# Feb. 16

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In This Issue	þage
PRESIDENT'S MESSAGE	1
AWARDS DINNER	2
ADS	4 -5
LEADING FORCE/TRAYLOR BROS	6-7
LEGISLATIVE UPDATE	8-9
PROFESSIONAL DIRECTORY	. 10-11





# Los Angeles Section

Monthly: Est. 1913

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

PRESIDENT'S MESSAGE

John Rogers, P.E., F.ASCE Los Angeles Section President

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## **Engineers Week**

**ENGINEER'S WEEK** is celebrated this year February 21-27. Started in 1951 and involving more than 100 engineering societies and organizations, corporations and universities, Engineer's Week calls attention to the far-reaching affect that engineers have upon society, with the goal of encouraging young people to enter the profession.

The date always coincides with President George Washington's actual birthday; we generally regard Washington as the Nations' first engineer (although he was more surveyor than engineer).

Credit must be given to the National Society of Professional Engineers for pioneering the Engineers' Week effort, and it is important to note that the event goes beyond Civil Engineering to include all branches of the profession. The event is largely organized through DiscoverE, formerly the National Engineers' Week Foundation. We can be proud that ASCE is a contributor to the Foundation, the membership of which is comprehensive. Their website (www.discovere.org) demonstrates the breadth and depth of national and international support.

The focus of Engineers' Week has always been to promote the importance of engineering to society as a whole, and to encourage students, at ever younger ages, to embrace the idea of an engineering career. In the Los Angeles Section, Engineers' Week activities are planned in all seven of our branches. The famous Popsicle Bridge competition and MLAB's iconic Egg Drop contest at Los Angeles City Hall are perhaps the most visible activities. School visits are easy to arrange, and teachers are anxious to have volunteers from the community speak to students (this isn't limited to Engineers' Week, by the way, but can be arranged throughout the school year). There are hundreds of opportunities; in my community alone there are nine public high schools and another half-dozen private or charter schools. Participation is simple and vital; contact any one of the Branch presidents to volunteer – or just reach out to the Counseling office at your local school. It's also fun and easy – just spend an hour or two, telling a group of interested young people why you love what you do, and how vital it is.

ASCE gives national recognition to local volunteers who have made a significant contribution to Engineers' Week and other community promotion activities. Congratulations this year go to Julian Garcia, the MLAB Secretary, and to Laura Rockett, Membership Co-Chair of MLAB YMF, for their well-deserved efforts. Perhaps their successes have been absorbed through exposure in the workplace? Both are employees of the LA Department of Public Works.

MRLC / WRYMC. Acronyms make me crazy, but these two are important. Annually, ASCE hosts a Multi-Regional Leadership Conference, this year held January 22-23 in Anchorage, coincident with the Western Region Younger Member Conference and the Region 9 Board of Governors Meeting. Superbly managed by our national ASCE Staff from Reston, VA, with the Alaska Section, these meeting were attended by a large contingent from the Los Angeles Section, including President-Elect Kathereen Shinkai

# 2016 California Infrastructure Symposium and Awards Dinner

by Matt Kennedy, P.E., T.E., ENV SP, M.ASCE, Region 9 Awards Committee Chair



As we close the books on 2015 and ring in the New Year, it never ceases to amaze me how quickly time passes! Another year has gone by full of the exceptional work done by individuals and organizations in service to the civil engineering profession. Each year, the many members and individuals who make up the ASCE Sections, Branches, Institutes, Younger Member and Student Chapter groups in California take the time to recognize the outstanding projects and

the selfless efforts of their peers who contribute to the continued growth and development of the civil engineering profession. Each group's annual awards program nominates and selects praiseworthy individuals and projects. In Region 9, which comprises the entire state of California, the four Sections (San Francisco, Sacramento, San Diego and Los Angeles), and numerous Branches and groups annually recognize individuals and projects within their geographic areas. In a similar fashion, the Board of Governors of ASCE's Region 9 also participates in this annual initiative by tasking its awards committee to solicit and recognize individuals and projects at the regional (State) level.

In my time with ASCE, I have been very fortunate to be involved in the recognition of individuals and projects at many levels. It has been a heart-warming experience. This involvement started with the ASCE Student Chapter at Humboldt State University, followed by the North Coast Branch, and most recently with the San Francisco Section. I was also fortunate to attend the ASCE Outstanding Projects and Leaders (OPAL) Awards Gala in Arlington, Virginia in March 2015, the ultimate recognition event for civil engineers and projects. I chose to become a civil engineer because, like most civil engineers, I wanted to make a difference in the world and help to improve our collective quality of life today and for generations to come. I am very proud to be part of a profession comprising such dedicated individuals who create awesome projects that solve real problems and improve our quality of life.

