



NCTR

NATIONAL CENTER for
TRANSIT RESEARCH

**Program Progress Performance Report
for University Transportation Centers
National Center for Transit Research (NCTR)
University of South Florida
a Tier I Livability University Transportation Center**

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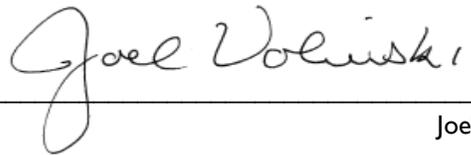
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Signature of Submitting Official: _____



Joel Volinski, NCTR Program Director

NCTR PROGRAM PROGRESS PERFORMANCE REPORT

REPORTING CATEGORIES

1. ACCOMPLISHMENTS: What was done? What was learned?
The information provided in this section allows assessment as to whether satisfactory progress has been made during the reporting period.

This PPPR for NCTR's Livability UTC grant, covering the period from April 1, 2015 to September 30, 2015, represents the fourth six month report. Some projects are still in the phase of being placed under contract with the partners of the consortium, but clear progress is being made with the grant as reported below.

Accomplishments

1. What are the major goals and objectives of the program?
2. What was accomplished under these goals?
3. What opportunities for training and professional development has the program provided?
4. How have the results been disseminated? If so, in what way/s?
5. What do you plan to do during the next reporting period to accomplish the goals and objectives?

1. *What are the major goals of the program?*

NCTR proposes to conduct research leveraging the strengths of its members in all forms of public transportation, transportation demand management (TDM), and non-motorized transportation. Public transportation and transportation demand management (TDM) make livable communities possible; indeed, we regard them as prerequisites to communities being safe and livable. In terms of transportation and the development of community, people cannot truly experience their communities if they are always insulated from them while in their private vehicles.

The NCTR consortium has a large, stable, multidisciplinary team with extensive experience in transportation research and UTC participation, enabled by dedicated full-time research faculty. Our proposed research addresses USDOT's goal of supporting Livable Communities as well as environmental sustainability and safety. Our research addresses many of the objectives of the USDOT Strategic Plan section on Livable Communities:

- To help improve the performance of, and passenger experience with, public transportation to help increase ridership and mode share.
- To reduce motorized trips by developing tools and policies to improve facilities for pedestrians and other non-motorized modes of travel.
- To improve access to transportation for people with disabilities, older adults, and low-income populations.
- To improve the relationship between land use and transportation and develop

multimodal networks to serve communities.

- To promote market-based strategies and information technologies to manage demand on congested roadways.

The research activities proposed by NCTR will be undertaken through collaboration among the four universities, with student research assistants involved in every project undertaken.

Table 1 – Performance Metrics for Research

Measure	Methods/Sources for Tracking
NCTR papers and research reports published	All reports posted to NCTR website; papers monitored quarterly
Presentations of NCTR research results at professional academic and industry association conferences	Quarterly PI reports on presentations
NCTR reports downloaded from NCTR websites	Google analytics
Students participating in NCTR research projects	PIs required to maintain statistics
NCTR awards and distinctions received	Faculty reporting of awards/distinctions
Customer satisfaction surveys by NCTR research partners	All partners complete satisfaction surveys
NCTR citations in other professional papers/media	Google Scholar/Publish or Perish software
Number of patents issued based on NCTR research projects	U.S. Patent Office, USF Technology Transfer Office
Policies/practices changed as a result of NCTR research	Responses to inquiries from NCTR website

NCTR will measure its leadership through the number of national professional committees that our consortium members lead, the number of significant roles our research faculty play in forums designed to identify transit research needs, the number of professional development workshops and conferences for which we develop programs, the number of presentations and papers published, and the research agendas prepared in consultation with FTA and state DOTs. Faculty members maintain documentation of these activities.

The most significant workforce development initiative funded through the grant will be to enhance the NCTR Graduate Assistant Research Program. NCTR will fund a targeted recruitment campaign aimed at attracting domestic students who are interested in pursuing a master's degree in Civil and Environmental Engineering with a focus on public transportation, with particular effort paid to attracting minority and female candidates.

The grant will be used to create an interactive exhibit at Tampa's Museum of Science and Industry (MOSI) near USF. This exhibit will be designed to interest primary and secondary school students in learning more about alternative forms of transportation and how they can make their communities more livable.

The goals for workforce development and education that were included in the NCTR application that was approved by OST-R include:

Measure	Methods/Sources for Tracking
Number of students who graduate from transportation-related programs or worked on NCTR projects and placement in industry	Reports from respective universities sent to NCTR Director at completion of each semester

Number of students to serve as interns or technical assistants to transit agencies within proximity of consortium members	Reports from respective universities sent to NCTR Director at completion of each semester
Number of students who participate in public transit courses	Reports from respective universities sent to NCTR Director at completion of each semester
Number of people participating in training programs offered by consortium, contact hours, and how they have responded to training program customer satisfaction surveys	Attendance to be recorded at all training sessions; evaluations of all training programs; information forwarded to NCTR for compilation
Number of transportation-related courses offered that were taught by faculty and/or teaching assistants associated with NCTR	Reports from respective universities sent to NCTR Director at completion of each semester
Number of students participating in transportation-related projects funded by grant	Reports from respective universities sent to NCTR Director at completion of each semester
Number of graduate students supported by grant	Reports from respective universities sent to NCTR Director at completion of each semester
Number of students supported by grant who received degrees	Reports from respective universities sent to NCTR Director at completion of each semester
Number of attendees at MOSI Exhibit	Visits recorded through interactive exhibit

In regards to technology transfer, the goals included in the grant application include:

- The continuation of support for a number of clearinghouse and information centers including the National TDM and Telework Clearinghouse, the National Transit Safety Research and Assistance Center, the GIS in Transit Clearinghouse, the Advanced Energy Transit Portal, and a new clearinghouse dedicated to collecting information on the experience public transit agencies are having in efforts to coordinate with transportation network companies.
- The continued publishing of the Journal of Public Transportation
- The development of patents and licenses for location aware software applications that help all users to better navigate their transportation system and services
- The management of numerous Listservs that allow for the easy and free exchange of information among over 5,000 professionals and students in the nation and the world
- The sponsoring of bi-weekly webinars featuring the results of research from not only NCTR members, but other UTCs as well
- The development and management of a bi-annual GIS in Transit Conference co-sponsored by TRB to be held in Washington, DC

What was accomplished under these goals?

This Livability grant was received from OST-R on September 30, 2013. This grant overlaps a very active transit-focused UTC grant that was awarded in 2012 and is still being utilized, but activity associated with the Livability grant is increasing as the transit-focused grant is nearing completion. Projects on the federal side of the budget have been established for both USF and Texas A&M as listed below, while the federally funded projects to be done by FIU and UIC will be started in the next reporting period:

Federal Projects in the NCTR Livability UTC Grant

Program Administration

Center Director

Teleconferences

Website Services

Transit GIS Conference and Clearinghouse

National Telework/TDM Clearinghouse

Transit Safety Research and Technical Assistance Institute

Advanced Transit Energy Portal

Travel for Presentations

Journal of Public Transportation - Publishing of the Journal of Public Transportation is now in its 18th year, supported through the years by UTC grants and now by the UTC Livability Grant, as another successful knowledge sharing/technology transfer project. Two editions of the Journal of Public Transportation were produced and released on a quarterly basis during this reporting period. Sixteen peer-reviewed and professionally edited papers were included in these two editions. In addition, discussions were completed with the University of South Florida to have the Journal produced only in digital form, with the first such edition published in this format in March, 2015. NCTR website and Scholar Commons page (host of NCTR's Journal of Public Transportation) has had an approximate 9% growth in pageviews (approximately 125,000) and a 10% increase in unique pageviews (~101,000).

Beginning in March 2015, over 400 articles and full text issues of the Journal of Public Transportation were moved to ScholarCommons <http://scholarcommons.usf.edu/jpt/> to increase the Journal's exposure and increase the number of downloads of the articles. From March through September 2015, nearly 16,000 articles have been downloaded.

