President's Message

For 2020, I recommend visiting a civil engineering landmark. Our newsletter this month includes an article about a scavenger hunt where we located National Historic Civil Engineering Landmark plaques in Southern California. Our group of volunteers had a lot of fun playing detective. There are many other monuments dedicated by ASCE Region 9 and by Los Angeles Section. Stop by and see one and share your love of civil engineering with your friends and family.

One of my family’s favorite engineering activities is to visit the Vista Del Lago Visitor Center on Interstate-5 at Pyramid Lake, operated by the California Department of Water Resources (35800 Vista Del Lago Road, Gorman). The center includes hands-on learning about the California Aqueduct and how water is important to California’s people and environment. They have plenty of activities to occupy children and adults – all free. The nerdiest part is an entire room filled with a 3D hydraulic grade model of the aqueduct.

The Visitor Center is also home to the ASCE Region 9 Historic Civil Engineering Landmark for The Ridge Route (located in the parking lot). The Ridge Route was the first primary highway connecting Northern and Southern California and was a major factor in keeping the state from dividing into two. Placed on the ridge to avoid drainage problems and reduce earthwork, the ridge portion of the road was almost a continuous set of short radius reversing curves, 697 curves in 36 miles. This was the first highway crossing of a major mountain range by the newly formed California State Department of Highways. As traffic increased, upgrades and additions in 1933, 1952, and 1968 created the 8-lane divided freeway for Interstate 5 that we have today. For more reading, check out “Ridge Route: The Road that United California” by Harrison Scott, which is available from Amazon.

It is amazing to think of what civil engineers have accomplished in 105 years. The trip between Los Angeles and Bakersfield, which originally took about 10 hours, now takes less than 2 hours. Living in Bakersfield, I make this drive several times a month and look forward to transportation in the future that will make the drive faster, safer, and more sustainable.
ASCE honors important civil engineering achievements through the program of National Historic Civil Engineering Landmarks. Last summer, Region 9 asked the Los Angeles Section to locate all five plaques for the landmarks throughout southern California. Finding the actual bronze plaques became quite the scavenger hunt with a number of people volunteering to help find them. We had so much fun searching for them, that we encourage you and your family to do the same in 2020.

**The Tehachapi Loop.** Railfans from around the world come to see the Loop, which is one of the seven wonders of the railroad world. Trains climb a 2.2% grade for 28 miles that include 18 tunnels and 10 bridges. The long spiral of the loop itself causes trains 4,000 feet in length to cross over itself. The rail line is jointly used by Union Pacific Railroad and BNSF Railway and one of the busiest freight corridors in the world.

Monument is located at 26800 Woodford-Tehachapi Road, Tehachapi, California 93561.

Latitude 35°11′42.17″N
Longitude 118°32′5.52″W

The first Owens River Los Angeles Aqueduct. The population in Los Angeles was growing rapidly at the turn of the century, and the demand for water in this semi-arid region was critical. In 1904, three Los Angeles engineers - William Mulholland, Frederick Eaton and J.B. Lippincott - developed a plan for future sources of water for the thirsty city. The men recommended construction of a 233-mile-long aqueduct from the Owens River to Los Angeles. Faced with a prolonged drought at the time, citizens approved a $23 million bond issue (roughly equivalent to $1.5 billion today) to build the aqueduct. We should note that Lippincott was the first Los Angeles Section President and Mulholland was the third President.

The plaque is located at a turnout at 17001 Foothill Boulevard, Sylmar, California 91342 at the Cascades.

Latitude 34°19′21.33″N
Longitude 118°29′50.63″W

Colorado River Aqueduct. Funded by a bond issue of $220 million approved by voters in 1931, the Colorado River Aqueduct is capable of lifting more than 1,600 cubic feet of water per second to a static height of 1,600 feet as it travels over several desert mountain ranges. Recognizing the project's unprecedented length, cost, pumping rate, lift, and severe climate and terrain ASCE selected it as one of Seven Modern Civil Engineering Wonders in 1955.

Unfortunately, the plaque is located within a secure facility and is not publicly accessible. However, you can visit Lake Havasu and Parker Dam – or just turn on your faucet.
Arroyo Seco Parkway. This 6.7-mile-long parkway was the first urban freeway to be built in the United States west of the Mississippi River. Asphalt and portland cement concrete pavements were installed side-by-side for comparison purposes. Despite having to carry over four times its projected design-year traffic, the parkway has remained in almost the same configuration as when it was opened in 1940.

Unfortunately, we were unable to locate this plaque after extensive searching. Great places to see the Parkway without driving on it include Heritage Square Museum and Sycamore Grove Park.

