Director’s Message

Index for Transportation Sustainability: Moving beyond Mobility in Assessing Transportation

CTUP is currently working on developing an Index for Transportation Sustainability. The basis for this work is the recognition that although transportation has a significant impact on the environmental, social and economic sustainability of society there is a gap in the existing metrics to assess the degree to which transportation planning leads to sustainable outcomes.

With the recent announcement of the “Interagency Partnership for Sustainable Communities” between US DOT, HUD and the US EPA, the need to have tools for assessing transportation sustainability has become central to the work of the US DOT. The transportation sustainability project developed as part of the 2005 strategic plan for CTUP, anticipated Secretary LaHood’s call for tools to measure the effectiveness of programs for sustainability. According to the Secretary,

“We’re moving into new territory, and it must be mapped out. We need standardized and efficient performance measures. We need to learn from what works.”

The focus of this work is to help to fill this gap by developing a process for evaluating the sustainability of transportation at the statewide level. As part of the study, we reviewed the existing literature on indicator selection criteria, examined...
the construction of composite indices, and explored existing rating systems. Building on this knowledge, we created a systematic tool for assessing sustainable transportation called the Composite Index of Transportation Sustainability (CITS).

We hope that this index of transportation sustainability will call attention to the differences between the states in terms of transportation sustainability and will help to highlight the policies and practices that promote sustainable outcomes. As the Secretary says, we need to learn from what works. We plan to release our first ranking of the states in terms of transportation sustainability in Summer 2010.

~ Norman W. Garrick

CTUP Seed Money at Work

Nicholas Lownes, PhD, assistant professor at the University of Connecticut recently received a grant from the New England University Transportation Center (NEUTC) with assistant professor Adam Zofka, PhD, also of UConn, to pursue research investigating the responses of travelers to GPS tracking devices. The researchers will install GPS receivers/transmitters in 5 UConn buses on the blue line and create a web application providing UConn students/faculty/staff with real-time updates on bus position. The equipment used will be off-the-shelf and relatively inexpensive, on the order of $750 per bus. After a semester of having the service available, students, faculty and staff will be surveyed on their use of and attitudes toward the tracking information and the UConn bus service in general. These results will be contrasted with a baseline survey, helping investigators identify shifts in perception toward bus travel in general and linkages of these shifts with the real-time information.

This project stems from seed funding provided by CTUP in 2008 to perform a small proof-of-concept study. The seed money from CTUP allowed the PIs to test several GPS units, acquire software for integrating GPS data with Google Maps API, and run tests to determine update service coverage and quality to ensure that such a tracking device is possible in a rural area. The preliminary data and logistic lessons learned through this seed project contributed greatly to the success of the NEUTC proposal.

Director Joins National Experts for Sustainable Mobility Workshop

In April, CTUP director Norman Garrick, was part of a team led by the Orlando, Florida firm of Glatting Jackson Kercher Anglin, Inc. that conducted a workshop on transportation design and livability in Montreal, Canada.

The workshop, “Urban Motorways of Today and Tomorrow,” was organized by Montreal’s Department of Health and Social Services (Agence de la Santé et Des Services Sociaux de Montréal) with the goal of starting dialogue on incorporating a vision for sustainable mobility in the city’s major highway reconstruction projects. In addition to Dr. Garrick, the members of the workshop team included Ian Lockwood and Paul Moore of Glatting Jackson Kercher Anglin and John Norquist, President of the Congress for the New Urbanism.

The workshop drew a large and diverse group of over 250, including health care professionals, transportation planners and engineers, community activists, and students and professors from area colleges. This event is an example of a growing movement linking transportation and the built environment to health outcomes.
Studying Attitudes about Nantucket Summer Transportation

During the last week of June a group of yellow-shirted researchers from the University of Connecticut’s Center for Transportation and Urban Planning fanned out across Nantucket riding buses, traveling on bike paths, walking downtown streets—even riding the ferry—to collect data about attitudes about public transportation on the island.

The goal of the study is to better understand attitudes about the use of public transportation during the summer season, to identify and quantify the barriers that exist, and to develop a set of recommended strategies for increasing the use of public transit.

The study is being conducted by Dr. Norman Garrick, an Associate Professor and CTUP Director. The study is being funded by Greenhound, a transportation-focused project of ReMain Nantucket, the Island-based philanthropic organization dedicated to strengthening the lasting economic, environmental, and social vitality of downtown Nantucket.

“Last fall the Urban Land Institute Advisory Panel identified a very real need for more and better transportation-related research,” said Melissa Philbrick, Executive Director of ReMain Nantucket. “Dr. Garrick will be studying people’s attitudes toward the range of public transportation options available on the Island, with a particular focus on the bus system.”

“We want to understand what it will take to increase the use of public transportation. We hope to identify strategies to increase the visibility, viability and attractiveness of alternatives to cars, particularly in the summer when congestion and parking are a concern,” said Philbrick.