The top 10 JPT articles for this period:

1. A Worldwide State-of-the-Art Analysis for Bus Rapid Transit: Looking for the Success Formula
2. Citizens or Customers? Transit Agency Approaches to Community Engagement
3. Bike-sharing: History, Impacts, Models of Provision, and Future

4. Factors Influencing Young Peoples' Perceptions of Personal Safety on Public Transport
 5. A Scientometric Analysis of Public Transport Research
 6. Measuring Passenger Loyalty to Public Transport Modes
 7. An Analysis of Commuter Rail Real-Time Information in Boston
 8. Effects of Light-Rail Transit on Traffic in a Travel Corridor
 9. Use of Statistical Process Control in Bus Fleet Maintenance at SEPTA
 10. A Cautionary Tale of Two Streetcars: Little Rock's River Rail and Tampa's TECO Line
-

In addition to these ongoing projects funded through NCTR, a number of projects were established or completed during this reporting period using federal funding:

Evaluation of HART MetroRapid BRT - This report was completed in August 2015. It is a limited scope evaluation of the MetroRapid's first two years of operation. The MetroRapid represents Hillsborough Area Regional Transit's (Tampa, Florida) first foray into bus rapid transit. Built at a total cost of \$34.75 million, or \$1.98 million per mile, it is at the low end of the cost spectrum for BRT projects. MetroRapid includes several key BRT features such as branding of the stations and buses, increased station spacing, ticket vending machines at 12 of the 59 stations, and transit signal priority (TSP). The MetroRapid averaged 48,666 riders per month in its first two years. Total annual ridership grew 3 percent between the first and second year, which was the same growth rate as the rest of HART's fixed route system. Most passengers board and alight between Marion Transit Center and University Area Transit Center. Ridership drops off significantly between UATC and the north end of the line at Hidden River Park and Ride Lot. The MetroRapid is 10 minutes faster than the parallel Route 2. Consequently, many Route 2 customers have switched to the MetroRapid. Despite that, there has been a 10 percent net gain in transit riders on the Nebraska Avenue corridor since the MetroRapid began. Even with the TSP, traffic signal delay accounts for 21 to 24 percent of its end-to-end travel time. Much of the signal delay is occurring at intersections where the TSP is not activated. Providing TSP in that section of the route could make the service more attractive.

Impacts of BRT Access on Residential Properties – This project was established as a joint project between the National Center for Transit Research and the National Institute for Transportation and Communities. The project will review whether having nearby access to Bus Rapid Transit Service has a positive, negative, or neutral effect on the value of residential properties as has often been shown to be the case with proximity to light rail and commuter rail stations.

USF Sustainable Cities Initiative – This project will build on the great success of similar programs established initially in Oregon where a wide range of faculty and student resources from USF

will be brought to bear on a community that is willing to partner with the university to examine a multitude of municipal issues dealing with the environment, public services, complete street issues, municipal water services, and anything else of interest to the university representatives and the city partner. The availability of relatively low cost but highly energetic and innovative students will provide observations and recommendations not typically thought of by municipal staff. NCTR faculty have led the effort to establish the program and are likely to select the first community to work with during the next reporting period.

Regional Transit Service Integration – This project has been identified by the University of Illinois at Chicago and will be put under contract in the next reporting period. The project will review the big picture of how greater coordination and integration among the various transit service providers in the Chicago area can result in greater efficiencies, improved service, and possibly expanded service.

Exploring Transit's Contribution to Livability in Rural Communities: Guidebook and Exercises - TTI established this project to be funded through federal UTC funds and matching funds: TTI researchers are assisting transit agencies to conduct rider surveys to create a baseline of information about the characteristics of riders and services, and factors related to livability and existing rural transit services (i.e., type, ridership characteristics, cost, funding resources) will be evaluated to determine how livability goals of each community relate to rural transit service. TTI researchers will assist local stakeholders to conduct public opinion surveys about livability, transit, and willingness to pay. TTI will develop a guidebook and exercise materials that will be of immediate benefit to transit agencies, rural communities, and policy makers in their efforts to engage in local dialogues. TTI researchers will document best practices via a recorded webinar question-and-answer session. TTI will present research findings at national professional meetings and through NCTR's webcast series. The scope for the project was completed, and the literature review and case study selection is expected to be completed by the next reporting period.

Safe and Accessible Pedestrian Facilities Inventory Model (SAPFIM): Planning, Design, and Development – This project has been identified by Florida International University as one that is of interest to the car-centered environment in the Miami, Florida area. It is expected to start in the next reporting period.

The Director of NCTR, Joel Volinski, met with vendors of the transit industry at the APTA Annual Meeting in September in Houston to solicit donations for the exhibit at the Museum of Science and Industry which will introduce youngsters to riding a bus. He also discussed receiving assistance from the Hillsborough Area Regional Transit Authority to assemble the simulated bus once parts arrive. While there appears to be considerable interest in supporting this project, the Museum of Science and Industry which is to host the exhibit is undergoing review for its financial stability.

Match projects funded by the Florida Department of Transportation

Linking Transit with Recreational Trails – This project is examining the many ways, through pedestrian and bicycle facility improvements, signage, and transit modifications that those people in low and moderate income communities in particular can have better access to park facilities that are within reasonable distance. The report will feature three case studies of communities in Florida, though the principles discovered will provide guidance to other communities as well. A final draft was prepared for review during this reporting period, with completion expected in the next reporting period.

Capturing the Benefits of Complete Streets – This project was completed just prior to this reporting period, but had been counted as part of the Transit Focused UTC grant until recently, hence it is included in this report. Anecdotal information indicates that private investment and property value increases are associated with featured Complete Streets projects. However, to date, little research has been done to confirm these benefits. Much of the relevant literature focuses on very real and important improvements to the safety of all who use Complete Streets: pedestrians, bicyclists, transit users, and auto users. This work contributes to a small but growing body of literature that associates the implementation of Complete Streets projects with increased economic activity such as increased property values, tax collections, and increased business activity (such as new businesses and an increase in jobs). This work began by reviewing background information related to Complete Streets and examining how such projects may be evaluated. A set of case studies was identified, which included locations where Complete Streets projects had been recently implemented, but also that had been in place long enough to assess any changes in economic activity. The case studies are diverse, including a beach community, a smaller-area business district, and a larger city that included a major transit investment. Findings indicated that, despite the recent economic downturn, the Complete Streets performed well, demonstrating maintained and enhanced economic activity, often outperforming other nearby areas and their cities as a whole. This work showed that the benefits of Complete Streets projects can be numerous and expected to include enhanced economic activity.

Improving Safe Access to Transit through Trip Planning - The purpose of this research is to facilitate the ongoing collection of information about potential areas of multimodal service and infrastructure improvements from the public that can be easily shared with transit agencies, departments of transportation, and city and county governments. This research will enable the capture of various types of data from actual users of public transportation via a real-time transit information system. Using this data, transit agencies, departments of transportation, and city and county government will be able to better target improvements to bike and pedestrian infrastructure for access to transit based on actual transit use and issues reported by the general public. This project will modify a real-time transit information tool, based on prior research conducted for FDOT and the recent deployment of OneBusAway by Hillsborough Area Regional Transit (HART) (<http://tampa.onebusaway.org/>), to collect information from the general public that can aid in the identification and prioritization of infrastructure and service improvements. This technique of collecting data from users of a system is typically referred to

as “crowdsourcing” information. The first five tasks of this project are now complete including:

Task 1. Review existing crowdsourced data collection systems

Task 2. Prepare for expansion of OneBusAway to a new agency

Task 3. Design and implement software to collect data from OneBusAway users

Task 4. Design and implement software to receive and visualize data from OneBusAway users

Task 5. Deploy and test OneBusAway with data collection software for the participating agencies. The project is expected to be completed during calendar year 2016.

Community2Go! Pilot of a Community-Based Voluntary Travel Behavior Change Effort - The CUTR TDM Team is conducting a pilot project funded by the Florida Department of Transportation’s Central Research Office to reduce household vehicle miles of travel in the Tampa Bay area. A community-based social marketing (CBSM) approach is being used to encourage residents to make behavior changes, such as reducing single occupancy vehicle travel, increasing the frequency and distance of walking and bicycling trips, and increasing use of transit. Seventy-two households will be recruited for this project. Half of these households will receive standard information which is commonly distributed to individuals to encourage them to reduce their vehicle miles of travel. The other households will receive personalized travel assistance from community-based transportation coordinators (CBTC), whose role will be to speak with households about their current vehicle usage and guide households to make behavior changes. Members of the participating households will carry a cell-phone enabled with TRAC-IT, a GPS cell phone application developed to record travel behavior, for eight weeks to gauge the effect of receiving the standard information versus the personalized CBTC travel assistance on reducing vehicle miles of travel. Currently, the community-based transportation coordinators (CBTCs) are being trained to work with the households that will be recruited for this project. Additionally, recruitment of the 72 households that will be included in this project is underway, and the program website that will help encourage household travel behavior change is in the final development phase.

NCTR strongly believes in the value of establishing clearinghouses and technical assistance centers as part of its mission. These clearinghouses are typically funded through both federal and state matching funds through related projects. These centers allow practicing professionals to exchange information to help solve transportation issues in communities across the country. They also help to organize information so that it is readily available to people who are looking for information on a variety of issues dealing with transit and alternative forms of transportation. While the following description of activities for the TDM and Telework Clearinghouse is quite lengthy, it will provide a clear picture of just how active it is and how well used it is in the transportation industry throughout the United States. It is acknowledged as “the place to go” for all professionals dealing with methods to help reduce traffic congestion, vehicles miles traveled, and air pollution from vehicle traffic. The information gathered and shared by TDM program managers make them highly sought after speakers at transportation conferences. Research projects are certainly important, but the

following description of the activities of this clearinghouse will demonstrate that far more people benefit from what it engages in than benefit from the typical research project:

Under the National TDM and Telework Clearinghouse and the Florida TDM Clearinghouse (matching project funded by FDOT), NCTR provides technical assistance using a range of methods from fostering self-service to short-term on-site support as described below.

