

FINAL REPORT

Kentucky Research Peer Exchange

October 12-14, 2011

Background and Introduction

Title 23 of the Code of Federal Regulations (23 CFR) establishes requirements for state departments of transportation (DOTs) to conduct periodic reviews of their research, development, and technology (RD&T) programs. One of the tools available to state DOTs in reviewing their State Planning and Research (SP&R) programs is the Peer Exchange. According to the “Guide for Peer Exchanges,” published by the Federal Highway Administration (FHWA):

The use of peer exchanges was established to provide State DOT RD&T programs with the opportunity to examine and evaluate their own programs through a collaborative team of peers, experts, and persons involved in the process, where the exchange of vision, ideas, and best practices could be fostered to benefit their program and the program of the participants. A peer exchange is a focused collaboration among transportation research colleagues through which a host State may find the means to restructure or merely fine tune research program processes. With periodic peer exchanges, a State DOT can help ensure that its research program remains viable, vibrant, and productive.¹

Federal regulations require each state to conduct a peer exchange at least once every five years. Each peer exchange should have an agenda covering two to three days and a panel consisting of four to five people. The panel should include representatives from other states, from FHWA, and from other key stakeholder organizations (such as universities with direct involvement in the SP&R program).

Participants in Kentucky’s Peer Exchange

On October 12-14, 2011, Kentucky hosted a peer exchange for its State Planning and Research (SP&R) Program. Panel members included:

Mark J. Morvant, P.E. (Panel Chair)
Associate Director, Research
Louisiana Transportation Research Center

¹ “State Planning and Research: GUIDE FOR PEER EXCHANGES;” FHWA-HRT-10-048; June 2010; pg. 8

Sylvia R. Medina
Contract Specialist and Program Coordinator
Research and Technology Implementation Office
Texas Department of Transportation

Linda A. Narigon, P.E.
Research Implementation Engineer
Research and Technology Bureau
Iowa Department of Transportation

Jamie Bewley Byrd, P.E.
Research Program Coordinator
State Highway Engineer's Office
Kentucky Transportation Cabinet

Robert C. Lewis, P.E.
Assistant State Highway Engineer
Kentucky Transportation Cabinet

Joseph D. Crabtree, Ph.D., P.E.
Director
Kentucky Transportation Center
University of Kentucky

Tony L. Young
Transportation Safety Specialist and Research Program Coordinator
Federal Highway Administration – Kentucky Division

Other participants in the Peer Exchange included:

Chuck Knowles, Waterways Research Coordinator, Kentucky Transportation Center
Steve Mills, Assistant Administrator, Kentucky Division, Federal Highway Administration
Steve Waddle, State Highway Engineer, Kentucky Transportation Cabinet
Reg Souleyrette, Professor of Civil Engineering, University of Kentucky
Eric Grulke, Associate Dean for Research, College of Engineering, University of Kentucky
Clark Graves, Research Program Manager for Pavements, Materials, and Geotechnology,
Kentucky Transportation Center
Martha Horseman, Technology Transfer Program Manager, Kentucky Transportation Center

Dina Johnson and Justin Riggs of the Kentucky Transportation Center's Technology Transfer Program provided meeting coordination, notetaking, and logistical support for the Peer Exchange.

Format and Agenda

The Peer Exchange commenced at 9 AM on Wednesday, October 12, at the University of Kentucky in Lexington. Following introductions, each of the state research program representatives (Mark Morvant, Sylvia Medina, Linda Narigon, and Jamie Bewley Byrd with Joe Crabtree) provided a PowerPoint overview of their respective state's research program. Each representative had been asked to include in their presentation answers to the following questions:

- What is the size (i.e., budget) of your annual research program and what are the funding sources?
- What staffing (i.e., how many people) do you have assigned for the management/coordination of your research program?
- How are ideas for new research projects identified, and how are new projects selected?
- Who actually carries out the research (i.e., DOT researchers, University, contractors, etc.)? How is the determination made as to what organization will carry out each research project, and how is the Principal Investigator selected?
- How does the DOT provide oversight and guidance for each project throughout the project's life?
- What tools or processes do you have in place to make sure research results get implemented?
- What tools or processes do you have in place to track research implementation?
- How do you measure the value of research?
- How do you promote the research program?
- Where do the Technology Transfer program and the Local Technical Assistance Program reside in your state? How are these programs managed/coordinated, and what sort of interaction/integration exists between these programs and the research program?

The PowerPoint presentations provided by the state representatives are included in this report as Appendix A.

Each presentation was followed by an opportunity for questions and answers and an open discussion of ideas and practices that might be suitable for adoption by Kentucky and/or by the

other participating states. Based on these discussions, the panel developed a list of recommendations for Kentucky. In addition, each participating state developed a list of “take-home” items, i.e., items to be considered for adoption in their state.

On the final day of the Peer Exchange, an Executive Briefing was held at the Transportation Cabinet’s Office Building in Frankfort. Representatives from the State Highway Engineer’s Office, as well as from several different divisions of the Transportation Cabinet, participated in the Executive Briefing. A PowerPoint presentation was prepared by the panel members and used for the briefing. That PowerPoint presentation is included in this report as Appendix B.

Findings and Recommendations

Assessment of Kentucky’s SP&R Program

- Kentucky’s overall program is healthy, stable, and well-managed.
- There is an excellent working relationship between the Kentucky Transportation Cabinet and the Kentucky Transportation Center.
- Kentucky has a strong LTAP and Technology Transfer program.
- Kentucky has a robust and effective process in place for selecting new research projects.

Recommendations for Kentucky Consideration

Funding and Budget for the Research Program:

- When developing the annual program plan for the SP&R program, provide increased flexibility and accountability by establishing line items in the budget for specific functions such as implementation, publications, program assessment, etc.
- Include funds in the research budget for training, PI travel to TRB, NHI courses, etc.
- Investigate the use of Surface Transportation Program (STP) funds for the Technology Transfer Program to release other funds for other uses.
- Investigate the establishment of a non-profit foundation to allow for support from industry and other private sector entities.

Implementation of Research and Tracking of Implementation:

- Provide designated funding for implementation and promote the use of this funding for implementation activities.
- Hire/designate an implementation engineer for Kentucky. (IA, LA, and TX each have an implementation engineer. This person should have responsibility for promoting, facilitating, and tracking research implementation.

- Ensure that implementation potential is considered as a key factor in the research project selection process.
- Make the development of the project implementation plan an integral (and formal) part of the project life-cycle. Don't wait until the final report is written to develop an implementation plan, but instead start the development of the implementation plan at the beginning of the project and continue to "flesh it out" throughout the course of the project.
- Put a process in place to track the status of implementation for each research project for a specified time period (e.g., five years) after the completion of each project. This process should include periodic implementation status reports.
- Use tools such as videos, fact sheets, and an annual "highlights" report to document successful implementation of projects and to promote the value of research.

Management and Oversight of Individual Research Projects:

- For each research project, produce periodic progress reports (Texas calls these "technical memos") as tasks are completed. These technical memos then form the basis of the final report.
- Each triannual report should include task specific progress updates.
- For each research project, once the literature review and preliminary investigation are complete, produce an interim report that better defines the scope, the workplan, and the anticipated deliverables.

Measuring the Value of Research

- Pick out specific, high-value projects to document and present. Don't try to measure the value of every project.
- Recognize that benefits occur in a variety of ways, such as cost savings, crash reductions, fatalities reduced, and quality and efficiency gains.
- Task each project's study advisory committee with identifying the anticipated benefits associated with the project and for validating the reported benefits once the project is complete and has been implemented.
- When reporting benefits, include any changes in practice, processes, and standards resulting from the research program.

Technology Transfer and LTAP

- Look for opportunities to more fully integrate the research and technology transfer functions and responsibilities.
- Place additional emphasis (providing funding as needed) on marketing and publications for the research and technology transfer programs.

Take-Home Items for Consideration by Iowa

For Immediate Application

- Provide a link to the Iowa LTAP from the Iowa DOT Research website.
- Discuss with the Iowa DOT Marketing and Media Office the possibility of putting Iowa DOT research videos on YouTube.

To Discuss and Consider for Incorporation into Iowa DOT's Process:

- Implement a research project and implementation tracking and reporting database.
- For each research project, revisit the project scope following the literature review and preliminary investigations. Consider making this a contractual requirement tied to project funding.
- Develop a formal plan and database for tracking research implementation.

Take-Home Items for Consideration by Louisiana

- Make a greater effort to develop videos to promote the research program and implementation successes (Iowa & Texas)
- Consider a pre-determined schedule each year for developing and advertising RFP's for new projects (Texas)
- Require a technical memorandum to be provided by the PI after completion of each research task (Texas)
- Use the technical memorandum to provide the basis for the final report (Texas)
- Expand research efforts in Intermodal transportation needs (Kentucky)
- Provide formal project management training to research managers and internal PI's (Kentucky)
- Leverage additional funds through the pooled fund program with more lead state initiatives (Iowa)
- Develop a project management manual for research activities (Texas)

Take-Home Items for Consideration by Texas

- Look into the database that Louisiana uses to manage their Research Program
- Become familiar with Louisiana's Implementation program
- Obtain a copy of Louisiana's value of research concept and how they measure research dollars
- Find out how Kentucky uses implementation plans to guide their research

- Look into setting up an account (like Kentucky does) for "Unforeseen Investigations"
- Kentucky's initiative to provide project management training to their Principal Investigators, seemed to be very valuable
- Become familiar with Iowa's Implementation Engineer - how this position works to track implementation

FINAL REPORT
Kentucky Research Peer Exchange

APPENDIX A:
Overview of Participating States' Research
Programs

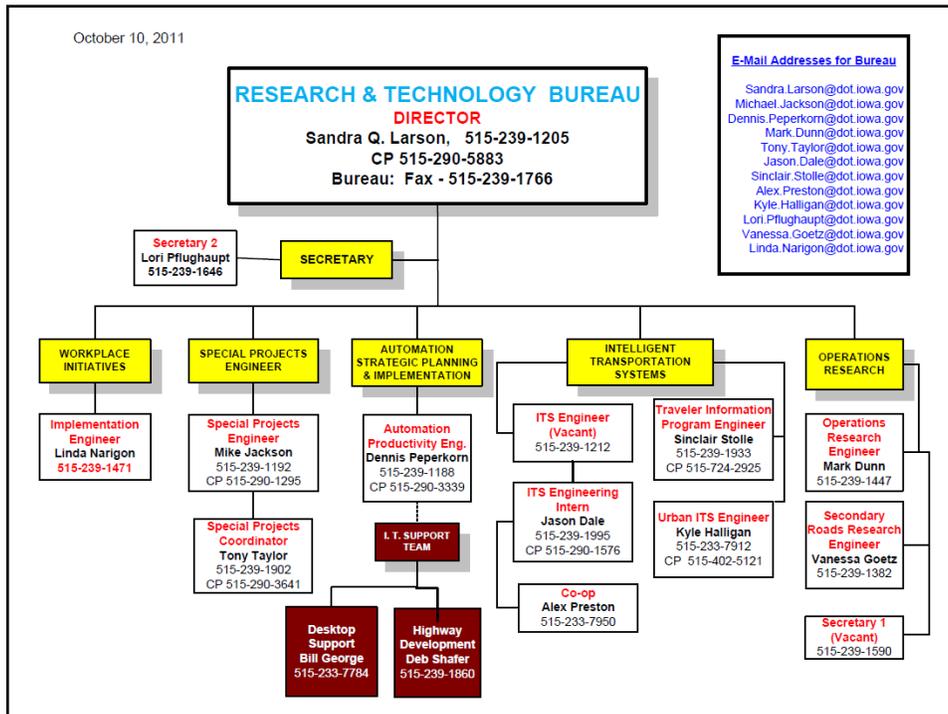


Research and Technology Bureau

A DRIVING FORCE OF INNOVATION

www.iowadot.gov/research

1950-2011



Iowa DOT Research Program

- 120 to 140 active project at any given time.
- Its own Bureau.
- Research is Imbedded throughout.
- Project Technical Advisors are DOT Champions and Experts in their fields. Many have Masters or PHDs.
- Some research conducted by DOT staff.
- Some projects are “managed” in other offices.



