

AWARD OF THE TERRY L. HAMPTON MEDAL DAVID CAMPBELL, DIRECTOR OF DAM ENGINEERING

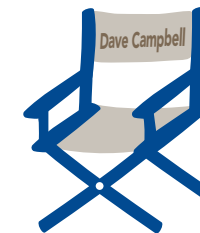
David Campbell, Schnabel's Director of Dam Engineering, was recently awarded the prestigious Terry L. Hampton Medal by the Association of State Dam Safety Officials (ASDSO). This award was established in 2007 by ASDSO's Advisory Committee (ADCOM) to recognize Terry Hampton's lifetime achievements in the field of hydrology and hydraulics, as well as his contribution to the ADCOM. The award recognizes individuals that have made significant contributions to ASDSO and the dam engineering community in the fields of hydrology and/or hydraulics.

Throughout his career of more than 35 years, Dave has published and presented extensively and supported research, primarily focused on hydrology and hydraulics for dams. He served on the organizing committee for the 2003 Spillway Research Needs Workshop,



sponsored by the Federal Emergency Management Agency. More recently in 2012, Dave was an invited Keynote Speaker for the 4th IAHR International Symposium on Hydraulic Structures in Porto, Portugal.

This award is particularly prestigious since it is only given when a worthy candidate is identified. Dave is the third recipient of the award since 2007. Dave joins Dr. Art Miller (Professor Emeritus of Pennsylvania State University) and Darrel Temple (retired, USDA Agricultural Research Service) as recipients of the Hampton Medal. ■



From the Director's Chair —

Greg Daviero, PE, a recently hired Principal in charge of our new Albany area office, has stepped in as guest author.

WHEN OPPORTUNITY KNOCKS ... ANSWER!

Miriam-Webster defines opportunity as a favorable juncture of circumstances. Schnabel recently welcomed me and my colleague, Kevin Ruswick, to their family with the opening of a New York State office in the Albany area (Clifton Park). We are excited about our opportunity to join this well respected group and know our New York State clients will benefit from Schnabel's commitment to excellence, can do attitude, and desire to be the very best in the marketplace.

Schnabel took advantage of this favorable juncture of circumstances by offering me the Director's Chair for this Water Wire issue. For those readers who might be seeing Water Wire for the first time, particularly those in New York, I encourage you to follow the link found on the back page to read previous issues. You'll discover more about the principles that guide Schnabel and get a sense of Schnabel's unshakable positive outlook. Particularly encouraging to me is that Schnabel was named as a 2012 Top 10 "Best Civil Engineering Firm to Work For" by CE News. Schnabel was also front and center at September's Association of State Dam Safety Official's (ASDSO) annual conference. As this issue's author, I need to convey congratulations to Dave Campbell as recipient of the Terry Hampton Medal, recognizing lifetime excellence in hydrology and hydraulics. This award was established in 2007, but is particularly notable because it has had only two prior recipients. Equally impressive was Schnabel's receipt of the ASDSO National Rehabilitation Project of the Year for the Townsend Dam Project (see next page). Congratulations to my new teammates!

I'd like to offer thoughts on our need to reinvest in critical water infrastructure. Today's water providers have fallen victim to the successes of a well engineered infrastructure coupled with historically poor public education regarding the value of water. Our predecessors designed systems that have been incredibly reliable, requiring limited maintenance and rehabilitation. As a result, facilities

investment has too often lost its proper place within operating budgets, disconnecting function from funding. Many systems are nearing or have passed the end of their operational lives. Many are experiencing increased demands. Reinvestment is required and inevitable.

New York State took a small step in this direction by passing new dam safety regulations (August 2009) to compel owners of high and intermediate hazard dams to complete engineering assessments and dam upgrades, many being water supply sources. This legislation focuses on dams, but recognizes the need to evaluate and repair our existing infrastructure, the facilities that we critically depend upon, yet too often take for granted.

But how do we fund these projects, and why now? First, we need to implement water and sewer rates that recognize water's value, and address maintenance and rehabilitation needs. It's time we move away from water and sewer rates based on percentage increases and focus on actual benefits and costs of service. Customers need to recognize the value of public water for drinking, washing, cooking, laundry, sanitation, fire protection, recreation, economic growth and more. Imagine no public water! Its average cost is about 0.4 cents per gallon. Not a misprint; less than a half a cent per gallon - more than one thousand times less than what we pay for gasoline or bottled water. Based on AWWA's reported per capita in home usage of 69.3 gallons per person per day, this equates to about 25 cents a person per day. A quarter! How much are these water systems really worth to rate payers, our communities, our economy and the environment? Our current economic doldrums provide access to construction savings now and initiation of these projects will stimulate and support our local economies.

