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Annual Report - 2007

NCTR

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National Center for Transit Research

National Center for Transit Research



Public Transportation JOURNAL OF

- Constantinos Antoniou, Evangelos Matsoukis, Penelope Roussi: A Methodology for the Estimation of Value Using State-of-the-Art Econometric
- Laura Eboli, Gabriella Mazzulla: Service Quality Attributes Affecting Customer Satisfaction for Bus
- Lars Eriksson, Margareta Friman, Ann-Catrin Norman: Electronic Service Information on the
- Liping Fu, Yaping Xin: A New Performance Index for Evaluating Transit Quality of
- Kevin Krizek, Ahmed El-Geneidy: Segmenting Preferences and of Transit Users and Ne
- Richard...: Benchmarking Transit Research in the United



Annual Report
October 2007

Transit Research

National Center for
Transit Research

National Center

Message from the Director

The year 2006-07 was an eventful one for the faculty and students at the National Center for Transit Research at CUTR. For the second time in four years, NCTR had to compete to retain its status as a Tier I University Transportation Center. Once again, we were successful in being selected as one of 10 centers in the U.S. out of 36 universities that applied.

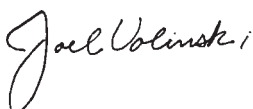
Our primary goal is that NCTR be of value to the transportation industry. A web search for “transit research” reveals that NCTR’s website ranks 1st with Google, 1st with Ask, and 3rd with Yahoo. From NCTR’s website, a visitor can download 87 reports that we have produced (10 completed in the past year), view on-demand streamed video presentations that summarize many of our reports, or listen to and view one of the many netcasts of seminars that NCTR arranged. They can subscribe to a variety of NCTR-operated listservs that now have more than 2,300 members who constantly trade information and stay up to date with new developments. They can read or download each edition of NCTR’s Journal of Public Transportation, the only academic journal dedicated to public transportation issues, now with over 2,200 subscribers.

In addition to the electronically-connected community that we manage and grow, NCTR faculty are engaged in numerous professional development forums to share the results of research and help develop solutions to new and old issues. They frequently are contacted to make presentations, moderate professional panels, and facilitate workshops. More than 40 presentations of NCTR research were made at state, national, and international transportation conferences last year. The Federal Transit Administration asked NCTR researchers to facilitate sessions between transit agency representatives, new UTCs, and the FTA to help shape research agendas of mutual benefit. The Florida Public Transportation Association has placed its faith in NCTR faculty to develop its professional development workshops and conferences. Leaders in Transportation Demand Management regard NCTR as “THE place to go when looking for state-of-the-art information.”

NCTR continues to produce students who contribute outstanding work to the field of transportation. Two of our students were honored as recipients of major scholarships from the American Public Transportation Association in recognition of their budding capabilities in the world of transit. NCTR has produced students who now serve as general managers of transit systems, leaders within DOTs, and prominent consultants.

Does NCTR provide value? Yes, to thousands directly and to millions indirectly who benefit from our theme of “enhancing the performance and relevance of public transportation and alternative forms of transportation in urban areas.” We say that to remind ourselves of the importance of our mission, and in gratitude for the opportunity to serve in such a capacity.

NCTR’s faculty and students look forward to another year of bringing even more value to you.



Joel Volinski, NCTR Director



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Contents

Introduction.....	5
Theme of NCTR.....	5
Organizational Structure	5
Program Overview.....	6
Year 8 Accomplishments	7
Research.....	7
Education	11
Technology Transfer	13
Year 9 Research Program.....	26
Conclusion	27
Financial Summary	27

Introduction

In September 1999, the National Center for Transit Research (NCTR) was approved for funding by the U.S. Department of Transportation's Research and Special Programs Administration (since renamed the Research and Innovative Technology Administration, RITA). The NCTR program builds on the goals and philosophies of the National Urban Transit Institute, which was established at the Center for Urban Transportation Research (CUTR) at the University of South Florida in Tampa by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.

Theme of NCTR

The theme of NCTR is "to enhance the performance and relevance of public transportation and alternative forms of transportation in urban areas." NCTR is focusing on these modes to help promote USDOT's strategic goals of safety, mobility, global connectivity, environmental stewardship, and security to help ensure the nation's economic growth, development, and sustainability. Virtually all of the projects undertaken at NCTR are, and will continue to be, dedicated to improving the ability of operating agencies (transit authorities, commuter assistance programs, transportation management associations, Departments of Transportation, etc.) to provide their services in a manner that is efficient, productive, and attractive to the traveling public, and in a manner that adds value to the communities they serve.

Organizational Structure of NCTR

NCTR is housed within the Center for Urban Transportation Research in the College of Engineering at the University of South Florida (USF). Following are key personnel of NCTR.

Director	Joel Volinski
Administrative Director	Dennis Hinebaugh
Communications	Patricia Ball
TDM Program Director	Philip Winters
Education Director	Steve Polzin
Transit Training Program Director	Lisa Staes
Transit Management and Innovation Director	Rob Gregg
NCTR Program Assistant	Pam Clark



Being housed at CUTR gives NCTR the enormous advantage of being part of a large and extremely active transportation research center. The faculty and students at CUTR represent the largest concentration of public transportation researchers in a single university in the country, and possibly the world. This concentration of talent and research provides opportunities for education and professional capacity building within the center. Extensive technology transfer activities ensure that research results are available to potential users in a form that can be implemented, utilized, or otherwise applied.

Program Overview

Funding

NCTR has now completed its 8th year, having been approved for funding in September 1999. The federal funding for this program helps to significantly expand the area of public transportation research already conducted by CUTR researchers over the last 18 years. Federal funds for the program are matched with a greater than 100 percent cash match from the Florida Department of Transportation (FDOT), creating more than a doubling of total program funding.

The FDOT funding used to match the USDOT funds is made available at a 10 percent indirect rate, compared to the federal indirect rate of 45 percent, resulting in a significant increase in direct funds available for public transportation research. FDOT's commitment to match this grant was secured before July 1999, and it is important to note that the relationship remains strong, with FDOT remaining committed to providing matching funds for the duration of the program. FDOT also has designated two senior members of its management staff to serve on the NCTR Advisory Committee to help select future projects and guide the program.

