



Research News

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Fall 2004

Maine DOT Heads Up NETC's Policy and Advisory Committees

On July 1, 2004, David Cole, Commissioner, Maine Department of Transportation and Dale Peabody, Director of Transportation Research, Maine Department of Transportation assumed the chairmanships of the NETC Policy and Advisory Committees respectively.

The primary responsibility of the Policy Committee, which is composed of the Chief Administrative Officers of the New England state transportation agencies, is to provide funding for the Consortium and approve its annual research program.

The primary responsibility of the Advisory Committee, which is composed of the Managers/Directors of Research of the New England state transportation agencies, is to develop and recommend an annual research program to the Consortium's Policy Committee and provide oversight of the operation of the Consortium.

NETC Awards \$380,876 for Transportation Research Projects

NETC awarded \$380,876 for transportation research projects at the University of New Hampshire and the University of Connecticut to address: FLOOD RISK EVALUATION FOR STEEP GRADIENT STREAMS; MORE EFFECTIVE USE OF RECLAIMED ASPHALT PAVEMENT MATERIALS; and the DEVELOPMENT OF HIGHWAY CRASH PREDICTION MODELS. Faculty researchers who have been awarded funding include Dr. Jennifer Jacobs and Dr. Jo Sias Daniel at the University of New Hampshire, and Dr. John Ivan at the University of Connecticut.

NETC To Test Bridge Rail Transitions for Crash Worthiness

The New England Transportation Consortium has awarded \$240,000 to the Texas Transportation Institute at Texas A & M University for crash testing of four bridge rail transitions that were designed for use in New England by the Consortium's member agencies. The crash testing is a requirement for certification by FHWA to permit use of the transitions on federal aid highways.

At its March 30, 2004 meeting, the NETC Advisory Committee selected the following research projects for funding in FY 2005.

05-1	Develop Base Resistance Load-Displacement Curves for the Design of Drilled Shaft Rock Sockets	\$100,000
05-2	Safety of Reflective Median Barriers	\$100,000
05-3	Analysis of Roundabout Operational Characteristics Utilizing Microscopic Simulation Modeling	\$ 75,000
05-4	Characterization of the Rate Constant of Pozolan Available Alkalis	\$ 60,000
05-5	Measurement of Work of Adhesion between Paint and Metallized/Galvanized Steel	\$ 75,000
05-6	Employing Graphic-Aided Dynamic Message Signs to Assist Elder Driver's Message Comprehension	\$ 60,000
05-7	Warrants for Exclusive Left Turn Lanes at Unsignalized Intersections and Driveways	\$ 70,000
05-8	Evaluation of Alternative Traffic Simulation Models, Including CA4PRS, for Analysis of Traffic Impacts of Highway Construction, Reconstruction and Rehabilitation Projects	\$100,000
05-9	Financing Intermodal Transportation in New England	\$ 50,000
Total =		\$691,000

State Transportation Agencies Appoint Chairpersons for Project Technical Committees for NETC FY 04 and FY 05 Research

Project 04-1	Recycling Asphalt Pavements Containing Modified Binders	Allan Perkins, New Hampshire Department of Transportation
Project 04-2	Driver-Eye-Movement-Based Investigation for Improving Work Zone Safety	Robert Roccio, Rhode Island Department of Transportation
Project 04-3	Estimating the Magnitude of peak Flows for Steep Gradient Streams in New England	Charles Hebson, Maine Department of Transportation
Project 04-4	Effective PG Grade in RAP Mixes	Denis Boisvert, New Hampshire Department of Transportation
Project 04-5	Network Based Highway Crash Prediction Using GIS	Erika Smith, Connecticut Department of Transportation
Project 05-1	Develop Base Resistance Load Displacement Curves for the Design of Drilled Shaft Rock Sockets	Leo Fontaine, Connecticut Department of Transportation

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Project 05-2	Safety of Reflective Median Barriers	Michael Sock, Rhode Island Department of Transportation
Project 05-3	Microscopic Simulation for Modeling Modern Roundabouts in New England: Accuracy, Sensitivity and Calibration	Rhaguram Dharmaraju, Vermont Agency of Transportation
Project 05-4	Characterization of the Rate Constant of Pozzolan Available Alkalis	Michael Foisey, Rhode Island Department of Transportation
Project 05-5	Measurement of Work of Adhesion Between Paint and Metalized Galvanized Steel	John Brownell, Rhode Island Department of Transportation
Project 05-6	Employing Graphic-Aided Dynamic Message Signs to Assist Elder Drivers' Message Comprehension	Joseph Schall, Rhode Island Department of Transportation
Project 05-7	Warrants for Exclusive Left Turn Lanes at Unsignalized Intersections and Driveways	Bernard Byrne, Vermont Agency of Transportation
Project 05-8	Evaluation of Alternative Traffic Simulation Models, Including CA4PRS, for Analysis of Traffic Impacts of Highway Construction, Reconstruction and Rehabilitation Projects	Erika Smith, Connecticut Department of Transportation

