

1-1-2012

Newsletters 2007-2012 - Volume 5 Issue 1

NCTR

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NCTR, "Newsletters 2007-2012 - Volume 5 Issue 1" (2012). *U.S. DOT Reporting*. 20.
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IN THIS ISSUE

Director's Message	2
NCTR Listservs	3
An Assessment of Public Transit Markets Using NHTS Data	4
Estimating Costs and Benefits of Emissions Reduction Strategies for Transit by Extending the TRIMMS Model	7
NCTR Student of the Year	8

NCTR Consortium Selected as Transit-Focused UTC

On January 17, 2012, U.S. Transportation Secretary Ray LaHood announced \$77 million in grants to **22 University Transportation Centers (UTCs)** to advance research and education programs that address critical transportation challenges facing our nation. The UTCs, which are located throughout the United States, conduct research that directly supports the priorities of the U.S. Department of Transportation (DOT), and the participating universities are a critical part of our national transportation strategy.

“Transportation matters in everyone’s daily life. These research centers will help us solve the transportation challenges we face today and those that we know lie ahead of us,” said Secretary LaHood.

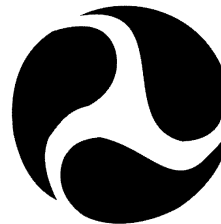
DOT’s Research and Innovative Technology Administration (RITA), which administers the UTC program, used a competitive selection process to select 10 University Transportation Centers (UTCs), 2 Transit-Focused UTCs, and 10 Regional UTCs. The centers will advance U.S. transportation technology and

expertise in research, education, and technology transfer. Each one of the selected UTCs will receive a \$3.5 million grant, which they must match with funds from non-federal sources. The 22 UTCs selected are all consortia, involving a total of 121 different universities.

“We are excited about the proposals these consortia put forward. They have the potential to advance basic and applied transportation research today and ensure a robust pipeline of professionals for the transportation workforce of tomorrow,” said RITA Acting Administrator Greg Winfree.

“It is absolutely crucial that we continue to invest in research, which has the added benefit of attracting and developing the high level of professionals needed for innovation and expertise in transportation.”

UTCs work with regional, state and local transportation agencies to help find solutions to challenges that directly impact their communities and affect the efficiency of the nation's transportation system. UTC projects are peer-reviewed and the results of



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NCTR is located at the University of South Florida's Center for Urban Transportation Research and is a federally-designated University Transportation Center, receiving annual grant funding from the Research and Innovative Technology Administration of U.S. DOT, with matching funds from the Florida Department of Transportation.



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Director's Message

From 2006 to 2011, 60 diverse University Transportation Centers (UTCs) were spread throughout the U.S.—several national centers earmarked by Congress at \$3.5 million per year, 10 Regional Centers that competed to receive \$2.25 million per year, 10 Tier I centers that received \$1 million per year, 26 Tier II centers that competed to receive \$500,000 per year, and 7 Title III centers that received various amounts earmarked by Congress. Although SAFETEA-LU's authorization expired in September 2009, the UTC program and other surface transportation programs were continued by Congress through a series of continuing resolutions. In June 2011, with reauthorization of the surface transportation program still very much up in the air, U.S. DOT announced that a new competition was being established for the UTC program that would bring it more consistency: 22 UTCs would be equally funded at \$3.5 million and were encouraged to form consortiums and include minority-serving institutions. This new requirement set off a tough game of musical chairs among the 60 universities that were UTCs under SAFETEA-LU. Every UTC director in the country had to develop new strategies to be competitive for this new round of funding.

The National Center for Transit Research at USF has been a UTC since 1991 and was well-positioned to be competitive as one of the 22 UTC designations because the competition provided that 2 of the centers would be “transit-focused.” NCTR reached out to other universities with excellent experience in transit research and formed a consortium with the **Small Urban and Rural Transit Center at North Dakota State University**, the **Urban Transportation Center at the University of Illinois at Chicago**, and the **Lehman Center for Transportation Research at Florida International University**.

