



## **An E-Update**

Prepared by Organizational Results  
Missouri Department of Transportation

**July 2006**

Volume 1, Issue 4

### **Teens Share Ideas on Seatbelts**

“Local Teen Killed in Traffic Accident.” The newspaper headline is all too familiar and the sentence, “... was not wearing a seatbelt,” appears too often. Why don’t teens wear seatbelts? Twelve focus groups of teens across Missouri were recently asked that question along with what outreach methods work the best. Their answers might surprise you. [Teen Seatbelt Report](#)

### **Latex Modified Concrete Reduces Travel Delays**

The thought of closing a lane on a major bridge in a metropolitan area is a headache for motorists and engineers alike. Now multiply that by three to seven days and maybe throw in a couple sporting events. The potential for traffic congestion goes through the roof. That’s the reality of repairing bridge decks in major interchanges or in areas already at capacity during heavy traffic hours. It’s also the reason MoDOT chose to explore the use of Latex Modified Concrete-Very high Early (LCMVE) strength on two projects in the St. Louis area. Both test projects were open for traffic within three to six hours of the overlay placement. Care to read more? [Breakthrough Bulletin](#) [Latex Modified Concrete Report](#)

### **Steel-Free Bridge Decks Avoid Corrosion**

They look like petrified dog chew sticks, but continuous fiber-reinforced-polymer (FRP) rebars may be an answer to avoiding the bite of corrosion on Missouri bridge decks. MoDOT recently completed a three-year collaborative research study with the University of Missouri-Columbia and University of Missouri-Rolla. The results were so encouraging that MoDOT will place its first steel-free hybrid reinforced concrete bridge decks during the summer of 2007. Projects on Boone County Route Y over Cedar Creek and Miller County Route OO over South Moreau Creek will be used to evaluate the feasibility of construction and monitor performance of the decks over time. Want more proof? [Breakthrough Bulletin](#) [Steel-Free Bridge Deck Report](#)

### **Research Program Certified by FHWA**

It’s been a fast-paced and productive year since Organizational Results opened for business last June. One project of note was certifying MoDOT’s research program with the Federal Highway Administration. This process required Organizational Results to document the steps used to develop, deploy and track MoDOT’s research program. We’ve packaged all the details in a manual for your review. [Organizational Results Manual](#)



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### Automated Hardened Concrete Analysis Saves Time

Thanks to a national pooled fund study led by MoDOT, materials staff around the country may soon be using a new automated system to analyze hardened concrete. Knowledge of the air-void structure in hardened concrete is a valuable tool toward predicting concrete durability and performance. However, current manual methods following ASTM standard C457-90 are extremely time-consuming, tedious and require highly skilled and experienced personnel. Variability of testing results from human subjectivity and other factors also are a concern. Despite these concerns, many DOTs, including MoDOT, continue to depend upon ASTM C457 using a human operator for evaluating the air-void system in hardened concrete. This data is used to make decisions, which may have significant physical and financial impact, both short and long term. The new automated system promises to save both time and effort while also improving the overall consistency and repeatability of the evaluation process. Take a minute to learn more. [Breakthrough Bulletin](#)

### Partnering Teams Work on Utility Relocations

It was a flurry of post-it notes at the second Partnering for Innovative Efficiencies meeting April 26 in Jefferson City. About 100 industry representatives and MoDOT staff gathered to look at ways to improve the process for relocating utilities with the goal of cutting costs and speeding highway projects. The suggestions were grouped into about a dozen topics and then voted upon to determine the top five actions to improve utility relocations. Five action teams are already meeting to address those key issues. Check out the progress on MoDOT's partnering homepage. [Partnering for Innovative Efficiencies](#)

### FRP Bridge Strengthening Project Shows Promise

For more than a decade, FRP laminates have been used worldwide to strengthen, repair or add ductility to existing bridges and buildings. Composite materials are strong, lightweight and not susceptible to corrosion. However, despite all well-documented benefits, including competitive cost, no traffic disruption, short-time installation, and anticipated long-term durability, validation of this technology for bridge retrofit applications on a large scale has been needed. Since 2002, a research team at the University of Missouri-Rolla has conducted field tests to validate the use of fiber-reinforced polymer (FRP) materials as a means to strengthened existing bridges that are considered structurally deficient. Five existing bridges considered structurally deficient have been upgraded using composite strengthening technologies. Post-strengthening load testing and monitoring continue to evaluate the performance and behavior of the in-place FRP materials and existing structures with no indication of deterioration at this time. The five-year monitoring program of the five bridges will be concluded in 2008. Check out the latest data. [Breakthrough Bulletin](#)

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