

**Mississippi
Department of Transportation**

**RESEARCH DIVISION
PEER EXCHANGE II
FINAL REPORT**

September 24 – 26, 2002

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Department of Transportation**

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FINAL REPORT**

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**Prepared by the
Mississippi Department of Transportation
*RESEARCH DIVISION***

**In Cooperation with the
U.S. Department of Transportation
Federal Highway Administration**

**MISSISSIPPI DEPARTMENT OF TRANSPORTATION
RESEARCH DIVISION**

SECOND ROUND PEER EXCHANGE

**September 24 – 26, 2002
Jackson, MS**

**SECOND ROUND PEER EXCHANGE FINAL REPORT
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INTRODUCTION

Regulations contained in 23 CFR Part 420 establish procedures under which the Federal Highway Administration (FHWA) may allow states increased flexibility for directing and controlling their program initiatives. These regulations set forth the minimum Federal requirements for carrying out Research activities using FHWA State Planning and Research (SP&R) funds. One of these conditions stipulates that the State Transportation Agency (STA) will conduct a peer exchange of their research management processes on a “periodic basis”. Each state is responsible for selecting and organizing the peer exchange team for its state exchange. Mississippi DOT hosted its initial Research Peer Exchange on June 15-18, 1998 in Jackson, Mississippi. This final report details the results of Mississippi’s second research peer exchange which was performed on September 24-26, 2002 in Jackson, Mississippi.

The Peer Exchange concept as used herein denotes a process of convening a team composed of invited research managers from other agencies. The team, together with the host agency discusses and reviews their management processes. Information from the host agency as well as the agencies represented by team members is exchanged with the intent to gaining insights that have the potential to improve the research management process of both the host agency as well as those of the peer exchange team members.

EXCHANGE PARTICIPANTS

Peer Exchange Team Members

1. Mr. Harold “Skip” Paul (Exchange Team Leader)
AASHTO Region II Research Advisory Committee, Vice-Chairman
Associate Director, Research – Louisiana DOTD
Baton Rouge, LA
2. Mr. Jeffery Brown
Research & Development Engineer – Alabama DOT
Montgomery, AL
3. Ms. Georgene Geary
State Materials & Research Engineer – Georgia DOT
Forest Park, GA
4. Mr. Michael Sanders
Research Engineer – South Carolina DOT
Columbia, SC
5. Mr. Michael Smith
Materials Engineer – FHWA Southern Resource Center
Atlanta, GA

MDOT Staff Member Participants

Mr. Marlin Collier, Director Office of Intermodal Planning (MDOT RAC member)
Mr. Pat Farris, Director Office of Administrative Services (MDOT RAC member)
Mr. Wendell Ruff, Assistant Chief Engineer Preconstruction (MDOT RAC member)
Mr. James Dickerson, District Two Engineer (MDOT RAC member)
Mr. Randy Battey, State Research Engineer (MDOT RAC Chairman)
Ms. Joy Portera, State Construction Engineer
Mr. Jimmy Brumfield, State Materials Engineer
Mr. Richard Sheffield, Assistant State Materials Engineer
Mr. Ray Balentine, State Planning Engineer
Mr. James Watkins, Assistant State Research Engineer
Mr. William Barstis, Engineer IV – Research Division
Mr. Dylan Gordy, Engineer-in-Training – Research Division
Mr. John Avent, Certified Engineering Technician – Research Division

FHWA Mississippi Division Office Participants

Mr. Andrew Hughes, Division Administrator
Mr. Robert Webster, Research Engineer (MDOT RAC member)

University Participants

Dr. Thomas White, Mississippi State University
Ms. Patsy Foster, Mississippi State University
Dr. Alexander Cheng, University of Mississippi
Dr. Chris Mullen, University of Mississippi
Dr. Waheed Uddin, University of Mississippi
Dr. Ahmed Al-Ostaz, University of Mississippi
Dr. Farshad Amini, Jackson State University
Dr. David Marchman, University of Southern Mississippi
Dr. Tulio Sulbaran, University of Southern Mississippi

EXCHANGE TEAM OBSERVATIONS

The Research Division should be commended for their efforts in conducting an outstanding peer exchange.

Interviews with the MDOT staff confirm the value of products and services produced by the Research Division. The technical assistance offered by the Research Division was noted as being extremely practical and valuable. Both positive and practical benefits of the research program were identified. Research is linked to actual changes in specifications, which validates the value of the research program. It was obvious in the RAC meeting that the Research Division was accountable to the department and was spending the money efficiently.

It was recognized that the research staff participate widely in department activities from leadership on the Pipe Culvert Subcommittee to participation in the winter construction meeting annually held by the department, to the Pavement Recommendations Committee, and to the Product Evaluation Committee. This is in addition to their normal responsibilities of conducting and managing a multi-faceted research program. The staff's authorship of in-house reports such as the Resin Modified Pavement and Lime Fly Ash reports demonstrates technical leadership and should be encouraged. The value of the pavement management system is recognized in the daily operational activities of the department.