Iowa DOT Research Program

- Annual Research and ITS Program ~ \$11 M
- Six Major Research Focus Areas
 - Winter maintenance - Safety
 - Structures - Pavements
 - Intelligent Construction - Human Factors

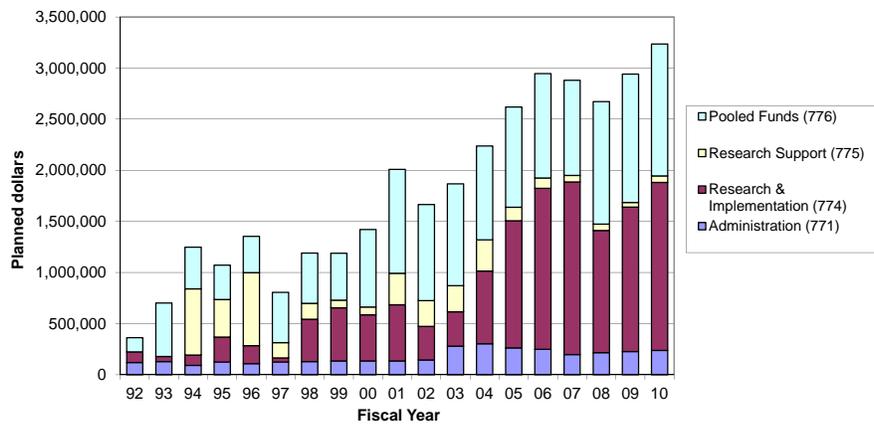


Major Research Funding Sources

- State Planning and Research (SPR) (Federal) ~ \$3.5M
- IHRB (State) ~ \$2.2M
- Traffic Safety Improvement Program (TSIP) (State) ~ \$0.5 M
- ITS (State) ~ \$5M



Annual SPR Plan - Distribution of Funds



Iowa DOT Research Bureau Program

- Multi-State Pooled Fund Projects_ 17 Active Iowa Led
- Iowa Participating Pooled Fund Projects
- State Planning and Research Projects_ 52 Active
- TRB & NCHRP Support
- Iowa Highway Research Board~ 60 Active
- Tech Transfer
- NHI & Other Training
- ITS Projects
- AASHTO Support
- DOT Library



Iowa DOT Research Program

- Basic Agreements with UNI, U of I and ISU
 - Reduced Overhead 26%
 - Work Order Contracts
 - Common Language
 - No overhead on subcontracts between U of I-ISU



Iowa DOT Research Program

- InTrans Support
- Shared Faculty Positions
 - Traffic Safety
 - Materials
 - PCC
 - Structures



Project Oversight & Guidance

- Technical Advisory Committees (TAC)
- Quarterly Reports
- Open Communication



Research Implementation

- Implementation TAC
 - IHRB Business Plan
- Make the Research Known



Research Implementation

- Implementation TAC
- Make the Research and Implementation Tools Known – Promote the Program and its results.



Iowa DOT Video Productions

If a picture is worth a thousand words, then how many words is a short transportation research video worth that describes the research project and findings? These videos capture the essence of the projects, and interested transportation professionals then can dive deeper into the research tech briefs and reports.

Sandra O. Larson, P.E.
Research and Technology Bureau Director
Iowa Department of Transportation



Completed Videos

TITLE	ONLINE
Transportation Innovation	9/2011
Go Team Project	8/2011
School and Intermediate License Drive Cam Study	8/2011
Implementing Breath Alcohol Interlock Devices	7/2011
Self Cleaning Box Culverts	2010

www.iowadot.gov/research/index.html



Videos in Production

Title	
Missouri River Flooding and use of Iowa LiDAR	An Evaluation of Retro-Reflectivity of pavement Markings on Traffic Safety
Communication is Knowledge: A Random Trial of an Intervention to Increase Parent Involvement in Teen Driving	A Study of the Relationship Between Operational Asset Performance and Safety Performance
Transportation Agency Tool to Analyze benefits of Living Snow Fences	Corrosion Performance of Eight Older Bridge Decks Constructed with Epoxy-Coated Reinforcing Steel

www.iowadot.gov/operationsresearch/default.html



Research News



IOWA STATE UNIVERSITY
Institute for Transportation

Iowa Department of Transportation

August 18-19, 2011

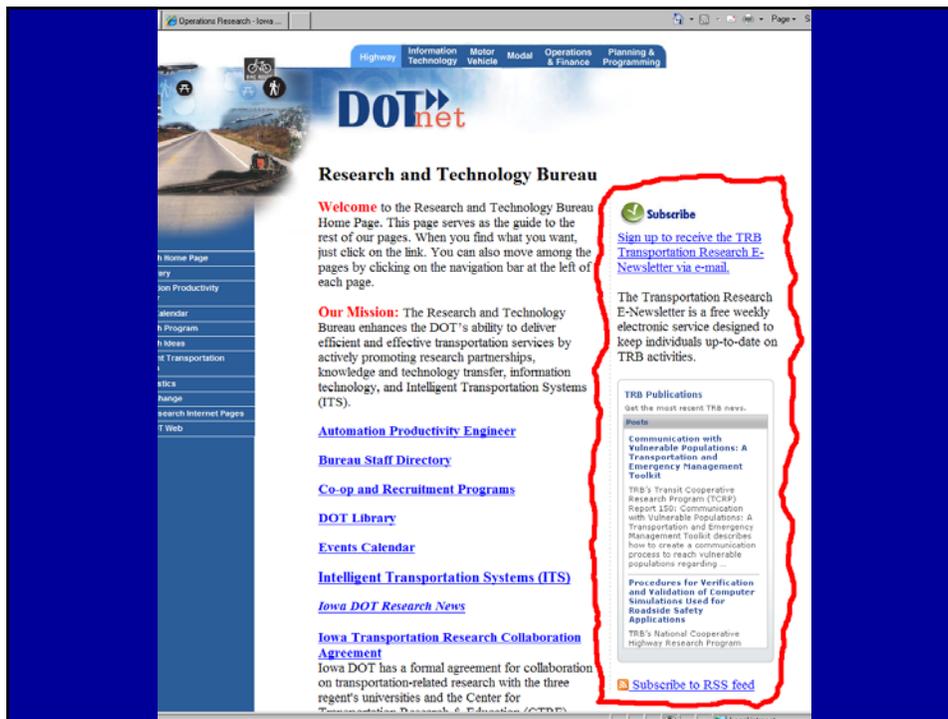
2011 Mid-Continent Transportation Research Symposium
Iowa State University, Ames, IA

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Library Services



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Research Implementation

- Processes in place to ensure Implementation?
- Tools or processes to track Implementation?





Implementation/Technology Transfer ~IHRB Document

- Describe how (in general) Iowa cities, counties, or the Iowa DOT can apply the anticipated research results to improve their practice.
- Describe the form in which the research findings may be reported, such as a mathematical model, a laboratory test procedure, or a design technique. Describe these results in terms of the practicing engineer or administrator.



Implementation/Technology Transfer ~IHRB Document

- State who would logically be responsible for applying the research results, such as the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), Iowa cities and counties, or the Iowa DOT and particular offices within Iowa DOT.
- Identify specific standards or practices that might be affected by the research findings, such as AASHTO or Iowa DOT specifications, policies and procedures, legislation, and funding or staffing requirements.



Implementation/Technology Transfer ~IHRB Document

- Identify institutional issues, including resource requirements, administrative rules, or laws, that might need to be addressed for successful implementation. If findings will not be suitable for immediate application at the conclusion of the research project, indicate what further work might be necessary.
- The PI, under the guidance of the TAC, will ensure that the final report has an implementation section that specifically meets the above requirements.

Research Implementation

- Processes in place to ensure Implementation?
- Tools or processes to track Implementation?



IHRB

IOWA HIGHWAY
RESEARCH BOARD



1950-2011



History

- Iowa Legislature set aside funding in 1949
- First meeting - May 18, 1950
- Initially county and state funding
 - City funding added in 1989





Funding

- City street funds and county funds allocated by Iowa Code
- DOT funds allocated by commission



FY11 Funding

Iowa DOT Annual Funding -	\$750,000
City Annual Funding -	\$200,000
County FY 2011 Funding -	<u>\$1,219,807</u>
	\$2,169,807





Goals

- Improve the efficiency and effectiveness of highway transportation and engineering in Iowa
- Identify needed research and engineering development activity
- Encourage collaborative involvement
- Support research implementation



Scope

- Financing Engineering Studies and Research Projects
- Efficient Use of Funds and Materials for Construction and Maintenance of Highways





Organization

- 15 Members / Alternates
 - 7 County Engineers (Six Districts + TRB Rep.)
 - 2 City Engineers
 - 2 University Civil Engineering Department Chairs (U of I, ISU)
 - 4 Iowa DOT Engineers
- 3 year terms



Oversight

- Nine Meetings Per Year
- Advisory Board
- Research Identification, Prioritization, and Selection
- Research Project Monitoring (Reports)





Project Identification & Selection

- Annual Call for Problem Statements
 - Anyone can submit topics
 - Focus group reports
 - Board member submittal
- Project Ranking
 - Voting
- Request for Proposals



Project Identification & Selection

- Approximately 60 projects considered
- 10-12 projects annually from priority list
- 15-20 total projects funded





Other Projects

- Immediate Opportunity
- Critical Timing
- Joint Funding



Key to Success is Partnership!

- Between Highway Agencies
- Within Industry
- All Disciplines



How to Measure the Value of Research

- Weigh each project independently.
- Goose and Gander: Performance Measures can be difficult to justify.
 - Benefit/Costs
 - Safety
 - Public Perceptions
 - Industry
- Leap not Creep: NHI-134073
 - Several templates for implementation!



Technology Transfer

- Where, how is it coordinated?
 - Throughout the department. Often a HDMT or Office priority and they dictate who implements.
 - Research Bureau has funding sources.
 - Proposed better coordination through Research Bureau.
 - TAC evaluation of needs (video, specifications, design manual, equipment training, videos, etc.).
 - Follow-up.



Technology Transfer

- Interaction/integration with research program?
 - Strongly considered throughout the research phase beginning with the research proposal.
 - Discussed at TAC meetings.
 - Documented in the report.



Technology Transfer - LTAP

- Where does it reside? InTrans/ISU
- How is it coordinated? InTrans and Board
- Interaction/integration with research program?
 - General interaction & updates
 - Iowa and FHWA provide seed \$



Iowa DOT Research Challenges

Strengths ~~ Challenges:

- 120 to 140 active project at any given time.
- Research is Imbedded throughout.
- Project Technical Advisors are DOT Champions and Experts in their fields. Many have Masters or PHDs.
- Some research conducted by DOT staff.
- Some projects are “managed” in other offices.
- Performance measures.
- Follow up / Follow through



Contact

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The Kentucky Transportation Cabinet

Research Program Coordination & Management
October 12, 2011

1

Kentucky's Research Program

- ▶ The Research and Technology Transfer “arm” of the Kentucky Transportation Cabinet (our “DOT”) is the Kentucky Transportation Center (KTC) at the University of Kentucky.
- ▶ The Transportation Cabinet (KYTC) has a standing contract with KTC, so new projects can be created quickly and with minimal administrative effort.
- ▶ KYTC has appointed a Research Coordinator within the State Highway Engineer's office.
 - Jamie Bewley Byrd
 - Bob Lewis assists Jamie as needed
 - (These are the only personnel assigned to the research program within the Kentucky Transportation Cabinet.)

2

KYTC's Role in Research

- ▶ KYTC serves in coordination and management of the Research Funds.
- ▶ Facilitates the Research Selection Process.
- ▶ Assists with Finding Additional Funds
- ▶ Works with KTC to provide documentation of research to Study Chairs and Cabinet Personnel
- ▶ Works with FHWA to gain funding approval and work plan approval– Typical Funding Year is between 3.5 and 4 million in SPR funds.

3

Research Project Selection Process

- ▶ We have a two-step process, carried out each year:
- ▶ Initial Meetings are held in February with KYTC employees in 4 different groups from all areas. It is an open forum to allow individuals to talk about issues and problems they are encountering in their jobs & projects.
- ▶ These meetings generate a long list of potential projects. Research staff works with the person who submitted the idea to prepare a brief project description for each project.
- ▶ These brief project descriptions are distributed in advance of the next set of meetings.

4

Research Project Selection (continued)

- ▶ A second set of meetings is held in March with 5 different groups of KYTC employees. At these meetings, employees have the opportunity to discuss and vote on the relative importance of each project.
- ▶ Results of the voting are used to prepare a ranked list of projects.
- ▶ This list is reviewed with the State Highway Engineer and other key management personnel. The State Highway Engineer's office has final approval on which projects are selected for funding.
- ▶ Once the projects are selected, the work plan is sent to FHWA for approval.