NCTR Advisory Committee

The NCTR Advisory Committee was created during the first six months of the program and consists of 13 experts in the public transportation community with knowledge in the areas of public transportation research and transit planning and operations. The members and their affiliations are as follows:

Joe Calabrese
*General Manager
Greater Cleveland Regional Transit Authority*

Roy Chen
*Engineer, Research Office
Federal Transit Administration*

Ed Coven
*State Public Transit Office Manager
Florida Department of Transportation*

Dr. Minnie Fells-Johnson
Public Transportation Consultant

Dr. Wendell Joice
*Director, International Telework Assoc.
& Council*

Richard Long
*Director, Office of Research
Florida Department of Transportation*

Perry Maull
*Operations Manager
Indiana University Campus Bus Service*

Bill McCloud
*Senior Vice President & C.O.O.
Veolia Transportation*

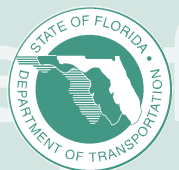
Jose-Luis Mesa
Director, Miami-Dade MPO

Louis Sanders
Director of Research and Technology, APTA

Eric Schreffler
*Director of Research, TDM Institute
Association for Commuter Transportation*

Donna Vlasak
*Senior Program Officer
Transportation Research Board*

Joel Volinski
Director, NCTR



Year 8 Accomplishments

Research

The 8th year (the second year of our Year 7 funding) of the NCTR program has supported 15 projects approved by the NCTR Advisory Committee. These projects consist of 5 core programs that will be conducted throughout the life of NCTR and 10 newly-selected research projects that explore methods to accomplish the goals of the USDOT, and the Center, in enhancing the performance of public transportation.

Core program areas include continued development and maintenance of:

- National Transportation Demand Management (TDM) and Telework Clearinghouse
- STEP (Student Transportation Education Program)
- ongoing production of teleconferences and webcasting
- graduate student professional development
- *Journal of Public Transportation*

In FY07, in addition to projects that fall into these core program areas, research topics were solicited from public transportation professionals throughout the U.S. and Canada. More than 100 research ideas were received, and 10 were selected for funding.

- An Evaluation of Public Transportation Productivity Trends and Funding Challenges (Steve Polzin, CUTR, 777-12)
- Development of a Large Bus/Small Bus Decisions Support Tool (Steve Reich, CUTR, 777-13)
- Enhancing Transit Safety and Security with Wireless Detection and Communications Technology (Sean Barbeau, CUTR, 777-14)
- Development of an NTD Tool for Vanpool Services (Xuehao Chu, CUTR, 777-15)
- Integrating Transit and Urban Form (Sisinnio Concas, CUTR, 777-16)
- Programs that Match Seniors with Volunteer Drivers (Sara Hendricks, CUTR, 777-17)
- Repair Time Standards for Transit Vehicles—Phase IV (Grisselle Centeno, CUTR, 777-19)
- Best Practices in Transit Service Planning (Jay Goodwill, CUTR, 777-20)
- Impacts of More Rigorous ADA Paratransit Eligibility Assessments on Riders with Disabilities (Debbie Sapper, CUTR, 777-21)
- Exploration of a Shift in Household Transportation Spending (Steve Polzin, CUTR, 777-22)

The following table shows the titles and project numbers for the 10 NCTR research projects completed during FY07. A sample summary of three of these projects follows in the text below. These projects are available in html and pdf formats on our website at <http://www.nctr.usf.edu/>.



<i>Summary of Year 8 Completed Research Projects</i>	<i>Project ID#</i>
Bus Incident Reporting, Tracking, and Analysis System	576-03
Guidebook for Startup Transit Agencies	576-04
Using Local Transit On-Board Surveys for State-Level Measurement	576-07
Finding Ways to Reduce Insurance and Bonding Costs for Major Transit Projects	776-02
Validating T-BEST Models with 100% APC Counts	776-03
The National Smart Transportation Archive Researcher NSTAR Program	776-04
Impact of Employer Based Programs on Transit System Ridership and Transportation System Performance	776-05
Repair Time Standards for Transit Vehicles—Phase III	31009
Economics of Travel Demand Management: Comparative Cost Effectiveness and Public Investment	777-04
Development of Alternative Measures of Transit Mode Share	777-08

Guidebook for Start-Up Transit Agencies



Project BD#549-14



Summaries of Selected Completed Projects in NCTR’s 8th Year

Guidebook for Start-up Transit Agencies
(Ann Joslin)

The objective of this project was to develop a guidebook for use by agencies in the process of initiating first-time transit systems, as well as to provide a comprehensive overview of the planning and programming aspects of the public transportation environment. The guidebook is designed to act as a consolidated source to inform agency personnel of various activities, procedures, and programs related to initiating and continuing to operate a public transit agency. By detailing the wide assortment of information related to starting and operating public transportation agencies, this document was also envisioned as a resource document and transit primer for those employees and policy makers new to the public transit industry, even if they have joined an established transit agency.

The report provides an overview of the institutional environment that public transit systems must understand, including the Florida DOT and the Federal Transit Administration. Federal and state transit funding sources, regulations, and requirements are summarized. The key steps involved in the initiation of new transit systems are detailed and general timelines are provided.

The final report for this project is available at <http://www.nctr.usf.edu/pdf/576-04.pdf>.

Finding Ways to Reduce Insurance and Bonding Costs for Major Transit Projects
(Stephen Reich)

The Florida DOT asked NCTR to investigate the reasons behind the rising costs in insurance and bonding for major transit construction projects and to identify ways that transit agencies could minimize these costs in their major capital programs. Researchers defined major transit capital projects as those projects primarily involving rail, bus rapid transit systems, or projects of similar complexity and/or cost.

Florida is positioned to embark on a number of major transit construction projects over the next five years. As transit’s primary funding source for capital programs, the Federal Transit

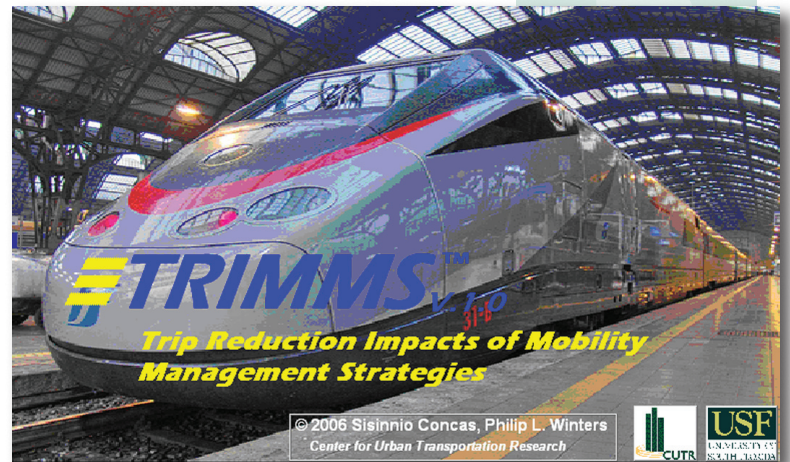
Administration expressed concern about escalating construction costs, specifically in the areas of insurance and bonding. Researchers were asked not only to test the premise that costs for insurance and bonding were increasing, but also to identify the basis of the increase, if the premise was confirmed. Researchers attempted to determine whether the costs associated with insurance and bonding for major transit construction projects were increasing disproportionately to overall construction costs.

A thorough review of available literature on the subject was conducted to identify articles written on the subject in the areas of insurance and bonding expenses associated with major transit construction projects. To provide a comprehensive understanding of the issues, the literature review included research related to why transit agencies need to seek alternative avenues of funding, and an overview of some of the long-term and short-term approaches to debt financing. Eight case studies illustrated the rising costs associated with major capital construction projects, identified the causes behind the rising costs, and possible ways to reduce costs.

