



## Semi Annual Progress Report for University Transportation Centers

Prepared for the USDOT Office of the Assistant Secretary for Research and  
Technology (OST-R)

OST-R Sponsor Award Number: 69A3552348310

Project title: **Pacific Northwest Transportation Consortium (PacTrans): Developing human-centered and transformative multimodal mobility solutions for an equitable Pacific Northwest**

**Program Director:**

Yinhai Wang, PhD, PE  
Professor and Director  
E-mail: [yinhai@uw.edu](mailto:yinhai@uw.edu)  
Tel: 206.616.2696

**Submitting Official:**

Ryan Avery, PhD, PE  
Interim Assistant Director  
E-mail: [rpavery@uw.edu](mailto:rpavery@uw.edu)  
Tel: 206.543.6261

**Organization Name:**

University of Washington  
Pacific Northwest Transportation Consortium (PacTrans)  
University of Washington  
Civil and Environmental Engineering Department  
More Hall 112  
Seattle, WA 98195

**Submission Date:** April 30, 2024

**DUNS:** 605799469 **EIN:** 91-6001537

**Report #2, SAPR reporting for six months** (October 1, 2023 – March 31, 2024)

**Project/Grant Period:** June 1, 2023 - May 31, 2029

**Reporting Period End Date:** March 31, 2024

**Report Term:** Semi-Annual

## Accomplishments

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

Pacific Northwest Transportation Consortium (PacTrans) consists of institutions from all four states in our region with the University of Washington (UW) as the lead and Northwest Indian College (NWIC), Portland State University (PSU), University of Alaska Anchorage (UAA), University of Idaho (UI), and Washington State University (WSU). PacTrans' theme centers on "Developing human-centered and transformative multimodal mobility solutions for an equitable Pacific Northwest". PacTrans serves as a focal point within Region 10 to develop initiatives and facilitate collaborative activities with regional partners to maximize the effectiveness of their collective services and programs toward the U.S. Department of Transportation's (USDOT) strategic goal of mobility. Major goals and objectives of PacTrans include:

**Research** – Serving as Region 10's research engine, PacTrans is committed to funding research in both the categories of advanced and, more importantly, applied research.

**Technology Transfer** – PacTrans strives to be an applied technology showcase, providing additional funds to projects that are deemed as "Success Stories" to ensure the dissemination of results to policymakers, educators, practitioners, other transportation professionals, and the general public.

**Education** – As a consortium of six prestigious universities/colleges, PacTrans is devoted to being an education leader. This involves continued evaluation and evolution of our transportation engineering programs as well as providing state-of-the-art research laboratories, student conferences and seminars, mentoring, and scholarship opportunities for our students and future workforce trainees.

**Workforce Development** – PacTrans endeavors to be a workforce development base: hosting activities that focus on the development of transportation professionals, building strong partnerships with transportation agencies and companies in our region, and designing training programs to address the workforce development needs, while connecting our students with quality jobs where they can implement the knowledge they gained through their education.

**Outreach** – Throughout all of these other goals and objectives, PacTrans seeks to be in a continual process of outreach: promoting and building the educational student base, making new industry and agency partners, attracting new research, and providing opportunities to share and learn about key outcomes and achievements that have been learned through research and education activities.

**Collaboration** – PacTrans desires to be a platform for participation and is always on the lookout for potential new partners and new opportunities with current partners to collaborate on transportation-related endeavors.

### What was accomplished under these goals?

PacTrans is fortunate as an existing UTC to already have a robust infrastructure in place to begin pursuing the Center's goals quickly. While our team's composition is different for this grant than it has been over the past several years, most of our team members have participated in the UTC program in the past. The majority of our work thus far has been to get organized and begin working toward getting each consortium

partner their first-year funding. Below are some more details.

