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Expecting Great Results

A conversation about MDOT's new research program with MDOT Chief Administrative Officer Leon Hank

Two days before leaving for a two-week best practices scanning tour of transportation systems in Europe, MDOT Chief Administrative Officer (CAO) Leon Hank sat down for a few minutes to provide his perspective of the new research program for the ORBP Newsletter. In addition to his duties as CAO, Mr. Hank serves on MDOT's Research Executive Committee, where he provides executive-level support to Chief Operating Officer (COO) Greg Johnson and ORBP Engineer Calvin Roberts and his team as they lead the department's research efforts.



ORBP: *How would you describe the new research program in relation to your view of the "Big Picture" at MDOT?*

Leon Hank: The new program reflects the department's continuing effort to make the most of all of our resources. By focusing research on the department's strategic goals and making implementation a priority, the new program makes sure we spend our research dollars in ways that produce meaningful results. Basically, the goal of the program is to conduct research that impacts the big picture.

ORBP: *What specific steps does the Research Executive Committee take to define research priorities?*

LH: Each member of the committee looks at the strategic plan and tries to identify problems within the department that could possibly be solved through research. Then we get together as a group and brainstorm to make a final list. This past summer we spent three or four hours around a conference table, discussing how research could help us get where we wanted to go. We ended up with a list of 60 issues.

ORBP: *What impact did the Research Summit have on the research priorities?*

LH: At MDOT we know we don't have the market cornered on great ideas; we rely heavily on our partners in the research community for help. When the REC made a list of issues that could be solved through research, that was just the first step. The summit was a way to engage with the rest of the research community to refine that list and begin to make plans to produce meaningful projects.

ORBP: *Is the research program for FY 2010 and 2011 in line with REC expectations?*

LH: Yes. It's a work in progress, so it's still too early to talk about results. But we're excited about what we've seen so far. The main thing is that the program is beginning to reflect the fact that we're a multi-modal department. In the past, there was a sense that research was focused on materials and processes for roads and bridges. Today, rail, aeronautics, mass transit, and others are getting more attention, and we've even identified some projects that deal with finance and administration. Both subject areas are vitally important to transportation, but neither has benefited much from research in past years.

ORBP: *Have you seen any impact outside of the research community?*

LH: The process has opened up communication between different groups within the department. Stakeholders in all areas are encouraged to speak up to modify and refine the projects,

See "Great Results" on page 2



From Calvin's Desk

Since the flurry of activity involved with processing the first batch of research proposals using an all new management process subsided a few of weeks ago, the ORBP offices have been relatively calm. While there is still plenty to do (and a great sense of urgency about everything we do), the relative calm has given me a chance to reflect on what has happened since the office was created in September 2005. Looking back over the past 48 or so months, three words come to mind: *engagement*, *responsiveness* and *collaboration*.

The entire research community in Michigan has been involved in the process from the beginning. From top-level executives within the Department through world-class researchers at universities to the youngest technicians just beginning their careers at consulting firms and municipalities, we have *engaged* with one another, *responded* to continued requests for help, and *collaborated* on how best to address problems. We at the ORBP first asked for help to re-write the research manual. We then asked you to identify problems within the field of transportation that could possibly be addressed through research. Most recently, we asked for project proposals to solve the problems identified. In every case, the community has engaged, responded and collaborated. The results have been overwhelming.

As a community, we have identified 22 very good research projects. The most exciting part of the process will begin shortly. More engagement, responsiveness and collaboration will be necessary to complete projects and implement results. Based on what I've seen so far, I'm more confident than ever that our transportation system will benefit greatly from our efforts. On behalf of everyone at the ORBP and everyone who uses our transportation system, thank you for your help.

Calvin Roberts, P.E.
Engineer of ORBP

Great Results (cont.)

and they've been doing that. Communication and understanding within the department has improved a lot – it's the best I've seen.

ORBP: *What's the next step in the process?*

LH: The REC will meet again on August 12 to review and approve the program. After that, it goes to FHWA for final approval, and then projects will begin on October 1. This is exciting. We're expecting great results.

ORBP: *Thank you for your time. Any final thoughts?*

LH: I just want to reiterate that this is a work in progress. Calvin [Roberts] and his team have made significant changes and we expect great results, but changes like this don't happen without some discomfort. We're confident that as we continue to work together we'll create something better for everyone involved in the process and for everyone who uses our transportation system.