The final report for this project is available at <http://www.nctr.usf.edu/pdf/776-02.pdf>.

Economics of Travel Demand Management: Comparative Cost Effectiveness and Public Investment (Sisinnio Concas)

The 2006 Congestion Mitigation and Air Quality Improvement (CMAQ) Program Interim Guidance provides explicit guidelines to program effectiveness assessment and benchmarking by calling for a quantification of benefits and disbenefits resulting from emission reduction strategies for project selection and evaluation. More public agencies are attempting to measure the value of Transportation Demand Management (TDM) strategies relative to their potential benefits and costs in comparison to other transportation solutions commonly employed to address capacity needs.



Various tools, such as the Worksite Trip Reduction Model developed by NCTR, the Environmental Protection Agency COMMUTER model, and impact calculation methods developed by the California Air Resources Board, are currently available for estimating some of the benefits of several TDM and other emission reduction strategies. However, no standardized guidance exists to quantify the costs and benefits of TDM strategies that considers the full range of benefits and costs accrued. The availability of an effective tool that takes into account a broader range of costs and benefits could greatly enhance agencies' abilities to evaluate alternatives and estimate post-implementation benefits of TDM strategies. At the same time, poor estimates could steer traffic mitigation and emission reduction policies towards inefficient transportation investments at the local and regional level.

The objective of this project was to develop a standardized methodology for calculating the costs and benefits of TDM for comparative assessment and public decision making. To achieve this goal, the report conceptualizes a new approach that builds on existing techniques and tools to produce a model that would save agencies time and money, providing a high level of reliability in impact estimates, while generating results that could be compared among regions and across projects. A methodology that combines academic and practitioner experiences

within a theoretical framework that truly captures what is at the core of TDM evaluation is provided. This includes an approach that models consumers' price responsiveness to diverse transportation options by embracing the most relevant trade-offs faced under income, mode cost, and availability constraints.

The development of the theoretical model leads to the design and implementation of TRIMMS (Trip Reduction Impacts for Mobility Management Strategies), a practitioner-oriented sketch planning tool. TRIMMS permits program managers and funding agencies such as Florida DOT to make informed decisions on where to spend finite transportation dollars based on a full range of benefits and costs. The approach is consistent with other benefit-to-cost analyses. Its accuracy and the perceived fairness are critical when significant funds are at stake. The model allows some regions to use local data or opt to use defaults from national research findings, select the benefits and costs of interest, and calculate the costs and benefits of a given program. A key strength of this model is its wide range of benefits and costs that can be selected for the analysis. The model's flexibility and robustness allows it to be adopted by agencies throughout the country. A step-by-step introduction to the program, its capabilities, and a set of working examples to guide the user through the process of evaluation is included in the report.

Future research could seek to enhance the model to include more of the internal benefits to employers (e.g., changes in worker productivity, reduction in overhead costs, changes in employee retention, etc.). The challenge of this future enhancement is finding data relating given TDM strategies to such business outcomes. Another area of future research would be to develop a framework to include regional or local values for some of the cost externalities and mode price elasticities for region-specific analysis.

Finally, a byproduct of this research effort that goes beyond the initial research objectives is the development of a structured approach to evaluate the impact of soft programs (i.e., programs other than changes in time or costs such as guaranteed ride home programs). Compared to the currently available soft program evaluation methods, the approach developed in this report provides a less heuristic method of estimation, resulting in statistically robust mode share impact predictions. Another future area of analysis would be the refinement of such a model to provide a standardized approach to soft program impact assessment.

The final report for this project is available at <http://www.nctr.usf.edu/pdf/777-04.pdf>.



Oliver Page

2006 NCTR Student of the Year: Oliver Page

Oliver Page entered the USF Civil Engineering program after earning his MS in Transportation Planning and Engineering from the University of Southampton, UK. Oliver earned a PhD in Civil Engineering in December 2006, served as a teaching assistant for the course "Transportation and Society," and served as President of the student chapter of ITE at USF. He made substantial contributions to a number of projects funded through the National Center for Transit Research, including "Developing Bus Transfer Centers for Maximum Transit Agency and Community Benefit" and "Transit Use Viability Among Older Drivers Losing Driving Privileges," the latter being the topic of his doctoral dissertation. He also provided substantive assistance in a recently completed TCRP report entitled "Guidebook for Evaluating, Selecting, and Implementing Suburban Transit Services." In addition, he co-authored a white paper on "Rapid Transit Options for Miami Beach" and critically analyzed ridership trends of New Start rail projects for the USDOT.

Oliver's paper entitled "Equity Impacts and Challenges of Highway Access Management in an Emerging Economy—South Africa at the Crossroads" was published in *Transportation Research Record* #1939. He presented findings of his NCTR research at state and national professional transportation conferences. He continues to conduct research and teach in the field of transportation at the University of Michigan Transportation Research Institute.

Education

Professional development of the current and next generation of transportation professionals through education continues as a core focus of NCTR and its parent Center for Urban Transportation Research. The rapid changes in university administration, computing and communications, student interests and capabilities, and other factors is resulting in a dynamic environment for delivering education to meet the diverse needs of various students and professionals. Student involvement in project research continues as a priority of CUTR and the NCTR program. During the 2006-2007 program year, graduate and undergraduate students were involved in ongoing public transportation research projects and were supported by funding from NCTR. The major areas of study of these students are multidisciplinary in nature, including engineering, economics, anthropology, business, geography, and public administration. Through research and professional experiences, NCTR helps develop well-informed, educated individuals, many of whom have gone on to work on public transportation planning, management, and analysis, while others will carry out their career activities with a far richer understanding and appreciation of public transportation.

The academic program at USF continues to evolve. Faculty and administration turnover at the University impacted the pace of full-time student enrollments; however, growth in certificate program enrollment and distance learning students resulted in 2006-07 having the highest enrollment levels in transportation courses in several years. There is an increasing emphasis on the "five-year program," designed to let undergraduates commit to a master's degree while intermixing their undergraduate and graduate courses such that they can complete degree requirements in five years and begin taking master's degree courses earlier in their overall tenure at the University. Job placement has remained very strong and requests for student resumes far exceed the supply. The program continues to be proud of its placement record, with numerous students finding increasingly prestigious employment opportunities.

The following are summaries of specific core areas of the NCTR education program.

Transportation Certificate Program

CUTR's newest certificate, the Transportation Systems Analysis Certificate, is designed to provide an opportunity for a transportation credential for persons who have an engineering or similar technical undergraduate degree and want to enhance their skills and credentials through additional study. Individuals can complete the certificate via distance learning, making it particularly attractive for continuing education for working professionals. Regular inquiries regarding certificates are received, and a growing number of students are now pursuing coursework.

