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President’s Message

There are some problems that challenge our industry but are good ones to have. One such problem facing us today, especially in Northern California, is the shortage of qualified and talented engineers and surveyors. Many of us who have gone through the difficult time that followed the financial meltdown of 2008 would agree this is a problem worth having. We can, however, expect that the problem is only going to get worse as two mega projects in the region, California Water Fix and Sites Reservoir are about to take off. And don’t forget the ongoing California High Speed Rail project.

Based on my discussions with other industry professionals, the problem is not only getting a healthy pool of applicants responding to a job posting but getting a pool of applicants with desired qualifications and experience. The problem seems to be most acute when trying to fill mid-level positions. It may still be possible to have a decent pool of candidates for entry-level positions, but that pool also appears to be drying up.

We know that California’s economy and the job market are expected go through cyclical ups and downs which affects the labor market. According to the numbers

Calendar of Events

Meetings are at the Hilton Sacramento Arden West unless otherwise noted.
 Member Cost: \$40 - Non-Member \$50

ACEC-CA State
October 10-12, 2018
 Annual Strategic Summit and Board Meeting
 Napa, CA

Wednesday October 17, 2018
 General Membership BOD Dinner Meeting and EEA Awards Ceremony.

Guest Speaker:
 James Watson, General Manager
 Sites Reservoir Project

Topic:
 Development of the Sites Reservoir Project

[Register Here](#)

Wednesday November 14, 2018
 General Membership and BOD Dinner Meeting

Topic:
 Autonomous Vehicles

Guest Speaker:
 Sahar Shirazi

Hilton-Arden West, Sacramento, CA



Debanik Chaudhuri
 Sierra Chapter President
 2018-2019

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California Water Bond 2018

Vote Yes on Proposition 3!

The [Water Supply and Water Quality Act of 2018](#) is a citizen's initiative water bond that will appear on the November 2018 statewide California ballot. The bond will invest \$8.877 billion dollars in California water infrastructure. ACEC California is a part of a long [list of endorsements](#) for the California Water Bond of 2018 and is also contributing financially to the campaign. We encourage member firms to endorse and financially participate as well. To learn more, go to waterbond.org. Contact [Brad Diede](#) if you have questions.

A Short Summary of selected major programs covered under the Water Supply and Water Quality Bond Act of 2018 include:

- Safe drinking water and wastewater treatment for disadvantaged communities
- Wastewater recycling
- Groundwater desalination
- Oroville Dam Spillway Repair
- Urban and Agricultural water conservation
- Central valley flood management
- Sustainable Groundwater Management Act Implementation
- Flood control
- San Francisco Bay Wetlands and flood improvements
- Watershed Restoration
- Stormwater management
- Central Valley Fisheries restoration



Vote No on Proposition 6!

ACEC California continues to work with the No on Prop 6. Coalition to defeat Prop. 6. If Prop. 6 passes, it would eliminate funding for more than 6,500 projects currently underway across California. Additionally, it would eliminate 68,000 well-paying jobs and \$183 billion in economic investments as thousands of road construction projects would come to a stop. Prop. 6 is also opposed by California Firefighters, California Association of Highway Patrolmen, the American Society of Civil Engineers, and engineering groups like ours. In addition, many Sierra Chapter member firms have donated to the campaign.

It's hard to overstate how destructive Proposition 6 would be for California. It would eliminate \$5 billion a year from the state budget, wiping out funds that could be used to fill potholes on local streets, smooth highways and stabilize bridges. It would cancel funding for highway and rail projects designed to move cargo more cleanly and efficiently, hurting the state's vital freight industry. It would slash money for light rail lines and commuter rail service, meaning fewer trains for people trying to get to work. – Los Angeles Time, September 22, 2018

If you would like information about how to receive yard signs or bumper stickers for the No on Prop 6 campaign, please reach out to Brad Diede (bdiede@acec-ca.org) or Lauren Jeglinski (ljeglinski@acec-ca.org).

Please see this link to the No on 6 campaign website for more details.

<https://noprop6.com/>

October 17, 2018 Guest Speaker: James Watson, General Manager—Sites Reservoir Project

By: Debanik Chaudhuri, Sierra Chapter President



Since graduating from UC Berkeley, Mr. Watson has been building teams that find innovative solutions to the challenges associated with developing water and hydropower projects. He has worked in all phases of the project development lifecycle and focuses on risk management, and quality

to deliver value. Mr. Watson is currently the General Manager responsible for advancing the Sites Reservoir

in an adaptable manner to provide dry year water supplies to both improve water supply reliability and provide water dedicated to environmental benefits.