5

Implementation

- ▶ We created an Implementation Database that assisted with the tracking of Implementation.
- ▶ Implementation Plans were created and each PI would assist the Study Chair with Creating the Implementation Plan.
- ▶ With on going research, we use Implementation Funding to allow the study chairs the opportunity and assistance with implementing the research.

6



The Kentucky Transportation Center

Who We Are and What We Do
October 12, 2011

7

KTC's Mission

- ▶ We provide services to the transportation community through research, technology transfer, and education. We create and participate in partnerships to promote safe and effective transportation systems.

8

Brief History of KTC

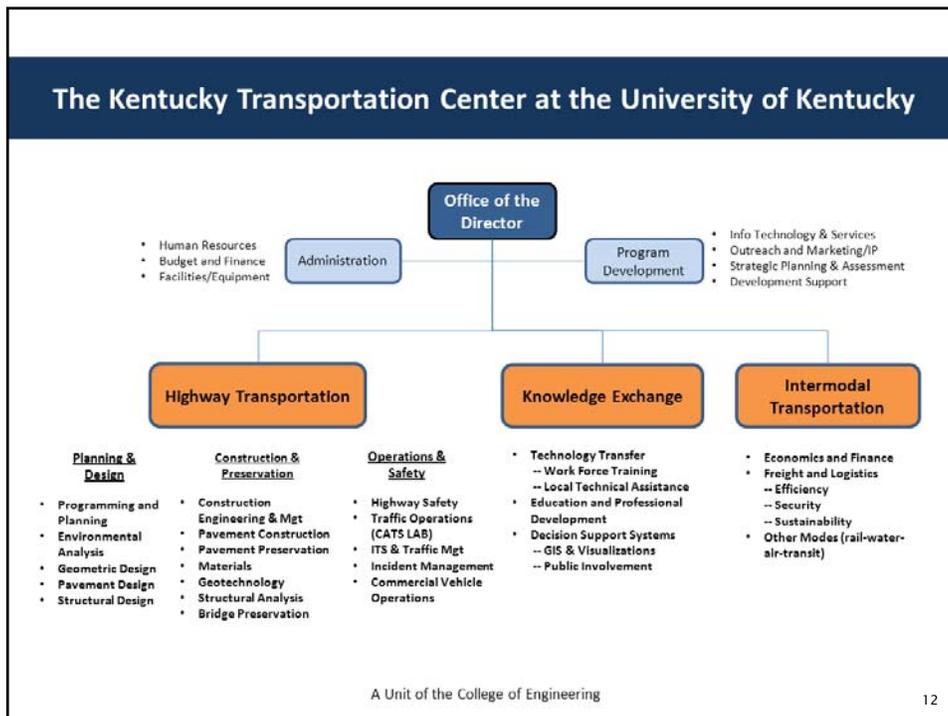
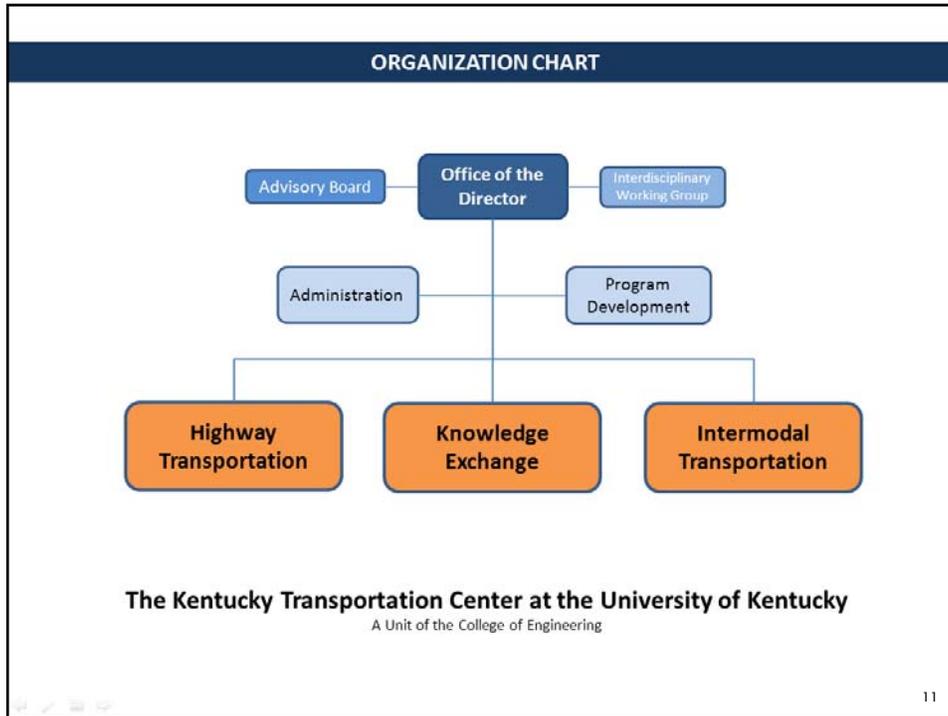
- ▶ 1941 – Kentucky Highway Dept. formed Division of Research, located on University of Kentucky's campus.
 - Initial focus was primarily on materials research.
- ▶ 1979 – UK's Board of Trustees created Kentucky Transportation Center at UK.
- ▶ 1980 – Kentucky DOT abolished the Division of Research and directed UK to assume the DOT's research functions.
- ▶ 1988 – Research and Technology Transfer functions were brought together within KTC.

9

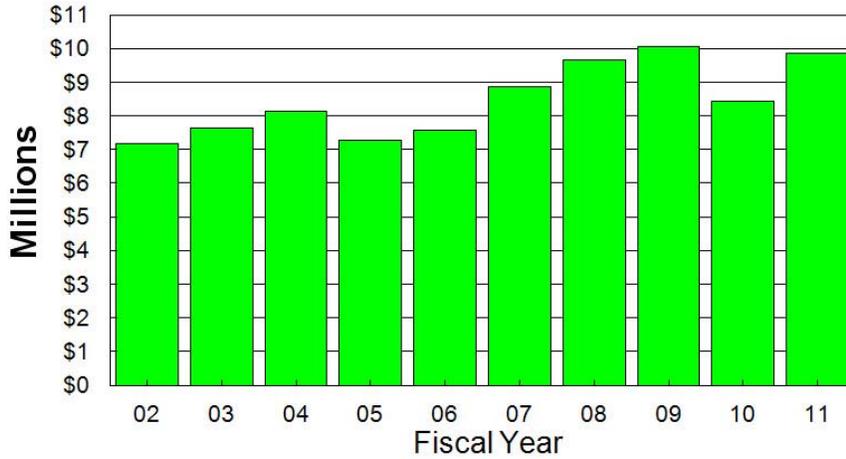
Current Staffing Levels

- ▶ 47 Permanent, Full-Time Employees
- ▶ 34 Temporary Employees
- ▶ 32 Student Employees
- ▶ Total 113 Employees
- ▶ Plus 9 Civil Engineering Faculty who regularly conduct KTC research

10

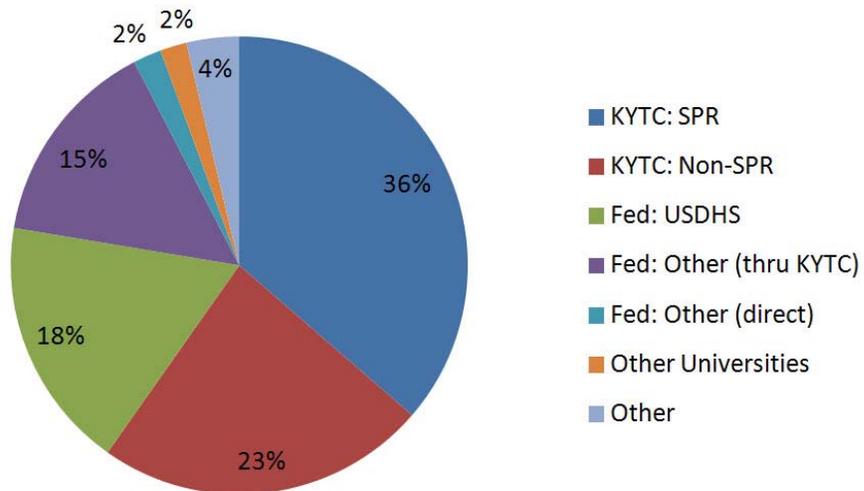


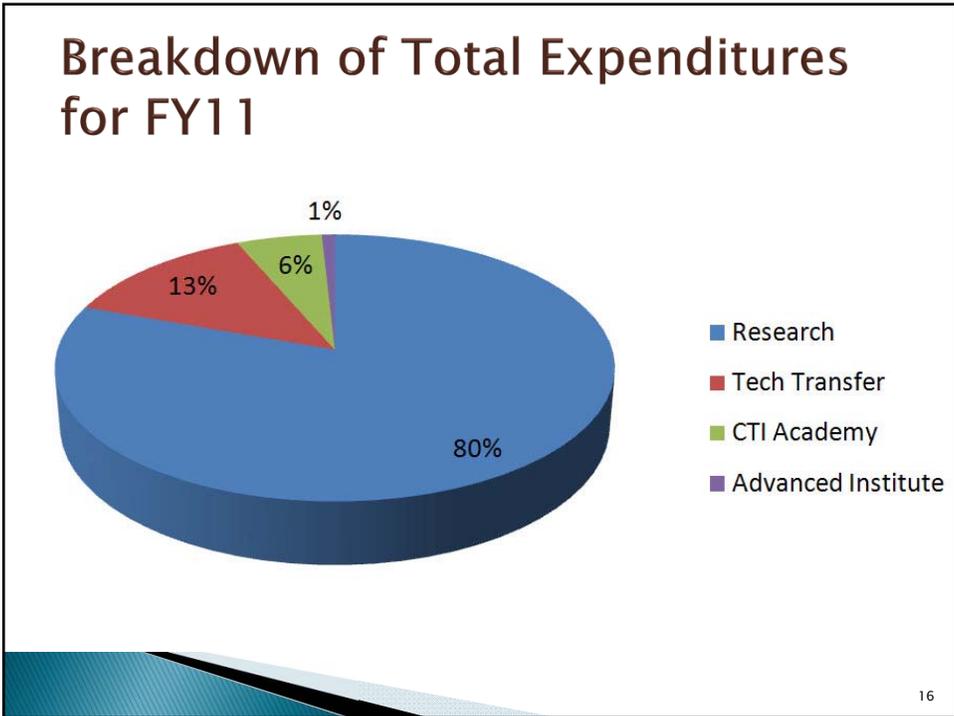
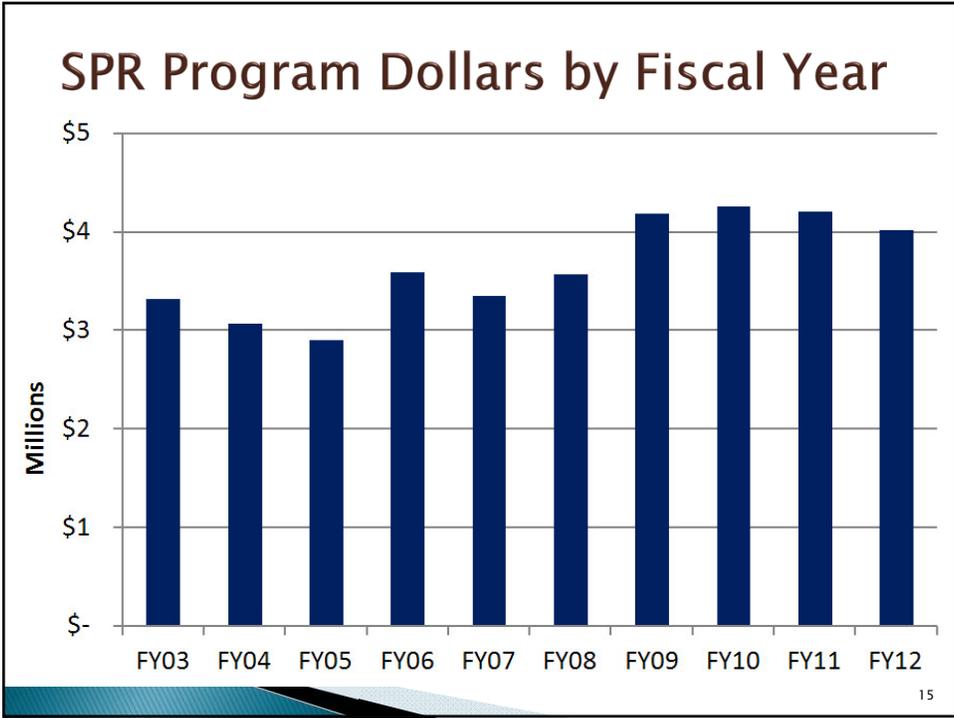
Total Expenditures by Fiscal Year: Kentucky Transportation Center



13

Breakdown of FY11 Funding Sources





FY 2012 SPR Program

- ▶ 54 SPR projects
 - 32 continuing from FY 2011
 - 22 new projects - began 07/01/11
- ▶ Program Funds also budgeted for:
 - NCHRP dues
 - Pooled fund studies
 - Super Pave Center
 - Unforeseen Investigations / Quick Response Studies
 - Implementation
 - Long-term Monitoring
 - General Administration
 - Equipment

17

Guidance of Research Projects

- ▶ For each research project, we form a Study Advisory Committee (SAC) and select a SAC Chair.
- ▶ The SAC is responsible for approving the work plan, guiding and overseeing the project, and approving all deliverables.
- ▶ We have a kickoff meeting each year with the SAC Chairs and PI's of all new projects, where we review the responsibilities of each.
 - (Handout to be provided)

18

Measuring the Value of Research

- ▶ ????