## Research

As Region 10's research engine, PacTrans has been actively engaged in two broader categories of research projects. We engage in multi-institutional research projects that require participation from at least two consortium universities and typically have a larger budget. Such projects include multi-institutional general research projects, as well as a multi-institutional educational project, and a multi-institutional outreach project. We also engage in single institutional projects (referred to as small research projects) that only require participation from a single consortium university and typically have smaller budgets. Both categories of research are geared towards the goal of advancing the region's transportation mobility research.

All of our multi-institutional and about half of our single-institutional projects were pre-selected from an RFP process that occurred while we were writing our new UTC proposal last year. This left a handful of single-institutional projects to select over the past six months. Now all projects for Year One have been selected.

PacTrans BOD reviewed our Instructions to the RFP Process document in its February BOD meeting and made necessary revisions to ensure it will work well for PacTrans' project selection needs. Consequently, PacTrans issued its Year 2 Request for Proposals as scheduled. All abstracts were reviewed and discussed and those proposal ideas aligned closely with the center theme were encouraged to submit their full proposals. The center is currently working on reviews of all the full proposals received. Results are expected to be announced before the summer quarter starts.

## Technology Transfer

PacTrans and its PIs engaged in several great conferences, workshops, and symposiums during this reporting period that offered a great platform for us to showcase our research to a broader audience.

In early October, PacTrans hosted our annual Region 10 Transportation Conference and continued its partnership with the Center for Safety Equity in Transportation (CSET) Tier 1 University Transportation Center (UTC) and the UW Mobility Innovation Center (MIC). This year we also added a new contributing partner to the conference, the UW College of Built Environments Technology Community of Practice. It was held on Friday, October 13, 2023, on the University of Washington campus. The theme of this year's conference was Bridging People and Technology for Improved Mobility and Safety. With over two hundred in attendance, it was a very successful conference that included a keynote presentation, a plenary session, and two sessions of three breakout technical panels. Panels were on topics such as transformative solutions, workforce development, artificial intelligence, connected and automated vehicles, rural safety, and supply chain disruptions. PacTrans also presented five annual awards and hosted a poster session that showcased over twenty ongoing/recently completed PacTrans research projects. Accolades from this conference included:

- Mark Hallenbeck (Washington State Transportation Center) won the 2023 Lifetime Achievement Award
- Anne Vernez Moudon (UW) won the 2023 Outstanding Educator Award

- Alaska Department of Transportation and Public Facilities won the 2023 PacTrans Partner of the Year Award

In November, several PacTrans researchers participated in and presented work at the ITS Washington Annual Meeting in SeaTac, Washington. Of note, Chenxi Liu (UW) participated in the session, Demystifying Artificial Intelligence and Its Application for Smart Cities, with their topic of Revolutionizing Road Transportation with Artificial Intelligence Empowered Technologies.

In December, Dr. Yinhai Wang was invited to deliver a talk to introduce artificial technologies and their applications to the Research and Technology Coordinating Committee (RTCC) under the National Academy of Sciences, Engineering, and Medicine. This committee advises the Federal Highway Administration on its RD&T programming, evaluation, and strategic direction.

In January, PacTrans participated heavily in the 2024 103rd Transportation Research Board (TRB) Annual Meeting. In total, our faculty and student researchers participated in over one hundred workshops, lectures, and poster presentations. This annual meeting continues to be a very productive way for PacTrans to present research findings to a national and international audience. In concert with the TRB Annual Meeting, the CUTC Awards Banquet was hosted; at this event, PacTrans was honored with the 2024 Technology Transfer Leadership Award, shining a light on our commitment to knowledge dissemination and practical applications.

## Education

The UW has welcomed a cohort of four new PacTrans Fellows. This fellowship is made possible by a partnership between PacTrans and the UW CEE department to offer promising Master's students covered tuition while they complete their studies and learn real world knowledge through internships.

During this past six-month performance period, PacTrans has been actively engaging students with a wide variety of activities and opportunities to further their education, experience, knowledge, and networks.

