Just recently I came across an article in the Orange County News, titled “Looking to avoid traffic jams”. In this article the reporter wrote about his long daily commute and the almost constant traffic jams he faces, the money that he has to spend on gas and the wear and tear of his car, and etc. He also expressed about the hardship that he had to endure, while going through many detours during the period of time that the 405 expansion project was in progress in his area. Even though most of us can relate to some of his points; however it seems unrealistic to expect that complex improvement projects of this size will happen magically over night and without imposing any hardship on the public.

With California’s high rate of annual population increase, together with an inadequate freeway system and insufficient financial resources for future improvements, the problem most likely is bound to get worse.

So what is the solution? I don’t really know! But I know that probably good Civil Engineers are at work to find reasonable solutions. Some of you may even be involved in various forms in shaping the future of our transportation system. But since we are Civil Engineers who understand the nature of this work, we at least could educate the public about the complexity of the work involved, and the time needed to go through all the phases of a project like this. And remind ourselves and others that even though things may get worse before they get better, however they will get better and everyone will benefit from them. After all our occasional inconveniences is a small price to pay for being able to live in such a unique place as our Southern California.
THE TETON DAM FAILURE

June 5, 1976

The history of the Teton Dam began with siting studies conducted in 1932, 1935, 1946, 1947, and 1957. The 1957 report by the Corps of Engineers determined that the quality of the rock was suitable for a dam. The report recognized that seepage from the reservoir would occur and additional studies were conducted to determine the impact of the anticipated seepage. Core drilling began in July 1961 and in March 1962 a report from the Corps of Engineers recommended construction of the Teton Project, which included the Teton Dam.

The Teton Dam was to be built about 12 miles northeast of Rexburg Idaho across a deep canyon on the Teton River. It was intended to provide flood protection, electrical power, irrigation water, and recreation facilities for the area; it was be approximately 3200 feet long at the crest and 305 feet above the stream bed, with an estimated storage capacity of 288,250 acre feet.

Construction began in February 1972. The dam was founded on hard, welded rhyolitic ash-tuff dated at 1.9 million years. Approximately 10 million cubic yards of selected fill was excavated from the bed of the reservoir and placed in the multi-layered structure of the dam. The core consisted of a mixture of clay, silt, sand, gravel, and cobbles, tightly compacted by tamping rollers. The Bureau of Reclamation considered the core to be imperious to water. The core was protected by four layers of rock material. Construction was completed in November of 1975.

By June 3, 1976, initial filling of the dam was almost complete and the reservoir contained approximately 251,000 acre feet of water. Engineers observed small springs in the right abutment downstream from the toe of the dam. The springs had been predicted in the project reports and were not a concern. Two days later, the first major leak was noticed between 7:30 and 8:00 am. The leak was issuing about 20 to 30 cubic feet per second (cfs) from rock in the right abutment near the toe and above the abutment-embankment contact. By 9:00 am, the flow had increased to 40 or 50 cfs. At 9:00 am, a 2 cfs seepage started from the rock in the right abutment, approximately 130 feet below the crest at the abutment-embankment contact. Between 9:30 and 10:00 am, a wet spot was observed on the downstream face of the dam, 15 to 20 feet out from the right abutment, about 130 feet below the crest. The wet spot progressed rapidly to a seepage. Material began to slough and the erosion progressed back into the embankment. The seepage flow rate increased steadily as the hole grew.