As the new chair of the Region 9 Awards Committee tasked with recognizing engineers and projects at the regional level, I work with the Committee to recommend individual and project awards for approval by the Region 9 Board of Governors. This year, 16 individual awards and 21 project awards were approved and will be handed out at the annual awards ceremony in March 2016.

The 2016 California Infrastructure Symposium and Awards Dinner will be held at the Sheraton Grand Hotel in Sacramento, on Friday March 18, 2016. The event is a partnership between the Sacramento Section, Section Institutes, and ASCE Region 9. The Symposium will be an all-day event that is typically attended by engineers, educators, elected officials, professionals and the general public. The Symposium will be primarily comprised of two tracks:

Transportation Track

- Intercity Rail The California High Speed Rail Program
- Connectivity and Economic Prosperity Planning and Development around High Speed Rail
- Regional Roadways and Aviation Transportation Infrastructure in the Greater Sacramento Region
- What is California's Transportation Funding Future?

#### Water Track

- State Water Bond Surface Water, Reservoirs and the Sustainable Groundwater Management Act
- Infrastructure Resilience Strengthening California's Infrastructure
- Sustainability Envision Rating System and Sustainable Water / Wastewater System Infrastructure
- Levees and the California Delta Central Valley Flood Protection, California Levee Status and the Delta

Will Kempton, Executive Director of the California Transportation Commission, will be a special opening keynote speaker, and Mark Cowin, Director of the California Department of Water Resources, will be a special keynote speaker during the lunch hour. I hope that many of you reading this will save the date and plan to attend this event.

The Symposium will be immediately followed by a networking reception that will precede the Annual Region 9 Awards Banquet where outstanding projects and individuals in Region 9 will be presented with awards. These award recipients were selected by the Region 9 Awards Committee from over 100 nominations received. Several past Region 9 Project Award nominees have gone on to be considered for, and win, the ASCE Outstanding Civil Engineering Achievement (OCEA) award at the Society-level OPAL awards ceremony. This year, one of the five projects being considered at OCEA is from Region 9: The Seismic Upgrade of Bay Division Pipeline Nos. 3 & 4 at Hayward Fault Fremont, California. Well done Region 9! And good luck to all the nominees on March 17, 2016 when the 2016 OCEA Award winner will be selected in Arlington, Virginia!

For more information and to register for the Infrastructure Symposium and/or the Region 9 Awards Banquet, please bookmark the California Infrastructure Symposium website at http://www.cais16.org, the Sacramento Section website at www.asce-sacto.org, or the Region 9 web site at http://www.asce.org/region\_9. We look forward to seeing all of you in Sacramento on March 18th, 2016!



www.ascelasection.org

PRESIDENT'S MESSAGE continued from page 1

and many Section and Branch Officers and younger members. A chance to share ideas, gain knowledge about the way the organization should and does work, and bring home inspiration to the local offices.

**TECH TOURS.** One of the best ways to gain knowledge and experience about aspects of engineering that may be beyond our day-to-day work is to take part in Tech Tours, at the local and national level. I have been on so many over the years, and I cannot remember one where I didn't learn something. The Tijuana River flood control project, the Pine Valley bridge on Interstate 8, Hoover Dam, Seven Oaks Dam, the FedEx Hub in Memphis, The Westside Connector rail tunnel and Terminal at Grand Central in New York, All-American Asphalt's quarry in Corona, Lamb Canyon Landfill in Beaumont, boat tours of Los Angeles Harbor and New York Harbor (the tour guide on the latter was the City of New York's Chief Bridge Engineer - it would be difficult to find anyone with better credentials). Check out your Branch's website to learn about new offerings. In January, the San Luis Obispo Branch had a tour and lunch devoted to the Los Osos Valley Road/Highway 101 interchange. Riverside/San Bernardino branch is planning a tour to the construction site of the Inland Empire Brine Line, a pipeline carrying high-saline wastewater from the Inland Empire to the Orange County Sanitation District wastewater treatment facility. If you have an idea for a tech tour, if your job involves an interesting design or construction project, organize a tour yourself and sell it to your local Branch. And keep an eye on the next ASCE National Conference in Portland – it's always interesting to see what the local organizers will come up with.