Exploration of Additional Public Transportation Graduate Courses

NCTR has continued interest in expanding course materials targeting transportation. At this point, tight University budgets and stable enrollment levels have prevented additional course



offerings. In addition, NCTR continues to explore administrative strategies that might enable the provision of public transportation courses offered nationally but that can be taken as an elective by students in other programs. An administrative model that would enable students to claim credit at their home university without having to be accepted for the course and register/pay at the offering university and then transfer credits back has yet to be discovered, but NCTR remains convinced that the most logical way to expand public transportation focused curriculum offerings is to expand the audience to the national level and harness select resources of national experts.



Developing Interest in the Field of Public Transportation— STEP 2007

For the 8th year, the Student Transportation Education Program (STEP) was held at CUTR during the summer. STEP is a three-day program designed to provide students with the opportunity to learn more about careers in the field of public transportation through discussions with practicing professionals, hands-on activities, and field trips. The 2007 STEP class consisted primarily of freshmen and sophomore students in high schools from Hillsborough County. The students were introduced to public transportation career opportunities related to engineering, safety, operations, and planning, among others.

Field trips included Tampa International Airport, the Tampa Port Authority, and the Hillsborough Area Regional Transit (HART) bus and streetcar maintenance facilities, where students observed technicians and supervisors at work, toured the Tampa seaport by boat, and traveled by streetcar and bus between the Port Authority and USF. For all of the students, it was their first time using public transportation. Hands-on activities included an introduction to transit trip planning using HARTline schedules and an intersection analysis for transit-oriented development. Students also were introduced to transit by means of USF's shuttle service, the Bull Runner. Information sessions included transportation and the environment, bus rapid transit, and bicycle and pedestrian safety.

Other Education Initiatives

Several other initiatives continue to receive attention. The undergraduate course "Transportation and Society," designed to introduce undergraduates from various disciplines to transportation, is offered twice annually with very good participation, and increasing the offerings for this course is being explored. CUTR collaborated in a USF initiative to introduce a master's degree in Urban Planning, which is being implemented in Fall 2008. This program will complement the transportation focus at CUTR and provide an additional group of students who will be interested in taking courses in transportation and perhaps being involved as research assistants for transportation studies.

In addition to the extensive ongoing training activities carried out at NCTR/CUTR, a week-long management level training program for the public transportation industry is scheduled for Fall 2007. This training, being carried out for a major private sector transit management company, provides an opportunity to develop academic quality public transportation management educational materials.

Technology Transfer

Excellent research is of limited value if the results are not made available to as many parties as possible that might benefit from the findings. Extensive technology transfer is a key determinant of NCTR's value. The following sections summarize specific accomplishments in the area of technology transfer by NCTR staff over the last year.

Professional Activities

NCTR staff continue to have significant involvement with partners in the public transportation industry, including serving on 17 Transportation Research Board (TRB) committees and holding leadership positions in the American Public Transportation Association (APTA), the Association for Commuter Transportation (ACT), and the Institute of Transportation Engineers (ITE). This has created an opportunity to tout the NCTR program through solicitation of project ideas from organization members and in the transfer of research results. Following is a summary of the participation by NCTR staff as members of industry associations.

Professional Involvement of Key NCTR Personnel

Joel Volinski

Board, Florida Public Transportation Association
Co-Chair, FPTA Annual Conference
Member, Human Resources Committee, APTA
Member, Research & Technology Committee, APTA
Member, Research Proposal Screening Committee, TCRP
Member, Transit Management and Performance Committee, TRB
President, Leadership APTA Alumni Association
Transit Ambassador Emeritus, TCRP
Friend, Public Transportation Marketing & Fare Policy, TRB
Friend, Bus Transit Systems, TRB

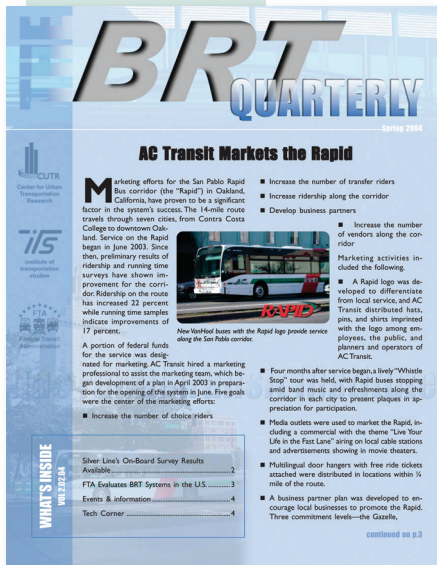
Dennis Hinebaugh

Member, Bus Transit Systems, TRB
Panel A-23: Cost Effectiveness of Selected BRT Components, TRB
Member, Public Transportation Marketing & Fare Policy, TRB
Chair, BRT Subcommittee, TRB
Panel D-13, Guide for Implementing Bus on Shoulder Systems, TCRP
Member, BRT Task Force, APTA

Sean Barbeau

Member, Expert Group, Java Spec Request 293





Ed Bart

Member, Bus Standards Policy/Planning Steering Subcommittee, APTA

Member, Transit Fleet Maintenance Committee, TRB

Chair, Florida Transit Maintenance Consortium

Julie Bond

Chair, Membership/Marketing Committee, ACT

Vice Chair, TMOCG

Member, Bicycle & Pedestrian Advisory Committee, Hillsborough County MPO

Alasdair Cain

Road Pricing Subcommittee, TRB

Managed Lanes Joint Subcommittee, TRB

Sisinnio Concas

Reviewer, Travel Behavior and Values Committee, TRB

Reviewer, Transportation & Economic Development Committee, TRB

Henry Cusack

Member, Bus Standards Policy/Planning Steering Subcommittee, APTA Bus & Paratransit Operations Committee

George Darido

Member, Public Transportation Forum, ITS America

Member, Transportation in Developing Countries Committee, TRB

Member, Bus Transit Subcommittee, TRB

Jay Goodwill

Co-Chair, FPTA Annual Conference

Rob Gregg

Coordinator, Florida Transit Planning Network

Sara Hendricks

Co-Chair, Telework Council, ACT

Jeff Kramer

Member, Metropolitan Policy, Planning & Processes Committee, TRB

Technical Committee, AMPO

Pei-Sung Lin

Chair, Intelligent Traffic Signal Operations Committee, ITE
Executive Committee, Management & Operations/ITS Council, ITE
Member, Detection, Verification & Response Committee, Florida STIM Team
Member, Traffic Engineering Council, ITE
Member, Traffic Signal Operations Committee, FDOT
Member, Traffic Simulation Subcommittee, ITE
Member, Transportation Management Center (TMC) Committee, ITE
Steering Committee, TSM&O Guidelines, ITE

Ed Mierzejewski

Project 8-44: Incorporating Safety into Long-Range Plans, NCHRP
National Board of Directors, ITE
Committee on Transportation Programming/Planning/System Evaluations, TRB
Panel 8-59, Transportation Cost Implications of New Development, NCHRP
Board of Directors, District 10, ITE