Listsers. NCTR manages the TRANSP-TDM listserv to allow commuter assistance programs, state departments of transportation, transportation management associations (TMAs), and the Clearinghouse to email their peers across the world to help answer questions and solve problems. The listserv membership stands at 2,471 active members (an increase of 46 members since the last PPPR report). The number of messages successfully delivered over the past six months is approximately 430,500 (an increase of 1,500 since the last PPPR report).

Other listservs hosted under this project with the most value to the Commuter Assistance Programs include Telework (424 members, an increase of 5), Best Workplaces for Commuters (190, an increase of 6), Best Workplaces for Commuters Champions (138, an increase of 7), parking management (433, an increase of 7), and sustainable transport indicators (483, an increase of 2).

NCTR hosts a number of other listservs supported by the Livability grant, including three new Listservs established during this reporting period (in italics below):

Listsers	Total Active Subscribers	Net Change in Subscribers	Established in
Bus Fleet Maintenance	417	12	Feb-08
Bus Rapid Transit	636	9	May-01
Florida Operations Network	90	31	Feb-13
Florida Rural Transit Assistance Program	107	14	Mar-07
Journal of Public Transportation	937	25	Dec-13
<i>Large Employers Council (new)</i>	28		<i>Aug-15</i>
Parking management research	441	29	Feb-07
<i>Substance Abuse Management (new)</i>	53		<i>Jun-15</i>
Sustainable Transport Indicators	485	7	May-07
<i>Transit Safety (new)</i>	135		<i>Jun-15</i>

Online TDM knowledge base. The Clearinghouse's online TDM knowledge base (KB) provides an intelligent self-service option by providing information on hundreds of frequently asked questions as well as case studies and examples. This approach provides a means to reduce the total number of basic inquiries or repeat requests that require personal attention. It also allows staff to quickly respond to inquiries drawing on the information in the KB. The objective is to be more cost-effective as the Clearinghouse seeks to handle more interactions by providing lower cost transactions with the KB's self-service feature. This reporting period had 851 searches and 40,618 answers viewed. The online TDM knowledge base (KB) provides an intelligent self-service option by providing information on hundreds of frequently asked questions as well as case studies and examples. This approach provides a means to reduce the total number of basic inquiries or repeat requests that require personal attention by staff. It also allows staff to quickly respond to inquiries drawing on the information in the KB. The objective is to be more cost-effective as CUTR seeks to handle more interactions by providing lower cost transactions with the KB's self-service feature.

Here are the 10 questions/answers that received the most hits over the past quarter:

1. Is there a rough dollar figure that I can assign to construction of a surface and garage parking space?
2. Can you share the "how to's" of carpool incentive programs?
3. Do you have job descriptions available for either a Marketing Manager or Outreach Coordinator?
4. How does IRS define "transit passes" for qualified transportation fringe benefits?
5. Is there an official ruling on whether someone who takes Amtrak as their regular commute mode to work would qualify for the commuter benefit?
6. Do more crashes occur in carpool lanes?
7. Do most programs allow overnight parking at Park and Ride lots or do they have automatic gates that close the lot after all buses run?
8. Do you have a sample of bus/shuttle satisfaction survey?
9. Is there an organization that produces effective citizen forums on transit improvements?
10. Seeking background research, strategies, tactics, and evaluation findings of efforts aimed at changing travel attitudes and behaviors at the community wide (vs. a specific employer worksite) and/or regional level (paraphrased).

On-demand short-term technical support and limited on-site technical assistance.

Activities this quarter include, but are not limited to:

- Assisted South Florida Commuter Services in identifying potential funding sources for electric vehicle stations on FIU campus
- Conducted training for reThink staff on qualified transportation fringe benefits
- Provided RideOn with survey questions to identify the barriers for commuters and their willingness to carpool or use other non-SOV modes
- Searched for any statutes that exempt employers, particularly universities and community colleges from promoting carpooling
- Advertised open positions for TBARTA Commuter Services
- Information on foldable bikes for Collier Area Transit
- Provided examples of employer surveys to City of Boca Raton
- Provide Commuter Services of Southwest Florida with estimated number of buses in District 1
- Participated in ACT Sustainable Real Estate Development Council conference calls
- Received 58 questions/topics received on TRANSP-TDM listserv (excludes 2 RFPs, 15 event announcements and 43 job openings)
 1. Auto Ownership Reduction
 2. Bicycle Education Module for Incoming College Students
 3. Bike Repair/Safety Clinics
 4. Bike Share Program on Federal Agency complexes
 5. BTS' National Transportation Statistics Updated
 6. Building entrance intercept surveys
 7. Carpooling/Uberpooling & Public Transit use
 8. Census Bureau Releases Commuting Report and Table Package
 9. CMAQ and gift cards
 10. CMAQ projects
 11. Community-based social marketing and ridesharing
 12. Commuting Behaviors in 2014
 13. Crash Prediction Method for Freeway Facilities with HOV and HOT Lanes
 14. Data for Housing Projects with No Parking
 15. Educating Renters/Homebuyers about Transportation Costs - What does it really cost to live here?
 16. Emergency Ride Home Programs - Liability Gap
 17. Farecard Integration into BikeShare Systems
 18. Foldable bikes
 19. Funding for TDM activities
 20. Suburban Ridematch Needle in the Haystack Problem

21. Hotel TDM
22. Impacts of Transportation Network Company (TNC) and Autonomous Vehicles webinar recording available
23. ISO Hip-Looking Portable Outdoor Bike Racks
24. Looking for Employer Transit Pass Marketing Strategies
25. Looking for ETC Training Class Curriculum
26. Looking for Examples of Work Site Commuter Hubs
27. Mode share question on our website
28. Patient transportation to and from cancer centers
29. Potential for parity for parking and transit-vanpool benefits
30. Qualified transportation fringe benefit rates for 2016
31. RE: CMAQ and gift cards - summary of responses
32. Reflective Paint Suggestions
33. Regional Variations in Statewide Marketing Efforts
34. Research Park connectivity
35. Responses | TDM Stock Photos
36. Responses Summary: Educating Renters/Homebuyers about Transportation Costs - What does it really cost to live here?
37. Rideshare Software: Benchmarking Study
38. Ridesharing Programs - Changes over the years
39. Sample TDM Program Marketing Plans
40. Seasonal reduction in bike commutes?
41. Seeking Interactive TDM exercise
42. Seeking Solutions for Short-term Parking Problem
43. shared employer shuttle systems
44. Smart Trips infographics?
45. Student Transportation Fee and Governance
46. Subsidy for privately-owned vanpools
47. suburban Ridematch Needle in the Haystack Problem
48. TDM measures for residential properties
49. TDM requirements - Financial Subsidies for new development
50. TDM Stock Photos
51. The End of Traffic
52. Tolling for Transit webinar recording now available
53. transit agency coordination
54. Transportation Trivia
55. Transportation Camp now on LinkedIn

- 56. TSP systems U.S. Fire Administration, Emergency Vehicle Safety Initiative, FA-336/February 2014
- 57. Vanpool Surveys
- 58. Verifying rideshare mode if Incentive/Rewards Program is open to the public

Best Workplaces for Commuters

Best Workplaces for Commuters is a program designed to encourage sustainable transportation innovation. During this reporting period it began the process of identifying employer worksites for a “Race to Excellence” Virtual Awards Ceremony. The awards recognize organizations who have taken exemplary steps to offer transportation options such as vanpool and transit benefits or telework and compressed workweek for their employees. The awards will be presented in December 2015. Best Workplaces for Commuters provides qualified employers with programs and services along with national recognition and an elite designation for offering outstanding commuter benefits, such as free or low cost bus passes. Employers that meet the National Standard of Excellence in commuter benefits, a standard established by the U.S. Environmental Protection Agency (EPA) and maintained by the National Center for Transit Research (NCTR), can become a member of Best Workplaces for Commuters. A full list of award recipients is shown on the [BWC website](#).

TDM Professional Development and Organizational Learning

The following report highlights the significant activities of the Florida Commuter Choice Training program and related activities.

Training

NCTR’s TDM program contributes significantly to professional development for practitioners in the field of commuter assistance programs. The course taught provide highly useful information that can be applied by program managers in their attempts to help reduce congestion and pollution, and in the process, improve livability of communities. Certification maintenance credits (CM) are awarded to members of the American Planning Association (APA) with the American Institute of Certified Planners (AICP) professional credential. Offering CM credits has proven to increase participation by providing the added incentive for planners to attend the training. AICP planners must obtain 32 hours of CM credits every two years.

This period saw the update of the following modules under the Commuter Choice Certificate:

- Introduction to Social Marketing
- Transit Service Options
- TDM in Land Development and Design
- Commuter Choice Support Strategies
- Carpool and Vanpool Options

- Bicycle and Pedestrian Issues

This year marks the third year of the Social Marketing in Transportation certificate. Due to overwhelming demand, we have a waiting list of participants even without any promotion outside of Florida. While some attrition is expected, we had more attrition (e.g., job changes, illness, workload travel restrictions, etc.) than previous years. Only fourteen of the nearly two dozen registrants completed the course.