**NATIONAL CONFERENCE.** Put this on your office and personal schedule: September 28 - October 1, Portland Oregon. It is hard to underestimate the importance and the value of the ASCE National Conferences each year. They present an opportunity to meet with peers, academic leaders, young engineers, and experts from so many diverse fields within the profession, along with Civil Engineers from around the world, for ASCE is now truly an international organization. At the National Conference in New York last year, members from Australia, many African countries, the Orient and many European countries, were present. There are many opportunities, both formal and informal, to interact with all of these individuals. I have been to seven national conferences, and have never had a bad experience. I'm looking forward to Portland.

**LIFE MEMBERS.** When in the presence of YMF groups, I have often thought, "If we could only bottle this energy and enthusiasm, our energy problems would be solved, and we'd have no more financial problems." The same can be said for the Section's Life Members, who exhibit not only the energy and enthusiasm of the younger members, but also the wisdom and experience that is the distillation of a lifetime in the profession.

Come and enjoy the presence of the Life Members as they induct the newest Class of 2016 into their fold, Monterey Hill Steakhouse, lunch Saturday, March 5. As has been their tradition and good fortune, the keynote speaker will be the ASCE National President-elect, Dr. Norma Jean Mattei, PhD, P.E., F.SEI, F.ASCE. Dr. Mattei is a true Southerner,

educated at Tulane and a Professor in the Department of Civil and Environmental Engineering at the University of New Orleans, where she is in her 21st year on the faculty.

Reserve your seat through the Section website. In keeping with our support of the eleven ASCE Student Chapters throughout the Section, Student members are free, so do your part and bring a student.





The Industry Leaders Council engages senior leaders from industry, academia, government, and non-governmental organizations to identify tactical actions for ASCE and the civil engineering profession.

Membership on the ILC is by invitation only. Council members commit to a two (2) year term of service. Potential candidates are nominated by their peers and those candidates selected to join the ILC receive an invitation from the ILC Chair and ASCE Executive Director.

Interested in learning more about the ILC? The ILC is always looking for dedicated, active, and dynamic leaders to join them in their work for the industry. Please contact Carol Vargas (cvargas@asce.org), Director of Industry Relations for information.





# COMPLETE STREETS & TECHNOLOGY CONFERENCE

SAVE THE DATE ◆
Wednesday
April 20, 2016
8 a.m. - 3:30 p.m.



## ENGAGING TOPICS OF BENEFIT TO CURRENT PUBLIC WORKS PRACTITIONERS:

- Plans, Specifications and Estimates (PS&E)
- Mobile Computer Applications
- Construction Management Best Management Practices
- ADA Accessibility Compliance

- Pavement Management Advances
- Tech Tools for Operations Maintenance
- Green Streets and Water Quality
- 3 Complete Streets Sessions:
  - Active Transportation Funding & Safety
  - Sustainable Streetscapes
  - Complete Streets Stories

## PLUS BONUS LUNCH PRESENTATION



## **DETAILS**

Carson Community Center 801 East Carson Street Carson, CA 90745 Wednesday, April 20, 2016 8 a.m. - 3:30 p.m.



### **EXHIBITORS**

an Exhibitor, please contact:

Alan Rigg

(714) 890-4203

ariaa@ci.stanton.ca.us



## COST

\$145 Members \$165 Non-Members \$165 Walk-ins |\$525 Vendors Students - FREE for the first 10 to register! (\$50 thereafter)



Cordially Invites You to the

# Life Member Brunch

March 5, 2016

In Honor of those members who have advanced to Life Member status in the society and in recognition of their career achievements.

## **Keynote Speaker:**

## ASCE Society President-Elect, Norma Jean Mattei, Ph.D., P.E., F.SEI, F.ASCE

Members & Guests: \$35.00 per person

Table Sponsor: FULL - \$350.00 (4 seats for Sponsor & 6 for Honored Life Members/Students) or HALF - \$175 (2 seats for Sponsor & 3 for Honored Life Members/Students)

Reception: 11:00 am Brunch: 11:30 am Program: 12:30 pm – 2:00 pm

Lunch: Chicken Chardonnay, Vegetarian available

Reservation must be received no later than Friday, February 26th.

