Webinars presented as of November 2020

ChargeEVal – A tool for evaluating electric vehicle charging along highway corridors, November 18, 2020

ChargEVal is a web interface with which users can specify the location, capacity, and pricing for electric vehicle charging stations. The interface conducts an agent-based simulation of long-distance EV travel demand, integrating empirically based models of vehicle choice and charging behavior, before providing output through a web-based results viewer. Join us to learn how the Washington State Department of Transportation and the University of Washington developed ChargEVal to simulate the effects of prospective additions to the state’s DC fast-charging network on electric vehicle usage and charging station demand. Tonia Buell, WSDOT Project Development Manager for Innovative Partnerships, will introduce the agency’s need for a decision support tool in EV infrastructure planning and the goals for developing ChargEVal. Dr. Don MacKenzie, Associate Professor of Civil and Environmental Engineering at the University of Washington, will discuss the modeling approach and demonstrate the tool.

*Presented by Tonia Buell, WSDOT Project Development Manager for Innovative Partnerships and Don MacKenzie, Ph.D., Associate Professor of Civil and Environmental Engineering, the University of Washington.*

[https://attendee.gotowebinar.com/recording/7850138499920983567](https://attendee.gotowebinar.com/recording/7850138499920983567)
Preserving and improving the service life of bridge decks remains critical in times of budget constraints and extreme weather conditions. Vehicle loading, freeze–thaw degradation, cracking, delamination of cover concrete, and corrosion of reinforcement, can compromise public safety. Yet, the preservation of concrete bridge decks is costly and disruptive to highway systems. All of these concerns present risk to state DOTs. Join WSDOT’s highly regarded Webinar Wednesday for a presentation on innovative approaches to concrete bridge deck design and construction practices in concrete materials and mixtures, fiber-reinforced concrete mixes, corrosion resistant reinforcement, and other means to improve the longevity of bridge decks.

*Presented by: Bijan Khaleghi, State Bridge Engineer, WSDOT; Anthony Mizumori, Bridge Engineer and Concrete Structure Design Specialist, WSDOT.*

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**THIS BOOK IS A BRIDGE!  Transportation and the Arts, July 9, 2020**

Given amidst an unprecedented pandemic, WSDOT’s two artists-in-residence managed to wrap up their residency, the first program in the nation to embed artists within a statewide government agency. Now more than ever the artists see these collaborations as an important bridge to new ways of thinking about transportation and arts. Climb aboard and let them take you on their version of the scenic byways. In addition to their year of research, conversation, site visits, and experiments they’ve produced a series of creative print projects — a newspaper, a bridge, and a creative conversation deck. Together it becomes a bridge, a highway, a bike lane, and, they hope, a platform for new collaborations. This Book is a Bridge is a road-map to WSDOT’s pilot residency program. The DOT Deck is a creative deck to understand and inhabit the conversational nature of transportation work. The Maintenance Post is a hyper-local newsprint publication that connects the traveling public to the often invisible labor of maintenance and preservation workers. They’ll be giving a talk about their time with WSDOT and sketching out some ideas they have for the future. All are welcome! Bring questions! Bring ideas!

*Presented by: WSDOT Artists in residence Kelly Gregory and Mary Welcome, and Ben Stone, Smart Growth America.*

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As the COVID-19 curve flattens and streets begin to fill, what Accessible Active Transportation future can we catalyze? Twenty years before social distancing, Active Transportation advocates understood that the ultimate goal of cities is to ensure its inhabitants' long-term health through improved mobility solutions promoting walking, biking, public transit and other active transportation choices. The pandemic further exposes the flaws of auto-centric planning and gives us an opportunity to reexamine our ideas on access to streets and access to transportation. We now understand that mobility is not summarized in how many cars and crashes there are on a particular street, but our metrics don't yet match our understanding. In this webinar, our speaker will demonstrate how OpenSidewalks, a simple, detailed data approach to the ped/bike transportation network can help us. The benefits go beyond better dashboards and improved metrics for planning, but in affecting real behavioral change with mobility tools to promote active transportation and accessible multi-modal trip planning.