This month, we received the welcome news that our consortium had been selected as one of the two transit-focused UTCs in the competition. The grant is funded for only one year of the federal budget (FY 2011); uncertainty remains about the direction Congress and the Administration will take in terms of shaping and funding the program beyond this recent competition. For now, our \$3.5 million grant has been established, with USF as the lead institution, and we are in the process of establishing sub-agreements with our new partners and working with FTA and our state DOTs to identify projects to conduct.

The members of our consortium have worked extensively with transit agencies of every size throughout the nation. Our center will continue to engage in diverse research, training, education, and technology transfer activities, all aimed at making public transportation safe, efficient, effective, desirable, and secure. We look forward to combining the strengths of our partners to be of greater service to the Federal Transit Administration, our respective state Departments of Transportation, and the transit industry throughout the nation.

Joel Volinski

Director, National Center for Transit Research

The selected universities will research a wide range of transportation-related issues including shared rail corridors, innovations in multimodal freight and infrastructure, bridge inspection methods, and reducing roadway fatalities and injuries.

UTCs—from page 1

their work are shared with the national transportation community to encourage greater progress through collaboration. The selected universities will research a wide range of transportation-related issues including shared rail corridors, innovations in multimodal freight and infrastructure, bridge inspection methods, and reducing roadway fatalities and injuries.

A list of grant recipients and consortium members is available at: http://utc.dot.gov/about/grant_recipients/html/2012_grant_recipients.html. Find out more about the UTC program at <http://utc.dot.gov/>.

Source: RITA news release available online at http://www.rita.dot.gov/press_room/press_releases/rita_001_12/html/rita_001_12.html.

Transit-Focused UTCs

San José State University in California and the University of South Florida, along with 11 other participating universities, were selected as Transit-Focused UTCs. These Transit-Focused UTCs have the same mission and objectives as the other UTCs, but they must focus their efforts on advancing transit-related research and enhancing the workforce that supports the provision of transit services.

Consortium members joining with the University of South Florida are:

- Florida International University, Miami
- North Dakota State University, Fargo
- University of Illinois, Chicago

NCTR Listservs	Type	Subscribers (12/31/11)
BFM-General (transit maintenance)	Discussion Forum	337
Bus Rapid Transit (BRT)	Discussion Forum	487
Journal of Public Transportation (JPT)	Announcement	487
National Center for Transit Research (NCTR)	Announcement	1,265
Parking Management (Parking)	Discussion Forum	294
Rural Transit Assistance Program (RTAP)	Discussion Forum	120
Sustainable Transport Indicators	Discussion Forum	276
Telework	Discussion Forum	364
Transportation Demand Management (Transp-tdm)	Discussion Forum	1,975
To subscribe to any of the above listservs, go to http://lists.cutr.usf.edu/read/all_forums		

An Assessment of Public Transportation Markets Using NHTS Data

The 2009 NHTS placed transit markets in the broader context of all travel activities and adds to the APTA study much valuable information about transit use for planning boards and civic officials.

In 2007, the **American Public Transportation Association** (APTA) assessed public transit markets in a national study published as “A Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys.” The APTA study was based on data collected from 2000 to 2005 through on-board surveys of more than 400,000 people on more than 150 transit systems. This valuable study gave an in-depth view of the behavior and characteristics of transit users.

Every few years, FHWA conducts a major survey called the **National Household Travel Survey** (NHTS). The 2009 NHTS was based on surveys from more than 150,000 households and examined travel behavior across all travel modes, correlated with a wide variety of traveler characteristics. Thus, the 2009 NHTS placed transit markets in the broader context of all travel activities and adds to the APTA study much valuable information about transit use for planning boards and civic officials.

to study both Florida and U.S. transit markets. For the purposes of the study, a transit market was defined as a segment of transit users defined by a specific characteristic measured in the 2009 NHTS. Eight markets were defined by trip purpose, driver status, immigration status, existence of medical conditions that make travel difficult, household income, vehicle availability, race and ethnicity, and monthly frequency of transit use. Each of these markets was further analyzed according to the following properties: market size, modal share, attitudes about a range of transportation issues, socio-demographics, and trip characteristics.

