

FLOW

Moving People and Ideas



Center for Urban
Transportation Research
University of South Florida

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NCTR emphasizes transportation education

Numerous initiatives are under way to provide educational programs and activities to support the growing workforce development need in the transportation area. Recently, the two transportation certificates offered at the University of South Florida have been updated and continue to attract growing interest by degree seeking and non-degree seeking students.

The **Transportation Systems Analysis Certificate** provides an opportunity to advance one's credentials and knowledge in the field of transportation engineering. It includes extended knowledge in such areas as planning, analysis and design, all vital to transportation planners. Course offerings from Civil and Industrial Engineering provide a range of contemporary materials. Four courses (12 credits) are required to complete the certificate. The courses are offered on campus and via APEX distance learning. You can learn more about the certificate at: <http://www.outreach.usf.edu/gradcerts/>.

The curriculum for the **Interdisciplinary Transportation Graduate Certificate** provides a clear and concise foundation in the field. It includes extended knowledge in such areas as planning, engineering, and economics, all vital to transportation planners. Students take two courses from each program or

department, that is, two courses from Civil Engineering, two from Economics, and two from Public Administration. One course from each discipline is required, and one course from each discipline is an elective course, to be selected in conjunction with the certificate program advisor, to meet the requirements of the student's major and/or interests. You can learn more about the certificate at: <http://www.outreach.usf.edu/gradcerts/certinfo.asp?ccode=XTP>

The demand for transportation professionals appears to be as strong as at any time in the past



few decades. We continue to see regular requests, especially for experienced professionals with strong analytic skills and proven workplace productivity. There appears to be a growing recognition of the impending talent drain challenge as baby boom era professionals near retirement. In addition, the very busy workloads of existing professionals make it increasingly difficult for them to avail themselves of continuing education and training opportunities. Hopefully, education and training will become recognized as critical productivity enhancement tools for transportation professionals.

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National Center for Transit Research

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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 USDOT, with matching funds from the Florida Department of Transportation.



Director's message

As this edition of *FLOW* is being prepared, gas prices in the United States have risen to record highs, even when inflation adjustments are made to the prices paid in the 1970s during the oil embargoes. Gas at the pump is now well over \$3 a gallon, and summer vacation driving hasn't started. Who knows what could happen to prices in the event hurricanes destroyed oil rigs or refineries, or if tensions in the Middle East caused disruption of oil supplies. Is \$5 a gallon gasoline really an unrealistic scenario as the developing countries in the world significantly increase their demand for energy?

It seems almost silly as the price of fuel escalates at a furious rate that there has been resistance in the past few years to modest increases in gas taxes that could have generated revenues that could pay for alternative means of travel. Those modest increases in gas taxes would by now be lost as "white noise" in the total cost of a gallon of gas. While no one actually likes paying taxes, if there is a visible benefit that results from taxes that provides a noticeable difference in the quality of life in a community, it is likely that there would be greater acceptance. The passage of the majority of local referenda for transportation improvements seems to bear that out.

The theme of the National Center for Transit Research is "to enhance the performance and relevance of public transportation and alternative forms of transportation in urban areas." When this theme was adopted, we realized that only a small portion of all trips are taken on public transportation and, in most communities, it is not the mode of first

choice. However, the attractiveness of public transportation and alternative forms of transportation is increasing in the face of rising gas prices and higher levels of traffic congestion. It is a good time to be associated with the subject of public transportation. Our center is well known for its work on issues dealing with "traditional" transit such as buses, trains, and paratransit vehicles.

We are also the national leader in the field of transportation demand management (TDM), which tries to help modify the demand for highway capacity through a variety of means such as carpooling and vanpooling, bicycling, telecommuting, flex hours, and managed lanes. Among other things, this edition of *FLOW* features summaries of recent research that quantifies the benefits of TDM to the overall transportation system in measures that everyone understands. We also note the live "netcasts" that our TDM program coordinates that enable hundreds of professionals and students from around the country to share the latest advances in knowledge about how to make TDM more effective.

We hope you enjoy this second edition of *FLOW*, and take advantage of the links to our newest reports.

