# June '20

## VOL. LXI NO. 5

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# Los Angeles Section

# Monthly: Est. 1913

ORANGE / SAN\_BERNARDINO/RIVERSIDE / SAN\_LUIS\_OBISPO / SANTA\_BARBARA/VENTURA / DESERT / SOUTHERN SAN\_JOAQUIN / METROPOLITAN LOS ANGELES

#### OFFICERS'S MESSAGE

Daniel Cronquist, P.E., P.L.S Los Angeles Section President



Greetings. We at the Los Angeles Section hope you and your family are healthy and well. We stand together with you as you deal with the impacts of COVID-19 to you, your family, and your job. We miss you and eagerly look forward to seeing you again.

President's Message

COVID-19 has confirmed a truth that we already knew, that civil engineers are essential. ASCE has always believed that safety of the public is paramount, which is why it was included in Article 1 of the Code of Ethics. Civil engineers have played key roles in public health for nearly 200 years. This month I bring you the story of cholera and typhoid.

In the early 1800's the City of London used the River Thames for both fresh water supply and as an open sewer. Because the river is under tidal influence, waste would flow upstream twice each day contaminating the water supply. Epidemics of cholera and typhoid were regular occurrences.

Before the modern era of germ theory, it was widely believed that disease was caused by miasma; bad airs and gasses. British civil engineer James Simpson thought differently. In 1829 he completed a prototype slow sand filter for the Chelsea Waterworks. This was the first treatment done on a public water system in the world. The slow sand filter removes approximately 95% of bacteria. Still, Simpson faced many challenges for filters to be accepted.

Twenty-five years later in 1854 there was a very large cholera outbreak in Broad Street, London. Physician John Snow conducted statistical analysis regarding where infections occurred. After eliminating multiple factors of transmission, the only remaining difference between who did or did not get sick was the source of water. Dr. Snow's evidence pushed public acceptance. By 1855 the law was changed and all water systems in Britain were required to include a filter. Check out the Institute of Civil Engineering for an insightful video on this story: https://www.ice.org.uk/what-is-civil-engineering/what-do-civil-engineers-do/londons-water-supply

While cholera and typhoid rates were significantly reduced by filtration, the threat of disease was not eliminated. This was found to be true when Jersey City Water Supply Company constructed a new water supply in 1904. People in Jersey City still became sick and the company was taken to court. The water company was ordered to improve the water system. They turned to bacteriology specialist, Dr. John Leal. Leal worked with civil engineer George Fuller to construct the first disinfection system for a public water supply. While the technology to combine chlorine and water existed and had been used on smaller scales, this was the first time where a permanent facility was constructed for a community. Just like Simpson, Leal faced significant opposition to disinfection. Because of his perseverance water is still disinfected today.

Both Simpson and Leal used existing technologies in new ways to save lives. Because of their perseverance in gaining acceptance of their work we no longer need to fear cholera or typhoid. I look forward to what marvelous advancements in health, safety, and welfare will be created by civil engineers in the future.

# **Award Announcement**

The following awards were made to ASCE members in the Los Angeles Section. Join us in congratulating each of them



Dr. Ares J. Rosakis, Ph.D., NAE, M.ASCE has been selected by the ASCE Engineering Mechanics Institute to receive the 2020 Zdeněk P. Bažant Medal for Failure and Damage Prevention for "his groundbreaking contributions to earthquake mechanics, specifically for inventing laboratory earthquakes which have transformed our understanding of failure and damage processes in the earth, that have proven central to infrastructure damage prevention." Dr.

Rosakis is the Theodore von Karman Professor of Aeronautics and Professor of Mechanical Engineering at the California Institute of Technology.



Dr. Craig Davis, Ph.D., P.E., G.E., M.ASCE has been selected by the Infrastructure Resilience Division of ASCE to receive the 2020 Charles Martin Duke Lifeline Earthquake Engineering Award for "his outstanding contributions in promoting the seismic resilience of water supply systems." Dr. Davis is the Water System Resilience Program Manager and the Seismic Manager for the Los Angeles Department of Water and Power, Water System.