## Monterey Hill Steakhouse

3700 W. Ramona Blvd. Monterey Park, CA 91754 323-264-8426 For reservations, please send checks to: ASCE, Los Angeles Section 1405 Warner Avenue, Suite B Tustin, CA 92780

# ------Return Coupon-----

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# **Leading Force in Sustainability Discusses What Needs to Happen Now**

by Ben Walpole, Associate Editor, ASCE News (Adapted from ASCE News, January 22, 2016)



It's not difficult to notice that Bill Wallace, ENV SP, M.ASCE, is a man of passion. Listen to him talk for two minutes about the importance of building sustainably in the modern world and it's obvious. He brought his message to ASCE's recent Sustainability Summit, delivering a keynote speech with a rousing call-to-action to civil engineers to respond to a new and changing set of environmental conditions.

Afterward, Wallace – president of Wallace Futures Group LLC, the lead designer of the Envision infrastructure-rating system and a member of the ASCE Committee on Sustainability – spoke with ASCE News. He shared a lesson about civil engineering of the past, peered into the industry's future, and emphasized the urgency of the present.

# In terms of sustainability, what do you see as the most important challenge that civil engineers face?

For civil engineers working in the built environment, their world is being turned upside down. Throughout our history we've operated on the assumption of what scientists call stationarity: meaning that the environmental conditions of the past were good predictors of future conditions. That fundamental assumption, so critical to how we design, build and operate infrastructure, is no longer reliable. Worse, environmental conditions continue to change in ways that are not readily predictable. So the challenge before us is how to do what society expects us to do – continue to design, build, and operate safe and reliable infrastructure projects. But we're supposed to do this while we're busy overhauling our basic standards and practices to address these new and changing environmental conditions. I cannot imagine a bigger challenge.

# You said it's not necessarily doom and gloom, that it could be a great opportunity for the industry. What have you seen from civil engineers that gives you some optimism that there are people out there who are embracing it as a chance to reshape the industry?

First of all, our Committee on Sustainability is composed of people who really understand the issue, believe that the change needs to be made, are active in the profession, and are actually out there doing things. This Summit meeting is a good example. Here, our Committee brought together experts from the U.S. and abroad—project owners, the engineers, people from the finance and insurance industry—people who represent the key stakeholders. Our objective for this meeting was to tell them about this enormous challenge we and they face, and to lay out plans for tackling it.

Second, with this enormous challenge comes enormous opportunity. I've been in the consulting engineering business for over 30 years. Since day one, I've been listening to a continuous industry whine that engineers aren't being paid for the value they deliver. What value? You deliver commodity engineering services. Everything is spelled out in your handbooks. What did you expect?

Now, things are very different. This new and changing operating environment – non-stationarity – requires a new form of engineer, one who is able to deal with substantial and unprecedented levels of change. The engineering handbooks don't cover it. He or she has to meet the needs of the owner and do so while coming up with new standards and methods. That's not commodity engineering. So for at least the next several decades, engineers will have the opportunity to rewrite the civil engineering body of knowledge. That's exciting.

# So why now? Why can't we start doing those things in 2020, 2025? What is the urgency?

As our other speakers have said, you've got a situation now where the more we wait, the worse things are going to get. Each and every day, civil engineers are putting in place long-lived infrastructure projects that have been designed based on the old assumptions of stationarity. For these projects, the best we can expect is that we get lucky and the project works without a hitch.

But it's highly likely that the project will not work as expected because of conditions that weren't accounted for. Possible failure adds risk to public health, safety, and welfare. The longer we wait, the bigger the gap between our current standards and actual conditions.

There are important things we must do now. First and foremost is education. Society is beginning to understand that climate change is real, human-caused, and needs to be addressed now, by both reducing greenhouse-gas emissions and adapting to a changing climate. Society is beginning to understand non-stationarity, at least implicitly.

For civil engineers, it's a different story. We've been assuming conditions of stationarity for so long that it's become embedded in our DNA. In fact, our whole industry is manned by engineers who have been educated, tested, and licensed to design and deliver projects in accordance with stationarity-based standards and practices. Deviations from those standards and practices are viewed as professional negligence. The challenge is not only changing an engineering mindset, it's about retooling an entire industry geared up since its inception to do commodity engineering.

In addition, we have to educate our stakeholders, project owners, financial people, insurers, the public, and academia. They think assuming stationarity is OK because we engineers told them it's OK. We need to help them connect the dots between the new and changing conditions and the assumptions we use to design and deliver infrastructure projects.

