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Livable Communities UTC - October 1, 2017–March 31, 2018

NCTR

U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology
University Transportation Centers Program

Program Progress Performance Report for University Transportation Centers

National Center for Transit Research (NCTR)

Tier 1 Livability University Transportation Center
University of South Florida
Texas A&M University • University of Illinois at Chicago • Florida International University

Grant Number: DTRT13-G-UTC56

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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 October 1, 2017 to March 30, 2018, represents the ninth semi-annual report. During this period, founding NCTR director Joel Volinski retired, and Dr. Robert Bertini was appointed NCTR director (approved by OST-R). Substantial work has been done with the resources the grant provides as reported below.

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

The goal of the NCTR program is to conduct research leveraging the strengths of its members in all forms of public transportation, transportation demand management (TDM), and active transportation. Public transportation and transportation demand management (TDM) make livable communities possible; indeed, we regard these transportation modes as prerequisites to communities being safe, livable, and more equitable. The NCTR consortium includes a multidisciplinary team with extensive experience in transportation research and UTC participation, enabled by dedicated full-time research faculty. Our research addresses U.S. DOT's goal of supporting Livable Communities as well as environmental sustainability and safety. Research performance metrics are shown in Table 1. Our research addresses many of the objectives of the U.S. DOT 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 conducted by NCTR are undertaken through collaboration among the four universities, with student research assistants involved in almost 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 and Scholar Commons reports
Students participating in NCTR research projects	PIs required to maintain statistics
NCTR awards and distinctions received	Faculty reporting of awards/distinctions
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 measures 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.

NCTR faculty provide multiple training opportunities for practicing professionals, as described later is this PPPR. Another significant workforce development initiative funded through the grant is the NCTR Graduate Assistant Research Program (NCTR Scholars). NCTR has funded 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. The goals for workforce development and education are shown in Table 2.

Table 2: Performance Metrics for Education

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

With regard to technology transfer, the goals include:

- Assertive management of 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 program named the Integrated Mobility Clearinghouse dedicated to collecting information on the experience public transit agencies are having in efforts to coordinate with transportation network companies and provide "mobility on demand".

- The continued digital publishing of the *Journal of Public Transportation* and establishing a new *Journal of Transportation Demand Management Research*
- 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 and private sector companies held in Washington, D.C.
- Presentations of completed research at various state and national professional forums

B. What was accomplished under these goals?

This Livability grant was awarded on September 30, 2013. Projects have been established for USF, Texas A&M, FIU, and UIC. In late 2017 a project selection peer review process was completed for USF projects. A total of 19 project proposal were submitted by NCTR faculty, a single-blind peer review process was conducted, along with consultations with FTA and FDOT. A total of 11 new projects have been selected and/or started during this reporting period. These include 9 projects funded using UTC funds, and two projects funded as match by FDOT. See Table 3.

Table 3: New NCTR Projects for 2018

No.	Title	PI
N5	Campus Automated Shuttle Service Deployment Initiative	Lin
N8	Florida's Public Transit and Women's Safety – Real and Perceived Concerns	Perk
N9	Improving the Quality and Cost Effectiveness of Multimodal Travel Behavior Data Collection	Barbeau
N10	Improving Transportation Access to Health Care Services	Williams
N11	Increasing the Desirability of Transit and All Other Travel Choices via Best Workplaces for Commuters	Winters
N12	Media Framing of Fatal Bicycle Crashes in Hillsborough County: A Critical Discourse Analysis	Bond
N14	Public Transit in America	Godfrey
N15	Smartphone Based Connected Bicycle Prototype Development for Sustainable Multimodal Transportation System	Kourtellis
	Transportation Webcast Series	Lewis
F1	Enhancing Cybersecurity in Public Transportation	Barbeau
F2	Understanding Ridership Trends in Transit	Polzin

Two ongoing projects are nearing completion:

F1	Safe and Accessible Pedestrian Facilities Inventory Model (SAPFIM)	Cevallos
I1	Regional Transit Service Integration	Sriraj

One project was completed:

T1	Transit's Contribution to Livability in rural Communities: Exploration Method and Materials Phase 3	Brooks

Student of the Year

The NCTR Student of the Year was Richard Driscoll, who is a student in the USF Master of Science in Civil and Environmental Engineering program. Richard was presented with this designation at the annual CUTR Transportation Achievement Awards Event on October 4, 2017.

The Future of Public Transportation Valedictory Lecture

On the occasion of Joel Volinski's retirement, CUTR held a special Valedictory Lecture event on November 9, 2017. This included Joel's lecture plus a panel discussion that included Bill Millar, Katharine Eagan, Lisa Bacot and Ed Coven. This event was streamed live on Facebook and also archived.