Attendees will learn about the use of OpenSidewalks in three communities: Seattle, Bellingham and Mt. Vernon. The talk discusses the important role of GIS and data-driven information technologies in providing equitable access to mobility and transportation for a changing, unequal, ageing demographic.

*Presented by Anat Caspi, PhD, Founder/Director Taskar Center for Accessible Technology, Paul G. Allen School of Computer Science & Engineering, University of Washington.*

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**Transportation Big Data: Promises, Issues, and Solutions, March 18, 2020**

Big data and related data analytics methods have received much attention recently in transportation for various planning and operational applications. This webinar summarizes the promises of big data and illustrates potential issues of some commonly used big data sources in transportation. We then discuss the implications of such issues and suggest a possible pathway that may help address those issues. We also briefly present a recent UW project for using big data (supplemented by other data sources) to analyze the impact of the new Alaska Way Tunnel to regional travel patterns.

*Presented by: Dr. Jeff Ban, Associate Professor, Civil and Environmental Engineering Department of the University of Washington, and Cynthia Chen, Professor, Civil and Environmental Engineering Department of the University of Washington.*

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Ultra High Performance Concrete (UHPC) for Bridge Applications, January 29, 2020

Precast decks, and precast girders such as deck bulb tees that incorporate decks, offer superstructure construction options that require less on-site time than conventional cast-in-place decks. Precast decks require joints, and UHPC is an ideal material because of the high bond strength that it can develop at early ages. The module will address the design and construction of such precast elements and joints, including the loading demands on the joints, their expected capacities, design methodologies and construction requirements. Precast decks may be used in both seismic and non-seismic applications, because the loadings are largely controlled by wheel loads.

Presented by: John Stanton, PhD, PE, Professor of Civil Engineering at the University of Washington, and Bijan Khaleghi, PhD, PE, SE, State Bridge Design Engineer at the Washington State Department of Transportation.

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Monitoring Amphibian Movements in the I-90 Snoqualmie Pass Project, November 20, 2019

The Interstate-90 Snoqualmie Pass East Project involves substantial improvements to handle larger traffic volumes, reduce closures due to avalanches, and enhance wildlife connectivity. Wetland mitigation and significant improvements to potential crossing structures have increased the number of breeding sites and enhanced the movements of aquatic amphibians across I-90. This webinar will discuss specific studies to describe our successes, cautionary tales, and some techniques for the study of amphibians. Before or after our webinar, don’t miss Cascade Crossroads, a 30-minute documentary that will give context to wildlife conservation on the I-90 Snoqualmie Pass East Project.

Presented by: Jason Irwin, Professor of Biological Sciences, Central Washington University.

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How does WSDOT work to ensure equity in projects and programs? This presentation will help you understand the how Title VI and Environmental Justice shape agency work, and also improve connections with communities. Attendees will gain a better understanding both of the historical context of these policies and the practical application at WSDOT.

*Presented by: Edwina Martin-Arnold, WSDOT’s Title VI Assistant Coordinator; Ashley Carle, National Environmental Policy Act and Environmental Justice subject matter expert for WSDOT HQ’s Environmental Services Office; and Bart Treece, Communications Manager for WSDOT’s Northwest Region.*

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**Ground Penetrating Radar for HMA in Place Density, July 31, 2019**

Newer technology in the area of ground penetrating radar (GPR) has shown the ability to measure the density of new asphalt pavements quickly and with better coverage than the nuclear density gauge currently used. As a result, the WSDOT Pavement Office worked with the Research Office to obtain STIC funds in order to purchase a GPR unit so that comparison to the nuclear density gauge for measurement of in-place density could occur. Comparisons were made on asphalt paving projects during the 2017 and 2018 construction season to determine the feasibility of using GPR for quality assurance of HMA density and this webinar Wednesday will introduce you to this technology and the initial findings of this research.

