



Project Title: Technology Transfer Products for NCITEC Projects at University of Mississippi

Principal Investigator

Dr. Waheed Uddin

Professor and Director, Center for Advanced Infrastructure Technology (CAIT)

Department of Civil Engineering

University of Mississippi

University, MS 38677-1848

Phone: (662) 915-5363

Email: cvuddin@olemiss.edu

TRB Keywords: Research project; supply chain, flood disaster, bridge, technology transfer

Start Date: March 1, 2016 **Completion Date:** May 31, 2016

NCITEC Funds: \$54,075

Matching Funds: \$54,075

Project Summary

Efficient, safe, and disaster resilient transportation infrastructure assets are the backbone of the U.S. economy by providing passenger mobility and freight transportation of commodities within the states. Intermodal integration of ports-rail-highway is the key for reducing travel time and emissions related to distribution of imports and exports of its agriculture commodities, lumber, and coal among other products. The following research projects were completed under all NCITEC project grants at the University of Mississippi (last names of primary researchers shown in parenthesis):

- Infrastructure funding issues and road safety evaluation (Holland and Uddin)
- Optimization of freight routes and logistics (Cao and Goggans; Uddin)
- Intermodal freight integration for NAFTA routes and highway/waterway (Uddin)
- Computational modeling of flood simulation impacts on infrastructure (Uddin and Altinakar)
- 3D-Finite element modeling of bridges and simulation of floodwater impacts (Uddin)
- Field and finite element studies of highway bridges for scouring damage (Swann and Mullen)
- Structural health monitoring highway bridge structures (Ervin, Aranchuk, Mullen)
- Passenger rail revival along the Mississippi Gulf Coast (Uddin)
- Energy harvesting from vehicle-pavement vibrations (McCarty and Sharma)
- Media framing of transportation accidents including hazardous spills (Swain)

The researchers will review and synthesize work accomplished and key results for each of the NCITEC projects completed at the University of Mississippi. The technology transfer briefs and media products will be developed and disseminated through CAIT-NCITEC web page, email distribution, and tweets. Additionally, SlideShare posts will be based on the summary briefs and blog posts will be created on summary results and their impacts on the stakeholders, economy, and society.