Program Progress Performance Report for University Transportation Centers

PPPR #8:
July 1 to December 31, 2015
The Mineta Transportation Institute (MTI) was established by Congress in 1991 as part of the Intermodal Surface Transportation Equity Act (ISTEA) and was reauthorized under the Transportation Equity Act for the 21st century (TEA-21). MTI then successfully competed to be named a Tier 1 Transit-Focused University Transportation Center. The Institute is funded by Congress through the United States Department of Transportation’s Office of the Assistant Secretary for Research and Technology (OST-R), University Transportation Centers Program, the California Department of Transportation (Caltrans), and by private grants and donations.

The Institute receives oversight from an internationally respected Board of Trustees whose members represent all major surface transportation modes. MTI’s focus on policy and management resulted from a Board assessment of the industry’s unmet needs to lead directly to the choice of the San José State University College of Business as the Institute’s home. The Board provides policy direction, assists with needs assessment, and connects the Institute and its programs with the international transportation community.

MTI’s transportation policy work is centered on three primary responsibilities:

Research
MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: transportation security; planning and policy development; interrelationships among transportation, land use, and the environment; transportation finance; and collaborative industry-related relations. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available both in hardcopy and on TransWeb, the MTI website (http://transweb.sjsu.edu).

Education
The educational goal of the Institute is to provide graduate-level education to students seeking a career in the field and professional development opportunities to working transportation professionals. MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI’s quarterly newsletter, covers innovation in the Institute’s research and education programs. MTI’s extensive collection of transportation-related publications is integrated into San José State University’s world-class Martin Luther King, Jr. Library.

Information and Technology Transfer
MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI’s quarterly newsletter, covers innovation in the Institute’s research and education programs. MTI’s extensive collection of transportation-related publications is integrated into San José State University’s world-class Martin Luther King, Jr. Library.

DISCLAIMER
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Program Progress Performance Report for University Transportation Centers

Mineta National Transit Research Consortium (MNTRC)
Led by San Jose State University

- Federal Agency and Organization Element to Which Report is Submitted:
  U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology

- Federal Grant or Other Identifying Number Assigned by Agency: DTRT12-G-UTC21

- Project Title: Tier 1 Transit Focused University Transportation Center Research, Education, and Technology Transfer Activities

- Program Director: Karen E. Philbrick, PhD, MNTRC Executive Director, karen.philbrick@sjsu.edu, 408.924.7562

- Submission Date: January 30, 2016

- DUNS and EIN Numbers: 0568207150000 and 94-6017638

- Recipient Organization: San Jose State University Research Foundation, 210 N. Fourth Street, 4th Floor, San Jose, CA 95112

- Recipient Identifying Number or Account Number: Not Applicable

- Project/Grant Period: January 1, 2012 – January 31, 2017

- Reporting Period End Date: December 31, 2015

- Report Term or Frequency: This report covers the period from July 1, 2015 to December 31, 2015, per the Grant Deliverables and Requirements for UTCs instructions

- Signature of Submitting Official: Karen Philbrick
1. ACCOMPLISHMENTS

Major Goals and Accomplishments
MNTRC complies with the provisions of the Office of the Assistant Secretary for Research and Technology (OST-R, formerly RITA) Grant Deliverables and Requirements for University Transportation Centers and any revisions to that document. Each MNTRC-funded project produces a peer-reviewed final report with a complete description of the problem, approach, methodology, findings, conclusions, and recommendations. Final reports are uploaded onto the Consortium and Transportation Research International Documentation Database (TRID) websites. Per the guidelines, these reports are also distributed to recipients that the US DOT identifies in the UTC reporting requirements. To drive traffic to the MNTRC website and widely disseminate the results, a news release, coordinated with partner institutions, is issued to regional, national and international media outlets. The reports are also promoted on MTI’s social media sites and through direct email to relevant legislators, transportation leaders, academics, practitioners, and others with an interest in transit research. Media interviews are also pitched to radio, TV, online, and print outlets. MTI is responsible for the final research publication process, which includes formal peer review, professional editing and formatting, distribution and promotion. Furthermore, MTI is responsible for collecting all performance metrics.

MNTRC allows all university partners to provide a higher level of service to the public transportation industry through research, education and workforce development, and technology transfer. MNTRC responds to OST-R’s desire for universities to collaborate more effectively, gain greater perspective through geographic diversity, and encourages the participation of minority-serving institutions. Collaboratively, MNTRC addresses both policy and technical challenges. Each Consortium partner realizes the importance of public transit to seniors, low-income people, and those with limited mobility. Often, this is a primary tool for employment and independent living and MNTRC is investigating ways to ensure that transit remains accessible and available for all people.