Sometimes you need to work hard to shape circumstances to frame opportunity. This is one of those times. Let's use all the venues, seek all outlets, and recognize all opportunities to educate the public and our political leaders about the value of water relative to its cost and seek ways to better align cost and value. Circumstances require reinvestment; let's make the circumstances favorable by starting to spread this message today. I hope you use your own Director's chair to do so. ■

**We build the systems to meet our needs
Too often forgetting a percent of proceeds
To fund the repairs that will surely be needed
To keep up with time – the job's never completed**

LAKE TOWNSEND DAM NAMED ASDSO NATIONAL REHABILITATION PROJECT OF THE YEAR

This prestigious national award is given to only one project per year. The Lake Townsend Dam story is one of American ingenuity and teamwork at its best.

The City of Greensboro's Lake Townsend Dam suffered from a severely deteriorating spillway and inadequate capacity for the spillway to handle large storm flows. Rapid action was needed to remediate these deficiencies while maintaining full serviceability of the City's primary water supply. The needs were great and time was the enemy. The story line that played out focused on an actively engaged and involved owner, engineer, constructor and permitting specialists who dedicated themselves to delivering project excellence on an expedited basis. The City of Greensboro and Schnabel Engineering recognized at the outset that the project demanded a singular focus on excellence in action, essentially becoming a single team with the capabilities and resources to expedite activities and motivate each other, as well as others that became critical to project success as the project developed. When project construction was awarded to Crowder Construction, they eagerly focused on streamlined, quality execution of a cost-effective remedial design to protect the City's critical water supply source. Under Greensboro's leadership, their creativity, innovation and hard work complemented Schnabel's design.

The original Lake Townsend Dam was built in 1967 and consisted of a 45-ft high, 1,445-ft long, earth embankment with a 276-ft long, gated concrete spillway. Alkali-silica reactivity (ASR) cracking of the spillway piers and other concrete components of the spillway was first noted in the late 1970s. Despite on-going repairs, cracking continued unabated. An underwater inspection in 2006 noted a relatively wide horizontal crack extending deep into the spillway mass, raising serious stability concerns, especially for high pool conditions during storm events. There was an elevating risk of dam failure over time. Loss of the City's primary drinking water supply, and the potential for loss of life and extensive property damage became dominant concerns and unacceptable outcomes.

To address immediate spillway stability concerns, an emergency rehabilitation project included high strength steel anchors for the spillway and steel reinforcing plates to secure the piers. Stabilization was performed concurrently with an expedited evaluation of alternatives for a permanent dam safety solution. The stabilized spillway served as a cofferdam and diversion control structure for the construction of a 300-ft wide, seven-cycle labyrinth spillway just downstream of the existing dam. Because Lake Townsend provides the City of Greensboro's primary drinking water supply source, all activities needed to be completed with a fully operational reservoir. For more details on the Lake Townsend project, check out the archive and references link found on the back page.

The City of Greensboro Water Department is to be commended for its consistent quality leadership. All parties to the project were positively engaged and became voices to be heard and allies to be supported as agents of purpose and achievement. This success story concludes with the expedited completion of an award winning design delivered at a very favorable cost by a constructor dedicated to delivering quality materials and exceptional workmanship on time.



City of Greensboro, Schnabel Engineering, and Crowder Construction as they accept the ASDSO Award.



ROCKY PEN RUN DAM

Schnabel has a long history of collaborating with Stafford County, Virginia, on water resources projects. Two of our engineers have assisted the County for nearly 30 years. Our involvement with the Rocky Pen Run Dam began almost 10 years ago as independent design reviewers and lead construction engineers for the project. Throughout our involvement, we've presented objective 'third-party' ideas and approaches with the goals and budgets of Stafford County paramount.



Key areas where that our team drove value enhancements in collaboration with Stafford County include:

- Vigorously pursuing a change in dam type from roller compacted concrete to earthfill, based on exposed foundation conditions. This change saved the County approximately \$10,000,000.
- Encouraging Stafford County to perform a cost-analysis to relate reservoir level, construction cost and safe yield based on updated, detailed topographic surveys which revealed greater reservoir storage. This process led to a reduction of the reservoir elevation with minimal impacts to the project's safe yield. The reservoir lowering allowed the spillway to be changed from a gated control to a labyrinth, reducing construction cost by another \$10,000,000 and minimizing operations, maintenance, and manpower requirements.

"At every stage of the project, we have focused on understanding Stafford County's issues and concerns, whether capital, operational or perceptual, to validate delivery of best value from the opportunities that presented themselves and from the choices being made."

— Dave Campbell, Schnabel's Director of Dam Engineering.

Our collaboration with the County continues with comprehensive construction engineering services, currently underway. Our field staff works closely with the County and project design team to perform QC and QA testing and validate contractor performance, while containing costs. ■

"Schnabel Engineering has been a true partner on our Rocky Pen Dam project. They are reliable, responsive and competent. Their thoughtful and prompt responses have added value to the project and saved Stafford County millions of dollars in project costs."

— Dale Allen, Stafford County
Assistant Director of Utilities



In planning for their own water supply reservoir, Henrico County, Virginia, officials visit the Rocky Pen Run Dam with Stafford County and Schnabel personnel.