19

Promoting the Research Program

- ▶ ???

20

Technology Transfer Program

- ▶ **Mission:** To foster a safe, efficient, environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision-makers.
- ▶ The mission is carried out through:
 - Training
 - Technical Assistance
 - Publications and Marketing
 - Library



21

T²: Training

- ▶ Over 200 training sessions provided each year
 - Over 5500 attendees
 - Over 33,000 participant hours
- ▶ Includes:
 - Roads Scholar Program (1,977 graduates to-date)
 - Road Master Program (1,394 graduates to-date)
 - Work Zone Traffic Control Employee Qualification
 - Hot Mix Asphalt Certification
 - Pesticide Certification and Continuing Education
 - Erosion Prevention and Sediment Control Training and Qualification



22

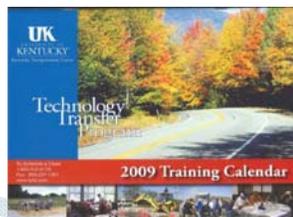
T²: Technical Assistance

- ▶ Designated a Local Technical Assistance Program (LTAP) by FHWA
- ▶ Provides on-site or telephone assistance to local agencies or individuals
- ▶ Includes Safety Circuit Rider Program
 - Focused on identifying and implementing low-cost safety improvements



T²: Publications and Marketing

- ▶ Quarterly Newsletter: “The Link”
- ▶ Training Calendar
- ▶ Transportation Directory
- ▶ Handbooks
- ▶ Field Guides
- ▶ Website and online resources
- ▶ Other specialty publications, as needed



T²: Library

- ▶ Kentucky's only transportation library
- ▶ Over 20,000 volumes of materials and 800 videos
- ▶ Online lending library
- ▶ Provided as a free service to local and state government agencies
- ▶ Hardcopy publications, DVDs, CD-ROMs, VHS tapes, etc.
- ▶ Also has a traffic counter available for loan

25

Progress on Peer Exchange Suggestions Offered Previously

- There may be value in greater university input to project submission.
- *More resources may be needed to oversee/lead/administer the research program.*
- May want to have problem statements more thoroughly defined when prioritizing.
- Include implementation considerations upfront at the initiation of research studies.
- Survey customers.
- Submit success stories to national publications such as TR News.
- Participate in Cabinet's technical meetings such as district maintenance engineers, construction engineers, etc.
- Provide implementation funding to keep research involved, don't just implement—report implementation.
- Move from "implementation" to deployment attitude—technology transfer/marketing.

Progress on Peer Exchange Suggestions Offered Previously... *page 2*

- Clearly define the project selection process as a two – tiered .
- Standardize idea submittal to create a more equitable presentation at focus group meetings.
- *Establish a penalty for researchers that don't submit reports on time (withhold 10% of the funding and/or no more projects until existing project complete)*
- Conduct annual surveys on principal investigators and SAC chairs.
- Principal investigators need to track funding so they don't go over budget.
- Be a lead state for pooled fund study.

Thank You!



28

Kentucky Peer
Exchange
2011

Mark Morvant P.E.
Associate Director,
Research



LTRC

Created by
R.S. 48:105
in 1986

Cooperative research, technology
transfer and training center jointly
administered by
LADOTD and LSU



LTRC's Mission

Effectively merge the resources of DOTD/LTRC and universities to provide transportation related research, education and training in a manner that:

- Addresses DOTD problems/needs
- Addresses transportation industry problems/needs
- Supports local government
- Advances transportation technology
- Benefits Louisiana's universities
- Provides optimal return on taxpayers' dollars



LTRC Facilities

LTRC Main Office (LSU BR campus)

10,920 sq. ft.

Laboratories (LSU BR campus)

11,760 sq. ft.

Training Center (LSU BR campus)

11,000 sq. ft.

Pavement Research Facility (Port Allen)

6 acres site



Functions and Duties of LTRC

- To develop & conduct a nationally recognized research program in transportation systems
- **To offer educational & training programs**
- To develop & implement a technology transfer program
- **To establish cooperative relationships with universities, associations & agencies**
- To report & publish research findings

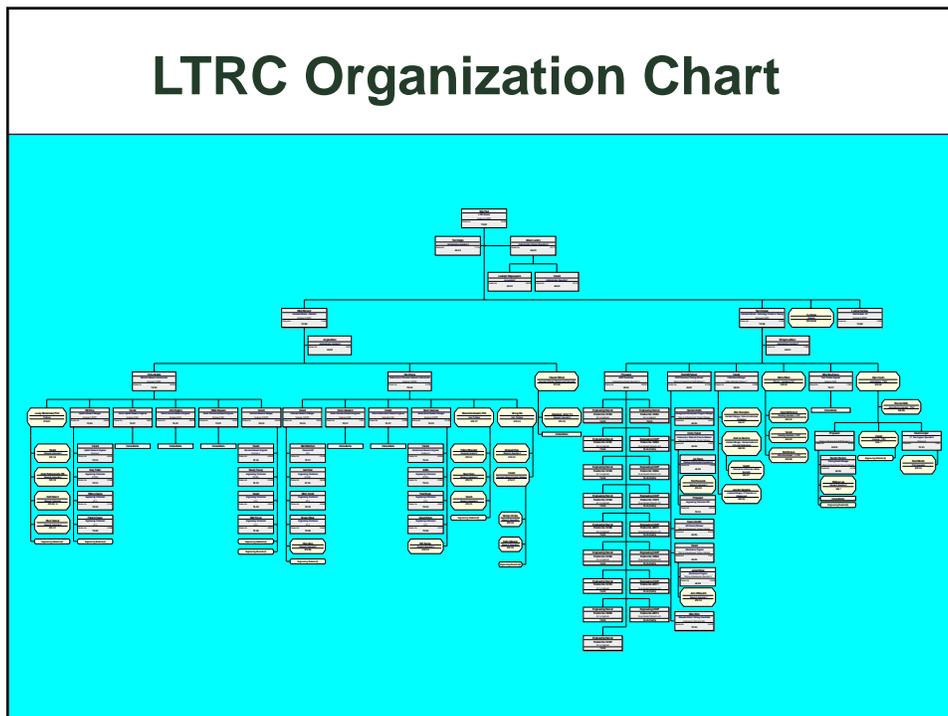
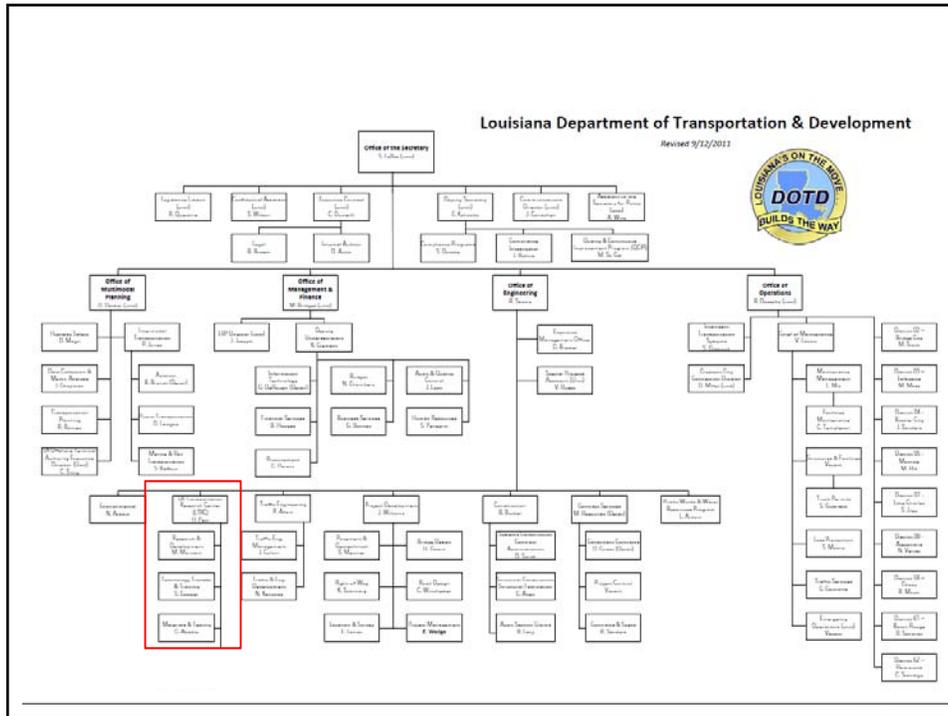


LTRC Staff

	Director	Research	Training	Total
■ DOTD Personnel	4	26	15	45
■ LSU Personnel	1	18	12	31
TOTAL	5	44	27	76

- Full-time classified employees of department
- Faculty and staff of university
- Graduate and undergraduate students not shown



