Hydro Hubs

By Ben Grumbles, President, U.S. Water Alliance

This month's feature takes a look at "emerging clusters of innovation and imagination" in the U.S. that Mr. Grumbles calls "Hydro-Hubs" (including one in Pittsburgh) that are helping to boost collective efforts to embrace and protect two most precious resources: water and the talent pool of future water leaders. WREN thanks Ben Grumbles for granting permission to reprint this article and for the Pennsylvania specific information he wrote just for our readers.

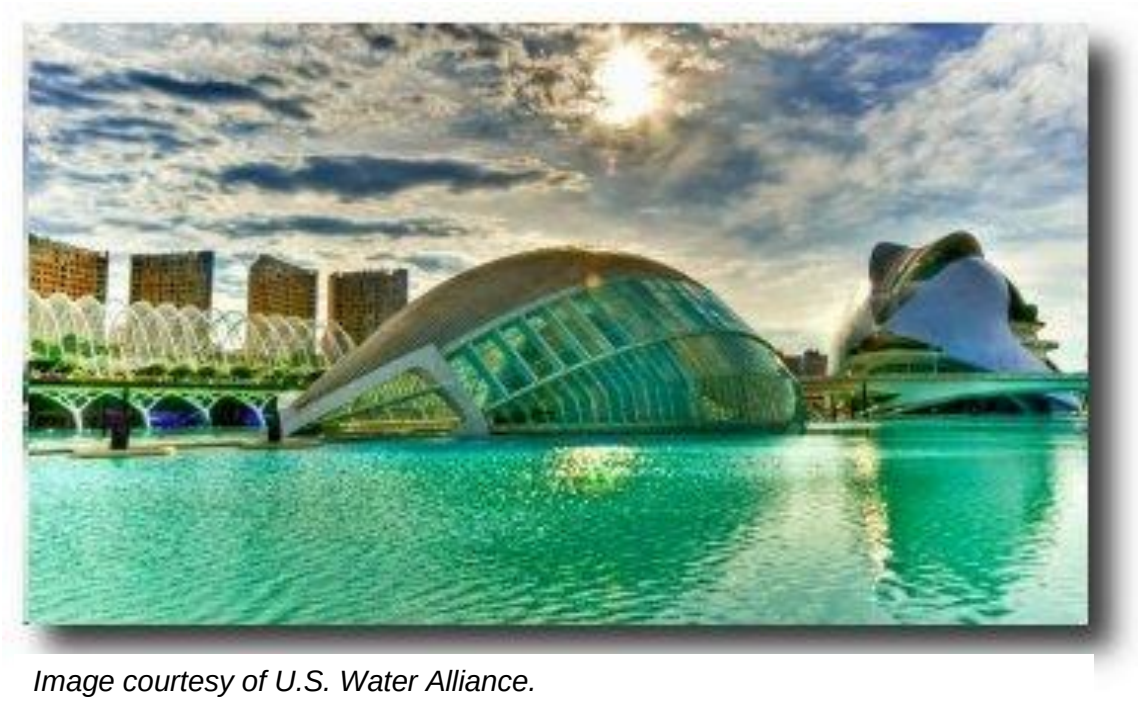


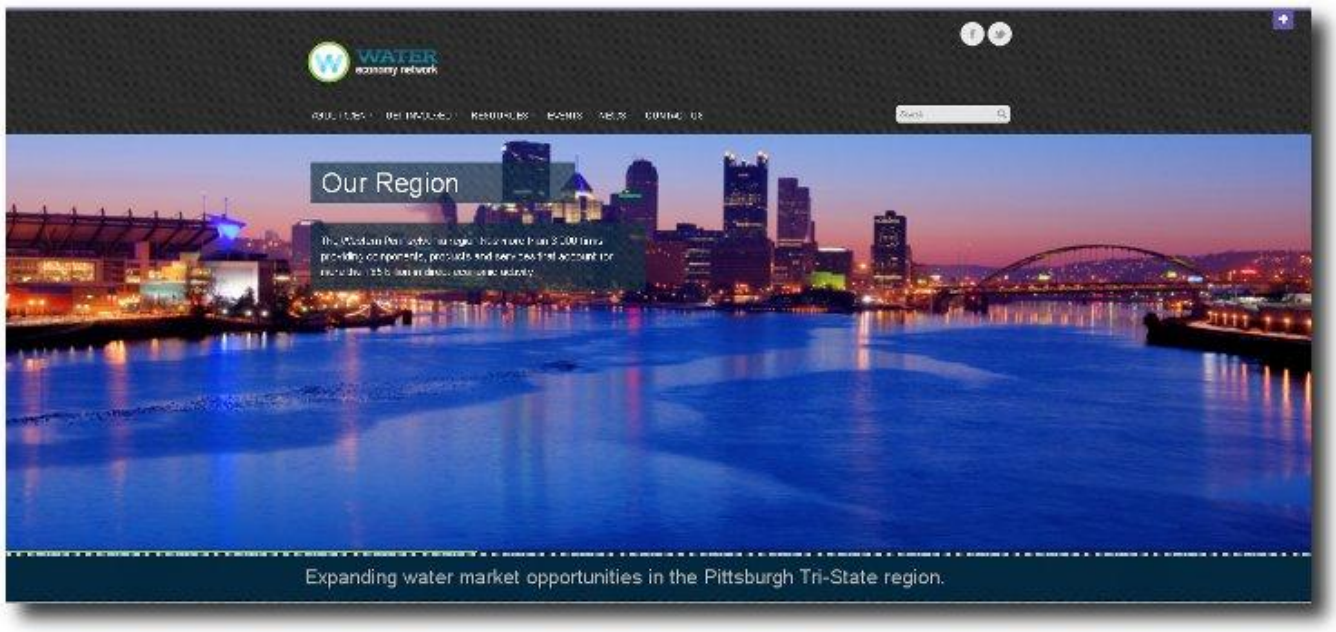
Image courtesy of U.S. Water Alliance.

