Improving the Flow

Indiana in Position to Provide Smart Water Solutions

By Erik Hromadka

Erik Hromadka

Indiana is uniquely positioned to benefit from an emerging tech sector – smart water distribution, which combines sensors and software to reduce loss and improve efficiency in drinking water systems.

It's a huge opportunity for the state as water prices are increasing rapidly and aging underground infrastructure is leaking at an alarming rate.

Some 20% of water that has been treated to high drinking quality standards is lost before it reaches any home or business. In addition, each day hundreds of water main breaks across the U.S. are slowing down the economy and impacting public health and safety.

Water risk is also a concern for business leaders as outages and availability are factored into financial performance. This is especially true in urban areas with growing demand, limited supply and increasing drought.

These problems are often hidden, however, since water pipes are buried underground and many growing leaks continue undetected. Although local water utilities do an admirable job working with systems that were designed in the first half of the 20th century, they now face thousands of miles of pipes that are reaching the end of their useful lives.

Dollars and sense

The American Water Works Association reviewed national water infrastructure and found that $1 trillion of investment will be needed to maintain current levels of service in the coming decades. The American Society of Civil Engineers gave the nation's drinking water infrastructure a "D" grade earlier this year and estimated that Indiana alone faces $5.9 billion in improvements over the next 20 years.

The U.S. Chamber of Commerce and National Association of Water Companies have outlined the impact on businesses at www.waterisyourbusiness.org.

Since water is also a local matter, each community faces unique challenges related to the types and conditions of its water infrastructure, the impact of a growing (or declining) base of users and changing weather patterns. Events like last summer's severe drought and water restrictions show the impact of water scarcity on families and businesses.

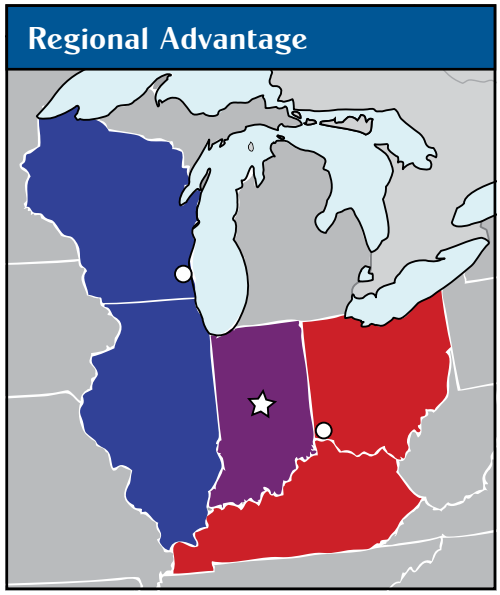
As a result, we are entering a new period in which water prices will increase on a regular basis. Losing 20% of that valuable product before it reaches customers will no longer be sustainable.

Fortunately Indiana is developing ways to address this problem in our communities and provide solutions for other parts of the country. New technologies with better measurement in underground pipes can provide real-time data on water distribution. Upgrades to smart water meters and consumer dashboards encourage greater efficiency.

As water prices increase, customers will start demanding better information on their usage and ways to lower bills. Instead of being charged for hundreds of cubic feet used 60 days ago, they will want to know how many gallons they are using this week.

Such analytics will provide better customer service and can also be used to create new demand-based tools. Imagine a situation, for example, in which water utilities facing a shortage could reward customers for voluntarily reducing usage rather than having city leaders issue water restrictions and punish offenders.

Smart water systems could also use predictive software to create an early warning system for water main breaks, allowing repairs to be made before streets are shut down, fire hydrants lose pressure and businesses are disrupted.



Leading water technology clusters are based in Milwaukee (Tri-State Alliance) and Cincinnati (Confluence).

Innovation required

Indiana must tap its dynamic technology community, strong research universities and advanced manufacturing base to create new jobs and opportunities in the emerging water technology sector.

Our state overlaps two of the leading water technology clusters in the nation. Confluence is an Indiana-Ohio-Kentucky initiative that was launched with support from the Environmental Protection Agency and Small Business Administration to leverage federal resources such as the national water laboratories in Cincinnati. To the north, the Tri-State Alliance is an Indiana-Illinois-Wisconsin effort to promote water research and includes Milwaukee as a United Nations Global Compact City for freshwater expertise.

Indiana communities can benefit from this regional activity by deploying smart water technologies and testing new solutions. For example, Global Water Technologies has partnered with Indiana University-Purdue University Indianapolis (IUPUI) and Grundfos, a world leader in pumps, to promote a "living laboratory" where new water technologies can be deployed, tested and refined in real-world conditions.

Other communities can also participate and national efforts to promote such pilot projects are gaining support.

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Recently, the U.S. Senate passed legislation to provide innovative financing for water infrastructure pilot projects. The bill passed with bipartisan support that included senators Dan Coats and Joe Donnelly. This summer, the legislation will be considered in the U.S. House and Indiana legislators are also planning to study water policy in the state.

Water technologies provide an exciting opportunity for Indiana to lead in developing smart solutions for the world's most precious resource.

INFORMATION LINK

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