- Social Marketing in Transportation – Overview and Orientation
- Conducting a Situational Analysis
- Defining the Problem, Identifying the Behaviors and Segmentation
- Understanding your Market via Formative Research
- Creating your Social Marketing Program Strategy
- Persona Development Class Activity
- Introducing the Social Marketing Plan
- Identifying Creative Solutions for Addressing Priority Group Needs and Behaviors
- Developing a Team Marketing Brief Class Activity
- Developing the Marketing Plan
- Testing the Concepts
- Preparing the Plan Class Activity

Netconferences

On July 14, 2015, Phil Winters conducted a webinar on the results of the TMA Evaluation Survey for the Association for Commuter Transportation's TMA Council members and friends.

On September 24, 2015, Best Workplaces for Commuters put the spotlight on GVF, a transportation management association (TMA) based in King of Prussia, PA with an hour long webinar. Earlier in 2015, GVF received a Gold Supporting Agency award from Best Workplaces for Commuters' 2014 Race to Excellence competition. GVF also is celebrating their 25th anniversary this year. Maureen Farrell, Assistant Director of GVF, presented on their successful marketing and outreach strategies as part of their "We Are TDM!" effort. She discussed their many creative efforts GVF uses to promote sustainability and transportation demand management and build diverse partnerships. GVF, she noted, is an active advocate for a full range of transportation solutions in order to serve their daytime population of over 600,000 people in their service area. She also highlighted some of the creative and fun approaches such as their "Commuter Olympics" challenge to employers. Ms. Farrell closed by highlighting their strategic marketing and communication efforts and signature events such as their Annual Sustainable Awards luncheon. The spotlight session attracted 66 attendees. The session was recorded and has received an additional 118 views. The recordings can be viewed at: <https://cutr.adobeconnect.com/p682pq6t1u6/> and download copies of the presentation at <http://www.bestworkplaces.org/wp-content/uploads/2015/09/Handout-BWC-Marketing-and-Outreach-Strategies.pdf>

Commuter Choice Courses Conducted This Period

Date	Module	Credits	Participants (Live)	Recording Views	Total Contact Hours
7/1/2015	Introduction to Basic Marketing – Part 3 of 3	1.0	14	26	40
7/22/2015	Transit Services – Part 1 of 3	1.0	4	43	47
7/29/2015	Transit Services – Part 2 of 3	1.0	10	18	28
8/5/2015	Transit Services – Part 3 of 3	1.0	10	26	36
8/12/2015	Incorporating TDM into the Land Development Process – Part 1 of 3	1.0	12	16	28
8/19/2015	Incorporating TDM into the Land Development Process – Part 2 of 3	1.0	9	28	37
8/26/2015	Incorporating TDM into the Land Development Process – Part 3 of 3	1.0	9	36	45
9/2/2015	Commuter Choice Support Programs - Part 1 of 2	1.0	6	51	57
9/9/2015	Commuter Choice Support Programs – Part 2 of 2	1.0	10	27	37
9/16/2015	Design Product Strategy: Carpool and Vanpool Options – Part 1 of 2	1.0	13	22	35
9/23/2015	Design Product Strategy: Carpool and Vanpool Options – Part 2 of 2	1.0	12	31	43
9/30/2015	Design Product Strategy: Bicycle and Pedestrian Issues – Part 1 of 3	1.0	12	30	42
TOTAL		12	121	354	475

The 12 sessions attracted a total of 121 attendees. The courses were recorded and received an addition 354 views. Therefore, we estimate there have been about 475 contact hours. One contact-hour represents one person who attends a 1-hour session.

We have also downloaded the 100+ netconference recordings stored on our previous vendor's servers and moved them to our YouTube channel. <https://www.youtube.com/user/NCTRCUTR>. Clearinghouse staff continue to participate in conference calls with the Association for Commuter Transportation on issues of public policy, TMAs, sustainability, vanpooling and telework.

The National Transit Safety Research and Technical Assistance Center has gained popularity quickly among those looking for the latest in improved transit safety techniques. Project managers continue to actively search for and post transit safety-related notices and informational pieces from FTA, NTSB, TRB, and other organizations.

Website Activity for the National Transit Safety Research and Technical Assistance Center has quadrupled since the last reporting period:

Total visits to website: 4,361

New users: 4,187

Most popular pages:

1. Federal Transit Safety Laws and Regulations
2. Transit Safety Research
3. Transit Training
4. State Safety Laws and Regulations

Country of origin and sessions per country:

Country ?	Acquisition		
	Sessions ? ↓	% New Sessions ?	New Users ?
	4,361 % of Total: 100.00% (4,361)	96.01% Avg for View: 95.18% (0.87%)	4,187 % of Total: 100.87% (4,151)
1.  United States	1,664 (38.16%)	92.61%	1,541 (36.80%)
2. (not set)	781 (17.91%)	99.87%	780 (18.63%)
3.  Brazil	358 (8.21%)	100.00%	358 (8.55%)
4.  China	187 (4.29%)	99.47%	186 (4.44%)
5.  Japan	126 (2.89%)	100.00%	126 (3.01%)
6.  Germany	115 (2.64%)	100.00%	115 (2.75%)
7.  Italy	92 (2.11%)	100.00%	92 (2.20%)
8.  Russia	83 (1.90%)	44.58%	37 (0.88%)
9.  United Kingdom	74 (1.70%)	100.00%	74 (1.77%)
10.  France	64 (1.47%)	100.00%	64 (1.53%)

- Weekly update to website with industry news, research, and other transit industry and research postings
- Provided updates on FTA MAP-21 related regulatory progress and activities, including issues related to WMATA and CTA
- Developed white paper: “Fatigue and distraction – pre-determinates for aggressive behavior and response from transit bus operators”
- Submitted fatigue paper to TRB (through TRB Task Force on Safety and Security and TRB Bus Committee)
- Developed and continue the maintenance of TRB’s Task Force on Transit Safety and Security website

In addition to managing the NCTR Transit Safety Center website, the program manager, as a member of TRB's Task Force for Transit Safety and Security, developed a website for the Task Force. Labor and expenses associated with this activity are attributed to the Transit Safety Center program. The TRBTSS is active and is being maintained and updated by project staff. The link for the website is: www.trbtss.org.

The NCTR Transit Safety Research and Technical Assistance Center also contributes significantly to workforce development through the training of practitioners from local transit agencies throughout the state of Florida. A listing of the courses taught during this reporting period through the Florida Transit Safety Network, established in partnership with NCTR, FDOT, and the Florida Public Transportation Association is provided below:

Florida Transit Safety Network – Training Courses Offered

Course	Dates	Participants	Contact Hrs
TSI Bus System Safety (FT00533)	May 11-15, 2015	20	800
Conflict Avoidance: The Art of Maintaining Control	June 1, 2015	53	77
Preparing for Triennial Reviews	June 2, 2015	40	58
Regional Transit Governance	June 2, 2015	19	28
Critical Topics in FDOT and FTA Program Compliance	June 2, 2015	73	219
4th Annual Florida Transit Safety Summit	June 3, 2015	92	736
SMS Principles for Bus Transit (FT00557) / Miami	June 15-16, 2015	13	208
SMS Principles for Bus Transit (FT00557) / Orlando	June 18-19, 2015	15	240
Risk Assessment for Transit Capital Projects	June 24-25, 2015	7	112
Total		332	2,478

Florida Transit Safety Network – Other Accomplishments

The Florida Transit Safety Network was engaged in dozens of activities with over 20 participating transit agencies in Florida, as listed below, though the most significant accomplishment during the reporting period was hosting the Transit Safety Summit at the Annual Florida Public Transportation Association Professional Development Workshop at which over 200 attended.

- Provided general program administration.
- Conducted teleconferences with FTSN committees and/or chairs including:
 - Distracted Driving Computer Based Training (CBT) subcommittee
 - Distracted Driving CBT call with FDOT Program Manager
 - Conference call with chair of Bus Operations and Passenger Safety Committee Chair, Stephen Berry (LYNX)
 - Conference call with Gainesville RTS on available video clips for use in the distracted driving CBT update
 - August 10, 2015, conference call with FTSN Training Committee
 - August 11, 2015, conference call with FTSN Operator and Passenger Safety Committee
 - August 17, 2015, conference call with FTSN Distracted Driving Committee
 - August 20, 2015, conference call with FDOT Project Manager to discuss Florida CDL/Medical Examination requirements
 - September 24, 2015, conference call with FTSN/FPTA Safety Awards Committee
- § Communicated with FTSN chairs/co-chairs to offer assistance in scheduling, organizing, and supporting committee meetings.
- Completed the development of the “Rule Chapter 14-90, FAC – A Review for You” computer based training module and posted to the Learning Management System. Link to course also emailed to FTSN listserv and placed on website.
- Updated Wireless Distractions Training Resource Program Computer Based Training (CBT)
- **Conducted Professional Development Workshop and Transit Safety Summit.**
- Conducted FTSN Transit Safety Summit planning conference call: May 27, 2015.
- Incorporated State Safety Oversight content to FTSN website: June 2, 2015.
- Conference call with Gainesville Regional Transit System staff to gather distracted driving video clips for use in the revised CBT and on the FTSN website: July 28, 2015.
- Conducted Florida Transit Safety Network sponsored *Statewide Transit Safety Summit* on Wednesday, June 3, 2015 (also counted as an FTSN quarterly meeting)
- FTSN 3rd quarter meeting – September 16, 2015
- Conference call with FDOT Program Manager to discuss FHSMV/CDL requirements webinar: July 15, 2015.
- Continued maintenance and update of the FTSN website: www.floridatsn.org. This included the addition of a State Safety Oversight tab.

