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# Los Angeles Section

*Monthly: Est. 1913*

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## PRESIDENT'S MESSAGE

Michael Thornton, P.E.  
Los Angeles Section President



## Water Policy – What is Our Role?

Water policy has long been an area of conflict throughout our State's history. We have all heard the old quote "whiskey for drinking and water for fighting." Some of the greatest water engineers that have ever lived served in the Los Angeles Section. Their vision and implementation created engineering projects that deliver vast quantities of water to Southern California beyond Mother Nature's historic deliveries. Try and think of what Southern California would be without these engineers. I can't imagine it.

As it has been historically, water supply reliability has its wide range of challenges. In the days of William Mulholland, it was "How do we bring more water to Southern California?" Today, not much has changed, except maybe it should be "How do we bring more water to Southern California that is of sufficient quality that doesn't significantly impact the environment?" The first question being asked - I remember it as far back as my college days – "is there enough water?" Some say yes and others say no. Most in the engineering community I believe would say "there is enough; it is just a matter of managing it properly."

As often occurred throughout history, Southern California's population growth simply overwhelmed the area's natural resources. As a result, the Engineer is called upon to enhance Mother Nature's natural resources and find other ways to meet the demands of growth. Engineers, never prone to shying away from such challenges, have found a number of ways to enhance water supplies to this area.

The engineers that came before us planned, designed and managed construction of such innovative projects as the Los Angeles Aqueduct (LAA), the Colorado River Aqueduct (CRA), and the State Water Project (SWP). These enhanced supplies have helped meet the demands of growth and agriculture. The amounts of water we have acquired have been challenged for many years and environmental conditions will continue to increase pressure to reduce imported water supplies.

Celeste Cantu, General Manager of Santa Ana Watershed Project Authority says "The 21st century is going to be different; the 20th century was the wettest year recorded and it is anticipated that the coming century will be much dryer. Adding the realities of climate change and growth, there will be less water from the Delta and Colorado River for Southern California." Further she notes that the long practiced policies of flood control have reduced the natural recharge. Conclusion, the water supply reliability will continue to be a challenge.

When voters approved the funding for the SWP in the 1960's, the last major imported water supply project delivering water to this region, the State's population was approximately 16 million. Today, we have over 38 million with projections that 50

*continued on page 3*

## Of Heroes and Engineering

Water and Heroes are the themes of our major articles this month.

Our Los Angeles Section President Michael Thornton, P.E., talks about our profession's role in not only delivering the water that 2/3 of the population of our State needs; but most importantly, how that delivered water actually gets efficiently used and re-used within our region. Today's overarching framework in water conveyance and use during the time of greater resource and energy constraints is how to keep as much of the water locally once delivered; in the most cost-effective way possible without endangering social and economic conditions. President Thornton provides an overview of how we can actually do this through the concept of "water ethic". He will further discuss in next month's issue of our newsletter how water projects can get funded.

How about a civil engineer for a hero? Let's talk about the real one first: Theodore Dehone Judah, M.ASCE. Theodore Judah led the survey party that identified the ultimate alignment chosen for the Transcontinental Railroad over the Sierras. He was a pioneer civil engineer and tireless advocate but whose monument currently exists in a very obscure location in Sacramento. In his article, Chuck Spinks, P.E., Past Region 9 Director seeks volunteers from the Sections and Branches to participate on the Judah Monument Relocation Committee. You would not want to miss becoming a part of history.

Current ASCE Managing Director of Member & Corporate Communications Stefan Jaeger has recently released a self-published book called *The Jackhammer Elegies*. While not a civil engineer himself, Stefan portrays civil engineers and our profession in a very positive note (unlike those we have known in recently released popular media). In this month's article, Stefan provides a description of how our engineer hero Scott Carter was catapulted from his everyday life into the media limelight—and ultimately into the crosshairs of a technically cunning terrorist.

I think we should all be heroes for our profession and our Los Angeles Section. The Centennial Donor list is an opportunity to do so. The list of supporters has now grow, to a two page spread in this issue. Make a difference today.