Diversity of involved stakeholders creates exciting benefits and new opportunities

By Michael Townley, Research Manager – MDOT ORBP

What began as a creative brainstorming exercise at the Research Summit in Lansing on October 1, 2008, has culminated in a group of 22 solid transportation research projects awarded to nationally-renowned researchers. Reaching this point required the collaborative efforts of close to 100 Michigan Department of Transportation (MDOT) personnel and external experts.

The diversity of involved stakeholders has been a common thread running through the entire process.

Web site creates huge response

In mid April, 2009, the Office of Research and Best Practices (ORBP) advertised problem statements through a Request for Proposal process. Using our web site enabled us to share our needs with researchers from all over the country. The response was overwhelm-

ing; universities and consulting firms from 28 locations throughout the United States and Canada submitted 85 proposals for consideration.

Diverse evaluation and influence

To evaluate each proposal, MDOT drew from a diverse group of experts in the fields of pavement, bridges, planning, design, materials, geotechnical, construction and safety. These teams of experts scored each proposal on its individual merit compared to the other entrants, and then selected the best proposal for each research project. The teams, or Research Advisory Panels (RAPs), will be available to assist project managers, who work directly with each principal investigator.

One project's RAP is made up of a staff member from a Michigan road commission, an engineer from an MDOT office in the Upper Peninsula, a safety specialist from Lansing, and an ORBP staff member. Bringing together such di-

verse teams of influencers ensures that research remains relevant to the needs of our transportation system, and that findings are useful and implementable.

More to come

Increasingly, MDOT is involving experts in the fields of psychology, mathematics, economics and other areas that historically have had little involvement in transportation research. The goal: more thorough results.

The results of our research efforts will save lives, reduce congestion, save money, and improve user experience throughout the transportation system in Michigan.

In the years ahead, ORBP is positioned to assist, through research, with all facets of MDOT's business, from real estate to railway. Through this involvement, we anticipate additional benefits and more opportunities for everyone involved.



Benefits from new transportation research process mirror advances in intelligent transportation systems

In a recent conversation about technology in the transportation field with the editor of ITS International magazine, U.S. Secretary of Transportation Ray LaHood drew a parallel between the continuing development of IntelliDriveSM (formerly the Vehicle Infrastructure Integration, or VII, initiative), and the early days of the Internet. “If we look forward to *IntelliDrive*, connectivity between vehicles and with smart infrastructure will become as transformational as the Internet,” Secretary LaHood said. “The Internet initially started with a few basic applications, and then exploded into countless new applications and fostered new industries. *IntelliDrive* represents that starting point for transportation applications that will improve safety, mobility and the environment. Additionally, connectivity will enable commercial and consumer services that we can only begin to imagine today.”¹

“...Technology in this area is advancing so fast that to take advantage of it, you need to recognize what’s going on and act quickly. Overall, the ORBP has established a great structure for getting things done.”

Jason Gutting, Management Engineer
MDOT Division of Operations

IntelliDrive uses wireless technologies to enable real-time communication among vehicles and between vehicles and the roadway. Technically, the *IntelliDrive* system is very complex. But the most complicated part of the initiative lies not in the technical details, but rather in issues of organizational dynamics. To be successful, *IntelliDrive* requires deep cooperation among diverse groups of technical, corporate, political and governmental entities that historically have not had much contact with each other. The diversity of stakeholders involved is part of the reason why Secretary LaHood expects *IntelliDrive* to serve as a catalyst for new industries.

A great start

Calvin Roberts, engineer of the Michigan Department of Transportation (MDOT) Office of Research and Best Practices (ORBP) has a similar vision for research in Michigan. As the new process for managing State Planning and Research (SPR), Part II, Program research develops and matures, Roberts predicts that the research community will find problems and create solutions that (in the words of Secretary LaHood) we can only begin to imagine today.

“This first research cycle using the new process has been encouraging, Roberts said. “The scope of our research efforts has increased greatly already, but this is only the beginning. As more people with different backgrounds, areas of expertise, and interests get involved, we’ll learn, accomplish and benefit even more from the work we do.”

Initial results look good

Jill Morena is a pavement marking engineer in the MDOT Traffic and Safety Division. She also serves as a research project manager (PM) on traffic and safety related research projects. This is not her first experience with managing research projects; she served as a PM several years ago, before the new process was in place. “The new way of doing things understandably has some glitches, but it provides much more direction and assistance than we’ve had in the past,” Morena said. “The ORBP is an excellent mechanism for support within the department. It’s been great to have a single point of contact for questions about the process.”

