



# CONNECTICUT DEPARTMENT OF TRANSPORTATION

## CONNDOT RESEARCH HIGHLIGHTS - MAY 2008



### NEW PHOTOLOG IMAGE & DATA TECHNOLOGIES

Department-wide usage and savings are up 50% with the introduction of high-definition video cameras, a new underclearance measurement system and rapid field-to-user image/data availability. Find out more about Photolog at <http://www.ct.gov/dot/photolog>.

Contact Brad Overturf of Connecticut DOT @ (860) 258-0319 or [bradley.overturf@po.state.ct.us](mailto:bradley.overturf@po.state.ct.us)

### CONNDOT PAVEMENT FRICTION TESTING PROGRAM ENHANCEMENTS

Pavement friction testing is performed for research, accident investigation and planning purposes. Using a state-of-the-art vehicle, ongoing research includes updating speed gradient curves; determining horizontal curve safe testing speeds; evaluating potential use of the International Friction Index (IFI); and, implementing laser-type texture measurements. Work includes participation in the "Consortium for Pavement Surface Properties" pooled-fund study and a equipment rodeo in Virginia.

Contact John Henault of Connecticut DOT @ (860) 258-0352 or [john.henault@po.state.ct.us](mailto:john.henault@po.state.ct.us)



### Webcasts & Video-on-Demand



### ADVANCING THE USE OF STREAMING AND DIGITAL MEDIA TECHNOLOGIES AT CONNDOT

Webcasts and Video-on-Demand (VoD) continue to facilitate communications within ConnDOT and also with the national transportation research community. Future webcasts will be undertaken using the new capabilities of an enhanced video production studio. By employing equipment like robotically-controlled, high-definition video cameras, the cost and effort associated with webcasting and creating VoD content will greatly diminish. A streaming video library can be perused at <http://www.ct.gov/dot/video>, and a final report is available at <http://www.ct.gov/dot/LIB/dot/documents/dresearch/CT-2231-F-05-11.pdf>.

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### TRANSPORTATION AND CIVIL ENGINEERING (TRAC) PROGRAM / AASHTO 2008 TRANSPORTATION DESIGN CHALLENGE

Attracting young people to the field of transportation has become critical for maintaining and developing Connecticut's transportation infrastructure. TRAC is a hands-on educational outreach program of the American Association of State Highway and Transportation officials (AASHTO) that engages student in solving real-world transportation problems. This contest culminates at AASHTO's 2008 Convention in Hartford, CT.

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The Connecticut Department of Transportation maintains 3731 centerline miles of highway and 3891 highway bridges.

### STUDY IN WEIGH STATION TECHNOLOGIES (CASE)

The Connecticut Academy of Science and Engineering (CASE) is conducting a study of weigh station technologies to increase the efficiency and effectiveness of Connecticut weigh stations. By deterring the passage of overweight and unsafe vehicles on the state's highways while increasing transit efficiency for regulation-compliant vehicles, potential highway damage and unsafe commercial vehicle operators can be minimized. The final report will be published in fall 2008.

Contact Richard Strauss of the Connecticut Academy of Science & Engineering (CASE) @ (860) 527-2161 or [rstrauss@ctcase.org](mailto:rstrauss@ctcase.org)



VISIT [WWW.CT.GOV/DOT/RESEARCH](http://WWW.CT.GOV/DOT/RESEARCH) OR CALL (860) 258-0311 FOR MORE INFORMATION...



### SHORT-TERM BRIDGE MONITORING

ConnDOT and University of Connecticut are working together to develop short-term bridge monitoring systems that can be rapidly deployed to problem areas on existing bridges. These systems employ accelerometers, tiltmeters and other data gathering equipment to record existing conditions for later analysis, with the findings being used to recommend appropriate remediation strategies. One successful deployment this year was used in the remediation for Route 190 bridge over the Connecticut River.

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### TRANSPORTATION ASSET MANAGEMENT (TAM) SYSTEM (INCLUDING COMPREHENSIVE PAVEMENT LIFE-CYCLE COST ANALYSIS)

The Connecticut Academy of Science and Engineering (CASE) is conducting a best practices review of other state's TAM systems applicable to Connecticut. The study identifies how others determine total cost of pavement investments (costs for construction, maintenance, repair, & users). Focus group meetings were held with ConnDOT managers to gather information on how TAM is perceived or currently applied within ConnDOT, and to identify what needs to improve. The final report will be published in fall 2008.

Contact Richard Strauss of CASE @ (860) 527-2161 or [rstrauss@ctcase.org](mailto:rstrauss@ctcase.org)

### FIELD EVALUATION OF A COLD-IN-PLACE RECYCLED PAVEMENT BASE

During 1998, a Cold-in-Place Recycling Method (CIR) was used to pave a 3-inch base on State Route 695 in Killingly, CT. Now, ten years later, the pavement is still in-place. With the State Legislature interested in pursuing CIR for use in applicable locations, the goal of this study is to evaluate and document the performance, consistency and durability of the CIR pavement.

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### CONNECTICUT COOPERATIVE HIGHWAY RESEARCH PROGRAM (CCHRP)

Connecticut statutes authorize UConn to perform research activities for ConnDOT under governance of a Joint Highway Research Advisory Council (JHRAC). JHRAC consists of four ConnDOT and four UConn members, and has performed over 160 research studies since its inception in the 1950's. Three new projects are presented here, and other CCHRP project reports are available free on-line @ [http://www.cti.uconn.edu/crp\\_completed.html](http://www.cti.uconn.edu/crp_completed.html).

### EXTENDING THE LIFESPAN OF EXISTING HIGHWAY BRIDGES THROUGH CONTROLLABLE STIFFNESS AND DAMPING DEVICES

This project will investigate state-of-the-art controllable stiffness and damping devices to reduce peak stresses in highway bridges; develop and validate structural health-monitoring techniques utilizing these devices; and, develop a design methodology for implementation.

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### STRUCTURES AND PROPERTIES OF IONOMERE MODIFIED ASPHALTS

This research examines ionomers (relatively hydrophobic polymers containing small amounts of bonded salt groups) to improve pavement performance of polymer modified asphalts. Ionomers exhibit nanophase separation of the ionic species which provides a physically cross linked structure to improve elasticity. The polar phase should improve aggregate adhesion, while the non-polar continuous phase should be asphalt-compatible.

Contact Dr. Robert A. Weiss of the *University of Connecticut* @ (860) 486-4698 or [rweiss@ims.uconn.edu](mailto:rweiss@ims.uconn.edu)

### ASSESSING AND QUANTIFYING PUBLIC TRANSPORTATION ACCESS

Advanced techniques will be utilized to develop a measurement tool for public transit accessibility in Connecticut. Results from this study will help planners identify regions ideally suited for transit investment.

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When opened on September 5, 1942, the original Charter Oak Bridge spanning the Connecticut River between Hartford and East Hartford was the longest span continuous plate girder bridge in the country.

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