Tampa Bay Smart Cities Alliance

CUTR/NCTR is working with the City of Tampa and the Florida Department of Transportation to form a Tampa Bay Smart Cities Alliance involving several dozen agencies and organizations, both public and private. USF and the City of Tampa recently executed a Smart Cities MOU which lays the groundwork for increased collaboration toward improving the ways that technology and data can improve quality of life and increase citizen engagement. The City of Tampa and USF were recently selected as members of the national MetroLab Network.

Journal of Public Transportation

Publication of the *Journal of Public Transportation* is now in its 21st year, supported by various UTC grants and during this reporting period by the UTC Livability Grant, as another successful knowledge sharing/technology transfer project. Dr. Robert Bertini was appointed Editor-in-Chief and two new Associate Editors and a slate of Editorial Board members was appointed. A special issue of the *Journal of Public Transportation* focusing on the *Future of Public Transportation* was produced and released during this reporting period (Volume 21, No. 1). Over this reporting period, 573 papers were downloaded a total of 32,417 times. The following table lists the top 10 papers over this reporting period:

Title	Downloads
Bike-sharing: History, Impacts, Models of Provision, and Future	2610
Lies, Damned Lies, AVs, Shared Mobility, and Urban Transit Futures	1613
Service Quality Attributes Affecting Customer Satisfaction for Bus Transit	926
Full Issue 19(4)	686

Transit Deserts: The Gap between Demand and Supply	566
Increasing the Capacities of Cable Cars for Use in Public Transport	548
Is It Time for a Public Transit Renaissance?: Navigating Travel Behavior, Technology, and Business Model Shifts in a Brave New World	513
Determinants of Customer Satisfaction on Service Quality: A Study of Railway Platforms in India	443
Use of Statistical Process Control in Bus Fleet Maintenance at SEPTA	358
Bus Rapid Transit: An Overview	351

The Special Issue focusing on the Future of Public Transportation included 12 papers and 1 editorial (see http://scholarcommons.usf.edu/jpt/vol21/iss1/) :

- Boyle, Dan. The Future of Transit. DOI: http://doi.org/10.5038/2375-0901.21.1.1
- Buehler, Ralph. Can Public Transportation Compete with Automated and Connected Cars DOI: http://doi.org/10.5038/2375-0901.21.1.2
- Currie, Graham. Lies, Damned Lies, AVs, Shared Mobility, and Urban Transit Futures. DOI: http://doi.org/10.5038/2375-0901.21.1.3
  Hough, Jill & Rahim Taleqani, Ali. Future of Rural Transit. DOI: http://doi.org/10.5038/2375-0901.21.1.4
- Polzin, Steven E. Just Around the Corner: The Future of U.S. Public Transportation. DOI: http://doi.org/10.5038/2375-0901.21.1.5
- Watkins, Kari. Does the Future of Mobility Depend on Public Transportation? DOI: http://doi.org/10.5038/2375-0901.21.1.6
- Schweiger, Carol. Improved Mobility through Blurred Lines. DOI: http://doi.org/10.5038/2375-0901.21.1.7
- Shaheen, Susan & Cohen, Adam. Is It Time for a Public Transit Renaissance?: Navigating Travel Behavior, Technology, and Business Model Shifts in a Brave New World. DOI: https://doi.org/10.5038/2375-0901.21.1.8
- Schreffler, Eric. Better Integrating Travel Choices into Future Urban Mobility Systems: The Day the Highways Stood Still. DOI: https://doi.org/10.5038/2375-0901.21.1.9
- Lutin, Jerome M. Not If, but When: Autonomous Driving and the Future of Transit. DOI: http://doi.org/10.5038/2375-0901.21.1.10
- Manville, Michael, et al. Transit in the 2000s: Where Does It Stand and Where Is It HeadedDOI: http://doi.org/10.5038/2375-0901.21.1.11
- Walker, Jarrett. To Predict with Confidence, Plan for Freedom. DOI: http://doi.org/10.5038/2375-0901.21.1.12
- Volinski, Joel. Editorial: Reflections on the Future of Public Transportation. DOI: http://doi.org/10.5038/2375-0901.21.1.13

Each of these authors will present a special CUTR Transportation Webcast (webinar) to discuss their contribution to this issue. As with most journals, the Journal of Public Transportation is published online. Google Scholar indicates that JPT has been cited a total of 9,123 times. Since 2015 a total of 172,677 downloads have been recorded. As of early 2018 all past issues of JPT are

now posted. We are working on refreshing the journal with a new editorial board and aim to continue to improve the impact factor and visibility of the journal. North Dakota State University and San Jose State University have made commitments to jointly fund the journal publication process moving forward. We are actively seeking other financial sponsors in an effort to keep the journal free and open access.