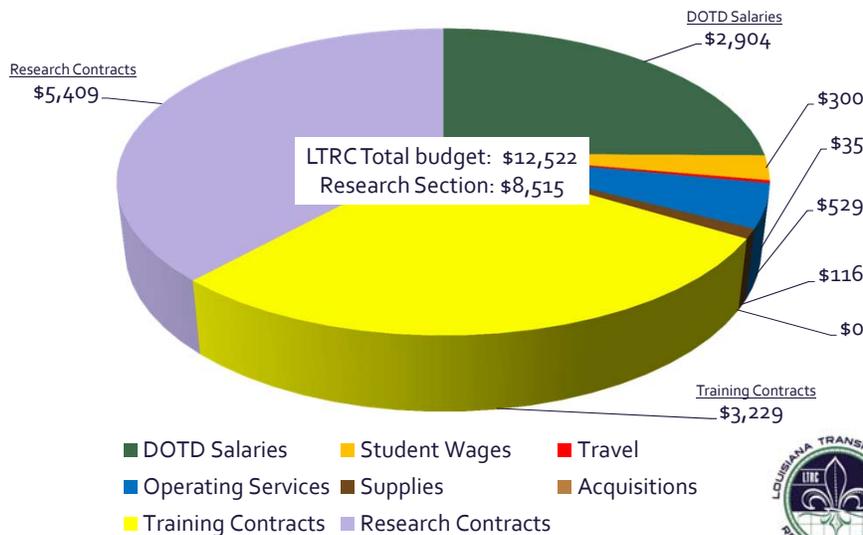


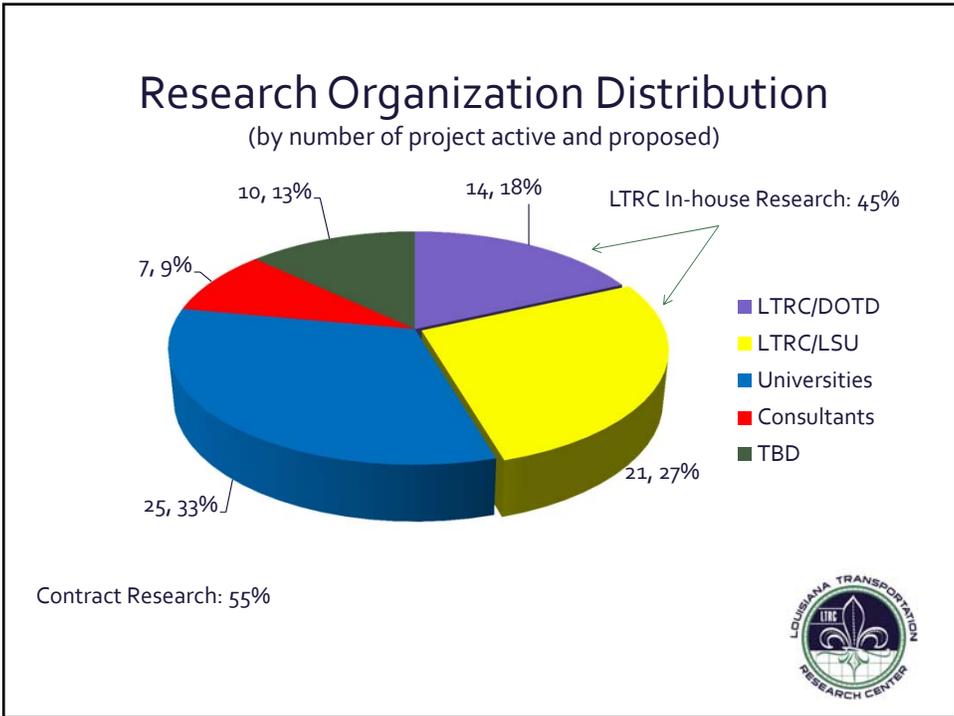
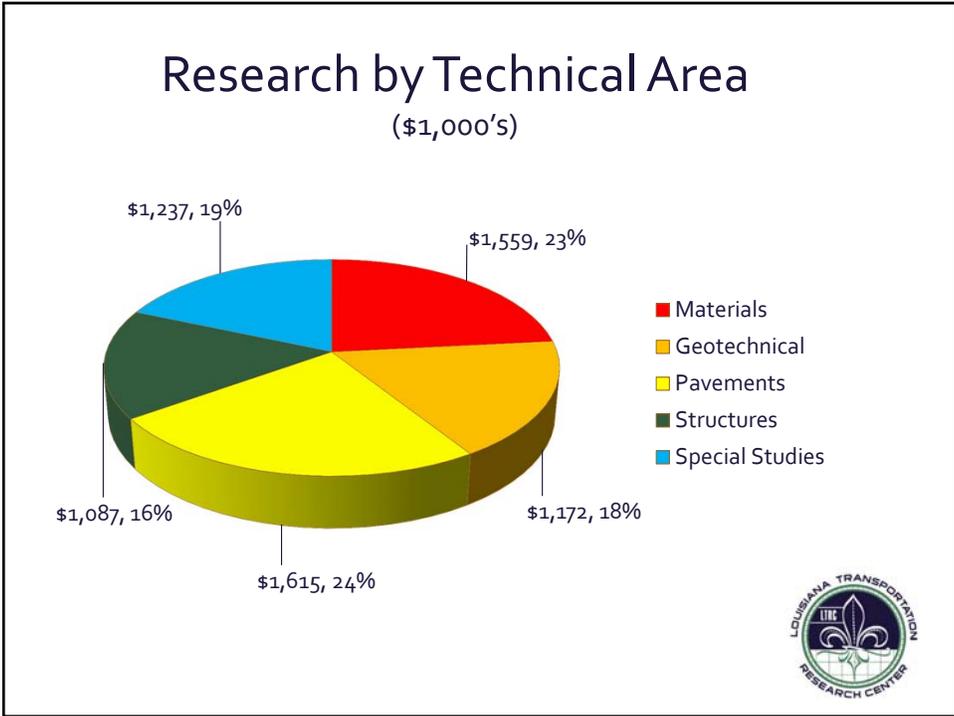
WORK PROGRAM FUNDING

- FHWA SP&R Part II (Internal research program)
- FHWA (IBRD)
- State funding
- Federal (NSF, Corp of Engineers, etc)
- FHWA STP (Technology Transfer, Workforce Development)
- Self Generated (NCHRP, Private)
- Other DOTD funded projects (non-LTRC budgeted)
- LTRC Foundation (non-DOTD budgeted items)



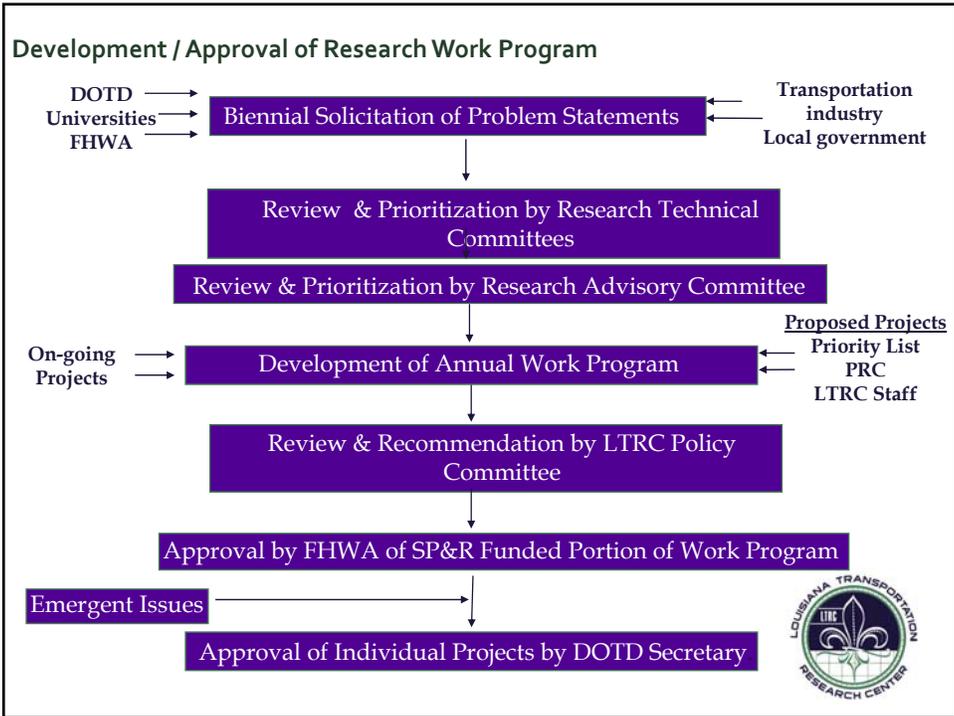
FY11-12 Budget (\$1,000's)





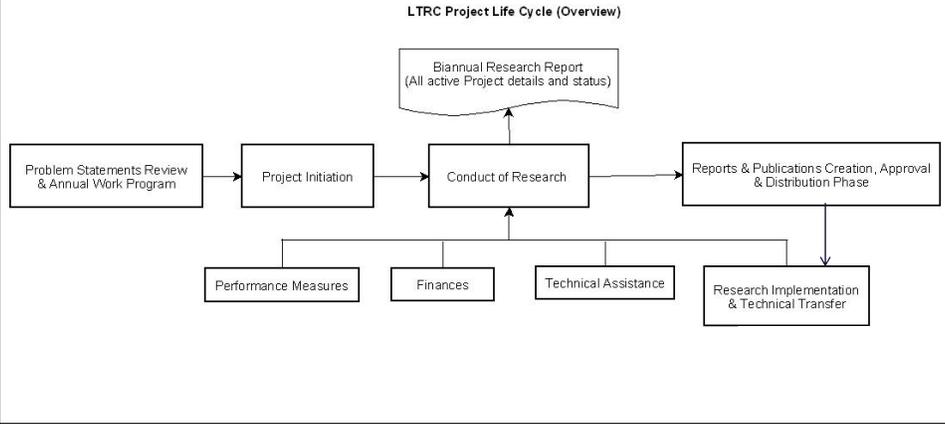
Louisiana Legislature
 Subcommittee on Infrastructure and Resources
 March 2008

- Can the department point to specific improvements in efficiencies, materials, methodology or other factors that merit these expenditures?
- What is the state's return on this investment?

Research Project Life Cycle Overview

- Research Project Management is a cumbersome process
- LTRC Management System (web base application)



home | logout

Research Project Management and Tracking
Louisiana Transportation Research Center

you are here: Home > Research Project Management > Search Projects

HOME | PROBLEM STATEMENTS | PROPOSAL FUNCTIONS | **PROJECT MANAGEMENT** | PERFORMANCE MEASURES | RESEARCH ADMINISTRATION | SYSTEM ADMINISTRATION

Project Functions

- Request LTRC Project Number
- View Project
 - View PRC
 - Project Files
 - Project Tasks
 - Annual Work Program
 - Create AWP Sheet
 - View AWP Sheet
 - AWP Reports
 - Biannual Reports
 - Create Biannual Report
 - View Biannual Report
 - Budget Reports
 - Fiscal Year Budget
 - Implementation
 - Create Assessment Report
 - View Assessment Report
 - Create Summary Report
 - View Summary Report

Search Projects

Search Projects using any of the following:

General Project Details

Research Project Number:

Funding Source:

Actual Start Date (From):

Actual Start Date (To):

End Date (From):

End Date (To):

Group Administrator:

Select Project Type: GT P B ST SS C PF ADM RS LTAP TT CON Other

SIO/State Project Number:

Budget Category:

Amount Requested (\$):

Project Status:

Project Manager:

Principal Investigator:

Agency:

Title:

View All Projects

Click on 'View' to see the details of the selected Projects

Select	Research Project Number	State Project Number	Title	Project Manager	End Date	Status	Funding Source	Edit	View Document
Select	08-3GT	30000114	Support Study to Structure Health Monitoring of the I-10 Twin Span Bridge Over Lake Pontchartrain	Dr. Zhongjie 'Doc' Zhang	12/31/2012	Ongoing	SPR: TT-Fed/TT-Reg	Edit	View
Select	08-4GT	736-99-1511	Support Study to Evaluation of the Base/Subgrade Soil Under Repeated Loading	Dr. Zhongjie 'Doc' Zhang	12/31/2009	Past Due	Self-Generated	Edit	View

LTRC Biannual Progress Report

LTRC Biannual Research Progress Report For Period Ending: 06/30/2010			
Title:	Evaluation of the Surface Resistivity Measurements as an Alternative to the Rapid Chloride Permeability Test for Quality Assurance and Acceptance		
Funding Source:	SPR: TT-Fed/TT-Reg		
State Project Number:	735-95-1061	Project Start Date:	02/01/2010
Research Project Number:	10-10	Completion Date (Original):	05/31/2011
Research Agency:		Completion Date (Revised):	
Principal Investigator:	Dr. Tyson Hudson		
BUDGET STATUS			
Total Budget:		Funds Expended (%)	11%
Total Cost (Original):	\$102,878	Funds Expended (%)	23%
Total Cost (Revised):		Progress (%)	20%
Total Expenditures:	\$17,910		
Fiscal Year Budget			
F.Y. Funds (Original):	\$102,878		
F.Y. Funds (Revised):			
F.Y. Expenditures (to date):	\$17,910		
PART I: RESEARCH INVESTIGATION			
Accomplishments this period (use additional sheets if necessary) (include any drawings on which assistance is needed)			
Task 1:	Design Testing Program The testing program has been designed and includes mixtures from laboratory test matrix, DS-4C mixtures, and field specimens.	100%	
Task 2:	Permeability Testing About 50% of the laboratory test matrix has been produced with ongoing permeability and surface resistivity testing. About 30 mixtures from field projects have also been tested.	20%	
Task 3:	Data Analysis A preliminary analysis has been completed comparing the Wenner probe to the RCP test showing favorable results.	5%	
Task 4:	Implementation Plan	0%	
Task 5:	Final Report Preparation A working outline has been drafted.	5%	
Proposed activities next period (use additional sheets if necessary):			
Task 2:	Permeability Testing Complete the laboratory test matrix and conduct all surface resistivity and RCP testing.		
Task 3:	Data Analysis Conduct statistical analysis on results of the same age to verify or adjust correlations published by others.		
Task 4:	Implementation Plan Prepare a draft implementation plan with specific recommendations for implementation for the surface resistivity device for projects such as the Caminada Bay Bridge.		

Task 5: Final Report Preparation Bring the final report to 50% completion by 12-31-10.
PART II: LTRC MANAGER'S COMMENTS Project is on schedule. Research Assessment and Implementation Report has been prepared.
PART III: LTRC TECHNOLOGY TRANSFER MANAGER'S COMMENTS Assessment of Benefits and recommended implementation strategies This research addressed and evaluated the current and new test methods for determination of concrete permeability for quality assurance. The objectives of this research were as follows: (1) Characterize the surface resistivity of concrete specimens produced in the laboratory and field conditions. (2) Characterize the rapid chloride permeability of said concrete specimens. (3) Conduct comparative testing on the concrete resulting from the Caminada Bay Bridge project. From these results, an evaluation of the surface resistivity device can be determined and a recommendation for implementation can be developed. Implementation Recommendations 1. Establish the Task Force committee to guide the effort to modify current specifications. 2. Establish a task force to prepare a TR procedure for the surface resistivity meter. 3. Develop training material regarding the use of surface resistivity meters.



