

ASCE SAN BERNARDINO & RIVERSIDE COUNTIES BRANCH, LOS ANGELES SECTION, REGION 9 SINCE 1953

**PRESIDENT'S  
MESSAGE**

Kenneth E. Cox, P.E., G.E.



Hello Members,

The People's Bridge. On October 30th I took a walk over the Tilikum Crossing. The newest of nine bridges crossing the Willamette River in downtown Portland, Oregon. As a tribute to the local native tribes, the bridge was given the name of "The People" in the Chinook language. Featured in the *Civil Engineering* magazine in April of this year, Tilikum Crossing is the



largest bridge in the US limiting traffic to pedestrians and mass transit: no cars allowed!

By definition, our work as Civil Engineers is for the people. We bridge the gap between society and possibility. We build civilization. We make life better, easier, and safer for mankind. I wear a simple steel ring on the little finger of my right hand to remind me of my commitment to the people. The obligation of the Order of the Engineer states: "As an Engineer, [in humility and with the need for Divine guidance,] I shall participate in none but honest enterprises. When needed, my skill and knowledge shall be given without reservation for the public good. In the performance of duty and in fidelity to my profession, I shall give the utmost."

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# Los Angeles Metro Rail - Part 2 The Expo Line

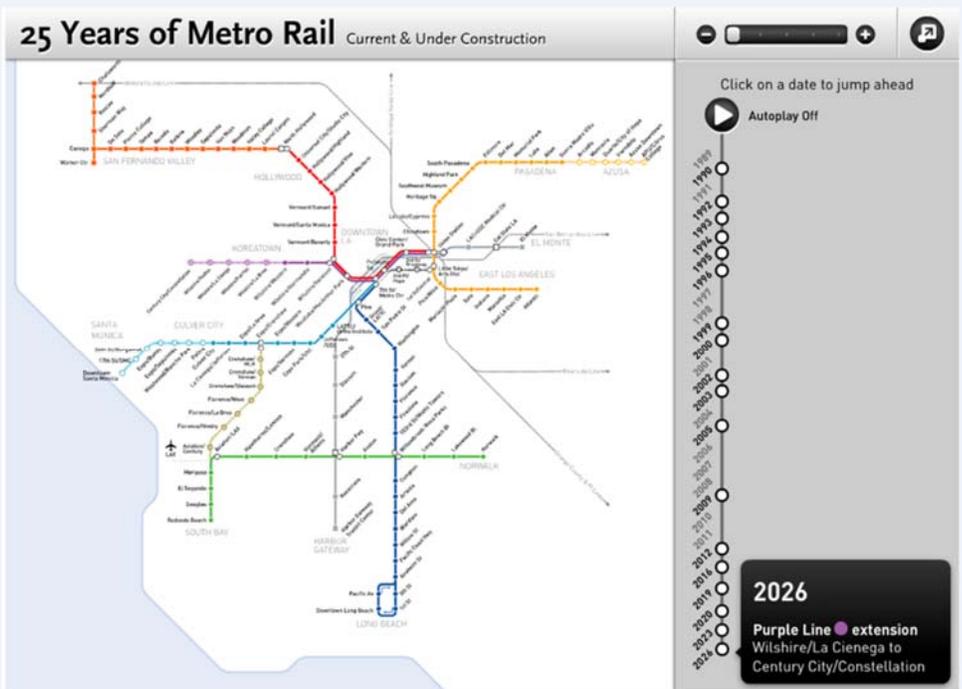
The LA Metro Rail has come a long way since its complex, complicated, and disorganized beginnings. The LA Metro as we know it now is a well-oiled machine that serves most of the City of Los Angeles and LA County, making it comparable to other more famous public rail transit systems. Instead of multiple companies owning separate trains and tracks, it is now operated and maintained by only one entity which began operations in July 1990; officially known as the Los Angeles County Metropolitan Transportation Authority.