I hope the coming Holiday Season not only bring joy to our lives, but most importantly bring peace and comfort through our work as civil engineers.

Happy Holidays! Enjoy this issue of your newsletter.

-Dr. Cris B. Liban, P.E.



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## A Great Idea from the Life Members

The ASCE Life Members' Public Image Committee request that members take their (to be discarded) Civil Engineering magazines to their doctor's office or barber shop and merge them with the stack of magazines. We feel that this will be an effective way to make the general public more aware of what civil engineers do.

National ASCE (800) 548-2723 (ASCE)

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million will be here by 2030. Remembering that approximately 2/3 of the population of our State resides in Southern California, the challenge appears daunting.

Clearly, there is a water challenge ahead and water policy will define how we meet this challenge. There is a long list of solution concepts being considered by regional water planners. They include, but not limited to, sustainable water rates, landscaping guidelines, water use efficiency, forest first, multi-use flood control, off river storage control, urban runoff management, and so on. The solution is likely all of the above and then some! We as engineers have a role in these discussions. Our expertise will lead regions to the best solutions for each community as we have done in the past.

Cantu says that water use efficiency is the first key component to meeting these challenges. Most water use, 60% to 70%, is used for landscape irrigation. "We use about double the amount of water we need to maintain landscaping. We are learning to be better irrigators saving approximately 30% of water used and we will learn to be landscapers [changing of development standards] saving about another 15% of water used." Wow, with landscape water use efficiency, we could conserve as much as 45% of the water we use. Further, she advocates for tiered water rates to incentivize conservation. Overall, she made it clear, we have to work together to find solutions.

When traveling around our communities take note of runoff. Far too often you see water running along the gutter and headed to waste. We as engineers should work to eliminate such waste. So how do we start? Cantu suggests that we adopt a "water ethic". We should take on the goal of educating the general public on "where their water comes from, how much they use, what they put into it, and where it goes when they are done with it." I would ask our membership to attend your local council meetings and advise our elected officials of the "water ethic".

Communities have spent much of the last century constructing facilities to convey water (storm and treated wastewater) to the Pacific Ocean or other water bodies. It is safe to say that such is no longer the appropriate method. Today we need to conserve every drop. Construction of storm water conveyance needs to be modified to recharge local aquifers. Conservation of treated wastewater through direct reuse and recharge must be implemented. Smart irrigation for landscape and agriculture is a must. We have lots of work to do!

How will we fund all of these needed improvements? Just four short years ago, the State Legislature recognized the need and developed the "Water Bond". As we know, it has been delayed due to economic conditions and due to the reality that the voters would likely not approve \$11.4 billion of borrowing. ASCE supports the Water Bond but it in itself will not solve these challenges.

With or without a voter approved Water Bond, how will we fund this needed infrastructure? Historically, funding has come from a variety of sources including the federal government, the state

government, and local ratepayers. As we face current political realities –federal earmarks are gone and bond financing is on hold. We are down to ratepayers. It has long been known that many ratepayers don't pay for the "real cost of water". Has the time come when ratepayers begin to pay for what it really costs?

Considering rates, understand that ratepayers pay to have the water transported to their communities and then they pay to transport it away. It is the engineer's role to reevaluate our systems to insure that the most cost effective systems are being used. With greater local water conservation and use, the costs to transport water or less water from outside areas could be reduced. Our task is to continue to develop more reliable water supplies and the most efficient cost!

In summary, I call upon all of us to continue to lead water policy discussions and to work together to find these water solutions for all communities. As we know, engineers have always led the way to finding solutions to critical society challenges.

Next month, I will continue to discuss water issues, in particular funding of these needed improvements.