Dr. Garrick’s research will include survey research among transit users, downtown business employees, and visitors. Garrick and his team will also be collecting data and evaluating the transit system’s visibility, usability, comfort and safety. The Nantucket Regional Transit Authority (NRTA) will be providing ridership and route data.

“We are very excited about Dr. Garrick’s research and began working with him during his visit to the Island in early June,” said Paula Leary, NRTA Administrator. “We were able to spend time discussing the opportunities and challenges for public transportation on Nantucket and to identify the data we need to improve the system.”

“We are going to learn a great deal about exactly who our customers are, how we can serve them better and how to grow our ridership. The more we can base decisions on quality data, the better for everyone,” said Leary. The UConn research team was on Nantucket collecting data from June 23 - June 27 and they returned to the Island for a second round of data collection in late July.

As part of the study there will also be an opportunity for Island residents to complete an online survey, sharing their thoughts, attitudes and recommendations about Nantucket transportation options. The online survey will be available on the ReMain Nantucket web site later this summer. A public announcement will be made when the online survey is available.

Dr. Garrick’s final research report will be available to the public this fall.

“Our goal is to advance public understanding with quality information and analysis,” said Philbrick. “We have coordinated our study with the Town, and the data on people’s attitudes that Dr. Garrick gathers will be a good complement to the quantitative study the Town is conducting this summer.”

“ReMain Nantucket is pleased to be able to fund this study to provide the kind of quality, research that will help Nantucket make important decisions about it’s future,” said Philbrick.
Researchers to Study Access and Mobility Impact of Freeway Removal

CTUP researchers Norman Garrick and Nicholas Lownes were recently granted a research award from the New England University Transportation Center to study the access and mobility impact of freeway removal.

Many cities around the country are re-assessing the role of freeways in their urban core. Some are even contemplating freeway removal similar to action already taken in Portland (OR), San Francisco, Milwaukee and Seoul, South Korea. Reports from these cities suggest that freeway teardown has been a catalyst for significant urban revitalization.

It has also been reported that freeway teardown or reconfiguration does not appear to have resulted in the disruption to travel that conventional wisdom predicts. There is much speculation about why this is the case, but little understanding of the underlying mechanism that affects the observed outcomes. This study of the changes in access and mobility before and after freeway teardown will allow the researchers to develop a more complete picture of the transportation impacts and, in essence, answer the question: Where did the traffic go?

The researchers plan to conduct case studies of freeway teardown in at least four different cities. The goal of the study will be to determine how transportation patterns in the cities change in response to freeway removal - both in the short and longer term. Specifically, they will look at the following factors: i) changes in the urban fabric, ii) changes in the transportation network for all modes of travel, and iii) changes in the travel patterns (including the number of users) for all modes of travel.

The results of the study will provide invaluable background information for those cities contemplating freeway removal. The results would also provide new insight in understanding the fundamental role of freeways in shaping travel patterns in cities.

Community Design, Road Safety and Transportation Sustainability

CTUP researcher, Wesley Marshall recently completed his PhD dissertation project, which aimed to better understand how community and transportation design interact to affect key indicators of transportation sustainability such as road safety and mode choice. Wesley along with his major advisor, Prof. Garrick, took an in-depth look at 24 medium-sized California cities and focused on the potential influence on safety and mode choice of differences in the street network—in terms of street connectivity, street network density, and street patterns.

The team’s focus on street network aspects of community design grew from their observations of an interesting relationship between the year of incorporation of a city and road safety outcomes. In an initial database of over 150 California cities, they found many of the post-1950s cities were experiencing higher than average fatality rates. Since the 1950s were thought to represent a period when typical street networks transitioned from highly-connected grids into sparser, more tree-like arrangements, the idea that differences related to the street network played a role in these outcomes started to take shape.

Based upon census mode share data and eleven years of crash records, it was found that for all types of street patterns, both street network characteristics and street design factors played a major role in how people used the transportation system and related traffic safety outcomes. Across the board, this research showed that denser, gridded street networks with more urban street features were associated with much more walking, biking, and transit use, as well as a safer overall transportation system. One of the most important factors in the analysis turned out to be street network density, which was highly correlated with more walking and biking as well as fewer crashes across all severity levels. In fact, the benefit of increasing the street network density was much more pronounced for fatal crashes than for those that were less severe.

Overall, the results suggest that both the design of the street network and the streets themselves work together to influence travel decisions, driver behavior, vehicle speeds, the total number of crashes and the severity of those crashes.
Graduate Degrees Awarded to CTUP Students

The Center for Transportation and Urban Planning proudly recognizes Jenna Nichols and Craig Yannes who completed work on their Master of Science degrees in May as members of the first class of graduate students working on CTUP sponsored projects.