With the consolidation of numbers historic transit systems, the LA Metro now has a simple six separate rail lines structure. The six rail lines are identified by the colors Blue, Gold, Green, Purple, Red and Light Blue (Expo Line). Of those six, the Red and Purple lines are considered rapid transit or subway while the Blue, Gold, Green, and Light Blue lines are considered light rail. The Metro Rail system consists of 100 stations and 105 miles of service lines, with plans for many more miles of expansion. At an approximate total construction cost of \$9.8 Billion and annual operational cost of \$399 Million, the existing LA Metro Rail system is able to transport an average of 362,135 riders per day and 9.5 million riders per month as of July 2016.

May 20th of 2016 was an important day for the LA Metro Rail because on that day the Expo Line Phase 2 was officially opened to public riders. If anyone has ever driven from Downtown LA to Santa Monica, they would truly know the nightmare of slogging through the infamous LA traffic. With the opening of the expanded Expo Line, came a very

convenient, fast, and quite comfortable transportation option from Downtown Los Angeles to Santa Monica. The new Expo Line can turn a stressful and rage inducing 1.5 hour car ride into a roomy and relaxing 45 train ride.

The Expo Metro Line Construction Authority was established in 2003, and “is an independent transportation planning, design and construction agency”. Three years after being established, 2006 marked the beginnings of the Expo Line Phase 1 and it was successfully opened to the public in 2012. Phase 1 runs from Downtown LA to Culver City, while Phase 2 was built to continue the Expo Line to Downtown Santa Monica. Phase 2 utilized a design-build delivery method instead of the more commonly used design-bid-build method. Skanska (the contractor) signed into a joint venture with WSP | Parsons Brinckerhoff (the designer) and together they worked closely with the project owner, Expo Metro Line Construction Authority to successfully deliver the project on schedule and



Source: Courtesy of LA Metro

within budget. The total length of Phase 2 was 6.6 miles, which added seven new stations, three park-and-ride lots, and is projected to transport 64,000 riders everyday by 2030 from Downtown Los Angeles to within four blocks of the Pacific Ocean.

The estimated total construction cost for Phase 2 was \$1.5 billion. This number “includes costs for design, construction, utility relocation, light rail vehicles and real estate”. The funding source for the \$1.5 billion came out mostly from Measure R (the half-cent sales tax initiative approved by Los Angeles County voters in November 2008).

The LA Metro Rail is always expanding to meet the public's needs, thanks to the innovation of engineers and dedication of the construction workers. Below is an informative website that contains more history as well as planned developments over the next few years for LA

Metro Rail: [https://www.metro.net/interactives/flash/metrorail\\_timeline/](https://www.metro.net/interactives/flash/metrorail_timeline/)

Next time around, if you are in Downtown LA, you may choose to leave your car behind, hop on a metro rail, sit tight, relax and it can take you to many more places than you have ever imagined.

Source:

<https://www.metro.net/about/library/about/home/los-angeles-transit-history/>

<http://insights.wsp-pb.com/articles/transportation/expo-line-phase-2-takes-light-rail-to-the-pacific-coast>

<http://www.usa.skanska.com/projects/project/?pid=8723>

<http://www.buildexpo.org/>

<https://beta.metro.net/news/>



Source: Courtesy of Skanska

**Interested in writing articles  
For the Engineers Column?**

**Contact the Newsletter Editor  
Chet Robinson, GE  
at [robinson@geoconinc.com](mailto:robinson@geoconinc.com)**

## President's Message Continued

...CONTINUED from PAGE 1



ASCE is building another bridge to the people: *Dream Big*. Premiering on I-Max giant-screen theaters Engineers Week, February 2017, *Dream Big* is a powerful film portraying the impact engineering has on society. Engineers push the limits of ingenuity and innovation to create marvels: structures and systems that improve life, protect the environment, enhance productivity, and increase communication. But engineers are often weak on communicating what it is we do to the people we serve. *Dream Big* will bridge the communication gap, telling the story of engineering and inspiring a new generation to make their dreams a reality.

