.

This in-house research can also be towards a university degree that you are working on as long as it addresses a Department need. If you are in-

terested in submitting a request for in-house research, please contact the Research Section.

POOLED FUND PROJECT PARTICIPATION

Requests to participate in National Pooled Fund Research Projects listed on <http://www.pooledfund.org/> can be made to the Research Section through the concerned Section Chiefs and these requests are presented to the Research Management Committee for consideration. **Requests to participate in pooled fund studies for FFY 2013 need to be submitted before May 4, 2012.**

For additional details about the research program or assistance to develop a research problem statement, please contact the Research Section as below:

Research Chief: **Ken Chambers**
kchambers@dot.state.nv.us
Research Coordinator: **Manju Kumar**
mkumar@dot.state.nv.us

NDOT PRODUCT EVALUATION PROGRAM

FIELD TESTING AT NDOT

The Nevada Department of Transportation (NDOT) approves field tests through the Product Evaluation Committee (PEC). The following field tests are in various stages of production:

- **Bridge Deck Membrane:** A bridge deck membrane is a two-component cold liquid polyurethane system that is spray-applied as a water proofing membrane protecting against water, salts, chemicals, and other corrosive effects on bridge structures. The field test was approved at the Product Evaluation Committee meeting, March 2010 and should be completed by September 2013. District II in collaboration with the Bridge Section, has located the test deck at SR 447 on the Truckee River at Nixon.
- **Corrosion Inhibitor:** The PEC approved a field test in December 2010 of Cargill's Corrosion Inhibitor with an anticipated completion date of March 2013. Two questions will be answered through District II Maintenance field test: how the corrosion inhibitor helps prevent or reduce damage to NDOT equipment and how corrosion inhibitor helps prevent or reduce damage to NDOT infrastructure. The field test is underway

for the first portion with Gary Erskine as Principal Investigator. It is being conducted in the Fernley/Fallon area. Snowplows have had buttons made of various materials, i.e., steel, copper, and iron, attached to the undercarriage of their vehicles where the worst of the treated snow will hit. The second part of the project will not begin until next winter at the earliest on the new portion of I-80 as part of the I-80 design-build contract (Keystone to 4th Street) and on the new I-580 extension (Mt. Rose Highway to Winters Ranch). An agreement is being drafted with the University of Nevada, Reno to complete the testing for the project.

• **Detectable Warning Systems:** Multiple vendors were approved in March 2009 to participate in a detectable warning system field test that will evaluate the latest technology including replaceable systems. District I is hosting the project on US95 south at Craig Road. The project will have periodic review with a one-year interim product approval; the completion date ends with the failure of the second replaceable installation of the product.

• **Fiber Mat:** Fiber Mat was approved September 2010 for a field test in Las Vegas on US93 through a District contract. The project's completion date is September 2013. Roma Clewell completed the first year's mapping of the test deck for cracks and general appearance. The observed cracks appeared around the areas where vehicles slow down entering town or speed up leaving town.

• **Manhole Adjustment Riser:** East Jordan Iron Works Incorporated, now EJ USA Incorporated's, Manhole Adjustment Riser was approved in June of 2009 for a field test with a completion date of September 2011. That date had to be extended as the first location for the test was changed to Boulder City, Nevada. Joe Miller, Fisher Industries, in collaboration with the Construction Section, will be conducting the test to determine the capability, advantages, and disadvantages of using a load distribution dissipating vibration system.

• **Modular Rubber Drains:** Modular Drains' Modular Rubber Drain was approved for field testing in March 2010 and will be completed in September 2012 through District I. The field test is located on the I-15 Henderson Bowl project. This system can be used in locations where treatment was otherwise not available.

• **Multilayer Overlay Systems:** In 2008, NDOT began field testing multilayer overlay systems. At first the evaluation focused on the binder, but NDOT has determined that the binder and aggregate combination is important. The newest round of testing applied Unitex's epoxy binder with two aggregate sources, SRI 6-8 Silica and Earthworks Solution's #8 Steel Slag on 395 north and south (I-1248 Moana Interchange) in August of 2011. Subsequent evaluation and skid testing is planned for Spring 2012 and again in Fall 2012. NDOT will then turn over its testing process to NTPEP and evaluate products based on the NTPEP data.

