

CTE Co-Hosts 2010 TRB Environment and Energy Conference and Research Needs Workshop

The Transportation Research Board (TRB)'s 2010 Environment and Energy Research Conference was held at the Raleigh Convention Center this June.

The conference, titled "Better Delivery of Better Transportation Solutions," partnered seven organizations responsible for organizing and overseeing the event, including CTE and TRB, the American Association of State Highway and Transportation Officials (AASHTO), the USDOT Federal Highway Administration (FHWA), the USDOT Federal Transit Administration (FTA) and the North Carolina DOT.



Over 500 participants attended the 2010 TRB Environment and Energy Research Conference, organized by CTE, making it the largest TRB environmental conference held in more than a decade.

The conference featured speakers and presentations from a wide swath of the transportation, energy and environmental sustainability industries. Various technical sessions, running concurrently, as well as business meetings made up the three and a half day schedule. The second day concluded with an open public forum, where conference attendees and local Raleigh community members had the chance to air their own ideas and concerns.

"The conference met and exceeded all of my expectations," **James Martin, PE**, associate director of CTE and an

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introductory conference speaker, said of the event.

The theme of the conference was an interdisciplinary approach to transportation solutions for the future. Conference attendees were offered presentations on topics ranging from aviation to vehicle electrification. Over 500 people registered to attend, making it the largest TRB environmental conference held in more than a decade. The previous high for attendance was for the 2000 conference in Pittsburgh.

CTE senior research associate **Leigh Lane** organized a session titled "Livability: What Is It and How Do You Measure It". The panel included Gary Toth from Project for Public Spaces, Todd Litman with the Victoria Transport Policy Institute and John Thomas from the US Environmental Protection Agency. The session included information on currently used measurement

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The Center for Transportation and the Environment is a university transportation center that seeks to mitigate the impacts of surface transportation development on the environment.

National Webcast Continues Dialog on CSS

CTE and the Federal Highway Administration (FHWA) in August followed up its well-attended series of Context Sensitive Solutions (CSS) National Dialog regional workshops with an equally successful national video webcast to close out the project. "Continuing the Conversation" drew over 500 registered participants to view the two-hour live webcast from studios in Raleigh, NC.

Produced by CTE, the program brought together FHWA staff and presenters from the regional workshops to discuss the opportunities and new approaches to applying CSS principles as part of the day-to-day work of transportation agencies. The presentations included updated information on case studies, emerging challenges, and new directions at local, state, and federal transportation agencies. The webcast also featured two interactive Q&A segments between presenters and participants submitting their questions by email.

"As we closed out the series of regional workshops, we recognized that it would be good to scale the project back up to the national level," said **Ann Hartell**, CTE research associate and project lead for the CSS National Dialog. "This webcast updated three case studies presented at the regional workshops. The case studies focused on street-level design and integrated planning—one is from a state DOT, one from a City/metro region, and one is a neighborhood level example."

Shari Schafflein with FHWA's Office of Project Development and Environmental Review moderated the webcast presentations and discussions. Panelists on the program included Thomas DiPaolo of MassDOT in Boston, MA; Robert Parish with SvR Design Company in Seattle, WA; Norman

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Steinman with the City of Charlotte, NC, Transportation Department; Rodney Vaughn from the FHWA Resource Center in Lakewood, CO; and Andrew Wiley-Schwartz of the New York City DOT Office of Long Term Planning and Sustainability.

CSS is a collaborative, interdisciplinary approach to planning, designing and implementing transportation facilities. The approach involves all stakeholders in developing infrastructure that fits the physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility.

The CSS National Dialog project, co-sponsored by CTE and FHWA, is an important component in FHWA's efforts to deliver CSS concepts to practitioners, managers and stakeholders in the transportation field. The Dialog promotes an ongoing exchange of ideas and builds momentum for wider implementation of CSS.