- Created and now maintain new list serve for Florida’s fixed guideway transit systems/rail transit agencies.
- Maintained and populated FTSN listserv with upcoming events, reports/research document availability, and other important items of interest.
- Updated FTSN member and listserv contact information as needed.
- Updated FTSN committee list
- Continued to keep an open line of communication with both the FDOT Program Manager, transit agency personnel, and chairs/co-chairs of FTSN committees.
- Developed agenda and presentation materials for *Statewide Transit Safety Summit*.
- Coordinated travel, logistics, and content delivery for special speakers for *Statewide Transit Safety Summit*.

The Florida Transit Safety Network program also has a website that attracted 3,365 new users. The most active day drew 124 views. The most active page views were:

- o Home Page: 3,609
- o Training: 213
- o Regulations and Standards: 96
- o Summit 2015: 63
- o Fixed Guideway Transit: 57
- o Links: 36
- o Activities: 31

Another program developed jointly by the FDOT, CUTR, and the FPTA is the Transit Maintenance Analysis and Resource Center (TMAARC) which serves as a matching project to the Livability Grant. TMAARC provides transit technicians with quality training and information to facilitate their advancement in the public transit arena. TMAARC has developed into a nationally recognized bus fleet maintenance support resource for public transit agency bus technicians and maintenance managers throughout the state of Florida. Participants not only learn skills to keep up with the rapidly changing technology associated with transit buses, but are also able to earn an AA degree from the Hillsborough County Community College in the process of earning credits through the program. Of course, better maintained buses means more reliable service, improving livability and mobility in the communities served.

TMAARC – Training Courses Offered during this reporting period:

Course	Dates	Participants	Contact Hrs
DIM0834 Diesel Engine Diagnosis, Rebuild & Repair Technician (C2)	April 20-24, 2015	13	520
DIM0834 Transit Intermediate Electrical Systems Technician	July 20-24, 2015	13	520

TABE Test	August 11, 2015	15	45
608/609 Training	August 12-14, 2015	9	288
DIM0810 Transit Equipment Preventive Maintenance Technician	August 24-28, 2015	15	600
DIM0830 Transit Alternative Fuels System Technician	September 21-25, 2015	12	480
Total		77	2,453

Another program that is a match to the federal UTC grant is the Florida Transit Operator Trainer Training Program. The program provides standardized state and federal curriculum training to Florida's transit operator trainers. The program has grown to include a statewide transit operator trainer certificate program as well as an effective and proactive Florida Operations network. It works closely with the USDOT's Transportation Safety Institute to develop and offer transit training. During this reporting period, the following training was provided through this program:

Course	Dates	Participants	Contact Hrs
Managing for Performance - Safety , Customer Service, Conflict and Work Ethic: A Guide for Transit Operators	August 25-26, 2015	21	336

GIS in Transit Clearinghouse

Under the GIS in Transit Clearinghouse, the following activities were accomplished: The Clearinghouse hosted the 9th National Transit GIS Conference held in Washington, DC on September 1-3, 2015. The Clearinghouse assembled a conference planning committee to guide the program and evaluate conference presentation proposals. Over 80 abstracts were submitted for consideration. To promote the hands on/ applied nature of the conference the committee produced three pre-conference workshops. The first general session featured a presentation by a representative from the software company WAZE. WAZE, a mobile crowd-sourced traveler information application, presented on developments in crowd sourcing for public transportation. Over 165 professionals from all over the country and the world

registered and attended. Since this conference was moved from Tampa to Washington, DC, attendance has increased by 65% over prior years.

The Advanced Transit Energy Portal (ATEP):

Advanced Transit Energy Portal is an online information exchange and clearinghouse resource covering all aspects of adoption and operation of alternative fuel buses. Alternative fuels contribute to improved livability by reducing the amount of carbon released to the atmosphere and often reducing the cost of providing transit, allowing more service to be provided. ATEP was envisioned as a single-point source of theoretical and practical knowledge about transit vehicles with advanced propulsion systems. The website (www.AdvancedTransitEnergy.org) features articles in the following categories:

- agency news
- industry news
- events
- laws and incentives
- publications
- research results

In addition to article posts, the website also features data collection pages, allowing participating agencies to securely submit their fleet operations and cost data to CUTR for analysis of the field performance of alternative fuel vehicles. A number of Florida transit agencies are submitting their data through the website. Reaching out to major agencies outside of Florida will begin with the next reporting period. Progress in the past 6 months includes:

- Moved website to a different hosting service that improved website speed
- 38 new posts on the website
- Made a presentation about ATEP and its data collection tool to 15 transit agencies in Florida
- Continue tracking website hits through Google analytics. Based on the statistics report, over the past 6 months (since website traffic started being tracked) the website was viewed 3,445 times by 2,488 users.

Work on the research project entitled “**Evaluation of Automated Vehicle Technology for Transit**” was completed. This project was supplemented with funds made available by FTA through the National Bus Rapid Transit Institute at USF. The purpose of this report is to provide an overview of the state of automated vehicle (AV) technology in transit. The Florida Department of Transportation (FDOT) wanted to know what AV technology is currently available that could be used in transit with an eye towards possible demonstration projects. The report finds that the operational use of AV technology by transit in the U.S. has been limited to a few prototypes. With one exception, there are no immediate plans by bus

manufacturers to add AV technology to their vehicles. The exception was Volvo/Nova Bus. They are considering adding a bicycle/pedestrian warning system to their buses. It appears that for the moment any new demonstrations of AV technology in transit would involve significant engineering work and retrofitting of buses. However, this situation is likely to change as the automotive industry makes great strides in connected vehicle research and automated features that should trickle down to the bus manufacturers.

The Florida Transit Operator Trainer Training Program was fully supported by the Livability Grant during this reporting period as a matching project funded by the Florida Department of Transportation. Again, the description of activities is lengthy, but serves to demonstrate how engaged the program is with operating transit agencies and employees, particularly in the area of workforce development. The following activities were conducted during the reporting period:

Task- Administration

- General program administration, management, oversight, and monitoring.

Task- Program Marketing

- Updated (delete and add) Florida's public transportation professional's contact information
- Updated Program's website regularly to include news and upcoming training courses

Task- Monitor Training Audience

- Received, processed and filed participant registration forms
- Mailed registration confirmations, including training logistics information

Task- Develop Training Strategy

- Utilized information collected through the Training Needs Assessment Survey, FDOT, and transit agency requests to expand training calendar

Task- Development/Implementation

- Continued to keep an open line of communication with both the FDOT Program Manager and the transit agency personnel
- Continued to keep an open line of communication with USDOT Transportation Safety Institute and the National Transit Institute (email/telephone)
- Identified training locations, negotiated costs with independent trainers for training courses issuing purchase orders, and approving final invoices.
- Created full record course file folders for each training which includes a copy of the registration flier, registration forms, attendee list, purchase order, invoice, general correspondence, course evaluations and additional correspondence

Task- Produce Training Materials

- Provided copies of training materials and handouts to participants

Task- Training Delivery

- Hosted the following trainings for the Florida Transit Operator Trainer Training Program (FTOTT) from October 1, 2014 - March 31, 2015:
 - TSI's Instructors' Course in Bus Operator Training (January 26-29, 2015) Course delivered at CUTR with 18 participants representing 720 contact hours.
 - Managing for Performance – Safety, Customer Service, Conflict and Work Ethic: A Guide for Transit Operator Trainers (February 24-25, 2015). Course delivered at CUTR with 17 participants representing 204 contact hours.
 - Managing for Performance – Safety, Customer Service, Conflict and Work Ethic: A Guide for Transit Operator Trainers (February 26-27, 2015). Course delivered at CUTR with 16 participants representing 192 contact hours.
 - Transit Dispatch and Supervisor Training (March 3-4, 2015). Course delivered at Palm Tran with 13 participants representing 208 contact hours.
 - TSI's Supervisor Certification Course (March 23-27, 2015). Course delivered at CUTR with 21 participants representing 840 contact hours.

- Processed and paid training related expenses/invoices

- Coordinated and provided training facilities
 - Set up training facilities
 - Processed registrations
 - Marketed training courses
 - Provided training technical support to trainers and participants
 - Produced training materials
 - Distributed and reviewed course evaluations

- Development of "Florida Administrative Code (14-90) Review for You - A Course for Transit Operators," an e-Learning training course. Course has been completed and is now being designed to allow for utilization through the LMS.

