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Moving People and Ideas

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There appear to be no obstacles presented in the federal tolling provisions to the implementation of a Bus Toll Lane project.

Prospects for Equity Sharing Between Transit and Toll Agencies

To meet growing trip demand in our urban centers, an evolution of highways from construction of general purpose "free" lanes to High Occupancy Vehicle (HOV) Lanes to High Occupancy Toll (HOT) Lanes is under way. There is little evidence of any instance in the U.S. where a toll agency and a transit agency have collaborated to finance a facility with the initial intent of using its excess capacity as a revenue source to either pay down the capital costs of the construction of a facility or as a revenue generator. The concept of Bus Toll Lanes has been developed by Joseph Waggoner, Executive Director of the Tampa-Hillsborough County Expressway Authority (THEA) in Tampa. To develop this concept further, several policy, programmatic, and regulatory questions required investigation.

NCTR undertook the project to garner some background on the issue, review and discuss various models of toll and transit agency partnerships, explore a hypothetical Bus Toll Lane (BTL) project, and summarize a review of federal and state issues that present opportunities and obstacles for the BTL concept.

Major findings of the study include that an explicit change to ensure that BTLs are considered fixed guideway transit facilities in the Federal Transit Administration statute and regulations would be the single most significant change that could pave the way for the implementation of Bus Toll Lanes. Anticipated resistance to any moves towards allowing BTLs to compete with other New Starts is understandable in light of the fierce competition for the limited funds. While there continues be a push for more intermodal cooperation, the current economic uncertainties and general stagnation of transportation funding levels can move policy makers to protect limited resources from what will be perceived by some as a "raid."

There appear to be no obstacles presented in the federal tolling provisions to the implementation of a Bus Toll Lane project, even if it involved an Interstate Highway. In fact, the SAFETEA-LU provisions on tolling appear to fully support the concept of the construction of Bus Toll Lane facilities. Unlike the HOT lanes, the BTL concept is based on the premise that there is no discounted, or free,

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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

The National Center for Transit Research strives to provide objective research results to operating transportation agencies and policy makers. We disseminate our many reports through a variety of means:

- Posting them on our website and making them available for free downloading.
- Distributing notices of the availability of final reports through listservs.
- Sending notice of final reports to other professional transportation organizations and asking them to provide links to the reports.
- Advising the media of the completion of research with the expectation/hope that they will report on the findings of the research.
- Presenting results of the research at professional committee meetings and transportation-related conferences.
- Conducting free live and recorded webinars.

We also are exploring the value of using social media to help distribute information on the availability of completed research. While we are confident that the information is helping the intended audiences, it is a challenge to determine just how extensively the research is being used. Most of our research is intended to benefit the entire public transportation industry, and by extension, the entire transportation system.

The research we conduct, funded by the U.S. DOT and the Florida Department of Transportation, usually is not conducted on behalf of a single beneficiary. Transportation agencies from all over the country might be using the results of our research, but they are under no obligation to inform us that they are using the information. We sometimes find out accidentally about how our research is being used through conversations or news articles. For instance, NCTR completed field research demonstrating the positive effects of Yield to Bus signals on the back of buses as they try to re-enter traffic from bus bays. Through reading articles from news services that collect stories on transportation, we learned that our study was the basis for Colorado's major transit systems equipping their bus fleet with lighting on the back of their buses, as recommended in our report.

In short, while we make every effort to distribute the results of our research, there is not a corresponding effort to advise us of how it is being used. Our challenge is to develop new practices that will help us document how our research results are being deployed. As always, whatever processes we develop will be shared with other University Transportation Centers throughout the country.

In the meantime, we ask you to please let us know how you have used any of our research. It is important to be able to document the value of research, particularly when it is funded by public entities. Please visit our website at www.nctr.usf.edu to review the titles of our 100+ completed reports and let us know if you have used the findings of these studies to improve your operations. Or perhaps you have participated in our webinars or listservs and have made changes to the way you operate based on information received in those forums—we would appreciate you letting us know. Please email me at volinski@cutr.usf.edu or click on the "Contact Us" link at www.nctr.usf.edu/feedback.htm to let us know how you have used any of our research, conference proceedings, listservs, webinars, or information in the *Journal of Public Transportation*. We look forward to hearing from you!