The major goals identified in the approved MNTRC proposal are listed by category below. Following each goal is the progress that MNTRC has made during this reporting period. Please note that all identified goals are to be fully achieved by the end of the grant period of performance.

Research Goals
- Select no fewer than 68 transit research projects for funding
  - To date, MNTRC has selected 76 research projects for funding, 35 in calendar year 2012, 30 in calendar year 2013, 8 in calendar year 2014, and 3 in calendar year 2015. Three of these research projects were selected during this period of performance. Fully executed contracts have been issued for these latter projects.

- Submit 68 project descriptions to the RiP database in accordance with the OST-R General Deliverables and Requirements
  - During this period of performance, three additional research project descriptions were submitted.

- Post to the MNTRC website no fewer than 68 project descriptions for the transit research projects
During this period of performance, three additional research project descriptions were posted and all UTC project information sheets were updated (http://transweb.sjsu.edu/mntrc/research/utc-info.html).

- Produce a final peer reviewed report for each research project
  - During this reporting period, MNTRC completed eleven final research reports.
  - In addition, MNTRC transportation security researchers published one transportation security perspective titled “The High-Speed Rail Attack in France: What are the security challenges for protecting rail systems?”. This perspective generated a tremendous amount of media attention and resulted in MNTRC researchers being featured in multiple news outlets, including four on air radio interviews.

- Publish the full text of the final research reports on the MNTRC website
  - Eleven final research reports were posted to the MNTRC website (http://transweb.sjsu.edu/mntrc/research/mntrc-publications.html).

- Submit 48 papers reporting transit research project results to peer-reviewed scientific or professional journals – such articles may be categorized as published, accepted, awaiting publication, submitted, or under review
  - During this reporting period, three additional papers based on MNTRC sponsored research were submitted to professional journals. The specific details of these submissions are listed in the section titled “Journal Publications”.

Leadership Goals

- Present transit research project results at 140 academic and professional meetings (name of conference, date, and location will be tracked)
  - The results from MNTRC funded research have been presented at 134 academic and professional meetings. Nineteen of these presentations occurred during the current reporting period. Examples of such presentations follow.

1. **MNTRC Project #1101**: Bhuiyan, Alam. “Investigating the Determining Factors for Transit Travel Demand by Bus Mode in U.S. Metropolitan Statistical Areas.” Presentation at the 22nd International Seminar on Urban Form Conference, Rome, Italy, September 22, 2015. *No UTC funds were used for international travel*

2. **MNTRC Project #1101**: Bhuiyan, Alam. “What Determines Travel Demand by Bus in the United States? A National Study at MSA Level.” Presentation at the 55th Annual Conference of the Association of Collegiate School of Planning (ACSP), Houston, TX, October 22, 2015.


4. **MNTRC Project 1202**: Chatman, Dan. “Low-income Immigrant Travel Behavior in the San Francisco Bay Area: Findings from an Intercept Survey.” Presentation at
the 55th Annual Conference of the Association of Collegiate Schools of Planning Annual Conference, Houston, TX, October 24, 2015.


- Provide 300 media interviews (media outlet, date, and topic will be provided) related to MNTRC activities and projects
  - There have been 414 media interviews related to MNTRC activities and projects, 141 of which were conducted during this reporting period. A sample includes:

  - Wired – July 1, 2015 – A Smart Car on Train Tracks Won’t Fix Our Transit Woes
  - City Lab – July 1, 2015 – 18 Reasons America Should Adopt a Per-Mile Driving Fee
  - Transit California – August 2015 – Mineta Offers Free Bus-Stop Time Models Report to Transit Operators and Planners
  - Eurail Magazine – August 12, 2015 – High-Speed Rail Attack in France: What Are the Security Challenges for Protecting Rail Systems?
  - National Sun Times – September 1, 2015 – Poll: Americans OK with gas tax increase to improve infrastructure


- *Time Magazine* – September 28, 2015 – Amtrak Gets Stricter on Baggage, But is Still is Very, Very Generous

- *Fox News* – September 30, 2015 – NTSB calls for direct federal oversight of Metro

- *City Lab* – October 30, 2015 – The Poor Bike, the Rich Bike-Share

- *The Hill* – November 12, 2015 – Passing judgment on Russian plane crash before the facts are in


- *Los Angeles Times* – November 21, 2015 – Islamic State presence in the U.S. is ‘the new normal,’ FBI director says

- *Engineering News & Record* – December 22, 2015 – U.S. High-Speed Rail Plans Include Private Role, Other Modes