The study uses six socio-demographics and two travel characteristics to define transit markets. The socio-demographics are immigration status, driver status, existence of medical conditions, household income, vehicle availability, and race and ethnicity, and the travel characteristics are monthly frequency of transit use and the purpose of person-trips. These characteristics for defining transit markets result from several considerations. For each of these characteristics, two to four market segments are defined using knowledge from the literature about differences in transit use, differences in policy concerns across these segments, and adequate sample size for each segment. The study assessed these markets from several perspectives:



To develop this information, the **Florida Department of Transportation** (FDOT) contracted with NCTR researchers to assess the 2009 NHTS data in terms of public transit. They used the data

- For the set of market segments based on a given characteristic, it determined their market sizes for public transit by looking at how all transit trips are distributed across them. This assessment, for example, determines that at 6.1 percent of the total U.S. population, zero-vehicle households represent the largest transit market, capturing more than 48.5 percent of the entire transit market in the U.S. It also determined that 18.9 percent of the total U.S. population use transit during an average month. In addition, the assessment determined that at less than 5 percent of the Florida population, new immigrants (entered the U.S. during 2000–2009) represent almost one-quarter of the transit market in Florida.
- For each market segment, it determined the mode choices of its population among driving, riding in a privately-operated vehicle (POV), using transit, walking, and biking. This assessment reveals that both persons in zero-vehicle households and the most frequent users of transit rely on transit for more than one-quarter of their daily travel, but transit still plays only a minor role for most other transit markets, including non-drivers and persons from extremely low-income households. This assessment also shows that biking is rarely used as a mode of transportation across all transit markets, including adults who do not drive and persons in zero-vehicle households.
- The study assessed the attitudes of each transit market in terms of its choice of the most important issue among a set of six pre-specified transportation issues and its view on the seriousness of each issue. This assessment determined, for example, that more than one-third of most transit markets consider access to and availability of transit as the most important issue, but well under one-tenth of most transit markets consider lack of walkways and sidewalks as the most important issue.
- Researchers assessed the socio-demographics of each transit market, i.e., the distribution of its transit trips across a set of population segments defined on the basis of these socio-demographics. It determined, for example, that 43.7 percent of the transit trip

Modal Share for Segments by Driver Status, 2009

Florida vs. U.S.	Main Modes	Driver Status (%)			Total (%)
		Children	Driver	Non-Driver	
Florida	POV driver	–	77.7	–	66.1
	POV passenger	72.6	11.0	53.8	19.3
	Transit	0.3	1.1	2.4	1.1
	Walk	12.2	8.4	26.1	9.6
	Bike	3.3	1.0	3.4	1.3
	Other	11.5	0.9	14.4	2.6
	All modes	100	100	100	100
U.S.	POV driver	0.0	77.1	–	63.7
	POV passenger	68.1	10.1	50.6	19.1
	Transit	1.1	2.0	4.5	2.1
	Walk	14.3	9.2	30.7	11.0
	Bike	3.5	0.7	2.3	1.1
	Other	13.0	1.0	11.8	3.0
	All modes	100	100	100	100

makers who live in zero-vehicle households also live in households with income under \$15,000, but 74.1 percent of the transit trip makers who live in households with income under \$15,000 also live in zero-vehicle households.

- The study assessed the trip characteristics of each transit market and determined, for example, that the percent of transit trips for work purposes varies significantly across transit markets, with just 9.7 percent among non-drivers, 12.4 percent among persons using transit 1–9 times per month, and 55.6 percent among persons with household income at least \$100,000.

