Program Progress Performance Report
for University Transportation Centers

Prepared for the USDOT Research and Innovative Technology Administration (RITA)

Project title: Pacific Northwest Transportation Consortium (PacTrans): Using Advanced Technologies to Develop Data-driven, Sustainable Solutions for the Diverse Transportation Needs of the Pacific Northwest

RITA Sponsor Award Number: DTRT12-G-UTC10

Program Director: Yinhai Wang, PhD
Professor and Director
E-mail: yinhai@uw.edu
Tel: 206.616.2696

Submitting Official: Meghan MacKrell, MA, MIS
Assistant Director
E-mail: mmackrel@uw.edu
Tel: 206.685.6648

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January 1, 2012 – December 31, 2013
Report #2, PPPR reporting on second six months (July 1, 2012 – December 31, 2012)
1. Accomplishments

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

  PacTrans focuses on using advanced technologies to develop data-driven, sustainable solutions for the diverse transportation needs of the Pacific Northwest. Major goals and objectives of PacTrans include: serving as Region 10’s research engine, applied technology showcase, workforce development base, educational leader, information center, and collaboration platform.

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

  During the second six months (July 1 – December 31, 2012) of the project:

  - The PacTrans logo and website were completely redesigned for improved communications with transportation professionals and the general public. The new logo replaced a temporary logo the PacTrans UTC adopted in the first couple of months of operation. The website represents a significant departure from that of its predecessor. There is improved navigation and functionality, and the look and feel of it is much cleaner.

  - After much consideration, the PacTrans Board of Directors decided that a part-time fiscal staff person was insufficient for the UW Center and made the decision to hire a full-time fiscal staff person, who started working in September. As a result of further discussion, a decision was made to bring on a part-time graduate assistant to start in January to help with event planning, daily office tasks, and communications with students.

  - The PacTrans Board of Directors established an External Board of Directors (EAB) to provide strategic guidance. The PacTrans EAB met with the PacTrans Board of Directors for the first time in late October on the UW campus. The meeting resulted in a meaningful set of next steps for the Board of Directors to consider.

  - PacTrans leadership established external project monitoring teams to review and provide regular feedback on the multi-institution projects that target critical regional transportation issues. Each monitoring team is composed of a PacTrans Board member, an expert from an external research institution, and a third from a local transportation agency or company. The monitoring team assures that the project goals and activities are in line with the strategic mission of PacTrans and that the agency or private industry sponsor’s concerns are sufficiently accounted for. This fall, the project monitoring teams provided the principal investigators of each multi-institutional PacTrans project with early written feedback on the project design and scope of work. After each PI was given
an opportunity to review the feedback, conference calls were set up with each team and each PI to further exchange ideas.

- PacTrans launched its high-level seminar series last fall and has held two high-level seminars on the UW campus, attracting a variety of students and professors engaged in transportation research and transportation professionals from around the Pacific NW region. PacTrans Seminar talks were also broadcasted over the Internet in real time to benefit remote audience.

- A number of PacTrans graduate students and professors attended academic conferences in the late summer and fall 2012, presenting early research findings from PacTrans projects.

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

By the second six months of the project, all projects were under way, with graduate students working in the vast majority of them. By involving graduate students in the actual research projects, all of which involve a great deal of collaboration with public transportation agencies, we are providing our students with invaluable opportunities to develop the skills they will need after they leave university.

PacTrans has actively approached to ITE Washington for collaborative training. The November 2012 PacTrans Seminar was a joint event with ITE Washington to promote PacTrans and benefit more working professionals.

- How have the results been disseminated? If so, in what way/s?

Preliminary research findings have found their way into numerous invited talks, conference presentations, and publications by participating professors and graduate students working on individual projects.

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

  - We will follow the implementation plan to ensure that all the PacTrans funded research, education, and outreach activities move forward as scheduled.

  - PacTrans will play an active role during the 2013 TRB Annual Meeting by hosting a Region 10 UTC reception and actively supporting UTC related activities.
- PacTrans board will proactively identify critical regional transportation issues deserving research and work with public and private collaborators to develop new research problem statements for Year Two research.

- Since the Region 10 Transportation Conference (including a Region 10 Student Transportation Conference) is scheduled in the fall of 2013, a conference committee will be set to ensure a fruitful conference.

