



## Program Progress Performance Report for University Transportation Center at Portland State University

Submitted to: U.S. Department of Transportation  
Office of the Secretary-Research

Grant Number: DTRT1-G-UTC27

Project Title: National University Transportation Center  
National Institute for Transportation and Communities (NITC)

*Consortia members: Portland State University (PSU), University of Oregon (UO), University of South Florida (USF), Oregon Institute of Technology (OIT), University of Utah (UU)*

Program Director: Jennifer Dill, Ph.D.  
Professor, Portland State University  
Director, National Institute for Transportation and Communities (NITC)  
[jdill@pdx.edu](mailto:jdill@pdx.edu)  
503-725-2855

Submitting Official: same as above

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Recipient Organization: Portland State University  
PO Box 751  
Portland, OR 97207-0751

Grant Period: October 1, 2013 – September 30, 2017

Reporting Period End Date: September 30, 2015

Report Term: Semi-annual

Signature:

A handwritten signature in black ink, appearing to read "J. Dill".

## 1. ACCOMPLISHMENTS: What was done? What was learned?

The information provided in this section allows the RITA grants official to assess whether satisfactory progress has been made during the reporting period.

### What are the major goals of the program?

The major goals for NITC as described in our application fall into six categories:

#### *Research*

- **Build and extend our current research through Year 1 Projects.** During the first year, we will undertake research projects that build upon and extend our current work, and reflect priorities identified by our external advisory board. All Year 1 project work plans will be peer-reviewed.
- **Competitive, peer-review project selection process in Years 2 and 3.** Our projects in Years 2 and 3 will be selected through an open RFP process to consortium faculty. These funds will be available for projects consistent with our theme.
- **Transportation for Livable Communities Pooled-Fund Research.** We will continue the Transportation for Livable Communities Pooled-Fund Research program. This program provides regional and local agencies, such as metropolitan planning organizations and municipalities, more opportunity to be invested in research.

#### *Leadership*

- **High Standing within National and International Arenas of Transportation.** NITC faculty are well regarded nationally and internationally as leaders in their fields. They will continue to demonstrate this leadership through publishing in the top journals and presenting their work at conferences. NITC takes the concept of leadership far beyond academic circles, as evidenced by the wide dissemination of research results in professional, technical and general publications and other media.

NITC faculty help address national transportation problems through volunteer leadership on TRB committees and in other positions. By serving on these committees, faculty will help set national research agendas and connect with agency leaders and practitioners on pressing research issues. To continue and reinforce this practice, NITC will mentor our new, junior faculty to apply for committee and panel membership and recognize the activities of all faculty members.

- **Solving Regional and National Transportation Problems.** NITC researchers have a long history of conducting research that is useful in solving the problems practitioners and decision-makers face every day. NITC's director and staff will serve as points of contact for agency leaders and policymakers regionally, statewide and nationally. When we identify needs that match the expertise of our researchers, we will make a connection. We will work with key staff at the DOT modal

administrations, both in Washington, D.C., and within our regions to determine the most effective way for our researchers to learn from and inform agency activities.

- **Future Leaders.** We recognize the investment we must make in our young faculty and students by prioritizing research projects that include them. We will support students traveling to conferences to present their work, a key activity in developing the next generation of leaders.
- **Development and Delivery of Programs.** We demonstrate our leadership in innovating transportation education, workforce development, deployment of research results and conducting research.

#### *Education and Workforce Development*

- **Offer Degrees and Courses in Multiple Disciplines.** NITC will continue to offer a rich array of degrees that serve the transportation profession.
- **Provide Experiential Learning.** A key component of our education strategy is experiential learning, which will help attract and retain students. Our campuses will continue to provide these opportunities, and NITC will seek ways to expand them.
- **Develop Innovative New Curriculum.** We will develop new, innovative curriculum consistent with transportation and livable communities that can be tested and shared among NITC and other universities.
- **Educate Professionals.** NITC will maintain a vibrant program of seminars, workshops, professional courses and other training opportunities that provide transportation practitioners with the latest tools and techniques.
- **Attract and Support Undergraduate Students.** NITC will build upon existing and effective mechanisms to expose K-12 students to transportation, attract and retain new undergraduate students to our degree programs, and involve undergraduates in our research.
- **Attract and Support Graduate Students.** NITC will support graduate students directly through research assistantships working on projects. We will provide dissertation fellowships for students to research surface transportation topics that fit under the NITC theme. This will be a competitive process open to Ph.D. students at NITC universities.
- **Sponsor a Transportation and Livable Communities Student Competition.** To further attract students to transportation-related professions and to promote integrated education into transportation and livability issues, NITC will sponsor an annual competition on transportation and livable communities.