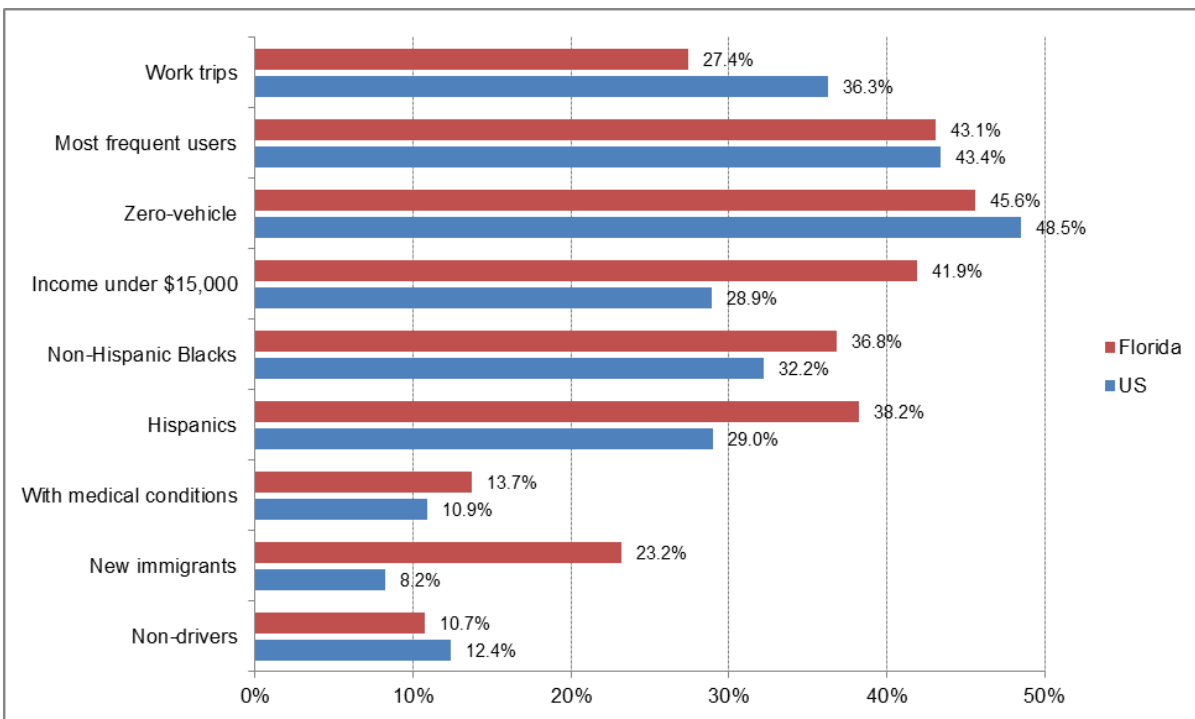
The report’s tabulations contain a great deal of information, but a few observations from the report serve as examples of its potential. Florida’s reliance on public transit is about one-half of that of the U.S. transit’s mode

share—1.00 percent in Florida vs. 1.92 percent in the U.S. as a whole. The amount of service provided certainly plays a role in mode share; in 2009, per capita vehicle revenue miles for all fixed-route services in Florida were about 70 percent of the national rate. Floridians are about 87 percent as likely as the average U.S. resident to walk for daily travel.

The study makes possible a detailed examination of transit users in Florida and compares Florida data to national data. The information study should be valuable to policy makers and agencies concerned with current use and future trends in public transit use.

The full report is available at <http://www.nctr.usf.edu/wp-content/uploads/2012/03/77920.pdf>.

For further information, contact CUTR Senior Research Associate Xuehao Chu, Ph.D., chu@cutr.usf.edu.