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# Is It Prime Time for Civil Engineers in Popular Entertainment? A Newly Released Thriller Makes a CE the Hero

By Stefan Jaeger, Author of *The Jackhammer Elegies* and ASCE Managing Director of Member & Corporate Communications



If you try to count the number of movies that have an engineer as a major character, you probably won't get off the fingers of one hand. I know of *Arlington Road* (the engineer, played by Tim Robbins, is a terrorist), *Falling Down* (the engineer, Michael Douglas, goes berserk), and *Mr. & Mrs. Smith* (the cover profession of the assassin, Brad Pitt, is an engineer), just to name a few. The problem with these is that the silver screen engineer hardly fits the bill as someone you'd want to invite home for dinner.

Movies are of course only one genre. In the nearly twenty years I've worked with engineering associations, the last seven at ASCE, the most repeated refrain I've heard from engineers is, "Why can't we have a TV show *L.A. Engineer*?" (For those of a younger generation, *L.A. Law* was a popular TV series in the late '80s and early '90s that featured a cast of characters from a law firm in Los Angeles.) I do recall a TV drama series from either Australia or South Africa that centered around a civil engineering firm. I got hold of an episode on video cassette,

but I can't say it was the best-made show I'd ever seen. I'm sure the budget wasn't too big either.

The problem with popular entertainment (or the attraction of it, depending on your point of view) is that you often have to toss in sex, violence, intrigue, and oddball personalities to get an audience. For a civil engineering firm setting, that might imply you have to make the firm's engineers corrupt, or have bad designs kill people, or fill the office with philanderers to give the *L.A. Law* treatment. The possibilities are of course limitless, but that might not be the image you'd want to project for CEs.

Nevertheless, that refrain of *L.A. Engineer* stayed with me, and given my ongoing interest in writing fiction, I got to wondering whether I could write something to address the popular entertainment void for engineers. That speculation, after a long off-and-on road, resulted in my newly released thriller *The Jackhammer Elegies*, which features a civil/structural engineer as the main character and hero.

The effort is not without precedent. A number of other novelists have written on engineer-related topics, and many of those authors have been engineers themselves. One example that comes to mind stems from my days as editor of NSPE's *Engineering Times* in the late '90s—the novel *Engineered for Murder*, by Aileen Schumacher, P.E. The mystery, which I read with great interest for an ET review, featured a professional engineer heroine working in an engineering setting, to whom Schumacher then gave additional starring roles in follow-up books.

I started planning my novel in the '90s, getting my initial plot hook from a story I heard about a New York City professional engineer who'd been caught in an elevator after the first World Trade Center bombing in 1993 and his ordeal in getting out. A fictionalized version of his experience became the opening scene in *The Jackhammer Elegies*, where the location is transported to Rosslyn, Virginia (across the river from Washington, D.C.), and the man trapped is Scott Carter, a structural engineer who had designed the steel frame to the building. In the novel, that powerful basement blast rocks Carter from his everyday life into the media limelight—and ultimately into the crosshairs of a technically cunning terrorist. Carter's knowledge of the building's structural framework helps him alert the city about potential collapse, but that turns him into the conduit of threats from the mastermind of the attack, alias Jackhammer. Carter becomes a consultant to the FBI as it investigates the engineering angles to the case, teaming up with Special Agent Michelle Taylor, whose striking presence pulls Carter into the complications of a growing love. The partners soon find themselves matching wits with an elusive mastermind targeting the lifelines of a city's public works.

A first draft took about two and a half years, but marketing the book to literary agents got put on hold when the tragedy of 9/11 struck. The dark mood of the nation meant no one had an appetite for stories involving terrorists, and it would take years before movies and fiction ventured into the subject matter of 9/11 itself. I put my book on ice and worked on other fiction projects, taking *The Jackhammer Elegies* out of the drawer for some revision in 2003, and then getting serious late last year with a major revision and upgrade. In that recent push, two well-known civil engineers and two senior ASCE staff agreed to read the manuscript and provide feedback, which led to a better novel.