Task- Target Results

- Disseminated electronic evaluations to both participants and the instructors
- These evaluations were reviewed by the project managers and kept on file. Evaluation feedback forms were provided to instructors on an as needed basis

Task- Onsite Technical Support

- Provided audio visual equipment for training courses
- Provided technical support and set up for onsite instructor(s)

Task- Learning Management System

- Managed, coordinated, and administered LMS

Task-Travel Coordination

- Coordinated travel for upcoming training course including, but not limited to processing travel authorizations, reserving hotel rooms, rental cars, etc.

Task- Travel Reimbursement

- Provided travel reimbursement for program participants to attend training.

The Florida Statewide Transit Technical Assistance and Training Program, a matching project funded by FDOT, was also active as part of the Livability grant with the following activities accomplished:

Task- Administration

- General program administration

Task- Program Marketing

- Monitored and maintained e-mail requests for training and technical assistance
- Coordinated, developed and distribution the monthly “Florida Transit Training” eblast
- Update (delete and add) Florida’s public transportation professional’s contact information
- Monitored and updated training offerings to CUTR, RTAP, Operator Training, FTSN, and other relevant website

Task- Monitor Training Audience

- Received, processed and filed participant registration forms
- Mailed registration confirmations including training logistics information (start time, end time, directions/maps, parking passes, parking instructions, hotel recommendations, etc)

Task- Development/Implementation

- Continued to keep an open line of communication with both the FDOT Program Manager and the transit agency personnel
- Continued to keep an open line of communication with USDOT Transportation Safety Institute and the National Transit Institute (email/telephone)
- Identified training location, negotiated costs with independent trainers for training courses issuing purchase orders, and approving final invoices
- Created full record course file folders for each training which includes a copy of the registration flier, registration forms, attendee list, purchase order, invoice, general correspondence, course evaluations and additional correspondence

Task- Produce Training Materials

- Provided copies of training materials and handouts to participants.

Task- Training Delivery

- Processed and pay training related invoices
- Coordinated and provided training facilities
 - Set up training facilities
 - Hosted the training courses
 - Processed registrations
 - Marketed the courses
 - Provided training technical support to trainers and participants
 - Produced training materials
 - Distributed and reviewed course evaluations
- Courses offered and provided included:
 - Transit Dispatch and Supervisor Training – April 28-29, 2015
 - Transit Dispatch and Supervisor Training – May 19-20, 2015
 - Organizational Dynamics and Career Development within Transit Agencies – June 1, 2015
 - Strategies for Successful Communication Outreach – June 1, 2015
 - State Management Plan – June 2, 2015

Task- Target Results

- Disseminated electronic evaluations to both participants and the instructors
- These evaluations were reviewed by the project managers and kept on file. Evaluation feedback forms were provided to instructors on an as needed basis.

Task- Onsite Technical Support

- Provided audio visual equipment for training courses
- Provided technical support and set up for onsite instructor(s)

Task- Learning Management System

- Manage LMS
- Coordinated with other FDOT training program managers to coordinate the selection of a LMS solution

Task-Technical Assistance Request

- In cooperation with FDOT's Central Office, performed technical assistance by developing a template of a Title VI Plan for FDOT sub-recipients to use in developing their own Title VI Plans
- Performed other technical assistance activities as directed by the FDOT project manager. Activities included support for FDOT District 3 regarding the Franklin County CTC and the development of support activities for Okaloosa County Transit.

2. How have the results been disseminated?

As noted earlier, the TDM Knowledge Base provided 851 answers to questions asked by members of the TDM Listserv, while over 400,000 messages were shared among members. Two editions of the Journal of Public Transportation were published containing 16 papers. Notification of the availability of the two new editions was sent via the Listservs maintained by NCTR/CUTR, reaching over 2,500 transportation professionals. Articles from those two editions have been downloaded over 1,000 times. Two research reports were completed during this reporting period and posted to the NCTR website. NCTR maintains an alerting service to almost 900 subscribers who ask to be advised when a new report is available.

3. *What do you plan to do during the next reporting period to accomplish the goals?*

The Editor of the Journal of Public Transportation will provide further guidance to prospective authors that the Journal is intending to have more of the papers be understandable to those practitioners who work in operating transit agencies, commuter assistance programs, and planning agencies. The Journal is being inundated with papers from other countries that are overly technical and beyond the capability of practicing professionals to benefit from. We plan to continue implementing the activities that are funded through the federal side of the grant, most particularly the clearinghouses and the Journal of Public Transportation. Additional webinars will be conducted featuring the results of NCTR research, as well as other research presentations that can be made by other UTCs. Projects associated with the technical assistance and training programs as described earlier will continue. The federally funded projects to be undertaken by Florida International University and the University of Illinois at Chicago will be authorized to start through the agreement with USF. TTI will begin Phase III of the project entitled "Exploring Transit's Contribution to Livability in Rural Communities: Guidebook and Exercises."

Work on creating the transit exhibit at the Museum of Science and Industry will continue with more contact established with vendor who can provide necessary components, parts, and technology. An updating of the GIS in Transit website will include presentations that were made at the conference held in Washington, DC in September 2015. NCTR's Student of the Year will be selected and supported to attend the CUTC Annual Awards Banquet in Washington, DC in January 2016. Efforts to attract new NCTR Scholars for the FY 2016 - 17 academic year will be made for two more such students who will work extensively on transit related research efforts in addition to completing their degree requirements.

2. PRODUCTS: What has the program produced?

Publications are the characteristic product of research projects funded by the UTC Program. OST-R may evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many research projects (though not all) develop significant products other than publications. OST-R may assess and report both publications and other products to Congress, communities of interest, and the public.

Instruction - Products***Publications, conference papers, and presentations***

As noted above, funds from the Journal of Public Transportation account were utilized to help pay for two editions of the Journal featuring 16 papers submitted from researchers all over the world. Two research reports were completed during the reporting period: (1) "Evaluation of the MetroHart BRT" and (2) "Capturing the Benefits of Complete Streets."

The amount of research done by the faculty at NCTR is significant with 33 full time research faculty members. The engagement they have through their Listservs, clearinghouses, and committee assignments keeps them well informed on a variety of issues in public transportation and transportation demand management that provides them the opportunity to put together presentations at a variety of state, regional, national, and international meetings where they are well known. The following 41 presentations were made during the reporting period based on research and communications funded through NCTR:

"A Strategic Statewide Approach to Safety Management – Florida," National Bus Safety Seminar

"The Setting: Bus Transit Safety in the US and Florida," National Bus Safety Seminar

"From Millennials to Uber to Autonomous Vehicles: How Demographics, Economics and Technology are Changing Transportation." Transtalk Lecture, Intermodal Transportation Student Organization, University of Minnesota, April 2015

"Evaluation of Camera-Based Systems to Reduce Transit Bus Side Collisions," Bus Safety Seminar, April 2015

"Moving the Bus Back into Traffic Safely: Signage & Lighting Configurations," Bus Safety Seminar, April 2015

"Transportation Demand Management in Florida," ITS, TDM, and Freight Logistics Workshop, May 2015

"Bringing the Bus into the 21st Century: Automated Avoidance Technologies," Bus Safety Seminar, May 2015

"Investigating Performance Improvements & True Costs of Alternative Fuel Buses in FL," APTA Bus and Paratransit Conference, May 2015

"The Evolution of Transit Ridership Forecasting Capabilities in Response to Changing Client Needs, Computing Capabilities and Data Availability," 15th TRB National Transportation Planning Applications Conference, May 2015

“From Millennials to Uber to Autonomous Vehicles: How Demographics, Economics and Technologies are Impacting Public Transportation,” Southeast Regional Transit Conference hosted by FTA Region 4, May 2015

“Lessons Learned in Transit Efficiencies & Revenue Generation,” Southeast Regional Transit Conference hosted by FTA Region 4, May 2015

“Travel Assistance Device - A Prototype Mobile Application to Increasing Mobility While Decreasing Paratransit Costs,” Southeast Regional Transit Conference hosted by FTA Region 4, May 2015

“Maintaining Transit Effectiveness Under Major Fiscal Constraints,” National Transit Institute Webinar, May 2015

“From Millennials to Uber to Autonomous Vehicles: How Demographics, Economics and Technologies are Impacting Public Transportation,” Central Florida Transportation Planning Group, May 2015

“Reducing Transit Assaults - A Modified Philosophy,” American Public Transportation Association Bus and Paratransit Conference, May 2015

“Energy in the Transportation Sector,” Tampa Bay Regional Planning Council, May 2015

“Impact of Driver Assist System on Bus Shoulder Operations,” Community Transportation Association of America, June 2015

“How New Technologies and Autonomous Vehicles May Change Public Transportation,” Webinar for the American Public Transportation Association, June 2015