During the Dialog's two-year project period nearly 1000 participants were

engaged at regional workshops and via webcasts across the country. Participants have represented state DOTs; state, federal and local governments; and the private sector as well as university affiliates and NGOs. In October CTE delivered to FHWA its final report that documents the project and includes a discussion of some of the main concepts addressed at the workshops and webcasts.

To view the webcasts, workshop materials, final report, and to learn more about the CSS National Dialog, visit www.cssnationaldialog.org.



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frameworks for understanding and measuring livability outcomes including some of the challenges associated with data collection and management.

Ms. Lane also organized a session on "Linking Community Visioning and Highway Capacity Projects" which included Liz Sanford Stepp from Cambridge Systematics, Inc. and Teresa Townsend with Planning Communi-

ties, LLC. This session reviewed the findings of the recently completed Strategic Highway Research Program (SHRP2) C08 Project and presented an on-line model process for practitioners to use for conducting visioning exercises associated with transportation projects.

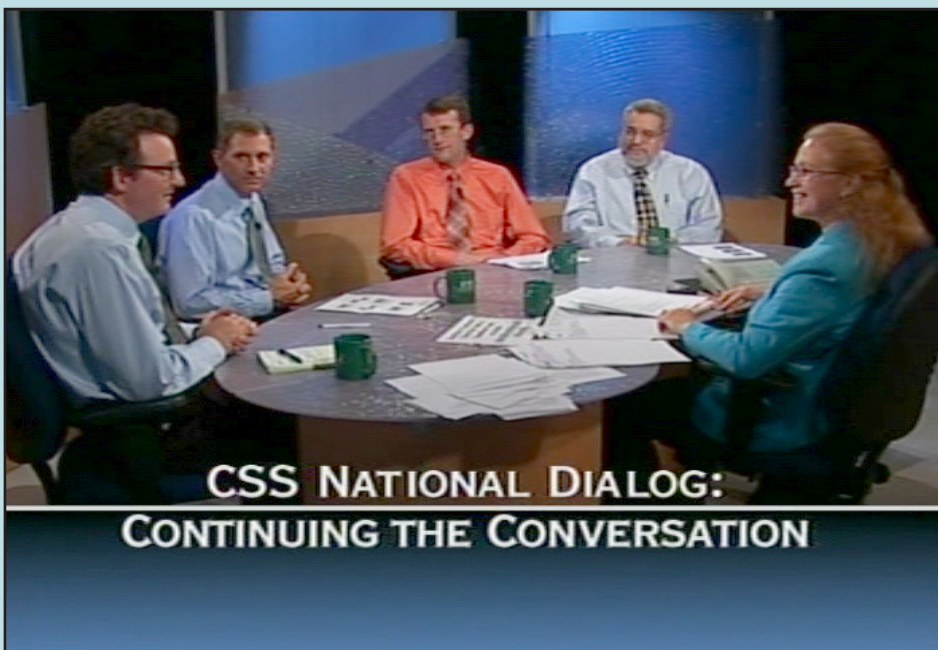
Ann Hartell, CTE research associate, organized a session titled "Making Livability Happen: Moving from the Federal Policy to Delivering Outcomes." The panel included transit planner Emily Yasukochi, AICP, Chapel Hill Transit, Chris Estes, director of the NC Housing Coalition, and Daniel Rodriguez, PhD, Dept. of City and Regional Planning, University of North Carolina at Chapel. The discussion focused on how to align policy and transportation facility designs with the goals set by the HUD-EPA-USDOT Partnership for Livable Communities.

Attendees were also encouraged to participate in a pre-conference environmental research needs workshop. Facilitated by staff from the FHWA and CTE, the interactive workshop discussed the development of a comprehensive agenda for environmental research needs used in coordinating future environmental and energy research.

Following the workshop, CTE developed a report synthesizing the research needs identified at the workshop. The report has proved a valuable resource to TRB and AASHTO committees and FHWA staff who are involved in prioritizing research needs and developing problem statements for the research community. The final report is available at: <http://itre.ncsu.edu/CTE/EEConference/workshop.asp>.

Overall, the conference was a great success. "The attendance, the quality of the presentations and participants' engagement was incredible," Martin said. "It was a timely, and I would say, exciting event."