Thank you to all those who helped in finding these plaques: Andy Machen, Arman Motavvef, Bill Lawson, Dan Cronquist, Elizabeth Ruedas, Francisco Aragon, Jessica Lowe, and Ruwanka Purasinghe.
The Legislature is in recess until January 6. January will be a busy month for any two-year bills as they must clear their house of origin by January 31.

New Reports of Interest
The UCLA Luskin Center for Innovation released California Building Decarbonization: Workforce Needs and Recommendations. This study estimates the potential employment impacts of “building decarbonization,” which involves renovating residential and commercial buildings with energy efficient improvements. “In total, building electrification in California could support an average of 64,200-104,100 jobs annually, after accounting for losses in the gas industry… The average annual jobs … are slightly different from the total job impacts upon 100% electrification…. The areas of greatest increase are building retrofits and renewable energy construction, while the greatest decrease is in gas distribution followed by labor-saving all-electric new construction, but these negative impacts are much smaller than the positive impacts.”

Lawrence Berkeley National Laboratory, Electricity Markets & Policy Group released Interruption Cost Estimate (ICE) Calculator. “[B]lackouts—while not as deadly or terrifying as wildfires—are nonetheless expensive in their own right. Outages this week could cost the American economy as much as $2.5 billion, says Michael Wara, a lawyer and energy-policy scholar at Stanford University. His estimate, calculated using a tool from the Lawrence Berkeley National Lab, assumes that the blackout will eventually reach its planned length (48 hours) and planned size (800,000 customers). Most of that $2.5 billion will be silently incurred by businesses, since many offices must restrict their hours or close altogether in a blackout. But costs will propagate through the economy. Tens of thousands of families must now sort through spoiled food and restock their freezers…. And people who depend on medical equipment to survive must decide whether to temporarily leave town, invest in a generator, or risk going without until the power returns.”

The Little Hoover Commission released Mapping a Strategy for GIS. Though California state government has been utilizing geographic information systems (GIS) to map data for more than a decade, “the state lacks a strategy to realize the full potential of GIS through coordination and data sharing.” Public policy recommendations: 1) California should designate a state Geographic Information Officer that would coordinate shared resources and projects, and promulgate standards; 2) the state should convene a GIS Advisory Council of governmental leaders and stakeholders; and 3) GIS should be utilized to evaluate disparities in regional funding and delivery of services.

The San Francisco Estuary Institute released Understanding Microplastic Levels, Pathways, and Transport in the San Francisco Bay Region. “Microplastics (particles less than 5 mm) are ubiquitous and persistent pollutants in the ocean and a pervasive and preventable threat to the health of marine ecosystems. Microplastics come in a wide variety of shapes, sizes, and plastic types, each with unique physical and chemical properties and toxicological impacts…. We measured microparticles and microplastics in stormwater from 12 small tributaries comprising 11% of the watershed drainage area to San Francisco Bay (6% of total flow to Bay). These tributaries varied in urban and nonurban land uses and were distributed across the region. Microparticles were identified in stormwater from all 12 small tributaries, which discharged between 1.3 and 30 microparticles per liter. Fragments (59%) and fibers (39%) constituted nearly all microparticles sampled.”

The California High Speed Rail Authority released 2019 Sustainability Report: Energizing Economic Revitalization. “California’s high-speed rail project received five stars and is one of the top ranked sustainable rail infrastructure projects in North America, as evaluated by the GRESB Infrastructure Assessment—the leading benchmark for environmental, social and governance policies, practices, and performance of real estate and infrastructure investments around the world.”

The National Academies of Sciences, Engineering, and Medicine released Reducing Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, Phase Two. “Medium- and heavy-duty trucks, motor coaches, and transit buses—collectively, ‘medium- and heavy-duty vehicles’, or MHDVs—are used in every sector of the economy. The fuel consumption and greenhouse gas emissions of MHDVs have become a focus of legislative and regulatory action in the past few years. This study is a follow-on to the National Research Council’s 2010 report, Technologies and Approaches to Reducing the Fuel Consumption of Medium-and Heavy-Duty Vehicles. That report provided a series of findings and recommendations on the development of regulations for reducing fuel consumption of MHDVs.”

Governor’s Appointments
As senior advisor at the California State Transportation Agency: Giles Giovinazzi, Davis, chief of staff and federal transportation liaison for the CA Dept. of Transportation since 2018.

As general counsel at the California State Transportation Agency: Scott Wyckoff, Sacramento, general counsel at the CA Dept. of Business Oversight since 2014.

Reappointed to Regional Water Quality Control Boards, by area.