This past January, PacTrans supported over thirty-five students from consortium universities to participate in the 103<sup>rd</sup> Transportation Research Board (TRB) Annual Meeting. Several other accolades from this conference included:

- Chenxi Lu (UW) won the Michael Kyte Outstanding Student of the Year Award
- Frank Yang's dissertation received Best Dissertation Award (second place) from the TRB AED50 AI and Advanced Computing Applications Committee.
- PacTrans undergraduate research fellow (UW) Peter Yu is selected as one of the 2024 Husky 100: <https://www.washington.edu/husky100/blog/announcing-the-2024-husky-100/>.
- Zhipeng Li's (WSU) dissertation titled "Fly Ash Based Geopolymer for Concrete Infrastructure: Development, Characterization, Application and Life Cycle Assessment" received the Best Doctoral Dissertation Award from the 2024 Milton Pikarsky Memorial Winners in Science and Technology.

- Nathan McNeil's (PSU) paper "Transportation Academies as Catalysts for Civic Engagement in Transportation Decision-making" won the Charley V. Wootan Award for most outstanding paper in the field of policy and organization.

PacTrans also hosted our 10<sup>th</sup> Annual Region 10 Student Conference. This event was organized by a committee of students that represent each of our consortium partner universities. This event was hosted on the UW campus the day after our annual conference and featured activities that included three speaker presentations, a career development panel, and the annual student poster competition.

Several other student- and faculty-related highlights from this reporting period included:

- The UW ITE Student Chapter attended the 2024 ITE Western District Student Leadership Summit at Cal Poly SLO
- The UW ITE Student Chapter's Peter Yu, Garrett Davis, and Jonah Lorica won the Western District Traffic Bowl and are headed to internationals
- PSU's Master of Urban & Regional Planning (MURP) program Team won the Student Group Award for Planning and Policy from National Council of University Transportation Centers
- PSU's Eun Jun Choi was awarded the Jannet Walker-Ford Leadership Legacy Scholarship from the WTS Foundation
- PSU's Holly Querin was awarded the Helene M. Overly Memorial Scholarship from the WTS Foundation
- PSU's Isa Swain (PSU) was awarded the Molitoris Leadership Scholarship from the WTS Foundation
- A group of PSU transportation students won Better Block PSU with their design for the Steel Bridge Skatepark located in Portland's Old Town neighborhood
- PacTrans board member, Xianming Shi (WSU), was honored as a senior member of the National Academy of Inventors
- Two WSU students, Amir Ali Shahmansouri and Ali Mahmoodigahrouei, were awarded the 2024 Eastern Washington Masonry Promotion Group Graduate Fellowship
- WSU's Ali Mahmoodigahrouei was also awarded the 2024 Graduate Research Assistant Award, by the WSU Graduate School, the 2024 University Transportation Center (UTC) Student of the Year, awarded by the U.S. Department of Transportation, and the Spring 2024 Dissertation Grant by Graduate & Professional Student Association (GPSA)
- WSU's Chuan Chen was awarded the 2024 Richard Perteet Graduate Fellowship in Civil Engineering
- WSU's Taiwo Olawale Akinleye received the 2024 GeoEngineers Incorporated Scholarship
- A WSU research team received a grant called 2023 STEM Talent Challenge by the U.S. Department of Commerce's Economic Development Administration (EDA) for a project named "Washington's High-Demand Advanced Civil Engineering Workforce Development"

Also, during this reporting period, PacTrans offered four wonderful webinars/seminars to our students and our broader community:

1. In November, we hosted Kelvin Wang (Montana State University) for a talk titled, Intelligent Evaluation of Transportation Infrastructure: Pavement and Bridges
2. In January, we hosted Prateek Bansal (National University of Singapore) for a talk titled, Marrying Cognitive Psychology and Behavior Modelling: New Advancements and Results.
3. In February, we hosted Zhanping You (Michigan Technological University) for a talk titled, Recycling Waste Materials for Pavement Construction
4. In March, we hosted Roger Millar (WSDOT Secretary of Transportation) and Dennis Truax, (ASCE President) for a talk titled, Preparing Future Transportation Leaders for a Sustainable Tomorrow

