



# 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 Transit Focused University Transportation Center**

**Grant Number DTRT12-G-UTC22**

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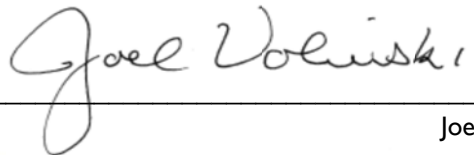
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**Grant Period:** January 1, 2012–January 31, 2014

**Reporting Period:** July 1, 2013–December 31, 2013, Third 6-Month Progress Report

Signature of Submitting Official: \_\_\_\_\_



Joel Volinski, NCTR Program Director

## **Accomplishments**

### **What are the major goals and objectives of the program?**

The major goals of the National Center for Transit Research are:

- To select and conduct research intended to make public transit and alternative means of transportation safe, efficient, effective, desirable, and secure. This will be done by receiving input from the Federal Transit Administration, the Florida Department of Transportation, the Illinois Department of Transportation, the North Dakota Department of Transportation, and transit professionals from throughout Florida and the nation. Research will be subject to peer review.
- To contribute to the education and preparation of the next generation of transportation professionals and to workforce development initiatives that will help attract, retain, and train employees in the fields of public transportation in particular.
- To disseminate the results of research as broadly as possible to fulfill the goal of making public transportation and alternative forms of transportation safe, efficient, effective, desirable, and secure. In addition, NCTR will continue to invest in projects that result in new patents and licenses that advance the quality of transportation services while creating new technology and employment opportunities.

### **What was accomplished under these goals?**

It is important to note that while the National Center for Transit Research was notified of its grant award in January 2012, NCTR is one of the relatively few UTCs that began its grant cycle almost a year later than the majority of UTCs. NCTR was still finishing the activities associated with prior UTC grants. In addition, NCTR cooperated with the Federal Transit Administration in identifying research projects to undertake with its federal funds. Those projects were not approved and put under contract until the latter half of 2012. Hence, NCTR is just now finishing projects from the grant received in January 2012. None of the larger FTA-suggested projects are complete at this time, though we expect them to be completed at the end of calendar year 2014.

During this six month reporting period (July 1, 2013 – December 31, 2013) all consortium partners have started work on all of the research projects they lead or participate in. Research projects to be undertaken with the \$3,493,000 in federal funding for the first year of the grant are in various stages of completion:

1. Evaluating the State of Mobility Management and Human Service Transportation Coordination – NDSU as the lead with assistance from USF and UIC (based on FTA proposal)
2. Improving Veteran Mobility in Small Urban & Rural Areas – NDSU
3. Intercity Transit Services Demand in North Dakota – NDSU
4. 2013 Rural Transit Fact Book – NDSU (Complete)
5. Cost-Benefit Analysis of Rural and Small Urban Transit – NDSU
6. National Transit Network Level of Service Data and Analysis – USF as lead with assistance from UIC (based on FTA proposal)

7. Texas Transportation Institute Annual Congestion Study: Measuring Transit's Impact – USF
8. Transit Safety Research and Technical Assistance Center – USF (Established/Ongoing)
9. Alternative Fuels Clearinghouse – USF (Established/Ongoing)
10. Transportation Demand Management and Telework Clearinghouse – USF (Established/Ongoing)
11. GIS in Transit Clearinghouse - USF (Established/Ongoing – GIS in Transit Conference held in Washington, DC on October 16-17, 2013)
12. Development of Training Manuals for Transit Planning and Scheduling – FIU
13. Transit Service Reliability: Analyzing Automatic Vehicle Location (AVL) Data for On Time Performance and to Identify Conditions Leading to Service Degradation – FIU as the lead with assistance from USF (based on FTA proposal)
14. The challenges to Creating Transit Value Capture by linking Transit Investment, Station Area Planning, Attraction of Appropriate Development, and the Application of Effective Value Capture Tools – UIC
15. Adapting Transit to Climate Change Impacts – UIC as the lead with assistance from USF (based on FTA proposal)

As noted earlier, the process of selecting projects to be undertaken with both federal and state matching funds was delayed due to NCTR's desire to receive input and ideas on research projects of interest to the Federal Transit Administration. Research projects are scheduled to be completed by the end of 2014, while the Clearinghouse and Technical Assistance Center activities will be ongoing throughout the term of the grant.