NCTR also started the process of publishing a new journal entitled the *Journal of Transportation Demand Management Research*. NCTR is expecting to publish the initial volume of the journal later in 2018. A member of the NCTR Advisory Board has volunteered to serve as the editor of this new journal. This will have a similar format to the JPT and the intent is to produce semi-annual issues with at least four papers each.

Transit's Contribution to Community Livability

This TTI led project was completed on December 31, 2017. Researchers developed a technique to use a simple survey instrument to define the ambiguous concept of livability both generally for all communities in the United States and locally by residents of a particular community. The study yielded a set of tools for researchers to continue the study of rural livability. The tools were presented and made available at the 2016 TRB Tools of the Trade Conference (presentation slides are provided as Deliverable 2a). Researchers also presented the results of the study in a webinar in October 2016 hosted by the Center for Urban Transportation Research (presentation slides are provided as Deliverable 2c). Lastly, researchers have made a public dataset available for researchers to perform their own analyses (the dataset is provided as Deliverable 3b).

Clearinghouses and Technical Assistance

NCTR has historically believed in the value of establishing and maintaining 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 resources allow practicing professionals to exchange information to help solve transportation issues in communities across the country and can sometimes be more valuable than research reports. 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.

The National TDM and Telework Clearinghouse is highly active and extensively used in the transportation industry. 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 researchers make them highly sought after speakers at transportation conferences. NCTR provides technical assistance using a range of methods from fostering self-service to short-term on-site support. NCTR hosts 20 public transportation-related listservs supported by the Livability grant. These listservs have over 7,300 subscribers. In addition, we have moved the over 2,000 subscribers from the NCTR and CUTR announcement listservs into MailChimp to deliver a more customized newsletter style of

communications about new reports, webinars, and other activities with a better analytics capability. These listservs include:

Listserv	Type	Subscribers
Best Workplaces for Commuters	Peer to Peer	518
Best Workplaces for Commuters Champions	Peer to Peer	143
Bus Fleet Maintenance	Peer to Peer	363
Bus Rapid Transit	Peer to Peer	630
Florida Fixed Guideway Transit System Safety	Peer to Peer	29
Florida Vehicle Procurement Program	Peer to Peer	93
Florida Transit Safety and Operations Network	Peer to Peer	236
Florida Transit Planning Network	Peer to Peer	316
Florida Transit Marketing Network	Peer to Peer	186
Florida Transit Maintenance Consortium	Peer to Peer	70
Journal of Public Transportation	Announce	714
Location Aware Information System	Peer to Peer	77
Parking Management Research	Peer to Peer	444
Rural Transit Assistance Program	Peer to Peer	119
Substance Abuse Management (Transit)	Peer to Peer	78
Telework	Peer to Peer	411
Transit GIS	Peer to Peer	902
Transportation Demand Management	Peer to Peer	1,952
Technology to Assist Travel Trainers	Peer to Peer	28
Florida Transit Research Inspection Procurement Services Program	Peer to Peer	146
Total		**7,455**

Online TDM Knowledge Base

We discontinued using Oracle's customer relationship management database service that housed National TDM and Telework Clearinghouse's online TDM knowledge base (KB) as a budget cutting action. The community will continued to be served by the listservs and the Best Workplaces for Commuters website.

On-demand Short-term Technical Support and Limited On-site Technical Assistance

The National TDM and Telework Clearinghouse also engages in a multitude of technical support activities, including interactions with the Association for Commuter Transportation and participants in the Best Workplace for Commuter program, requests for assistance from commuter assistance programs, transit agencies, state departments of transportation, regional planning councils, the media, and others on a range of topics from bike programs, to effective TDM strategies, effective carpool programs, and transit marketing techniques. Best Workplaces for Commuters Best Workplace for Commuters™ (BWC) provides qualified employers with national recognition for offering outstanding commuter benefits, such as free or low cost bus passes. Employers that meet the national standard of excellence in commuter benefits are

eligible to be designated a Best Workplace for Commuters. Best Workplace for Commuters is a program designed to encourage sustainable transportation innovation. In January 2018, NCTR announced the 2018 list of Best Workplaces for Commuters (238 members from 32 states) is shown on the BWC website at www.bestworkplaces.org

Social Media

@CUTRUSF Twitter has 600 followers. CUTR has begun using Facebook Live to broadcast weekly graduate seminar series at USF and guest speakers.