Beyond administrative benefits, Morena also pointed out how the research itself will benefit from the new process. While reviewing a proposal with her group’s research advisory panel (RAP), one member of the RAP whose job responsibilities were in the field, asked if the project could be modified slightly. He explained how making the change would help him do his job. Morena was thrilled. “We’re in the office day-to-day looking at this stuff, but we only see it from one perspective,” she said. “This guy helped all of us see the project with fresh eyes. It was an extremely valuable exchange, and it will ultimately help when the research is complete and we move on to implementing results.”

Wide scope, fast pace

The expanded scope of the MDOT research program and the pace of the process for managing it are especially beneficial according to Jason Gutting, manager of the System Planning and Strategic Measures research focus area. Gutting is a systems operations and management engineer in the MDOT Division of Operations area.

“I have been very happy with the research projects in my focus area. This is the first time I’ve seen so much emphasis on operations,” Gutting said. “And the fast pace is great. Technology in this area is advancing so fast that to take advantage of it, you need to recognize what’s going on and act quickly. Overall, the ORBP has established a great structure for getting things done.”

Looking ahead

Kick-off meetings are the next significant step in the process (see “Kick-off meetings will set the tone, on page 2) before the new research biennium begins October 1.

References

1. “Recovery Position.” ITS International May/June 2009: 74.



Kick-off meetings will set the tone

Kick off meetings, to be held in late September, are the next significant step toward beginning the FY 2010-2011 research biennium. The meetings will be coordinated by the research manager (RM) for each project that is scheduled to begin in 2010. For projects scheduled to begin in 2011, kick-off meetings will take place in September 2010.

In addition to the RM, each meeting will include the principal investigator (PI) and the project manager (PM). In addition, the rest of the research advisory panel (RAP), including a variety of technical experts, such as engineers, statisticians, planners, safety specialists for each project may attend, but are not required.

The purpose of the kick-off meetings is to review the work to be completed, expectations, deadlines, and other issues to establish a common level of understanding among members of the RAP. Topics to be addressed in the kick-off meetings will include:

- Work plan
- Scope of work
- Schedule
- Reports
- Invoicing
- Deliverables
- Implementation
- and other topics as necessary

Michael Townley, research manager for the Office of Research and Best Practices (ORBP), appreciates the significance of the kick-off meetings.

"This is an exciting and very important time in the research process," Townley said. "It's exciting because these are the final steps before beginning the research projects. It's also very important because these meetings will set the tone for the coming research biennium; they will provide a framework for the communication and relationships that will drive the rest of the process."



About the Office of Research and Best Practices



Our Mission

The ORBP's mission is to:

- Coordinate and manage research programs for the Michigan Department of Transportation (MDOT)
- Monitor learning and innovation in development and operations of integrated transportation systems
- Promote implementation of learning and innovation throughout MDOT
- Encourage research that supports integrated multi-modal transportation and MDOT's strategic goals.

Our Vision

The ORBP's vision is to be a recognized leader in coordinating applied research and implementing results. We will accomplish this by:

- Identifying cutting edge research topics
- Coordinating development of research projects
- Implementing research results

Our core strength results from a highly integrated network of dynamic partnerships among transportation professionals.

Our Values

The ORBP's values include:

- Quality
- Teamwork
- Customer Orientation
- Integrity
- Pride
- Determination
- Innovation
- Partnership

The ORBP Team

Main ORBP Office

Calvin Roberts, Engineer of ORBP
Trudy Schutte, Executive Secretary
Wen-hou Kuo, Statistician
Angela Nelson, Department Analyst

MDOT Statewide Library

Alexandra Briseno, Librarian

Best Practices/Legislative Initiatives

Andre Clover, Administrative Engineer

Transportation Research Program

Michael Townley, Research Manager
Annette Nealey, Research Admin. Asst.
Nancy Crider, Research Analyst
Homer Sprague, Statistician

Contact us

Hearing from you is very important to us. Your questions and comments provide opportunities for us to improve our processes for managing research. Please use one of the methods below to let us know what you're thinking.



Phone: 517-241-4667



Email: mdot-research@michigan.gov



Web site: www.michigan.gov/mdot

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