Continued on page 3

This Month in Engineering History
Kenneth Cox, Assistant Newsletter Editor
Attempts were made to fill the hole for 2 ½ hours, however they were all futile. At 10:30 am the larger of two dozers began to slide into the hole. The sheriff of Fremont County was officially warned of the pending collapse at 10:43 am and the sheriff of Madison County was notified at 10:50 am; he did not immediately accept the warning as valid. At 11 am, a whirlpool was observed in the reservoir approximately 10 to 15 feet from the embankment and 100 to 150 feet from the right shoreline. Two dozers pushed riprap into the whirlpool. At 11:30 the two dozers working on the downstream edge of the embankment were lost into the hole. At 11:57 the crest of the embankment fell into the hole and a wall of water surged through the opening. The reservoir emptied in approximately 5 hours. Evacuation alerts within the flood path were issued by radio and television. Law enforcement officials drove up and down streets and country roads telling people to leave for higher ground. Residents ran from door to door to warn their neighbors. 11 lives were lost in the flood, with three other deaths attributed to secondary affects of the failure. Tens of thousands of acres near the river were stripped of fertile topsoil. The rapid withdraw in the reservoir resulted in over 200 landslides in the reservoir basin. The federal government paid 7,563 claims totaling about $322 million, by the end of the claim period in January 1987. No attempt has been made to rebuild and the ruins of the disaster remain today.

Several videos of the dam failure and its aftermath can be found on YouTube.
On October 3, 2011, RBF Consulting, a company of Michael Baker Corporation, entered an exciting new era in the company’s nearly 70-year history. Having established a national presence built upon the roots of their work in Orange, San Bernardino, Riverside and San Diego Counties, RBF had grown to serve clients in 26 states and over 13 countries from 17 west coast offices. Today, with the Baker acquisition of RBF, there are over 100 offices across the U.S., giving the combined firm a truly national presence and a greater depth of resources in all aspects of the field of engineering.

RBF has a noteworthy mission and story to tell of people, projects and dedication to making each place in the world that their professionals touch, a better place. This philosophy stems from deep within the firm’s roots, much of which began with the company’s first President and CEO, Robert W. Bein, Past National ASCE President. This attitude of individuals contributing meaningfully to the world around them now lives on with RBF within Baker.

As a company that delves deep into the communities it serves, the firm’s professionals in planning, engineering, geomatics and construction management establish relationships that help them to better serve clients and the people they represent. By sponsoring projects for students such as the Land Development Sustainability Lab at Cal Poly, and using their professional understanding and experience to volunteer on boards and commissions, they are making a difference. Leading in our municipalities and assisting non-profit and professional organizations with giving time and expertise exhibits the values of these professionals who contribute their talents both professionally and as volunteers here in the Inland Empire for the people and projects they serve. Bill Green, Regional Manager of two Inland Empire offices, serves on the San Diego Regional Water Quality Control Board. Nationally-recognized experts, such as Tim Haile in Ontario and Scott Taylor in San Diego County serve on research committees for organizations such as the Transportation Research Board of the National Academies (TRB). Internationally, Tim Muli and Mujahid Chandoo of RBF lent their expertise in the community of Edana, Kenya to Engineers Without Borders (EWB), to build the Segera footbridge to provide access to healthcare, education, spiritual and agricultural activities as well as access to trade for 6,000 people. Baker supports EWB as a Silver Sponsor.

This deep-seated philosophy of “giving back” has resulted in many opportunities and a long slate of awards for the firm each year, including the “CE News 2005 Best Firm to Work For”. The company’s CEO Bob Kallenbaugh was recently awarded the 2012 Distinguished Alumnus Award from Cal Poly Pomona’s College of Engineering, where RBF continues to be involved. The firm has received over 30 awards for engineering and planning excellence over the past two years, many from Inland Empire professional organizations and communities.

RBF along with the Baker team is made up of experts and professionals who not only care tremendously about their engineering and planning projects, client needs and quality, but about the people whose lives and environments they can personally improve with their work, sustaining the future of the world around us and the people they serve.
None of us like to be reminded of unpaid bills but they are a fact of modern life. The Branch recently received a copy of our roster, showing 912 members in the Riverside / San Bernardino Branch. This particular copy had some unfortunate information added: those members with unpaid dues for 2012 were highlighted, amounting to about half of the membership.