Whether you call them water clusters or innovation stations, these town-gown-business techno centers are gaining steam in strategic locations around the country and that's good news for water, jobs, and communities.

"Cluster" isn't a new concept but the notion of water technology innovation locations has gotten a lot of traction in recent years, particularly in January 2011 when EPA and the Small Business Administration announced the formation of a "Water Technology Innovation Cluster" in the Cincinnati, Dayton, northern Kentucky, and southeast Indiana region, now known as "Confluence". The organization works with private and public entities, including the Ohio River Valley Water Sanitation Commission (ORSANCO), SBA, and regional economic development organizations to promote the regional effort by bringing water research stakeholders together to foster collaboration.

In 2011, EPA also announced the commitment of $5 million to fund innovative water technology research. In 2012, the Agency began funding 18 research projects, including: green infrastructure, water monitoring, more efficient wastewater treatment, combined sewer overflow reduction, and develop tools to track harmful microbes or contamination events in water systems. Other funded projects include the hosting of workshops on the need for citizen-based water monitoring programs, and collaboration on rain water and stormwater reuse. The water cluster research projects are another water-worthy effort by EPA's Office of Research and Development. EPA's Office of Water also released, in April 2013, a "Blueprint for Integrating Innovative Technology into the National Water Program." It identifies 10 priority topic areas/challenges and describes various tactics and strategies, such as supporting the Office of Research and Development's technology clusters. One of my favorite aspects of the EPA blueprint is their recognition of the need to look for "regulatory space to foster technology innovation".

Milwaukee has also been an early leader in clustering. Seizing on a vision to become a "world water hub," area pioneers formed the Milwaukee Water Council and won supporters across the nation, receiving the 2010 U.S. Water Prize. Now known simply as the Water Council, the cluster is becoming a regional and global powerhouse for water technology and cutting edge issues such as the energy-water nexus. And, as Dean Amhaus, President/CEO, points out in his blog, "Water is a City's Economic Link to Sustainability," on the Growing Blue website, they aren't simply web-based or virtual without tangible storefront windows. They have buildings that will make up a water technology campus. That includes the renovation of a historic, seven-story warehouse into an International Water Technology Center and an 18 acre water technology park. Five minutes away, there's another water research facility, the future home for UW-Milwaukee's School for Freshwater Sciences.



Screenshot of the Water Economy Network website.

Momentum has been growing for a water cluster, a **Water Economy Network**, in the Pittsburgh region for some time. In 2007, U.S. EPA chose the city as the location to announce and launch its national "green infrastructure" initiative, bringing together diverse interests to tackle a complex problem

(stormwater and sewer overflows among multiple jurisdictions) and create environmentally cleaner and ecomically greener solutions. On April 19, 2007, the EPA Administrator and four national groups signed a Statement of Intent (PDF) (4 pp, 37K, About PDF) to promote green and natural infrastructure strategies. The statement formalized a collaboration among EPA, the National Association of Clean Water Agencies (NACWA), the Association of States and Interstate Water Pollution Control Administrators (now the Association of Clean Water Administrators), the Natural Resources Defense Council (NRDC), and the Low Impact Development (LID) Center to assist state, city, and local governments in implementing and evaluating innovative and effective green infrastructure approaches. The movement continues to grow.

The momentum behind a Pittsburgh area cluster continues to expand. For example, the U.S. Water Alliance is working with cities and environmental organizations in key regions around the country, such as Pittsburgh, to broaden the green infrastructure agenda to encompass more than just stormwater benefits. The Alliance's Urban Water Sustainability Council, which includes the 3 Rivers Wet Weather organization, advances strategies for conservation and efficiency, resource recovery, and infrastructure resiliency. The U.S. Water Alliance's Business Advisory Council is also planning a national conference in Pittsburgh in the Spring of 2014 to bring together environmental, governmental, and business interests on the best ways to reduce the impacts of energy development/resource extraction on water resources and species habitat. How can mitigation and conservation banks be used to boost environmental benefits when resource extraction projects are allowed to proceed and responsible parties are required to compensate for impacts? Organizations are attracted to the natural, intellectual, financial, and political capital in Western Pennsylvania. It can become a center for eco-innovation and job creation.