Victoria Perk

Member, Social/Economics Factors A1C06, TRB
Member, Intermodal Passenger Facilities A1E03, TRB
Member, Planning Committee, APTA
Instructor, National Transit Institute

Steve Polzin

Member, Policy & Planning, APTA
Member, Public Transportation Planning & Development, TRB
Member, Urban Transportation Data/Information Systems, TRB
Education Committee, SE Transportation Center
Transit and Urban Form Working Committee, APTA
Editorial Board, *Journal of Public Transportation*

Amber Reep

Associate Staff, Federal Transportation Safety Institute
Chair, Florida Operations Network

Steve Reich

Director of Research, TEAM Florida Board of Directors



or
National
Transit
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ch
Center

Deborah Sapper

Member, Committee on Public Transportation Safety & Security Task Force, AASHTO

Karen Seggerman

Member, Transportation Planning Division, APA

Member, Congress for New Urbanism

Vice Chair, Planning Council, FSITE

Member, Transportation Planning Division, APA

Co-chair, Conference Mobile Workshops/Receptions Committee, FAPA

2007 Conference Steering Committee, Florida Chapter APA

Lisa Staes

Member, National Peer Review Panel, Instructor's Course on Paratransit Operations, TSI

Transportation Work Group, American Cancer Society

Member, Panel B-36, Updated Methodology for Forecasting Demand, TCRP

Kristine Williams

Chair, Committee on Access Management ADA70, TRB, 2007

Secretary, Committee on Access Management ADA70, TRB, 2006

Phil Winters

Information Director, TDM Institute, ACT

Vice Chair, Transportation Planning Council, ITE

Member, TDM Committee, TRB

Executive Committee, Transportation Planning Council, ITE



Huaguo Zhou

Member, Traffic Signal Operations Committee, ITE

Co-Chair, Conference Technical Committee, 2007 Tech Symposium on Intermodal Transportation

Board of Directors, North American Chinese Overseas Transportation Association

Publications and Presentations

During FY07, NCTR researchers were active in publishing and presenting at state and national conferences and meetings, as follows:

Publications

- Barbeau/Aguilar et al., Quantifying the Position Accuracy of Real-Time Multi-Modal Transportation Behaviors, *TRR*

- Barbeau/Winters/Georggi, A General Architecture in Support of Interactive, Multimedia, Location-Based Mobile Applications, *Communications Magazine* (IEEE)
- Cain, Teenage Mobility in the US: Issues and Opportunities for Promoting Transit, *TRR* 1972
- Cain/Darido, Applicability of Bogota's Transmilenio BRT System to the U.S., *TRB Compendium*
- Chu, Ridership Accuracy and Transit Formula Grants, *TRR* 1986
- Chu et al., Crossing Locations, Light Conditions, Pedestrian Injury Severity, *TRR* 1982
- Chu/Kourtellis et al., Considering Usage/Safety Effects for Uncontrolled Midblock Crosswalks, *TRB Compendium*
- Chu/Polzin, Theoretical/Empirical Analyses of Transit's Usual/Actual Mode Shares, *TRB Compendium*
- Chu/Polzin et al., A Framework of Modeling/Forecasting Stop-Level Transit Patronage, *TRB Compendium*
- Concas/Winters, Impact of Carpooling on Trip-Chaining Behavior/ Emission Reductions, *TRB Compendium*
- Darido, BRT Opportunity, *Natural Gas Fuels*
- Darido et al., Performance and Lessons from Implementation of BRT in the U.S., *TRB Compendium*
- Hsu/Zhou/Lin/Hagen/Singh, Drive 4 Life: An Innovative Safety Program, *Proceedings*, ITE Annual Meeting
- Kramer/Hopes, Models for Independence: Organizational Structures of Independent MPOs in Florida, *TRB Compendium*
- Lin, Integration of Traffic Signal Systems across Multiple Jurisdictions, *Proceedings*, ITE Annual Meeting
- Lin et al., Automatic Transformation of Video Image Data from UAV's, *Compendium*, ITS World Congress
- Lin/Rai/Hagen, Development of an Adaptive Rear-End Crash Avoidance Model, *Compendium*, ITS World Congress
- Mierzejewski/Seggerman, What is New in Transportation & Growth Management?, *Compendium*, ITE Annual Mtg
- Polzin, Obesity, Transportation & Energy Use, *Planetizen*
- Polzin/Page, Active & Former Drivers: Critical Link in Understanding Future Travel Demand, *TRB Compendium*
- Seggerman, Shall We Dance? Achieving Corridor Management through International Cooperation/Coordination, *Compendium*, ITE Annual Meeting
- Seggerman, Transportation Concurrency, Intergovernmental Review, Impact Fees, *TRB Compendium*
- Williams/Seggerman/Kramer, Integrating Access Management into Local Transportation Planning, *TRB Conference on Transportation Planning*
- Winters/Shannon, Journey to Work Census Data Released, *TDM Review*
- Zhou, Benefit and Cost Analysis of Road Ranger Program in Florida, *Compendium*, ITE Annual Meeting



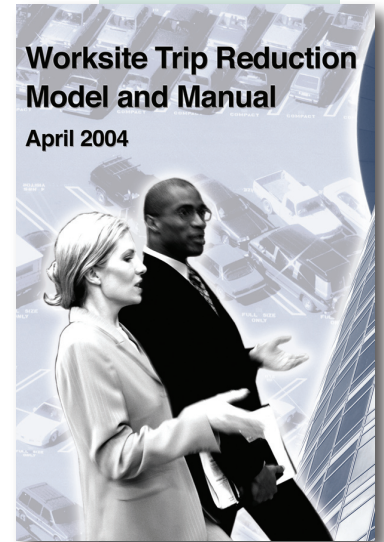
- Zhou, Empirical Delay Models for Multi-Lane Two-Way Stop-Controlled Intersections, *ITE Journal*