#### *Technology Transfer*

- **Move Research into Practice.** Each research project will include a well-defined scope of work that identifies the problem the research will solve, how the research will address the problem and how the results will be implemented. We will continue

our practice of having every final report peer reviewed by at least one academic and one practitioner with relevant knowledge. We will also identify "implementation champions" the influential decision makers, executives and other top officials who can cut through organizational obstacles to deploy research results. We will provide these champions yearly summaries of our deployment successes as a reminder of the value of our research. Researchers working closely with practitioners and champions throughout the project ensures that our research stays current with the changing needs of practice and delivers research results in the optimal format.

- **Use Innovative Approaches to Communicate Research Results.** NITC will embark on an ambitious program of sharing information through traditional and new media.

#### *Collaboration*

- **Collaborating within our consortium.** NITC's governance structure is cooperative and leadership is distributed. The Executive Committee includes one faculty member from each campus. The Executive Committee provides overall direction for the Center, makes project funding decisions, and selects Center award recipients, including student of the year. They will meet in person at least once a year, rotating the location between campuses, and hold regular conference calls. Each Executive Committee member will be responsible for representing and supporting their respective campus
- **External collaboration.** In addition to the partnerships that occur through individual projects and the pooled-fund program, NITC will foster collaboration with a range of "end-users" of our work through an External Advisory Board.

#### *Diversity*

- **Attract underrepresented students to transportation careers.** We aim to attract underrepresented middle through high school students to transportation as a career through our partnerships with STEM and WTS.
- Priority funding to research with an equity focus. We give priority to funding research projects that have an equity focus by awarding them additional points in the RFP process. In addition, three of our projects selected for the first year directly address equity issues.

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

#### *Research*

- **Build and extend our current research through Year 1 Projects.**

All 13 of the Year 1 projects have submitted proposals and have started. The total allocation of NITC funds for these projects is \$ 870,266. As of September 30th, 2015, the 13 projects in progress are on average, 57% complete. The projects in progress include the following:

- Encouraging Low-Income Households to Make Location-Efficient Housing Choices, Andree Tremoulet, Portland State University.

- Integrating Freight into Livable Communities, Kristine Williams, University of South Florida.
  - Generalized Adaptation of an Electric-Hydraulic hybrid drive system, James Long and David Culler, Oregon Institute of Technology.
  - Improving Bicycle Crash Prediction, Krista Nordback, Portland State University.
  - Improving Trip Generation Methods for Livable Communities, Kelly Clifton, Portland State University and Nico Larco, University of Oregon
  - Transportation Cost Index: A Comprehensive Performance Measure for Transportation and Land Use Systems and its Application in OR, FL, and UT, Liming Wang and Jenny Liu, Portland State University.
  - Creating Livable Communities through Connecting Vehicles to Pedestrians and Cyclists, John MacArthur, Portland State University.
  - Metropolitan Centers: Evaluating local implementation of regional plans and policies, Richard Margerum and Rebecca Lewis, University of Oregon, and Keith Bartholomew, University of Utah.
  - Developing a model for Transit Oriented Development in Latino Immigrant Communities: A National Study of Equity and TOD, Sandoval, Gerardo.
  - Do TODs make a Difference? Phase 2, Arthur Nelson and Reid Ewing, University of Utah and Jenny Liu, Portland State University.
  - Changing attitudes toward sustainable transportation: The impact of meta-arguments, David Sanbonmatsu and David Strayer, University of Utah.
  - Rapidly Expanding Mobile Apps for Crowd-sourcing Bike Data to New Cities. Sean Barbeau, University of South Florida.
- **Competitive, peer-review project selection process in Years 2 and 3.**