Amir AghaKouchak, Ph.D., P.E., M.ASCE has been selected by ASCE's Committee on Technical Advancement to receive the 2020 Walter L. Huber Civil Engineering Research Prize for "his fundamental and innovative contributions to the study of hydrologic extremes, including droughts, coastal floods and compound natural hazards." Dr. AghaKouchak is a professor at University of California, Irvine.







The California Polytechnic S t a t e University, San Luis Obispo ASCE Student Chapter has been awarded the 2020 ASCE Distinguished Chapter Award for Region 9

by the ASCE Committee on Student Members. This award is made annually to the most outstanding Student Organization in Region 9. Congratulations to faculty advisor **Dr. Daniel Jansen, Ph.D, P.E., M.ASCE**, Chapter President **Rebecca Maloney**, and all the students.





Pearce Ferriter, S.M. ASCE, has been awarded the 2020 Daniel W. Mead Prize for Students for the paper, "How Misplaced Loyalties are Harming the Profession." Mr. Ferriter is the Outreach Coordinator for the CSU Northridge ASCE Student Chapter.





# **State Investments and Legislative Update**

by Richard Markuson, CA Region 9 Legislative Advocate



The State Assembly returned to Sacramento on May 4, 2020; the Senate followed on May 11.

Governor Newsom Taps California Business, Labor, Health Care and Community Leaders for New Task Force on Business and Jobs Recovery After Lenny Mendonca's resignation as Chief Economic Advisor, head of Governor's Office of Business and Economic Development (GO-BIZ), and Chair of the High-Speed Rail Authority,

Governor Newsom selected former Presidential candidate and hedge-fund manager Tom Steyer to become his chief advisor and to chair the Governor's Task Force on Business and Jobs Recovery. "The Task Force will work to develop actions government and businesses can take to help Californians recover as fast as safely possible from the COVID-19 induced recession and to shape a fair, green, and prosperous future. They will meet twice a month throughout 2020 to develop options that would work for all Californians, with a particular focus on those hardest hit by the pandemic." 80 members – including all the living ex-governors were originally appointed but that list has grown to 87.

Columnist Dan Walters was not particularly optimistic about the chances for great success. "The group's unwieldy size is compounded by an inability to meet personally. Moreover, its something-foreveryone composition, its polarizing co-chairs, its brief time frame and, finally, the dim history of such exercises make some positive and lasting effect unlikely." On Steyer he observed "Having Steyer, with his penchant for ideological confrontation, in the driver's seat is probably more an impediment than a lubricant." Much of the work is expected to be performed by one of 12 sub-groups (complete list here) of the taskforce who are supposed to figure out how to get California moving again. The taskforce is to issue its report within the next 60 days.

## New Reports of Interest

California Independent System Operator released "Avangrid Renewables Tule Wind Farm: Demonstration of Capability to Provide Essential Grid Services," finds that "over several days in 2019" Avangrid's 131.1 megawatt wind plant east of San Diego showed that a commercial wind farm with a "smart" inverter-based controller for converting direct current to alternating current can provide important services to the grid that "are currently being provided by conventional sources, including natural gas plants."

Legislative Analyst's Office released "State Budget Effects of Recent Federal Actions to Address COVID-19," finds: state is eligible for \$15.3 billion to be shared between state and local governments; federal government enhancements to Medi-Cal are estimated to generate "between \$1.5 billion and \$2.5 billion in General Fund savings in both 2019-20 and 2020-21;" changes to unemployment insurance have added "about \$120 million in additional UI money" and interest-free loans from the federal government "could have budgetary benefit in the hundreds of millions of dollars;" and in education "we estimate California will receive \$3.7 billion (\$1.7 billion for higher education, \$1.6 billion for elementary and secondary education and \$355 million for educational institutions at any level)."

Public Policy Institute of California released policy brief on "How Is the Pandemic Affecting Wildfire Preparedness?", finds that potential recipients of wildfire risk reduction funds proposed in Governor's budget, which includes "\$165 million in state Greenhouse Gas Reduction Fund money and an additional \$250 million in funding for forest health projects from a Climate Resilience Bond intended for the November 2020 ballot," are "cautiously optimistic" notwithstanding "economic fallout from the pandemic" that "is forcing the state to reassess its spending priorities."