At the June meeting of the Branch Board of Directors, our local Treasurer, Brandon Ritchey, also announced that we had received from our parent body, the Los Angeles Section, a check representing their contribution to our budget, the most significant form of income that we receive to carry on the Branch activities from year to year.

The Los Angeles Section Board will be discussing the matter in detail this month. The cold facts remain: without funds to operate, ASCE and its Branches and Sections cannot continue to provide services to members.

Bringing your dues account current is simple: go to [www.asce.org](http://www.asce.org), log in using your e-mail address and member number, then click on “Membership” under the “Membership and Community” tab. There are many other options for donations as well, including the ASCE Foundation, Engineers Without Borders and six other voluntary funds within ASCE. If you are fortunate enough to be a Life Member, your Section Dues and Voluntary Contributions are still needed.

Do what’s right for your Society and for your Profession.
From time to time this Newsletter will be publishing cartoons by W. Dean Davidson, Architect, currently living and working in Sun City, California. Mr Davidson, a graduate of University of Oregon, has worked in New York City, Long Beach, California and Kuwait as well as in the Inland Empire. Throughout his career he has been fascinated by the inherent conflicts between Engineers and Architects, and between both disciplines and the regulatory officials that oversee and approve their work.

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Lighter Side

From time to time this Newsletter will be publishing cartoons by W. Dean Davidson, Architect, currently living and working in Sun City, California. Mr Davidson, a graduate of University of Oregon, has worked in New York City, Long Beach, California and Kuwait as well as in the Inland Empire. Throughout his career he has been fascinated by the inherent conflicts between Engineers and Architects, and between both disciplines and the regulatory officials that oversee and approve their work.
Mr. Tim Watkins, Public Information Specialist at San Bernardino Associated Governments, presented to members and guests a fascinating inside look at the preparation and execution of “215 Big Shift” that took place recently as part of SANBAG’s project to reconstruct Interstate 215 between I-10 and I-210. He explored the public relations and coordination effort that was required to accomplish this massive and complicated shift of multiple lanes of high speed traffic. The use of social media was new. Facebook, Twitter and YouTube were paired with local radio station 99.1 to reach a younger demographic. An extremely successful news conference attracted almost all of the Los Angeles media, including the major networks, local television and radio stations, the Los Angeles Times, and local newspapers The San Bernardino Sun and The Riverside Press Enterprise. Unprecedented media coverage resulted. One reason for this success was the location: the news conference was held on the pavement in the middle of the freeway!

Watkins introduced Angela Meluski and Samantha MacDonald, representing SANBAG’s public relations consultant Westbound Communications. Westbound’s efforts were central to the success of the entire “Big Shift”, and Watkins stressed the vital nature of the total communication picture in a project of this sort, bringing together the public, other agencies, contractors, designers and other consultants in a coordinated effort. People want information, accurate and timely. It doesn’t matter if the news is good or bad – just accurate and far enough in advance for them to make good travel decisions.
LOW IMPACT DEVELOPMENT DEMONSTRATION FACILITY
AT FLOOD CONTROL
Arlene B. Chun

On May 14 at the headquarters of Riverside County Flood Control and Water Conservation District, General Manager Warren D. “Dusty” Williams greeted a crowd of District employees, local and regional agencies and political representatives along with members of the public, to formally present the completed Low Impact Development Demonstration Facility.

The District, through a partnership with the Santa Ana Watershed Project Authority (SAWPA), embarked in a $2.5 million renovation to incorporate water conservation and water quality features on its 15-acre site at 1995 Market Street, Riverside. It is the District’s goal to implement a variety of Low Impact Development “Best Management Practices” that will demonstrate the local application of these practices to contribute to basin water banking, storm water capture and management, including hydromodification, and water conservation. The Demonstration and Training Facility promotes the increased usage of LID principles and BMPs throughout Riverside, Orange, and San Bernardino Counties, and Southern California.