### Workforce Development

PacTrans is actively engaged in several workforce development initiatives this reporting period. Firstly, PacTrans welcomed Melissa Amrhein as the new Assistant Director of the Workforce Development Institute. Melissa's expertise will be pivotal in driving the WDI forward during the duration of our latest grant. PacTrans has teamed up with our transportation agency partners, such as Washington State Department of Transportation, and the Northwester Tribal Technical Assistance Program (NW TTAP) Center to jointly address the workforce challenges.

During the last six months the WDI has engaged transportation stakeholders in identifying and developing multiple new short courses. We have contracted with over six consultants to develop new training courses. The following professional development courses were developed during this grant time period:

- Transportation Data and Analysis Tools (Advanced)
- Active Transportation (Introduction to Active Transportation and Safe Systems Integration)
- Active Transportation (Complete Streets Field Class)
- Active Transportation (Design Innovations in Active Transportation)
- What is the MUTCD?
- 2024 MUTCD Update
- Where Traffic Engineering Meets the Law

In the past few months, WDI has also rebuilt the online registration system and created our own online course system. This new registration system will support the development and offering of new online live and on-demand courses. Content experts and instructional designers are currently collaborating to build new online courses.

The WDI also focused on student-centered initiatives. One initiative involves collaborating with the UW Teen and Youth Program to reoffer the course, Introduction to Autonomous Cars, targeting to K-8 students. This year the course will be offered in two separate sessions to accommodate the overwhelming demand from sixth through eighth graders.

Furthermore, for high school students, the PacTrans WDI is teaming up with WSDOT, UW, and WSU to reoffer the Washington Transportation Camp. This residential summer program, focusing on transportation, proved to be a hit last year. To meet the increase in demand, this summer's camp will see an increase in student group size.

## What opportunities for training and professional development have the program provided?

Many of the specific details of these opportunities get discussed above. More generally, PacTrans provides training and professional development opportunities through multiple channels:

**Research:** Through the lifespan of this grant, PacTrans annually selects research projects that offer faculty and student researchers funding to conduct cutting edge research in a variety of areas directly tied to the USDOT strategic goals.

**Education:** PacTrans consortium partners offer a variety of other on-campus and online courses designed for professional development in addition to the regular degree programs. The online programs, such as the online master's program of sustainable transportation, are particularly good for working professionals because of the flexibility in schedule and location. PacTrans also supports a wide variety of student activities geared toward enhancing their educations. Several examples include: supporting ITE student chapter activities, travel support for students to present accepted work at conferences, sponsorship of student competition teams, and so much more.

**Outreach:** PacTrans offers training and educational opportunities to K-12 students through its outreach activities. Three quick examples include: (1) UW partners with the UW Teen and Youth Program to deliver a course titled *Introduction to Autonomous Cars* that is offered to sixth through eighth graders during the summer months, and (2) PacTrans consortium partners UW and WSU have partnered with WSDOT to offer a week long, high school transportation summer camp, and (3) PSU participates in the National Summer Transportation Institute (NSTI) program to bring roughly 25 students to campus each summer for a week long transportation experience.

**Funding assistance:** PacTrans financially supports students through their participation in research activities, as well as fellowships. During this past reporting period, PacTrans welcomed three new graduate fellows, and also continues to offer undergraduate research fellows. The Undergraduate Research Fellowship offers undergraduate students the opportunity to participate in research while receiving a stipend for things like conference travel, or research supplies.

**Seminars, workshops, and conferences:** As outlined above, PacTrans offers many opportunities for training and professional development through its webinar series and various workshops. PacTrans also emphasizes our Region 10 Transportation Conference and Region 10 Student Conference as important opportunities for training and professional development.

