



January 2025

TRAC e-News: Delivering Research Results!

The Washington State Transportation Center ([TRAC](#)), conducts transportation research through collaborative partnerships among WSDOT, the University of Washington (UW), and Washington State University (WSU).

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Haifang Wen is the new TRAC-WSU Director



Dr. Haifang Wen has been appointed the new Director of TRAC at Washington State University. Wen is a professor of Civil and Environmental Engineering at WSU, where he has been faculty since 2008.

Wen looks to continue TRAC's 40-year tradition of excellence in transportation research, coordinating both public and private research efforts, developing research opportunities both locally and nationally, and maintaining and growing the links among government agencies, university researchers, and the private sector.

Wen's research interests include pavement evaluation and rehabilitation, constitutive modeling of pavement materials, and recycled materials and byproducts utilization. His research group focuses on the sustainability and resilience of infrastructure design and materials. His awards include the 2023 Leon Luck Outstanding Faculty Award from the WSU Department of Civil and Environmental Engineering and the 2014 Anjan Bose Outstanding Faculty Researcher Award from the WSU College of Engineering.

Wen has a Ph.D. in civil engineering from North Carolina State University and an M.S. from Southeast University, Nanjing, China.

Freeway and Arterial Management

Model Deployment of the Virtual Coordination Center for Multimodal Integrated Corridor Management

Research team: [Mark Haselkorn](#) (UW) | [Travis Phelps](#) (WSDOT) | [Doug Brodin](#) (WSDOT)
Sponsors: FHWA | WSDOT | Challenge Seattle Report

Completed: The Virtual Coordination Center (VCC) is a digital collaborative environment for integrated multimodal transportation corridor management. Under Federal Highway Administration sponsorship, an operational community of state, city, and county agencies—including law enforcement, transit, and



transportation departments—developed, deployed, and evaluated the VCC for interagency management of significant traffic incidents in the Seattle urban corridor. The collaborative environment now supports the Seattle fire, police, and transportation departments, King County Metro Transit, Sound Transit, Washington State Patrol, and WSDOT in their interagency management of high-impact situations that put unusual stress on the Seattle-area transportation corridor. The VCC supports increased shared situational awareness, enhanced incident and congestion management, and coordinated population movement. [Read more...](#)

Pavements

Transportation Infrastructure Sustainability and Carbon Reduction



Research team: [Steve Muench](#) (UW) | [Mohamed Nimeri](#) (WSDOT) | [Mustafa Mohamedali](#) (WSDOT)
Sponsor: WSDOT

Ongoing: WSDOT is combating climate change by working to reduce agency and transportation sector greenhouse gas emissions. One way to accomplish that is to adopt sustainable, low carbon materials and construction methods as standard practice. To do that, it is investigating the use of Environmental Product Declarations and life cycle assessment in construction project procurement (in a concurrent project), and it will develop a sustainable procurement strategy for

construction and materials. To assist WSDOT in that goal, UW researchers are working to develop a viable carbon reduction strategy, a greenhouse gas (GHG) inventory procedure, methods for including sustainability in contract documents and specifications, and a method for tracking sustainability commitments throughout the construction process. This procurement strategy will support WSDOT in purchasing materials and

contracting for services that have less negative or more positive effects on the environment and human health. [Read more...](#)

Transportation Planning

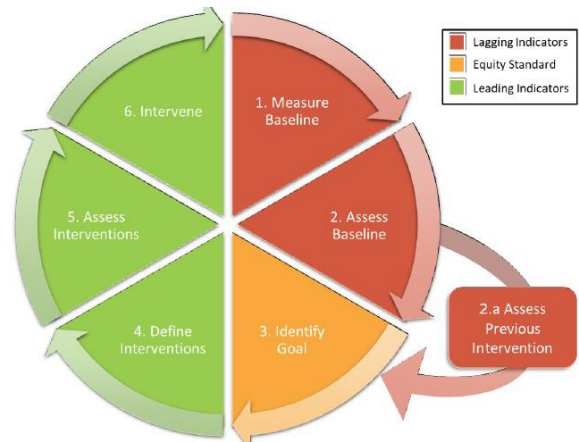
Leading Indicators of Transportation Equity: Equity in Planning

Research team: [Bethany Gordon](#) (UW) | [Ryan Warner](#) (WSDOT) | [Jon Peterson](#) (WSDOT)

Sponsor: WSDOT

Report: [WA-RD 938.1](#)

Completed. To increase equity in transportation planning, this project sought to identify key performance indicators that can measure the effects of transportation projects on vulnerable populations. It also sought to develop a framework for incorporating equity into the WSDOT's planning processes for long-range, regional, and corridor planning initiatives. The researchers organized the identified transportation equity indicators within the classifications of accessibility, mobility and economy, land use and displacement, environmental health and safety, and qualitative and engagement. They surveyed 207 community members and 36 WSDOT planners to develop suggestions to help WSDOT fully integrate equity in planning. The researchers supported their development of a framework for incorporating equity into WSDOT planning efforts with geospatial analysis. [Read more...](#)



