ICOET 2007 Proceedings Now Available

Proceedings of the 2007 International Conference on Ecology and Transportation (ICOET) are now published and available for order in printed and CD-ROM copies.

Held May 20-25 in Little Rock, Arkansas, ICOET 2007 comprised more than 150 technical presentations, posters, and exhibits, along with two full-day field trips, which surveyed the broad range of ecological concerns related to surface transportation. The conference included many sessions on integrative planning approaches, including a special session on environmental considerations related to public-private partnerships.

CTE and the Federal Highway Administration served as lead organizers for ICOET 2007, co-hosted by the Arkansas State Highway and Transportation Department.

Printed copies of the proceedings may be ordered for $45 per copy, and CD-ROM copies are available free of charge while supplies last. The proceedings and video clips of selected sessions also will be posted on the conference website. If you are interested in ordering print or CD versions of the proceedings, please contact Walt Thomas, CTE information processing assistant at (919) 515-8893 or wthomas@ncsu.edu.

For more information on ICOET 2007 or to view videos and download proceedings, visit www.icoet.net/ICOET2007.asp.

Community Impact Assessment Training Continues

CTE research associate Teresa Townsend, and senior research associate Leigh Lane, in September continued a series of Federal Highway Administration’s Community Impact Assessment (CIA) training courses for the Alaska, Illinois, Maryland, Utah and North Carolina departments of transportation.

CIA is the process used to analyze proposed transportation actions and determine their effects on the human and social environment. CIA is crucial to making balanced transportation decisions that preserve, protect and enhance quality of life. During its 2006-2007 series of courses, CTE has successfully prepared over 270 DOT professionals in the four states to incorporate the FHWA CIA process in both transportation planning and project development.

This course provides a framework for the CIA process and builds on “Community Impact Assessment: A Quick Reference for Transportation,” better known in the transportation industry as the “small purple book.” The course also provides several case studies and references.

The two-and-a-half-day course was developed and piloted by CTE for FHWA in cooperation with Data Transfer Solutions and Powell, Fragala and Associates. While the CIA process varies by state, the national FHWA CIA course was created in response to numerous training and research requests within the transportation industry.

States are welcome to request CIA courses from CTE. For more information, please contact James Martin, CTE associate director, (919) 515-8620 or jbm@ncsu.edu.

Regional Transit Commission Gets CTE Support

CTE is providing logistical support for the Special Transit Advisory Commission (STAC), which is taking a fresh look at transit for North Carolina’s Research Triangle region. Comprised of nearly 40 Triangle business and community leaders, the STAC is jointly appointed by the region’s two Metropolitan Planning Organizations with additional support and sponsorship from North Carolina DOT and regional transportation agencies. The STAC is tasked with developing recommendations for major transit investments that will inform the transit components of both MPOs’ 2035 Long Range Transportation Plans. Ann Hartell, CTE research associate, is leading the staff support efforts on this project.

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.
2008 TRB Annual Meeting to Feature CTE Research

Two presentations by CTE researchers have been accepted for the Transportation Research Board (TRB) Annual Meeting in Washington, D.C. January 13-17, 2008. Some or all of these papers will be published in the Transportation Research Record, and serve as a national resource for transportation-related decision making.

Improved Methods for Quantitatively Assessing Social and Community Well-Being as Part of Transportation Planning and Project Development

Authored by CTE senior research associate Leigh Lane, and research associate Ann Hartell, this poster presentation highlights findings from AASHTO’s Standing Committee on Planning’s (SCOP) NCHRP Task 66: Improved Methods for Assessing Social, Cultural, and Economic Effects of Transportation Projects. The objectives were to identify and describe measures that can be incorporated into the transportation decisionmaking process to improve the consideration of quality of life components.

The project results include a set of measures that reflect the interrelationship between transportation infrastructure and the components of community wellbeing. The project describes ways to enrich the understanding of how well communities are functioning via quantitative information by analyzing traditional data in new ways, adopting data sources from other disciplines, and promoting the development of new data sources. The practicality and potential for adoption of these measures were evaluated through a case study application.

The project highlights the promise of multi-disciplinary approaches that can lead the transportation industry to look beyond the historical boundaries of practice to improve understanding of community context and the types of effects that transportation systems can have on social and community well being.

Is Inadequate Transportation a Barrier to Community Involvement? Evidence from Social Capital Benchmark Survey

This paper, authored by CTE research associate Ann Hartell, investigates whether inadequate transportation constitutes a barrier to peoples’ involvement in their communities.

Since the publication of Robert Putnam’s influential Bowling Alone, the concept of social capital has captured the attention of researchers in many disciplines. Policymakers and community advocates have pressed to include social capital in public policy discussions, including transportation policy and planning.

Using data from a national survey conducted in 2000, Hartell’s analysis uses a binary logistical model and finds that respondents who were female, non-white, with household incomes below $30,000, and long commutes to work had increased odds of citing transportation as a barrier. Only 17% of the analyzed sample reported that transportation was a barrier, while most respondents cited other barriers such as inflexible work schedules, inadequate child care and concern for personal safety.

Although some types of improvements to transportation systems and transit service could improve access to community activities, this research suggests that transportation improvements which seek to dismantle barriers to community involvement will need to be combined with policies and programs that address other types of barriers to achieve a measurable positive effect.

For more information about these presentations, contact Ann Hartell, CTE research associate, (919) 515-9351 or amhartel@ncsu.edu.