San Francisco: William Kissinger, Mill Valley, partner at Morgan Lewis and Bockius since 2014.
Central Coast: Michael Johnston, Watsonville, former consultant for teamsters Local 890 and Teamsters Joint Council 7; Jean-Pierre Wolff, San Luis Obispo, viticulturist and owner of Wolff Vineyards since 1999.

Central Valley: Mark Bradford, Sacramento, former principal at ERM-West.

San Diego: Henry Abarbanel, Del Mar, professor of physics at UC San Diego and a research physicist at the Scripps Institution of Oceanography since 1983; Eric Anderson, Elfin Forest, agronomist and vice president of La Costa Flower Shop and Nursery since 1978.

Los Angeles: Cynthia Guzman, Los Angeles, principal at Estolano Advisors since 2018; Irma Munoz, Los Angeles, founder and president at Mujeres de la Tierra since 2007.

Lahontan: Donald Jardine, Markleeville, member of the Alpine County Board of Supervisors since 1987; Peter Pumphrey, Chalfant, former deputy district attorney in the San Joaquin County District Attorney’s Office.

North Coast: Kelli Gant, Trinity Center, former owner and president at Tangella Corp.

Colorado River Basin: Edward Muzik, Indian Wells, general manager of the Hi-Desert Water District of Yucca Valley since 2007; Jayne Powell, Rancho Mirage, environmental and aggregate resources manager at Granite Construction Inc. since 2007.

Santa Ana Region: Tom Rivera, Grand Terrace, former associate dean of undergraduate studies at CSU San Bernardino; William Ruh, Montclair, director of government affairs for the Citrus Valley Association of Realtors since 2001 and a member of the Montclair City Council since 1998.

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This past year has been a banner year for civil engineering history buffs, with the celebration of the 150th anniversary of the completion of the first transcontinental railroad being the highlight. The Railroad History Symposium held in Sacramento in May was a great success and was attended by ASCE members from across the United States. The Symposium included sessions on the construction of the railroad and the civil engineers that led the construction. The event was sponsored by the Society History & Heritage Committee and by the Sacramento Section.

Here in California, the big 2020 ASCE event will be ASCE’s Annual Convention in Anaheim from October 28 to 31. Typically, some of the best attended sessions at the Convention are the History & Heritage topics. The 2020 Convention will highlight projects in Southern California, including the 7 National Historic Civil Engineering Landmarks (NHCEL) in the Los Angeles and San Diego Sections. The 7 NHCELs are: All American Canal; Arroyo Seco Parkway; Colorado River Aqueduct; Owens River-Los Angeles Aqueduct; Sweetwater Dam; Tehachapi Loop; Tustin Blimp Hangars.

The Conference History & Heritage topics will include:
• Landmark and other historically significant projects.
• Major historic civil engineering events.
• Biographies of prominent civil engineers.
• Historic projects with lasting significance and relevance to modern practice.

If you have a special interest in any of these topics and want to be a part of this Conference here in our Region, please submit an abstract for a presentation at the conference. The abstracts are due by January 9th, with information on the ASCE Conference website: https://www.asceconvention.org/call-submissions.

A History & Heritage activity that will continue in 2020 is the research and cataloging of all the Civil Engineering Landmarks in Region 9, including National, Region, and Local landmarks. We are looking for assistance from Section and Branch members to visit civil engineering landmark sites, take photographs, and fill out a Site Visit Form for each landmark.

We are also looking to identify new potential Historic Civil Engineering Landmarks, particularly sites that would qualify as National Landmarks. If you have any suggested projects for new landmark recognition, please contact me: chuck.spinks@outlook.com.
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Barry Broome, CEO of the Greater Sacramento Economic Council
Felicia Marcus, Former Chair, California State Water Resources Control Board
Jean-Louis Briaud, Ph.D., PE, D.GE, DIST.M. ASCE, 2019-2020 ASCE President-Elect

More information at www.caisregion9.org

Bi-Monthly Board Meetings

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Reminder:
Copy deadline for the March 2020 issue is February 1, 2020; copy deadline for the February 2020 issue is January 1, 2020.

MATERIALS SUBMISSION INFORMATION

All graphic materials submitted for use in the ASCE newsletter should have all fonts outlined, and links included; EPS or PDF files preferred. Other formats are Adobe InDesign or Adobe Illustrator (any version); additional acceptable file formats are JPEG or TIFF files (minimum 300 dpi). Images embedded in Microsoft Word documents should be sent separately, at a minimum resolution of 300 dpi at the display size desired. Collected files, including links and fonts, should be compressed and e-mailed, or sent on CD or Zip disk (provide return address). Business cards can be submitted electronically as well, or send clean, crisp, B&W laser print, unfolded. This publication’s size is 8½” x 11”.

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