Advanced Transit Energy Portal (ATEP)

The 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 a data collection page, allowing participating agencies to securely submit their fleet operations and cost data to CUTR for analysis of the field performance of alternative fuel vehicles. Statistics for past 6 months include (October 1, 2017 – March 31, 2018):

- 9 new posts on the website
- Website was viewed 198 times by 187 users
- Total of 211 page views
- 98% of the users were new visitors while one user was a returning user
- 97% of the time the website was accessed from a computer, while 3% of the time a mobile device (phone or a tablet) was used to access the website.
- November 2017 was the month with the highest number of website visitors

TDM Professional Development and Organizational Learning

Training

NCTR's TDM program contributes significantly to professional development for practitioners in the field of commuter assistance programs. The courses 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. Courses cover subjects such as bicycle and pedestrian issues, parking management, changing travel behavior by time and place, trends and conditions affecting transportation, TDM societal costs and benefits, commuter tax benefits, how to market TDM to employers, travel choices and public health, and creating vanpool and carpool programs. In the past six months the Commuter Choice Certificate attracted a total of 159 attendees. The courses were recorded and received additional 423 views. Therefore, we estimate there have been approximately 611 contact hours of training. One contact-hour represents one person who attends a 1-hour session.

Program	Participants	Contact Hours
Commuter Choice Training	611	611
Social Marketing in Transportation	457	1085
Technical Assistance and Training Program	131	3318
Transit Maintenance AARC	46	1432
Transit Operator Trainer Program	22	880

Finally, NCTR and CUTR produce the CUTR Transportation Webcast series (webinars) on a bi-weekly basis that features the results of transit research and program technical assistance. The Webcast series has undergone a new "branding" effort with a better outreach and advertising strategy (enhanced website and social media outreach). An average of 40 people attend the webinars on a live basis, and a bit more view the webinar on a recorded basis. Hence, an additional 700 transportation professionals were able to increase their knowledge of various transportation issues through the webinars offered by CUTR/NCTR.

Netconferences

The following seven Netconferences were conducted this reporting period:

- Trends in Travel Behavior and Transit Ridership (March 29, 2018)
- Positively Improving Your Online Reputation & Rating (November 9, 2017)
- Utilizing TBEST for Comprehensive Transit Planning (Part 2) (October 26, 2017)
- Bringing Order to Chaos: The Growing Role of Proactive Traffic Management Solutions (October 24, 2017)
- Texas Transit Needs Assessment and Performance Dashboard (October 19, 2017)
- A GIS Methodology for Evaluating Bus Pedestrian Safety (October 12, 2017)
- Application of Demographic Analysis to Pedestrian Safety (October 10, 2017)

Transportation Engineering Graduates

Some of our most important successes are reflected in our graduation of transportation students. Here are the Fall 2017 transportation engineering graduates from USF:

Kessler	Matthew	MSES	Transportation Engineering
Bourne	Alexander	MCE	Transportation
Charukitpais	Teerapat	MCE	Transportation
Gurram	Sashikanth	PhD	Transportation and Environmental
Knight	Mark	MCE	Transportation
Luong	Trang	MSCE	Transportation
Wang	Yuan	MCE	Transportation
Wilson	Michael	MCE	Transportation
Narayanaswam	Gurudutt	MCE	Transportation
Rajalingola	manvitha	MSCE	Transportation
Xin	Chunfu	MCE	Transportation

C. *How have the results been disseminated?*

Results are disseminated through publications, presentations, newsletters, social media, web postings, and through teaching and training. As examples of NCTR dissemination, the TDM Knowledge Base provides thousands of answers to questions asked by members of the TDM Listserv. The *Journal of Public Transportation* was published containing 12 papers. Notifications of the availability of the new issue was sent via the appropriate Listservs maintained by NCTR/CUTR, reaching over 2,600 transportation professionals. Papers from the Journal were downloaded 27,000 times. Research reports are posted to the NCTR website and posted in TRID. NCTR maintains an alerting service to almost 2,000 subscribers who ask to be advised when a new report is available.

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

We plan to continue working on our 11 new projects, which are all very exciting and will help position NCTR/CUTR for the future. We plan to complete the other past/ongoing projects and document their impacts.

Most of the new projects are contributing toward the new USF/CUTR Connected Automated Testbed, which is an evolving living laboratory on the USF campus, in partnership with the City of Tampa, Hillsborough County, HART, the Florida Department of Transportation and other partners.

The *Journal of Public Transportation* will publish a regular issue in the second quarter of 2018 and will continue to produce two additional special issues later in 2018, focusing on Transit

Automation and Transit Safety and Security. In January 2019 the regular unsolicited journal process will resume. Continuing efforts are underway to solicit additional funding for the journal.

The new *Journal for Transportation Demand Management* is nearing its first published issue which is expected to be available in the next reporting period.

We plan to continue implementing the activities that are funded through the grant, most particularly the research projects, including students on every project. Additional webinars (two per month) will be conducted featuring the results of NCTR research, as well as other research presentations that can be made by other UTCs. The FIU project is nearing completion—the Final Report is currently being finished. The UIC project is also nearing completion.

Work on creating the transit exhibit at the Museum of Science and Industry is on a hiatus as the museum is experiencing severe financial strains and is now anticipating moving from its current location near USF to a location in downtown Tampa.