Besides trying to build an engaging plot, I hoped to paint the world of civil and professional engineering through Carter's character and his active participation in ASCE activities. Like so many civil engineers and PEs I've met over the years, Carter holds a keen conviction that engineers need a higher profile in society. He champions infrastructure renewal and sustainability, qualifications-based selection of engineering services, and raising the bar on the education required to get the PE license of the future. Carter also speaks out in public forums to raise the stature of engineers.

*continued on page 5*



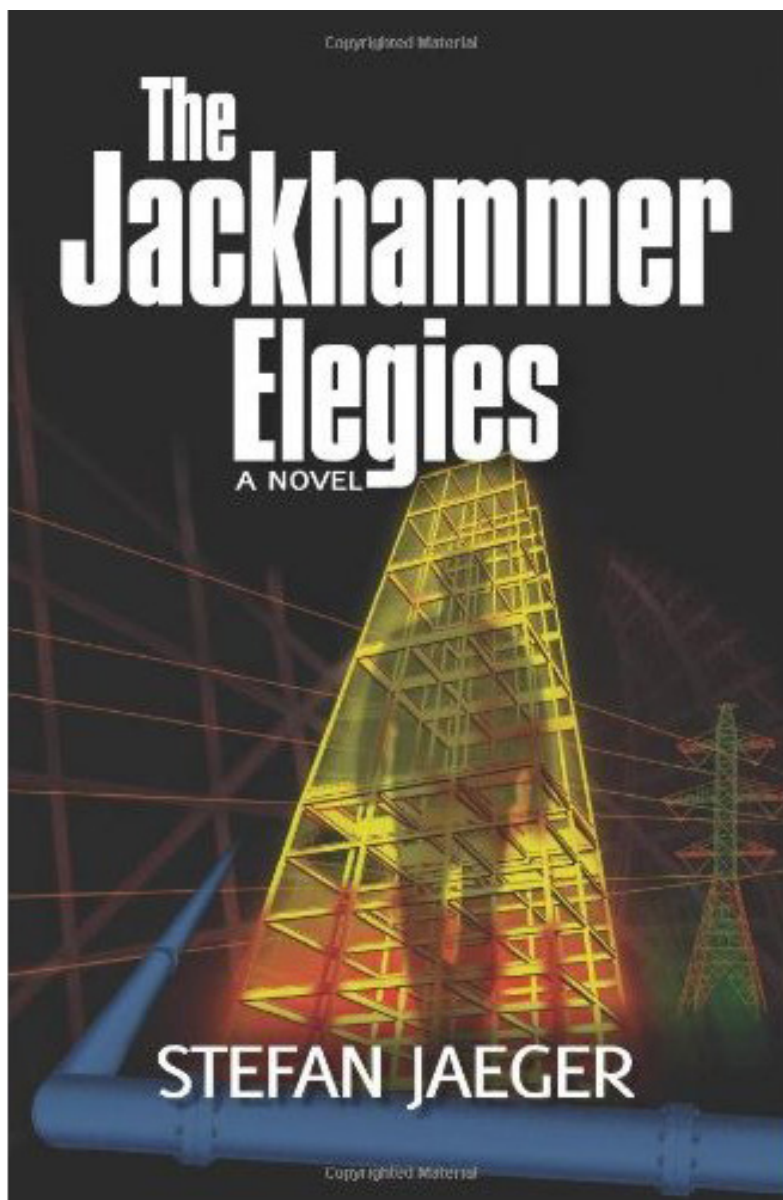
In the same way that a John Grisham novel provides insights into the legal profession, I tried to weave in aspects that show the world in which Scott Carter travels, be it engineering licensure and licensure boards, private practice firms, or National Engineers Week. The vulnerability of our nation's infrastructure becomes an overriding theme.

In these sidelights to the book, I didn't want to whitewash the profession and portray Carter as an idealized figure. He fights self-doubts about his move into management to make more money when his true passion is design, and health issues can at times undermine his confidence as he faces the stresses of his hunt for the public works terrorist. As one PE reviewer of the novel said, "The book . . . portray[s] the engineering profession with all of its strengths, weaknesses, and foibles."