# You'd mentioned kind of a generational opportunity. Can you think of another time in the civil engineering practice when this kind of massive shift came up?

I'd say the Industrial Revolution, starting in the mid-17th century. Prior to that time, life was really miserable for most people. Health and nutrition were very poor. Many children died at an early age. Families were living on a bare subsistence level. Then along came the Agricultural Revolution that brought new and more productive ways of crop rotation. New, high-calorie foods from the Americas were introduced. Now, people were healthier and needed to spend less time eking out a living. Home-based cottage industries sprang up to spin yarn and weave cloth.

ARTICLE continued from page 6

The Agricultural Revolution was the precursor to the Industrial Revolution. Enter the engineers. They quickly invented more efficient ways of cloth production.

Cottage industries were displaced by factories that produced an everexpanding array of goods for a growing population. Factories used water power to drive their machinery, but there were only so many suitable locations. So, engineers developed steam engines to power the factories. Transport of goods was also water-dependent, but that soon gave way to rail transportation developed and built by engineers. Road surfaces were reengineered to be more durable.

As one author describe it, the Industrial Revolution was the greatest advancement of mankind since the domestication of animals. And engineers were full partners to that advancement.

# Do you feel like the next 30, 40, 50 years could be as transformative?

I'd rephrase that question a bit. I'd ask, 'Can we make the necessary transformation in the next 30, 40 or 50 years?' We absolutely have to unless we think it's OK to let societies crumble.

Think about what happens if we follow a business-as-usual course. Right now we have credible predictions, backed by actual evidence, that temperatures will increase, sea levels are going to rise substantially, extended droughts and heat waves will be worse, and storms will be much more intense and devastating. The U.S. and other developed countries will probably be able to muddle through, but the rest of the world isn't as strong and well-prepared.

We know what's causing these problems, we have good ideas on how to solve them, and we have lots of smart people, especially in our own engineering ranks, to work on the solutions. What's holding us back is the will to take the necessary actions. And, we have ourselves to blame.

Think about it. If all we need to know is contained in our engineering handbooks, then scientific inquiry becomes interesting but irrelevant.

## Transformation seems to be happening a little bit, I think.

Well, yes. But, it's been my observation that transformation happens in certain pockets where the right leadership is in place. [Summit cochairs] Doug Sereno and Michael Mucha are good examples of that sort of leadership. Doug has brought the Envision sustainable infrastructure rating system into his work at the Port of Long Beach and makes sure that his infrastructure projects follow those principles. Michael at the Madison Sewerage District has substantially reduced non-point source pollutant runoff by managing the pollutant sources, thereby avoid a costly brick-and-mortar solution.

The city of Denver is another good example. City leaders put in a light rail system that transformed the city. Instead of moving out and advancing urban sprawl, people are now coming back to the city. Each light rail stations is experiencing something called transit-oriented development.

What Denver discovered is that people would much rather walk to a light rail station rather than drive a car and sit in traffic. Back before the Denver light rail opened in 2000, it was being ridiculed for being wasteful. Now Denver is a model for other cities interested in transitoriented development.

Transformation can happen, but you have to have the right ingredients. You need the right leadership at the top and a collaborative team of engineers to get it done. You also need a public that understands the issue and is willing to make the investments. Last but not least, you need a forward-looking institution such as ASCE to convene the right people, communicate the issues effectively, and do what it can to expedite the transformation.

ARTICLE

# 2016 OPAL for Construction Honors Co-President of Traylor Bros.

by Ben Walpole, Associate Editor, ASCE News (Adapted from ASCE News, January 21, 2016)

Risk is a subjective in civil engineering. What some consider too much, others see as worth the potential reward.

Traylor Bros. Inc. – and its co-president, Chris Traylor, M.ASCE – is among those who embrace risk and reap the rewards.

"A higher risk requires more talent and might keep others away from the project," he said. "Those are the projects that we look for and thrive on."

That approach has made Traylor Bros. one of the nation's leading heavy civil contractors, and Chris the worthy recipient of ASCE's 2016 Outstanding Projects and Leaders (OPAL) award for career achievements in construction.

"The nature of those jobs fits our strategies," he said. "We look to innovate and manage that risk in a way so that we can take advantage of opportunities. Frankly, it's just who we've been from the very beginning."