Presentations

- Bond, TDM 101, ACT International Conference
- Audino, Increasing Human Effectiveness, National Rural Public Transportation Conference
- Audino, Getting the Right People on the Bus, National Rural Public Transportation Conference
- Audino/Page, Safe Mobility for Seniors Who Drive Less, 11th International Conference on Mobility/Transport
- Barbeau, Using GPS-Enabled Mobile Phones and Location-Aware Technology, TRANSP0 2006
- Barbeau et al., Quantifying the Position Accuracy of Real-Time Transportation Data, TRB
- Barbeau/Aguilar et al., A Comparison of Fix Times and Estimated Accuracies in Application Program Interfaces, 11th World Conference on Transport Research
- Bezdecny, Integrating GIS into a Transit Development Plan, Symposium on 21st Century Teaching Technologies
- Bezdecny/Catala, Use of Census Data in Spatial Analysis for Transit Planning, ESRI's 27th Annual International Users Conference
- Bond, TDM 101.2, SEACT Conference
 - Cain, Applicability of Bogota's BRT System to the U.S., APTA/TRB BRT Conference
 - Cain, Bus Rapid Transit, ASCE Transportation Growth Seminar
 - Cain, Applicability of Bogota's BRT System to the U.S., Segunda Feria, Bogota
 - Cain, Developing Design Guidelines for Printed Transit Information Materials, APTA Marketing Workshop
 - Cain, Tracking the Evolution of the Bogota Model, 2007 APTA Bus/Paratransit Conference
 - Cain, Quantifying the Importance of Image/Perception to BRT, 2007 APTA Bus/Paratransit Conference
 - Cain, Integration of Accessibility into BRT Projects in the U.S., 5th International Workshop on Public Transportation
 - Cain, The Bogota Model: Maximizing Mobility and Operational Efficiency, America's Competitiveness Forum
- Cain, Developing Design Guidelines for Printed Transit Information Materials, FFTA Workshop
- Cain/Darido, Applicability of Bogota's Transmilenio BRT System to U.S., TRB
- Cain/Darido, Overview of BRT in the U.S. and Lessons Learned from South America, UITP International Bus Conference
- Cain/Darido, Tracking the Evolution of the Bogota Model, FTA Briefing Session
- Chu/Kourtellis et al., Considering Usage/Safety Effects for Uncontrolled Midblock Crosswalks, TRB



- Chu/Polzin, Theoretical/Empirical Analyses of Transit's Usual/Actual Mode Shares, TRB
- Chu/Polzin et al., A Framework of Modeling/Forecasting Stop-Level Transit Patronage, TRB
- Concas/Winters, Impact of Carpooling on Trip-Chaining Behavior/Emission Reductions, TRB
- Cusack, Florida Vehicle Procurement Program, APTA Bus & Paratransit Conference
- Cusack/Chaudhary/Wooten, Florida Vehicle Procurement Program, FPTA Workshop
- Darido, Lessons from ITS Deployments of Recent BRT Implementations, APTA/TRB BRT Conference
- Darido, Overview of Characteristics of BRT, ASCE BRT Workshop
- Darido et al., Performance and Lessons from Implementation of BRT in the U.S., TRB
- Goodwill, Special Event Transportation Planning & Operations Strategies for Transit, TRB Conference on Managing Travel
- Gregg, Existing Florida Recruitment Issues/Practices, FPTA Workshop
- Hagelin, Challenges & Opportunities in a Post-Oil Peak World, ACT International Conference
- Hagelin, Integrating Bicycles and Transit through the Bike to Bus Strategy, APTA Intermodal Workshop
- Hendricks, National Smart Transportation Archive Researcher, ACT International Conference
- Hendricks, Alternative Transportation and the Land Development Process, Environmental Research Colloquium
- Hinebaugh, Moderator, BRT Technical Workshop, FTA
- Hopes/Bezdecny, GIS and Access Management, Symposium on 21st Century Teaching Technologies
- Kramer, MPO Organization & Structure, NC Association of MPOs
- Kramer, Driving the Transportation Planning Process: Essential Information for County Commissions, Florida Association of Counties
- Kramer, MPO Financial Planning: Issues & Next Steps, Federal Planning Requirements Workshop
- Kramer/Hopes, Models for Independence: Organizational Structures of Independent MPOs in Florida, TRB
- Lin, Integration of Traffic Signal Systems across Multiple Jurisdictions, ITE Annual Meeting
- Lin, Successful Experience from FDOT Districts for Reducing Queues, TRANSPO 2006
- Lin, Advancement of Adaptive Rear-End Crash Avoidance Systems, TRANSPO 2006
- Mierzejewski, Growth Management and Concurrency in Florida, Maryland National Capital Park & Planning Commission
- Mistretta, Multi-Lingual Customer Support, FPTA Workshop
- Mistretta, RAPS Overview, FPTA Workshop
- Page, Transit Use Viability among Older Drivers Losing Driving Privileges, TRB Rural Public/Intercity Bus Conference



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- Page, Partnering with the Community to Develop Their Plan, TRB Rural Public/Intercity Bus Conference
- Polzin, Looking Ahead, the Changing World for Transportation, Georgia MPO Annual Conference
- Polzin, The Case for More Moderate Growth in VMT, TRANSPO 2006
- Polzin, State of Our Industry: Observations on the Future of Public Transportation, FPTA Workshop
- Polzin, Transit Development Plan Guidelines, FPTA Workshop
- Polzin, Observations/Perspectives on Using ACS Data (keynote), Transportation Planning Capacity Building Program
- Polzin/Page, Active & Former Drivers: Critical Link in Understanding Future Travel Demand, TRB
- Rai/Lin, Case Study of Safety Impacts of Congestion on Urban Freeways, ITE 2007 Conference



- Sapper/Reep, An Innovative Approach to Statewide Bus Incident Reporting, National Rural Public Transportation Conference
- Seggerman, Shall We Dance? Achieving Corridor Management through International Cooperation/Coordination, TRB Conference on Access Management
- Seggerman, Corridor Policy and Agreement Development (panelist), TRB Conference on Access Management
- Seggerman, Best Practices for Transportation Concurrency, TRANSPO 2006
- Seggerman, Transportation Concurrency, Intergovernmental Review, Impact Fees, TRB
- Staes, Florida Transit System Hazard and Security Plans, National Rural Public Transportation Conference
- Staes, A United Approach to Rural and Urban Operator Training/Networking, National Rural Public Transportation Conference
- Staes/Sapper, Developing Bus System Safety/Security Programs, FPTA Workshop
- Volinski, Lessons Learned in Paratransit Efficiencies, APTA Board Seminar/Workshop
- Volinski, NCTR Objectives/Achievements, CUTC
- Volinski, Introduction to the Transit Cooperative Research Program, North Carolina Public Transportation Association Annual Meeting
- Volinski, Developing Bus Transfer Centers for Maximum Community Benefit, Virginia Transit Association Annual Meeting
- Volinski, Lessons Learned in Transit Efficiencies, Revenue Generation, Cost Reductions, Virginia Transit Association Annual Meeting
- Volinski, Lessons Learned in Paratransit Efficiencies, Virginia Transit Association Annual Meeting
- Volinski, Developing Transit Centers as Community Assets, DCA Urban Redevelopment Conference

- Volinski, Moderator, Current Issues in Transit Management, TRB
- Volinski/Flynn, Strategies for Successful Intra-Urban Circulator Systems, APTA Intermodal Workshop
- Williams, Model Proportionate Fair Share Ordinance, TRANSPO 2006
- Williams, Developer Contributions for Transportation Facilities, NC Transportation Commission
- Williams, Integrating Access Management into Transportation Planning, Arkansas Transportation Planning Conference
- Williams/Seggerman/Kramer, Integrating Access Management into Local Transportation Planning, TRB Conference on Transportation Planning
- Zhou, Benefit and Cost Analysis of Road Ranger Program in Florida, TRANSPO 2006
- Zhou/Hagen/Singh/Lin, Benefit and Cost Analysis of Road Ranger Program in Florida, Access Management Annual Meeting