For more information on the conference, visit www.cte.ncsu.edu/cte/EEConference.



CSS NATIONAL DIALOG: CONTINUING THE CONVERSATION

Panelists discuss CSS principles during CTE's August 2010 webcast on the CSS National Dialog. The two-hour live program drew over 500 participants.

CTE Researcher Takes to the Road to Support High-Speed Rail

CTE senior research associate, **Dr. David Robinson**, in August began a new public information and engagement role for CTE as a community liaison officer to support the Rail Division of the North Carolina Department of Transportation (NCDOT). In his capacity as liaison officer, Dr. Robinson has hit the road to discuss the Southeast High Speed Rail Corridor (SHSRC) project with communities that have been, in some way, affected by its implementation.

The SHSRC comes on the heels of a \$545 million dollar grant awarded to the state for construction of a high-speed rail corridor from Charlotte to Washington, D.C., an area designated for rail construction by the U.S. Department of Transportation in 1992. The current windfall of funds has advanced the project to include minor to major rail upgrades and construction projects in eleven counties in the state, including Wake and Durham counties.

In his new role, Dr. Robinson will help foster and perpetuate positive reactions from those communities directly involved in the project, as well as serve as a knowledgeable representative of the project and its goals. His responsibilities include compiling and updating a directory of community contacts; developing and updating presentation materials on the various state-wide projects; compiling and updating project status reports; and establishing and maintaining communication with affected communities.

“As far as the Southeast High Speed Rail Corridor in North Carolina is concerned,” Robinson says, “good public relations is considered to be as important as good engineering design and the availability of funds needed to implement the project.”



In his new role as a community liaison officer to support the NCDOT Rail Division, CTE's Dr. David Robinson (far right) organizes educational field trips for NC State University engineering students at NCDOT's rail yard in Raleigh, NC.

Dr. Robinson previously provided technical assistance to the NCDOT Ecosystem Enhancement Program (EEP), which oversees compensatory mitigation for wetland and stream habitats affected by state transportation projects. Robinson supported the EEP since 2003 to manage the implementation of its federal requirements. His new role as community liaison officer for the NCDOT Rail Division will conclude in July 2013.

More information on the high-speed rail can be found at <http://sehsr.org>.



CTE Assists NCDMV with Federal Security Program for Driver Licenses and ID Cards

The North Carolina Division of Motor Vehicles (NCDMV) has engaged CTE to provide documentation and support services for its program to implement enhanced security and identification verification in the driver license and identification card issuance process.

CTE research associate **Ann Hartell** is leading this effort.

The scope of work includes documenting and coordinating \$4 million in projects funded under a federal grants program. CTE is providing substantial assistance to NCDMV in developing grants applications and multi-year budgets under the federal program, and is facilitating the work of NCDOT information technology staff and NCDMV program managers to coordinate multiple projects.

One project, slated for implementation in 2011, will require a statewide training program to update NCDMV field office staff on a new process for verifying federally-issued identification documents. CTE is leading the development of the training manual and field office guide for the new process.

Recognizing that the new process represents significant changes to field office responsibilities and workflow, CTE will also produce a post-implementation webinar allowing NCDMV central office staff to address questions and concerns from field office staff – a first for this state agency.

CTE Launches NCHRP Project on Community Context Tools for Transportation Planning

CTE staff, working with The Louis Berger Group, Inc., is implementing a new research project for the National Cooperative Highway Research Program (NCHRP).

The goal of Project 25-25, Task 69, entitled “Defining Community Context in Transportation Project Planning and Development Process,” is to provide practitioners with effective tools that can describe community context so that transportation decisions and projects can be catered to the goals and perception of the community. The research will also identify future needs in the area of context tool development.

To gather this information, CTE has launched a new website to collect a wide range of tools from the various sectors of the community such as community development, historic preservation, and architecture. Community members can submit their tools on the project website at www.itre.ncsu.edu/cte/communitycontext.