Other efforts across the country are tapping into the talents and assets of area leaders and organizations. With help from some EPA staff, I can identify the following established or emerging clusters:

- **The BlueTechValley** (Central and San Joaquin Valleys, CA)
- **Las Vegas Cluster Effort** (Nevada)
- **Arizona Cluster Effort** (Tucson, Arizona)
- **Colorado Water Innovation Cluster** (Fort Collins, CO)
- **Michigan Water Technology Initiative**
- **Confluence WTIC** (SW Ohio/N Kentucky/SE Indiana)
- **NorTech Water** (NE Ohio)
- **Water Economy Network** (Pittsburgh, PA *as mentioned above*)
- **Massachusetts Water Innovation Initiative**

Add another very promising location in the U.S.: Tacoma and Pierce County in Washington State. The ongoing partnership among the Port of Tacoma, the Economic Development Board for Tacoma-Pierce County, http://waterworkshere.com/, the University of Washington at Tacoma, and other business and community leaders bodes well for South Puget Sound. The cluster's vision is to become a clean water technology center for the region and the nation. They have 340 companies in the area, 12 higher education centers, an international port and airport and an interstate highway connecting the area to Canada and Mexico. I participated in their "Wellspring 2013" conference, at a LEED-certified building on the beautiful urban campus of the university, with the port Commissioner Connie Bacon, University

Chancellor Debra Friedman, Mayor Marilyn Strickland, and others. Very impressive. Lots of brainstorming on stormwater and technologies for water's future.

Some of the top themes at Wellspring 2013, as well as WEFTEC 2013 in Chicago, which hosted a meeting on technology clusters and a “Congress” on stormwater include green infrastructure and low impact development, public private partnerships, water quality trading, big data, and smart water grids. What are the essential ingredients for creating and sustaining clusters, whether the centers are in U.S. cities or international cities such as Singapore and Ontario? In my cookbook, you can boil it down to capital and collaboration.

Capital is more than just money, though. It comes in at least four varieties.

1) Financial capital, with its investors and entrepreneurs, is the most widely known. Are monetary assets in hand or nearby?
2) Natural capital is another form. Is there any doubt why some of the clusters are located near great inland or coastal water bodies, such as Puget Sound?
3) Intellectual capital is often underappreciated but always essential. Are strong research, testing, demonstration, and deployment organizations and people nearby? Do they have the creativity and support systems to let their imaginations run wild?

The last, 4) Political capital, is always needed sooner or later–often early on as town fathers and mothers make critical decisions on strategic growth and economic development. Are elected and appointed leaders willing to leap forward despite the risks?

Mark Twain got it right: “You can't trust your judgment if your imagination is out of focus.”

Collaboration is about more than simply communicating and cooperating among sectors. It includes coordination and integration of effort. Verifying and certifying new technologies is a perfect example of a need in the world of clusters so that promising new technologies don't have to go through endless and inconsistent approval procedures but can benefit from some appropriate level of reciprocity among agencies and jurisdictions.

Mark Twain got it right: “You can't trust your judgment if your imagination is out of focus.”

These emerging clusters of innovation and imagination can help boost the country's collective judgment on the best ways to embrace and protect our two most precious resources: water and the talent pool of future water leaders.

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About the Author:

Ben Grumbles is President of the U.S. Water Alliance, a not-for-profit educational organization based in Washington, DC and committed to uniting people and policies for water sustainability throughout the country. He has had a long career in water and environmental policy, serving the public and teaching law students and environmental professionals, over the last 25 years.
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Most recently, he led Arizona's Department of Environmental Quality working on air quality and climate change, energy policy and waste management, water efficiency, and wastewater recycling. Regional priorities included protecting the Grand Canyon, Colorado River, and Arizona-Mexico border environment.

Mr. Grumbles served as Assistant Administrator for Water at US EPA from 2003 through 2008 where he was known for using collaboration, innovation, and technology to improve environmental performance and reduce costs. He launched EPA's water efficiency labeling program, WaterSense, and initiatives on green infrastructure, water and climate change, and pharmaceuticals. He carried out and defended the nation's clean water, drinking water, ocean, coastal, and wetlands laws and worked on large ecosystem collaborations from coast to coast.

From 1985 to 2001, he served in the US House of Representatives in various environmental counsel and staff director roles for the Transportation and Infrastructure Committee and Science Committee. His particular focus was on water and its connections to people, wildlife, agriculture, and energy.

Mr. Grumbles has served on the Board of River of Words, a national nonprofit committed to connecting kids to their watersheds and imaginations through poetry and art and on the nominating committee of the Stockholm World Water Prize founded by the Stockholm Water Foundation. He's currently a member of the National Research Council's Water Science and Technology Board and the Statewide Advisory Board of the Virginia Water Resources Research Center.

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