A request for proposals (RFP) for the NITC National Year 2 funds was released in January of 2015 for research and technology transfer projects. NITC requires that all proposals fit within the NITC theme of livability, safety and environmental sustainability. The NITC Advisory Committee provided guidance at the December 2014 meeting that the RFP give priority for research funding that examines the economic impact of transportation and livable communities. Abstracts were due on March 16th, 2015 and full proposals due on April 15<sup>th</sup>, 2015. Fifty-eight abstracts and 39 proposals, requesting more than \$4 million, nearly doubling the 20 proposals submitted in last year's funding round. Sixteen projects were selected through a competitive, peer review process with approval from the executive committee on June, 10<sup>th</sup>. Funded projects with an economic focus area looked at urban greenways, location affordability in shrinking cities, transportation affordability in developments near transit, smart-parking programs and effects of bus rapid transit on surrounding property values. Awards were made shortly after for an August 1, 2015 start date for many of the projects. Each project from the second round is also between 12 and 18 months in duration. As of September 30<sup>th</sup>, 2015, the 16 projects are on average, 4% complete. The projects in progress include the following:

- Understanding the Economic Impacts of Urban Greenway Infrastructure, Jenny Liu, Mike Paruszkiewicz and Jeff Renfro, Portland State University.
  - How Does Transportation Affordability Vary Between TODs, TADs, and Other Areas, Brenda Scheer and Reid Ewing, University of Utah
  - Integrating Title VI and Equitable Investment in Transportation Alternatives into the MPO Transportation Planning Process, Kristine Williams, University of South Florida, and Aaron Golub, Lisa Bates and Liming Wang, Portland State University
  - Building Planner Commitment: Are Oregon's SB 1059 & California's SB 375 Models for Climate-Change Mitigation? Keith Bartholomew, David Proffitt and Reid Ewing, University of Utah
  - Racial Bias in Drivers' Yielding Behavior at Crosswalks: Understanding the Effect, Kimberly Barsamian Kahn, Portland State University
  - The Economic and Environmental Impacts of Smart-Parking Programs, Nicole Ngo, University of Oregon
  - What do we Know About Location Affordability in U.S. Shrinking Cities? Joanna Ganning, University of Utah
  - Framing Livability: A Strategic Communications Approach to Improving Public Transportation in Oregon, David Remund, Kelli Matthews, Deb Morrison and Nico Larco, University of Oregon
  - Effectiveness of Transportation Funding Mechanisms for Achieving National, State, and Metropolitan Economic, Health, and Other Livability Goals, Rob Zako and Rebecca Lewis, University of Oregon
  - Multimodal Trip Generation, Vehicle Ownership and Use: Characterizing The Travel Patterns of Residents of Multifamily Housing, Kelly Clifton, Portland State University
  - Incorporate Emerging Travel Modes in the Regional Strategic Planning Model (RSPM) Tool, Liming Wang, Kelly Clifton and Jennifer Dill, Portland State University
  - Evaluating Efforts to Improve the Equity of Bike Share Systems, Nathan McNeil, John MacArthur and Jennifer Dill, Portland State University
  - Evaluation of roadway reallocation projects, Miguel Figliozzi, Portland State University
  - Impacts of Bus Rapid Transit (BRT) on Surrounding Residential Property Values, Victoria Perk and Martin Catala, University of South Florida
  - Addressing Bicycle-Vehicle Conflicts with Alternate Signal Control Strategies, Sirisha Kothuri, Christopher Monsere and Krista Nordback, Portland State University and Ed Smaglik, Northern Arizona University
  - Planning Ahead for Livable Communities Along the Powell-Division BRT: neighborhood conditions and change, Lisa Bates and Aaron Golub, Portland State University
- **Transportation for Livable Communities Pooled-Fund Research.**  
A request for problem statements was released in February 2015. Any agency was eligible to submit a problem statement to identify research needs that could be of common interest to similar agencies. Three problem statements from partners were

received by the April 15<sup>th</sup>, 2015 deadline.