Jenna Nichols

Jenna’s thesis, “Developing a Sustainable Transportation Composite Index for Transportation Planning,” focused on developing a systematic measuring tool with the goal of evaluating the sustainability of transportation at the statewide level. In January of this year, Jenna presented findings from this study at the annual Transportation Research Board Meeting in Washington, DC. Jenna is a 2007 graduate from the University of Connecticut with a BS in Civil and Environmental Engineering. In September she will be starting a new career at the URS Corporation in their Rocky Hill office after she returns from a long anticipated trip to Europe this summer.

Craig Yannes

Craig earned his MS degree in Civil Engineering after defending his thesis “The Public Value of Transit,” which was based on work he performed with the CTUP project “Public Transit Design for Smart Growth.” Craig was instrumental in the organization and implementation of focus groups, pilot studies and final the full survey that was distributed as part of this project. As an MS student, Craig also participated in studies involving traffic microsimulation and the usage of GPS in public transit network design. For his work in the latter, he won the student paper competition at the 18th Rural Public Transportation Conference in Omaha, Nebraska in October 2008. Upon completion of his studies, Craig accepted a position with Dewberry in New York City, a transportation consulting firm.

2009 Eisenhower Awards to Transportation Students

This year, two University of Connecticut transportation students were awarded Eisenhower Grants. Jason Billings was awarded an Eisenhower Fellowship and Derek Nener-Plante was awarded a travel grant to attend the upcoming Transportation Research Board Annual Meeting in January.

Derek is entering his second year in the graduate program at UConn and his research is focused on pavement engineering. He is a 2008 graduate of the University of Maine where he received his BS in Civil Engineering. Jason, who is a 2005 graduate of Purdue University in Mechanical Engineering, is currently employed as head of the engineering section at the Los Angeles Air Force Base in California. He will begin his study in transportation and urban planning at UConn in August.

CTUP Welcomes Visiting Graduate Fellow

This summer’s CTUP Visiting Graduate Fellow is Jonas Maciunas, a master’s student in city and regional planning at the University of Pennsylvania.

Jonas is conducting a comparative analysis of the parking and transportation practices of corporate, non-profit and government entities in downtown Hartford. Some of these entities have been much more effective than others in encouraging their employees to use green modes of travel, thereby reducing their parking demand. Reducing the demand for parking is important to the individual organization because parking is very costly to provide—the construction cost of each space in a parking garage is now at least $40,000. But the city also has a stake in the issue of reducing parking since the provision of large amounts of parking disrupts the fabric of the city and reduces its vitality. The results of this analysis will be used to craft recommendations for organizations that are interested in reducing their ecological and financial footprint from parking and transportation.

Jonas, who is originally from Wethersfield, is a 2006 graduate of Yale College with a bachelor’s degree in political science. He spent nearly two years at the architecture and town planning firm of Robert Orr & Associates in New Haven before returning to school at the University of Pennsylvania.
Marshall Bids Farewell to Join UC Denver Faculty

As I finish up my work here at the University of Connecticut, my family and I are also getting ready to move to Colorado, for recently I accepted a faculty position in the Civil Engineering Department at the University of Colorado Denver. The University of Colorado Denver has more than 29,000 students and a campus situated right in downtown Denver that a number of us from UConn were able to visit during our recent Congress for the New Urbanism conference. Over the course of this conference, I was also able to see first hand some of Denver’s recent transportation initiatives that I will hopefully get the opportunity to research, such as their new light-rail system and evolving transit-oriented developments, highways with congestion pricing, and proposed citywide context-based zoning code. I also hope to study some recent New Urbanist development projects and nearby bicycle-friendly cities such as Fort Collins and Boulder.

This is an exciting opportunity that my family and I are looking forward to. However, for the last five years, we have enthusiastically called Storrs and the University of Connecticut our home. As I finish up my dissertation and transition to a faculty position at the University of Colorado Denver, I really wanted to express my gratitude to everyone at the University of Connecticut, the Connecticut Transportation Institute, and the Center for Transportation and Urban Planning that I was fortunate enough to learn from and work with over this time. In particular, I want to thank Dr. Garrick for helping me shape this journey in a way that most transportation engineers would never believe was possible.

~ Wesley Marshall

The U.S. Department of Transportation supports a network of University Transportation Centers throughout the nation to advance technology and expertise in transportation through combined efforts of research, education, and technology transfer. Within the federal SAFETEA-LU legislation, the Center for Transportation and Urban Planning (CTUP) was designated the University of Connecticut’s University Transportation Center.

DIRECTOR
Norman W. Garrick, Ph.D.
Phone: 860-486-2990
Email: Norman.Garrick@uconn.edu

PROGRAM COORDINATOR
Stephanie G. Merrall
Phone: 860-486-6446
Email: Stephanie.Merrall@uconn.edu

Visit our web site at http://www.ctup.uconn.edu/

179 Middle Turnpike Unit 5202
Storrs, CT 06269-5202

Non-Profit Org.
U.S. Postage
PAID
Storrs, CT
Permit No. 3