The Master Agreement, implemented just prior to and noted in the last peer exchange, has been so successful that it has been extended for an additional five years. Because of the existence and size of the agreement, the universities have been encouraged and expanded their expertise to meet MDOT needs. As a result the universities are more responsive to the needs of MDOT.

The Research Division is cultivating relationships with the universities beyond research, such as supporting the purchase of superpave equipment for each university. Developing the latest expertise in technologies at the university level provides an investment towards potential employees for the transportation industry. In a similar vein, the K-6 transportation kit was recognized by each member of the peer exchange team as a valuable investment in MDOT's future.

The Research Division intranet site has tremendous potential and should be expanded. PDF files on the web page should include proposals and final reports. The value of the information is such that it should be available to a wider audience and placed on the GoMDOT page.

Having observed the RAC meeting, it appears that there's a positive working relationship between the various members with an open exchange of ideas and priorities. The inclusion of the FHWA Division Office appeared to be welcomed and appreciated by the RAC members. Consider adding additional district personnel to the RAC in order to get a better representation of district operations.

Several division administrators noted that a greater investment in research is needed to address the problems they are facing. It was indicated that desirable research projects may not now be undertaken because of limitations in either staff or budget. Given the existing needs for research contract management and conduct of in-house research by the present staff, substantial benefits may be achieved through the addition of staff.

Issues on contract limitations also affect the research program. The 80% federal/20% state funded projects (as opposed to 100% federally funded pool fund projects) appear to provide higher implementation potential and better support department problems, but current state limitations on contractual spending authority often constrain the funding of these projects. Therefore, it should be recognized that if additional state contractual spending authority, MDOT could realize more beneficial research results from the minimal investment of additional 20% state monies.

The MDOT research program has provided successful research that deserves wider recognition. The AASHTO “High Value Research” web page, the TRB “Research Pays Off” articles, and the GoMDOT web page are typical vehicles to disseminate this information.

The research program as presented to the exchange team is problem driven; however, a number of opportunities can be incorporated into the solicitation process to involve a larger segment of the transportation community and to address long term concerns. These opportunities could include:

- The addition of industry and Metropolitan Planning Organizations (MPO’s) in the solicitation process
- Wider outreach to all department personnel
- Web page inclusion of the solicitation outreach letter and the problem statement form and/or a bulletin board for research problems submittal

Consideration should be given to a conference or workshop bringing all facets of the transportation industry together to encourage face-to-face meetings to discuss research needs. This session could include brainstorming to go beyond solving immediate problems.

Consider the formation of advisory committees to refine problem statements and to serve as support throughout the conduct of the research. Consider having a FHWA member on the committee also.

Tremendous benefits can be received from educational/professional conferences and workshops. Expertise and networking developed through these conferences, along with dissemination of MDOT research, provide staff with the opportunity to better serve MDOT and the transportation community. Sufficient travel funds beyond operational needs should be provided to optimize participation at these meetings.

Consider the development of a customer survey to identify improvements or problems with either the research process or the research products.

MAJOR POINTS TO TAKE HOME

SCDOT, FHWA, ALDOT, GDOT

- utilization of the web to distribute technical/progress reports
- placing library resources on the web, including search capabilities
- inform appropriate personnel about the development of the k-6 transportation kit

LADOT

- make sure web resources are up-to-date
- explore the use of technology deployment funds from resource centers for marketing/Technology Transfer/implementation
- explore opportunities for assisting university educational programs such as the 125K superpave equipment. This provides an investment opportunity for future DOT employees.
- revisit taking the LTRC research program to the universities and have the universities reciprocate by presenting their expertise and capabilities

SCDOT

- consider research brainstorming meeting to promote topic solicitation and research in general
- add implementation section to the progress report form
- increase awareness of in-state universities' expertise in all areas

FHWA

- share knowledge of MDOT research projects with southeastern states
- awareness of Mississippi universities' expertise

ALDOT

- purchase equipment for universities and professor training
- budget for discretionary funding
- consider funding senior research projects for the universities as a comprehensive senior project

GDOT

- use RAC meeting as a forum to provide info to upper management on status and accomplishments of the research program instead of just a project approval meeting
- add more detail and money to the implementation line item in the work program budget
- request literature search results to be included in research proposals
- research newsletter or sharing information through LTAP newsletter
- improve relationship with local universities

RECOMMENDATIONS FOR MDOT CONSIDERATION

Increased staffing – In recent years, the Research Division has lost several key upper management employees either due to promotion or retirement. When these Research manager positions were vacated, there was a promotional “domino effect” throughout the division that left several lower engineer classification staff positions vacated. These positions remained vacant for an extended period of time and were eliminated based on a state policy regarding vacant positions. If the Research Division is to continue to provide MDOT with a quality product, these positions need to be returned to the division and filled with entry level engineering personnel. This would insure that when the current upper level research managers within the agency are no longer available to the division that qualified personnel will be available to assume the leadership positions within the division.