Traffic Simulation, Water Quality, Composite Materials and Monitoring Bearing Capacity at Construction Sites are Among NETC's Current Research Projects

"Calibrating Traffic Simulation Models to Inclement Weather Conditions With Applications to Arterial Coordinated Signal Systems"

Principal Investigator: Dr. Adel Sadek, University of Vermont
Email asadek@emba.uvm.edu

Objectives are to explore how to best calibrate simulation models to inclement weather conditions in New England, and to use the calibrated model to investigate the feasibility and benefits of tailoring signal timing to adverse weather conditions along New England arterials.



Wet Condition



Wet and Snowy Condition



Wet and Slushy Condition



Slushy in Wheel Paths

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"Measuring Pollutant Removal Efficiencies of Stormwater Treatment Units"

Principal Investigator: Dr. Xiaoqi Zhang, University of Massachusetts, Lowell

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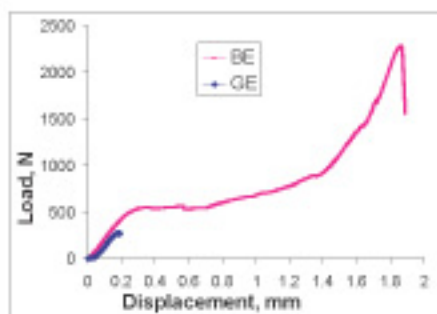
Objectives are to develop a "bacterial budget" to track influent and effluent bacteria concentrations as well as measuring the growth or reduction of bacteria within the separator units, and to determine the extent of bacteria survivability in hydrodynamic separator units.



"Basalt Fiber Reinforced Composites"

Principal Investigator: Dr. Richard Parnas, University of Connecticut

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The objective of this research is to evaluate, through the application of a range of basic mechanical tests and environmental exposure, the usage of basalt fiber reinforced polymer composites for civil infrastructure applications requiring excellent mechanical properties and long lifetime.

Figure 1. 3-Point bending load curves from tests conducted with basalt / epoxy (BE) and glass / epoxy (GE) composites before freeze / thaw exposure.

"Portable Falling Weight Deflectometer Study"

Principal Investigator: Dr. Dana Humphrey, University of Maine, Orono

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Objectives are to evaluate the effectiveness of the portable falling weight deflectometer (PFWD) as a means of monitoring bearing capacity at construction sites and develop guidelines for their use that will include acceptance and testing protocols.



The NETC Advisory Committee will meet at the University of Connecticut's Nathan Hale Inn and Conference Center in late November to review the effectiveness of the Consortium's operating procedures and formulate an action plan to enhance the achievement of its mission. Persons wishing to submit a brief summary of an issue or issues relating to the Consortium's operating procedures should send an email to the Coordinator at the address shown below.

Transportation Potpourri

The Plight of Reauthorization: Speaking at the *Driving Reauthorization Home Seminar* at the annual meeting of the American Highway Users Alliance in Washington, D.C., last week, House Transportation and Infrastructure Chairman Don Young (R-AK) gave a frank assessment of the reauthorization impasse and how eventual passage of the legislation is instrumental to the nation's economic future.

"One thing we have today that produces revenue is transportation—an investment for the future economy," Young said. He also commented, "You [the transportation community] have to make transportation a national issue. If you don't do it now, we will fall further behind." Young noted that, while he had hoped for more funding, passage of a \$299 billion conference report this year would be good for America. Without mentioning specific names, Young expressed frustration over the resistance mounted by senators to moving the bill forward.

Source: AASHTO Reauthorization Update, AASHTO.org, posted 10/15/2004.

<http://rip.trb.org/>: The Research in Progress (RIP) Database allows users to search approximately 7,600 records of recently completed transportation research projects including NETC projects.

http://safety.fhwa.dot.gov/fourthlevel/pro_res_road_nchrp350.htm: This website contains information on roadside hardware that are tested and evaluated using NCHRP Report 350 criteria. The 2-Bar and 4-Bar bridge rails designed and crash tested by NETC that meet the NCHRP Report 350 criteria can be found on this website.

Intelligent Transportation Systems: FHWA's Office of Operations and the Intelligent Transportation System (ITS) Joint Program Office has recently released the latest report in a special series on the benefits and uses of ITS technologies. The report, "Work Zone Traffic and Incident Management System: Keeping Traffic Moving During Reconstruction of the Big I" (FHWA-OP-04-072) documents the design, selection, implementation, and operation of an ITS that was deployed to facilitate traffic flow and incident management during the 'Big I' reconstruction in Albuquerque, NM. ■

Visit the NETC website to review the status of research projects, contact Principal Investigators or obtain copies of completed final reports.

www.netc.uconn.edu

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