- Track an average of 275,000 hits and/or uses per month on the MNTRC/MTI website (Note: Since inception of this contract, an average of 322,684 hits have been recorded per month):
  - For the period of performance of July 1 to December 31, 2015, the MNTRC/MTI website had an average of 319,623 hits per month

- Track an average of 75,000 documents downloaded per month from the MNTRC/MTI website (Google Analytics will track this information):
  - For the period of performance of July 1 to December 31, 2015, the MNTRC/MTI website registered an average of 124,788 document downloads per month

- Sponsor 30 MNTRC regional forums and national summits that will reach 6,000 attendees
  - During this period of performance, MNTRC sponsored twelve technology transfer events that reached 1,677 attendees; these are:
    - Envisioning Automated Vehicles within the Built Environment, Ann Arbor MI, July 2015 – Emerging and innovative public transport and technologies were addressed at this Michigan conference, co-sponsored by MTI. It was created especially for regulators, technologists, innovators, architects, planners, engineers, and environmental and transportation professionals. Primary topics included a description of the Michigan Connected Vehicle Proving Center, and potential land use and travel
effects of automated vehicles. The assembly broke into groups to participate in built environment design workshops addressing plans for 2020, 2035, and 2050.

- **First International Conference on Transport and Health**, London UK, July 2015 – The Transportation Public Health Link (TPH Link) is based on a systems approach to transportation infrastructure, which integrates social, political, economic and environmental elements that impact long-term sustainability and quality of life. Policy-makers, practitioners and academics from multiple disciplines involved with transport planning and engineering, public health, urban planning, spatial and architectural design, environmental planning, economics, and beyond convened on the University College London campus. They learned how non-traditional thinking can lead to creative problem solving. MTI was a co-sponsor of this event.

- **5th Annual Silicon Valley Bike Summit**, Palo Alto CA, August 2015 – This bicycle summit is the region’s largest gathering of active transportation leaders and organizers from government, law enforcement, non-profit, and the public. Participants heard fresh ideas about the future of safety and bicycling. Featured speakers included Nuria Fernandez, MTI Board Chair and VTA CEO, plus Jim Hartnett, GM and CEO, San Mateo County Transit District.
San Mateo County Health System and Santa Clara County Health Department introduced their bicycle collision reports and discussed recommendations for focus areas. Silicon Valley Bicycle Coalition presented a toolkit for local governments to implement Vision Zero plans. Fresh concepts from San Mateo and Santa Clara Counties also were presented.

- **Statewide Planning Roundtable for Transit Oriented Development at California’s High Speed and Intercity Rail Stations**, Sacramento CA, August 2015 – Transit-oriented development (TOD) is a key part of high-speed rail (HSR) success because of its interconnectivity facets. This conference addressed several relevant topics, including making the most of high-speed rail in California; maximizing economic development at HSR stations through good station design, place making, and land use; navigating the complexities of station area development for success; assessing existing involvement of state agencies in TOD planning at HSR stations; developing strategies for assisting cities with station area planning and long-term TOD implementation; and connecting good TOD planning to California’s sustainability goals. MTI co-sponsored.

- **San Jose Mini-Maker Faire**, San Jose CA, September 2015 – MTI co-sponsored this first annual fair, showcasing local innovators who are solving problems in technology, invention, homesteading, transportation, science, and more. This event was based on successful makers’ fairs around the US and in Europe and Asia. This year’s San Jose event presented everything from homemade bamboo bicycles and personal scooters to the Spartan Superhighway and an electric tricycle.

- **ATC/USGS Seismic Hazard User-Needs Workshop**, Menlo Park CA, September 2015 – The workshop program was designed to elicit feedback from those who use seismic hazard information and products; to provide a forum for the earthquake engineering community to discuss the transfer of seismic hazard results into engineering practice, seismic risk analysis, and public policy; and to make practical recommendations to the USGS National Seismic Hazard Mapping Project.
Experts described the changes in the 2015 update of the hazard maps, including changes to the hazard model input, hazard calculations, and the resulting differences in hazard values. Users discussed how they use hazard information from the Project. They also provided feedback on the hazard products they use, and they provided ideas about developing additional products or consolidating existing products. MTI was a co-sponsor.

- **Responding to High-Speed Rail Earthquake Emergencies**, San Francisco CA, October 2015 – The purpose of this meeting was to discuss high-speed rail emergency response to earthquakes, and to share the information for current situations among railway operators.

  The Railway International Standards Center (RISC) plans a development of international standard for this issue in near future. MTI co-sponsored the event, which included several Japanese scientists, the Consulate General of Japan in San Francisco, and experts from MTI.