“Forum on Transportation Network Companies & Autonomous Vehicles,” CPCU Society (Insurance Industry), St. Petersburg, Florida chapter, June 2015

“Maintenance Spotlight on Facilities and Vehicle Tracking,” Florida Public Transportation Association Professional Development Workshop, June 2015

“Implementing Technology in Community Transportation,” Florida Public Transportation Association Professional Development Workshop, June 2015

“Strategies for Successful Communication Outreach,” Florida Public Transportation Association Professional Development Workshop, June 2015

“Organizational Dynamics and Career Development within Transit Agencies,” Florida Public Transportation Association Professional Development Workshop, June 2015

“How to Make My Day (or not),” Florida Public Transportation Association Professional Development Workshop, June 2015

“Critical Topics in FDOT and FTA Program Compliance,” Florida Public Transportation Association Professional Development Workshop, June 2015

“Leading Creative Thinking in Your Organization,” Community Transportation Association of America, June 2015

“Spotlight on Best Workplaces for Commuters Employer Programs,” Association for Commuter Transportation International Conference, July 2015

“Introduction to Social Marketing for TDM Professionals,” Association for Commuter Transportation International Conference, July 2015

“Beyond the Fundamentals of Commuter Tax Benefits,” Association for Commuter Transportation International Conference, July 2015

“From People to Politics - Considerations to Improve TDM Performance,” Association for Commuter Transportation International Conference, July 2015

“Considerations to Improve TDM Performance,” Association for Commuter Transportation International Conference, July 2015

“Integrating Transit with Managed Lanes Projects,” International Bridge, Tunnel, and Tollway Association, July 2015

“The Changing World of Demand for and Supply of Data for Travel Analysis,” Florida Data Symposium, August 2015

“From Millennials to Uber to Autonomous Vehicles: How Demographics, Economics and Technologies are Changing Transportation,” Florida League of Cities, August 2015

“How New Technologies and Autonomous Vehicles May Change Public Transportation,” Brown bag Lunch with staff at the American Public Transportation Association, August 2015

“Integrating Freight into Livable Communities,” National Institute for Transportation and Communities Summit, September 2015

“Market Opportunities and Challenges on a University Campus,” National Institute for Transportation and Communities Summit, September 2015

“Florida's Mobility Fee Concept,” National Institute for Transportation and Communities Summit, September 2015

“Visualizing Transit Opportunities through GIS Innovations,” 9th GIS in Transit Conference, September 2015

“Impacts of BRT on Residential Property Values,” 9th GIS in Transit Conference, September 2015

“Data Geeks,” 9th GIS in Transit Conference, September 2015

1. *Website(s) or other Internet site(s)*

NCTR’s website is now supported by funds from the Livability Grant (rather than the Transit Focused Grant). The website is highly visited by people seeking information on public transit and alternative modes of non-Single Occupant Vehicle transportation. During this six month period there were 34,234 sessions, 27,948 users, and 62,516 page views. The NCTR website is #1 when people query “transit research” while on Google, #2 on Bing and #2 on Yahoo!. TCRP, a program with five times the resources of NCTR, is #1 on Bing and Yahoo!

Transit Automated Vehicle Institute Website – The National Center for Transit Research established the Transit Automated Vehicle Institute Website during this reporting period as a comprehensive resource for research and information related to automated and connected vehicle technology pertaining to transit. It provides published and in-progress research about transit automated vehicles that are relevant to the industry, as well as blog posts. It also provides links to Federal and state statutory language pertaining to autonomous vehicles. A project entitled Evaluation of Automated Vehicle Technology for Transit, funded by the FDOT, is providing match for this project.

The National Transit Safety Research and Technical Assistance Center has grown quickly since the previous reporting period. During this reporting period there were 4,361 visitors.

In addition to managing the NCTR Transit Safety Center website, the program manager, as a member of TRB’s Task Force for Transit Safety and Security, developed a website for the Task Force. Labor and expenses associated with this activity are attributed to the Transit Safety Center program. The TRBTSS is active and is being maintained and updated by project staff. The link for the website is: www.trbtss.org.

The Florida Transit Safety Network program also has a website that attracted 3,365 new users.

The Advanced Transit Energy Portal website was viewed 3,445 times by 2,488 users.

To summarize, during the six month reporting period, the six websites maintained by NCTR researchers had a total of over 40,000 users.

2. *Technologies or techniques*

The @NCTRUSF Twitter account has 777 followers.

3. *Inventions, patent applications, and/or licenses*

NCTR was awarded Patent # US 9,047,384 B1 on June 2, 2015. NCTR researchers developed an automated trip purpose detection method that utilizes GPS data collected by GPS-enabled devices (most smart phones included). The GPS data is compared against a GPS map to obtain various spatial and location characteristics of the surrounding area. This information is then used to drive a traveler's trip purpose. In a preferred embodiment, the inventive method is implemented automatically without any needed manipulation of GIS data. Additionally, the method integrates location information as defined by the user for critical locations such as work and home. These personalized locations allow the method to immediately identify the two most important types of trips: work-related trips and trips returning home. This is the 16th patent received by USF due to NCTR research. USF is now among the top 10 universities in the world for receiving patents.

4. *Other products*

While NCTR cannot take credit for creating the OneBusAway software which provides real time information on the arrival time of the next bus at any bus stop, it can take credit for making improvements to it and assisting the Hillsborough Area Regional Transit Authority (HART) in implementing this service to those who use transit in CUTR's backyard of Tampa, Florida. The success experienced at HART has helped eight other transit agencies adopt this software, helping millions of people in cities ranging from Seattle to New York.

3. PARTICIPANTS & COLLABORATING ORGANIZATIONS: Who has been involved?
RITA needs to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations.

Instructions-Participants & Collaborating Organizations

1. *What organizations have been involved as partners?*

As noted earlier, the Texas Transportation Institute worked through phase II of a three phase project during this six month reporting period. USF's other two partners (Florida International University and the University of Illinois at Chicago) were still working on a number of projects from the Transit-focused grant. Consequently, the subcontracts with these two universities were not established, but project ideas have been submitted by both universities.

The Museum of Science and Industry in Tampa has expressed interest in hosting an educational exhibit to introduce children to public transit. This exhibit is planned to feature the first 10 feet of an actual bus which will be equipped with a variety of technology elements including cameras, fareboxes, mobile data terminals, and automated passenger counters. The Hillsborough Area Regional Transit Authority will also contribute to the development of this exhibit and possibly donate a bus that is due to be retired. It is expected that a number of private vendors that supply the industry will also donate equipment that can be installed. The one drawback is that the Museum is undergoing a review of its finances and ability to continue in its current capacity and might be a reason the project does not go forward.

In addition to managing the NCTR Transit Safety Center website, the program manager, as a member of TRB's Task Force for Transit Safety and Security, developed a website for the Task Force. Labor and expenses associated with this activity are attributed to the Transit Safety Center program. The TRBTSS is active and is being maintained and updated by project staff. The link for the website is: www.trbtss.org.

2. *Have other collaborators or contacts been involved?*

The Transportation Research Board, the American Public Transportation Association, and private GIS vendors participated in the planning and execution of the GIS in Transit bi-annual conference held in September 2015 in Washington, DC, and co-sponsored the event.

NCTR has worked closely with the Association for Commuter Transportation to plan and produce webinars that are hosted by NCTR faculty.

The Florida Public Transportation Association works closely with NCTR faculty in the development and production of the Annual Professional Development Workforce conference that is held on the campus of USF as can be seen by the large number of presentations made by NCTR faculty at that event.

NCTR works in close cooperation with the Florida Department of Transportation and the Florida Public Transportation Association to administer the many training programs for bus operators, maintenance technicians, planners, and trainers. All three also work together in providing administrative assistance to the Florida Transit Safety Network, the Florida Transit Planners Network, the Florida Transit Maintenance Network, and the Florida Transit Marketing Network. FDOT provides the funding and oversees the programs that are administered by NCTR faculty at USF.

The Hillsborough County Community College coordinates with the Transit Maintenance Analysis and Resource Center (TMAARC) program that provides transit technicians with quality training and information to facilitate their advancement in the public transit arena. Participants not only learn skills to keep up with the rapidly changing technology associated with transit buses, but

are also able to earn an AA degree from the Hillsborough County Community College in the process of earning credits through the program.

NCTR worked cooperatively with the Hillsborough Area Regional Transit Authority (HART) to receive data from transit agency planners as they conducted the research project entitled "Evaluation of HART MetroRapid BRT." NCTR and HART also worked cooperatively to institute the OneBusAway software to provide transit users with real time information on the arrival time of the next bus at any bus stop.

NCTR and the National Center for Transportation and Communities are jointly funding the project entitled "Impact of BRT on Residential Properties." In addition, NCTR Director Joel Volinski serves on the Executive Committee of NITC to help identify and select projects for funding, and helps to disseminate information to USF faculty and staff regarding opportunities for funding for curriculum development, a speakers series, and student support.