Mark your calendars for the *Dream Big* premier, February 19-25, 2017. Spread the word and invite your family and friends to learn more about your profession. They will be inspired to follow their dreams, no matter how big.

Sincerely,

Kenneth E. Cox, P.E., G.E.

San Bernardino and Riverside Counties Branch President

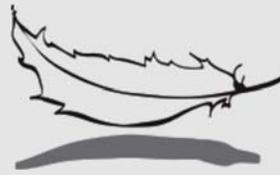
# **October Lunch Meeting—The Importance of Surveying**

**Write-up by Jeff Meiter, LS, PE**

On Wednesday, October 19, 2016, Surveyors and Engineers came together at the Riverside Convention Center to learn about the surveying aspects of Civil Engineering. Bill Hofferber, former Chief of Survey and Mapping with the Riverside County Flood Control and Water Conversation District and John Rogers, Vice President of CLE Engineering and head of all Civil Engineering and Land Surveying, tag teamed to detail to the audience the important role survey plays in accurate Civil Engineering. Bill discussed the technical aspects of surveying, including the difference between current horizontal and vertical control systems and how they are relate in the local Southern California area. These items often come into play with large scale projects, but may also be required to be addressed on small, local municipality projects. Common mistakes and pitfalls were mentioned, such as the differential between vertical datums NGVD29 and NAVD88 and how this approximate 2 foot difference in height can cause problems if not properly acknowledged. John then turned the conversation to a more practical nature and led the audience to understanding levels of accuracy in survey and what certain types of survey are good for. An example of this would be to understand the accuracy difference between convention design topographic surveys and aerial photogrammetric surveys. Though aerial surveys can be cost effective for larger project areas, the level of accuracy is limited to the abilities of the camera that is used. Having this knowledge can be a valued asset to any Civil Engineer and how they go about preparing plans and specifications. We want to take the opportunity to thank Bill and John for leading the attendees this very information and valuable discussion.

Members and non-members can come together in future meetings to learn from the wisdom and knowledge of the speakers. We invite you to join us at the next meeting in January 2017. Keep an eye out for the newsletter, where we will detail the upcoming meeting topic.

# Lighter Side

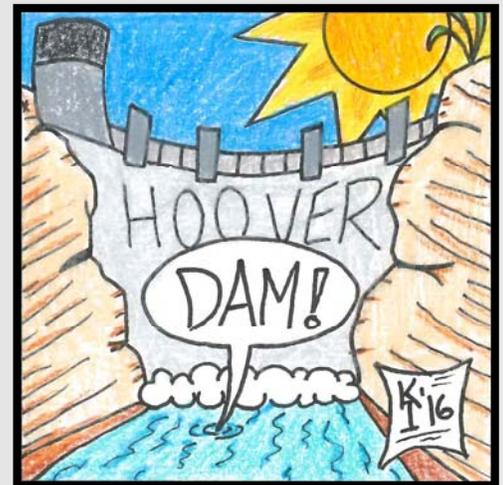
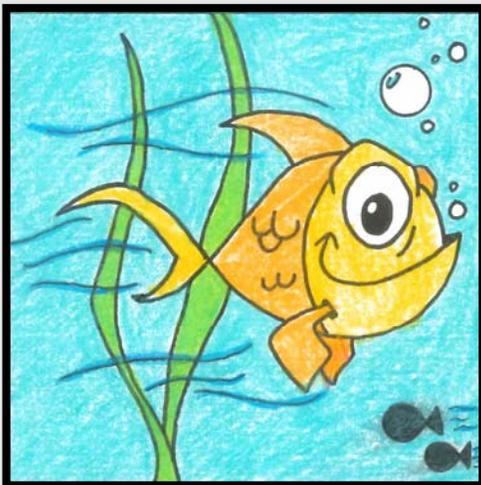


