Indiana Sees Economic Opportunities In Water Innovation

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ABSTRACT

Strategically located between two of the leading water technology clusters in the United States, Indiana has a unique opportunity to leverage its competitive advantages and realize economic benefits from the emerging need for innovation in the water sector. Much of the state's total employment is dependent on water-related industries, with manufacturing and agriculture across the state and a dynamic technology and life sciences sector in the state's capital. Existing economic development and university resources, coupled with a new focus on water issues, presented the impetus for the creation of an Indiana Water Institute in 2015. The institute concept provided both structure and funding mechanisms to improve coordination of local, state and federal initiatives and partnerships between the public and private sectors. Workforce development, innovative technologies and comprehensive planning were targets of the new water institute. Such an approach leverages the benefits of a "People + Pipes + Policy" approach to drive innovation in the water sector, which has traditionally been slow to change. However, policy and politics often intersect in unexpected ways. This happened in Indiana when other legislation abruptly shifted the discussion away from economic development and created a firestorm of unwanted national attention and economic boycotts of the state. While opportunities to recognize the benefits from water innovation remain, the impact of politics on water policy provides an important lesson for those who seek long-term solutions.

KEYWORDS: Indiana, innovation, public policy, politics, water technology.

INTRODUCTION

Indiana may be known as the Crossroads of America, but the Midwestern state is recognizing the role that water plays in its regional economic strength. Recent studies, economic development initiatives and legislative efforts have sought to create new benefits for the state by leveraging both its existing resources and new ideas to create economic opportunity. However, such activity has also been impacted by unexpected political fallout and therefore provides an example of the challenges that exist for those who seek to create long-term solutions for more efficient water innovation.

Located in the Midwestern and Great Lakes regions of the United States, the state of Indiana is home to 6.5 million people, with approximately 1 million living in the Indianapolis metropolitan area, which is both the center of the state and its capital city. The state's water resources range from the sandy shores of Lake Michigan in the northwest to rivers that flow

across the state, including the Ohio River that serves as its southern border. Drinking water is provided by some 555 water utilities of various types across Indiana's 92 counties and including investor-owned, municipal and not-for-profit entities. As is common in the United States, regulation of water is decentralized and state agencies with such responsibilities include the Indiana Department of Environmental Management (IDEM), Indiana Utility Regulatory Commission (IURC), Indiana Department of Natural Resources (IDNR) and Indiana State Department of Health (ISDH).

Indiana leads the United States in terms of the percentage of its total employment in water-related industries, according to "Innovating for the Blue Economy", a 2014 report commissioned by the University Research Corridor in Michigan. The study found 23.3 percent of the state's total private sector employment in 2013 was in industries most intensively affected by water supply and quality. The Great Lakes region was well represented in the findings, with Wisconsin ranking second and Michigan placing fourth. The six-state region had a concentration of 3.8 million total workers in water-related industries, which include both the companies that deliver core water technology products and services and well as those that use water as a key input to their operation and/or have a significant water discharge that must be processed properly.

A separate study completed in 2014 by the Indiana Chamber of Commerce noted supply issues and concerns while conducting a comprehensive analysis of the state's water resources. While that work noted that the Midwest has not faced the severe drought that dominates headlines in California and other western states, the impact of water availability in Indiana is just as important and requires careful planning for the future.

"This is definitely a jobs and economic development issue," said Indiana Chamber President and CEO Kevin Brinegar, who noted much of the state's water demand is driven by manufacturing and agriculture. For example, the report noted an increase in agricultural irrigation in northern and central Indiana, which produces large crops of corn and soybeans. A growing population in Central Indiana is projected to require an addition 50 million gallons per day by 2050 and limited natural water supplies in the southern part of the state are expected to be insufficient for anticipated business development in the region.

"What this study does is set the stage for creation of a long-needed, long-range water plan for the state," explained Vince Griffin, the state chamber's vice president of energy and environmental policy. "While a credible plan may take three to five years, legislators — from the Senate and House, as well as both parties — understand the importance of this issue and are prepared to lead on the next steps."