- We are currently planning several public talks as part of the PacTrans seminar series. Confirmed upcoming guests for the January 1 – June 2013 reporting period include Carnegie Mellon University and Green Design Institute Co-Director Chris Hendrickson on February 27th and Region 9 UTC (at UC Berkeley) Director Robert Cervero on April 19th. As with our fall 2012 PacTrans seminars, the talks will be open to not only the PacTrans university community, but also to the Pacific NW transportation community. For those who cannot attend in person, we will make the talk available as a webinar through WebEx.

- We will continue to grow our new website to include increasingly more information about our projects and research findings.

2. Products (for the reporting period of Jan. 1 – Dec. 31, 2012)¹

Peer reviewed journal articles


¹ Please note that although this report is for the July 1 – December 31, 2012 reporting period, all products listed in the report are from the January 1 – December 31, 2012 reporting period. We chose to include January 1 – June 30, 2012 products in this report because we were not able to collect this information from faculty during the summer for PPPR#1.


**Book chapters and other edited manuscripts**


Conference papers


Conference presentations


Lectures/Seminars/Workshops/Invited Talks


**Technologies or techniques:** none at this time

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

Wang, Y. USPTO Provisional Patent Application in preparation: Travel Pattern Discovery Using Mobile Device Sensors, the UWC4C tracking number 45830.01US1, filed in 2012.

**Other products:** none at this time

**Scheduled academic talks for upcoming reporting period (Jan. 1 – June 30, 2013)**


3. Participant and Collaborating Organizations: Who has been involved?

- **What individuals have worked on the program?**

  PacTrans Director, Yinhai Wang, Ph.D., professor of Civil and Environmental Engineering at the University of Washington (UW), devotes 50 percent of his time directing PacTrans. Dr. Wang has overall responsibility for program management, oversight of PacTrans operations, including the Research Committee, the Education and Workforce Development Committee, and the Outreach and Technology Transfer Committee, and Student Leadership Council. He is the regional and national leadership for PacTrans, and the contact person for management relationships with USDOT Research and Innovative Administration (RITA) and other USDOT organizations.

  PacTrans Associate Director in Research, Lind Ng Boyle, Ph.D., associate professor with joint appointments in Industrial and Systems Engineering, and Civil and Environmental Engineering at the UW spends 15 percent of her time managing the research program as the research committee chair for PacTrans and organizing the research collaboration across the five partner institutions.

  PacTrans Associate Director in Education and Workforce Development, Anne Vernez-Moudon, Dr. es SC, Professor of Architecture, Landscape Architecture, and Urban Design and Planning, Adjunct Professor of Epidemiology and in Civil and Environmental Engineering, devotes 10 percent of her time leading the Education and Workforce Development Committee. She is involved in curriculum changes, professional training program development, and educational enhancements among the partner institutions.

  PacTrans Associate Director in Outreach, Mark Hallenbeck is also the Director of the Washington State Transportation Center (TRAC) office located at the UW. Mr. Hallenbeck works closely with Associate Director Anne Vernez-Moudon on organizing student seminars, internships and fellowship programs.

  PacTrans Associate Director in Oregon State University (OSU), Chris Bell, Ph.D., professor of Civil and Environmental Engineering at OSU, devotes 10 percent of his time to managing and organizing the education, outreach, and research activities within OSU. He coordinates all results and outcomes with the UW on a regular basis.

  PacTrans Associate Director in the University of Alaska Fairbanks (UAF), Billy Connor, Director of the Alaska University Transportation Center (AUTC), devotes 10 percent of his time to managing and organizing the education, outreach, and research activities within UAF. He coordinates all results and outcomes with the UW on a regular basis.

  PacTrans Associate Director in University of Idaho (UI), Karen Den Braven, Ph.D., professor of Mechanical Engineering at UI, devotes 10 percent of her time to managing and organizing...
the education, outreach, and research activities within UI. She coordinates all results and outcomes with the UW on a regular basis.

PacTrans Associate Director in Washington State University (WSU), Dave McLean, Ph.D., professor of Civil and Environmental Engineering at WSU, devotes 10 percent of his time to managing and organizing the education, outreach, and research activities within WSU. He coordinates all results and outcomes with the UW on a regular basis.