An NCTR Student of the Year for 2018 will be selected in Fall 2018 and the selected student will be assisted with making plans to attend the TRB Annual Meeting and the CUTC Annual Awards Banquet in January 2019.

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.

A. *Publications, conference papers, and presentations*

During this reporting period the following numbers and types of publications, conference papers and presentations were completed by NCTR faculty members:

- Moderator of presentation: 2
- Moderated Panel: 3
- Guest lecture: 1
- Conference Presentation: 24
- Meeting Presentation: 4
- Seminar Presentation: 1
- Poster Presentation: 2
- Webinar: 1
- Book chapter: 1
- Publication: 1

Type	Title
Moderator	Godfrey, Jodi. Steven Polzin. Trends in Travel Behavior and Transit Ridership. CUTR Transportation Webcast. 03/29/2018
Guest lecture	Winters, Philip. Demand Management and an Introduction to Shared Mobility. Multimodal Transportation Planning. 10/31/2017
Conference presentation	Winters, Philip. Making an ImpACT with TDM. Association for Commuter Transportation's ImpACT! Leadership Program. 01/21/2018
Moderator	Bunner, Rodney. Utilizing TBEST for Comprehensive Transit Planning (Part 2). CUTR Transportation Webcast. 10/26/2017
Meeting presentation	Godfrey, Jodi. Lisa Staes Lisa. Xuehao Chu. FTA Safety Standards Strategic Plan: Comprehensive NTD Data Analysis and Exposure Risks Across Person Types. Task Force on Transit Safety & Security Meeting. 01/09/2018
Conference presentation	Lehmann, Kurt. Steven Polzin. Richard Driscoll. Jodi Godfrey. The Effect of Demographic Changes on Transit Ridership Trends. TRB Annual Meeting. 01/09/2018
Conference presentation	Godfrey, Jodi. Lisa Staes Lisa. Jennifer Flynn. Roberta Yegidis. Successful Practices and Training Initiatives to Reduce Bus Accidents and Incidents at Transit Agencies – an abridged version of TCRP Synthesis 126. TRB Annual Meeting. 01/09/2018
Conference presentation proceedings	Barbeau, Sean. Closing the Loop: Improving Multimodal Transportation Through Crowdsourced Information. 2018 Transportation Research Board 97th Annual Meeting. 01/08/2018
Conference presentation and proceedings	Barbeau, Sean. Quality Control - Lessons Learned from Deployment and Evaluation of GTFS-realtime Feeds. 2018 Transportation Research Board 97th Annual Meeting. 01/09/2018
Conference presentation	Barbeau, Sean. Kari Watkins. Can Transit Open-source Software Survive? 2018 Transportation Camp DC. 01/06/2018
Conference presentation	Barbeau, Sean. GTFS-realtime v2.0. 2018 Transportation Camp DC. 01/06/2018
Conference presentation	Barbeau, Sean. Closing the loop - Improving Transit through Crowdsourced Information. 5th Annual UTC Conference for the Southeastern Region. 11/16/2017
Conference presentation	Barbeau, Sean. Open Transit Data 2.0 - GTFS Best Practices and GTFS-realtime v2.0. 5th Annual UTC Conference for the Southeastern Region. 11/16/2017
Conference presentation	Barbeau, Sean. GTFS-realtime – Next Steps. 2017 Transit Data Workshop. 10/19/2017
Conference presentation	Barbeau, Sean. GTFS-realtime v2.0. 2017 Transit Data Workshop. 10/19/2017
Blog post	Barbeau, Sean. Bike share launches in OneBusAway! 10/09/2017
Poster presentation	Lester, A.B., Bond, J.A., and Henry, A. (2017, November). A social marketing framework to develop key messages for travelers along high crash corridors in Florida. Poster presentation at that American Public Health Association (APHA) Conference, Atlanta, GA.
Poster presentation	Lester, A.B., & Bond, J.A. (2017, November). Neighborhood Residents' Perceptions of Physical and Social Environmental Factors Related to Active Transportation. Poster presentation at that American Public Health Association (APHA) Conference, Atlanta, GA.
Webinar	Polzin, Steve. "Trends in Travel Behavior and Transit Ridership", CUTR Webinar, March 29, 2018. https://www.cutr.usf.edu/2018/03/cutr-webcast-trends-in-travel-behavior-and-ridership/
Conference Presentation	Polzin, Steve. "What Portends the Future of Public Transportation?" Presentation, Public Partnership Models for Transit and Micro-Transit Session, 3 Revolutions Policy, UC Davis