Joel Volinski, NCTR Director



NCTR hosts TDM, other public transportation listservs

In the past couple of months, NCTR has established two new discussion forums (listservs). These topic-central forums bring like-minded transportation professionals together to exchange ideas, post questions, provide answers, and offer help on subjects relevant to that topic. These forums also store (or archive) previous exchanges and offer a means for searching for previous postings.

The Sustainable Transport Indicators listserv (sti@lists.cutr.usf.edu) advances the understanding of how transportation and sustainability relate and how transportation can contribute to achieving sustainability for economic growth, social equity, and a healthy environment. NCTR hosts this listserv as a courtesy to the Transportation Research Board's Sustainable Transportation Indicators Subcommittee of the Transportation and Sustainability Committee (ADD40).

Through the Parking Management listserv (parking@lists.cutr.usf.edu),

ideas, issues and experiences relating to parking management research as it relates to demand are shared. NCTR hosts this listserv as a courtesy to the Transportation Research Board's Parking Management Subcommittee of the Committee on Transportation Demand Management (TDM) (ABE50).

Subscribers are encouraged share ideas, issues and experiences relating to the development and use of sustainable transport indicators and are welcome to browse and read messages in the discussion forum and/or post questions, comments and replies. There is no cost to subscribe.

To subscribe, go to http://lists.cutr.usf.edu/read/all_forums/subscribe?name=sti

Questions about how to use these listservs should be directed to CUTR TDM Program Director Phil Winters, winters@cutr.usf.edu.

These topic-central forums bring like-minded transportation professionals together to exchange ideas, post questions, provide answers, and offer help on subjects relevant to that topic.

NCTR-Hosted Public Transportation Listservs

- **Bus Rapid Transit (BRT)** – discussion forum with 258 subscribers
- **Journal of Public Transportation (JPT)** – announcements sent by NCTR including calls for papers and availability of the online copies of NCTR's academic journal on public transportation
- **National Center for Transit Research (NCTR)** – announcements of new publications, conferences, etc. with 830 subscribers
- **Parking Management (Parking)** – discussion forum with 75 subscribers
- **Rural Transit Assistance Program (RTAP)** - discussion forum with 107 subscribers
- **Telework** – discussion forum with 258 subscribers
- **Transportation Demand Management (Transp-tdm)** – discussion forum with 1,125 subscribers

TRIMMS permits program managers and funding agencies like FDOT to make informed decisions on where to spend finite transportation dollars based on a full range of benefits and costs.

Economics of travel demand management: Comparative cost effectiveness and public investment

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, as well as disbenefits, resulting from emission reduction strategies for project selection and evaluation. The objective of this study was to develop a methodology that combines academic and practitioner experiences within a theoretical framework that truly captures consumers' price responsiveness to diverse transportation options by embracing the most relevant trade-offs faced under income, modal price 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 FDOT 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 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. 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. Future research could seek to enhance the model to include more of the internal benefits to employers (e.g., change in worker productivity, reduction in overhead, changes in employee retention, etc.).

A byproduct of this research effort that goes beyond the initial project objectives is the development of a structured approach to evaluate the impact of soft programs. Compared to the currently available soft program evaluations methods, the approach developed in the 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.

A copy of the final report is available at <http://www.nctr.usf.edu/pdf/77704.pdf>. For more information, contact CUTR Senior Research Associate Sisinnio Concas at concas@cutr.usf.edu.

NCTR's Strategic Theme

“To enhance the performance and relevance of public transportation and alternative forms of transportation in urban areas.”

Impact of employer-based programs on transit system ridership and transportation system performance

This study established a direct quantitative relationship between employer-based Transportation Demand Management (TDM) strategies and the performance of a transportation system. The study aimed to develop a methodology for measuring the impacts of employer-based TDM programs on the performance of a traffic network using measures universal to traffic operations staff, transportation planners, and decision-makers.