## Appointments of Interest

## By Governor:

To the Delta Stewardship Council: **Daniel Zingale**, Sacramento, former senior advisor for strategy and communications in the office of Gov. Gavin Newsom.



Los Angeles Section Monthly: JUNE 2020

## ARTICLE

# **ASCE's Battle of the California Sections - Articles**

by Chuck Spinks, P.E., M.ASCE, Chair, Region 9 History & Heritage Committee And Dan Cronquist, P.E., M.ASCE, President, Los Angeles Section



Did you ever wonder why Fresno is part of the San Francisco Section and not the Sacramento Section? The story starts on October 5, 1937, when the ASCE Board of Direction adopted new by-laws that stated all of North America was to be divided into Sections. The By-laws stated in Article VII:

"All existing Sections shall re-define the boundaries of their areas of influence with due attention to covering all the natural or

state areas so that all members within these areas may come within suitable zones of influence..."

California had four sections in the principal cities of Los Angeles, San Francisco, San Diego, and Sacramento. The sticky question became, what was the "zone of influence" for each city? A "battle" ensued between the Sacramento and San Francisco Sections over who had the zone of influence over and controlled the San Joaquin Valley.

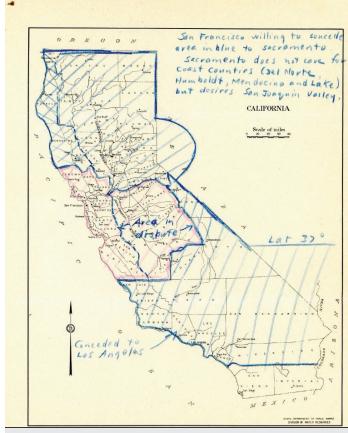


Figure 1. Disputed area between San Francisco and Sacramento Sections dated Nov. 19, 1937. (ASCE Los Angeles Section Archives)

The battle opened with letters on October 11, 1937 from George Seabury, representing the ASCE Board of Direction, to each of the four Section Presidents in California. The first shot was fired by the Sacramento Section, which opposed the recommendation that the new Sacramento Section boundaries be "All of California north of the south lines of Sonoma, Napa, Solano, Sacramento, Amador and Alpine Counties." All of San Joaquin Valley was to go to the San



Francisco Section. Sacramento claimed that their area of influence included the San Joaquin Valley, and that San Francisco Section should take all of the North Coast counties.

Thomas Stanton, District 13 Director, recommended that the Los Angeles Section boundary be Latitude 36 with the addition of Inyo and Mono Counties and southern Nevada with the small town of Las Vegas (about 7,000 people). Los Angeles Section accepted those boundaries.

That left the two northern California Sections to work it out. The issue centered not just on the areas of influence of each section, but also the number of members to be gained with the new boundaries. San Francisco Section claimed that the Sacramento Section was going to get a huge influx of new members because, quoted from a letter:

1. When the Bay Bridge work is completed, quite a group of Engineers will undoubtedly return to Sacramento.

2. The trend is to concentrate all state offices in Sacramento.

The headquarters of the Central Valley Project will be in Sacramento.
If the PG&E Feather River Project goes ahead it will place many engineers on this job.

Thomas Waddell, the Sacramento Section President, responded with Sacramento's own arguments. First, they noted that if the San Joaquin Valley was added to the San Francisco Section, they would have 710 members, compared to Sacramento Section's 233 members. Sacramento also noted that "all points in the San Joaquin Valley counties in question are closer to Sacramento than they are to San Francisco." Also, the employees working on the Central Valley Project in the San Joaquin Valley will be tied closer to Sacramento, the project's headquarters. Finally, Waddell said that civil engineers in San Joaquin Valley would "derive as much or more from this Section as they would from San Francisco Section," because Sacramento Section holds weekly meetings, about 50 each year, while San Francisco Section holds only quarterly meetings.