*Presented by: Jeff Uhlmeyer, WSDOT State Pavement Engineer and Jim Weston, WSDOT Roadway Operations Manager.*

[https://register.gotowebinar.com/recording/8772673825074744835](https://register.gotowebinar.com/recording/8772673825074744835)
Sugar Access - Understanding Accessibility, May 22, 2019

Most people don't get in a car or bus just to drive...they have a destination in mind. They are going to work, to school, to retail services. Measuring accessibility brings WSDOT closer to evaluating what people care about when they travel - connecting multimodal mobility to economic and social opportunities. It also helps us understand who has access to those opportunities which helps use an equity lens when making transportation decisions. WSDOT and Smart Growth America's State Smart Transportation Initiative (SSTI) have teamed up on a project to better understand accessibility. This project will help WSDOT develop methodologies and standards to implement accessibility metrics.

Presented by: Kyle Miller, Transportation Planning Specialist, WSDOT, and Chris McCahill, PhD., Deputy Director of the State Smart Transportation Initiative.

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Linear Scheduling – WHAT IS IT? March 13, 2019

Have you ever asked, why didn’t they think of this during design? Working on a design, have you ever wondered how the project might be constructed so the design can be optimized for constructability? Many in our industry, for decades, have pursued ways to improve the nexus between design and construction. This webinar explores a powerful approach to make design and construction considerations an integral part of project development.

WSDOT has launched an initiative to evaluate, develop and implement best practices for linear schedule of transportation projects. Linear scheduling may be an effective tool for constructability reviews earlier in design and to identify coordination opportunities. It can enhance processes related to project cost risk assessment, value engineering, and stakeholder engagement. This multiphase study includes surveys and interviews of key WSDOT project personnel; and pilot use of the linear scheduling with off the shelf software in a selected project. This webinar is a platform for researchers to present some preliminary findings at an early stage, gather input and attract potential interviewees and participants for future stages.

Presented by Amy Kim, Assistant Professor in Civil Engineering at University of Washington, Shuoqi (Stanley) Wang, Postdoc Research Associate at University of Washington, and Mark Gabel, WSDOT Cost Risk Estimating Manager.

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TSMO, WHAT IS THAT THING ANYWAY? Transportation Systems Management & Operations, January 30, 2019

Have you heard about Transportation Systems Management and Operations (TSMO) and wondered what is it exactly? Maybe you are familiar with the term TSMO (pronounced TIZ-MO) but wondered, “Is TSMO all that different from Intelligent Transportation Systems of Traffic Operations?” or “How does Connected Vehicles and Travel Demand Management fit into TSMO?”

This webinar is intended to provide an overview of WSDOT’s efforts to develop and deploy transportation strategies that maximize the use of existing infrastructure to benefit the safety and mobility of our communities.

*Presented by Monica Harwood Duncan, WSDOT Statewide Traffic Operations Engineer.*

[https://register.gotowebinar.com/recording/2906200943750271235](https://register.gotowebinar.com/recording/2906200943750271235)

WSDOT LiDAR: An Efficient Geospatial Data Acquisition Technology, November 28, 2018

LiDAR is an emerging and valuable technology. It has the potential to enable this agency to acquire very high quality, dense and accurate point cloud data for the entire state highway system at a very low cost. This data would be very useful for asset management, planning, design and preservation; enabling better decisions and immediate access to relatively up-to-date conditions of our transportation system. Mobile LiDAR presents an opportunity for WSDOT to consolidate geospatial data collection operations, improve efficiency, safety for workers, and mobility of traveling public. This webinar will discuss the current and future use of LiDAR at WSDOT and provide examples of some of the key deliverables.