The firm recently completed two major projects – the Inner Harbor Navigation Canal Surge Barrier in New Orleans, winner of ASCE's 2014 Outstanding Civil Engineering Achievement award, and the Huey P. Long Bridge Widening Project in Jefferson, LA, which won an AGC of America Alliant Build America award.

Behind these massive infrastructure achievements is a family-owned business based in Evansville, IN, where Chris's grandfather William Traylor founded the firm in 1946. William handed down the firm to his son, Thomas, who handed it off in 2008 to his sons Chris, Mike, Tom Jr., and Daniel, before passing away in 2013.

"My dad passed the company to the third generation of our family and our team, a company that had one of the most outstanding reputations in the industry," Chris Traylor said. "I think that's one of our most valuable traits. We cherish that. And I think he'd just be glad to know that the industry continues to hold us in that same regard."

Chris considers his OPAL a tribute to all three generations of Traylors. "I see this as recognition of our company's efforts. I think my dad would be very proud of the recognition," he said.

The OPAL awards honor outstanding leaders whose lifetime accomplishments contributed to civil engineering in one of five categories – construction, design, education, government, or management. The 2016 honorees will be recognized at the OPAL Awards Gala, March 17, in Arlington, VA.

# State Investments and Legislative Update

by Richard Markuson, CA Region 9 Legislative Advocate



The State Legislature returned to year two of the regular session on January 4, 2016 with many new infrastructure issues to grapple with and several – including the transportation special session – still pending.

The two special session transportation bills – ABX1 3 (Frazier) and SBX1 4 (Beall) that "declare the intent of the Legislature to enact legislation to establish permanent, sustainable sources of transportation funding to

maintain and repair highways, local roads, bridges, and other critical infrastructure" remain in conference.

AB 1033 (Eduardo Garcia), among other things, would revise the definition of economic development facilities in the Bergeson-Peace Infrastructure and Economic Development Bank Act to include facilities that are used to provide goods movement and would define goods movement-related infrastructure. A two-year bill, AB 1033 will be heard on January 13, 2016 in the Assembly - Jobs, Economic Development, and the Economy Committee.

#### **Appointments**

Governor Brown has made the following appointment:

As supervisor of the California Department of Conservation Division of Oil, Gas and Geothermal Resources: **Ken Harris**, Davis, executive officer for the Central Coast Regional Water Quality Control Board. Succeeds Steven Bohlen who plans to return to Lawrence Livermore National Laboratory.

To the Central Coast Regional Water Quality Control Board: **Jane Gray**, Goleta, environmental planner and project manager at Dudek.

As assistant chief deputy director at the California Department of Water Resources: **Cindy Messer**, Sacramento, deputy director of the Planning, Performance and Technology Division at the Delta Stewardship Council since 2012.

#### **Recent Reports**

State Water Resources Control Board has released its latest water conservation data, finds urban water districts' conservation rate was 22.2 percent in October, falling short of the Governor's mandate of 25 percent, but the cumulative conservation rate between June, first month of required reporting, and October was 27.1 percent.

California State Auditor's office has released its report, "Central Basin Municipal Water District: Its Board of Directors Has Failed to Provide the Leadership Necessary for It to Effectively Fulfill Its Responsibilities," says the district paid for "unreasonable" travel and meals, hired "unqualified staff," and violated state law when it improperly established a legal trust fund. The District responded, saying, "The State Audit Report provides valuable insight on steps

the District can take to enhance its operations, while recognizing key improvements that have taken place."

Environment California releases "Turning to the Wind," finds wind power supplies enough energy to power 1,188,483 homes and last year wind turbines in California averted over 9 million tons of carbon dioxide, equivalent to removing more than 1.9 million cars from the road; report release timed as Congress considers renewing tax credits for clean energy "which have helped spur wind power's growth."

The Dept. of Finance has released state population estimates, says California's population grew by 346,000 people between July 1, 2014 and July 1, 2015 to total 39.1 million, which represents a growth rate of 0.9 percent; among counties San Joaquin's 1.6% was highest, lowest was Lassen with -2.6%.

Caltrans has released its latest issue of "The Mile Marker: A Caltrans Performance Report," includes details of the \$205 million project, completed in May, to create a 70-mile stretch of carpool lanes on Interstate 215 from San Bernardino north to the Los Angeles Countyline.