Such collaboration on water issues has already begun to take place in Indiana. The state overlaps two of the leading water technology clusters in the United States. Confluence is an Indiana-Ohio-Kentucky initiative that was launched in 2011 with support from the U.S. Environmental Protection Agency (US EPA) and U.S. Small Business Administration (US SBA) to leverage federal resources such as the national water laboratories in Cincinnati. In 2013, representatives from all three states signed a Memorandum of Understanding to collaborate on ways to speed the adoption on new water technologies. 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.

In the state's capital, Indianapolis Mayor Greg Ballard, who serves as Co-Chair of the U.S. Conference of Mayors Water Council, cited progress in water infrastructure as one of his most significant accomplishments. He noted the transfer of the city's water and wastewater utilities to a public charitable trust and significant investments being made to upgrade its infrastructure, including a massive $1.6 billion underground tunnel system that has been expanded to store 250 million gallons of wastewater below the city. The DigIndy Tunnel System was part of an agreement with U.S. EPA to reduce combined sewer and storm water overflows by 2025. In the past, as little as .25 inches of rain on the flat city topography could exceed sewer capacity and cause overflows into the White River. "The DigIndy Tunnel System will perhaps be the most impactful public works project the residents of Indianapolis will ever see," said Carey Lykins, president and CEO of Citizens Energy Group, a public trust that provides utility services to 800,000 residential, commercial and industrial customers.

Such infrastructure improvements are also creating new awareness of water issues in Indianapolis, such as Reconnecting Our Waterways, a grassroots effort that has drawn dozens of organizations to use a collective impact model to improve neighborhoods by better appreciating water resources. Another effort in Indianapolis is a "living laboratory" model that has been organized by Global Water Technologies in partnership with Indiana University – Purdue University at Indianapolis, the urban campus of the state's leading research institutions. The concept seeks to demonstrate the benefits of new technologies by deploying them in a real-world setting where results can be monitored and shared with other utilities in the state. Initial efforts are focusing in better water usage data tools, advanced leak detection and pipeline rehabilitation methods developed in Europe and the United States.

These factors set the stage for Indiana to create a new statewide water institute, an idea that was introduced in the 2015 session of the state legislature with a unique funding process and goals that could serve as a national model for water innovation.

METHODS

Driving innovation and improving efficiency in the water sector can be challenging due to its generally conservative nature and highly fragmented structure. This is seen in Indiana, where many of the positive developments noted above have taken place independently and often with little knowledge or coordination among participants. Water issues tend to be viewed only from a very local perspective and in the context of immediate needs and constraints. For example, although water prices vary greatly across the state, with the IURC reporting a range from $6 to $71 per 5,000 gallons, there is little awareness of these differences among customers. And issues of scarcity or infrastructure problems typically get attention only during times of drought, like Indiana experienced in 2012, or when water main breaks occur in dramatic fashion or outages have disruptive impacts.

In order to spur innovation in the sector, Global Water Technologies, an emerging company in Indianapolis, has suggested a framework of "People + Pipes + Policy" where customer engagement, infrastructure improvement and regulatory and legislative initiatives can all work together to drive positive change. This comprehensive approach to innovation in the water sector was positioned well in Indiana at the beginning of 2015, with increasing public awareness of water issues and efforts to address infrastructure and introduce new technologies. To continue the process, a policy effort was undertaken to create a new Indiana Water Institute through legislation introduced in the state senate.

The goals of the proposed institute were to direct the long-range water resources master plan for Indiana, to drive unparalleled speed to market of innovative water technologies and to develop the leadership to meet Indiana's water challenges of the future. Legislation introduced as Senate Bill 410 proposed creation of a nonpartisan organization that would work to meet these goals and be supported through an annual fee paid by water and wastewater utilities based on the amount of water and wastewater they handle. The innovative funding mechanism also utilized grants and private sector contributions to create a sustainable model that could place Indiana among the most innovative states in the country on water issues.