*Presented by: Pete Townsend, WSDOT GeoMetrix Manager, Kurt Williamson, WSDOT Survey and Mapping Manager, and Marc Faucher, WSDOT Statewide Geomatics Specialist.*

[https://register.gotowebinar.com/recording/4332012436882951937](https://register.gotowebinar.com/recording/4332012436882951937)
Innovation in Action – Cooperative Automated Transportation (CAT) – WSDOT’s efforts to prepare for connected and automated vehicles, September 12, 2018

This webinar is intended to provide an overview of WSDOTs efforts to prepare for a Cooperative Automated Transportation (CAT) future. WSDOT is currently promoting and working to enable the deployment of automated technologies that encourage all modes of transportation to cooperate and communicate to provide travelers a safe, sustainable, and integrated multimodal transportation system. This will be accomplished in part by automating some or all of the functions of or access to various vehicle types (automobile, van, plane, truck, bus, rail, ferry, etc.) and integrating vehicles with infrastructure, and implementing shared mobility. Ultimately, this will better leverage our limited funding for infrastructure, make our communities more livable, improve economic vitality, and improve the safety of our entire multimodal transportation system.

*Presented by: Ted Bailey PE, WSDOT CAT Program Manager and Daniela Bremmer, WSDOT CAT Development Manager.*

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Stormwater Infiltration in Highway Embankments – Estimating $K_{sat}$ for Infiltration Assessment, July 25, 2018

This webinar presents research into new methods for estimating the hydraulic conductivity of soils in compacted embankments as well as soils not subjected to compaction. Natural and engineered sloped vegetated areas, typically on or immediately adjacent to the highway embankment, are designed to receive highway runoff for the purpose of runoff treatment and flow control. The Highway Runoff Manual design criteria require knowledge of the saturated hydraulic conductivity ($K_{sat}$) to estimate the dispersion area. Accurate and cost-effective methods of estimating $K_{sat}$ allows embankment side slopes and natural dispersion areas to be designed at the optimal size, potentially lowering costs and maximizing ecological benefit.

*Presented by Tony Allen, PE, State Geotechnical Engineer.*

https://attendee.gotowebinar.com/recording/471730463067811841
Rapid Road Rehab (R3), May 16, 2018

Rapid Road Rehabilitation (R3) is a set of web-based applications developed by Pavia Systems that facilitate the analysis of scheduling, traffic, and costs for highway construction projects. The methods are based on research performed by E.B. Lee from the University of Washington and validated in practice by numerous published case studies since 1999. R3 provides an intuitive, graphical user interface that allows users to analyze and compare design alternatives among six paving methods with configurable closure and work scenarios. R3’s web and cloud-based system greatly improves access to these tools and for the first time, allows users to collaborate online and distribute their participation. Bolstered by a highly visual interface and reporting system, R3 provides several layers of user support through its in-app guidance, software training through its companion Pavia Academy service, as well as on-demand domain knowledge for relevant concepts in practice. Collectively, R3’s suite of apps create a work environment that allows users to quickly examine and identify impacts from various design and construction alternatives.

Presented by George White, CEO of Pavia Systems, and James Feracor, PhD Candidate at University of Washington and consultant for Pavia Systems.

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WSDOT’s Flexible Bridge – A World First, March 14, 2018

In 2017, WSDOT built the first-in-the-world bridge to incorporate the innovative materials Shape Memory Alloy (SMA) and Engineered Cementitious Composite (ECC) on the Alaskan Way Viaduct SR-99 project. These materials help improve the resilience of a bridge after a major earthquake. SMA and ECC aid in eliminating damage to essential bridge elements while providing a crucial energy dissipating mechanism during the ground induced motion. SMA is a super elastic metal alloy that will stretch and deform beyond the limits of conventional steel rebar and spring back into shape. ECC is used in place of conventional concrete wherever SMA is used. It is a bendable concrete that won’t break up when large earthquake forces shock the bridge. Incorporating SMA and ECC into bridge columns by replacing conventional steel rebar and conventional concrete will provide reliable bridge components that will allow bridges to be operational after a major earthquake.