**Internships:** PacTrans regularly posts internship opportunities on our website as a student resource. During this reporting period for example, PacTrans circulated thirteen separate announcements for internship opportunities. Further, we regularly work with our external partners to develop internship programs for our students. With the WSDOT for example, we have set up internship opportunities both with their traffic management center and their tolling operations group.

**Partnerships:** PacTrans has developed strong partnerships with many agencies, companies, and non-



profit organizations. For example, PacTrans has developed strong partnerships with local ITE chapters in student mentoring and training. ITE Washington has a mentor program for university students. They offer student fellowships and also host events for student training. PacTrans is also in a strong partnership with American Society of Civil Engineers in supporting student activities and organizing the upcoming International Conference on Transportation and Development.

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

This being a brand-new Center, we do not yet have many results to disseminate but PacTrans has a strong outreach program to local and state transportation agencies and private partners in the region, where PacTrans research outcomes are presented and demonstrated. Research outcomes are posted on the PacTrans website, distributed through our monthly newsletter and annual reports, and promoted through social media such as LinkedIn and Facebook and the University of Washington press media. We also disseminate news, events and results via our website at [www.pactrans.org](http://www.pactrans.org).

Another avenue for dissemination that PacTrans leans on heavily is presentations at conferences, workshops, and symposia. Each year we send roughly one hundred PIs and students (about 70 students) to the TRB annual meeting where we participate in over 120 committee meetings, poster presentations, workshops, and lectures. Our annual conference each October also provides an invaluable platform for our researchers to present work either through presentation or poster.

PacTrans also encourages new, innovative dissemination materials through the identification of success stories, where PacTrans offers limited additional funds to projects that have results with potentially strong impacts. These funds can then be used to explore new and innovative opportunities to get knowledge, methods, and products gained, into the hands of practitioners. This year these funds have been used to host workshops/training, produce informational videos, build online tools and procedure manuals, etc.

Finally, per our obligation as a UTC, research results are posted on our website and are disseminated to all of the required repositories that include, TRID, USDOT, Transportation Library, Volpe National Transportation Systems Center, Federal Highway Administration Research Library and the US Department of Commerce National Technical Information Service.

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

PacTrans has the Year 1 research ongoing and will announce the Year 2 projects soon. PacTrans is expected to operate at its full speed through the next reporting period. Following our current assistance director Cole Kopca's departure, PacTrans will hire a new assistant director to support Dr. Yinhai Wang and oversees operations of both the PacTrans and the NW TTAP center.

Here are some of the specific items we hope to accomplish in the coming six-month performance period.

#### **Research**

We expect our Year 2 research projects will be on their way. Some Year 1 projects may produce interesting results to follow up. These research projects will follow the PacTrans procedure to share their findings at the PacTrans Region 10 Transportation Conference scheduled on October 11, 2024 in Moscow, ID.



Following last year's success of our PacTrans Region 10 Transportation Conference, we will also engage industry and agency partners in our organizational effort to facilitate collaborations between researchers and practitioners on research and technology transfers.

In addition to our regular research, we will enhance partnerships with local transportation agencies and companies. We will facilitate collaborations between regional partners to go after major RFPs from USDOT and other relevant agencies, such as Strengthening Mobility and Revolutionizing Transportation (SMART), Advanced Transportation Technology and Innovation (ATTAIN), Safe Streets for All (SS4A), etc.

### Technology Transfer

We typically do not begin offering Success Story funding until after our first year of research projects has been completed. So, it will be a few more reporting periods before we have anything on those. However, during this next reporting period, PacTrans has several great opportunities for technology transfer, including: the 2024 ASCE International Conference on Transportation and Development, the National Travel Monitoring Exposition and Conference (PacTrans is a co-host of this conference), and the Women in Transportation Conference. We will make great use of these opportunities to build new partnerships for technology transfers and provide support as needed.