Research Assessment and Implementation Report

Research Assessment and Implementation Report	
Project Number:	
Project Title:	
Objectives [What are the objectives/deliverables/products of this research?]	
Implementation Recommendations [Provide the implementation recommendations as developed by the Project Review Committee.]	
Potential Impact [Describe potential impact of the recommendations in terms of cost, efficiency, safety, convenience, aesthetics, etc. Describe required changes to existing specifications, standards, procedures, etc.]	
Target Audience [Who will benefit from this research? List whom you want to reach, their primary interest, and your objective in reaching them.]	
Strategies and Tactics [Describe practical areas of application. List the activities required for implementation, including resource needs. Consider needs for training, multimedia, and marketing.]	
Timeline [Create a schedule for each discrete strategy or tactic.]	
Implementation Responsibility [Define roles and responsibilities of all personnel involved in the implementation effort. Identify who will be the decision makers to implement results of the research.]	
Evaluation [Identify methods for evaluating the implementation effort. How will benefits be quantified or assessed?]	
Principal Investigators:	
PRC Committee Members:	



Value of Research Program

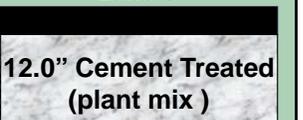
Quantifying Return on Investment Examples

- Comparison of Louisiana's Conventional and Alternative Base Courses
- Use of High Performance, High Strength Concrete (HPC) Bulb-Tee Girders





LA DOTD Pavement Research Facility
Comparison of Louisiana's Conventional and Alternative Base Courses

Lane 1 (control)	Lane 2	Lane 3
		
Lane 4	Lane 5	Lane 6
		
Lane 7 (control)	Lane 8	Lane 9
		



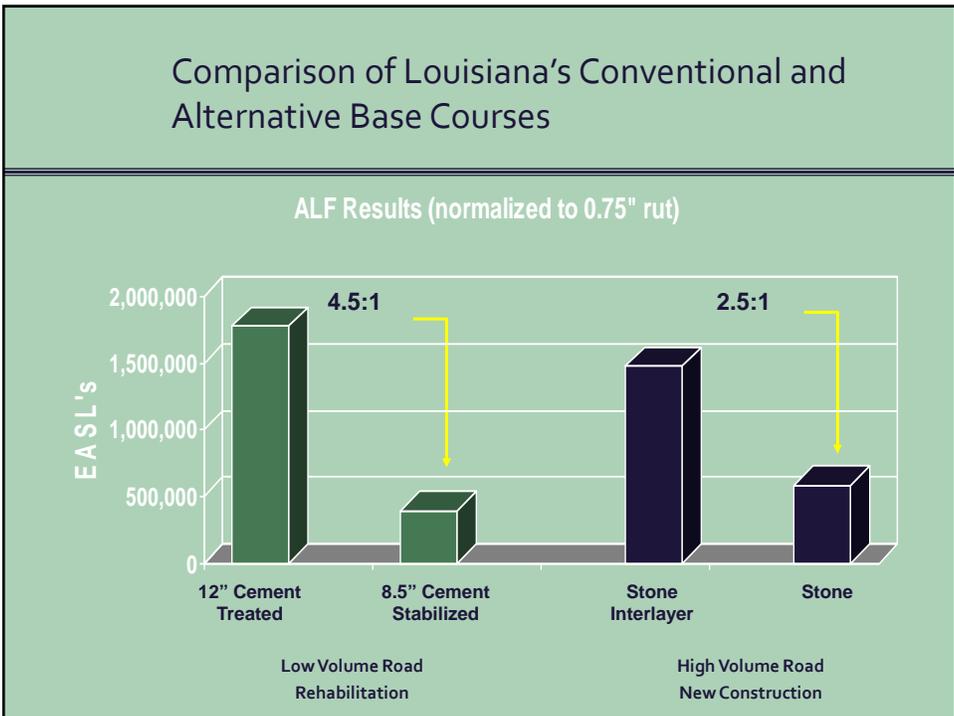
Results

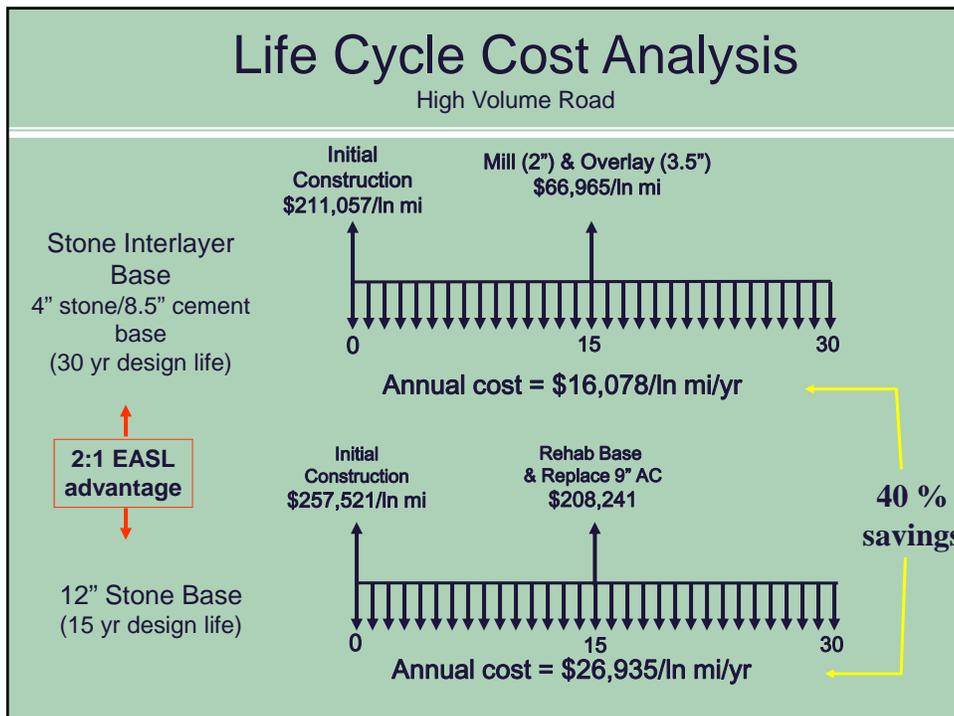
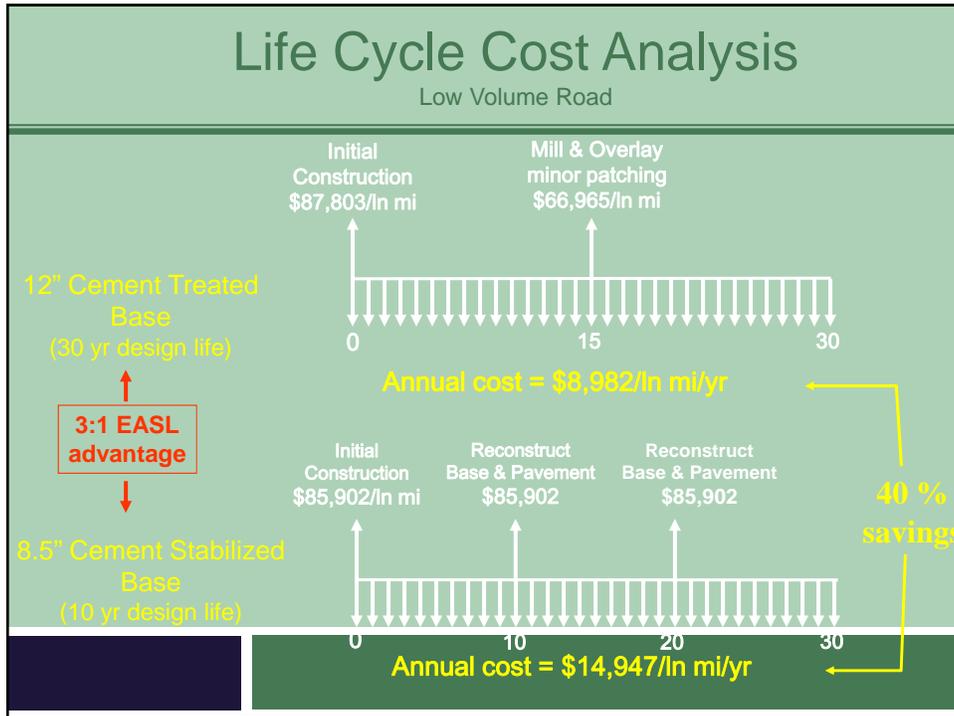
Low Volume Road Rehabilitation Experiment

Lane 7 (control)	Lane 9
3.5" Asphalt	
8.5" Cement Stabilized (300 psi mix)	12.0" Cement Treated (150 psi mix)

High Volume Road New Construction Experiment

Lane 1 (control)	Lane 8
3.5" Asphalt	
8.5" stone ← fabric	4.0" Stone 6.0" Cement Stabilized (300 psi mix)





Implementation History

Three Year Period

- Low volume roads CTB
 - Yr 1: 41% of total quantity bid
 - Yr 3: 95% of total quantity bid
 - 659 lane-miles x \$ 5,965 / mile
 - Life Cycle Savings: \$3.9 million
- High Volume Road Stone Interlayer
 - Full implementation did not occur until Yr 3
 - Yr 1 – 3 : 4 projects
 - 95 lane-miles x \$ 10,857 / mile
 - Life Cycle Savings: \$1 million
- 3 Year PRF Investment
 - Facility operation & research expenditures
 - \$ 1.6 million
- Return on Investment
 - \$ 4.9 mil / 1.6 mil = 3:1 B/C ratio



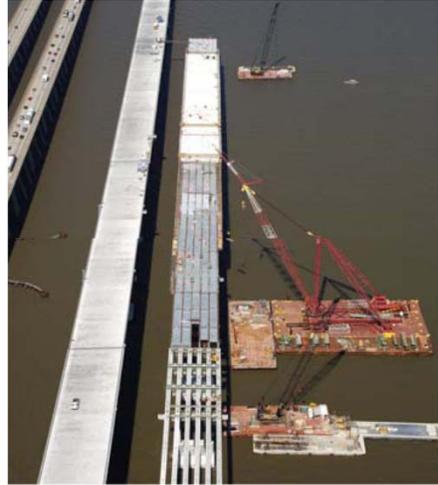
Use of High Performance, High Strength Concrete (HPC) Bulb-Tee Girders

- Girders performed satisfactorily after 5 million loading cycles
- Flexural and shear testing exceeded AASHTO design standards
- Higher reinforcement yield strengths



Project Implementation

- Benefits
 - Less girders
 - Longer spans
 - Longer life
- Charenton Canal Bridge
 - Pilot Project
 - Materials supply
- US 90 Rigolets Pass
 - Instrumented two spans
 - 10,000 psi girders
- I-10 Twin spans
 - Full implementation
 - 8,500 psi girders



Use of High Performance, High Strength Concrete (HPC) Bulb-Tee Girders

- High strength concrete
 - 10,000 PSI
- Full scale girder tests (5)
 - Flexural strength
 - Flexural fatigue
 - Shear strength



Value of Research I-10 Twin Span Bridge

- Twin Span Bridge Savings
 - One less girder/span for each direction
 - BT 78 - \$308.50/LF
 - 2 spans x 25,920 LF x \$308.50/LF = \$17,107,200
 - Additional benefits not included
 - Less foundation costs
 - Longer life of structure
 - 75 – 100 yrs vs 50 yrs
- Research expenditures
 - \$1,304,373
- Return on Investment
 - One project (conservative)
 - \$17.1 mil / \$1.3 mil
 - B/C = 13:1



Implementation Summary Report

Research Implementation Status Report

Research Studies on Resilient Modulus of Louisiana Subgrade:

Development of Models to Estimate the Subgrade and Sub-base Layers' Resilient Modulus from In-Situ Devices Test Results for Construction Control

Investigation of the Applicability of Intrusion Technology to Estimate Resilient Modulus of Subgrade Soil

Comparative Evaluation of Subgrade Resilient Modulus from Non-Destructive, In-Situ, and Laboratory Methods

The results from these studies have been used by LA DOTD on a several projects to improve design and construction of Louisiana pavements. The primary objective of this research was to develop models to estimate the resilient modulus of base courses and embankment soils from in-situ tests. The implementation has improved the quality of pavement design and construction and prevented premature failure of pavements due to the under-design of pavement structures.