The Facility includes:

- The conversion of approximately 10,000 square feet of existing asphalt pavement and base with new porous asphalt pavement and new porous concrete pavement and sub drain systems;
- The construction of two raised flow-through planters and one landscape filter basin (“rain garden”);
- The replacement of approximately 260 feet of 12- and 20-inch diameter storm drain pipe with a vegetated infiltration swale;
- The replacement of approximately 5,250 square feet of turf landscaped area with an infiltration swale planted with drought tolerant landscaping;
- The deepening of an existing infiltration basin to facilitate positive drainage for the LID IMP features; and
- The construction of 10 monitoring vaults with flow metering and electronic control and recording equipment.

The Facility also includes a monitoring center that centralizes BMP flows for ease of collection and houses automated monitoring equipment to measure in situ parameters and collect water quality samples. The Facility’s monitored LID BMP network includes the following control surfaces and LID BMPs: roof runoff control, personal vehicle parking control runoff, equipment parking control runoff, porous asphalt with and without filtration, porous concrete with and without filtration, landscape filter basin, and flow-through planter. Data obtained from this network will be used to determine LID BMP effectiveness at mitigating stormwater pollutant runoff and stormwater runoff volume. In addition to water quality and BMP performance monitoring, lessons learned during BMP construction, operation, and maintenance will be documented. This information will be incorporated into the District’s LID BMP Manual as well as into other regional and national databases, and will submitted for inclusion in publications by organizations such as the California Storm Water Quality Association (CASQA) and ASCE in their International BMP database.

During the ceremony, Bill Flores, Jr., Chairman of the Stormwater Committee of the Riverside / San Bernardino Branch, ASCE, presented a Resolution from the Board of Directors of the Branch, along with a plaque recognizing the District’s accomplishment in creating this facility.

The District invites the public to visit the Facility’s website at http://www.rcflood.org/LID.aspx. The Facility is open to the public for self-guided tours during normal business hours (please check-in at the front desk for a tour brochure). Please contact the District directly for large tours (951.955.1200).
June Lunch Meeting

Annual General Membership Meeting
and
Presentation of Awards

The Riverside / San Bernardino Branch follows many other ASCE Branches, Section, and Districts as well as the National organization in recognizing outstanding projects and individuals in several categories each year. Last year’s local project winners were San Bernardino Associated Governments for the I-10 Widening project through Redlands, and RBF Consulting for Downtown Indio Revitalization, Phase I Infrastructure Improvements.

This year’s project and individual awards will be announced at this celebration. Scholarships will be presented to Civil Engineering Students from Cal Poly Pomona and from California Baptist university. The Branch Officers for 2012-2013 fiscal year will be announced, and prospective Board members introduced.

Date: Wednesday, June 27, 2012

Time: 11:30am to 1:00 pm

Location: Holiday Inn Express & Suites, Ontario Airport
2280 South Haven Avenue
North side of Route 60 at Exit39
Ontario, CA 91761

Cost:
$25 members w/ RSVP
$30 non-members or no RSVP
$15 students

Deadline: Please reserve by June 25, 2012

Additional Info: Brian Wolfe, P.E.
bdwolfe@csupomona.edu
(909) 800-0178
The annual Bill Young Memorial Golf Tournament, held in Lake Elsinore for the fourth year at The Links at Summerly, was a big success, thanks in large part to the efforts of Bill Hofferber of Riverside County Flood Control and Water Conservation District. 82 golfers participated, raising about $3,000 for the CLSA and ASCE college scholarship funds. According to Hofferber, the staff at The Links at Summerly were exceptionally helpful, and the course was in fine condition. For many, the buffet dinner following the tournament was the highlight of the day.

One out-of-town visitor who participated was Annette Lockhart of Sacramento, a Department of Water Resources employee and expert on Geodetic Information Systems. She was in Riverside as the guest speaker for the CLSA’s dinner meeting the evening before the tournament.

Another player of note was John Hogan of Hall & Foreman, President of the Los Angeles Section of ASCE.