  The overall purpose is to provide broad and centralized support for the activities of the international railroad-related standardization committees; to engage strategically in international rail standardization to enhance the safety of rail transportation; and to foster the development of rail technologies.

- **Viva Calle San Jose**, San Jose CA, October 2015 – Removing more than 40,000 cars off urban streets is no easy task. But six miles of city streets were opened to people – and closed to cars. The City of San Jose estimated that more than 35,000 people filled the streets to walk, bike, skate, and play. A Heroes Ride celebrated the life of a local police officer, and other events included a street library, a petting zoo, tricycle races, chalk artwork, dance and music performances, athletes signing autographs, a bike helmet giveaway, and more. MTI was a co-sponsor.

- **SmartRail USA**, Charlotte NC, October 2015 – MTI was a co-sponsor and presenter at this annual summit on national rail transport. The SmartRail Congress gave
executives and budget holders insight on the return on investment available from a long-term view of transit development. The Congress included round-table sessions, technical seminars, and solutions-provider exhibits. Attendees heard from more than 75 speakers, including Joseph Szabo, executive director of Chicago Metropolitan Agency for Planning; Nick Tennyson, North Carolina Secretary of Transportation; Frank Vacca, chief program manager, California High-Speed Rail Authority, and many others. Topics covered technical and planning facets, as well as methods for attracting ridership, managing finances, and implementing wireless communications.

- **RISC Standards Development**, San Francisco CA, October 2015 – Frances Edwards, PhD conducted this summit with the Consulate of Japan, Railway Technical Research Institute, and Railway International Standards Center to discuss high-speed rail emergency response to earthquakes, and to share the information for current situations as railway operators. RISC plans to develop an international standard for this issue in the near future. Participants included Mr. Kazunori Makino, Technical Expert of RISC, RTRI; Dr. Shunroku Yamamoto, Senior Chief Researcher, Laboratory Head, RTRI; Ms. Asako Togari, PE, Technical Expert of RISC, RTRI; Mr. Shunta Noda, Researcher, RTRI (also at USGS as a Visiting Scientist); and Mr. Masao Kanno, PE, Consul, Consulate General of Japan in San Francisco.

- **Podcar City 9**, Mountain View CA, November 2015 – Each year, the Podcar City conferences, co-sponsored by MTI, present the latest information about automated guideway transit and its progress. Presenters come from around the world to discuss how these systems can fit into the urban environment to augment traditional transit. Speakers included those from several universities (UC Berkeley, Sydney Tech, Princeton, etc.), industry (Parsons, Lea + Elliot, Podaris, etc.), agencies (US DOT, Ithaca MPO, California High-Speed Rail Authority, etc.) and nations (France, Netherlands, Australia, Sweden, Italy, UK, etc.).

  As a new feature, San Jose State University students presented a Podcar Student Design Charrette, designing podcars and their stations for a local California environment.

- **US High-Speed Rail Conference**, Los Angeles CA, December 2015 – Business and political leaders and the world's top experts brought high-speed rail to America. The event was co-sponsored by MTI, with Emeritus Executive Director Rod Diridon
making a featured presentation. The conference addressed construction on the first phase of California’s 800-mile state-of-the-art transportation system “set to revolutionize mobility in America.”

Education and Workforce Development Goals
1. A 5% increase over 2010-11 figures in the number of undergraduate and graduate students enrolled in transportation-related degree programs
   - To date, MNTRC partner universities have documented a 12.83% increase in enrollment figures.

2. 50 undergraduate and graduate students participating in MNTRC transit research
   - For the period of performance of July 1 to December 31, 2015, 41 students were engaged in MNTRC research projects.

3. 10 students participating in internships at transportation-related agencies
   - For the period of performance of July 1 to December 31, 2015, 68 students were participating in transportation-related internships.

4. Sixteen K-12 outreach programs that will reach 800 students
   - Two K-12 outreach events were held during this reporting period for 58 students. These included:

   1. Transit Smart Moves, Detroit MI, July 2015 (33 participants): Hosted once again by the University of Detroit Mercy, this was a two week summer commuter camp for high school students, currently in the 9th-12th grades, who wanted to learn about the world of transportation engineering. During this camp, students engaged in hands-on activities, labs and discussions led by University professors, high school science teachers; and industry leaders representing organizations such as MDOT, Ford Motor Company, Road Commission for Oakland County, SEMCOG and others. They leaned about:

      • The impact of transportation on communities.
      • The emerging new technologies and their effect on transportation.
      • The science behind such topics as bridge design, city planning, construction, highway safety, magnetic levitation, motion and traffic technology.
      • Smart cars and how they will communicate with smart highways.
      • How traffic simulation software can be used to make intersections safer and more efficient.
      • The making and testing of concrete.
      • What's behind alternative fuels.
      • How communities work together to plan transportation.
      • How transit systems can bring us together in southeast Michigan.
2. **Summer Transportation Institute (STI) at Howard University**, Washington DC, July 2015 (25 participants): This summer camp was designed to attract High School students to careers in transportation. STI provided a stimulating introduction to all modes of transportation through hands-on projects, problem-solving techniques, field trips, and classroom and enrichment activities. MNTRC sponsored.