Provided below is a list of the projects funded by the Florida Department of Transportation (FDOT) that have been undertaken at USF as match to the first year of the grant, many of which have been completed, as well as a few other projects from the prior grant completed during this six month reporting period:

1. Florida Transportation Demand Management Clearinghouse - \$143,325 (Established/Ongoing)
2. Improved Traffic Control Measures to Prevent Incorrect Turns at Highway-Rail Grade Crossings and Pilot Testing - \$99,033.88 (Completed November 2013)
3. Impacts Of Dialysis Transportation On Florida's Coordinated Public Transportation Programs - \$115,100 (Final draft sent to FDOT)
4. Analysis of Transit Contracting Models and Proper Incentives for Long-term Success - \$137,074 (Completed November 2013)
5. Bus Operator Safety Critical Issues Examination and Model Practices - \$242,005 (Completed December 2013)
6. Best Practices in Enhancing Transit in Multimodal Transportation Elements - \$174,871
7. Evaluation of Rear-end Bus Collisions and Identifying Possible Solutions and Assessing the Effectiveness of Bus Pull-out Bays in Reducing Collisions - \$150,000 (Findings presented at Florida Public Transportation Association Conference October 2013)
8. Florida Transit Operator Trainer Training Program - \$186,900 (Established/Ongoing)

9. Investigation Quantification and Recommendations - performance of Alternatively Fueled Buses - \$140,000
10. Improving the Cost Effectiveness of Financial Incentives in Managing Travel Demand Management (Completed November 2013)
11. Ridership Impacts of South Florida's Easy Smart Card - (Completed October 2013)
12. Transit Boardings Estimation and Simulation Tool (TBEST) Calibration for Guideway and BRT Modes (June 2013)
13. Project UCARE: Uniform Cost Accounting and Reporting Elements for TDM (Completed July 2013)
14. A Tool for Assessing Economic Impacts of Public Transit Spending (Completed July 2013)

The projects for the first year of the grant listed above, denoted with project cost, total \$1,397,208.00 which is being provided as a cash match from the Florida Department of Transportation for the first year of the grant. Between these projects and others that have been identified for the first and second year of the grant, the local match for the portion of the grant conducted by USF (\$1,743,000) for the first year of the grant will be more than covered. All projects are underway and under contract with FDOT. Most projects are 15 to 18 months in length and most are expected to be completed by July of 2014. New projects as listed below have been submitted for approval by FDOT for the second year of the grant, and will be started in the next six months, while ongoing training programs administered by USF and funded by FDOT will also continue:

1. Methodology for Linking Greenways and Trails with Public Transportation in Florida - \$99,032
2. Capturing the Benefits of Complete Streets - \$147,160
3. Technology Application among Florida Community Transportation Coordinators - \$67,153
4. Improving Safe Access to Transit through Trip Planning - \$206,358
5. Community2Go: Encouraging Travel Behavior Changes - \$211,886
6. Florida Transit Safety Network (Technical Assistance, Information Sharing, and Research) - \$133,650
7. FL Statewide Transit Training & Technical Assistance Program - \$154,265
8. Transit Manager Certificate Program (TMCP) - \$125,127
9. Impacts of TDM on Managed Lane Toll Prices - \$128,091
10. Florida Commuter Choice Training - \$121,958
11. Parking guidance system project- USF Office of Sustainability - \$200,000
12. FL Statewide Transportation Demand Management Clearinghouse - \$259,382
13. Developing Guidelines for Incorporating Managing Demand Into WSDOT Planning and Programming - \$100,000

The funding for these local match projects totals \$1,954,082 which will be more than the federal amount of \$1,698,800 associated with the second year of the grant for USF.