You may be asking yourself whether I'm an engineer. I'm not, but I did start my adult life with a physics and astronomy degree, so I've enjoyed the ability to relate to technical questions even though my work with engineers has generally been focused on professional and policy issues. While I enjoyed bringing those issues into my book, the one aspect that provides a bit of unease is that in promoting the novel I'll come across as simply wanting to make a buck through book sales. A real part of the fun is getting a story about civil engineers and PEs in front of engineers and the public. I'm guessing my experience might parallel that of civil engineers who testify before Congress on the critical need for renewing our nation's infrastructure. The engineers are pushing for something from a standpoint of the public, but there's no guarantee some congressman won't accuse them of lobbying for funding that will put money in their pockets through more demand for civil engineering design work. There's no obvious way to completely avoid that trap.

The engineers who created the new self-publishing technology that I used for my book would certainly have gotten kudos from Carter, who later in the novel tells of his forays into grade school classrooms to promote engineering careers and engineers' contributions to society. (He uses a rip-off of *A Christmas Carol* to show what a fearful world we would live in without the work of engineers.) Just consider: To get an e-book up for global sales (once all the text formatting is finalized) can take just an hour, with a Kindle or a Nook Book version then appearing in the online catalog, later with look-inside samples. Creating the paperback version is a technology to behold. Once you've done design for your cover and text (not necessarily a small task if you want to do it professionally), you upload those electronic files and then receive a digital proof where you turn pages on screen to check formatting and alignments. Once approved, that electronic file goes into a print-on-demand hopper, and any time someone orders the book, the press spits out an individual copy, bound and put in the mail, not only in the U.S. but in Western Europe as well. No more risky investments on inventory that might not be sold, and no cost to the author for the service. The self-publishing house simply gets a cut on the sale price of each book sold on Amazon.com. It's truly amazing how far engineers have taken us, and the progress is only accelerating, as any engineer knows when witnessing the latest tools in their own profession.

I only hope my thriller can do its part in sending more of that message and shining that spotlight a bit brighter on civil engineers and ASCE.





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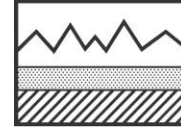
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## The American Society of Civil Engineers Congratulates President Barack Obama on His Re-Election



As America's leading infrastructure voice, we look forward to continuing to work with President Obama and his administration on investing in America's future. As we recently saw with Hurricane Sandy, the resilience of our national infrastructure system is vital for the safety and stability of all Americans, and one issue that crosses political lines.

For the U.S. economy to be the most competitive country in the world we need a first class infrastructure system—transport systems that move people and goods efficiently and at reasonable cost by land, water and air; transmission systems that deliver reliable, low-cost power from a wide range of energy sources, and water systems that drive industrial processes as well as the daily functions in our homes. Infrastructure is the foundation that connects the nation's businesses, communities and people, driving our economy and improving our quality of life.

ASCE urges the administration and Congress to focus on policies that will create jobs and continue to grow the economy. ASCE will work with the new Congress and the President to rebuild and revitalize the very foundation of our national economy. Roads, bridges, levees, and dams not only provide security, but also allow businesses to move goods, reach global markets, grow their market share and create new jobs.

With the economy slowly recovering, infrastructure investment will help spark growth and continue our path towards prosperity. In 2009, ASCE gave America's infrastructure a "D-" grade and called for \$2.2 trillion in investment over the coming five years. Obviously, this investment has not been made, and consequently, we have jeopardized our economy, our quality of life, and our very safety. We are pleased, however, that Congress this year passed and the President signed the Moving Ahead for Progress in the 21st Century (MAP-21) legislation that reauthorized the nation's surface transportation funding.

At the dawn of the 20th century, the investments to come in infrastructure were not even conceivable. Yet, we built a national highway system connecting families and businesses alike; we brought clean drinking water to homes and increased life expectancy nearly overnight; and, we created a national electric grid capable of withstanding the rigors of the digital age. We encourage the President to learn from our history and lead the charge in making the necessary investment to build an even stronger America.