Training

During FY07, NCTR researchers were active in either providing or facilitating the following training sessions:

Bus Operator Training

- TSI Fatigue Awareness
- Instructor's Course in Bus Operator Training

Commuter Choice

- Long Range TDM Planning
- Bicycles & Transit through the Bike to Bus Strategy
- Establishing Program Goals & Objectives
- Institutional Arrangements
- Measuring Results and Performance
- Introduction to Basic Marketing Strategies & Campaigns
- Creative Thinking for Transportation Professionals
- Social Marketing
- Bicycle & Pedestrian Issues
- Incorporating TDM into the Land Development Process
- Rideshare Options
- Parking Management
- Commuter Choice Tax Benefits
- Commuter Choice Support Programs & Smart Commute Strategies
- Bicycle/Pedestrian Issues
- Car Sharing Programs
- Transit Service Options



- Access Management
- Creative Thinking for Transportation Professionals
- TDM Case Studies
- Public Speaking

CUTR

- NTD Training
- Introduction to Transit Operations Planning



Florida Maintenance Training Program

- Basic Electric
- Heat/Vent/AC w/608 Training & Testing
- Preventive Maintenance
- Practical Hydraulics
- Coach A/C with 608 Training/Testing
- Intermedial Electric
- Cummins Power Train
- Air Brakes/Systems
- Detroit Diesel Power Train
- ThermoKing Air Conditioning
- I/O Electrical Controls

Florida Public Transit Association Workshop

- Leadership Modules I-4
- Bus Incident Reporting
- Growth Management & Concurrency
- Mobility Management Strategies
- Where Art Thou, Bus Stop?
- Sexual Harassment & Discrimination
- Transit Funding
- Investigating Harassment
- Developing a Printed Transit Information Material Design Manual
- Improving Security at Transit Facilities & Passenger Stations
- System Security Planning/System Safety Program Plans
- Supervisor's Refresher on Substance Abuse Management
- Florida Vehicle Procurement Program, Online Software
- Florida Transit Marketing Network
- Transit Development Plan Tool Kit
- Conflict Resolution
- Integrated Strategic Planning

- Organizational Change
- Advanced Technical Training for Transit Mechanics

RTAP

- Instructor's Course in Paratransit Training

Transit Training

- TSI Fundamentals of Bus Collision Investigation
- Conflict Management
- TSI Transit Bus System Safety
- Substance Abuse Management/Program Compliance
- TSI Transit Response to Bus Hijackings
- Creating a Transit Safety Culture



Journal of Public Transportation

The *Journal of Public Transportation* is a respected international journal containing refereed papers on current, original research and case studies associated with public transportation and related policy issues. Topics are approached from disciplines including economics, engineering, planning, BRT, GIS, finance, and safety, and include methodological, technological, and financial perspectives, with emphasis on the identification of innovative solutions to public transportation problems. The journal has nearly 2,200 subscribers from all around the world, and boasts a distinguished editorial board.

FLOW Newsletter

In 2007, NCTR initiated a new e-newsletter, FLOW: Moving People and Ideas. Flow is another example of how NCTR shares the information generated through its research. The newsletter summarizes recently completed projects, provides updates on the NCTR education program and student accomplishments, and directs subscribers on how to access NCTR's wealth of information.

Net Conferences: Learn More—Travel Less

In addition to the diverse range of publications, NCTR uses various means and formats for disseminating information and sharing insights. NCTR continues to provide opportunities to collaborate online individually or with large groups of transportation professionals in real time, with only a telephone, computer, and an Internet connection. This netconferencing approach provides a cost-effective means of bringing together public transportation professionals with peers and other experts from around the country to disseminate research results and share experiences. NCTR's use of Microsoft's Live Meeting™ enables it to quickly and more effectively communicate with transportation professionals while reducing travel time and expenses. Netconferences are held in real-time but are also available for on-demand viewing after the live presentation. No special equipment is necessary. "Attendees" view the presentation via the Internet while listening via the telephone.

To leverage NCTR's resources, ACT chapters were enlisted to host netconferences in their cities and invite members and non-members alike. Based on the topic, from 15 to 25 locations

participated in the netconferences live and attracted up to 150 “conference attendees” each. In 2006-07, NCTR sponsored the following four netconferences in partnership with the Association for Commuter Transportation.

“A Look at Employer TDM Programs in the Midwest” Netconference

Employers and transportation management associations (TMAs) can have a significant impact on commuter travel behavior. On June 21, 2007, the Midwest Chapter of the Association for Commuter Transportation (ACT) and NCTR hosted a netconference that spotlighted two transportation demand management programs based in the Midwest. This 64-minute event, led by moderator Donna Smallwood, covered Hewitt Associate’s comprehensive TDM program and Downtown TMA’s “Rest Your Car” promotion. The streaming media recording also includes over 20 minutes of a lively question and answer period. Speakers included:

- Tim Grzesiakowski, Commuter Transportation Manager, Hewitt Associates, in Lincolnshire, IL, who discussed the TDM program undertaken by his employer in suburban Chicago.
- Anne Janotta, Marketing Director, Downtown TMA, Des Moines, IA, who discussed an employer-based alternative commute initiative called “Rest Your Car.”

“Do You Get What You Incent?: A Virtual Discussion on Areawide Commuter Financial Incentives”

On April 25, 2007, ACT and NCTR hosted a “virtual discussion” with a panel of TDM professionals who have been providing area-wide financial incentives across modes and/or who have mode-specific financial incentive programs. This event included a panel of experts who discussed how to provide rewards for changing travel behavior and use public resources cost effectively. The streaming media recording also includes over 35 minutes of a lively question and answer period. Questions were fielded from the estimated 125 attendees scattered in 24 locations around the country who heard the presentation live. Moderators were Donna Smallwood of MassRides/URS and Peter Valk of TMS, Inc. Presentations included:

- Cathy Blumenthal, King County Metro, “Vanpool Incentive Programs That Work!”
- Andrew Swords, New Jersey DOT, “Carpooling Makes \$ense in New Jersey”
- Rick Steele, NuRide, “Rewarding the Right Behavior”

“Striving to Be the Best: Employer TDM Programs That Deliver Results to Employees and Stockholders” Netconference

On October 18, 2006, NCTR and ACT held this netconference that discussed why employers go beyond what is expected of them when carrying out TDM programs for their employees. Representatives from three companies that differ in their core businesses, but all of which value being the best, described their approaches to providing TDM programs for their employees. The panel included Jessica Barron, VPSI Project Manager with Wyeth Pharmaceuticals in Collegeville, PA; Matt Nichols, Principal Transportation Planner for the City of Berkeley, CA; and Danielle Bricker, TDM Coordinator at Yahoo! in Sunnyvale, CA, who discussed why they undertake these programs and how management views these programs. This 77-minute session, moderated by Donna Smallwood, MassRIDES/URS Corporation, featured presentations by the following:

- Jessica Barron, VPSI Project Manager, Wyeth Pharmaceuticals
- Matt Nichols, Principal Transportation Planner, City of Berkeley (CA)
- Danielle Bricker, TDM Coordinator, Yahoo!