The first objective of the institute was the development of a comprehensive, long-term water resources plan that would be developed by a council of key stakeholders from the business and agriculture communities, state and local government, universities and utilities. Key objectives of the plan were sustainability of Indiana's water resources and the "one water" ethic that included a holistic focus on drinking water, wastewater, storm water and reclaimed water. The effort would also include a water-forecasting group that would address supply and demand issues such as water conservation and drought planning.

The second objective was the creation of Indiana's first statewide collaborative water technology council that would bring together efforts to speed innovation through research & development, implementation and commercialization of new water technologies. This effort was envisioned to complement and draw upon the successful models utilized by the state in information technology and life sciences, where Indiana is recognized as a leader. The proposal recognized the competitive nature of venture funding for such endeavors and planned to leverage existing state resources such as the Indiana Economic Development Corporation (IEDC) and partnerships with the state's leading universities to attract capital investment.

The third objective focused on workforce development, succession planning and leadership within the state's water sector. Recognizing the growing need for both management and leadership training and also skilled technical operators in a water sector that is set to face new challenges and an aging workforce, the institute envisioned collaboration with both state universities and Indiana's large network of community college programs.

RESULTS

The three goals of the legislation seemed to fit well with the other objectives of the state, which has placed a priority on creating economic opportunities and it gave Indiana a chance to leverage existing developments in the water sector, such as the increasing call for technology solutions to address severe water shortages in other states. When initially introduced in January, Indiana Senate Bill 410 seemed to have a clear path to passage, likely support from the governor's office and near-term results with the legislation taking effect in July.

However, any anticipation of Indiana getting national attention for passing innovative water legislation in 2015 was about to be dashed, as two political dynamics began to take shape. Initial support for the ideas behind the institute was replaced with some concerns about whether it was too ambitious or required addition study before taking action. "The ideas are good, but this isn't the time," was a message voiced by several industry leaders.

Other water legislation proposing more incremental steps, such a creating a voluntary system to monitor well levels and collect data, were cited as goals for the current session and had broad support from traditional constituent groups. Subsequently Senate Bill 410 was withdrawn in February amid suggestions that some of its ideas could be reintroduced in other bills or considered at a later date.

Meanwhile, another piece of legislation was about to thrust Indiana into the national spotlight for very different reasons. Senate Bill 101 made its way through committees, passed in both houses and was signed by the governor on March 26 as the Religious Freedom Restoration Act. The controversial legislation, which was viewed as potentially obstructing civil rights, drew an immediate backlash from opponents that erupted into a political firestorm. Within days, more than 5,000 media stories across the United States generated negative coverage for Indiana and several boycotts of the state. Efforts to control the ensuing damage took priority for the remainder of the legislative session and the controversy overshadowed any discussion of innovative water policy.

CONCLUSION

Effective solutions for complex water issues are never easy to achieve. Some of the well-documented challenges — the slow-moving, fragmented industry that focuses on immediate and local issues — may be mitigated by setting up a comprehensive approach that engages stakeholders and provides economic incentives. However, when seeking to use public policy as a tool, it is important to consider both internal and external political realities.

Inertia is one of the biggest dangers to water innovations. Limited customer awareness of water issues and infrastructure problems hidden underground make it very easy for policymakers to postpone action and take only incremental steps forward. Indeed, it is this approach that has caused much of the current backlog in water infrastructure improvements and any internal political disagreement provides a simple excuse to call for further study, rather than taking action. A lack of engaged stakeholders also results in fewer voices advocating for policy change.

Likewise, comprehensive solutions are often at risk of being derailed by external issues that suddenly disrupt the process by drawing all the attention to an immediate crisis rather than a long-term plan. This is especially true in today's media culture where stories can explode quickly and drown out any other issues or pending plans.

Therefore patience is needed when attempting to create solutions and recognize opportunities in the water sector — and contingencies for political problems should be included. The economic opportunities for water innovation in Indiana are real and much progress has been made to date. Sound public policy can be a very effective driver for innovation, especially in regulated sectors, but the process often moves in unpredictable ways and takes longer to achieve than initially anticipated. Private sector leadership and persistence are key to moving forward with targeted incremental goals, rather than transformative change. And a broad base of support must be built among all stakeholders.

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