

December 2017

## Joint Meeting with Tacoma-Olympia ASCE: Port of Seattle Capital Projects



### Wednesday, December 13

Join us for this year's joint meeting with the Tacoma-Olympia Section of ASCE. We will be gathering in Tukwila to listen to Mr. Ralph Graves, PE, Senior Director of Capital Development with the Port of Seattle. He will be talking about the capital projects program at the Port. The program is staggering in scale: many billions of dollars in construction. Some examples include the SeaTac Airport and the Fishermen's Terminal. Ralph will also discuss some of the technical challenges that the Port has faced. Our section will be offering

participants 1 professional development hour - just be sure to check the box when you register! Don't miss this one!

Ramada  
15901 West Valley Highway  
Tukwila, WA 98188

**5:30 PM - Doors open**  
**6:00 PM - Dinner served**  
**6:30 PM - Announcements**  
**and ASCE Business**  
**7:00 PM - Presentation**

[Click Here to Register](#)



### Never miss a Seattle Section event, link our calendar to your Outlook today!

Have you seen our new event calendar? [Click here](#) to see what exciting events we have planned!

The best way to stay up to date on Seattle Section happenings is to **add our calendar to your Outlook** or other email manager. All you have to do is [click here](#) to download a .ics file that you can open and add to your own calendar.



### December President's Column

By Diana Hasegan, PE, ENV SP, Seattle Section President

Success in achieving ASCE's strategic goals to improve the condition and performance of our nation's infrastructure depends on involvement from members across the organization. Our ability to meet the needs of the society for infrastructure depends tremendously on proper funding sources and local, state and federal regulatory support.

The Government Relations program actively works to achieve the Society's strategic goal of improving the nation's infrastructure. This program is the Society's as well as your voice in Washington, DC and in the states. They work with Congress and State legislators directly on issues of importance to the practice of civil engineering.

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They also represent ASCE's interests in the regulatory processes of agencies.

I challenge each of you to become involved in the government relations activities to help ensure our nation's infrastructure is well funded and capable of meeting our needs. Here are a few ways you can get involved:

Start building relationships with elected officials through the [Key Contact Program](#). You will get email briefs on key issues up for vote at the federal level and ASCE will help you craft powerful messages to send your representatives in Congress from the comfort of your computer. A few clicks away and you can help influence public policy and educate yourself about current legislative issues.

There's also an app! ASCE's new [Save America's Infrastructure app](#) lets you stay informed on ASCE's priorities and easily tell your legislators about infrastructure issues at the state and national level. Help save America's roads, water pipes, airports, and more by telling your lawmakers to get to work in the Action Center.

The [2017 Report Card for America's Infrastructure](#) was released in March 2017. ASCE's Report Card covers 16 infrastructure categories and includes videos, interactive maps, and other multimedia tools. The 2017 Report Card will link to all the recent State and Local Infrastructure Report Cards and gives key facts for all 50 states, including examples of initiatives and innovations that are making a difference. We are also updating the Washington State Report Card and we are looking for more volunteers to make this happen in 2018. Read below on how you can get involved.

Do you know where ASCE stands on specific issues? The public policy positions that ASCE takes are based on [Policy Statements](#) developed under a well-established process and adopted by the Board of Direction. Policy Statements are the basis for any statements made on behalf of the Society to Congress, federal regulatory agencies, the media and the public. Policies are updated on a three-year cycle, if not sooner. All ASCE policy statements are available online at: <http://www.asce.org/policystatements/>

Within the Seattle Section, the Legislative Committee is chaired by [Savannah Linders](#) and our State Advocacy Captain is [Conrad Felice](#). The WA State Report Card efforts are led by [Erik Ellingsen](#) and [Richard Fernandez](#). If you would like to get involved with any of these please do not hesitate to reach out to them.

## LOCEA Spotlight: SR 520 Floating Bridge



The ASCE Seattle Section newsletter is featuring projects that received a Local

[Outstanding Civil Engineering Achievement Award in 2017. The SR 520 Floating Bridge project is also a finalist for the 2018 Outstanding Civil Engineering Achievement award, the Society's preeminent project honor.](#)

## **New SR 520 floating bridge gives region safer, more reliable transportation**

*By Dave Becher*

For thousands of years societies have built bridges to improve travel, support commerce, and bring people together. Beyond their practical function, though, bridges can also serve as landmarks, even icons. Think of Tower Bridge in London, the Ponte Vecchio in Florence, Italy, or the Golden Gate Bridge.

One of the newest bridges getting global recognition is the replacement State Route 520 floating bridge. When the 1.5-mile-long span on Lake Washington opened in April 2016, Guinness World Records declared it the world's longest floating bridge (snatching the title from the original, slightly shorter SR 520 floating bridge). Since its completion, the new bridge has garnered 14 industry awards for its design, construction and operational features.

### **Challenges breed opportunity**

Rebuilding a major highway within a densely developed urban area – all while keeping heavy traffic flowing, day after day – is a complex undertaking. The task is especially challenging when it involves replacing a long, over-water structure.

For the SR 520 floating bridge, one major challenge involved access – specifically, how to efficiently move crews and materials onto the lake's bridge-assembly work site, with land access only from a narrow, steep embankment on Lake Washington's eastern shore in Medina. The design-builder, Kiewit-General-Manson, together with the Washington State Department of Transportation and our consultants, addressed the challenge, in part, by turning a "marine" job into a "land" job as much as possible. The strategy centered on:

- Constructing the bridge's 77 concrete pontoons, over a four-year span, at casting basins in Aberdeen and Tacoma, towing them to Lake Washington, then joining and anchoring them, sequentially, from east to west.
- Building the bridge's concrete anchors and precast roadway-deck panels at a lakeside industrial area in Kenmore, then barging the components to the bridge-assembly site in a just-in-time manner.
- Setting the 776 precast roadway-deck panels in place with a barge-mounted crane and post-tensioning the panels together to form the bridge superstructure and roadway surface.