On-Demand Streaming Presentations

On-demand streaming presentations provide another means for facilitating the sharing of research results. Some final reports are being turned into short, streaming presentations that can be viewed on demand by public transportation professionals and others. This provides a quick and convenient means to hear a researcher discuss a project without the cost to travel to a conference or the time to read the full report. The current list of streaming presentation includes a range of topics related to all forms of public transportation.



Website

In addition to the netconferences and on-demand streaming presentations, NCTR provides links to 87 completed research reports in HTML and pdf formats.

As the following table shows, most NCTR websites are found at or near the top of major search engines when using key search terms reflecting NCTR priorities.

<i>Search Term</i>	<i>Search Engine</i>	<i>Ranking</i>
"Transit Research"	Google	1st
	Yahoo	3rd
	Ask	1st
"Bus Rapid Transit"	Google	8th
	Yahoo	16th
	Ask	6th
"Transportation Demand Management"	Google	4th
	Yahoo	27th
	Ask	5th

Basic web statistics were designed so systems administrators could determine how efficient the system was in processing requests. The statistics were not intended to count every user. However, such web statistical reports enable NCTR to track basic trends.

Discussion Forums and Listservs

NCTR continues to see increases in the number of subscribers across the board from its public transportation-related listservs. These discussion forums and e-newsletters have attracted more than 2,100 subscribers. The listservs provide quick access to information and facilitate peer-

to-peer assistance from across the country. The e-newsletters provide information on what is new at NCTR and include 350 electronic subscriptions to the *Journal of Public Transportation*.

Name	listserv	Type	Subscribers
Bus Rapid Transit	brt	discussion forum	371
Florida Vehicle Procurement Program	flvpp	discussion forum	86
Florida Operators Network	Fon	discussion forum	32
Florida Rural Transit Assistance Program	rtap	discussion forum	115
Florida Transit Planning Network	Ft-forum	discussion forum	119
Florida Transit Maintenance	Ftmn	discussion forum	42
Journal of Public Transportation	jpt	journal subscribers	405
Leadership APTA	leadershipapta	discussion forum	159
National Center for Transit Research	nctr	e-newsletter	894
Parking Management (TRB)*	parking	discussion forum	94
Sustainable Transport Indicators (TRB)*	sti	discussion forum	84
Telework	telework	discussion forum	287
Transportation Demand Management	transp-tdm	discussion forum	1,662

**new in 2006/07*

Beginning in FY06, all NCTR abstracts, announcements, and listserv postings are published as RSS feeds. This method allows NCTR to deliver information to the desktop of transportation professionals and others (e.g., customized Google or Yahoo home page) without cluttering up email inboxes.

Also, in the past year, NCTR has initiated a blog to foster discussion of transportation issues, TDM Talk (www.tdmtalk.blogspot.com/), to complement the listserv it runs for TDM professionals.

Help Desk for the National TDM and Telework Clearinghouse

In 2004, NCTR unveiled a customer relationship management software solution to provide the enhanced communications and continual feedback loops that are central to understanding and addressing the needs of the transportation community. The Help Desk's role is to provide more intelligent self-service options. With 523 questions and answers, including 100 case studies, this approach provides a means to reduce the total number of basic inquiries or repeat requests that require personal attention by the NCTR staff. The Help Desk also tracks and reports to the staff the topics that are receiving the most questions and responses. Such monitoring can help NCTR staff identify research needs, possible subjects or topics for net conferences, or training workshops based on the level of interest or need.

Year 9 Research Program

NCTR recently completed the process to solicit and select research ideas for the FY08 program year. Requests for research ideas and proposals were sent to all Florida transit agency directors, MPO directors, and FDOT public transit managers. Idea requests also were sent to all public transportation-related committees of TRB/APTA committee chairs, and national

listservs. From the submission of more than 100 different research ideas, the NCTR Advisory Committee provided assistance in selecting 5 core program and 10 research projects for funding in FY08.

Conclusion

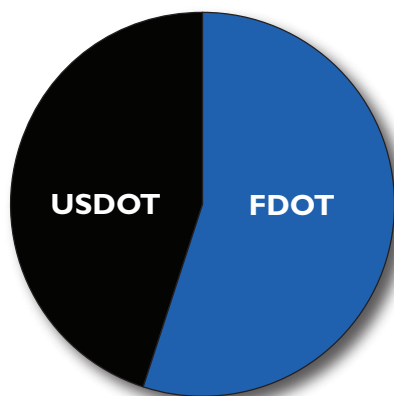
At the completion of its 8th year, CUTR's National Center for Transit Research continues to produce a large volume of high-quality research of practical value to public transportation agencies throughout the country. The results of the research are being effectively distributed through a variety of means, including new electronic techniques that allow fast and flexible access to the information NCTR is producing. The program is helping to cultivate the next generation of transportation professionals by providing opportunities for students who assist in the research being conducted. The vast majority of them are joining public and private sector transportation agencies upon graduation. NCTR continues to be excited about the possibilities of establishing an interdisciplinary transportation degree program that will attract even more students to the profession.

NCTR always has enjoyed a strong relationship with the Florida Department of Transportation and is leveraging UTC program funds through partnerships and contracts with transportation authorities and the Federal Transit Administration. The research faculty and students of NCTR look forward to contributing to the rising success of public transportation agencies throughout the nation.

Financial Summary

Figure 1 presents the funding sources for the 8th year of the NCTR program. Figure 2 shows the split of expenditures for the fiscal year based on the key program areas of the NCTR Program.

\$1,732,000 (45%)



\$2,152,000 (55%)

FIGURE 1:
NCTR Funding Sources

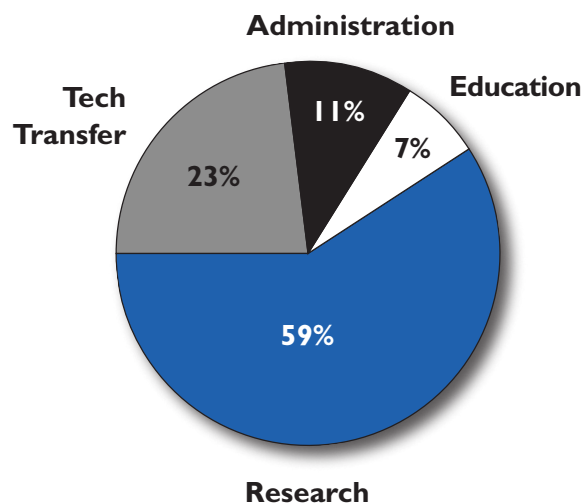


FIGURE 2:
NCTR Expenditures



Center for Urban Transportation Research