• **Rehbein's Epic System:** The Product Evaluation Committee approved Rehbein's Epic System for field testing December 2008. Funding for the project was requested through a grant, but was not awarded. State Route 28 Marlette Creek project is being considered by District II to test the water purifying system pending environmental clearance. James Murphy is completing the paperwork for this clearance.

• **SS Intertrade LLC's Guardrail Delineation Lights:** SS Intertrade LLC's LED Guardrail Delineation field test was approved March 2011 with an anticipated completion date of June 2013. District II is working on installation on two guardrails to be located at primary accident locations. This system would serve as an alternate to the reflective stripe field test approved three years ago.

• **SS Intertrade LLC's Road Markers:** SS Intertrade LLC's LED Road Markers field test was approved March 2011. A test location is being sought in Las Vegas. Representatives from the company will meet to discuss the process with District I.

PRODUCT EVALUATION COMMITTEE MEETING DATES

The 2012/2013 Product Evaluation Committee meeting will be held in the 3rd floor conference room at Carson City Headquarters from 1:30 p.m. to 4:00 p.m. on the following dates:

2012	2013
Tuesday, June 12, 2012	Tuesday, March 12, 2013
Tuesday, September 11, 2012	Tuesday, June 11, 2013
Tuesday, December 11, 2012	Tuesday, September 10, 2013
	Tuesday, December 10, 2013

Library Corner:

ASCE Journal Publications Electronic Access

After giving Sena Loyd, NDOT Librarian, your input, Research decided to try online access for all ASCE Publications. This library of journals is accessible at each of your workstations authenticated by an IP Address (NDOT employees only). This means that by accessing this URL, (<http://www.ascelibrary.org/>), you will have access to approximately 73,000 papers. If you have any trouble accessing or finding the specific information you are seeking, feel free to contact Sena Loyd, NDOT Librarian, at 775-888-7895 or sloyd@dot.state.nv.us.

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NDOT Research Library's Virtual Intern

Research is excited to announce that Sarah Emmerson has accepted a virtual internship for the NDOT Research Library.

Sarah Emmerson

Sarah Emmerson is in her final year of studies for a Master in Library and Information Science (MLIS) degree in the San José State University SLIS program, specializing in Special Librarianship as well as Digital Services and Emerging Technologies. She earned BA degrees in History and Political Science from California State University, Chico in 2008. While she pursues her MLIS degree, Sarah divides her time among serving as Art Database Tagging Project Volunteer at Hesperian Foundation, Newsletter Editor and Mentorship Coordinator for the Special Interest Group on International Information Issues (SIG-III) at the American Society for Information Science and Technology (ASIS&T), and Chair of the San José State University ASIS&T Student Chapter. She completed an internship at Yuba College Library in the Fall 2011, and in the Spring 2012 semester she begins an internship at the Nevada Department of Transportation. Her professional goal after graduation is to work in a special library. Sarah's professional experiences lie in indexing, descriptive metadata tagging, creating research guides, editing, communications, social technologies, screen casting, and international professional development outreach. She currently lives in Orange County, California.

Sarah will be cataloging library materials, answering reference question, and assisting with acquiring OCLC [Online Computer Library Center] services through the Library Connectivity Pooled Fund. If you have any literature searches or more involved research we may be able to accommodate them at this time. She began her internship on 1/31/2012.

Sarah Emmerson
 Email: semmerson@dot.state.nv.us



Please send larger research projects to both Sarah and Sena Loyd for a determination of the time and resources that can be allocated.



The NDOT Research Section administers the NDOT's research, development and technology transfer program and serves as the "clearing-house" for product evaluations.

Research and Technology Review is published quarterly by the NDOT Research Section. Its purpose is to provide the latest information on the NDOT research activities including product information and other pertinent research topics.

If you have comments or need additional information regarding any of the topics discussed in this issue, please contact the Research Section. Edited by: Gizachew Zewdu

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