	Institute of Transportation Studies, Davis, California, February 26-28, 2018. https://3rev.ucdavis.edu/wp-content/uploads/2018/03/3R_Steve_Polzin.pdf
Book Chapter	Polzin, Steve. Three Revolutions: Steering Automated, Shared, and Electric Vehicles to a Better Future, Chapter 5. Upgrading Transit for the Twenty-First Century \ Steven E. Polzin and Daniel Sperling, ISBN: 9781610919050, Island Press, March 2018. https://islandpress.org/book/three-revolutions.
Publication	Polzin, Steve. "Just Around the Corner: The Future of U.S. Public Transportation", Journal of Public Transportation, 21 (1): 43-52. http://scholarcommons.usf.edu/jpt/vol21/iss1/5/, February 2018.
Conference Presentation	Polzin, Steve. "Current Travel Behavior and Transit Ridership", invited presentation, APTA Transit CEOs Seminar, Miami, Florida, February 12, 2018.
Conference Presentation	Polzin, Steve. "Changes in Travel Behavior Affecting Transit," Invited Presentation, Transportation Research Board Executive Committee, TRB Annual Meeting, Washington D.C., January 10, 2018.
Conference Presentation	Polzin, Steve. "How to Support Decision Making in an Era of Uncertainty", Presentation, Special Task Force on Data for Decisions, Transportation Research Board Annual Meeting, Washington DC, January 8, 2018.
Conference Presentation	Polzin, Steve. (With Lehman, Richard Driscoll, Jodi Godfrey) "The effects of Demographic Changes on Transit Ridership Trends," Conference Proceedings, Presentation, TRB Annual Meeting Session 697 – Integrating the Data into Public Transportation Service Planning Process, Washington DC, January 9, 2018.
Conference Presentation	Polzin, Steve. "New Data, New Research Priorities" Presentation, session on National Household Travel Survey, Applying Census Data for Transportation: 50 Years of Transportation Planning Data Progress, Wednesday, Kansas City, MO, November 15, 2017.
Conference Presentation	Polzin, Steve. "Unintended Consequences: What Else Should We be Thinking About?" Presentation, 2017 Florida Automated Vehicle Conference, November 14, 2017, Tampa, Florida. https://www.youtube.com/watch?v=F3koLLNUxFo&index=4&list=PLSxfeVJfJaUa7LNlHruHN7BnYcogF_0px (at 33 minutes).
Seminar Presentation	Polzin, Steve. "Transportation's Transformation: The Confluence of Demographic, Economic and Technology Trends," seminar presentation, Arizona State University, and Maricopa County Metropolitan Planning Organization, November 2, 2017.
Conference Presentation	Polzin, Steve. "Transit Trends and Forecasting Issues," Presentation, Florida Model Task Force, Transit Subcommittee, Orlando, Florida, October 17, 2017.
Conference Presentation	Bond, Julie. The New Commute, Employers Leading the Way. Association for Commuter Transportation TDM Forum. Las Vegas, NV. 10/18/2017
Conference Presentation	Bond, Julie. Best Workplaces for Commuters Partnerships. Commuterland/commute.org. South San Francisco. 3/15/2018
Meeting Presentation	Staes, Lisa. FTA Safety Standards Strategic Plan and Standards Development Program, APTA Safety Coordinating Committee/Council meeting, October 8, 2017.
Conference Presentation	Staes, Lisa. Successful Practices and Training Initiatives to Reduce Bus Accidents and Incidents at Transit Agencies, TCRP Synthesis 126, Transportation Research Board, APTA Annual Meeting, October 10, 2017
Meeting Presentation	Staes, Lisa. *SMS in Research*, APTA Mid-Year Safety Meeting, December 6, 2017
Moderated Panel	Staes, Lisa. Technology and Safety, APTA Mid-Year Safety Meeting, December 6, 2017
Moderated Panel	Staes, Lisa. Achieving Safety and Security in Today's Resource Constrained Environment, TRB, January 7, 2018