Figure 2. Current Section boundaries today.

In the end, the two Sections could not come to an agreement. Thomas Stanton, the District 13 Director, wrote a letter dated November 19, 1937 to ASCE Headquarters suggesting the approval of the San Diego and Los Angeles Section boundaries, but added:

"The balance of California to be divided between San Francisco and Sacramento Sections along lines to be decided upon after thorough discussion before the Board of Directors at its January meeting."

Looking at today's Section boundaries, the Board apparently decided to split the difference, and give about half of San Joaquin Valley to Sacramento and half to San Francisco. And that's why today the Fresno Branch is part of the San Francisco Section. Figure 1 depicts the disputed areas in 1937 and Figure 2 depicts the current Section boundaries in California.



# www.ascelasection.org



## **Region 9 Water Committee Hot Topics** – Water and Wastewater in the Time of Covid-19

by Xavier Irias, P.E., M.ASCE Chair, ASCE Region 9 Water and Environment Committee



It's simply not possible to write this year's Water article without talking about the coronavirus pandemic which continues to impact us. February seems a distant memory: a time when we all commuted to work, when grocery stores were fully stocked, when the news was about something besides a virus and its impacts on society, when we weren't all wearing masks.

While relatively few of us have been sickened by the virus, many of us know

somebody's who's been sick and a few of us have lost a loved one to the virus. All of us have been greatly affected in our personal and professional lives by the many changes brought about by the shelterin-place mandates.

These difficult times have a way of reminding people which things are really important; Health care, Food and Water. In fact, while water is essential in its own right, it's also essential to the function of all 15 of the other "critical sectors". Without water, you can't produce food, power, or fuel. And you can't run a hospital. Note that when we say water, we mean wastewater too; what good is a truckload of toilet paper unless there's a way to flush?

In accordance with their essential nature, water and wastewater utilities throughout the State have remained open during the pandemic even though many other activities have been shut down to control the virus' spread. While some water sector workers can telecommute to a degree, the basic work of running treatment plants and repairing pipes requires a physical presence. Those front-line workers in the water and wastewater sectors are fulfilling a role every bit as important as that of medical workers, i.e., keeping the basic underpinnings of modern society intact. For some water sector workers, this means coming to work more or less as usual; for others, it requires juggling home-school duties or elder care: and for still others, it's a more drastic change in lifestyle. For example, the operators of the San Diego County Carlsbad desalination plant are living in rented RV's at the plant, seeing their families only by web chat; this isolation ensures that the plant can stay running and keep water flowing to customers.

So far, the complex engine that is our economy continues to run, albeit with a sputter. And thus, with the exception of a brief hiccup in carbon dioxide availability, the basic staples needed to keep water flowing have continued: fuel, treatment chemicals, electrical power, financial services. However, as the pandemic continues, there is growing concern about the economic impact of the pandemic. In a recent AWWA survey, most water utilities reported either experiencing a financial pinch or expecting to do so as a result of the pandemic. These survey results came as no surprise, given the hardships being endured by individuals and businesses that will continue to ripple through the economy. In California, water (and power) utilities have generally announced that they are suspending disconnections for failure to pay; while this is an appropriate step, it will not be without impact. Even before the pandemic, affordability of water and wastewater service was a top-tier issue facing the industry, as rate pressure caused by aging infrastructure, combined with other economic pressures such as the high cost of housing, posed a huge challenge to industry professionals tasked with somehow providing safe, reliable service while controlling rate increases. The pandemic will exacerbate that affordability challenge, as it places greater pressure on individuals who were already struggling, which in turn places pressure on water and wastewater utilities. One doesn't have to be Nostradamus to foresee that utilities might face some pushback if they seek even "normal" rate increases in the next several months. That's even if the State "reopens" in the very near future, i.e., eases the many restrictions put in place since March.