The USF Sustainable Cities Initiative worked closely with officials of the City of Temple Terrace near the USF campus in expectation of that city serving as the first case study for the initiative. Regrettably, the city has determined that they do not have the funds to help support this effort whereby university resources in the form of faculty and students would apply their attention and talents to developing potential solutions to multiple livability issues in the city. During the next reporting period it is expected another city will be selected from among several candidates.

The Community2Go! Pilot of a Community-Based Voluntary Travel Behavior Change Effort project is a pilot project to reduce household vehicle miles of travel in the Tampa Bay area. A community-based social marketing (CBSM) approach is being used to encourage residents to make behavior changes, such as reducing single occupancy vehicle travel, increasing the frequency and distance of walking and bicycling trips, and increasing use of transit. Seventy-two households will be recruited for this project. Members of the participating households will carry a cell-phone enabled with TRAC-IT, a GPS cell phone application developed to record travel behavior, for eight weeks to gauge the effect of receiving the standard information versus the personalized CBTC travel assistance on reducing vehicle miles of travel. Currently, the community-based transportation coordinators (CBTCs) are being trained to work with the households that will be recruited for this project.

Over 300 employers, including private and public entities, participate in the Best Workplace for Commuters program and share their best practices with all members.

Certification maintenance credits (CM) are awarded to members of the American Planning Association (APA) with the American Institute of Certified Planners (AICP) professional credential for those who complete Transportation Demand Management courses offered through NCTR. Offering CM credits has proven to increase participation by providing the added incentive for planners to attend the training. AICP planners must obtain 32 hours of CM credits every two years.

The National Transit Safety Research and Technical Assistance Center works closely with USDOT's Transportation Safety Institute when putting curriculum together for safety training courses, and also work together to certify transit personnel to become safety instructors.

The NCTR Advisory Board is comprised of professionals from TRB, APTA, FPTA, FTA, FDOT, private transit management companies, and private consultants.

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4. IMPACT: What is the impact of the program? How has it contributed to transportation education, research and technology transfer?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

DOT uses this information to assess how the research and education programs:

- increase the body of knowledge and techniques;
- enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and,
- improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

Impact

This component should describe ways in which the work, findings, and specific products of the program have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the program relative to:

1. The development of the principal discipline(s) of the project;
2. Other disciplines;
3. The development of human resources;
4. Physical, institutional, and information resources at the university and/or other partner institution;
5. Technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a start-up company); or
6. Society beyond science and technology.

1. *What is the impact on the development of the principal discipline(s) of the program?*

NCTR partners have had a long history of transit research and education, which, in addition to its successful track record of producing first rate research, providing leadership in the industry, and graduating students who contribute to the transportation field, was no doubt part of the reason it was selected for the UTC grant. Consequently, the grant does not necessarily contribute to the development of the disciplines of the program, but the resources of the grant allow NCTR to retain its place as an important resource to the public transportation industry and to the communities it serves.

2. What is the impact on other disciplines?

NCTR, with its 35-member full time research faculty, has long been populated with a variety of disciplines including but not limited to civil engineering, urban planning, computer science, geography, public administration, economics, mathematics, and anthropology. In addition, NCTR faculty have worked with other disciplines at the university when their talents can add to the value of a research project. As noted in the previous question, the UTC grant does not necessarily impact other disciplines, but it does allow the faculty with such multiple disciplines to be able to apply their skills to a variety of transportation challenges.

3. What is the impact on the development of transportation workforce development?

NCTR, in partnership with the Florida Department of Transportation, the Florida Public Transportation Association, the Association for Commuter Transportation, and TRB excel in providing training to practicing professionals at a variety of levels, and very possibly at levels higher than any other UTC in the country. A summary of the information provided from pages 16 to 21 demonstrates the long reach of NCTR's training efforts to improve the capabilities of the current workforce:

Program	Participants	Contact Hours
Commuter Choice Training	121	475
Florida Transit Safety Network	332	2,478
Transit Maintenance AARC	77	2,453
Transit Operator Trainer Program	21	336
GIS in Transit	160	2,560
FPTA Professional Development Workshop	300	1,500
TOTAL Training	1,011	9,802

In addition to the direct training received at the venues noted above, NCTR faculty made 33 other presentations at state, regional, national, and international professional conferences. Assuming an average of 40 attendees in each session where presentations were made, another 1,320 transportation professionals benefitted from research findings presented by NCTR faculty. Finally, NCTR and CUTR produce webinars on a bi-weekly basis that features the results of transit research and program technical assistance. An average of 40 people attend the webinars on a live basis, and a bit more view the webinar on a recorded basis. Hence, and additional 1,300 transportation professionals were able to increase their knowledge of various transportation issues through the webinars offered by CUTR/NCTR.

4. What is the impact on physical, institutional, and information resources at the university or other partner institutions?

The University of South Florida is now helping to publish the Journal of Public Transportation through its Scholar Commons program. This will help NCTR staff keep better track of usage and downloads. Other than that, the UTC grant is used for policy research and software application development, none of which require testing of materials or laboratory work.

5. *What is the impact on technology transfer?*

The publishing of two editions of the Journal of Public Transportation was supported with funds from this Livability grant. Papers included in these editions were downloaded over 1,000 times. The grant also supports the administration and maintenance of the various Listservs listed below that allow the exchange of information among thousands of transportation professionals in the areas of transportation demand management, safety, etc. With over 400,000 messages being exchanged via the Listservs, it is clear the grant supports an incredible amount of transfer of knowledge:

NCTR hosts a number of other listservs supported by the Livability grant, including three new Listservs established during this reporting period (in italics below):

Listserv	Total Active Subscribers	Net Change in Subscribers	Established in
Bus Fleet Maintenance	417	12	Feb-08
Bus Rapid Transit	636	9	May-01
Florida Operations Network	90	31	Feb-13
Florida Rural Transit Assistance Program	107	14	Mar-07
Journal of Public Transportation	937	25	Dec-13
<i>Large Employers Council (new)</i>	28		<i>Aug-15</i>
Parking management research	441	29	Feb-07
<i>Substance Abuse Management (new)</i>	53		<i>Jun-15</i>
Sustainable Transport Indicators	485	7	May-07
<i>Transit Safety (new)</i>	135		<i>Jun-15</i>

6. *What is the impact on society beyond science and technology?*

Clearly it is hoped that efforts to encourage the use of transit and alternative and active modes of transportation results in the reduction of congestion and air pollution. The information collected and shared helps transit agencies to be more efficient and safe in their provision of service, while information on alternative fuels helps reduce the costs of transit as well as its carbon footprint, resulting in cleaner air to breathe and a small step toward slowing global

warming. The training that is offered through direct courses taught through NCTR enables practitioners in the field to perform their functions more efficiently and effectively, resulting in better quality of service to the public. The research report on linking transit to recreational areas helps the health and welfare, particularly of lower income communities with fewer mobility options.

5. CHANGES/PROBLEMS

The grantee is required to obtain prior written approval from the OST-R grants official whenever there are significant changes in the project or its direction. See agency specific instructions for submission of these requests. If not previously reported in writing, provide the following additional information, if applicable:

- Changes in approach and reasons for change
- Actual or anticipated problems or delays and actions or plans to resolve them.
- Changes that have a significant impact on expenditures.
- Significant changes in use or care of animals, human subjects, and/or biohazards

Changes/Problems

If not previously reported in writing to OST-R through other mechanisms, provide the following additional information or state, "Nothing to Report, if applicable:

1. *Changes in approach and reasons for change*

Nothing to report, no changes to this point

2. *Actual or anticipated problems or delays and actions or plans to resolve them*

There was a delay in beginning certain projects, but only because the transit-focused grant, which was approved two years earlier, is still very much open and is funding the activities being undertaken at USF and its partners. However, no problems are anticipated in completing the work of the grant by the end date.

3. *Changes that have a significant impact on expenditures*

Nothing to report

4. *Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards*

Nothing to report, and no anticipation of the need to report in the future since no projects will be dealing with these subjects.

5. *Change of primary performance site location from that originally proposed*

There is nothing to report, and no anticipation of the need for any change to the primary performance site(s) identified in the proposal.

Additional information regarding Products and Impacts
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UTCs are encouraged to consider identifying program results by outputs, outcomes or impacts as suggested by the examples below. Impacts should be linked to National goals expressed in the Secretary's Strategic Goals.
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Only a few research projects have been completed. We believe the report dealing with Linking Transit to Recreational will help communities find ways to make lower income communities more livable by providing greater access to public recreation areas. The Evaluation of the HART MetroRapid BRT has identified its performance characteristics and opportunities for improvement which HART can now take into consideration for implementation, providing a more attractive service for people to consider using. The GIS in Transit Conference provided 160 attendees to learn new ways to utilize GIS capabilities to improve the planning of transit service and better ways to track agency inventory, among many other things. The impacts of the training offered through the TDM program and other transit safety programs will result in less congestion, reduced pollution, fewer accidents, and equipment that can be kept in service for the maximum amount of years, thereby reducing capital costs for transit systems.

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6. SPECIAL REPORTING REQUIREMENTS
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Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.
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Nothing to report