The NITC executive committee selected the problem statement, Contextual Guidance at Intersections for Protected Bicycle Lanes. NITC staff then worked with the lead agency, Portland Bureau of Transportation, to secure financial support of \$125,000 from the municipalities and partners including the cities of Los Angeles, Chicago, Seattle, Washington, D.C., Portland, Oakland and Cambridge; TriMet; Metro; Washington County; and SRAM Foundation. NITC released an RFP for the problem statement for up to \$250,000. Two proposals were received and are currently under review.

### *Leadership*

- **Shape national & international conversations on transportation research and education.**
  - Twenty-five NITC faculty and staff serve on editorial, policy and other advisory boards.
  - NITC staff are active in the AASHTO-RAC liaison group.
  - NITC faculty are part of the team (led by ICF International) developing FHWA's Strategic Agenda for Pedestrian and Bicycle Transportation.
  - NITC's Director, Jennifer Dill, was elected to the Executive Committee of the Council of University Transportation Centers (CUTC).
- **Serve on national committees and panels.**
  - Faculty members and students at the five NITC member campuses currently serve on 72 TRB committees/task forces and 9 NCHRP/SHRP2/NCFRP/TRB panels.
- **Solving Regional and National Transportation Problems.**

The Transportation and Communities Summit (formerly the Oregon Transportation Summit) was held on September 15<sup>th</sup>, 2015 at Portland State University. The event hosted 243 practitioners, policymakers, students and researchers. The goal of the Summit is to advance the educate professionals on the state of research and to facilitate a conversation between practitioners and researchers to shape future research agendas. The 2015 Summit live streamed the event. Eighty-one unique viewers attended the event through the live webcast.

### *Education and Workforce Development*

- **Offer Degrees and Courses in Multiple Disciplines.**

The five-university consortium offers 13 graduate and 6 PhD degrees in transportation, closely related fields, and many dual degree options. Sixty undergraduate and 71 graduate level transportation-related courses are offered among the university.
- **Provide Experiential Learning.**

Our campuses continue to incorporate access to community partners and employment opportunities in a number of ways. The support for the student groups

and student scholars are our priority method for accomplishing this goal. The only campus student group and student scholars program to receive funds during the reporting period is University of South Florida. The other universities continued to utilize NITC Tier 1 funds.

The student group funding supporting the development of a LiveMove chapter developed with the assistance of the NITC Tier One funded University of Oregon chapter. There are 19 student members of the USF student group. LiveMove hosted or co-hosted 5 events during the reporting period. Nine of the members attended conferences with NITC assistance. Seven of the members held research assistantships and 3 members held transportation related internships.

- **Develop Innovative New Curriculum.**

Education modules were awarded to each of the five campuses for the 2015 winter, spring and summer terms. These curriculum projects include the following:

- Introduction to Scientific Computing for Planners, Engineers, and Scientists, Liming Wang, Portland State University
- Graduate-level Civil Engineering Transportation Course Development- Oregon Tech, Roger Lindgren, Oregon Institute of Technology
- Pedestrian and Transit Oriented Design, Keith Bartholomew, University of Utah
- Multimodal Transportation Planning Curriculum for Urban Planning Programs, Kristine Williams, University of South Florida
- Advanced GIS: Smart Transportation, Chris Bone, University of Oregon

Education year two projects were awarded in August of 2015 to three of the five NITC campuses. These projects include:

- Dynamic Evaluation of Transportation Structures with iPod-Based Data Acquisition, Charles Riley, Oregon Institute of Technology
- Design for an Aging Population, Trygve Faste, University of Oregon
- Establishing Graduate Certificate in Sustainable Transportation, Keith Bartholomew, University of Utah

- **Educate Professionals.**

NITC was involved with and sponsored the Oregon Active Transportation Summit on March 30<sup>th</sup> and 31<sup>st</sup>, 2015. The Summit was two days, the first being a conference and the second being trainings and tours. During the conference, NITC provided a total of 7.5 AICP credits for five of the sessions. A total of 210 people attended these five NITC-sponsored sessions. NITC staff hosted a training in partnership with the National Association of City Transportation Officials (NACTO). The NACTO trainings were the Urban Bikeway Design and the Urban Street Design. Fifty practitioners attended the trainings and NITC provided 6 AICP, ASLA, and ITE credits for each training.