Leigh Lane, CTE senior research associate and principal investigator on the project, is working closely with research associate, **Ann Hartell**, to inventory and evaluate the effectiveness of community context tools and techniques that are being used as part of the project planning and development processes. **Nancy Bailey**, web development specialist at CTE, is designing and programming the website.

Visitors to the website – which is open to members of public and private sector organizations, as well transportation planning advocacy organizations – can view a brief video that introduces the concept of community context and provides examples of context tools. Produced by CTE



The NCHRP Project 25-25 Task 69 website includes a video introduction to community context tools and guides the viewer on how to submit their tool using the online form.

distance learning specialist, **Eugene Murray**, the video features Ms. Hartell as the on-camera narrator and guide to using the website. The website also contains an online form that visitors can fill out to submit information about their tool.

NCHRP 25-25 is a support program for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment. The goal of this program, active since 2002, is to provide flexible, ongoing, quick-response research on environmental issues in transportation. Research has developed improvements to analytical methods, decision support tools, procedures, and techniques that have supported statewide and metropolitan transportation planning. CTE is pleased to add their support to the program.

For more information visit the project website at www.itre.ncsu.edu/cte/communitycontext.



Hartell Speaks to Civil Engineering Group about CSS National Dialog

CTE research associate **Ann Hartell** was invited to speak at the North Carolina chapter of the American Society of Civil Engineers (ASCE) conference in Asheville, NC this September. The annual conference features speakers from the public, private, and academic sectors who are invited to present on the state of civil engineering in North Carolina.

Ms. Hartell gave a presentation on the Context Sensitive Solutions (CSS) National Dialog, a project that brings CSS principles to focus on both new and current national and regional transportation initiatives. CTE recently partnered with the Federal Highway Administration on the project to initiate a national exchange of information and ideas about CSS best practices. The project featured a series of one-day workshops and webcasts held in various locations across the US.

“The conference sent me an invite to speak, and I was happy to do it,” said Hartell. “It’s always important to reach out to the engineers working in our state.”

During her 75-minute session, Hartell also reviewed recent CSS activities and general resources available with regards to transportation engineering in North Carolina. She also highlighted a related national research project on “Defining Community Context in Transportation Project Planning and Development Process.” CTE is conducting this project for the National Highway Cooperative Research Program (NCHRP) to identify current tools and methods used for data collection about communities.

For more information about the CSS National Dialog and the Community Context Tools for Transportation Decisions projects, visit the CTE website at www.cte.ncsu.edu.

CTE/NCDOT Environmental Research in Progress

CTE assists the North Carolina Department of Transportation with promotion and distribution of its environmental research results to the transportation and environmental community at large. NCDOT funds one of the largest environmental research programs in the country. The following research project is in progress; a final report has not yet been issued.

Assessment of Bioenergy Crop Production along North Carolina Highway Right-of-Ways

Principal Investigator: Matthew W. Veal, Assistant Professor, Department of Biological and Agricultural Engineering, North Carolina State University

Project Period: March, 2009 – May, 2011

As fuel costs and right-of-way maintenance fees continue to rise, the use of interstate and highway right-of-ways for cultivation of energy crops is receiving attention. The Utah Department of Transportation has recently initiated a project (Freeways to Fuel) to explore the production of canola and soybeans in right-of-ways as a source of vegetable oil that can be converted to biodiesel. Canola is an annual variety of rapeseed, containing up to 50% vegetable oil. Canola is also an attractive right-of-way crop because of the aesthetic value of the yellow flowers produced by the plant in the months leading to harvest. Canola has the potential to produce over 150 gallons of biodiesel per mile of right-of-way planted for each 10 ft. strip cultivated. In the case of soybean, the biodiesel yield for each 10 ft. cultivated strip would be around 60 gallons per mile. Assuming 100 miles of the right-of-way land on Interstate 40 was cultivated with a single 10 ft. strip on the left, middle, and right medians (for a total cultivated strip of 30 ft.); over 65,000 gallons of biodiesel could be produced annually with a canola/soybean rotation. There would also be considerable tonnage of high protein meal that could be sold to feed mills to support local livestock and poultry production. The meal represents the portion of the seed left following the extrusion of oil.

