CONNECTICUT DEPARTMENT OF TRANSPORTATION

CONNDOT RESEARCH HIGHLIGHTS – SPRING 2006

Actual Photolog Image - © 2006 Connecticut DOT

NEW PHOTOLOG IMAGE & DATA TECHNOLOGIES

New High Definition (HD) cameras and an Underclearance Measurement System are now installed on ConnDOT's two photolog vehicles. HD provides over six times the resolution of older image files. Rapid collection of bridge underclearance measurements should aid in bridge safety and emergency planning.

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CONNDOT PAVEMENT FRICTION TESTING PROGRAM ENHANCEMENTS

Pavement friction testing is performed for research, accident investigation and pavement planning purposes. In 2005, ConnDOT acquired a replacement, state-of-the-art friction-testing vehicle. Research is being performed to update speed gradient curves by pavement types; determine safe testing speeds for horizontal curves; evaluate potential use of the International Friction Index (IFI); and implement use of laser texture measurements.

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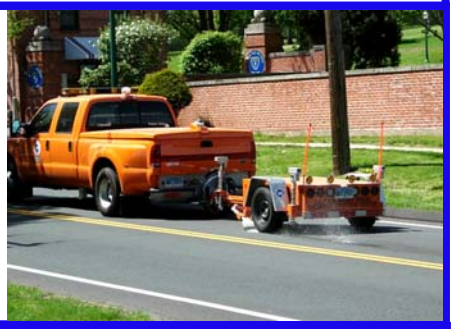

The Connecticut Department of Transportation maintains 3732 centerline miles of highway, 4163 bridges and administers an annual budget of over $400 million.

STREAMING MEDIA FOR RESEARCH DISSEMINATION AND TRAINING

Faced with reductions in staffing, travel restrictions, and budgetary constraints, streaming media tools like webcasts and video-on-demand are routinely being employed as a new venue for distance learning and enhancing communications. A streaming video library can be perused @ http://www.ct.gov/dot/video .

Contact Drew M. Coleman of *Connecticut DOT* @ (860) 258-0310 or drew.coleman@po.state.ct.us

ASSESSING CONNECTICUT DOT'S PORTLAND CEMENT CONCRETE TESTING METHODS

To investigate why some cured concrete specimens did not attain required 28-day strength, a study was designed to clarify ASTM C31 procedures for making and curing concrete test specimens in the field; evaluate and demonstrate the concrete maturity method to determine real-time, in-place concrete strength; and compare several concrete maturity devices for possible ConnDOT applications.

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

Connecticut DOT has over a dozen engineering & technical personnel conducting in-house research activities.

PREPARING FOR THE HYDROGEN ECONOMY - TRANSPORTATION

Around the world, substantial efforts are underway to address technology behind hydrogen-fueled vehicles and infrastructure. This project consisted of a literature-based review of hydrogen-fueled transportation; issues and barriers in both planning and transitioning to hydrogen-fueled transportation in Connecticut; and two alternative policy pathways for consideration by Connecticut decision-makers. A final report will be available on-line in late spring 2006.

Contact Richard Strauss of *Connecticut Academy of Science & Engineering (CASE)* @ (860) 527-2161 or rstrauss@ctcase.org

Photo Courtesy of AC Transit

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Short-term Bridge Monitoring

The University of Connecticut (UConn) and ConnDOT have been performing bridge monitoring research for over twenty years. This study will 1) show how short-term monitoring can be used to supplement design and analysis; and 2) use non-intrusive traffic speed monitors in work zones. The findings will be used to evaluate the behavior of various bridges and bridge components, including strain monitoring of both reinforced and prestressed concrete bridges; bending and shear capacities; and load distributions.

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Long Term Pavement Performance (FHWA-LTPP) Monitoring & Weigh-In-Motion Studies

Connecticut participates in the Long Term Pavement Performance (LTPP) program and maintains five experimental test sites. In conjunction with collecting traffic data needed at these sites, ConnDOT conducted research on weigh-in-motion (WIM) sensor performance and durability. Through this research, Connecticut was the first state to install and evaluate quartz-piezoelectric WIM sensor technology.

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Commercial Vehicle Information Systems & Network (CVISN): Internet-based Vehicle Routing for Oversize/Overweight (OS/OW) Vehicle Permits

Currently in the implementation phase, ConnDOT is deploying internet-based software for obtaining OS/OW permits. The system routes vehicles of known dimensions by evaluating up-to-date size & weight highway restrictions, allowing applicants to preview routes before submitting permit applications thus reducing the quantity of rejected applications. The system is part of Connecticut's ongoing, multi-agency deployment of CVISN components.

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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.engr.uconn.edu/ti/Research/crp_completed.html .

Improving Surveying Accuracy and Efficiency in Connecticut: An Accuracy Assessment of GEOID03

This project will evaluate GEOID03 model performance throughout the state; highlight areas for problem resolution; and create a local geoid model to bring GEOID03 into acceptable levels of accuracy until the Federal model meets ConnDOT criteria.

Contact Thomas Meyer of *University of Connecticut* @ (860) 486-0145 or thomas.meyer@uconn.edu

Connecticut DOT provides funding for two railroads: Metro-North, which links New Haven, Waterbury, southwestern Connecticut & Grand Central Station in New York City; and Shoreline East, which links New Haven & New London.

Notes (or doodle)

Evaluating Stormwater Quality Associated with Milling of Hot-Mix Asphalt Surfaces

This study will characterize differences in water quality parameters of stormwater runoff from both milled roadway surfaces and undisturbed roadway surfaces.

Contact James Mahoney of *University of Connecticut* @ (860) 486-5956 or james.mahoney@uconn.edu

Design and Feasibility Study: Connecticut Transportation Planning

This study will rank and prioritize household travel data needs of Connecticut transportation planners and evaluate the available options, including new technology-driven options to collect these data on a routine basis.

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Connecticut's weather varies widely, including hurricanes, blizzards and temperatures from below 0°F to above 100°F.

Notes (or doodle)

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