Joel Volinski
Director, National Center for Transit Research

Bus Toll Lanes—from page 1

passage for carpools or fuel-efficient automobiles.

The equity arguments for this approach are sound, but the public education involved in their explanation will be difficult. Reauthorization presents an opportunity to advance the BTL approach without a wholesale change to New Starts eligibility. The new authorization bill could contain provisions for applications for a limited number of proposals for the funding of BTLs that might include New Starts funding. This would provide an opportunity for a few projects to compete with other fixed guideway proposals and for the evaluation of those projects.

For Bus Toll Lanes to become a routine alternative for consideration in a state's toolbox of transportation solutions, the statutes of expressway authorities would need to be modified to allow them to construct, operate, and maintain public transportation facilities.

ACS Statistical Analyzer

Transportation planning in general and transit planning in particular have relied heavily on the commuting and socio-demographic data from the long-form survey of the decennial census at various levels of geography. While the short-form count will continue every 10 years, the long-form survey has been replaced by the American Community Survey (ACS). While providing more current information, ACS data represent serious challenges for transportation planning professionals to use them effectively. One of these challenges results from the fact that the precision of estimates from the ACS is significantly lower than the precision of estimates from the traditional decennial census long-form survey. This requires transportation planning professionals to explicitly take into account the precision of estimates from the ACS when they use these estimates either individually or for comparisons. Transportation planning professionals, however, face difficulties in overcoming this challenge:

- Estimates in published ACS tables at American FactFinder come with a margin of error (MOE) but without other measures of precision. This makes it difficult for transportation planning professionals to judge the usability of these estimates.
- Some estimates do not come with any measure of precision. While necessary statistical procedures and formulas are available in various documents from the U.S. Census Bureau, they are not easily accessible to many transportation planning professionals.
- When the procedures and formulas are accessible, they typically involve statistical procedures and formulas that many transportation planning professionals do not feel comfortable working with.

While providing more current information, ACS data represent serious challenges for transportation planning professionals to use them effectively.

The ACS Statistical Analyzer can be used to assess the precision of individual estimates or to compare pairs of estimates without the need to work directly with the statistical procedures and formulas involved.

The objective of this project was to develop a tool that helps transportation planning professionals overcome these difficulties in using ACS data. The target users are those who are familiar with the statistical concepts involved and with the measures of precision and their use, and are even capable of following the statistical procedures and formulas but do not want to go through these procedures and formulas by themselves.

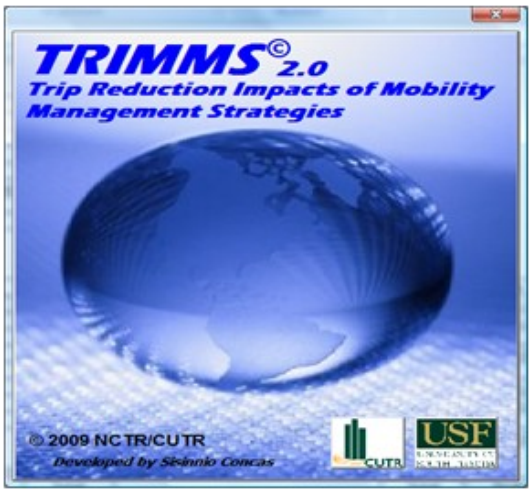
The resulting tool from the research project is the ACS Statistical Analyzer. It can be used to assess the precision of individual estimates or to compare pairs of estimates without the need to work directly with the statistical procedures and formulas involved. The tool is comprehensive and covers a full range of functions and sub-functions for transportation planning professionals to derive measures of precision in individual estimates and to compare estimates:

- To derive other precision measures for published ACS estimates at American FactFinder or estimates in the Census Transportation Planning Products (CTPP) for ACS data. Estimates from these two sources come with a margin of error (MOE) or up to 200 ACS estimates from the same table.
- To derive the precision measures for individual estimates that do not already have an MOE. These include published Census 2000 estimates, CTPP 2000 estimates, individual user-derived estimates from an ACS Public Use Microdata Sample (PUMS), and user-derived estimates from a Census 2000 PUMS.
- To derive the precision measures for new estimates obtained from two or more original estimates that already have an MOE. These estimates can be published ACS estimates, CTPP estimates, estimates whose precision measures are derived using Function B, or estimates whose precision measures are derived using another subfunction of this function.
- To compare pairs of two estimates that already have an MOE. The estimates to be compared may be published ACS estimates, CTPP estimates, estimates whose precision measures are derived using Function B, or estimates that are derived along with their precision measures using Function C.