5. Eight adult workforce development seminars  
   - During this period of performance, MNTRC sponsored one event: a Seminar on Public Transportation Systems, Las Vegas NV, December 2015 – This seminar helped transit engineers, planners, managers, and public agencies gain a broader understanding of public transportation systems. It also was valuable for university students and faculty. Participants learned how to perform better at their current positions and how to open new career opportunities as they connected with experienced professionals on practical and academic matters. They also gained a greater appreciation of the technical and the not-so-technical aspects of public transportation systems.

**Technology Transfer Goals**

- The MNTRC/MTI website will average 275,000 hits and/or uses per month (Google Analytics will track this information)  
  - For the period of performance of July 1 to December 31, 2015, the MNTRC/MTI website had an average of 319,623 hits per month

- Track an average of 75,000 documents downloaded per month from the MNTRC/MTI website (Google Analytics will track this information)  
  - For the period of performance of July 1 to December 31, 2015, the MNTRC/MTI website registered an average of 124,788 document downloads per month

- A minimum of 100 research citations based on MNTRC funded work  
  - Nineteen research citations were documented for this period of performance.

- A 20% increase in the number of MNTRC/MTI Facebook fans  
  - During this reporting period, 15 Facebook fans were added bringing the total to 729 (over a 100% increase since contract inception).

- A 20% increase in the number of Twitter followers  
  - During this reporting period, MNTRC/MTI received 173 new Twitter followers, bringing the total number of followers to 2,242.

**Collaboration Goals**
Three MNTRC digital newsletters will be published per fiscal year
  o Three MNTRC digital newsletter was published during this reporting period:
    1. Summer 2015
       • [http://transweb.sjsu.edu/mntrc/about/newsletters/2015/summer/index.html](http://transweb.sjsu.edu/mntrc/about/newsletters/2015/summer/index.html)
    2. Fall 2015
       • [http://transweb.sjsu.edu/mntrc/about/newsletters/2015/fall/index.html](http://transweb.sjsu.edu/mntrc/about/newsletters/2015/fall/index.html)
    3. Winter 2015
       • [http://transweb.sjsu.edu/mntrc/about/newsletters/2015/winter/index.html](http://transweb.sjsu.edu/mntrc/about/newsletters/2015/winter/index.html)

Twelve technology transfer activities (summits/forums; K-12 outreach) will involve more than one partner
  o During this reporting period, there was one technology transfer activity that involved more than one partner.

Twenty MNTRC project teams will include researchers from more than one partner university
  o During this reporting period, MNTRC universities continued to partner on two research projects. These are:
    1. MNTRC Project 1233 “The Nexus between Infrastructure and Accessibility”, a jointly funded project between the Mineta Transportation Institute and Rutgers University.
    2. MNTRC Project 1234 “Analysis of the US Transit Bus and Paratransit Vehicle Manufacturing Industry”, a jointly funded project between the Mineta Transportation Institute and Pennsylvania State University.

Ten percent (10%) of MNTRC summits and forums and/or funded research projects will have international collaboration
  o Five of the MNTRC summits and forums had international collaboration during this period of performance. These were:
    1. International Conference on Transport and Health (July 2015)
    2. RISC Standards Development (October 2015)
    3. Responding to High-Speed Rail Earthquake Emergencies (October 2015)
    4. Podcar City 9 (November 2015)
    5. US High-Speed Rail Conference (December 2015)

Sixty-seven percent (67%) of MNTRC projects will have interdepartmental research team members
  o Twenty-one (48.8%) of MNTRC-funded research projects have interdepartmental research team members.