Contractual Services spending authority relief – Contractual spending limits are currently set by the Mississippi State Legislature for all state agencies, including MDOT. MDOT’s Office of Budget divides this contractual spending authority among all MDOT Divisions. Currently the Research Division is constrained by this spending authority limit. As the internal staff size of the division shrinks, additional monies must be spent on contractual research if MDOT is to remain in compliance with current Federal regulations with regard to the utilization of SPR funds for research. This state spending authority often puts the Research Division administrators between “a rock and a hard place” because of the inability to spend the necessary amount of money internally due to lack of staff and the constraints on external (contractual) research spending. Often due to the nature of pool fund activity accounting (100% federal funded studies that do not count against state spending authority limitations) pool fund studies are chosen over conventional 80% federal/20% state funded research even though historically the department has realized more implementable research results from 80/20 studies than pool funded activities.

Further expansion of the MDOT Research Advisory Committee (RAC) to include District personnel – The current MDOT Standard Operating Procedure (SOP) with regards to the departmental RAC sets the membership of the committee to include only one of MDOT’s six District Engineers on a rotating basis. Since these District Engineers are aware of problems that exist “where the rubber meets the road”, it is recommended to insure that practical and needed research continues to receive funding; one additional District Engineer should be added to the current RAC membership on a rotating basis. This will also increase “champions for research” within MDOT’s Districts.

Utilization of the various mechanisms available for dissemination of research – It is recognized the current MDOT research staff provide implementable results for the department. Current mechanisms such as AASHTO’s “High Value Research” web page and TRB’s “Research Pays Off” articles should be utilized to inform the transportation community of the quality products that are being provided by MDOT researchers and to give current and future MDOT research staff the recognition they deserve.

Expansion of travel funding – The travel budget for MDOT research staff members should continue to be expanded to provide for a wider participation in valuable national research activities such as the TRB Annual Meeting, SASHTO Quality Workshop and the Southeastern Asphalt Users & Producers Group Annual Meeting. As operational duties for the department increase, much of the divisional allotment for travel funding is utilized to perform operational functions. Opportunities for the exchange of ideas and technology transfer will decrease if travel funding is not expanded.

Annual Research Conference sponsored by MDOT – To insure that practical, implementable and needed research continues to be produced for the department through the utilization of SPR Part II funds, it is recommended that MDOT host an annual event to bring all the research stakeholders together for a research brainstorming event. This event will involve MDOT personnel, FHWA partners, representatives from academia and industry and any other necessary stakeholders. This meeting will assist all stakeholders to provide for the research needs of the transportation community.

Expand the utilization of Technical Advisory Committees (TAC's) – In recent years, the Research Division has formed a TAC on only a few select research projects. It is recommended that this policy be expanded to include the majority of the projects that are undertaken utilizing SPR Part II funds. The TAC would be made up of the MDOT & FHWA personnel with a vested interest in the project. These committees would meet periodically and would serve to insure that the proper direction of the study is maintained and that practical and implementable research results are attained throughout the life of the project. Should implementation of a portion of the project become feasible during the life of the study, the TAC could assist to implement recommendations earlier as opposed to waiting to implement once the final product of the project is completed. The TAC would also insure that a “champion of the research” is in place to implement the products of the research.

Continued expansion of MDOT Research's web resources – It is recognized that the MDOT Research Division has made great strides in providing the Department with research information through the MDOT@Work intranet research site. The Division should continue to expand this service and make much of the information currently only available to MDOT employees accessible to the transportation community at large by including this information on the GoMDOT internet website. This would help other state transportation agencies to insure that their SPR funds are not being spent to duplicate research results already achieved by MDOT research. Further, all proposals for research should be received in PDF format for inclusion on the MDOT@Work intranet site, so interested MDOT personnel can review the proposals and provide quality feedback to the MDOT Research Advisory Committee as to the necessity of the proposed research. Additionally, a customer survey should be distributed utilizing web resources to insure that MDOT Research is meeting the needs of their customers.

**Mississippi Department of Transportation
Research Division Peer Exchange II
September 24th – 26th, 2002**

MDOT Administration Building, 401 North West Street
Jackson, MS 39201

Agenda

Tuesday, September 24

1:00pm – 2:45pm Organizational Meeting with MDOT Research Staff
2:45pm – 3:00pm Break
3:00pm – 5:00pm University Research Presentations (MSU, UM, USM & JSU)
6:30pm Group Dinner

Wednesday, September 25

8:30am – 9:00am MDOT Staff Interview – Marlin Collier, Director Office of
Intermodal Planning
9:00am – 9:30am MDOT Staff Interview – Joy Portera, State Construction Engineer
9:30am – 10:00am Break
10:00am – noon MDOT Annual Research Advisory Committee (RAC) Meeting
noon – 2:00pm Group Lunch
2:00pm – 2:30pm MDOT Staff Interview – Jimmy Dickerson, District Two Engineer
2:30pm – 3:00pm MDOT Staff Interview – Jimmy Brumfield, State Materials
Engineer
3:00pm – 3:30pm MDOT Staff Interview – Ray Balentine, State Planning Engineer
3:00pm – 5:30pm Critique Development
5:30pm – 6:30pm Group “Working” Dinner
6:30pm – until Team Report Preparation

Thursday, September 26

8:00am – 8:30am Review of Exchange Team Findings
8:30am – 9:30am Presentation of Exchange Team Findings to MDOT Upper
Management
9:30am Adjourn