Center staff at the UW includes full-time Assistant Director, Ms. Meghan MacKrell, who devotes 100 percent of her time to the day-to-day operations in support of the PacTrans mission. Her responsibilities include project management, grant management, social media and outreach, and managing the PacTrans operations team. Additionally, as of September 2012, PacTrans has had a second full-time Fiscal Specialist, Ms. Eva Lu, on board. In the late October 2012, the half-time program assistant, Ms. Wanjiku Gitahi, resigned to take a full-time position on the UW campus in another department. In her absence, PacTrans had a number of grad students who helped out on various projects in the fall. (PacTrans now has a half-time graduate assistant, Mr. Kristian Henrickson, who started Jan. 2013.)

The Student Leadership Council, composed of graduate students at all Consortium partner universities, is an active part of the PacTrans management structure. The Student Leadership Council facilitates student and center communications and plans their own activities. For example, one important student event already on the PacTrans schedule is the Region 10 Student Conference, set to be held on the UW campus in October 2013. Leaders of the three UTCs in this region – (PacTrans, the National Institution for Transportation and Communities (NITC), and Transportation for Livability by Integrating Vehicles and the Environment (TranLIVE) – will all assist in the sponsorship of this conference.

- What other organizations have been involved as partners?

The state DOTs in Alaska, Idaho, Oregon, and Washington, have all been very much involved in the funding and implementation of the PacTrans research projects. Additionally, members from each of the four state DOTs serve on the PacTrans External Advisory Board, which provides strategic oversight to the PacTrans Board of Directors. In addition to the state DOTs, other public transportation agencies and private companies are also involved in PacTrans research, education, and technology transfer activities.

The PacTrans External Advisory Board met for the first time on the UW campus in Seattle, Washington, on October 29, 2012. In addition to state DOT members on the PacTrans EAB, membership includes a representative from Toyota Corporate, Port of Portland, the Puget Sound Regional Council (PSRC), as well as a representative from Idaho industry, Western Trailers.

During the second six month period, PacTrans has also collaborated with three other University Transportation Centers: the UNL Mid-America Transportation Center (MATC),
Transportation for Livability by Integrating Vehicles and Environment (TranLIVE), and the Oregon Transportation Research and Education Consortium (OTREC).

On November 14, 2012, PacTrans invited MATC Director Dr. Laurence R. Rilett to give the talk “Calibration of Micro-Simulation Models Using ITS Data: Lessons Learned” as part of the ongoing PacTrans Seminar Series. The talk was well-attended by UW students and faculty, as well as by members of private industry and the Seattle DOT. The ITE Washington chapter helped sponsor the talk.

PacTrans also collaborated with Portland State University’s UTC (NITC) and University of Idaho’s TranLIVE on the Region X Student Conference, sending a large contingent of graduate students from PacTrans consortium universities UW, WSU and OSU to Portland, Oregon to participate in the event.

- Have other collaborators or contacts been involved?

On October 24, 2012, PacTrans invited Professor Baibing Li from Loughborough University in the UK to deliver the talk “Discrete Analysis for Travelers: A Semi-parametric Approach” as part of the PacTrans Seminar Series. As with the talk by MATC Director Laurence R. Rilett, the talk was well attended by UW students and faculty, as well as members of the greater Pacific NW transportation community.

Also in the fall of 2012, PacTrans hosted a delegation of transportation researchers from Japan, who visited the UW and were curious about PacTrans’ current transportation research.

4. Impact

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

While it is still very early to report on PacTrans’ impact on the full development of the principal disciplines the program, we can state with confidence that preliminary research results are promising.

- What is the impact on other disciplines?

It is still too early to report on the full impact on other disciplines, but based on the strong level of interest in our research from disciplines outside Engineering and Urban Planning, we can assume that we will have some impact to report at a later date.

- What is the impact on transportation workforce development?
At the moment, it is too early to report anything significant. However, we strongly believe our collaborative work on the online programs and the seminars is contributing positively to transportation workforce development in the Pacific Northwest.

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

  Nothing to report at this time.

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

  Nothing to report at this time.

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

  At this time, it is still too early to judge the impact of PacTrans research on society beyond science and technology, but we strongly believe our work is contributing to a greater understanding and appreciation of the importance of collaboration between the public and private spheres around transportation issues in not only the Pacific Northwest, but across the U.S. and abroad.

5. **Changes/Problems**

   No changes or problems at this time to report.

6. **Special Reporting Requirements**

   Nothing at this time to report.