Moderated Panel	Staes, Lisa. Improvements in Transit Safety on Roadway Systems, TRB, January 9, 2018
Publication	Pei-Sung Lin, Seckin Ozkul, Rui Guo and Cong Chen, Assessment of countermeasure effectiveness and informativeness in mitigating wrong-way entries onto limited-access facilities, Accident Analysis & Prevention, pp 63-72, January 25, 2018.
Publication	Pei-Sung Lin, Cong Chen, Achilleas Kourtellis, Zhenyu Wang, Rui Guo, Zhao Zhang, "Investigating Driver Compliance with Pedestrian Features at Signalized Intersections: SHRP 2 Naturalistic Driving Study Data Analysis", *Compendium of Papers*, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Publication	Zhenyu Wang, Chunfu Xin, Chanyoung Lee, Pei-Sung Lin, Rui Guo, "A Matched Case-Control Study on Single-Motorcycle Crashes on Rural, Two-Lane, Undivided Horizontal Curves in Florida", Compendium of Papers, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Publication	Zhenyu Wang, Chunfu Xin, Pei-Sung Lin, Tao Chen, "Exploring the Impacts of Street Illuminance on Nighttime Crash Severity in Roadway Segments Using a Random Parameter Ordered Probit Model", Compendium of Papers, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Publication	Haozhe Cong, Cong Chen, Pei-Sung Lin, Guohui Zhang, John Milton, Ye Zhi, "Traffic Incident Duration Prediction Based on a Dual-Learning Bayesian Network Model", Compendium of Papers, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Publication	Chunfu Xin, Zhenyu Wang, Chanyoung Lee, Pei-Sung Lin, Tao Chen, Rui Guo, Qing Lu, "A Matched Case-Control Study on Single-Motorcycle Crashes on Rural, Two-Lane, Undivided Horizontal Curves in Florida", Compendium of Papers, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Publication	Chunfu Xin, Rui Guo, Zhenyu Wang, Qing Lu, and Pei-Sung Lin, "The effects of neighbourhood characteristics and the built environment on pedestrian injury severity: A random parameters generalized ordered probability model with heterogeneity in means and variances", Analytic Methods in Accident Research, Volume 16, December 2017, Pages 117-132
Publication	Rui Guo, Chunfu Xin, Pei-Sung Lin, Achilleas Kourtellis, "Mixed Effects Logistic Model to Address Demographics and Neighborhood Environment on Pedestrian Injury Severity", Transportation Research Record, Journal of the Transportation Research Board, Volume 2659, pp 174-181, December 2017.
Conference Presentation	Pei-Sung Lin, Achilleas Kourtellis, Zhenyu Wang, Cong Chen, "Understanding Interactions Between Drivers and Pedestrian Features at Signalized Intersections Using NDS and RID and Databases", Lectern Session 706 - SHRP 2 Safety Data: Key Results from State DOT Research, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Conference Presentation	Zhenyu Wang, Chunfu Xin, Chanyoung Lee, Pei-Sung Lin, Rui Guo, "A Matched Case-Control Study on Single-Motorcycle Crashes on Rural, Two-Lane, Undivided Horizontal Curves in Florida", Lectern Session 554 - Motorcycle and Moped Crash Studies, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Conference Presentation	Pei-Sung Lin, Cong Chen, Achilleas Kourtellis, Zhenyu Wang, Rui Guo, Zhao Zhang, "Investigating Driver Compliance with Pedestrian Features at Signalized Intersections: SHRP 2 Naturalistic Driving Study Data Analysis", Lectern Session 552 - SHRP 2 Safety Data: Researchers' Perspectives and Some Analysis Results, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Conference Presentation	Zhenyu Wang, Chunfu Xin, Pei-Sung Lin, Tao Chen, "Exploring the Impacts of Street Illuminance on Nighttime Crash Severity in Roadway Segments Using a Random Parameter Ordered Probit

	Model", Lectern Session 429 - Lighting, Visibility, and Safety, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Conference Presentation	Haozhe Cong, Cong Chen, Pei-Sung Lin, Guohui Zhang, John Milton, Ye Zhi, "Traffic Incident Duration Prediction Based on a Dual-Learning Bayesian Network Model", Poster Session 385 - Artificial Intelligence and Machine Learning Tools for Estimation, Detection, and Prediction Applications in Transportation, 97th Transportation Research Board Annual Meeting, Washington DC, January 7-11, 2018.
Conference Presentation	Pei-Sung Lin, "How to Successfully Implement Leading Pedestrian Intervals", Session III: Innovative Transportation Operations, Workshop on Transportation Advancement – Connecting Industry, Government, and Academia, Sponsored by the International Chinese Transportation Professionals Association (ICTPA), Washington DC, January 7, 2018
Moderated Panel	Pei-Sung Lin, Session Chair, Session III: Innovative Transportation Operations, Workshop on Transportation Advancement – Connecting Industry, Government, and Academia, Sponsored by the International Chinese Transportation Professionals Association (ICTPA), Washington DC, January 7, 2018
Conference Presentation	Pei-Sung Lin, "Comparing Countermeasures for Mitigating Wrong-way Entries onto Limited Access Facilities" Wrong-way Driving Forum, Florida Department of Transportation, November 9, 2017
Conference presentation	Hendricks, Sara. The Collaborative Role of Transit Agencies in the Provision of Bicycle & Pedestrian Street Improvements. 5th Annual UTC Conference for the Southeastern Region. 11/16/17
Meeting presentation	Hendricks, Sara. Better Links: Improving Trail Connectivity with Public Transportation. Pasco MPO Bicycle and Pedestrian Advisory Committee. 11/28/17
Conference presentation and proceedings	Hendricks, Sara. Method for Linking Greenways and Trails with Public Transit Service. 2018 Transportation Research Board 97th Annual Meeting. 1/9/18

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

The NCTR (nctr.usf.edu) website is highly visited by people seeking information on public transit and other modes of non-Single Occupant Vehicle transportation. During this six month period there were about 37,000 sessions (an increase of 17% from previous six months), 28,000 new users (an increases of 13%), and 64,000 page views (an increase of 20%). When people query "transit research," NCTR's website is the top listing on Google, Bing, and Yahoo! search engines.