*Congratulations to David White, PE with Huitt-Zollars, Inc. for being the first to correctly respond to last month's question!*

*Question: How could you measure exactly 6 liters of water using only two containers that hold 4 liters of water, and 7 liters of water each?*

*Response: Fill the 7 container, pour 4 liters into the 4 container leaving 3 liters. Empty the 4 container, pour the 3 liters in into the 4 container. Fill the 7 container again, pour 1 into the 4 container leaving 6 liters in the 7 container.*

*This Month's Infrastructure Joke:*



*By Kai B. Parker*

*If you have an engineering joke or puzzle to share, email it to the newsletter editor.*

[robinson@geoconinc.com](mailto:robinson@geoconinc.com)



# ASCE Joint YMF Broomball Night!!!

Saturday - November 12, 2016 - 10pm - 11:40pm

*Cost: Free!!*

Bring:

1. 2 outer Shirts – Jerseys  
a White shirt and a Black shirt  
for splitting up into teams
2. Snacks & drinks (non-alcoholic)  
to share with the group!!



Happening at: Ontario Ice Skating Center  
1225 West Holt Blvd  
Ontario, CA 91762

For more information please contact Roman Ramos: [gilramos7@gmail.com](mailto:gilramos7@gmail.com)  
SB-Riv YMF Activities Coordinator

**REGISTER NOW**

**ASCE**

LOS ANGELES SECTION

San Bernardino-  
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YOUNGER MEMBER FORUM

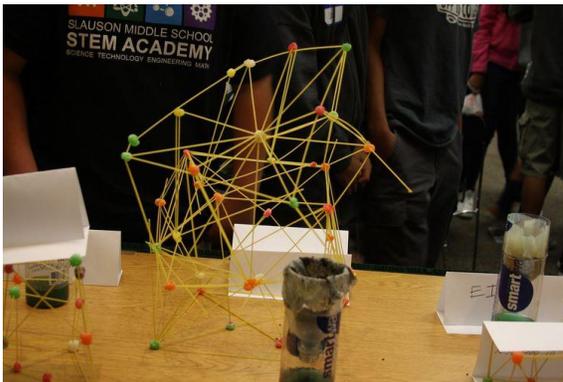
# 6<sup>th</sup> Annual Civil Day

Friday, November 18<sup>th</sup> / 9:30am- 1:30pm

## Cal Poly Pomona

- Hands- on activities
- Civil Engineering lab tours
- Environmental Awareness Fair
- Various keynote speakers

Contact Racieli at [cppasce.outreach@gmail.com](mailto:cppasce.outreach@gmail.com) to RSVP





LOS ANGELES SECTION, REGION 9

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## November Technical Tour

At



Join ASCE at the Thompson Pipe Group manufacturing facility in Rialto to get a firsthand look at how Reinforced Concrete Pipe (RCP) is made and tested. This 1.5-hour tour will begin with an in depth look at each step in the manufacturing process, a live D-Load test, and conclude with a presentation and lunch.

Branimir Kovac, Vice President for Thompson Pipe Group, will be hosting our group tour. Branimir is involved in all aspects of management, production, employment, procurement, maintenance, transportation, and customer satisfaction with Thompson Pipe Group.

***Please be sure to wear close toed shoes and bring you hard hat and safety vest! If you don't have safety gear, Thompson Pipe will supply some before we begin the tour.***

- Date:** Friday, November 18, 2016
- Time:** 10:00 am to 11:30 am
- Location:** Thompson Pipe Group  
3011 N Laurel Avenue, Rialto, CA 92377
- Cost:** Free!
- Deadline:** Please reserve your spot by November 11, 2016
- Additional Info:** Steve Ledbetter, P.E.  
(951) 680-0440  
[sledbetter@tkeengineering.com](mailto:sledbetter@tkeengineering.com)