Three unique bicycle and pedestrian focused workshops were held during the summer months on the Portland State University campus. The Integrating Bike-Ped Topics into University Transportation Courses was held June 18-19 to train university professors on integrating these livable communities-related topics into their transportation planning and engineering courses. This was the fourth workshop involving ten professors from across the US. Over the years, faculty from diverse disciplines such as civil engineering, planning, geography, epidemiology, and earth resources/sciences have participated in these workshops. Two, week-long comprehensive bicycle design and engineering workshops were held in July and August. These workshops brought 31 bicycle and pedestrian transportation professionals from across the U.S. to Portland to learn from local practitioners and to experience designs first-hand in the field.

NITC hosted 7 webinars from April to August. The webinars were attended by 758 people and 7 hours of AICP credits were offered. The webinar topics include:

- Impacts of Roadway and Traffic Characteristics on Air Pollution Risks for Bicyclists
  - How Affordable Is HUD Affordable Housing?
  - Understanding the Socio-Psychological Factors Affecting Active Travel to School
  - Transit-Oriented Development and Equity in Latino Neighborhoods: A Comparative Case Study of MacArthur Park (Los Angeles) and Fruitvale (Oakland)
  - Americans' Views of Transportation and Livable Communities
  - Four Types of Cyclists: A National Look
  - Pedestrians Count! – How to Measure Foot Traffic
- **Attract and Support Undergraduate Students.**

On April 13<sup>th</sup>, high school students from around the Portland metropolitan region participated in the 3rd Annual PSU High School Innovation Challenge. PSU student mentors worked with eight high school teams to develop innovations relating to “Smart Cities: Making Our Urban Communities Safer, Healthier and Happier.” Two of the winning concepts included the design of an improved anti-theft bike lock and rack system which protects wheels, seat and frame and an application to give bicyclists a way to find bike parking near their destinations.

Seven dedicated high-school students spent their summer at Portland State University working to transform the Bike-Ped Portal, the Online Non-motorized Traffic Count Archive. They worked on processing roughly four million individual records of bicycle, pedestrian and even equestrian movements in five states. The students participated in the internship through Saturday Academy, a program affiliated with the University of Portland which connects motivated high school students with STEM internships.

NITC staff are working to develop a one-day workshop on Working with Transportation Data: Statistical and Spatial Analysis for junior and senior girls in February 2016 as part of the ChickTech program. NITC is exploring developing a weeklong summer program for high school girls that focuses on exposure to careers in transportation on the Portland State University campus in the summer of 2016. NITC will continue to work with WTS Portland on their TransportationYou initiative which looks at engaging middle school girls

- **Attract and Support Graduate Students.**

Six graduate students at the University of South Florida have received NITC support. Examples of the student scholar successes include:

- Jodi Godfrey's presentation on "The Impact of Millennials' Travel Behavior on Future Personal Vehicle Travel" won her second place for the Southeastern Transportation Center Consortium in the 3-Minute Thesis competition at the 2015 Annual Transportation Research Board Meeting.
- Jodi Godfrey's abridged version of her thesis titled "Risk-Taking Characteristics as Explanatory Variables in Variations of Fatality Rates in the Southeastern United States" won the Daniel B. Fambro Student Paper Award from the International Institute of Transportation Engineers.
- Monica Martin won the APA-FL YPG State Conference Scholarship.
- Katrina Corcoran won the Florida Public Transportation Association Scholarship from the Directors of the American Public Transportation Foundation (APTF).

- **Sponsor a Transportation and Livable Communities Student Competition.**

NITC staff have been working with leaders from the student groups to develop a student competition for the fall of 2016 in conjunction with the Transportation and Communities Summit.

### *Technology Transfer*

- **Move Research into Practice.**

Five presentations on NITC National research reaching 305 people have been given at professional and trade conferences.