As an economic comparison, using 10 ft. implements, mowing currently costs approximately \$17/ac and the cost to cultivate canola is approximately \$200/ac. Based on current commodity prices and estimated regional grain yields, the approximate net return on the canola sold to a grain elevator would be \$75/ac and the approximate net return if the vegetable (canola) oil is used for biodiesel production is \$125/ac plus the value of the protein meal. While the economics support this activity there are many factors that must be addressed. Studies to determine the amount of right-of-way that is available for row crop production are needed. Soil type and condition, ground slope, traffic, and moisture conditions are factors that will determine what areas are acceptable for right-of-way crop production. Secondly, right-of-ways are generally heavily compacted as a result of road building operations. The proper cultivation and tillage procedures need to be developed to insure a seed bed capable of supporting row crop production can be established. Finally, the safety of agricultural equipment operators in these areas as well as the motorists on the road needs to be investigated.

The Bioprocess Extension Program in the Biological and Agricultural Engineering Department at NC State has proposed a project to investigate the feasibility of initiating a Freeways to Fuel project in North Carolina. The following research objectives have been developed to support this activity: 1) Develop assessment criteria to identify right-of-way areas that are suitable for energy crop production and produce a computerized-map project (i.e. GIS) to indicate these areas; 2) Assess the production, economic, and logistical parameters impacting oilseed production in right-of-ways to determine the optimal crop cultivation system; 3) Perform a series of plot trials to assess the yield potential of canola and soybeans in right-of-ways for various cultural practices.



CTE Intern Ted Mansfield

Meet Ted Mansfield, CTE's Newest Colleague

Intern **Ted Mansfield** is the newest member of the CTE staff. Mr. Mansfield is a current graduate student at the University of North Carolina in Chapel Hill, where he is working toward dual master's degrees in city planning and environmental engineering. Mansfield joined CTE in July after applying for an internship position being offered by the Center.

CTE's work on transportation development, and the environmental strategies and consequences involved in that development, was very appealing to him as a graduate student "getting his feet wet in the field," Mansfield says. "It's a natural fit, because of the work I'm doing right now at UNC and my interests in general."

Mansfield is currently working closely with CTE researchers **Leigh Lane** and **Ann Hartell** on two projects. The first is as an assistant researcher on the National Highway Cooperative Research Program (NCHRP) Project 25-25 Task 69, "Defining Community Context in Transportation Project Planning and Development Process." Mansfield is also conducting research for the development of a North Carolina Department of Transportation sustainability blueprint.

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What's Coming Up?

September 2010 – January 2011
ICOET 2011 Call for Abstracts
www.icoet.net/ICOET_2011

January 10-14, 2011
Transportation Research Board
90th Annual Meeting
Washington, DC
<http://trb.org>

February 23-25, 2011
GIC '11 National Green Infrastructure
Conference 2011
www.conservationfund.org/GIC2011

March 2011
ICOET 2011 Registration Opens
www.icoet.net/ICOET_2011

For more information and future events,
visit www.cte.ncsu.edu/cte/events.

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Mansfield is interested in improving the integration of transportation and land use planning in order to create highly accessible, livable, and dynamic urban spaces. His research has included an investigation of the causal linkages between urban form and local air quality and an analysis of the ability of decentralized stormwater management to mitigate combined sewer overflows in highly urbanized areas

He holds a B.S. in Civil Engineering from New Mexico State University and plans to graduate from the University of North Carolina in May 2012.

We welcome Ted to the CTE staff!



The Center for Transportation and the Environment is an activity of North Carolina State University in cooperation with the Institute for Transportation Research and Education (ITRE). Funding for the Center is provided in part by the US Department of Transportation and the North Carolina Department of Transportation.

CTE News & Notes is an update of the Center's activities and other significant happenings in the area of transportation and the environment. For more information, or to submit material for this publication, contact:

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