ASCE will continue to serve its members and advance the engineering profession. Along those lines we urge the President and his administration to sharpen the country's focus on the education of our children, particularly in the area of Science, Technology, Engineering and Math. STEM education affords our children a path to a bright education and career, which will benefit our nation.

Our expertise affords us tremendous opportunity in discussing infrastructure issues with political leaders, and it is not a responsibility we take lightly. We look forward to working with the President and the new Congress to continue to grow our nation and build the foundation for a 21st century economy.

## Bi-Monthly Board Meetings



Day:  
1st Friday of February,  
April, June, August, October, and December

Time:  
7:30 am – 10:00 am

Location:  
ASCE LA Section Office  
1405 Warner Ave., Ste B.  
Tustin, CA 92780

Everyone is welcome



## Region 9 Legislative Update

*By: Richard Markuson, R9 Advocate*

### Recess Activities

With the Legislature in recess until December, most of the political activity is focused on the November elections. More on the results and implications next month.

### Recent Reports

The **Air Resources Board** released a study on indoor air quality in child care facilities, finds levels of most pollutants and pesticides below level of concern, though "a few chemicals exceeded health guideline levels, especially formaldehyde, but there are a variety of simple steps that can significantly lower exposure to them."

The Legislative Analyst's Office released "[Funding and Options for Near-Term Actions in the Delta](#)," finds state expenditures related to efforts in the Delta are estimated to total \$405 million in 2012-13.

The Nature Conservancy in California released "[Where Does California's Water Come From?](#)" finds snowpack from the Sierra Nevada provides 65 percent of drinking water for Californians.

Controller John Chiang has released the [financial statement](#) and [summary analysis](#) of the state's cash flow for September, shows total revenues were "\$162.5 million below (2.2 percent) projections contained in the 2012-13 State budget." Release [here](#).

Pesticide Action Network released report "[A Generation in Jeopardy: How pesticides are undermining our children's health and intelligence](#)," findings include evidence linking pesticide exposure to "certain childhood cancers is particularly strong."

Legislative Analyst's Office releases updated [report on 2012-13 budget plan](#), reflecting actions Gov. Brown took on budget related bills through Sept. 30, bill signing deadline.

American Council for an Energy Efficient Economy released "[2012 Energy Efficiency Scorecard](#)," finds California is the second most energy efficient state.

The California Taxpayers Association has released its [2012 Legislative Voting Record](#) which grades legislators on "major tax and fiscal legislation," says 29 out of the 120 members scored 100%.

The Congress of California Seniors has released its [Legislative Report Card](#) for the 2012 session, says 52 of the 120 legislators received a score of 100.

Treasurer Bill Lockyer released [2012 Debt Affordability Report](#), findings include FY 2011-12 debt service was \$6.9 billion (7.9% of general fund revenues), estimates FY 2012-13 debt service at \$8.6 billion (8.9% of general fund revenues.)

California Water Boards released [Fiscal Year 2011-12 Performance Fact Sheet](#), findings include regional water boards oversaw more than 32,000 dischargers, inspected nearly 5000 facilities, adjudicated more than 200 penalty and compliance actions and adopted mitigation plans for more than 100 polluted waterways.

CA Public Utilities Commission released [2010-2011 Energy Efficiency Annual Progress Evaluation Report](#), finds "groundbreaking" energy efficiency programs "resulted in savings of 5,900 gigawatt-hours of electricity," enough to power "more than 600,000 households for a year."

CA State Auditor has released "[Metropolitan Transportation Commission: The Use of Toll Revenues to Purchase a New Headquarters Building Is Likely Legal, but the Transaction Exposes Toll Payers to Undisclosed Financial Risk](#)."

CA State Auditor has released its "[California Department of Transportation: Its Poor Management of State Route 710 Extension Project Properties Costs the State Millions of Dollars Annually, Yet State Law Limits the Potential Income From Selling the Properties](#)."

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