Implementation of New OGFC Specification

This study focuses on the application of a new surface mixture that reduces overspray from traffic during a rain and the improved surface friction on wet pavements. The first project was placed on US 71 near Colfax that had 5 fatalities. Since the placement of OGFC 4 years ago, no wet weather accidents have occurred. Also on the second application I-20 in West Monroe, the wet weather accident rate was improved dramatically.

Evaluation of the Effect of Soil Moisture Content on Stability of Reinforced Embankments

This project demonstrates the utility of slope correction using geogrids reinforced embankment technique. District 55 utilized the geogrid reinforcement technique to repair multiple slope failures. A workshop and demonstration project was conducted at the I-10 Bluebonnet interchanges in Baton Rouge for District Maintenance Engineers. An instructional video of the slope correction technique has been produced and may be viewed from the LTRC website.

Identification and Stabilization Methods for Problematic Silty Soils

The result of this study changed the definition of usable soils in DOTD specifications for embankment materials used on construction projects. The change in specification eliminates the silty soils that are susceptible to long term strength loss due to excessive moisture and pumping. Pavement structures constructed on new embankments will have longer life due to a stronger foundation.

Stabilization techniques using cement in wet silty subgrades has been incorporated into the DOTD design process producing a stronger foundation and longer life for Louisiana pavements.



Research Performance Measures

- Objectives (long-term measures)
 - On time & on budget
 - Process improvements
 - Personnel development
 - Return on investment
 - Marketing results

- FY Strategies (short-term measures)
 - 13 continuous improvement tasks / initiatives
 - 9 Based on 2008 Peer Exchange
 - Heavily weighted toward customer satisfaction and research implementation



Research Project Management and Tracking
Louisiana Transportation Research Center

You are here: >

HOME | PROBLEM STATEMENTS | PROPOSAL FUNCTIONS | PROJECT MANAGEMENT | PERFORMANCE MEASURES | RESEARCH ADMINISTRATION | SYSTEM ADMINISTRATION

Project Functions **Research Assessment and Implementation Status Report**

Request LTRC Project Number:

Search Projects using any of the following:

General Project Details

Research Project Number: State Project Number:

Funding Source: Amount Requested (\$):

Actual Start Date (From): Project Status:

Actual Start Date (To): Project Manager:

End Date (From): Principal Investigator:

End Date (To): Agency:

Group Administrator: Implementation Status Code:

Select Project Type: GT P B ST SS C PF ADM RS LTAP TT CON Other

Project Title:

View All Reports

[Click here to Download all selected Implementation Reports at once](#)

Total Number of Implementation Reports searched: 11

Select	Research Project Number	State Project Number	Title	Status	Funding Source	Implementation Code	Edit	View Document
Select	04-1GT	736-99-1359	Estimating Setup of Piles Driven into Louisiana Clayey Soils	Completed	State: TT-Reg	Implementation Complete	Edit	View
Select	04-2GT	736-99-1242	Use of Reinforced Soil Foundation (RSF) to Support Shallow Foundation (Executive Summary) Calibration of Backbone Esti...	Completed	SPR: TT-Fed/TT-Reg	Implementation Recommended	Edit	View

REPORTING / MARKETING RESEARCH IMPLEMENTATION UPDATES

IMPLEMENTATION UPDATE: Research in Practice

Construction & Comparison of LA's Conventional and Alternative Base Courses Under Accelerated Loading

CONSTRUCTION

Use of High Performance, High Strength Concrete (HPHC) Sub-Base Courses

Use of High Performance, High Strength Concrete (HPHC) Sub-Base Courses

By using high performance, high strength concrete, winter prior paving was achieved for the I-20 Twin Span Bridge. The use of 8,500 psi (59 MPa) HPHC concrete allowed the use of less concrete (saved at 32.8 ft³ (9.28 m³) rather than seven spans at 48.12 ft³ (1.36 m³), which would have been required with a concrete compressive strength of 6,500 psi (45 MPa). Furthermore, the use of 8,500 psi (59 MPa) concrete allowed the BT-78 girder to span a length of 135 ft (41.1 m). The BT-78 girders spanned a cumulative length of 28,500 ft (8,686 m) in each direction (in each span).

In addition, with the lower permeability associated with high performance concrete, the Louisiana Department of Transportation and Development



CONCRETE

- Quality
- Material Performance
- Durability
- Sustainability and Environmental Stewardship
- Performance

IMPLEMENTATION UPDATE: Research in Practice

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Research Fact Sheet

FACT SHEET

Impact of Left Lane Restrictions on Multilane Highways in Louisiana

May 2009

WHAT WAS THE PROBLEM?

Senate Concurrent Resolution 29 requested a study to restrict trucks from the left lane of multilane state and federal highways. Specific impacts of such restrictions could be enhanced safety and reduced congestion.

WHAT SHOULD BE DONE?

TRLS have been reported to reduce crashes from several percent up to six percent with a 50 percent reduction on average on a site specific basis under site specific conditions, such as geometric characteristics of lanes, interchange spacing, and length of restrictions, traffic volume, traffic control (such as ramp metering), and percentage of trucks.

Conditions most conducive to favorable application of TRLS are:

- Highways with three or more lanes in each direction
- Interchanges spaced more than one mile apart with two ramp columns
- Initial traffic flows greater than 1,500 vehicles per hour per lane
- Truck percentages between 20 and 25 percent of the total traffic stream

WHY SHOULD YOU DO IT?

This study was conducted by LTRC based on a review of current practice in the U.S., theoretical and empirical studies of truck lane restriction strategies (TRLS) reported in the literature, a public opinion survey, and a review of highway characteristics in Louisiana. An LTRC project review committee consisting of DOTD, LULU, LRA, and FHWA traffic and safety experts along with trucking industry representatives reviewed this report and its findings. The key findings of the study are:

- Truck lane restrictions should not be applied to all multilane highways, sites must be evaluated individually. These locations need to be strategic.
- Prohibiting truck traffic from the left lane on multilane highway sites and at certain conditions specific locations can be successful in reducing accidents and improving traffic flow.
- Restricting trucks to the right lane in left lane to urban settings does not work as it impedes entering and exiting on the interstate.
- The main benefit of truck lane restrictions applied at appropriate locations is improved safety and congestion management. While safety variables, a reduction in crash rate in the order of 20 percent can be achieved under favorable conditions with truck lane restrictions.
- Marginal benefits for non-trucks are increased speed and reduced delay, but this could be at the expense of reduced speed and increased delay for trucks. Change in average speed is typically in the order of 2 or 3 miles per hour.
- Concentrating trucks into certain lanes accelerates pavement damage in those lanes. For example, on a facility with four lanes in each direction, restricting vehicles from using the left lane is estimated to reduce the life of the pavement by 2 percent to 3 percent. On two lanes in each direction, restricting vehicles from using the two left most lanes would reduce the life of the pavement by 34 percent. On two lanes in each direction, restricting vehicles from using the two left most lanes would reduce the life of the pavement by 34 percent. On two lanes in each direction, restricting vehicles from using the two left most lanes would reduce the life of the pavement by 34 percent.
- Safety is lowered the greater the differential in speed between non-trucks and trucks, therefore, uniform speed is preferred.

FACT SHEET

Impact of Left Lane Restrictions on Multilane Highways in Louisiana (continued)

page 2

Adverse consequences can occur when TRLS are employed outside these parameters. Site specific studies should be conducted and a blanket application of TRLS should not be used.

Given the right conditions and circumstances, safety can be improved and congestion reduced. Without site specific studies, TRLS can increase crashes and increase congestion. A survey of the traveling public showed that 20 to 30 percent would be in favor of truck lane restrictions.

WHAT ARE POTENTIAL FISCAL IMPACTS?

Without DOTD, field operations would be most directly affected because of increased cost for installation and maintenance of signage to which DOTD would use TRLS funding for the signage costs. The fiscal impact would also depend on the extent of TRLS employed. Impact to state and local law enforcement agencies is unknown, however, TRLS are most effective with enforcement, which would require the cooperation of state and local law enforcement agencies.

Negative consequences, however, include acceleration of pavement damage in those lanes where truck traffic is carried. It is estimated that TRLS would reduce pavement life by 24 percent. Other negative responses would come from the trucking industry if a blanket application was employed.

Reporting / Marketing Research Quarterly Newsletter

The collage displays three issues of the 'Technology Today' newsletter. The top issue, dated February 24, 2009, highlights the 'LTRC Secures Contract from Shell for Thiopave Testing' and the 'LTRC Hosts Fly Ash Seminar'. The middle issue, dated April 18, 2009, features the '2009 Louisiana Transportation Conference' and 'LTRC Hosts Fly Ash Seminar'. The bottom issue, dated May 11, 2009, continues with 'LTRC Hosts Fly Ash Seminar' and '2009 Louisiana Transportation Conference'. Each newsletter includes the LTRC logo and various photographs related to the articles.

Reporting / Marketing Research LTRC Website

The screenshot shows the LTRC website homepage. At the top, there is a navigation bar with links for 'Home', 'About Us', 'Services', 'Publications', 'Training', 'Certification', and 'Links'. Below this is a search bar and a 'Search' button. The main content area is divided into several sections: 'Publications' with a list of recent articles, 'What's New' with a list of recent news items, and 'TRC Seminar Series - Concrete Workshop' with details about upcoming seminars. The LTRC logo is prominently displayed in the top right corner.

LTRC Training / Education Role

- Engineering continuing education
 - *PDH requirements by board of registration*
 - *Transportation related topics*
 - *Conferences, seminars, workshops*
- Job skills training for technicians
 - *Construction*
 - *Design*
 - *Maintenance*
- Management / professional development programs
 - *CPTP*
 - *Management topics*
 - *Construction project management*
 - *TQM*
 - *Strategic planning*



Lessons Learned / Moving Forward

- Easy to identify successful research projects
- Difficult to go back and determine real data to quantify benefit
- Engage Project Review Committees for implementation expertise
- Develop implementation strategy early
 - Formalize implementation strategy
- Market projects with quantifiable implementation benefits
 - Quantitative or Qualitative
 - Three year implementation history
 - Implemented projects
 - Projected implementation savings
 - Approved implementation
 - Begin project tracking



Research and Technology Implementation Office

Texas Department of Transportation

Research Program

Sylvia R. Medina
Program Coordinator



Research and Technology Implementation Office

Role of RTI

- RTI administers the research program for TxDOT and reports to the Assistant Executive Director for Engineering Operations
- RTI Staff includes the Office Director, Administrative Assistant, 3 Research Engineers, 3 Contract Specialists, an Accounting Specialist, and a Tech Transfer/Outreach person





Research and Technology Implementation Office

How TxDOT's Research Program Operates



Research and Technology Implementation Office

How Research is Conducted

- TxDOT contracts with Texas state supported universities
- There are currently 22 institutions active in the program.





Research and Technology Implementation Office

Funding

- TxDOT's research program is funded from Part II of the State Planning and Research Program (SPR)
- TxDOT allows for 50% of the SPR funds to be used for research
- The FY 2012 Annual funding is:
 Research Program: \$22,789,146
 Implementation Program: \$2,851,323



Research and Technology Implementation Office

Research Cycle

Research and Implementation Program Development						
Activity	September	October	November	December	January	February
Committee Meetings	TAP Meetings	RMCs	ROC			
Developing Projects - Due Dates				Final Prob Statements due to RTI	PMAC Nominations Due	RFP Sent Out
	TAPs review, refine, and rate	RMCs select	ROC approves			
					De selected	Pre-proposal meetings
					As selected as practical	

Research and Implementation Program Development						
Activity	March	April	May	June	July	August
Committee Meetings			RMCs	ROC		
Developing Projects - Due Dates	Program Due	Proposed Selections Due	Call for Proposals	Problem Statements Due		
Active Projects - Activities	PMAC selected	PMAC's review proposals	RMC's review proposal selections	ROC may establish staff priorities	Project Agreements finalized & distributed to users	RTI engineers do initial evaluation of Prop Items
Active Projects - Due Dates	AAAs Due	AAAs Due	AAAs Due			AAAs Due
Other TxDOT Activities	SCOR recommends final program	AASTHO approves program, or M&M to administrator	Expert panels translate Prop Items into SCORP Project Statements	SCOR selects 1 Prop Item	DOT's, AASHTO Comms, PMAC develop Prop Items	Proposals reviewed
Long term and Ongoing Program Activities:	<ul style="list-style-type: none"> Project Meetings Processing Deliverables Processing University Inquiries 			<ul style="list-style-type: none"> Other RTI Activities: Product Evaluation Program Library Engineering Project Manual / Handbooks Maintenance 		





Research and Technology Implementation Office

Research Committees

- Research Oversight Committee (ROC) – establishes research program policies and gives final approval for new research projects.
- Research Management Committees (RMC) – develop technical program and oversight of projects
- Technical Assistance Panels (TAP) – help their RMCs develop their annual programs.



