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The Water Sustainability Institute to Address Local and Global Challenges

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Matthew G. Ballard is president and CEO of the Charleston Area Alliance. Prior to being named president, he served as executive vice president of the Alliance, managing its economic development efforts and launching its young professionals initiative Generation Charleston.

Before joining the Alliance, Mr. Ballard was executive director of the Hatfield-McCoy Trails. He also served as the special assistant for project management and policy analysis to the cabinet secretary in the West Virginia Department of Tax and Revenue.

Mr. Ballard is a past president of the Charleston Rotary Club. He was named a "Ford Fellow" by the American Association of Chamber Executives and the Ford Foundation in 2009 and was selected as one of *The State Journal's* "40 under 40" award recipients in 2008.

He currently serves on the board of directors of several organizations including: the West Virginia Governor's Disaster Recovery Board; Alderson Broaddus College; Hatfield-McCoy Trails; Chemical Alliance Zone; West Virginia Regional Technology Park; and the West Virginia University School of Nursing.

Mr. Ballard has an undergraduate degree in nursing from Alderson-Broadus College and a master's degree in public administration from West Virginia University.

The idea of water as a commodity is simple. Water has a value to users who are willing to pay for it. If you agree with the premise that water is needed to sustain life and industry, then consider these meaningful projections:

- The global population will grow from seven to nine billion by 2025... 60 percent of the world's people are projected to be living in urban environments, while 61 percent will be in Asia. Increased population in specific areas of the globe will strain water as a resource.
- Annual global water needs are projected to reach 6,900 billion cubic meters in 2030, 40 percent above circa-2013 sustainable supply.
- There is a growing food, water, energy "nexus" – demand is projected to rise 35 percent, 40 percent and 50 percent respectively in these areas – with challenges pertaining to one increasingly linked to supply and demand for the others.
- Estimates show that there is currently an \$11 billion annual funding shortfall for drinking water infrastructure to replace aging facilities and comply with safe drinking water regulations in the United States.
- The United States Environmental Protection Agency estimates that it needs \$390 billion during the next 20 years to meet increasing demand for wastewater infrastructure.
- By 2025, two-thirds of the world population will live in water-stressed areas.

Source: Toffler and Associates, 2011

These data points demonstrate that investments relative to research and development, innovation, and commercialization of water-related technologies to maintain security of our vital resources will advance dramatically in the coming years.



The Charleston Area Alliance considered these global megatrends when creating its 20-year economic development plan, Vision 2030. In addition to these trends, several key industries in West Virginia, such as energy, chemical and tourism industries, interact with and rely on water as a vital part of their business process. Moreover, West Virginia is one of the most water-abundant states in the United States. These key points culminate in the Vision 2030 plan, which includes strategies to elevate water as a key natural resource centric to West Virginia's economy going forward.

As initially outlined by Vision 2030 in 2011, water strategies would become a greater focus in year five of plan implementation, after the foundational development of an entrepreneurial ecosystem in our region. However, the January 2014 Freedom Industries chemical spill and subsequent water contamination created a more pressing need to address water sustainability, and this portion of the plan was fast-tracked. This accelerated Vision 2030 focus on West Virginia's water resources and the Water Sustainability Institute concept was born.



AP Photo/Tyler Evert

The objective of the Water Sustainability Institute is to bring together leading water experts at the West Virginia Regional Technology Park to commercialize innovative technologies and provide expert advice to maintain, improve, and protect water quality and quantity in West Virginia and around the world.

Examples of these activities would include:

- commercializing technologies that reduce hazards to fresh water sources;
- commercializing technologies for rapid identification of water contamination;
- developing custom solutions to water quality and quantity issues;
- testing and evaluating technologies that maintain the integrity of the entire water distribution system, including wastewater treatment;
- providing independent assessments and reviews of potential hazards technologies, contingency plans, and related water quality issues;
- providing advice or technologies for improved response capabilities; and

- providing expert advice and assistance on water resource and quality issues.

The initial partners in the concept are the following organizations:

- Charleston Area Alliance;
- Chemical Alliance Zone;
- Mid-Atlantic Technology, Research & Innovation Center (MATRIC);
- West Virginia State University;
- Marshall University;
- West Virginia Higher Education Policy Commission; and
- West Virginia Regional Technology Park

Currently, partners with the Water Sustainability Institute are completing market research and defining partner roles relative to the Institute. Many of the existing partners are currently engaged in work that meets the goals of the Institute, with MATRIC spin-off companies working in the space and the higher education institutions conducting research and partnering on several ongoing activities.

From our recent challenges in West Virginia, to drought strangling Californian agriculture, to China's mounting water insecurity – water-related challenges are pervasive. Pairing this with the critical nature of water to both life and business increases the complexity of these water-related challenges. Access to clean water will become a defining challenge of this century.

The Water Sustainability Institute brings new life to the West Virginia's natural resource economy. It addresses global challenges, utilizing the principles of the triple bottom line: balancing impact to people, profit and planet. The Water Sustainability Institute is poised to be an economic driver for West Virginia by solving local and global challenges. 