### Education

PacTrans consortium partners will support our students in a variety of ways, including but not limited to:

1. PacTrans fellowship program. PacTrans will continue to support new and existing fellow students and track their performance after graduation.
2. Student activities. We support professional organization student chapters, such as the Institute of Transportation Engineers, and student competition teams, such as UI's clean snowmobile team, and UW's Hyperloop team.
3. Academic travel. Some of these funds are historically used to support the travel of students to conferences such as the ASCE International Conference on Transportation and Development to present their work.

### Workforce Development

We will continue hosting seminars/webinars that provide insights as to the current state of the industry and emerging researching needs and cutting-edge technologies and techniques.

Looking ahead, the next phase of work will be building and offering new transportation professional development opportunities. There will also be in person learning opportunities and we will be getting the word out this summer for fall and winter courses.

This summer we will host two summer camps for K-12 students. PacTrans will offer two sessions of our Introduction to Autonomous Vehicles course to middle school students in July. We will also facilitate the 2<sup>nd</sup> offering of the WA Transportation Camp in partnership with WSDOT, UW, and WSU.

PacTrans will also work with the NW TTAP Center closely to address rural mobility challenges through proposal development, technology transfer, and workforce development. We will expedite the process in developing the short-term training courses urgently needed by Tribal and other rural communities.

## 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 UW, devotes 20 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, **Jeff Ban**, Ph.D., Associate Professor of Transportation Engineering in Civil and Environmental Engineering at the UW spends 5 percent of her time managing the research program for PacTrans and coordinates 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 5 percent of her time leading the Education and Workforce Development Committee. She is involved in curriculum changes, training program development, and educational enhancements among the partner institutions.
- PacTrans Associate Director in Technology Transfer, **Jon Froehlich**, PhD, Professor of Computer Science Engineering, devotes 10 percent of his time leading the Technology Transfer Committee.
- PacTrans Associate Director in Portland State University (PSU), **Jennifer Dill**, Ph.D., Professor of Urban Studies & Planning at PSU, devotes 10 percent of his time to managing and organizing the education, outreach, and research activities within PSU. She coordinates all results and outcomes with the UW on a regular basis.
- PacTrans Associate Director in the University of Alaska Anchorage (UAA), **Osama Abaza**, PhD, Professor of Civil Engineering at UAA, devotes 10 percent of his time to managing and organizing the education, outreach, and research activities within UAA. He coordinates all results and outcomes with the UW on a regular basis.
- PacTrans Associate Director in University of Idaho (UI), **Ahmed Abdel-Rahim**, Ph.D., Professor of Civil Engineering at UI, devotes 5 percent of his time to managing and organizing the education, outreach, and research activities within UI. He coordinates all results and outcomes with the UW on a regular basis.
- PacTrans Associate Director in Washington State University (WSU), **Xianming Shi**, 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.
- PacTrans representative from Northwest Indian College (NWIC), **Victoria Retasket**, Dean of Student

Life at NWIC, devotes 10 percent of her time to managing and organizing the education and outreach activities within NWIC. She coordinates all results and outcomes with the UW on a regular basis.

- Assistant Director, **Cole Kopca**, devoted 50 percent of his time to the day-to-day operations in support of the PacTrans mission. His responsibilities include project management, grant management, events coordination and outreach, and managing the PacTrans operations team.
- PacTrans full-time Finance, Grants, and Research Manager, **Christina Yarbrough**, devoted 20 percent of her time to the Center's budget, expenditure, and research management.
- PacTrans part-time Assistant Director of the Workforce Development Institute (WDI), **Melissa Amrhein**, devotes 20 percent of her time to daily operations of the PacTrans WDI. Her responsibilities include partnership building, needs assessment, and coordination of course development and facilitation.
- PacTrans full-time Communications and Marketing Specialist, **Kristine Pham**, devoted 5 percent of her time to the Center's communications and marketing work.
- PacTrans part-time Program Coordinator, **Melanie Paredes**, devoted 20 percent of her time to the Center's fiscal matters, support with events coordination and outreach and day to day administration.
- PacTrans has 28 fulltime faculty at the UW engaged in transportation research. Our consortium partners (NWIC, PSU, UAA, UI, WSU) have 45 fulltime faculty directly involved in PacTrans research.