Research and Technology Implementation Office

Research Management Committees

- RMC 1 – Construction and Maintenance
- RMC 2 – Planning and Environment
- RMC 4 – Safety and Operations
- RMC 5 – Structures and Hydraulics





Project Monitoring Committees

- The Project Director (PD) manages the work the university performs under a Project Agreement - there is one PD per project
- Project Advisors (PA) assist the PD by providing a range of knowledge needed to ensure a project meets TxDOT's needs
- Together, the PD and PAs comprise the Project Monitoring Committee (PMC)



Criteria for Choosing the PMC

- RTI requests nominations from Administration and the D/D/O/Rs
- Representation from office of primary responsibility (OPR)
- Special areas of expertise
- RTI makes final determination





Research and Technology Implementation Office

Project Directors

- Monitor & direct day-to-day project activities
- Keep the project on track
- Ensure that the project produces results that are useful to TxDOT



Research and Technology Implementation Office

Project Advisors

- Review and evaluate proposals
- Provide support and advice to PD and researchers during project
- Review deliverables
- Assist with implementation





Research and Technology Implementation Office

Initiating a Research Project

- Project starts from a problem that TxDOT is experiencing
- How can research solve the problem?
- TAP → RMC → ROC → RFP



Research and Technology Implementation Office

RFP Process

- A Pre-proposal meeting is held for each project included in the RFP announcement
- Proposals are received from universities
- RTI reviews to ensure proposals meet the minimum criteria
- Proposals are sent to the PMC for technical review.





Proposal Review Process

- Ground rules during RFP Solicitation period
- Each member should evaluate each proposal independently based on merit
- Be fair and objective



Proposal Review		Form PropRev (02/09) (RTI)	
Complete the yellow areas.			
Project Number:			
Research Agency(s):			
Proposed Tasks	Rating	Weight	Score
Grasp: Rate the proposal on its understanding of the issue a. Is the intent and significance of each objective understood? b. Are all the Project Statement's objectives addressed?		3	0
Focus: Rate the tasks on how suitable they are for the project objectives a. Are the scientific and practical concerns that shape the research methodology clear? b. Do the proposed tasks effectively address all the project's objectives? c. Is each task properly focused?		3	0
Clarity: Rate the tasks on clarity and level of detail a. Is the scope and intent of each task clear? b. Is the wording concise while still providing sufficient detail?		3	0
Innovation: Rate the research approach on its innovativeness a) Does the work plan demonstrate a new way of looking at the issue or problem? b) Are the work tasks likely to expand the current state of knowledge on the issue or problem?		1	0
Products: Rate the work plan on how it addresses the required product(s) a. Do the proposed products meet the minimum requirements of the Project Statement? b. If a product is to be demonstrated or tested, or otherwise needs TxDOT review to be effectively finalized, will this be done early enough to incorporate the results before the project terminates?		2	0
Success: Rate proposal on likelihood of achieving implementable results a. Based on the above, will the researchers be able to achieve the goals of the project? b. Will the project's tasks deliver practical and implementable results?		2	0
Research Team			

Proposal Review Form





Research and Technology Implementation Office

Selecting Proposals

- The PD considers input from PAs
- Determine whether the PMC needs to meet to resolve discrepancies
- Use proposal review scores and comments as a basis for selection
- PD recommends best proposal



Research and Technology Implementation Office

Project Approval Process

- Recommended proposals are presented to RMC
- ROC provides final approval
- RTI proceeds to execute Project Agreements





Research and Technology Implementation Office

Getting the Project Off to a Good Start

- Project Directors hold a kick off meeting with the research team and Project Advisors, and RTI's Research Engineer and Contract Specialist
- A few issues that can be discussed at the meeting are:
 - Discuss the approved work plan
 - Communication during project
 - Deliverables
 - Implementation



Research and Technology Implementation Office

Project Oversight

- Project Director oversees & directs the project on behalf of TxDOT, RTI and the university
- Maintains close coordination with the Research Supervisor & RTI
- Involves Office of Responsibility (OPR) as appropriate
- Ensures researchers follow approved work plan
- Assists with implementation of research results (Closing the loop)





Research and Technology Implementation Office

Project Meetings

- PMC, RTI's Research Engineer and Contract Specialist, and researchers should meet on a regular basis
- Review work plan
- Ask questions
- Ensure everyone is on the same page and OPR still supports the project.



Research and Technology Implementation Office

Managing the Project

- Monthly emails
- Technical Memorandums
- Semi-Annual Progress Reports (SARs)
- Project Meetings





Research and Technology Implementation Office

Managing the Data

- RTI has a Research Management System (RMS) database
- RMS contains RTI's budget information
- Has each project's financial information
- Personnel involved in projects
- Keeps track of project deliverables and billings.



Research and Technology Implementation Office

PD - Billings Review

- RTI conducts an initial review
- RTI and PDs review to ensure charges appear necessary and reasonable
- Questions on charges - PD contacts researcher for justification
- RTI encourages responsiveness
- Any questions at all – call RTI





Signs a Project May Be in Trouble

- Researchers will not communicate with PMC
- Work Plan is not being followed
- Project work is behind the estimated schedule
- Tech memos and deliverables are behind schedule
- Semi-Annual Progress Reports are not consistent with PMC observations
- Project invoices are not consistent with observations of project work



Closing Out the Project

- Wrap-Up Meeting
- Deliverables
- Implementation





Project Wrap-up

- Within last 2 to 3 months of project.
- Project status
- Accomplishments
- Deliverables
- Further research
- Equipment disposition



Types of Deliverables

- Project Summary Reports
- Technical Reports
- Products
 - ❖ devices,
 - ❖ analytical tools
 - ❖ new materials
 - ❖ new or improved specifications
 - ❖ improved testing methods
 - ❖ knowledge or guidance





Research and Technology Implementation Office

Deliverables Process

- PMC reviews
- PAs send comments to PD
- PD sends comments and recommendation to RTI on approval and distribution
- If published, deliverables can be found in TxDOT's Research Library hosted on CTR's website



Research and Technology Implementation Office

Implementation and Tech Transfer





Types of Implementation

- Implementation of research findings through dissemination to districts or divisions through Office of Primary Responsibility (OPR)
- Implementation projects funded through RTI; i.e., workshops or field implementation



Implementation Status

- OPRs are sent an Internal Implementation Status (IIS) form with each Project Summary Report (PSR).
- IIS forms are posted with PSRs on Crossroads.
- RTI continues to monitor the status during the implementation process.





Research and Technology Implementation Office

Contact Information, Tools, and Resources for Program Participants

- contact list of phone numbers and email addresses
- PD Handbook, University Handbook, and Research Manual
- links to the Research Library, our internal website, and our internet page
- PMC workshop for those who are new to the process



Research and Technology Implementation Office

Promoting the Research Program

- Web sites both internal and external
- Monthly email to key audience of about 300 including directors, administration, TxDOT research committees, and area engineers
- ShortCourse





Research and Technology Implementation Office

Promoting the Research Program

- RTI publishes a Program Book which includes active research projects and an Annual Report which includes research results from projects that have ended.
- New Regional Implementation Engineer (Pilot Program)
- Video Summary Reports (VSRs)



Research and Technology Implementation Office

On the Horizon

- More focus on implementation performance measures
- More focus on documenting and reporting performance data collected from implemented projects
- More focus on benefits and value from the data





Research and Technology Implementation Office

Texas LTAP Program



Research and Technology Implementation Office

LTAP

- Program funded by FHWA with State/Local match
- Provides cities and counties with assistance
- Technology transfer, training and personalized assistance (Free service to these agencies!)





Research and Technology Implementation Office

LTAP/TEEX Continues to

- Look for new training ideas to benefit the cities and counties
- Reach out to local agencies not aware of this program
- Work with RTI to promote LTAP.



Research and Technology Implementation Office

Thank you

Some information that may interest you:

- *Video Summary Reports*

<http://www.youtube.com/watch?v=bSVDNHXIDzE&feature=related>

- *Our research publications*

http://www.txdot.gov/txdot_library/publications/research.htm

- *TxDOT's Research Library – Housed and maintained at the Center for Transportation Research*

<http://library.ctr.utexas.edu/index.html>





Research and Technology Implementation Office

Texas LTAP

- TxDOT, FHWA, TEEX, & Local agencies
- Bridge and Road Maintenance, Traffic Safety, LGPP classes, etc.
- Lone Star Roads Newsletter, technical brochures, and training videos
- Advisory Committee
- LTAP is managed by the RTI Office
- RTI facilitator Sylvia R. Medina



Research and Technology Implementation Office

Research and Technology Implementation Office (RTI)

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FINAL REPORT
Kentucky Research Peer Exchange

APPENDIX B:
Executive Briefing Presentation



Kentucky State Planning & Research Peer Exchange

October 14, 2011

1

Panel Members

Mark Morvant

LA Transportation Research Center

Jamie Bewley Byrd

KY Transportation Cabinet

Sylvia Medina

TX Department of Transportation

Bob Lewis

KY Transportation Cabinet

Linda Narigon

Iowa Department of Transportation

Tony Young

FHWA, KY Division

Joe Crabtree

KY Transportation Center

2

What is the size (i.e. budget) for your annual research program and what are the funding sources?

- Increase flexibility and accountability with line items for specific functions (such as implementation, publications, program assessment, etc.)
- Investigate STP (Surface Transportation Program) funds for Tech Transfer program to release other funds for something else
- Investigate private/industry support with non-profit foundation
- Better market designated funding for implementation activities

3

How are ideas for new research projects identified, and how are new projects selected?

- Kentucky's process is robust and effective in selecting projects
 - Cabinet involvement
 - Two-tiered committee selection process
 - Implementation addressed as part of selection process
 - Final Executive level approval
- Process implemented from last Peer Exchange
- RFP vs Sole Source/PI selection

4

How does the DOT provide oversight and guidance for each project throughout the project's life?

- Technical Committees
- Technical memos – gives progress as tasks are completed (Texas)
 - Technical memos provide basis for final report
- Tri-annual report should include task specific progress
- Interim report to better define workplan; better understands scope and what can be provided once literature review and preliminary investigation are complete
- DOT Staff provide management oversight
 - Champions
 - Research Staff

5

What tools or processes do you have in place to make sure research results get implemented and tracked?

- Implementation potential in selection process
- Implementation discussed from beginning of project
- Research Assessment & Implementation report
 - Contains implementation strategy/plan;
 - Research objective
 - Implementation tools
 - Implementation timeline
 - Assessment of benefits
- Research implementation status report;
 - Summary of progress
 - Changes in practice
- Classify projects

6

How do you measure the value of research?

- Pick out specific high value projects to present; not entire program
- Benefits for projects
 - Cost benefits
 - Crash data
 - Lives saved
 - Quality/efficiency
- SAC responsibilities
 - Provide assistance for identifying and assessment of benefits
 - Validate final benefits
- Report changes in practice, processes and standards

7

What tools or processes do you have in place to promote research implementation?

- Responsibility of dedicated staff person to track projects (implementation engineer)
- Implementation Status Report
- Performance measures (of implementation), part of personnel performance annual rating
- Tech videos on YouTube; use as training video
- Produce literature to present, technical, multi-projects
 - Detailed on major projects
 - Fact sheets after executive/legislative audience
 - Yearly summary of successful projects
- Provide necessary tools, training and products (specifications, software, manuals, etc.)
 - Funds allocated specifically for training and includes travel to TRB, NHI courses (Iowa)

8

Where do the Technology Transfer program and the Local Technical Assistance Program reside in your state? How are these programs managed/coordinated, and what sort of interaction/integration exists between these programs and the research program?

- KY Technology Transfer Program already strong and robust
- Integrate Research and Tech Transfer functions and responsibilities
- Publication services and support
- LTAP
 - Transportation Centers
 - University responsibility

9

**Questions/
Discussion**

10