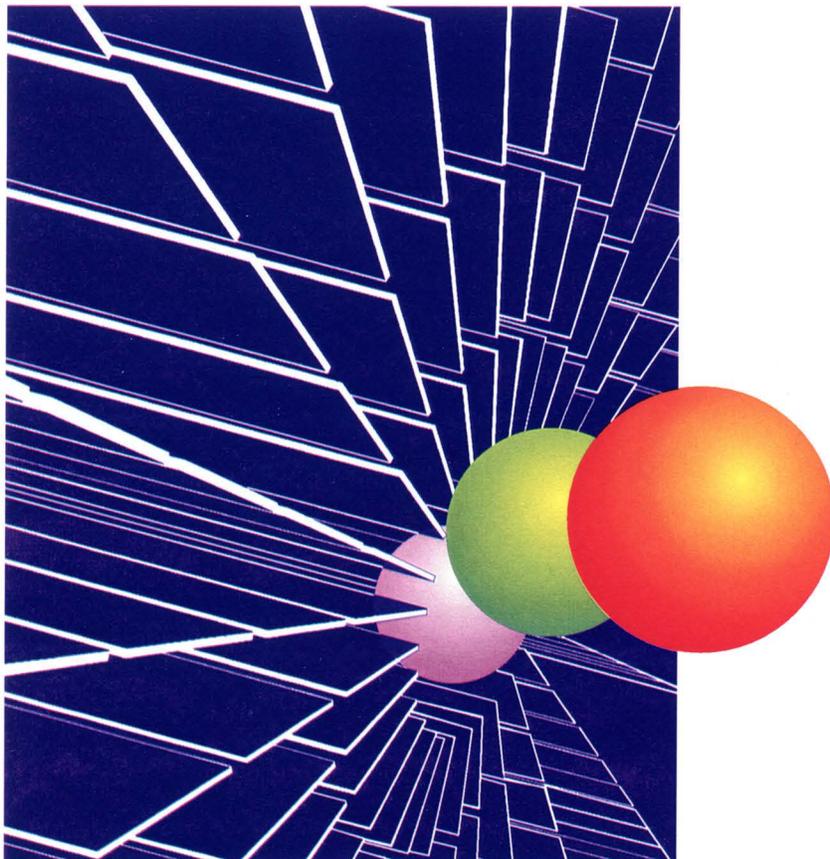


MoDOT

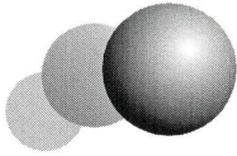
Research, Development and Technology Division

Missouri Transportation Research
and Education Center
Conference

MOTREC



June 2, 1999



MOTREC

(Missouri Transportation Research Education Center)

The second MOTREC Conference was held on June 2, 1999 at the Capitol Plaza Hotel in Jefferson City, MO. The University of Missouri and MoDOT's Missouri Transportation Research Education Center (MOTREC) partnership was identified in the 1998 Peer Exchange as a strength of the RDT Division. The official MOTREC partnership was executed on February 4, 1998. The Peer Exchange also identified opportunities for the division that suggested expanding RDT's communication efforts within MoDOT, expanding roles of employees and advisory committees, soliciting department needs, leveraging university expertise and prioritization of research work. The goal of this conference was to assist in the effort to improve the RDT Division's responsiveness to the department while creating awareness of interest areas to our university partners.

Jim Murray, MoDOT's RDT Division Engineer, opened the conference with a discussion of objectives.

Conference objectives included:

- Open discussion from MoDOT employees to identify research, development and technology transfer needs of the department.
- Share and discuss these needs with staff of the universities.
- Coordinate the department's needs with the research, development and technology expertise of particular universities.



(Left to right): Sam Kiger, University of Missouri-Columbia; Jim Murray, Mo. Dept. of Transportation; Paul Munger, University of Missouri-Rolla.

- Initiate development of technical advisory groups with specific topic areas in preparation of research idea statements, new product evaluations and assistance with prioritizing studies.

Previously identified emphasis areas from the Focus Group meeting were shared with the MOTREC participants. These Focus Group Emphasis Areas included:

- Safety
- System Preservation
- Traffic Mobility
- Innovation
- Social, Economic, Environment

Breakout session topics were established as follows:

Breakout Topics

Bridges

Geotechnical

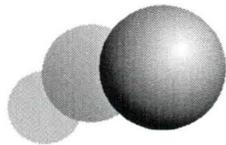
Operations (Construction and Maintenance practices, products, procedures and system preservation)

Pavements

Traffic (Safety)

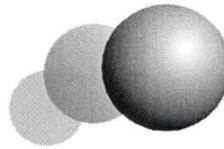
Social/Economic/Environment (soft research issues)

From these breakout sessions the following emphasis items were identified (RDT Discussion Leader).