The implementation of the ACS Statistical Analyzer is expected to reduce agency cost and lessen the technical barriers to dealing with the precision of ACS estimates when agencies use these estimates for transportation planning. These direct benefits, in turn, can lead to wider and more effective use of ACS data for transportation planning.

This project was conducted by Dr. Xuehao Chu at the University of South Florida through UTC matching funding made available by the Florida DOT. For more information, contact Dr. Chu at (813) 974-9831, *chu@cutr.usf.edu*.

Guidance for Customizing the TRIMMS© Model



The Federal Highway Administration's Congestion and Air Quality CMAQ) Improvement Program provides explicit guidelines to program effectiveness assessment and benchmarking. The program calls for quantitative analysis of benefits and disbenefits (i.e., emission increases) resulting from emission reduction strategies for project selection of congestion and emission reduction initiatives. In a partial attempt to quantify the net social benefits of congestion reduction strategies, an increasing number of state, regional, and local agencies are attempting to measure the benefits of transportation demand management (TDM) initiatives.

With funding from the Florida DOT and the U.S. DOT, NCTR recently developed the TRIMMS© (Trip Reduction Impacts for Mobility Management Strategies) model. TRIMMS© is a visual basic application spreadsheet model that estimates the impacts of a broad range of TDM initiatives and provides program cost effectiveness measures, such as net program benefits and benefit-to-cost ratio analysis.

This project expands the model capabilities and ease of implementation and provides the research and documentation necessary to help professionals use the model by selecting the appropriate cost parameters, providing referenced sources where such parameters can be obtained, and by offering general guidance on how to incorporate data already at their disposal.

The objective of this project was to further enhance TRIMMS© by allowing regional customization of default benefit and cost parameters. Other objectives include updating the model to a new version and provide the documentation to help professionals use the model and offer guidance on how to incorporate area-specific input data.

The new model version, TRIMMS© 2.0, presents notable improvements. Specifically, the model now offers default parameters for 85 metropolitan statistical areas. TRIMMS© allows input customization and the ability to clearly differentiate between analysis at the regional and employer-site levels.

Recognizing that there is uncertainty in the value of inputs such as cost of accidents, the model now includes a

TRIMMS© 2.0 offers default parameters for 85 metropolitan statistical areas and allows input customization and the ability to clearly differentiate between analysis at the regional and employer site levels.

sensitivity analysis component. This feature is not present in any other currently available spreadsheet application of this kind. Sensitivity analysis can help practitioners estimate the probability that program benefit-to-cost ratios will at least be greater than some predetermined benchmarking value. This feature allows conducting TDM evaluation to meet the Federal Highway Administration Congestion and Air Quality (CMAQ) Improvement Program requirements for program effectiveness assessment and benchmarking.

The model enhancements allow a wider range of default values needed for the analysis, specifying under what conditions the values can be considered reliable or appropriate. Furthermore, this research provides sample data collection and measurement methods to guide agencies that want to tailor input parameters to their areas. This will improve the ability of TDM practitioners to identify and put in place TDM programs that can produce the highest estimated social benefits.

This research project was conducted by Dr. Sisinnio Concas through matching funds provided by the Florida DOT. For more information, he may be contacted at (813) 974-7760, or *concas@cutr.usf.edu*.

NCTR Listservs	***Type***	***Subscribers as of 12/31/10***	***Percent Change since 12/09***
BFM-General (transit maintenance)	Discussion Forum	295	+14%
Bus Rapid Transit (BRT)	Discussion Forum	378	+2%
Journal of Public Transportation (JPT)	Announcement	443	+5%
National Center for Transit Research (NCTR)	Announcement	1,092	+11%
Parking Management (Parking)	Discussion Forum	257	+13%
Rural Transit Assistance Program (RTAP)	Discussion Forum	114	+21%
Sustainable Transport Indicators	Discussion Forum	189	+22%
Telework	Discussion Forum	350	+4%
Transportation Demand Management (Transp-tdm)	Discussion Forum	1,782	+8%
To subscribe to any of the above listservs, go to http://lists.cutr.usf.edu/read/all_forums			

L to R: U.S. DOT Deputy Secretary John Pocari, NCTR Student of the Year Enrique Gonzalez-Velez, CUTC President Steve Albert of the Western Transportation Institute, RITA Administrator Peter Appel.