Land-based construction presented numerous advantages: a safer work environment for crews; reduced environmental risk to the lake; simpler access for material and personnel; improved construction consistency and quality; a shortened project schedule; and lower cost.

### **Public benefits of the new bridge**

The old SR 520 floating bridge, opened in 1963, had surpassed its design life. Strong winds and waves threatened the structure's integrity and potentially could have broken it apart in a severe storm. A failure of the aged bridge would have had catastrophic consequences for the region's economy.

The new floating bridge provides a safer, more reliable, more environmentally sustainable transportation link between the region's growing urban hubs on both sides of Lake Washington. Key improvements include:

- Bigger, heavier pontoons and anchors, enabling the bridge to withstand stronger winds and waves.
- Transit/HOV lanes in both directions.
- Full shoulders for disabled vehicles.
- A 14-foot-wide cross-lake bicycle and pedestrian path.
- An elevated roadway that, unlike the old bridge, lifts vehicles above windswept waves and allows for easier maintenance of the new structure.
- A design that accommodates a retrofit for light rail if the region endorses that option.

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Editor's note: Dave Becher is Director of Construction for the Washington State Department of Transportation's \$4.5 billion SR 520 Bridge Replacement and HOV Program. In his role, he led the construction of the new SR 520 floating bridge, and now oversees SR 520 construction efforts in Seattle, where crews in August opened the West Approach Bridge North (WABN) and are preparing for the highway's next phase of construction in Seattle, set to begin in 2018. In recognition of his work, *Engineering News-Record* named him one of the country's "Top 25 Newsmakers of the Year."

**Volunteer on the R.H. Thomson Scholarship Committee**

The R. H. Thomson Memorial Scholarship is an annual scholarship awarded by the Seattle Section each year to honor the accomplishments of R.H. Thomson. The Scholarship Committee is responsible for judging applications and selecting the \$5,000 scholarship recipient, subject to confirmation by the Seattle Section Board.

The aim of the scholarship program is to encourage students to pursue a course of study leading to a Bachelor or a Master of Science degree in Civil Engineering or one of the specialties within the Civil Engineering discipline. It also strives to honor R. H. Thomson, a civil engineer who had a profound and lasting impact on Seattle's infrastructure.

[Email Diana Hasegan](#) if you are interested in volunteering on the committee.

## November Section Meeting - Envision Rating System Overview and Case Studies

We hope you enjoyed our November section dinner! Richard Fernandez and Christina Kapoi informed us about how the Envision Rating System works and shared valuable insights and lessons learned from the King County Georgetown Wet-Weather Treatment Station Project and the Seattle Ship Canal Water Quality Project. They tackled questions such as:

- “What IS the Envision Rating System and how does it work?”
- “What considerations go into planning/implementing Envision? What are the associated costs?”
- “How is the Envision Rating System changing and how is it expected to evolve in the future?”



Check out Richard and Christina's Envision Rated projects to learn more!

- Richard Fernandez, [Ship Canal Water Quality Project](#)
- Christina Kapoi, [Georgetown Wet Weather Treatment Station](#)

## University Mentor Night Help Needed

**Seattle Central College (SCC)**  
**Thursday, January 25<sup>th</sup>, 2018, 6:00 to 8:00 pm**  
**Location: 1<sup>st</sup> floor Atrium of Science & Math Building, 1701 Broadway, Seattle**

If you are interested in being a mentor for a night for college students, the Puget Sound Engineering Council (PSEC) needs your help! The purpose of the mentor night activity has been to bring as many practicing engineers together with as many students as possible. We are trying to inspire the students, most of whom are freshmen and sophomores as well as high school seniors, toward a career in engineering. The mentor night allows engineers to relay their experience in the profession and answer questions posed by students. The event will be kicked off with a brief introduction of the engineering disciplines represented by the volunteers followed by open forum where the students visit various tables and converse with the mentors. Mentors are encouraged to bring a sample of work that will fit on a 30"X30" table top for potential discussion with the students.



[If you are interested in participating, please sign up online by clicking here.](#)

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## Meet a Board Member

### Paul Fikse, PE | Secretary

Paul is another transplant from the San Francisco Bay Area, where he worked for the heavy civil contractor American Bridge on the construction of the San Francisco Oakland Bay Bridge as well as for the engineering consultant Simpson Gumpertz & Heger on a number of industrial facilities for oil and gas clients. He holds a B.S. from Columbia University and an M.S. from UC Berkeley, both in Civil Engineering with a Structural emphasis. Paul chose to study and practice civil engineering simply because he loves math and physics, and is always in awe of our infrastructure.



Paul currently works with McMillen Jacobs Associates where he is designing station elements for two Link Light Rail stations in Redmond, WA with a team of talented engineers and architects.

He enjoys cycling home from work, cooking dinner, and taking photos of Seattle's infrastructure. His wife and he are very excited to welcome a baby girl into the world sometime this month!



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## ASCE Membership Renewal Drawing Last Chance!

Renew your 2018 ASCE membership early and earn chances to win one of 4 prizes, including the grand prize worth \$1,000!

- Renew by **December 12, 2017** for a chance in the grand prize drawing for a \$1,000 Amazon.com Gift Card (U.S. members), or a free year of ASCE membership (international members)!



When you join ASCE, you become part of the largest professional civil engineering network in the world. As a part of our community, you have access to our industry's most comprehensive communication, networking, and learning resources. As an ASCE member, you have access to a wealth of benefits that serve you throughout your career.

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