# 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 1 Livability University Transportation Center

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**Reporting Period**: April 1, 2014 – September 30, 2014, Second 6-Month Progress Report

Signature of Submitting Official: _____

Joel Volinski, NCTR Program Director

NCTR at CUTR
National Center for Transit Research

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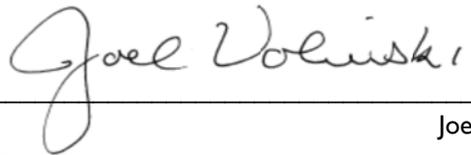
# NCTR PROGRAM PROGRESS PERFORMANCE REPORT

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. |

**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 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.

NCTR will continue to apply the same output metrics it has been using and enhance its outcome metrics by measuring the value of its research.

### 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 Ofc., USF Technology Transfer Ofc. |
| 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, and the Alternative Fuels Clearinghouse.
- 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 10,000 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 grant was received from OST-R on September 30, 2013. USF is also the lead of a Tier I Transit Focused UTC grant which is still ongoing and very active with many open projects. There was no pressing need for USF to start utilizing the funds from this Livability grant while dozens of projects were still open from the previous Transit-Focused grant. It also took a bit of time for the grant to be recorded at the university and established in all financial systems. Consequently, while a number of projects were established in this second six month reporting period, none of the research/technical assistance projects have been completed. The following chart shows the various chargeable accounts that were opened in this second six month reporting period:

| Federal Projects NCTR Livability Year 1 | |
|---|---|
| 79061-02 | Subcontract with TTI - June 2014 |
| 79061-03 | Center Director |
| 79061-05 | Journal |
| 79061-06 | Teleconferences |
| 79061-07 | Website Services |
| 79061-09 | GIS Conference & Clearinghouse |
| 79061-10 | National Telework/TDM Clearinghouse |
| 79061-11 | Transit Safety Institute |
| 79061-12 | Alternative Fuels Clearinghouse |
| 79061-16 | Travel for Presentations |

The Journal of Public Transportation and the GIS in Transit Clearinghouse projects represent continuations of highly successful projects that had been funded through the Transit-focused grant and required new dollars to allow the activities to continue uninterrupted. Funds from this Livability grant were used to support the activities associated with two editions of the Journal of Public Transportation which is produced on a quarterly basis.

A number of research and technic al assistance projects were also established under the Livability grant. On the federal side of the budget, the project entitled "Evaluation of Automated Vehicle Technology for Transit" was created. This project is being supplemented with funds made available by FTA through the National Bus Rapid Transit Institute at USF. The purpose of this project is to conduct a synthesis of available AV technologies that could be installed today on transit vehicles. On the matching side of the budget the following projects were established:

Florida Transit Operator Trainer Training Program ($186,900)

Florida Statewide Transit Technical Assistance and Training Program ($148495)

The Director of NCTR, Joel Volinski, made initial contact with the Museum of Science and Industry in Tampa to discuss what would be possible in terms of assistance from the Museum in setting up an educational exhibit to introduce children to public transit buses.

In addition to the establishment of these projects at USF, the subcontract with partner Texas Transportation Institute at Texas A&M was also completed. TTI established the following project to be funded through federal UTC funds and matching funds: "Exploring Transit's Contribution to Livability in Rural Communities: Guidebook and Exercises."

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2. *How have the results been disseminated?*

The only project that has material that can be disseminated is the Journal of Public Transportation. The two editions that were published were produced in both hard copy and in digital form. The hard copies were mailed to over 2,000 subscribers. In addition, notification of the availability of the two new editions was sent via the Listservs maintained by NCTR/CUTR. That broad dissemination helps to make the Journal of Public Transportation papers the most frequently downloaded and visited product on the NCTR website.

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

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. Projects associated with the technical assistance and training programs will continue. In addition, more matching projects will be established through the Florida Department of Transportation. TTI will begin the project entitled "Exploring Transit's Contribution to Livability in Rural Communities: Guidebook and Exercises" and complete the following tasks of **Phase 1, Task 1.1.:**
   (1) Literature Review
   (2) Case Study Selection

**Phase 1, Task 1.2** TTI is waiting on IRB human subject research review and approval of the methodology for pilot case study research. TTI researchers submitted a detailed application for IRB review in September 2014. The application included a survey instrument to use with both rural transit riders and the general public. The application also included a discussion guide for stakeholder interviews.

**Phase 1, Task 1.3** TTI researchers will use the surveys and interview discussion guide to meet with community leaders and organizations with missions relevant to rural transit. Researchers will continue and complete Phase 1 effort by submitting Task 1.1 technical memorandums, completing Task 1.2 IRB approval, conducting Task 1.3 pilot community case study, and completing Task 1.4 documentation and outreach refinement.

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**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.

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**Instruction - Products**

While a number of projects were established during this six month reporting period, only the Journal of Public Transportation has products to report.

***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 19 papers submitted from researchers all over the world.

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

NCTR's website was still being managed through funds available from the transit focused grant. Hence there is nothing to report that was supported by this livability grant.

2. ***Technologies or techniques***

Nothing to report. The transit focused grant supported research that resulted in another patent being issued to USF dealing with location-aware cellphone software.

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

Nothing to report

4. ***Other products***

Nothing to report

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**3. PARTICIPANTS & COLLABORATINGORGANIZATIONS:** Who has been involved?

RITA needs to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations.

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**Instructions-Participants & Collaborating Organizations**

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

As noted earlier, the subcontract with the Texas Transportation Institute was completed 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.

The Museum of Science and Industry in Tampa has affirmed their desire and interest to serve as host of the educational exhibit to introduce children to public transit. This exhibit will 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. It is expected that a number of private vendors that supply the industry will also donate equipment that can be installed.

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

The Transportation Research Board, the American Public Transportation Association, and private GIS vendors will co-sponsor the GIS in Transit bi-annual conference to be held in September 2015 in Washington, DC.

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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.

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**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?*

Nothing to report. NCTR was still working on projects funded through the Transit-focused grant.

> **2. What is the impact on other disciplines?**

Nothing to report

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

As noted earlier, two projects dealing with training and technical assistance were established with matching funds, but there are no results to report during this six month reporting period.

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

Nothing to report

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

Two 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.

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

Nothing to report

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| **5. CHANGES/PROBLEMS** |
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| 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:<br><br>• Changes in approach and reasons for change<br>• Actual or anticipated problems or delays and actions or plans to resolve them.<br>• Changes that have a significant impact on expenditures.<br>• 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, there are no problems.

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*

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

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| **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. |

Nothing to report at this early date.

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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. |

Nothing to report