NCTR Student of the Year 2011

Enrique Gonzalez-Velez

Each year, every University Transportation Center in the United States is asked to select a Student of the Year who has earned high grades, provided assistance in research, and exhibited a keen interest in professional development. This year, Enrique Gonzalez-Velez was selected from among several strong candidates as NCTR's Student of the Year.

Enrique is a Doctoral Candidate student in the Civil and Environmental Engineering Department at the University of South Florida. He is employed at USF's Center for Urban Transportation Research (CUTR) as a Graduate Research Assistant in the ITS Traffic Operations and Safety group and has worked with the NCTR for several semesters. Through his studies and work, he has developed an impressive set of credentials, worked on several safety topics, and has a solid track record of presentations and papers.

Prior to coming to USF, Enrique earned a Master of Science degree at the University of Puerto Rico at Mayagüez and received the Dwight David Eisenhower Transportation fellowship for a Hispanic Serving Institution. During his Ph.D. studies at USF, he received the Southeastern Transportation Center Outstanding Student Award for Region 4, the Anne Shanklin Brewer Scholarship from the Intelligent Transportation Society of Florida, and the Georgia Brosch Memorial Transportation Scholarship from CUTR.

In the past year, Enrique has assisted in the research of several NCTR projects, including Moving the Bus Safely Back into Traffic and Evaluation of Camera-Based Systems to Reduce Transit Bus Side Collisions. Both of these projects proved, through rigorous field testing, that accidents and traffic delays could be reduced through the use of new equipment and technology on transit buses. He presented the results of his research at two professional conferences in 2010 and presented the findings at the TRB Annual Meeting in 2011. He has been an active member of the ITE Student Chapter, serving in several officer positions. In addition, he is a Young Member of the TRB Committee on Visibility (AND40) and the Transportation Safety Council of ITE.

Enrique hopes to perform more research in transit safety and has a strong interest in the evaluation and implementation of new technologies that can be used to improve the operation and safety of the transit industry.

Thank you, Enrique, for your contributions—we look forward to your continued success in the field of transportation!

NCTR and URISA invite you to attend the 2011 GIS in Public Transportation conference on September 13-15, 2011, in sunny St. Petersburg, Florida. As with past conferences, this conference will help transportation professionals from public and private transportation entities by:

- Providing professional development opportunities
- Facilitating the sharing of resources and industry information
- Enabling peer-to-peer networking
- Learning about new vendor technologies

Conference participants will represent all areas of the public transportation industry, including rail, bus, BRT, TDM, etc. Introductory, intermediate, and advanced sessions will be offered and will be structured to provide interactive learning experiences that focus on applying skills and knowledge in the GIS public transportation environment in a wide variety of topic areas.

For additional information or to register online, visit the URISA website.

Application

- Asset Management—stops, stations, communications, routes/track, work orders, etc; bus stop inventory collection/management
- Transit Operations—scheduling, AVL, paratransit voice annunciation, ridership stats, routing, performance analysis, data validation, etc.
- Security and Safety—crime analysis, accident/safety analysis, emergency planning, disaster recovery, etc.
- Planning—service planning, TDM planning, Census data transit planning, transit-oriented development, demand studies (long-range forecasting, transit oriented development, etc.)
- Public Information—data presentation/cartography, trip planners, other public website services
- Other applications topics

Tools

- Software—Google/Microsoft and transit, open source and web-enabled GIS
- Data Collection—Automatic Passenger Counters (APCs), GPS, mobile GIS
- Other Tools topics

Data

- Data Modeling—transit modeling applications
- Data Standards—transit data standards
- Data Sources—American Community Survey, LED (Longitudinal Employment Dynamics) Data, Census Data, National Household Data Survey
- Other Data topics

Management & Policy

- Enterprise Architecture—implementation issues
- GIS and IT management topics
- FTA/Census/FGDC programs/priorities—Intelligent Transportation Systems, Title 6, NTD Data
- GISP Program
- New Starts Program
- Other Management & Policy topics

This is the only conference in the country dedicated to GIS in public transportation. Participants in the past have come from all over the country and the world. We hope you can help advance the use of the many applications of GIS through your participation.