The following projects are being undertaken by UIC with matching funds from the Illinois DOT. These projects provide a full 100% cash match to the portion of the federal grant that is being implemented by UIC. None had been completed by December 31, 2013.

	<b>Project title</b>	<b>Sponsor Name</b>	<b>Budget \$</b>	<b>Period</b>
1	Igo Car Sharing: Feasibility of Charging Stations for Hybrid Cars	IL Dept. of Transportation	\$49,116	10/31/12 to 8/31/14
2	Study of Integrated Corridor Management in Greater Chicago area	IL Dept. of Transportation	\$268,784	10/31/12 to 8/31/14
3	Mobility Case Studies: Where Integrated Corridor Management has Worked and Why	IL Dept. of Transportation	\$59,193	10/31/12 to 8/31/14
4	Modeling of Transit Mode Choice in greater Chicago	IL Dept. of Transportation	\$95,662	10/31/12 to 8/31/14
5	Ranking Northeast Illinois New Starts Transit Potential Expansion Projects for Metra and CTA	IL Dept. of Transportation	\$103,947	10/31/12 to 8/31/14
6	Administration	IL Dept. of Transportation	\$123,298	10/31/12 to 8/31/14
	Total		\$700,000	

UIC has secured matching funds from local and state sources to match the federal side of the grant, and projects will be selected in 2014.

The following projects are being undertaken by Florida International University with funding made available from the Florida DOT:

- Analysis of Movable Bus Stops Boarding and Alighting Area - \$110,677
- Guidelines for Bus Transit Stops in Highway Construction Work Zones - \$122,600

These projects provide a 66% cash match for the portion of the first year grant being implemented by FIU. FIU will be using unrecovered indirect and students' time to provide the remainder of the match for the first year of the grant. A new project to be funded by the Miami-Dade Expressway Authority will provide the bulk of the match for the second year of the grant.

The following project has been completed by North Dakota State University with funding made available from the North Dakota Department of Transportation:

- Regional Transit Coordination Pilot Project - \$150,000

This project being funded with North Dakota's DOT with SPR funds, and other general funds from the state government, have provided \$260,207 as cash match to date. North Dakota State University has provided \$228,167 for a total of \$488,374 in local match toward the \$700,000 federal funding being utilized by NDSU in the first year of the grant.

**What opportunities for training and professional development has the program provided?**

- Dr. Jill Hough of NDSU and Dr. Steve Polzin of USF continued to develop modules that will be incorporated into a national transit course that will be able to be delivered by any transportation faculty at universities around the country. Dr. Hough is the Chair of APTA's Higher Education Subcommittee of the Human Resources Committee.
- NDSU continued preparations for delivering training to small urban and rural transit professionals throughout the country through the federal funds they will receive. A new trainer has been hired to continue the program.
- USF hosted the GIS in Transit Conference held in October 2013 at the Keck Center in Washington DC. TRB co-sponsored the conference. The mission of the biennial conference is to provide a forum for geographic information systems (GIS) in transit professionals and other key industry stakeholders to share innovative GIS solutions, industry best practices, and new technologies. The conference is also designed to explore ways to use GIS to improve the safety, reliability, sustainability, and operation of public transportation. The conference enjoyed record attendance due to its co-sponsorship with TRB, with over 170 registrants.
- The scopes for virtually every research project listed above incorporate student research assistants.
- The first "NCTR Scholars" (graduate research assistants supported by NCTR funding) were admitted to the College of Engineering. Two Masters in Engineering candidates began their program in late August 2013 and were immediately assigned to NCTR research faculty members as research assistants. They also participated in the development of future corridor scenarios for the I-4 corridor including provisions for transit. They attended the Annual Conference of the Florida Public Transportation Association and the annual meeting of the NCTR Advisory Board. They were also given assignments for the development of white papers on partnerships between public school systems and local transit agencies, and on steps transit agencies have taken to ensure truly low income people still have access to the transit services they need.