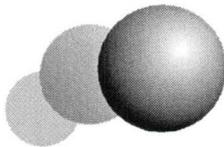
Bridge Emphasis - *(Tim Chojnacki)*

- High Performance Concrete (HPC) applications
 - Optimization of prestressed I-girders
 - Use in decks to increase service life by decreased permeability and increased durability
- Seismic Retrofit for Columns
 - Application of innovative materials (SIMCON, FRP, etc.)
- High Performance Steel (HPR) applications
- Fiber Reinforced Polymers (FRP) applications
 - Seismic retrofit
 - Deck reinforcement
 - Girder repair or strengthen girder
- Computerized design program
 - Calculate capacity/demand (C/D) ratios for assessment of seismic retrofits



Geotechnical Emphasis - *(J. D. Wenzlick)*

- GIS Database
 - Log boring data
 - Training in soil mechanics for department construction personnel
- Erosion Control
 - Identify optional planting varieties
 - Identify low cost methods for small slide repairs
- Pavement Drainage
 - Evaluation of edge drains in retrofit designs
 - Consider drain back flushing
 - Wick drains in areas of soil pumping
- Soil Stabilization
 - Improve subgrade support for pavement
- Culvert Design
 - Investigation benefits of soil arching in high fills



Operations Emphasis - *(Don Davidson)*

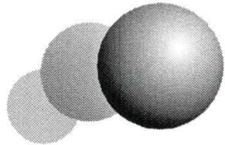
- New Products/Processes for positive impact on highways and customers
 - Snow removal, mowing, safety
 - Growth regulators on vegetation
 - Better materials for roads and bridges
- Preventive Maintenance Program
 - Develop and identify cost effective treatments and application methodology
- Pavement Management System
 - Inventory and rate pavement condition
 - Transfer pavement management methodology

■ Concrete Joints

- Joint spacing
- Joint materials

■ Shoulder Maintenance

- Correct edge drop off



Pavement Emphasis -

(Patty Lemongelli)

■ Life Cycle Cost Analysis (LCCA)

- Evaluation of user costs in LCCA
- Evaluation of existing LCCA design assumptions
- Incorporation of LCCA into pavement management system (PMS)

■ Pavement Base and Subbase Stabilization

- Improve for construction and drainage purposes

■ Pavement Smoothness

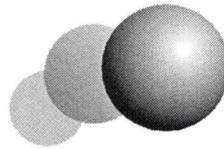
- Improve construction methods

■ Pavement Recycling Procedures

- Evaluate hot/cold in-place AC recycling
- Evaluate PCCP recycling

■ Asphalt Paving

- Develop test/process/procedure to eliminate segregation behind paver



Traffic Emphasis -

(Jim Radmacher)

■ Pavement Markings

- Materials applications guidance (paint vs. epoxy vs. raised)
- Management System
- Reflective Life Expectancy vs. Pavement Life Expectancy

■ Safety

- Intersection Conflict Reduction
- Sign Management System
- Safety Audits
- Human Element (Aged Drivers)
- Crash Rates/Traffic Calming

■ Geometrics

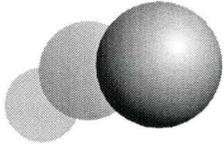
- Intersection (At Grade) Design (Accel/Decel Lanes)
- Access Management Department Policy

■ Traffic Division Strategic Plan Addressing

- Striping
- Signing
- Safety Emphasis
- Training
- Share Success Technology Transfer



- Intelligent Transportation System (ITS)
 - On Line/Real Time data available to University as training mechanism
 - Utilize Traffic Management Center as Training Tool



Social, Economic and Environmental Emphasis - (Keith McGowan)

- Correlated database information source for project support
 - Projections and analysis for project decision support
- Research and follow up studies to identify impact of social, economic, and environmental issues
 - Multimodal options
 - Alternative modes for moving goods
- Customer Involvement in Transportation Improvement
 - Identify user groups
 - Consider alternate transportation modes
- Resources for use in research studies and planning activities
 - Sources other than traditional engineering
- Alternative Financing Methods
 - Identify sources available locally and state wide.

The Research, Development and Technology Division acknowledges and thanks all the representatives from the department and universities who participated in this MOTREC Conference. This summary of discussion items is intended to keep you informed and involved in the Research, Development and Technology Transfer process of the department. Your comments and suggestions for this division are appreciated.