For additional information or to register online, please visit the URISA website.

Ongoing NCTR Projects

- An Assessment of Public Transportation Markets Using NHTS Data (Chu, CUTR, 77920)
- Improving Value of Travel Time Savings Estimation for More Effective Transportation Project Evaluation (Perk, CUTR, 77921)
- Project UCARE: Uniform Cost Accounting and Reporting Elements for TDM (Winters, CUTR, 77922)
- Exploring Opportunities to Expand Public Transportation Services in Florida through Potential Private Sector Participation: Phase I – Analysis of Contracting for Fixed Route Bus Service (Reich, CUTR, 77923)
- Florida Bus Maintenance Staffing Practices (Goodwill, CUTR, 77924)
- Exploration of Transit's Sustainability Competitiveness (Polzin, CUTR, 77925)
- Enabling Cost Effective Multimodal Trip Planners through Open Transit Data (Hillsman, CUTR, 77926)
- Tracking Costs of Alternative Fueled Buses in Florida (Reich, CUTR, 77927)
- HSR Station Area Access (Gregg, CUTR, 77928)
- Expanding the Google Transit Data Feed Specification to Support Operations and Planning (Catala, CUTR, 77902)
- Development of a Program Assessment Instrument for the Certified Transit Technician Program – Phase One (Reich, CUTR, 77911)
- TBEST Model Enhancements – Parcel Level Demographic Data Capabilities and Concepts for Park-and-Ride Modeling (Polzin, CUTR, 77801)
- Dynamic Travel Information – Personalized and Delivered to your Cell Phone (Barbeau, CUTR, 77804)

NCTR Projects Completed in FY 2011

- Travel Assistant Device – Deployment to Transit Agencies (Barbeau, CUTR, 77904)
- Assessing Air Quality Impacts of Managed Lanes (Stuart, Environmental Engineering, 6402-1041-00)
- Developing a Framework for a Toolkit for Carbon Footprint that Integrates Transit (C-FIT) (Hendricks, CUTR, 77909)
- Moving the Bus Back into Traffic – Phase 2 (Lin, CUTR, 77910)

Information on NCTR research projects and contact information for principal investigators can be accessed at www.nctr.usf.edu/list_of_projects.html or by calling (813) 974-3120.

Graduate Certificate in
Transportation Systems Analysis

The curriculum of the Graduate Certificate in Transportation Systems Analysis, offered through the Center for Urban Transportation Research in USF's College of Engineering, 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. Coursework should be completed in three years.

Application Process

This certificate is offered fully online or on campus. A total of 12 credit hours is required for those who are engineering majors. Applicants must hold a bachelor's degree with a 3.0 GPA from a regionally accredited institution. In addition to the application forms, please submit:

- Official transcripts. International students must provide certified transcripts showing that the U.S. equivalent of the bachelor's degree has been earned.
- A resume.
- A 250-word letter of interest stating your objectives in pursuing this course of study.
- Standardized tests are not required.

Registration Process

Consult with the certificate program advisor and obtain an electronic course permit if necessary. Go to OASIS, USF's on-line registration system, and follow the directions given online.

OASIS: http://usfonline.admin.usf.edu.

Required Courses (12 credits of required courses must be selected from the following eligible courses*:)

- TTE 5205 - Traffic Systems Engineering
- TTE 6315 - Transportation Safety
- TTE 6270 - Intelligent Transportation Systems
- TTE 5501 - Transportation Planning & Economics
- TTE 6507 - Travel Demand Modeling
- TTE 6651 - Public Transportation
- TTE XXXX - Transportation Network Analysis
- TTE 6835 - Pavement Design
- EIN 5322 - Principles of Engineering Mgt.
- EIN 6934 - Special Industrial Topics I: Supply Chain/Logistics
- EIN 6455 - Project Management

**Courses listed are 3 hours each, except Supply Chain, which is 1-3 hours.*

Elective Courses

None required.

Department Contact

Steve Polzin, Ph.D.
Graduate Certificate Director
CUTR, USF College of Engineering
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Download a certificate application from

www.outreach.usf.edu/gradcerts/admissions.asp

or contact

USF Office of Graduate Certificates
4202 E. Fowler Ave., SVC1072
Tampa, FL 33620
(813) 974-2442
Fax: (813) 974-8031
E-mail: gradcerts@admin.usf.edu

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