- USF's Commuter Choice Certificate Program provided 869 contact hours of training to 220 participants during the six month period, covering subjects ranging from Creative Thinking for Transportation Professionals, to Social Marketing in Transportation, to Land Use and Transportation Demand Management, among other topics.
- NDSU's Small Urban and Rural Transit Training program continued its activities, providing 185 individuals with 305 hours of training.
- During the time period of July 1 – December 31, 2013, the Florida Transit Operator Trainer Training Program, the Florida Rural Transit Assistance Program, the Transit Maintenance Analysis and Resource Center, the Florida Transit Safety and Workforce Development Program, the Airport Leadership Development Program, and the Substance Abuse Management Program Oversight and Technical Assistance Program accounted for the following:
  - 3,345 classroom hours
  - 130 participants
  - 9 training courses

**How have the results been disseminated? If so, in what ways?**

All Principal Investigators were given instructions to consider how the results of their research will be shared even as they prepared their scopes for the projects. They have established peer reviewers who are most likely to be interested in the results and in a position to share and implement findings. PIs have also been instructed to identify opportunities to share results of research through webinars, conferences, and direct notification to lists of professionals that have been identified in advance of conducting the research. USF's webcasts are free to all participants and can be viewed in real time, or viewed as a recording at the viewer's convenience. An average of approximately 50 people view each webcast on a live basis, with many more watching the webinars on a recorded basis at a time convenient for them.

- USF conducted 10 free webcasts in its bi-weekly series to share the results of transportation research with transportation professionals from all over the nation and the world. Four of the webcasts featured research conducted through funding provided to the UTC program. USF also produced two more editions of its highly valued Journal of Public Transportation featuring peer-reviewed papers written by authors from around the world.
- Three peer-reviewed national papers written by NCTR faculty were published in the TRB's Transportation Research Record and the Journal of Public Transportation.
- Faculty of USF prepared and managed the Mid-year Professional Development Workshop of the Florida Public Transportation Association held in Tampa in June, 2013 which was attended by over 200 public transit agency managers.

- NCTR researchers were members of 41 committees of national transportation associations including TRB, APTA, ITE, APA, and AASHTO. In these settings researchers can share information on their research results with other professionals.
- Notifications of newly completed reports are sent to members of a number of Listservs maintained at NCTR. Over 6,000 transportation professionals receive information directly advising them of how they can download research reports at no cost. Also included in direct notification are numerous news outlets around the country.
- NCTR faculty members made five presentations at state and national conferences based on research funded through the UTC grant.

**What do you plan to do during the next reporting period to accomplish the goals and objectives?**

During the next six months the majority of the projects identified and established in the first year of the grant will be nearly completed (all will be completed by December of 2014). NCTR will energetically share the results of the research projects with sponsors and with all other parties that can benefit from the findings through every technology transfer avenue available. Webinars (as described above) featuring results from these projects will be held every two weeks, and opportunities to present findings at professional transportation conferences will also be pursued. Scopes for new research projects will be peer reviewed. Planning for the training to be provided by NDSU to small urban and rural transit agencies will be finalized. Preparations for the next bi-annual GIS in Transit conference will begin with the benefit of learning from the recent successful conference held in Washington, DC. The development of training modules for the national public transit course will continue. The search for new student candidates as NCTR Scholars will be aggressively pursued. The NCTR website will be expanded to include the scopes for all projects being undertaken by all four consortium members, while all projects completed by consortium members will be posted.

**Products**

Due to NCTR’s desire to be responsive and helpful to the Federal Transit Administration and delaying the identification of research projects until it received their input, relatively few research projects have been completed, though many are near completion. The information provided above describes the status of activities undertaken to date. All clearinghouses and technical assistance centers have been established and are actively serving as conduits for information for over 6,000 transportation professionals and students.

**Publications**

Two editions of the Journal of Public Transportation were produced during this progress report period featuring a total of 16 papers. NDSU’s Rural Transit Fact Book was published. Five of the grant match



projects funded by the Florida DOT were completed and posted to the NCTR website. Three peer-reviewed papers written by NCTR researchers were published in national transportation journals.