Size of Transit Markets, 2009

Estimating Costs and Benefits of Emissions Reduction Strategies for Transit by Extending the TRIMMS Model

Florida's remarkable transportation infrastructure is a key to its economic vitality, but transportation is also the single largest contributor to air pollution. Pollutants such as greenhouse gases (GHG) degrade air quality and contribute to climate change, while other pollutants have many environmental and health impacts. Urban areas, which are prone to traffic jams, generate high pollutant levels as vehicles inch along. By reducing vehicle use and highway density, public transportation can be a cost-effective and efficient means of reducing air pollutants. Therefore, how modes of transportation contribute to air pollution is an important topic of transportation planning.

The **Florida Department of Transportation** (FDOT) is working to create a GHG baseline for each Florida transit agency, focusing on reducing ozone emissions. However, ozone is only one of many airborne pollutants. This project engaged NCTR researchers to develop a low-cost method for assessing the full benefits and costs associated with the implementation of mobile source ozone reduction strategies while accounting for a broader spectrum of emission pollutants. They did this by extending the capabilities of software developed at USF that already was used to model transportation strategies—Trip Reduction Impacts of Mobility Management Strategies (TRIMMS).

Originally, TRIMMS evaluated strategies that directly affect the cost of travel, such as public transportation subsidies, parking pricing, pay-as-you-go pricing, and other financial incentives, and strategies that affect travel indirectly, such as alternative work schedules, telework and flexible work hours, and worksite amenities (e.g., childcare). With additional programming, the researchers enabled TRIMMS to evaluate a full suite of air pollution emissions based on a user-selected transportation strategy. Through a new interface, users compare selected strategies to understand their relative impacts on pollutant levels.

TRIMMS enables FDOT, transit agencies, planners, and communities to use a method similar to highway cost-benefit analyses to quickly estimate emissions and determine the societal benefits of changing travel behavior. Practitioners can assess costs and benefits for most strategies identified by the FDOT-sponsored Transit Ozone-Reduction Strategies Toolbox without the cost and expertise required by models that are more sophisticated.

The full report is available at <http://www.nctr.usf.edu/wp-content/uploads/2012/02/77932-final.pdf>.

For further information, contact NCTR Senior Research Associate Sisinnio Concas, Ph.D., concas@nctr.usf.edu.

TRIMMS enables FDOT, transit agencies, planners, and communities to use a method similar to highway cost-benefit analyses to quickly estimate emissions and determine the societal benefits of changing travel behavior.

NCTR Student of the Year 2012

Tara Rodrigues

For the past 20 years, at the annual winter meeting of the Transportation Research Board, the U.S. DOT honors the most outstanding student from each participating University Transportation Center (UTC) for his/her achievements and promise for future contributions to the transportation field. Students of the year are selected based on their accomplishments in such areas as technical merit and research, academic performance, professionalism, and leadership.

Tara Rodrigues was selected as NCTR's 2012 Student of the Year. She has been a Graduate Research Assistant at the Center for Urban Transportation Research at the University of South Florida since early

2009 and since then, she completed a Bachelor of Science in Civil Engineering (BSCE) degree and successfully passed the Fundamentals of Engineering Licensure Exam. She currently is a graduate student at USF pursuing a master's degree in Civil Engineering.

Ms. Rodrigues played a major role in collecting, preparing, and summarizing data used in the NCTR project "Improving Value of Travel Time Savings Estimation for More Effective Transportation Project Evaluation." She has also worked on an evaluation of the Los Angeles Orange Line bus rapid transit (BRT) system and has gained significant expertise with the National Transit Database (NTD) by annually collecting and compiling NTD data for each reporting transit agency in Florida.

As NCTR Student of the Year, Ms. Rodrigues received a \$1,000 award and was sponsored to attend the TRB Annual Meeting in January 2012.

Upon receiving her MSCE, she hopes to work as a Professional Engineer and continue to collaborate with her peers to research innovative ways to improve our society's infrastructure, help create a sustainable world, and enhance the global quality of life.



Tara Rodrigues, NCTR 2012 Student of the Year, and Greg Winfree, General Counsel and Acting Administrator of U.S. DOT's Research and Innovative Technology Administration (RITA).