Guests of honor at the post-tournament dinner were Mrs. Mollie Young, widow of Bill Young, her son Mike Young of San Diego, and her daughter Karen Young Henson of Menifee. Bill Young was a nationally known expert in the field of Geodesy and GPS, an appointee to the Committee on Geodesy of the National Academy of Science, a founding member and Board Chairman of the California Spatial Reference Center, and an Executive Committee member of the Integrated GPS Network of the Southern California Earthquake Center, located at USC. The family expressed their gratitude to the two organizations for continuing to honor Young’s memory.

Hofferber credited his wife Elena, fellow CLSA members Ryan Hunsiker, Larry Dill and Dee Smith, ASCE Members Brandon Reyes, Steve Ledbetter and Matthew Addington, and ASCE YMF Member Julianna Gonzalez for helping to organize and staff the tournament. Almost two dozen prominent engineering and surveying firms, both local and national, title companies, suppliers and local agencies contributed as players and sponsors of the event.
Come Join Riverside-San Bernardino ASCE YMF for a Friday Night Dodger Game & a spectacular Firework Show!

**Where:**  
Stadium  
1000 Elysian Park Ave  
Los Angeles, CA 90012

**Date:**  
Friday August 3, 2012

**Time:**  
7:00 PM

**Price:**  
$8/ticket

**RSVP:**  
melissa.cayir@transtech.org

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**Bill Young Memorial Golf Tournament**

Tournament Organizer Bill Hofferber with Cole Dawson, grandson of land surveying veteran John Dawson, Dawson Surveying in Colton.

Bill Young, Mrs. Mollie Young, Bill Hofferber and Karen Young Henson

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**Bill Young, Mrs. Mollie Young, Bill Hofferber and Karen Young Henson**
June

June 27  Annual Meeting and Awards Luncheon, Holiday Inn Express & Suites, Ontario Airport

July 18  Lunch Meeting, Carl Jacobsen, S.E., Member, California Board for Professional Engineers, Land Surveyors and Geologists.

August 3  YMF, Dodgers v. Cubs baseball, Dodger Stadium

August 4  YMF Joint Meeting with LA Section YMF, Valencia

September 13  Joint Dinner Meeting with CLSA, Hydrographic Surveying

October 18-20  ASCE National Conference, Montreal, Canada

Membership Information

Type of Membership and Annual Dues (National)

Students:  Free
Associate Member:  $50 year of baccalaureate Degree and first year after, then incremental increases to $205 over five years.
Member:  $205 annually
Affiliate:  $205 annually
Section (Branch) Dues:  $45/year

1. 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 https://www.asce.org/online/ fill out the short application and instantly become a member of ASCE or call 1-800-548-ASCE (2723)

2. Online Membership renewal available, go to https://www.asce.org/renewal/inforenewal.cfm. You 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.

Over the summer your ASCE San Bernardino – Riverside Branch will be contacting you for a business card advertisement in your monthly newsletter. The proceeds from the business card ads defray the costs of newsletter so that the Branch funds can be used for purposes of providing student scholarships, Engineer’s Week in February where the Branch volunteers make presentations to the local high schools to generate interest in the field of engineering, and other community programs. The cost of the newsletter advertisement is $250 for a one-year subscription of 10 issues. Included with the Business Card advertisement is a business spotlight in the monthly newsletter where one or two businesses are highlighted. If you would like to reserve your spot early for next years newsletter please contact your Treasurer for next year – Brandon Reyes 909.974.4967 and let him know which month you would like your Business Spotlight (1st in line gets first choice).
Available space

Please see contact information below to have your companies business card displayed here.

If you’d like to have your business card or company information listed in the Professional Directory, Please Contact: The Branch Treasurer, Brandon Reyes at (909) 974-4967, or email at breyes@rbf.com
REMINDER

June 27
Annual Meeting and Awards Luncheon
Holiday Inn Express & Suites
Ontario Airport.
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