**Dissemination of Results**
Eleven MNTRC-funded projects were completed during this reporting period. The final reports appear on the MNTRC website, and have been distributed per the federal reporting guidelines. These are:

1. **Project 1107**: Neighborhood Crime and Transit Station Access Mode Choice – Phase III of Neighborhood Crime and Travel Behavior


3. **Project 1151**: Advanced Low-Floor Vehicle (ALFV) Specification Research

4. **Project 1207**: Synergistic Integration of Transportation Demand Management Strategies (Land Use, Transit, and Auto Pricing) with New Technologies and Services (Battery Electric Vehicles and Dynamic Ridesharing) to Enhance Reductions in VMT and GHG

5. **Project 1209**: Promoting Intermodal Connectivity at California’s High-Speed Rail Stations

6. **Project 1237**: Economic Impacts of Bus Rapid Transit in Southeast Michigan

7. **Project 1239**: Development of Bus-Stop Time Models in Dense Urban Areas: A Case Study in Washington DC

8. **Project 1244**: A Longitudinal Analysis of Cars, Transit, and Employment Outcomes

9. **Project 1425**: The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies

10. **Project 1426**: Household Income and Vehicle Fuel Economy in California

11. **Project 1427**: High-Speed Rail and Equine Issues

**What Do You Plan to Do During the Next Reporting Period to Accomplish the Goals?**

No change to the agency-approved application

**2. PRODUCTS**

**Publications, Conference Papers, and Presentations**
During this reporting period, the results from MNTRC funded research were presented at 19 academic and professional meetings. Details of these presentations can be found under the heading “Leadership Goals.”

**Journal articles** *(publication details for articles that have been published prior to this reporting period can be found in prior PPPR reports - http://transweb.sjsu.edu/mntrc/about/pppr.html)*


Books or other non-periodical, one-time publications
Eleven final MNTRC research reports were published during this period of performance. The titles and links to these one-time publications can be found in the section titled “Dissemination of Reports”. All of these publications acknowledge federal support and contain the appropriate disclaimer.

Website(s) or other Internet site(s)
- An MNTRC web site has been maintained at www.transweb.sjsu.edu/mntrc
- An MNTRC presence has been established, and continues to grow, in conjunction with the existing MTI Facebook page - www.facebook.com
- www.twitter.com - “@MinetaTrans” feed on Twitter
- An MNTRC Pinterest page at http://pinterest.com/minetatrans/
- A LinkedIn page at www.linkedin.com - “Mineta Transportation Institute”
- A second LinkedIn page for the “MTI Alumni Association” at www.linkedin.com
- A You Tube Channel - http://www.youtube.com/user/MinetaTrans

Technologies or Techniques
- MNTRC partner Howard University developed a model for bus transit reliability that can help operators improve planning and scheduling in cities. Research results defined a new reliability variable, Total Bus Stop Time (TBST), which includes “dwell time” (DT) and time for buses to maneuver into stops and re-enter the main traffic stream. The full report can be downloaded at: http://transweb.sjsu.edu/project/1239.html

- MNTRC partner Grand valley State University completed a sustainable rural recycling prototype. The unit, run by renewable energy, is a fully functional recycling center that can be trucked to rural areas where curbside recycling pickup is too costly, as well as to places where a central transfer station is too distant for people to make the trip. The unit is efficient because it runs on solar power and recycled batteries, and it minimizes operational costs because township staff can use remote cameras to see exactly when the recycling bins must be emptied.

Inventions, Patent Applications, and/or Licenses:
Nothing to report

Other Products
- No new products were developed this reporting period.

3. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What Organizations Have Been Involved as Partners?
During the period of July 1 to December 31, 2014, MNTRC universities have partnered with the following organizations:

1. **Organization Name and Location:** American Public Transportation Association (APTA-Washington, DC)
   - Partner’s Contribution to the Project: In-kind support (live-streaming broadcast network and conference facilities)
   - Project: MTI Garrett Morgan Competition

2. **Organization Name and Location:** Association of American State Highway and Transportation Officials (AASHTO-Washington, DC)
   - Partner’s Contribution to the Project: Financial support and In-kind support (live-streaming broadcast network and conference facilities)
   - Project: MTI Garrett Morgan Competition

3. **Organization Name and Location:** US Department of Transportation (Washington, DC)
   - Partner’s Contribution to the Project: In-kind support (live-streaming broadcast network and conference facilities)
   - Project: MTI Garrett Morgan Competition

4. **Organization Name and Location:** California Department of Transportation (Caltrans-Sacramento, CA and several district offices)
   - Partner’s Contribution to the Project: In-kind support (live-streaming broadcast network)
   - Project: MTI Masters of Science in Transportation Management and Garrett Morgan Competition

5. **Organization Name and Location:** Toledo Area Regional Transit Authority (TARTA: Toledo, OH)
   - Partner’s Contribution to the Project: In-kind support (transit buses are made available for testing), Facilities, and Collaborative research (a staff member helps the project team select buses for experimentation).
   - Project: Combustion Chemistry of Biodiesel for the Use in Urban Transport Buses: Experiment and Modeling (MNTRC Project 1146 and 1245)