The National Transit Safety Research and Technical Assistance Center website reports having 1,778 visitors during this reporting period. The site serves as both a resource for the industry, as well as for CUTR's FTA Transit Standards Working Group, an independent stakeholder body that provides input and support to CUTR's project team for FTA's Safety Standards Strategic Plan and standards development activities. 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 and is maintaining a website for the Task Force (www.trbtss.org).

The Florida Transit Safety Network program also has a website that attracted 4,085 users. The Advanced Transit Energy Portal website was visited over 320 times during this reporting period.

C. Technologies or techniques

The @NCTRUSF Twitter account that had 909 followers was changed to shift all communications to @CUTRUSF. The change was posted for 10 days advising @NCTRUSF followers to follow @CUTRUSF. It is hoped that traffic will pick up as more projects are completed and more messages are sent out informing followers of valuable information.

D. Inventions, patent applications, and/or licenses

No patents were issued based on NCTR research. However, USF remains in the top 15 universities worldwide for receiving patents with 16 granted for work funded through NCTR.

E. Other products

OneBusAway is an open source platform for real time transit information. NCTR did not create the software but continues to contribute to its improvements and to helping disseminate its availability. This software enables a low cost provision of real time information. It is growing in popularity and used by over 400,000 transit passengers in 10 different cities including New York.

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

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

NCTR works with many organizations including the Florida Department of Transportation, the City of Tampa, Hillsborough County, most transit agencies in the State of Florida and many agencies, firms and organizations around the Tampa Bay Area, the State of Florida and the U.S.

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

NCTR has worked closely with the Association for Commuter Transportation to plan and produce webinars that are hosted by NCTR faculty and to plan their conference programs. The Florida Public Transportation Association works closely with NCTR faculty in the development and production of the Annual Professional Development Workforce conference that will be held on the USF campus in June 2018.

NCTR works closely with the Florida Department of Transportation and the Florida Public Transportation Association to administer 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.

Hillsborough Community College (HCC) 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 learn skills to keep up with the rapidly changing bus technology, and can also earn an AA degree from HCC in the process of earning program credits.

NCTR and the Hillsborough Area Regional Transit Authority (HART) work cooperatively to institute and improve the OneBusAway software to provide transit users with real time information on the arrival time of the next bus at any bus stop. Other transit agencies in Florida have expressed interest in using this software after seeing the success in Tampa.

USF/CUTR/NCTR faculty and students are now involved with three new UTCs, including ones led by the University of Texas at Arlington (CTEDD), Cornell University (CTECH), and Arizona State University (TOMNET).

More than two hundred public and private employers from across the country, participate in the Best Workplace for Commuters program and share 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 completing MCTR TDM courses. CM credits increases participation by providing the incentive for planners to attend the training. AICP planners must obtain 32 hours of CM credits every two years.

Several agencies have worked with FIU for its project on pedestrian facility inventory including FDOT District #6, the FHWA Florida Division, and the Broward County MPO. The National Transit Safety Research and Technical Assistance Center works closely with U.S. DOT'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.

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.

A. 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 their 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 remain an important resource to the public transit industry and the public.

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

NCTR, with its 40-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 member universities 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.

C. *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 provide training to practicing professionals at a variety of levels. In addition to the training received at the venues noted above, NCTR faculty made 32 other presentations at state, regional, and national professional conferences. NCTR and CUTR continue produce webinars on a bi-weekly basis and weekly transportation seminars that feature the results of transit research and program technical assistance.

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

Nothing to report.

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

The publication of the special issue of the *Journal of Public Transportation* was supported with funds from this grant. Individual articles and full text issues were downloaded over 27,000 times. The grant also supports the administration and maintenance of the various Listservs that allow the exchange of information among over 10,000 transportation professionals in the areas of transportation demand management, safety, etc., resulting in an incredible amount of transfer of knowledge among practicing professionals, university researchers, and students.

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

Efforts to encourage the use of transit and alternative and active modes of transportation should result in the reduction of congestion, energy consumption and emissions. 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 and a step toward slowing global warming. NCTR training enables practitioners in the field to perform their functions more efficiently and effectively, resulting in better quality of service to the public.

5. CHANGES/PROBLEMS

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

Nothing to report.

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.

Additional information regarding Products and Impacts
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.

We are excited about the array of new projects that started or were selected during this reporting period. These projects will provide significant impacts and will position CUTR well for the future to compete for research projects at the state and national levels. 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.

6. SPECIAL REPORTING REQUIREMENTS

Nothing to report.