Analytic Tools for Locating, Sizing, and Evaluating Electric Vehicle Charging Stations



Research team: [Don MacKenzie](#) (UW) | [Tonia Buell](#) (WSDOT) | [Doug Brodin](#) (WSDOT)

Sponsor: WSDOT

Report: [WA-RD 930.1](#)

Completed. To meet its anticipated growth in electric vehicle adoption, Washington state will need sufficient charging and refueling infrastructure to serve the public. This project reviewed the available analytic tools for planning electric vehicle (EV) charging infrastructure and made recommendations on how to meet legislative requirements for forecasting the

needs for zero-emission vehicles and mapping recharging equipment. After reviewing the available forecasting and mapping tools, the research team developed an approach to producing regular, small-area forecasts of electric vehicle adoption. To address WSDOT's need to make decisions about the locations and plug configurations of charging stations that will receive grant funds, the researchers evaluated where stations will be needed and how different station configurations will affect charging times and potential wait times for a

free plug to start charging. To quantify station-level performance, the team developed a queueing simulation model. Several scenarios were tested to demonstrate the model and estimate station performance under current and future conditions. [Read more...](#)

T2 Events

WSDOT hosts a technology transfer peer exchange

WSDOT organized a technology transfer peer exchange on August 21-22, 2024, intended to foster coordination among regional transportation partners engaged in tech transfer activities. Such coordination includes sharing the knowledge gained from research activities, helping agencies and other entities implement research, and even commercializing research results in the form of new companies. TRAC helped host the meeting at the University of Washington in Seattle. In attendance were WSDOT's research managers, as well as research managers from the Alaska Department of Transportation, Idaho Transportation Department, and Oregon Department of Transportation and a representative from the Federal Highway Administration.



Attendees shared current strategies and efforts related to technology transfer, including research and implementation plans, technical training programs, and webinars. With great interest in WSDOT's Webinar Wednesday program, attendees discussed opportunities to develop joint webinars or perhaps create a showcase across all four states with topics of mutual interest. Regional peers also agreed to plan a technology transfer event for this year, topics and dates to be determined. For more information, contact [Kathy Szolomayer](#), WSDOT Research Tech Transfer and Implementation Coordinator.

Webinar Wednesdays

WSDOT's [Research & Library Services Office](#) hosts Webinar Wednesdays, its continuing series of one-hour webinars to promote research technology transfer, encourage implementation, and foster innovation. Generally held every other month, the sessions cover a wide range of transportation topics. Each webinar showcases research results or innovative practices presented by researchers and subject matter experts, and each features a Q&A segment for attendees to pose questions.

[Sign up here](#) for webinar announcements and registration information. [Previous webinars are available for access here.](#)

Below is information about WSDOT's most recent research webinar:

Beyond the Pond: Steps Taken Toward the Recovery of Washington's Northwestern Pond Turtles (November 2024)



Presenters: Tessa Ott, Wildlife Biologist, Washington State Department of Fish and Wildlife | Tim Chen, UW PhD student, School of Environmental and Forest Sciences

[Access the recording](#)

Advancements in animal tracking technology now enable researchers to monitor a broader range of species, including smaller, semi-aquatic turtles. In partnership with WSDOT, the Washington Department of Fish and Wildlife (WDFW) has begun remotely tracking Washington's two native freshwater turtles: the western painted turtle and the state-endangered

northwestern pond turtle. This webinar provided an early look at an ongoing habitat use study, focusing on WDFW's conservation work and emerging insights from the latest data. Explore how tracking technology supports the recovery of northwestern pond turtles and informs the management of both species, including the role of transportation infrastructure.

The 2025 webinar schedule is still being determined. We will partner with research peers from Idaho, Oregon, and Alaska for a research technology transfer event with a regional perspective, in addition to sessions focused on WSDOT research. [Sign up here](#), and as webinars are scheduled you will receive announcements and links to register. Thank you!

TRAC e-News will be delivered about three times a year. For more information about TRAC and the groundbreaking work we are doing, please visit our [Current Projects](#) and [Research Results](#) pages. A downloadable, pdf version of [this newsletter](#) is also available.

For contact information, follow these links:

- [WSDOT Contacts](#)
- [UW Contacts](#)
- [WSU Contacts](#)

The Washington State Transportation Center (TRAC) is a cooperative, interdisciplinary transportation research agency. Its members, the Washington State Department of Transportation (WSDOT), Washington State University (WSU), and the University of Washington (UW), formed TRAC in 1983 to coordinate transportation research efforts—both state and commercial, public and private—and to develop research opportunities both nationally and locally. TRAC acts as a link among government agencies, university researchers, and the private sector.

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