SYNOPSIS

In an ever-changing environmental and hydrologic landscape, developing additional water storage in California remains challenging. The Sites Project Authority has a bold vision that also includes providing water dedicated for environmental benefits, which currently doesn't exist. With the next drought just around the corner, Mr. Watson will discuss some of the challenges to developing the Sites Reservoir Project.

September 2018 Meeting Recap—Sergio Escobar, DWR—Oroville Dam Project

By: Landon Blake, State Director



The speaker for our September 2018 meeting was Sergio Escobar from the California Department of Water Resources. Sergio spoke to our chapter about the massive reconstruction effort that has been in progress during the spring and

summer of 2017 and 2018 on the Oroville Dam. As part of the project over 1000 people have been working on the dam for 7 days a week during the dry season. The construction team has placed over 1,000,000 cubic

yards of concrete as part of the design improvements. Sergio's presentation included photos showing the progress of work on the main spillway and emergency spillway over the course of the two dry seasons. At the conclusion of the project, Sergio shared some of his lessons from the project. The main lesson included the importance of open communication between design disciplines on the project, the importance of having management on the site, and regular meetings between a facilitator, the design team, and the contract team. As a result of these good practices there has been no adverse construction claims and only two minor injuries for a project of this scale.

Wolfpack Robotics Eyes World Championships

By Tom Sell, Sierra Chapter Director
By: Landon Blake, State Director

Imagine being in high school and getting the opportunity to design and build robots that compete head-to-head in a high-energy environment. Thanks to the support of the Sierra Chapter of ACEC-CA and their backing of STEM-focused school programs, students from the Wolfpack Robotics Team at Cosumnes Oaks High School get to do just that.

Through FIRST® Robotics Competition, high school students are paired with adult mentors (primarily engineers and teachers) to design and build the robots. Jerry Pascoe, GE, of SAGE Engineers, Inc. is one of the dedicated mentors, and giving his time and experience to the Wolfpack Robotics Team along with the parents. "It's more than building robots and competing," says Pascoe. "The students are also developing a work ethic and seeing how a positive attitude contributes to overcoming obstacles."

The 2018 season for the Wolfpack Robotics Team has been their most successful yet, despite losing several

key students to graduation. Underclassmen stepped up to fill vacant leadership roles, which helped them gain confidence in their abilities, and developed a sense of ownership in their contributions. And, thanks to sponsors, the team experienced its largest budget to-date, enabling the team to build an off-season practice robot, build custom pit carts, purchase a travel trailer to store and haul the robot and equipment, and obtain two CNC routers to manufacture custom parts.

About the Competition

The 2018 season required teams to build robots that could collect and deliver cubes to scales and power up stations during 2 ½ minute head-to-head battles with other robots. Robots operated independently following preprogrammed instructions for the first fifteen seconds of the match. Toward the end of the round, the robots had to lift themselves off the ground for a few seconds to earn extra points.



2018 CVR Team

President's Message Continued

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posted by California EDD, the unemployment rate in August 2018 was about 4.2 percent, down from over 10 percent during the peak of the economic crisis. This optimism in the current job market is shared by the graduating seniors in my class in SAC State. The current shortage in engineering workforce is definitely a reflection of the strong economy. And definitely, the tight market would loosen sometime in the future when the economy cools down. That should not prevent us from asking the question whether the supply of well-qualified engineers would remain strong in the future to support all the infrastructure project, not to mention the upkeep and maintenance of the aging and deteriorating infrastructure inventory.

I did a little internet search and came up with the following statistics. The US Department of labor estimates 11 percent job growth in civil engineering during next ten years or about 1.5 percent growth per year. Similar growth is predicted for surveying as well. American Society for Engineering Education indicates a growth of about 4 per cent in undergraduate enrollment in civil engineering during last year. I could not find comparable statistics for California. I don't know how reliable these numbers are, but they seem to suggest that we don't have a nationwide crisis in hand, but local markets may vary significantly. Notwithstanding the statistics, we should do our part to encourage and support engineering education. ACEC California and our local

chapter try to do this by providing scholarships to deserving students and supporting various STEM related events. During last few years Sierra Chapter provided encouragement to young students in high school and middle school by supporting their robotics teams. Read the article by Tom Sell in this newsletter about the robotics team we supported last year.