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

The following table highlights the institutions, organizations, agencies, and industry partners who have partnered with current PacTrans funded research projects to provide match, either cash or in-kind.

Partner	Type
Washington State Department of Transportation	Government
Alaska Department of Transportation and Public Facilities	Government
Oregon Department of Transportation	Government
AIWayson, Inc.	Private Company
City of Bellevue	Government
DKS, Inc.	Private Company
INRIX, Inc.	Private Company
AWS	Private Company

Further, PacTrans has continuing relationships with many partners that have been cultivated over the years. The table below highlights the many partnerships that PacTrans has built over the duration of the center:

Partner	Type
Alaska Department of Transportation and Public Facilities	Government
Idaho Transportation Department	Government
Oregon State Department of Transportation	Government
Washington State Department of Transportation	Government
City of Bellingham	Government

City of Seattle	Government
City of Lynnwood	Government
City of Bellevue	Government
City of Everett	Government
King County	Government
Snohomish County	Government
Pierce County	Government
Sound Transit	Government Agency
Washington Traffic Safety Commission	Government Agency
Washington State Transportation Insurance Pool	Government Agency
University of Alaska, Anchorage	Educational Institution
University of Washington Transportation Services	Educational Institution
Washington State Department of Ecology	Government
Puget Sound Regional Council	Government
Washington State Transportation Investment Board	Government Agency
American Society of Civil Engineers	Professional Association
Institute of Electrical and Electronics Engineers	Professional Association
Institute of Transportation Engineers	Professional Association
Yakama Nation	Federated Tribe
Northwestern Tribal Technical Assistance Program (NW TTAP) Center	University Center
ITS Washington	Professional Association
HDR Engineering	Private Industry
Port of Portland	Government
BMW Group	Private Industry
Western Trailers	Private Industry
Coral Sales Co.	Private Industry
National Institute for Transportation and Communities	University Transportation Center
Transportation for Livability by Integrating Vehicles and the Environment	University Transportation Center
Center for Environmentally Sustainable Transportation in Cold Climates	University Transportation Center
Aichele and Associates	Private Industry
Alstom Grid Inc.	Private Industry
Alta Planning and Design	Private Industry
Battelle	Private Industry
Cascade Bicycle Club	Non-profit/ Foundation
Feet First	Non-profit/ Foundation
DENSO	Private Industry
T Mobile	Private Industry
DKS Associates	Private Industry
Fehr and Peers	Private Industry
FLIR	Private Industry
INRIX Inc.	Private Industry

Wejo	Private Industry
AIWayson	Private Industry
Tom Tom	Private Industry
Amazon	Private Industry
Nokia	Private Industry
Transpo Group	Private Industry
Intelligent Transportation Systems of Washington	Professional Association
Luum	Private Industry
Kittelson and Associates	Private Industry
Microsoft	Private Industry
BlackBerry	Private Industry
Verizon	Private Industry
Q-Free	Private Industry
PACCAR, Inc.	Private Industry
West Salem High School	Educational Institution
The Bush School	Educational Institution

## Outputs

Nothing to report at this time.

## Outcomes

Nothing to report at this time.

## Impact

Nothing to report at this time.

## Changes/Problems

None.

## Special Reporting Requirements

### Research Project Requirements

Per our research update above, PacTrans is working diligently to initiate our first year of funded projects. They will be uploaded to RiP and put on our website in short order. Further, PacTrans will continue to include the requirement for an ORCID number from each PI before their project funds are released.

### Submission of Final Research Reports

As final versions of technical project reports are completed and checked for ADA compliance, they will be uploaded to our repository and linked on the research project profiles on the PacTrans website. Then they will be submitted to TRID, NTL Research HUB, etc. This process will not begin until our first year projects are wrapped up (likely middle of 2025).