# ANNUAL OFFICERS RETREAT IN BIG BEAR LAKE

## SAN BERNARDINO/RIVERSIDE BRANCH

### YOUNGER MEMBER FORUM

**By: Ibrahim Ibrahim, E.I.T.**

ASCE San Bernardino-Riverside Branch Younger Member Forum (SB/R YMF) officers recently had a three-day retreat at a cabin in Big Bear City, California. The event was attended by some of the current 2015-2016 board members including returning officers and most of the new 2016-2017 ASCE YMF board members. The main retreat's objective was to plan and schedule the upcoming year's events, connect upcoming officers with leaving officers, and familiar officers with each other throughout fun activities.



The exciting retreat began on Friday 09/30/2016 around 7:00PM, when officers arrived at the cabin. Attendees worked together on preparing a very delicious dinner. The remainder of the night was spent chatting, playing pool, and watching movies. We started the second day (Saturday) with a delightful breakfast, while more members arrived. The main meeting started around 10:40AM. The meeting commenced with officers backgrounds and introductions. Officers brainstormed the upcoming year's main activities, and set tentative months for major events. K-12 civil engineering presentations, community volunteer events, sport events, technical tours, workshops for college students and other fun social and fundraising activities were planned. The main meeting ended around 1:30PM.

Following the meeting, officers grouped together for a nice Big Bear Lake downtown tour and walk. Two groups were formed for two different events. Officers kayaked parts of Big Bear Lake, while the second group hiked the beautiful Rock Castle Trail. Following these events and around 7PM both groups met back at the cabin. Dinner preparation, chatting, gaming, and watching TV were the second night's major activities. On the final day officers prepared breakfast, cleaned out the cabin, and checked out around 11:00AM

The retreat was a great success and accomplished the main goals. The SB/R YMF board members were able to plan, tentatively schedule and assign leads to upcoming year's events. The retreat was also a very great bonding experience between upcoming officers. Thank you ASCE SB/R YMF officers-this retreat would not have been possible without their attendance and teamwork.



# Girls Excelling in Mathematics with Success (G.E.M.S.)

**By: Maricruz Gonzalez**

On Tuesday, November 18th the Riverside County Flood Control & Water Conservation District (District) rallied its FEMALE scientists and engineers to mentor 40 - 7th and 8th grade girls from the Girls Excelling in Mathematics with Success (GEMS) Program. The goal of the United Way of the Inland Valleys-GEMS Program is to expose girls to the fields of science, technology, engineering and mathematics.



After receiving a warm welcome from Bob Cullen, the Assistant Chief Engineer at the District and listening to a brief presentation from ASCE San Bernardino-Riverside Branch President-Elect Julianna Gonzalez and ASCE San Bernardino-Riverside YMF member Andrea Gonzalez, about Civil Engineering, the girls participated in three hands-on activities around the District.

## **Station 1- Water Quality:**

The activity at Station 1 provided an overview of water quality monitoring, turbidity, oxygen demand, and pollution types. At this station the girls were able to conduct pH testing of various household solutions.

## **Station 2- Land Surveying:**

The activity at Station 2 provided an overview of how information in the field is collected via a level total station. The girls were also exposed to the technological improvements of land surveying by using a robotic total station and also learned how horizontal and vertical data is used to create 3D renderings.