State Treasurer John Chiang has released a report on the spending of nearly \$300 million in green bonds, a relatively new category of general obligation bonds issued for the first time by the state in 2014 to finance environmentally friendly projects. Report notes that the bulk of the money went for mass transit projects in Los Angeles and San Francisco and some is paying for projects such as reduction of emissions from heavy trucks. Chiang said the green bond market is still a small fraction of the worldwide bond market and he plans to hold a "cross-country listening tour" next year to "see what we can do at the California State Treasurer's Office to unlock the potential of the green bond market."

The California Water Foundation released Creating an Opportunity: Groundwater Recharge through Winter Flooding of Agricultural Land in the San Joaquin Valley. "Using surface water to replace groundwater during rainy seasons, which a recent study proposes, is in reality what the Friant Water System was designed to do, said a local irrigation district manager. A study commissioned by the California Water Foundation shows the potential to significantly improve groundwater levels in San Joaquin Valley by directing excess river flows from winter storms to active farmland. Research results indicate that groundwater overdraft in San Joaquin Valley's eastside could be reduced by 12 to 20% each year using this approach."

Environmental Research Letters published "The Potential for Snow to Supply Human Water Demand in the Present and Future." By Justin S. Mankin, et al., In this study, researchers looked at basins throughout the Northern Hemisphere to investigate "where present spring and summer snowmelt has the greatest potential to supply human water demand that would otherwise be unmet by instantaneous rainfall runoff. Using a multi-model ensemble of climate change projections", they found that there is a 67% risk of decreased snow supply this

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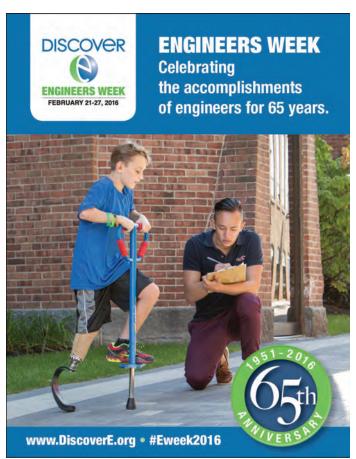
century. Three basin areas in California are identified with significant snow sensitivity, resulting in a high risk of human water consumption demand potentially unmet by future snowmelt estimates: Sacramento, Coastal California, and San Joaquin.

Public Policy Institute of California published Allocating California's Water: Directions for Reform. By Brian Gray, et al. The ongoing drought has exposed the limitations of California's water allocation system. This report finds that the system is "fragmented, inconsistent, and lacking in transparency and clear lines of authority," and the authors offer suggestions for reform. "We propose an interlinked set of legal and policy reforms that would significantly strengthen California's ability to address future droughts, climate variability, and shifting economic demands for water. Our proposals focus on three areas where the water allocation system is especially weak: water rights administration, allocation of water for the environment, and water trading. The common thread in these reforms is to increase coherence, transparency, and flexibility, while protecting water right-holders and public values."

Climate Central and ICF International released States at Risk: America's Preparedness Report Card: California. "California faces some of the most severe climate threats of any state, both now and in the future, but its A grade reflects the state's exceptional level of preparedness." Although California is rated as one of the most at-risk states from severe weather, it also receives top marks as having gone the furthest of all states in protecting its infrastructure against extreme heat, drought, wildfire, and inland and coastal flooding."

Frontier Group and Environment American Research & Policy Center released Turning to the Wind. By Kim Norman, et al. This report uses data on wind generation and carbon dioxide emissions reductions from the U.S. Energy Information Administration to estimate total emissions savings for each state from 2001-2014. Over this period, California wind generation totaled 91,634 megawatt-hours resulting in 72 million metric tons of averted carbon dioxide emissions. As of September 30, 2015, California ranks second in current installed wind power capacity (6,022 megawatts). The report estimates the projected impact of the Production Tax Credit on wind energy in California in 2020 in added wind capacity to range between 548-2,742 megawatts, averting somewhere between 1,140,938 and 5,704,691 metric tons of carbon dioxide emissions.

The Milken Institute released California's Innovation-Based Economy: Policies to Maintain and Enhance It. By Ross DeVol, et al. "To maintain its leadership in innovation, California must provide a competitive business environment in which prospective and existing companies can conduct research.... However, California also suffers from the widely held perception that it is inhospitable to businesses in terms of tax policy, regulatory regime, and other costs of doing business.... For this report, Milken Institute researchers conducted one of the most thorough analyses of the landscape of research and development (R&D) spending in California. The report demonstrates the key role of R&D in the state's economy, and proposes ideas for spurring businesses to continue and intensify their research activity."







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