- **Use Innovative Approaches to Communicate Research Results.**

At the recent NITC Transportation and Communities Summit, we offered live video streams so that a remote audience could participate. Since this was a test of how to engage a national audience during an in-person conference, the live stream was not widely announced. It was announced via social media with very short notice. There were 81 unique viewers with 131 total views with an average streaming duration of 10 minutes. People tuned in from Oregon (71 viewers), California (35 viewers), Washington (5 viewers) and Elsewhere (6 other states and 11 other countries).

12% of the NITC website traffic was generated by social media. Most of this traffic came through two social media, Twitter and Facebook. Twitter accounted for the majority of social traffic, 54 percent, with Facebook following at 34 percent. Other

referrers included Naver (4 percent); Reddit and Disqus (2 percent each); and LinkedIn, Weebly and Blogger (around 1 percent each). Visitors arriving via social media viewed more pages and stayed active longer than our other visitors. Those arriving through Twitter stayed on the site more than 4 minutes per visit, compared to the overall site average of 2 minutes, 12 seconds. Those arriving through Facebook stayed nearly 3 minutes. Visitors viewed 3.28 pages per visit when arriving through Twitter and 2.39 pages per visit when arriving through Facebook. This compares favorably with the site average of 2.21 pages per visit.

### *Collaboration*

- **Collaborating within our consortium.**

The Executive Committee held a conference call on May 6, and met on June 10. The committee also convened at the NITC Advisory Committee meeting on September 16, 2015.

- **External collaboration.**

The following people and organizations were members of the NITC Advisory Board during this reporting period:

- Alan Lehto, Director of Planning & Policy, TriMet
- Brian Saelens, Professor of Pediatrics and Psychiatry & Behavioral Sciences, Seattle Children's Hospital
- Cameron Kergaye, Director of Research, Utah DOT
- Charles Pattison, Policy Director, 1000 Friends of Florida
- Craig Honeyman, Legislative Director, League of Oregon Cities
- Gabe Rousseau, Safety Operations Team Leader, FHWA
- James Christian, Division Administrator, FHWA-Utah Division
- Jana Lynott, Senior Strategic Policy Adviser, Public Policy Institute, AARP
- Kevin Desmond, General Manager, King County Metro Transit
- Matthew Hardy, Program Director, Policy and Planning, AASHTO
- Michael Baltes, ITS Program Manager, Office of Mobility Innovation, Federal Transit Administration
- Michael Bufalino, Research Section Manager, Oregon Department of Transportation
- Jon Peterson, Manager, Community Design, Engineering Policy & Innovation Division, WSDOT
- Wendy Cawley, Transportation Systems Management, Bureau of Transportation, City of Portland
- Robin Hutcheson, Director, Transportation Division, Salt Lake City
- Susan Handy, Director, National Center for Sustainable Transportation
- Susan Herbel, Principal, Cambridge Systematics
- Ted Knowlton, Sustainability Director, Wasatch Front MPO
- Ted Trepanier, Director of Product Management, Traffic, Inrix
- Tom Schwetz, Planning & Development Manager, Lane Transit District
- Tyler Deke, Executive Director, Bend MPO

- Wayne Kittelson, Founding Principal, Kittelson & Associates, Inc.
- Yin Hai Wang, Director, PacTrans

The NITC Advisory Board met for a day-long meeting at the Portland State University campus on September 16<sup>th</sup>, 2015 in conjunction with the Transportation and Communities Summit. The outcomes of the meeting included strategic direction for the general research RFP to be released in January 2016 as well as campus and research updates.

### *Diversity*

- **Attract underrepresented students to transportation careers.**

Six of the 7 high-school students participating in the internship at Portland State University were from underrepresented backgrounds. One of the key objectives of the 2016 summer program is to attract underrepresented students to transportation careers. The partnership with Oregon MESA is critical in developing an outreach plan to attract young women and students of color. The weeklong residential program will also be at no cost to the participants in order to reduce any financial barrier to participation. NITC's partnerships with WTS Portland and ChickTech focuses on attracting female students to the transportation workforce. NITC also provides grants to faculty who wish to include an underrepresented, undergraduate student in their research project.