As I write this column, there are indeed high hopes for a rapid reopening of the State. Opinions vary as to exactly how this ought to be done, and how quickly, reflecting the basic fact that rebooting an economy is a tricky thing, and trickier still with a virus still at large. The stakes - our lives and livelihoods - couldn't be higher. Historical analogues are always an imperfect match, but they certainly suggest that challenges lie ahead. Fortunately, on one hand, Covid-19 has a far lower case mortality rate than that of the bubonic plagues those plagues not only shut down, but utterly transformed, medieval European society. On the other hand, our highly interconnected modern society has a fragility that a medieval community didn't have. The speed of economic recovery will not be all about government action or lack thereof, regardless of how quickly the government moves, it may be some time before we see full restaurants, ballgames, concert halls, etc., and even when we do, we need to remember that Mother Nature bats last and may upend our recovery plans.

Fitting Covid-19 into the appropriate historical context will take some time; if it's typical of most major events, the lessons observed from the same basic set of facts will vary greatly among observers, as each person's unique circumstances, expertise, and perspectives color their interpretation of events. For some water/wastewater utilities and consultants, the pandemic may confirm the validity of lessons already learned well. Those organizations and individuals that had taken to heart the many pandemic wake-up calls of the past twenty years, and made appropriate investments in telecommuting capability, respirator stockpiles, and continuity planning have seen those strategies resoundingly vindicated. Some organizations, even if caught flat-footed by Covid-19, will learn the value of preparedness and will face future crises on surer footing. But there will no doubt be others that learn the wrong lessons, whether it's a blame transferal ("other people should have planned better"), a false sense of invincibility ("we got through this, we can get through anything"), or an overly narrow learning ("let's refocus our emergency plans on pandemics and de-emphasize other hazards").

Even as we're still trying to interpret the lessons of Covid-19, many of us in the water industry have been, or will be involved, in compliance with America's Water Infrastructure Act of 2018 (AWIA). AWIA requires drinking water utilities to update their vulnerability assessments by specific due dates, and then within six months update their emergency response plans. Large utilities have already updated their vulnerability assessments (due date was March 31), while mid-size utilities have until December 31, and small utilities have until June 30, 2021. This means that utilities of all sizes are at some stage of assessing their vulnerabilities and-or updating their emergency plans.

No doubt the lessons of Covid-19 will inform the ongoing AWIA work; the challenge will be learning the right lessons. As we assess a utility's readiness and response to Covid-19, at most utilities we will see some hits and some misses. The most disciplined among us will be able to perceive gaps in our readiness and outline remedial measures that not only improve our resilience for future pandemics, but for other hazards as well. Those other hazards – the ones that,

ARTICLE

but for Covid-19, might have been a feature in this article – are still important to us as water professionals. Hazards like earthquakes, climate change, power outages, wildfires. Economic shock; oh, that one's included with Covid-19, never mind.

Here's looking forward to next year's article when we get to return to talking about hazards other than Covid-19, along hopefully with progress on advancing infrastructure funding, and continuing discourse on water and environment policy.

If you wish to learn more about the Region 9 Water & Environment Committee please contact me at XIrias@woodardcurran.com.

# **Disaster Preparedness Update**

by Doug Taylor, P.E., M.ASCE Chair, ASCE Region 9 Disaster Preparedness Committee



## What do COVID-19 and Earthquakes Have in Common?

You can hardly watch an hour of television these days without some mention of the heroes (doctors, nurses... even grocery store workers!) who are working to help us all despite risking their health and even their lives. Well guess what... someday California is going to have another big earthquake and YOU are going to be the hero of the day. That is IF you get trained and certified as a Safety Assessment

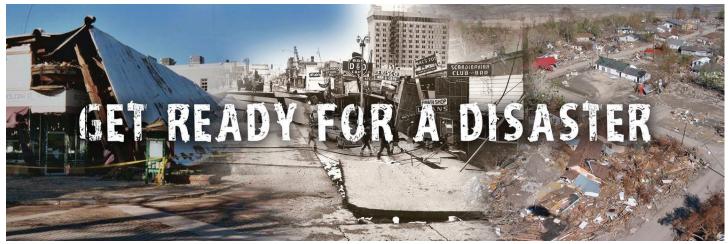
Program (SAP) Evaluator. Hundreds of licensed civil engineers will be needed to rapidly assess homes and commercial buildings so people and businesses can get back to normal life (sound familiar?). If you think "stay at home" orders make life difficult, imagine the hardship when families can't go back into their homes and have to live in FEMA shelters until their home is inspected (rapidly assessed)!