We are doing the right thing, but we should do more as an organization, and also as individuals. May be a trip to the elementary school or middle school and talking to students about science and engineering and what scientists and engineers do may spark something in a young mind and you have a future engineer or scientist. You never know.

Few other things. Please remember to vote in November to support growth and upkeep of California's infrastructure. As a member of engineering community, I encourage you to support Prop 3 and oppose Prop 6. You can read more about them in two articles by Marco Palilla in this newsletter.

We will have the Engineering Excellence Award ceremony this month and Mr. James Watson will be talking about challenges facing the Sites Project. Hope you can join us.

See you all!

Debanik Chaudhuri
Sierra Chapter President
2018/2019

ACEC-CA – Sierra Chapter – 2nd Annual Engineering Excellence Awards

The projects provide a great example of the excellent engineering and surveying work being done by ACEC members firms in Northern California. We look forward to presenting our awards to the winners at our dinner meeting on Wednesday, October 17th, 2018.

The ACEC Sierra Chapter is pleased to announce the winners of our Fourth Annual Engineering Excellence Awards! The awarded project this year are:

Best Civil Engineering Project

San Mateo Bridges Project

Client: Peninsula Corridor Joint Powers Board

Consultant: WSP USA



Completed Polar Avenue Caltrain Bridge

The San Mateo Bridges Project improved the Caltrain railroad corridor from the Villa Terrace Street crossing to the San Mateo Station, by raising and replacing four grade separation structures in the City of San Mateo. The resulting project provided improved vertical clearance over the streets below and enhanced public safety. The four railroad bridges are at Poplar Avenue, Santa Inez Avenue, Monte Diablo Avenue, and Tilton Avenue. Phase 1 of the project included utility relocations and bridge foundation improvements. Phase 2 of the project replaced the superstructures, while rehabilitating the existing abutments and removing the existing bents. Soldier Pile retaining walls were constructed on both sides of the tracks to retain the higher embankments. The abutment and retaining wall finished surfaces included architectural and aesthetic treatments which upgraded the landscape throughout the project area. The existing 100+ year old structures were replaced in separate weekend closures to prevent extended interruption of commuter train traffic.

The main project constraints involved limited space within right of way for construction activities, the proximity of private and residential properties, and limitations on the durations of track closures for bridge replacements. There are

over 94 daily trains on this facility. The replacement utilized accelerated bridge construction (ABC) methods. Through close coordination with Caltrain, the City of San Mateo, adjacent residences, and multiple utility agencies, replacement strategies were identified allowing replacement of the structures over short weekend closures on alternating weekends. The steel bridge superstructures were fabricated off-site and assembled adjacent to the existing structure during street closures. Soldier Pile retaining walls were constructed and tracks were raised prior to the weekend track closures. Existing bridge demolition and bridge replacement occurred over one weekend closure of both tracks at each site. Precast abutment caps were used to facilitate the abutment rehabilitation. The new bridges were rolled into place with a self-propelled modular transporter (SPMT).

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Best Community Design Project

East 5th Street Improvements Project

Client: City of Lincoln

Consultant: Wood Rodgers



The team developed unique ideas to incorporate the highly valued oak tree into the project including adding a storm planter, and adding curbs to treat it as a traffic calming feature.

This project was designed to construct new water and sewer mains, roadway reconstruction, alignment improvement and storm drainage conveyance at the intersection of East 5th Street and East Avenue in the City of Lincoln. East 5th Street and its' associated above and below ground infrastructure had ceased to function as designed. Due to age and impacts from trees, the roadway pavement had failed, water lines were beginning to leak, and sewer lines plugged frequently.

What was originally thought to be a straight forward utility and roadway replacement project on a dead end street quickly became something more than that. The sanitary sewer and water systems were nearly 100 years old and had a history of leaking and the roadway was falling apart. An existing five foot diameter oak tree that was growing in the westbound travel lane was planned to be removed as part of the project in order to facilitate better flow of traffic in a safer manner.

As an innovative solution, Wood Rodgers proposed pipe bursting for this project. Pipe bursting has less surface impacts, requires little excavation, and is a trenchless method; unlike conventional pipe-laying that requires a traditional construction trench. This approach helped to preserve as much as the existing environment with the least amount of disturbance to the project site and the existing oak tree roots.

This project was a unique project in that it wasn't just a "run-of-the-mill", typical roadway and utility improvement project. It was a project that dealt with a number of challenges, including:

- Preservation of a majestic oak tree that residents valued a great deal.
- Challenging construction windows, due to varying resident work schedules, the on/off of water to every household, and construction staging for temporary access to homes.
- Very involved residents and community as the street directly impacts their daily experience and way of life.