The study used a micro-simulation traffic model to simulate the effects of Washington State Commute Trip Reduction programs implemented by 189 employers in an 8.6-mile segment of I-5 in the Seattle downtown area. The current performance of the selected network with the actual volumes provided by the Washington State Department of Transportation was compared to that of a scenario with vehicle trips actually reduced by CTR programs at the worksites added onto the network. Performance measures analyzed included the spatial and temporal

extent of congestion, recurring delay, speed, and travel time. On the segment of I-5 in the study area, savings in AM peak delay due to CTR programs were 152,489 vehicle minutes and 17,297 vehicle miles of travel were reduced. Savings in PM peak delay were 169,486 vehicle minutes and 14,510 vehicle miles were reduced. Fuel saved in the AM and PM peak were 3,489 and 4,314 gallons, respectively.

The study showed that TDM programs have a significant impact on the operation of the transportation network. Further sensitivity analysis proved that even a small reduction in vehicle trips at worksites had a significant impact on the performance of the transportation network decreasing delay in vehicle-minutes by as much as 21.9 and 32.3 percent during the AM and PM peak periods, respectively.

For further information, contact CUTR Research Associate Nevine Labib Georggi at georggi@cutr.usf.edu. A copy of the final report is available at <http://www.nctr.usf.edu/pdf/77605.pdf>.

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Impacts of TDM on Corridor Performance for PM Peak

| <i>Performance Measures (Typical PM Period)</i> | | <i>3:00 -4:30 pm</i> | <i>4:30-6:00 pm</i> | <i>6:00- 7:15 pm</i> | <i>Total</i> |
|---|--------------------|------------------------|------------------------|------------------------|-----------------------|
| Delay Savings | | 52,893 veh-min | 102,931 veh-min | 13,663 veh-min | 169,486 veh-min |
| Congestion Reduction | | 47.2 lane-mi 15 min | 79.4 lane-mi 15 min | 16.3 lane-mi 15 min | 143 lane-mi 45 min |
| Average Speed Increase | | Up to 9 mph | Up to 11 mph | Up to 8 mph | Up to 11 mph |
| Reduction in Vehicle Miles Traveled | | - | - | - | 14,511 veh-min |
| Fuel Savings | | 1,161 gal | 2,545 gal | 607 gal | 4,314 gal |
| Emission Reductions | Hydrocarbon | 5.1 Kg | 12.7 Kg | 3.9 Kg | 21.7 Kg |
| | Carbon Monoxide | 361.3 Kg | 895.8 Kg | 288.0 Kg | 1,545.1 Kg |
| | Oxides of Nitrogen | 17.7 Kg | 39.1 Kg | 11.1 Kg | 67.9 Kg |

The panel of experts discussed how to provide rewards for changing travel behavior and use public resources cost effectively.

Do you get what you incent?

A virtual discussion on areawide commuter financial incentives

On April 25, 2007, the [Association for Commuter Transportation](#) (ACT) and NCTR hosted a “virtual discussion” with a panel of TDM professionals who have been providing areawide financial incentives across modes and/or who have mode-specific financial incentive programs. This event, led by co-moderators Donna Smallwood and Peter Valk, 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.

Presentations included:

- Vanpool Incentive Programs That Work! *by Cathy Blumenthal, King County Metro*
- Carpooling Makes \$ense in New Jersey *by Andrew Swords, New Jersey Department of Transportation*
- Rewarding the Right Behavior *by Rick Steele, NuRide*

The 72-minute streaming media recording of the presentations can be viewed at <http://streaming.cutr.usf.edu/asxgen/streamingfiles/clearinghouse/rewards.wmv>.

2007 NCTR GIS in Transit Conference

The National Center for Transit Research is pleased to announce the 2007 **NCTR GIS in Transit Conference** at the Embassy Suites-USF in Tampa on November 6-8, 2007.

Papers and presentations are being solicited by the Steering Committee. Authors and presenters interested in preparing a paper or presentation should visit www.nctr.usf.edu/gis to learn more about the topics and requirements for submittal. Themes being considered include:

- Managing Data
- Service Planning/Operations
- Stages for Developing Your GIS (case studies)



- Web-Based GIS
- Data Collection
- Transit Modeling Applications
- Mobile GIS and Transit Applications
- Census Data and Transit Planning
- Other GIS in transit topics

Submission deadline is July 16, 2007.

To attend the NCTR GIS in Transit Conference, register at www.nctr.usf.edu/gis.