

## **Findings from First-Ever 21<sup>st</sup> Century Water Technologist Skills and Talent Development Survey Announced: Looming Gaps Provide Unique Opportunity for Texas Collaboration**

**San Antonio, Texas (April 26, 2016)** AccelerateH2O, the Texas water technology initiative announced findings from the ***“Survey of 21<sup>st</sup> Century Water and Water Technology Skills, Talent and Workforce,”*** and a looming skills shortage and gap in training for emerging technologies could limit regional economic development, competitiveness and negatively impact the transition of agricultural, industrial, residential and utility water operations.

Of 500 respondents, evenly comprised of public and private sector representatives, the results from the first-ever statewide survey identified several key findings about the 344,000 individuals currently employed directly in the water and water technology “cluster.”

- The overall average length of employment in surveyed organizations is greater than 50% in positions 15-20 years or longer, while 39% have been employed less than three years. Over 32% of surveyed organizations reported that approximately 10% of their current employee base has been on the job in excess of 20 years. There is a ‘greying’ of the water and water technology workforce as can be found in other sectors, and yet the slowness in entry level employment signals a 10-12% gap to replace future retirees.
- Educational attainment of the surveyed organizations is representative of most manufacturing-related operations – 66% hold associates degrees, 62% have a high school diploma, 45% have an under-graduate and 42% a graduate degree from a four- year institution. Less than 10% of the overall water and water technology workforce hold PhDs, while the majority hold high school certifications or diplomas.
- An equal number across the board hold state required Texas Commission on Environmental Quality certificates, while just as many hold an even number of associate, bachelor, and graduate degrees. Simply, the pipeline of public workforce is balanced for progression from one level to next as is the private sector along the traditional paths for training.
- Expected retirements are troublesome between 2016 and 2020 with greater than 20% of all retirees leaving the workforce by 2020. However, over the next five years, the gradual retirement per year is a steady rate of 10% per year cumulative. This confirms that nearly 30,000 retirements will drain the public and private sector of experienced individuals, but open the door for newly trained employees on the latest of technologies and innovations.
- Increasingly the source of training for all organizations are Four Year Universities, Two-Year Community Colleges, Certified Providers, Internal Programs, and Vendor Suppliers in that order. The portfolio of training signals that high school, community college, four-year institution, and recertification programs must be better aligned to handle the demand for replacing retirees while also updating and modernizing skills tied to new technologies, breakthroughs, and innovative operational practices.
- Of special note is the role that Vendors-Suppliers-Manufacturers play in skills and training – or in actually performing the work on behalf of public and private sector employees. Nearly 50% of respondents to the survey reported that vendors and suppliers of new technologies provide significant training onsite or conduct ongoing support for traditional positions held by public and private sector employees. The introduction of breakthrough products, services, and integrated solutions are managed by the vendor-supplier/manufacturer – and often are onsite for extended periods of time to conduct work that employers may not wish to risk potential failure of systems or setbacks due to “working the kinks out!”

- Equal number of organizations rely upon vendors-suppliers for installation, operations, and maintenance; however, the complexity of advanced treatment technologies is causing greater reliance upon manufacturers' engineering capabilities to solve integration issues into legacy systems. This further signals increasing job opportunities in the private sector for consulting, advisory, and onsite support from the equipment, technology, and manufacturing sub-sectors.
- Based on survey responses, when asked about current and future skills gaps, the priorities are identified in the following rank order: Direct Potable Reuse, Consumer-End User Mobile and Remote Engagement, Advanced Treatment, R/O and Desalination Filtration, Information and SCADA, Sensors and Instrumentation, Leak Detection, Smart Meters (in order of priorities). Each of these technology sub-sectors has a significant opportunity in Texas' \$9+ billion marketplace and therefore the importance of aligning skill development with product introduction and deployment across Texas' 4600 utilities and 5000 corporate facilities and campuses.
- Future employment opportunities for the water and water technology sector are promoted through specific talent-related initiatives among community interests, internships, after school projects, and then veteran's programs. Few respondents connected Returning-Veterans skills initiatives to direct hiring potential unless it was offered through a training provider. Youth and student outreach is just now beginning to take hold in the water sector, especially in rural communities. Yet few respondents recognized the transformation in water technology leading to communicating excitement and interest in future employment by current and future generations of students.
- Most public and private sector employers rely heavily upon employee referrals, then online job boards and postings, association networks, and finally an equal number across workforce investment boards, four-year and community college recruitment, and professional societies. Because a majority of positions start with individuals at a high school level equivalency, peers and family recommendations remain the strongest entry method for employment in water and water technology. The belief that most employment in the water and water technology sectors relies solely upon state required certification is a challenge, and the largest employment base is in non-public sector positions where a state certificate is not often required.

Ed Archuleta, former President of the El Paso Water System and Chairman of AccelerateH2O notes: "We have overlooked the importance of the water and water technology cluster in Texas as a long-term employment, economic competitiveness, and investment opportunity. The results of the survey indicate that the Texas Education Agency, the Texas Workforce Commission, the Texas Higher Education Coordinating Board should consider increasing their focus and collaboration with the Texas Water Development Board, Texas Commission on Environmental Quality and the Railroad Commission if we are to be a global hub for innovating water."

"The most dynamic and concerning employment scenario unfolding around us is the transition in the oil and gas sector. We are hearing of layoffs and downsizing across the board – from the majors to the independents. Yet, water – the use, recovery, costs – associated with our energy success now has the potential for becoming an entire new revenue generator for the exploration and production sector," observed Russ Conser, former Senior Vice President of Shell USA's Game Changer program, and Advisory Committee member of AccelerateH2O.

Richard Seline, Executive Director of AccelerateH2O, suggests: "With another 1 million Texans employed indirectly in 76 industries and over 50 occupations, the survey provides a directional goal for regional and statewide workforce and economic development interests to identify where gaps exist in their employment scenarios and address the challenges that limit their communities from competing for desalination, industrial reuse, aquifer recharge, leak detection, and any number of ground-breaking solutions which will ensure we are drought proof, storm and flood resilient, and water secure well into the 21<sup>st</sup> century."

### **About Accelerate H2O**

There will always be challenges in Texas as well as barriers to innovating water. AccelerateH2O was formed to identify the most efficient and effective pathway for technology development and deployment across Texas' residential, industrial, agricultural, and utility end-users. With more than 18 university research centers, 4,600 water agencies, 5,000+ medium and large corporate campuses, and thousands of farms and ranches, Texas represents an undiscovered \$9 billion water technology marketplace. AccelerateH2O connects the market of ideas, resources, and assets by delivering and partnering on Grand Challenge Competitions, Innovative Water Technology Demonstration Hubs, InvestH2O Forums, and its Texas Water Innovation Clearinghouse and Collaboratory - [www.accelerateH2O.org](http://www.accelerateH2O.org) .

The 21<sup>st</sup> Century Water and Water Technology Skills, Talent, and Workforce Survey is a project under a Wagner Peyser Grant from the Texas Workforce Commission and in cooperation with Alamo Colleges of Greater San Antonio. AccelerateH2O is an affiliate of the Texas Research and Technology Foundation, a 501c3 corporation.