### **Websites**

The website for NCTR ([www.nctr.usf.edu](http://www.nctr.usf.edu)) has been in place since 1999 and remains very active. It is rated the number one site for “transit research” results on Google, and is number two on Bing and Yahoo search engines. It includes information on the center’s history, key personnel, research activities, links to all reports and webinars, the various programs and clearinghouses hosted by NCTR, all volumes of the Journal of Public Transportation, and a section on career opportunities in transit. It includes the contact information for the directors of the research centers at NDSU, FIU, and UIC. The links to their websites (<http://www.surtc.org/>; <http://lctr.eng.fiu.edu/>; <http://www.utc.uic.edu/>) have also been included. Those websites also include information on key personnel, active research, downloadable reports, student participation in their programs, and webinars that can be viewed. The NCTR website will continue to be updated to include all projects completed by consortium members and the projects yet to be undertaken through the federal grant and matching funds.

**Technologies or Techniques** – Nothing to report.

**Inventions, Patent Applications, and/or Licenses** – Two patents were awarded in the last six months of 2013: Two patents were awarded during the six month time period to USF for transportation software development: (1) US Patent # 8,548,724 on System and Method for Real-Time Travel Path Prediction and Automated Incident Alerts and (2) US Patent # 8,600,674 on Using Pattern Recognition in Real-Time LBS Applications

**Other Products** – To this point, the products have been as already described: finished research reports, webinars, GIS conference, multiple presentations, training, mentoring, and peer-reviewed papers.

## **Participants and Collaborating Organizations**

### **What organizations have been involved as partners?**

The National Center for Transit Research (NCTR) is a consortium of four universities as follows:

- University of South Florida located in Tampa, Florida, featuring the National Center for Transit Research (NCTR), a Tier I UTC at the Center for Urban Transportation Research, contributing to the program financial support and collaborative research.
- North Dakota State University located in Fargo, North Dakota, featuring the Small Urban & Rural Transit Center (SURTC), a former Title III UTC, contributing to the program financial support and collaborative research.

- University of Illinois at Chicago located in Chicago, Illinois, featuring the Urban Transportation Center (UTC) in the College of Urban Planning and Public Affairs, contributing to the program financial support and collaborative research.
- Florida International University located in Miami, Florida, featuring the Lehman Center for Transportation Research (LCTR), contributing to the program financial support and collaborative research.

The Federal Transit Administration – The FTA has been a fully engaged partner not only in its role as the source of federal funds for the program for the two transit-focused UTCs, but as a source of ideas for research projects to be undertaken. FTA established an internal process to solicit, screen, and submit research ideas to the two transit-focused UTCs to be funded through both the first and second year of the federal grant. FTA previously submitted eight project proposals. Four of them will be undertaken by USF’s consortium and three will be undertaken by the San Jose State consortium. All of these projects are underway and are expected to be completed by December 2014. FTA staff have agreed to serve as peer reviewers of the projects.

The Florida Department of Transportation – FDOT has been a vital partner in the development, selection, and funding of the research that will be conducted by USF and FIU researchers under this grant. FDOT is providing cash match to USF’s and FIU’s portion of the grant. It is also providing project managers for each project to manage and oversee the completion of each project done by USF and FIU. Similar arrangements have been made with the Illinois and North Dakota Departments of Transportation. IDOT is providing a full cash match to UIC’s portion of the grant, while NDDOT is providing approximately one-third cash match.

The Florida Public Transportation Association – FPTA, in conjunction with FDOT, is collaborating on a number of research projects through the engagement of various public transit networks (e.g., Transit Operations Network, Planning Network, Maintenance Network) to serve as advisors and peer reviewers of research projects. Several Florida transit properties will also serve as case studies for some of the research projects.