6. **Organization Name and Location:** Proterra (Greenville, SC)
   - Partner’s Contribution to the Project: In-kind support (a battery pack and associated wiring, and cooling and monitoring systems to support the battery pack)
- Project: Electrical and Thermal Management of a Lithium Titanate Prismatic Cell Battery System (MNTRC Project 1150)

7. **Organization Name and Location:** Ride Solution, Inc. (Palatka, FL)
   - Partner’s Contribution to the Project: In-kind support (prototype transit vehicle and vehicle spare parts)
   - Project: Advanced Low-Floor Vehicle (ALFV) Specification Research (MNTRC Project 1151)

8. **Organization Name and Location:** Florida Department of Transportation (Tallahassee, FL)
   - Partner’s Contribution to the Project: Financial support
   - Project: Advanced Low-Floor Vehicle (ALFV) Specification Research (MNTRC Project 1151)

9. **Organization Name and Location:** Centre Area Transportation Authority (CATA: State College, PA)
   - Partner’s Contribution to the Project: In-kind support (historical bus GPS data)
   - Project: Estimating Uncertainty of Bus Arrival Times and Passenger Occupancies (MNTRC Project 1246)

10. **Organization Name and Location:** PyroPhobic Systems, Ltd (Barrie, Ontario, Canada)
    - Partner’s Contribution to the Project: Financial support
    - Project: Safety of Lithium Nickel Cobalt Oxide Battery Packs in Transit Bus Applications (MNTRC Project 1247)

**Have Other Collaborators or Contacts Been Involved?**
- Several organizations have participated as experts in MNTRC summits, conferences and other events. These include but are not limited to the Federal Transit Administration; Federal Railroad Administration; International Union of Railways; Office of the Secretary of Transportation; Transportation Research Board; and the California High-Speed Rail Authority.

**4. IMPACT**

**What is the Impact on the Development of the Principal Disciplines of the Project?**
- The results of MNTRC-sponsored research programs continue to improve the content of undergraduate senior level logistics courses as well undergraduate and graduate engineering and urban planning courses.

- The MTI/MNTRC web sites have become a repository for scholarly transportation research, available to anyone for free download. They are also a resource for attracting and enrolling students into the transportation education programs.

- At the request of the office of the Secretary of Transportation, Consortium trustee and executive director of the Metropolitan Transportation Commission Steve Heminger and MNTRC Executive Director Karen Philbrick participated in a lively panel discussion of USDOT’s Beyond Traffic Draft Framework at the Northern California megaregional transportation forum on September 18 in Sacramento. US DOT hosted eleven such forums.
over a two-month period in the nation’s eleven “megaregions” – defined on the Secretary’s blog as networks of urban clusters interconnected by economic, social, and cultural relationships and transportation infrastructure.

What is the Impact on Other Disciplines?

What is the Impact on the Development of Transportation Workforce Development?
- In September 2015, MTI began working with middle-schools on the 16th annual Garrett Morgan Sustainable Transportation Competition. This competition (set for April 2015) helps to develop and inspire transportation workforce capacity by introducing students to transportation careers and connecting them with industry mentors. Students from participating schools were provided free workbooks to study the science and math involved in transportation. This education will culminate in a group project from each school that focuses on sustainable transportation. It will be presented at a national videoconference, where Secretary of Transportation Anthony Foxx and other industry and government leaders will address the teams. This project includes participation from AASHTO, APTA, Caltrans, and VTA.

- MNTRC partners (University of Detroit Mercy and Howard University sponsored two 2014 summer camps for high-school students, which introduced them to practical careers in transportation. These programs are intended to build a sense of hope in youth, giving them a “stake” in their communities, cities, states and nation, building the necessary skills to become active participants in the engineering and workforce development pipelines. It is MNTRC’s goal to encourage traffic safety, a clean environment, and livable, viable, sustainable neighborhoods and communities. Meeting these goals requires the participation of informed citizens working together. Building awareness of the relevance of transit and transit related issues will engage participants in educational opportunities, expanded transit related career choices and provide the opportunity for participants to network, shadow and potentially intern with industry leaders in the field of transit.

What is the Impact on Physical, Institutional, and Information Resources at the University or Other Partner Institutions?
The MNTRC and MTI web sites provide an online resource for professionals and the public to access a repository of transportation-related research.