It's SO easy to get trained and certified... once the COVID-19 orders to stay home are lifted, that is. Right now, there are no training sessions due to the "stay at home" orders.

But wait! Cal OES just approved online training so you can participate in a webinar to get certified. SAP Trainers can now set up these webinars and give them in one, 6-hour session, or two, 3-hour sessions or... you get the idea. Following the webinar training, Cal OES will send an exam to participants. Once they have completed the exam, they will scan and email the exam back to Cal OES who will grade and process the certificates. The exam is open book so the odds of passing are pretty good (but you have to pass with a 70% score or better, and no re-takes allowed).

Now I'm going to make this really easy for you. I'm setting up a webinar for Saturday, June 20th from 9 am to 3:30 pm (a half hour for lunch) and you can be one of the 30 people to register. Best of all... IT'S FREE. And you get to take it from the comfort of wherever. Just email me at dtaylor@outbackmaterials.com and give me your full name and cell phone number. I'm only registering licensed PEs for this session (no EITs for now).

I hope you'll take advantage of this opportunity. Then you'll be ready to help when people who don't have your skills will need you desperately.



4th Engineers Day

at Caltrans Distrist 8, City of Fontana



San Bernardino-Riverside Branch

## YOUNGER MEMBER FORUM



# Future Engineers in Progress...

by Alexander Liu

Early 2020 kicked off the 4th Annual Engineers Day and it turned out to be an astonishing event as young students learned about the different branches of civil engineering and projects in their own community. On February 21, the ASCE San Bernardino and Riverside County Younger Member Forum (SBR YMF) had over 90 students from various middle and high schools eagerly participate in this event at Caltrans District 8 in the City of Fontana.

This year, ASCE SBR YMF partnered with Caltrans District 8 and invited the District 8 Director, Michael Beauchamp to speak to the young minds of the future. The Directors explored engineering topics and inspired the students with the future of engineering careers. After an encouraging start to the day, the volunteers lead the students to begin their tours.



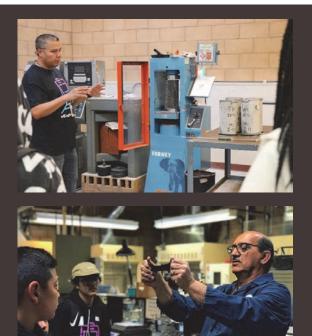
# 4th Engineers Day

at Caltran Distrist 8, City of Fontana

At the technical tour, students got a first-hand look at the transportation facility and the engineers in day-to-day action. The extensive tour demonstrated various aspects of roadway material testing and traffic management engineering. Students were especially fascinated with the demonstrations at the asphalt concrete lab where technicians used a compressor to test the strength of concrete cylinders. The tour also explored operations at the traffic management center and how technicians and engineers monitor the highway.

The final activity of the day was an impromptu event where students were divided into teams and encouraged to use their creativity to create structures using jelly beans and toothpicks. The teams were judged by volunteers from both ASCE and Caltrans based on a set of criteria to make the tallest standing structure. Winners earned prizes for their outstanding work!

"The students of today are our future difference makers, innovators and leaders of the community". We hope that a day like Engineers Day inspires them with future career possibilities. Of course, this day could not have happened without our wonderful volunteers and sponsors: Terracon, ASCE Foundation, WSP, Twining, Advancing Women in Transportation (WTS), Riverside County Flood Control, Michael Baker International, Valued Engineering, Caltrans, IE Commuter and Rick Engineering Company.







"The students of today are our future difference makers, innovators and leaders of the community."

## PROFESSIONAL DIRECTORY



PROFESSIONAL DIRECTORY



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## Reminder:

Copy deadline for the July 2020 issue is June 1, 2020; copy deadline for the June 2020 issue is July 1, 2020.

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# Los Angeles Section

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