- **Priority funding to research with an equity focus.**

Two of our Year 1 projects address equity issues. The research project Encouraging Low-Income Households to Make Location-Efficient Housing Choices and Developing a model for Transit Oriented Development in Latino Immigrant Communities are in progress.

Five of the Year 2 projects address equity issues. These research projects include:

- Integrating Title VI and Equitable Investment in Transportation Alternatives into the MPO Transportation Planning Process
- Racial Bias in Drivers' Yielding Behavior at Crosswalks: Understanding the Effect
- What do we know about Location Affordability in U.S. Shrinking Cities?
- Evaluating Efforts to Improve the Equity of Bike Share Systems
- Planning ahead for livable communities along the Powell-Division BRT: neighborhood conditions and change

### **How have the results been disseminated?**

Nothing to report for this period. Projects funded by this NITC grant have not yielded results yet.

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

Expected highlights for the next reporting period include:

- Release of the Year 3 General Research RFP
- Selection of dissertation research awards
- Selection of dissertation research awards
- Selection of pooled-fund research project team
- Publish Year 1 research reports and disseminate findings
- Organize 2016 Transportation and Communities Summit

## **2. PRODUCTS: What has the program produced?**

### **Publications, conference papers, and presentations**

Nothing to report for this period for projects funded through this NITC grant (MAP-21 National UTC).

### **Website(s) or other Internet site(s)**

The website for NITC is located here: <http://nitc.us>

### **Technologies or techniques**

Nothing to report for this period.

### **Inventions, patent applications, and/or licenses**

Nothing to report for this period.

### **Other products**

Nothing to report for this period.

## **3. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: Who has been involved?**

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

The members of the consortium include Portland State University, University of Oregon, Oregon Institute of Technology, University of Utah, and the University of South Florida. Each NITC-funded research project is required to have 120% match. Match partners for current Year 1 and Year 2 projects include the following:

- American Automobile Association
- City of Flagstaff
- Cleveland State University
- District Department of Transportation
- Florida Department of Transportation
- Greater Cleveland Regional Transit

- Hillsborough County MPO
- Intel
- Lane Transit District
- NACCO Industries
- Natural Resources Defense Council
- Northern Arizona University
- Oregon Department of Transportation
- Oregon METRO
- Portland Bureau of Planning and Sustainability
- Portland Bureau of Transportation
- People for Bikes
- Transportation for America
- University of California, Davis
- University of Colorado, Denver
- University of Arizona
- Utah Transit Authority
- Vancouver Housing Authority

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

Nothing to Report for this period.

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

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

Nothing to Report for this period.

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

NITC continues to lead the education of the current and next generation of bicycle and pedestrian professionals. There is widespread recognition that transportation planning and engineering courses lack multimodal topics, and traditionally focuses on the design of the transportation for vehicles. The bike-ped topics workshop trains university faculty to help them expand their curriculum to include multimodal topics. This is essential to helping update outdated curriculum. Further, NITC faculty and students were recently tapped to write the chapters on Pedestrian and Bicycle Transportation in the 2015 release of *The Routledge Handbook of Transportation*. As it relates to existing professionals, NITC's support of continuing education workshops for transportation professionals who work on bicycle and pedestrian transportation is another way of ensuring that the latest research results get into the hands of practitioners. For example, much of the applied research relating to bicycle infrastructure safety and similar topics are directly shared with practitioners in these workshops who then use this information to help design better bicycle facilities in their communities.

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

Nothing to Report for this period.

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

NITC hosted a total of 7 webinars that highlight NITC sponsored research over the reporting period. 758 people attended the webinars. One AICP credit was offered per webinar.

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

Nothing to Report for this period.

## **5. CHANGES/PROBLEMS**

**Changes in approach and reasons for change**

Nothing to Report for this period.

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

Nothing to Report for this period.

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

Nothing to Report for this period.

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

Nothing to Report for this period.

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

Nothing to Report for this period.

**Additional information regarding Products and Impacts**

Nothing to Report for this period.