CTE Studies Social Wellbeing and Transportation Links

CTE research associate Ann Hartell, and senior research associate Leigh Lane, are leading CTE’s work on the National Cooperative Highway Research Program (NCHRP) Project 8-36, Task 66 titled, “Improved Methods for Assessing Social, Cultural and Economic Effects of Transportation Projects.”

Working in partnership with Cambridge Systematics, CTE is conducting research to identify and describe social (human) indicators that reflect quality of life (QoL) considerations during the transportation decisionmaking process. This research will build upon existing state DOTs and Metropolitan Planning Organizations (MPO) best practices in incorporating social considerations into the transportation planning process, indicating how current and often qualitative approaches can be extended to be more quantitative in nature.

National and international information resources related to understanding interlinkages between social wellbeing and QoL will be consulted to identify noteworthy tools, techniques, processes and methods of social assessment. Research findings will help state DOTs and MPOs address social considerations earlier in their transportation plans. A case study will be chosen to test the utility of social indicators in the transportation planning process and develop initial benchmarks for social wellbeing related to QoL.

CTE is performing the lead research building on its extensive base of both completed and ongoing Community Impact Assessment (CIA), Context Sensitive Solutions (CSS), and socioeconomic research. Research began this past spring and will be conducted through the fall 2007, with a draft report expected to be submitted to NCHRP in early 2008.

For more information, contact Ann Hartell, CTE research associate, (919) 515-9351 or amhartel@ncsu.edu.

Histogram examples (below) showing the distribution for Census block groups, by percent of protected populations in the case study project area. The bimodal and strongly skewed distributions for some typically used reference populations indicate that relying on an overall ‘average’ proportion may mask underlying spatial patterns of environmental justice populations.
CTE associate director James Martin traveled to Orlando, FL, in July to participate in the national Transportation, Land Use, Planning and Air Quality Conference. The event focused on the latest developments in transportation planning and land use modeling and new developments and strategies in air quality including transportation planning and land use planning processes that result in air quality benefits. CTE served as an official co-sponsor of the conference.

Martin moderated two conference sessions on “Innovative Uses of Technology” and “Integrating Transportation, Land Use and Air Quality.” He also exhibited CTE materials to the nearly 200 attendees. The conference also included a presentation by Dr. Nagui Rouphail, director of the Institute for Transportation and Education (ITRE), on “Impact of Alternative Vehicle Technologies on Vehicle Emissions.” CTE is a program group administered by ITRE at North Carolina State University.

FHWA and CTE Integrating CSS into University Curricula

The Federal Highway Administration (FHWA) is working with CTE to develop university curricula on context sensitive solutions (CSS) principles and practices for use in civil and environmental engineering (CEE) graduate-level courses. This initiative is building upon a CSS course developed and offered by CTE and North Carolina State University’s Department of Civil and Environmental Engineering. The course, first offered at NCSU during fall semester 2006, is being adapted for use at CEE programs nationwide.

The FHWA initiative will create a process for integrating CSS philosophy and principles into transportation curricula, as well as develop an academic network to provide feedback into the development of this template and encourage the integration of CSS into both undergraduate and graduate curricula. The overarching goal of the project is to help career-track students and rising professionals develop a greater awareness of how to plan and deliver transportation projects that support community values without compromising safety, cost efficiency, and the integrity of the natural environment.

For more information, please contact James Martin, CTE associate director, (919) 515-8620 or jbm@ncsu.edu.

CTE/NCDOT Research-In-Progress Profile:

Monitoring the Effects of Highway Construction in the Sedgefield Lakes Watershed
Performing Organization:
Department of Biological and Agricultural Engineering, Water Quality Group, North Carolina State University

Principal Investigators:
Daniel E. Line, P.E., Biological and Agricultural Engineering, North Carolina State University, dan_line@ncsu.edu
Jean Spooner, Ph.D., Biological and Agricultural Engineering, North Carolina State University, jean_spooner@ncsu.edu

Project Period:
December, 2003 to December, 2008

Sediment from North Carolina construction projects received public notoriety in 1997 when a plume of muddy runoff, thought to be from construction sites, was photographed on its way down the Neuse River.

Following this incident, the Governor called on the NC Department of Environment and Natural Resources to begin stricter enforcement of erosion and sediment control regulations on construction sites. The muddy plume incident and increased public scrutiny has resulted in the need for reliable and defensible documentation of the effectiveness of erosion and sediment control programs.

One of the most defensible ways to demonstrate the effectiveness of these programs is through water quality monitoring of surface water resources in close proximity to the construction. This project outlines such a monitoring plan for the Sedgefield Lakes watershed in Guilford County, NC.

The objectives of the study are to (1) document the changes in the water quality of unnamed tributaries to Sedgefield Lakes as a result of highway construction in the

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The Sedgefield Lakes watershed has experienced an increase in sediment to its area lakes resulting from the Interstate 40 bypass around Greensboro, NC, being constructed within the watershed. This project highlights the difficulty in controlling sediment export resulting from large storm events that occur at times of high erosion vulnerability. Photo ©2008 Google/DigitalGlobe.
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watershed; and (2) evaluate the monitoring data to determine if changes in water quality parameters are significant.

Initial research on this project was completed in 2005. Additional research and funding has been extended until December 2008. For more information, please contact the principal investigators or project manager G. Dennis Pipkin, research engineer with the NCDOT Research & Development Unit, (919) 508-1816 or dpipkin@dot.state.nc.us.

CTE assists North Carolina DOT 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. Additional research information can be found on CTE’s website at www.cte.ncsu.edu/cte/research and on NCDOT’s website at www.ncdot.org/doh/preconstruct/tpb/research/program.html.