What is the Impact on Technology Transfer?
- MNTRC and/or its partners transfer the results of research and outreach activities through news releases, all of which include active links, and through media interviews, which are actively pitched. News releases are issued through PR Newswire’s national media distribution and are sent directly to MTI/MNTRC’s proprietary list of email addresses that include policy makers, transportation professionals, research associates, students and alumni, and others. This list is continually updated as new contacts are made. Additionally, an electronic newsletter, published three times a year, promotes MNTRC work, and is distributed to an MTI/MNTRC proprietary list of nearly 9,500 email addresses.
What is the Impact on Society Beyond Science and Technology?
The long-range purpose of MNTRC research and outreach activities is to help legislators, policy leaders, transportation professionals, and others to understand the issues facing the nation’s mobility infrastructure and to make optimum decisions based on factual data.

5. CHANGES/PROBLEMS

Changes in Approach and Reasons for Change: Nothing to report

Actual or Anticipated Problems or Delays Encountered: Nothing to report

Changes that Have a Significant Impact on Expenditures: Nothing to report

Change of Primary Performance Site Location from that Originally Proposed: Nothing to report

ADDITIONAL INFORMATION REGARDING PRODUCTS AND IMPACTS

Outputs
- Research projects awarded: Three new research projects were awarded during this period of performance. A complete description of each project can be found on the MNTRC website: [http://transweb.sjsu.edu/mntrc/research/utc-info.html](http://transweb.sjsu.edu/mntrc/research/utc-info.html)
- Publications, conference papers, and presentations: Nineteen presentations were based on MNTRC funded research projects during this reporting period.
- Websites: MNTRC maintains a website to document consortium-related activity [http://transweb.sjsu.edu/mntrc/index.html](http://transweb.sjsu.edu/mntrc/index.html)
- Technologies or Technology Assessments, Databases, Software or Models:
- Outreach activities: MNTRC sponsored fifteen outreach activities, two of which focused on K-12 during this period of performance. Details of these events can be found under the heading “Leadership Goals”.

Outcomes
Nothing to report this period.

Impacts

With 10.7 billion trips on public transportation recorded in 2013, MTI realized the value of objectively compiling and evaluating the benefit-cost (b-c) ratio estimates for US transit systems. MTI’s peer-reviewed report, [The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies](http://transweb.sjsu.edu/mntrc/research/utc-info.html), found that the benefits of transit were measurable and strong in a variety of operating environments, not just in large cities. Study results suggest that transit investments in all areas, regardless of size, can yield benefits substantially greater than costs. Findings of this timely report were featured at a congressional briefing hosted at the Senate Dirksen Building in Washington DC in July 2015.
The Mineta Transportation Institute (MTI) was established by Congress in 1991 as part of the Intermodal Surface Transportation Equity Act (ISTEA) and was reauthorized under the Transportation Equity Act for the 21st Century (TEA-21). MTI then successfully competed to be named a Tier I Transit-Focused University Transportation Center. The Institute is funded by Congress through the United States Department of Transportation’s Office of the Assistant Secretary for Research and Technology (OST-R), University Transportation Centers Program, the California Department of Transportation (Caltrans), and by private grants and donations.

The Institute receives oversight from an internationally respected Board of Trustees whose members represent all major surface transportation modes. MTIs focus on policy and management resulted from a Board assessment of the industry’s unmet needs and led directly to the choice of the San José State University College of Business at the Institute’s home. The Board provides policy direction, assists with needs assessment, and connects the Institute and its programs with the international transportation community.

MTI’s transportation policy work is centered on three primary responsibilities:

Research
MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: transportation security; planning and policy development; interrelationships among transportation, land use, and the environment; transportation finance; and collaborative management relations. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available both in hardcopy and on TransWeb, the MTI website (http://transweb.sjsu.edu).

Education
The educational goal of the Institute is to provide graduate-level education to students seeking a career in the development and operation of surface transportation programs. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and a graduate Certificate in Transportation Management that serve to prepare the nation’s transportation managers for the 21st century. The master’s degree is the highest conferred by the California State University system. With the active assistance of the California Department of Transportation, MTI delivers its classes over a state-of-the-art videoconferencing network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI’s education program promotes enrollment to under-represented groups.

Information and Technology Transfer
MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI’s quarterly newsletter, covers innovation in the Institute’s research and education programs. MTI’s extensive collection of transportation-related publications is integrated into San José State University’s world-class Martin Luther King, Jr. Library.

DISCLAIMER
The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented herein. This document is disseminated under the sponsorship of the U.S. Department of Transportation, University Transportation Centers Program and the California Department of Transportation, in the interest of information exchange. This report does not necessarily reflect the official views or policies of the U.S. government, State of California, or the Mineta Transportation Institute, who assume no liability for the contents or use thereof. This report does not constitute a standard specification, design standard, or regulation.
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