Many organizations have lent their considerable experience and expertise to NCTR by agreeing to have representatives serve on the NCTR Advisory Board. Included among them are:

1. Michael Melaniphy, President – American Public Transportation Association
2. Dr. Mary Leary, Senior Director – Easter Seals Project Action
3. Kim Adair, Public Transportation Office – North Dakota Department of Transportation
4. David Spacek, Public Transportation Office – North Dakota Department of Transportation
5. Tim Garling, Director, Broward County Mass Transit Division – President, Florida Public Transportation Association
6. Ed Coven, Manager, Public Transportation Office, Florida Department of Transportation
7. Darryll Dockstader, Manager, Research Office, Florida Department of Transportation
8. Bill McCloud, Senior Vice President, Veolia Transportation
9. Donna Vlasak, Senior Program Officer, The National Academies, TRB

10. Jon Martz, Vice President, Van Pool Services, Inc.
11. Joe Calabrese, GM/CEO, Greater Cleveland Regional Transit Authority
12. Michael Baltes, Director – Office of Technology, Federal Transit Administration
13. Dr. Minnie Fells Johnson, Chair, Projects for Public Spaces
14. Perry Maull, Director – Indiana University Bus Services
15. Brendon Hemily, Independent Transit Consultant for ITS for the USDOT

### **Have other collaborators or contacts been involved?**

Most of the significant collaboration has been described in previous sections. It should be emphasized that consortium members will be collaborating on four projects listed in the federal projects to be undertaken after discussions were held with the Mineta Transportation Institute on which UTC was most appropriate to undertake each project. Similar discussions were held between NCTR and MTI for the new projects identified by FTA and arrangements have been made to collaborate with MTI on one of those projects to be done with funds from the second year of the grant. Most of the research will be conducted by full time research faculty at the four NCTR consortium centers, along with students. However, there will also be interdepartmental/interdisciplinary coordination on a number of projects that will involve tenured faculty from the disciplines of Public Health, Economics, Urban Planning, and Civil Engineering. USF secured guidance from tenured faculty in Australia (Dr. Graham Currie of Monash University) who has extensive background in researching public private partnerships and contracting for transit services.

### **Impact**

USF's project entitled "Improved Traffic Control Measures to Prevent Incorrect Turns at Highway-Rail Grade Crossings and Pilot Testing" was accepted by the Florida DOT. This project suggested what treatments could be made at grade crossings. There will be new commuter rail service opening in Central Florida in May of 2014. FDOT has agreed to fund a second phase of this project to institute some of the recommended treatments identified in Phase I of the project at two intersections where there have been incidents in the past.

The project entitled "Bus Operator Safety: Critical Issues Examination and Model Practices" was enthusiastically received by the Florida DOT. The NCTR Project *Bus Operator Safety - Critical Issues Examination and Model Practices*, has provided both direct and indirect benefit to the NCTR program, CUTR, and transit agencies - specifically those in Florida. These are provided in the bulleted section below:

- Paper and presentation at the American Public Transportation Association (APTA) Bus and Paratransit Conference held in Indianapolis, Indiana

- Presentation scheduled for the APTA Bus and Paratransit Conference that will be held on May 5-7, 2014 in Kansas City, MO
- A statewide “Florida Transit Safety Summit” that will become an annual event with the next Summit scheduled for June 2, 2014
- This NCTR project and the activity associated with the research resulted in an increased level of focus on bus system safety in Florida and the response by FDOT to formally establish a “Florida Transit Safety Network” (FTSN) with membership that includes a representative and alternate from each of Florida’s FTA Section 5307 recipients. The FTSN meets quarterly.
- The FTSN has an active website: <http://www.floridatsn.org/> and listserv
- As part of the FTSN - there have been five very active committees established (each meet telephonically as needed):
  - Collisions
  - Driver Fatigue
  - Operator and Passenger Safety (including assaults and injury)
  - Distracted Driving
  - Training

Scopes are being developed in response to findings from the report - specifically research related to assaults on transit passengers

The findings of the project entitled “Evaluation of Rear-end Bus Collisions and Identifying Possible Solutions” were shared at the Florida Public Transportation Association in October 2013. It was found that Florida leads the nation in rear-end bus accidents by a wide margin. Potential remedies to reduce such accidents will be a major element of discussion among members of the Statewide Transit Safety Network, with recommendations then being implemented primarily at the local level.