Presented by Jed Bingle, PE, SE, WSDOT Bridge Engineer

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Pollinator Research and WSDOT Pollinator Initiatives, January 18, 2018

This webinar features WSDOT’s research on pollinators, how pollinators figure into WSDOT’s roadside management program, and what WSDOT is doing to protect pollinators and their habitat.

Presented by Juli Hartwig, WSDOT Landscape Architect, Ray Willard, WSDOT State Roadside Asset Manager, and Marion Carey WSDOT Fish & Wildlife Program Manager.

[Link to recording]

Road User Charges, November 15, 2017

The focus of this webinar is road user charges. The presenter, WSDOT’s Director of Innovative Partnerships, provides a high-level overview of the concept of road usage charges. Advancements in automobile technology are presumed to have a negative impact on fuel tax revenues in future years. The increased fuel efficiency of modern day vehicles means potentially less revenue for necessary highway construction and maintenance projects. Road user charge or the pay per-mile concept is intended to address this issue.

Presented by Anthony Buckley, WSDOT Director of Innovative Partnerships

[Link to recording]
Wildlife Passage in Washington State: Lessons learned from hanging out under bridges (and in culverts), September 27, 2017

This webinar looks at WSDOT’s research of terrestrial habitat connectivity across state highways. The presenter, a WSDOT Wildlife Biologist, discusses the use of remotely triggered cameras to document wildlife use of bridges and culverts, the information gleaned from such documentation, and how this information is used to better facilitate safe wildlife passage across highways.

Presented by Glen Kalisz, WSDOT Wildlife Biologist

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Concrete Filled Steel Tubes - Innovations in Bridge Engineering, July 19, 2017

Concrete filled steel tubes (CFST) are composite members that consist of circular steel tubes with concrete infills. In bridge structures, CFSTs may be used for piers, columns, piles, or drilled shafts. CFSTs offer many advantages in bridge design due to their high strength, stiffness, and ductility. They may also be used in accelerated bridge construction (ABC). WSDOT has recently started implementing CFSTs within bridge design in large part due to recent research projects. These research projects include testing connections and shear capacity. This presentation gives an overview of some of the CFST research, its history, implementation of research results future use within bridge design and construction.

Presented by Amy Leland, WSDOT Bridge Design Engineer

https://attendee.gotowebinar.com/recording/6914544237698245378
Pre- and post-construction monitoring for American Pika connectivity across Interstate-90, May 24, 2017

This webinar focuses on wildlife connectivity, discussing outcomes of research related to monitoring pikas and other small mammals for the I-90 Snoqualmie Pass East Project. The research was designed to test the effectiveness of wildlife crossing structures and provides recommendations for enhancing their suitability for low-mobility species.

Presented by Kristina Ernest, Professor of Biology Central Washington University

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Media Filter Drains, March 8, 2017

This webinar presents the outcomes of research related to media filter drains (MFDs), with impact for several project offices statewide. This project has been a remarkable collaboration among everyone involved: WSDOT policy, engineering, environmental, maintenance, and field staff; BMP installation team; design-build team, and the Washington State Department of Ecology staff. While the application of the research results has not yet reached all of the original goals related to filtration levels, the effort has made some dramatic strides:

- Confidence in the feasibility of using engineering methods to re-disperse point discharges back to sheet flow for water quality treatment BMPs naturally suited for sheet flow (natural dispersion, bio-filtration, media filtration, etc.).
- Demonstrated that the treatment train meets Basic (TSS) and Phosphorous water quality treatment standards.
- Recognized potential BMP installation cost saving through collaboration and innovative thinking.
- Lessons learned from construction, monitoring, and the data that will help us eventually reach our goal of meeting the “Enhanced” (metal removal) standard.

Presented by Alex Nguyen, WSDOT Highway Runoff Program Manager, and Brandon Sloane, Stormwater Monitoring and Research Analyst.

https://attendee.gotowebinar.com/recording/6632013726903849987
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