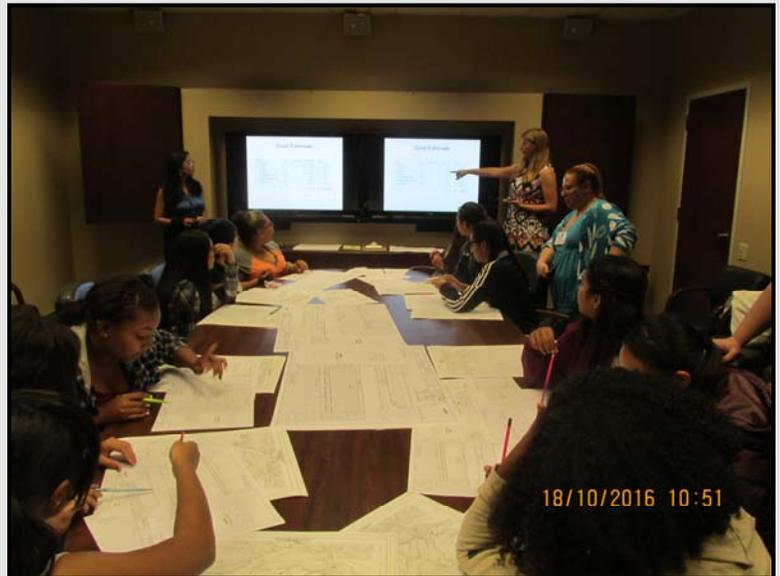
## Girls Excelling in Mathematics with Success (G.E.M.S.)

### CONTINUED

#### **Station 3- Design and Construction Section:**

The activity at Station 3 was a quick walkthrough of a project lifespan. The activity began with describing the importance of understanding site conditions of a project. The girls were then introduced to hydrology by having them delineate low flows in a watershed using historical topographic maps. The girls then gave it their best shot at completing an engineering's estimate using the District's Sunnymead MDP Line project. The activity wrapped up by describing the issues that could arise during project construction.

After the activities were completed, the girls were treated to lunch where they mingled with their mentor's and shared their experiences of the day. But they did not leave empty handed. Thanks to the San Bernardino-Riverside Branch the girls received a "Women Working" Construction sign sticker and a stress ball that looked like a construction hard hat. The 13 engineers and scientists involved in the tour hope that at least one of the girls that attended this event will become a Civil Engineer.



# Employment Opportunities

*The Mission Springs Water District is currently taking applications for an experienced Associate Engineer to work in Engineering. For additional information including essential function, qualifications, pay scale, and would like to apply for the position, please go to <https://www.mswd.org/employment.aspx>.*

*Be sure to check out additional career opportunities at ASCE's Career page at <http://www.asce-sbriv.org/careers-1.html>*

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# Calendar of Upcoming ASCE Events

**November 12, 2016** – YMF Broomball

**November 18, 2016** – 6th Annual Civil Day, Cal Poly Pomona

**November 18, 2016** – Technical Tour, Thompson Pipe Group

**November 24, 2016** – Thanksgiving

**December 2, 2016** – SBR Branch Board Meeting

**December 7, 2016** – Geotechnical Committee Meeting

**January 12 to 14, 2016** – Western Region Younger Member Council (WRYMC) + Workshop for Section and Branch Leaders (WSBL) Additional information at [www.wrymc2017.com](http://www.wrymc2017.com)

Technical Tours to include: Griffith Observatory, NASA Jet Propulsion Laboratory, Aquarium of the Pacific, Metro Regional Connector Transit Project, Wilshire Grand Tower, and Sixth Street Viaduct. Sign up today!

## Membership Information

### *Types of Membership and Annual Dues (National)*

<b>Students:</b>	FREE
<b>Associate Member:</b>	\$50 per year of Baccalaureate degree and first year after, then incremental increases to \$225 over five years.
<b>Member:</b>	\$225
<b>Affiliate:</b>	\$225
<b>Section (Branch) Dues:</b>	\$55

National ASCE student membership is now FREE! Those who have chapters or clubs still must be a member of them before joining National. Log onto <http://www.asce.org/join/> fill out the short application or call 1-800-548-ASCE (2723) and instantly become a member of ASCE.

Online membership renewal is available! Go to <http://www.asce.org/membership-communities/> You will need your membership number. All payments must be made with a major credit card. An e-receipt is transmitted to the member upon completion of the transaction.

## Newsletter Information

### **Publisher:**

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