The report entitled “Investigation, Quantification, and Recommendations - Performance of Alternatively-fueled Buses”, along with the information gathered through the Alternative Fuels Clearinghouse has been of assistance to transit agencies in Florida as they decide how to proceed in terms of fuel for their bus fleets. This subject was identified by transit managers across the state two years ago as one of the most pressing issues their policy boards have asked about. Both the Hillsborough Area Regional Transit Authority and Miami-Dade County have decided to move forward with converting their fleets to compressed natural gas.

The report entitled “Transit Boardings Estimation and Simulation Tool (TBEST) Calibration for Guideway and BRT Modes” was provided to FDOT and has been incorporated by that agency as a pre-approved method for local transit agencies to use for demand forecasting modeling as they complete their Transit Development Plans.

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

Please see directly above.

**What is the impact on other disciplines?**

Nothing to report.

**What is the impact on the development of transportation workforce development?**

Funding from the grant is supporting the development of courses to be taught at the graduate level of universities that is designed to give students a comprehensive understanding of how transit agencies operate and how they interact within the total transportation system and the communities they serve. North Dakota State University continues to provide training to small urban and rural transit agencies at their locations through the central and western parts of the United States.

During the time period of July 1 – December 31, 2013, the Florida Transit Operator Trainer Training Program, the Florida Rural Transit Assistance Program, the Transit Maintenance Analysis and Resource Center, the Florida Transit Safety and Workforce Development Program, and the Substance Abuse Management Program Oversight and Technical Assistance Program accounted for the following:

3,345 classroom hours  
130 participants  
9 training courses

NCTR's Commuter Choice Certificate Program provided 220 participants with 869 contact hours of training in Social Marketing, Land Use and Transportation, Creative Thinking for Transportation Professionals and a half-dozen other subjects.

NDSU continued its Small Urban and Rural Transit Training program providing 185 participants with 305 contact hours of training in transit management.

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

Nothing to report. All partners of the consortium have been doing this type of work for a number of years and has not required a modification in resources at our universities.

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

Nothing to report.

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

The Transportation Demand Management Clearinghouse is funded through NCTR and continues its outstanding service as a forum for thousands of transportation professionals to share information and ideas. In addition, it manages the national Best Workplace for Commuters (BWC) program, previously managed by the EPA, which encourages employers to institute programs to help reduce congestion, vehicle miles traveled, and carbon emissions. There are now 360 different employers in good standing in the program throughout the country. In the last six months of 2013, 35 companies from ten different states joined or renewed their membership. These employers have established programs such as

telecommuting, flexible work hours, subsidies for transit utilization, ridesharing programs, support for biking, and other actions that result in less traffic and less air pollution on the transportation systems in their areas. In addition, six BEST Sites joined BWC. Best Sites is a new category for 2013. This new designation was created for commercial and retail developers, shopping malls, business campuses, and other multi-employer developments. To receive this designation for the Site location, the BWC “Best Sites” Standard of Excellence must be met. The Sites recognized in the last six months are in Virginia, Florida, and Nevada.

## **Changes/Problems**

No changes or problems to report at this time.

### **Changes in approach and reasons for change**

Nothing to report.

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

While it took a little while for FTA to identify the projects it was most interested in, causing a delay in starting some projects, they will all be done well within the time frame of the grant.

### **Changes that have a significant impact on expenditures**

Nothing to report.

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

Nothing to report.

### **Change of primary performance site location from the originally proposed**

Nothing to report.

## **Additional information regarding Products and Impacts**

### **Outputs**

Nothing to report beyond what was reported above describing the projects completed and clearinghouses and technical assistance programs established.

### **Outcomes**

Nothing to report beyond what was reported in terms of actions that have been taken as a result of the research projects completed and the technical assistance programs established.

**Impacts**

Nothing to report beyond those impacts already reported.

**Special Reporting Requirements**

Nothing to report.