The team was able to overcome the number of challenges and provided a creative and innovative approach that not only completed the project on time, but also within budget, and up to current standards. It created a roadway that preserved the things that the community valued most, the oak tree, the relationship and trust harnessed with the City, and an inviting roadway leading to their homes.

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Best Land Surveying Project

Surveys For Hagan Community Center Pool Replacement

Client: LPA Incorporated

Project Owner: Cordova Recreation and Park District

Consultant: Guida Land Surveying

The Hagan Community Center Pool is an important aspect of the Cordova Recreation and Park District's mission to serve the needs of their diverse and growing community. Guida Surveying, Inc. was proud to be a part of this project with LPA, providing a very detailed topographic survey (using terrestrial laser scanning) to support the design of improvements on a complicated site on a very short schedule. Guida also provided UAV orthophotography and oblique images to support the site design by the civil engineering and architectural team. With an accelerated schedule that took place over both the Thanksgiving and Christmas holiday, this project is considered by all stakeholders to be a success. The CAD files Guida provided to LPA on such an accelerated schedule, helped them to quickly deliver a project design that integrated well with existing features of the community center surrounding the pools that would be replaced as part of the project.

Sponsorships for the October 17th Sierra Chapter EEA Awards Event Available!

\$600 Gold. Includes a table of 8 for dinner.

\$300 Silver. Includes half table of 4 for dinner.

\$150 Bronze. 2 dinner guests.

[Sign up here](#)

(All Sponsors will be recognized during the event)



WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

An ACEC-CA Member Profile



Sutter Butte Flood Control Agency Feather
River West Levee Project



Greenbriar

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Wood Rodgers, Inc. was founded in 1997 by two engineers who were determined to create an energetic and innovative engineering firm that focused on the needs of their clients and a dynamic workplace where staff are encouraged to grow. As a result, the firm has grown into a unique company incorporating innovation and quality into each project, while adhering to schedules, budgets, and environmental constraints.

We are a California corporation with a staff of over 260 employees including professionally registered engineers in the fields of civil, transportation, traffic, structural, and geotechnical; licensed hydrogeologists; project management professionals; professional land surveyors; certified floodplain managers; registered landscape architects; qualified stormwater practitioners and developers; and LEED Accredited Professional staff who have had extensive experience with completing public and private projects with a high rate of success. We currently have six (6) offices located throughout California and Nevada.

Our mission is to provide our clients with exceptional service, provide our employees with a great work environment, and provide lasting value to society through the work that we do. We take pride in the fact that the principals and management staff are closely involved with the work product and are responsive to clients' needs. **We believe that our clients' success is our success.**



U.S. 50 South Shore Community Revitalization
Project

2018-19 Board of Directors

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GET NOTICED IN THE SIERRA CHAPTER NEWSLETTER!

Would you like to see YOUR FIRM listed in this Newsletter?

ACEC-CA/Sierra Chapter firms in good standing are invited to submit a company profile for inclusion in this newsletter. **Firms that have not been featured in the last two years are invited to participate again.** Contact Kevin Gustorf, Vice President, for submission details.

Point of Contact:

Kevin Gustorf
(Wood Rodgers)
kgustorf@woodrodgers.com



Debbie LoCicero
Recording Secretary
Newsletter Editor

ACEC California Sierra Chapter

October 2018

You are cordially invited to attend:

The October General Membership and BOD “Dinner” Meeting & 3rd Annual Sierra Chapter EEA Awards Presentation

Wednesday October 17, 2018

Guest Speaker:

James Watson

General Manager, Sites Reservoir Project

Topic of Discussion:

**Development of the Sites Reservoir Project
Challenges and Achievements**

On-line Registration/ RSVP:

[Register Here](#)

Or you can:

***Pay by check at the door.**

***Pay Cash at the door.**

**R.S.V.P. deadline: Monday
October 15, 2018 12:00 noon**

*If paying by cash or check at the door, please either “RSVP Only” at the above Eventbrite link, or email dlocicero@acec-ca-sierra.org for reserving your seat.



Meetings are held at the Hilton unless otherwise noted.

Hilton Sacramento Arden West

**220 Harvard Street
Sacramento, CA**

5:00pm - 6:00pm: BOD Meeting

6:00pm - 6:30pm: Networking

**6:30pm - 8:00pm: General Membership
Dinner Meeting**