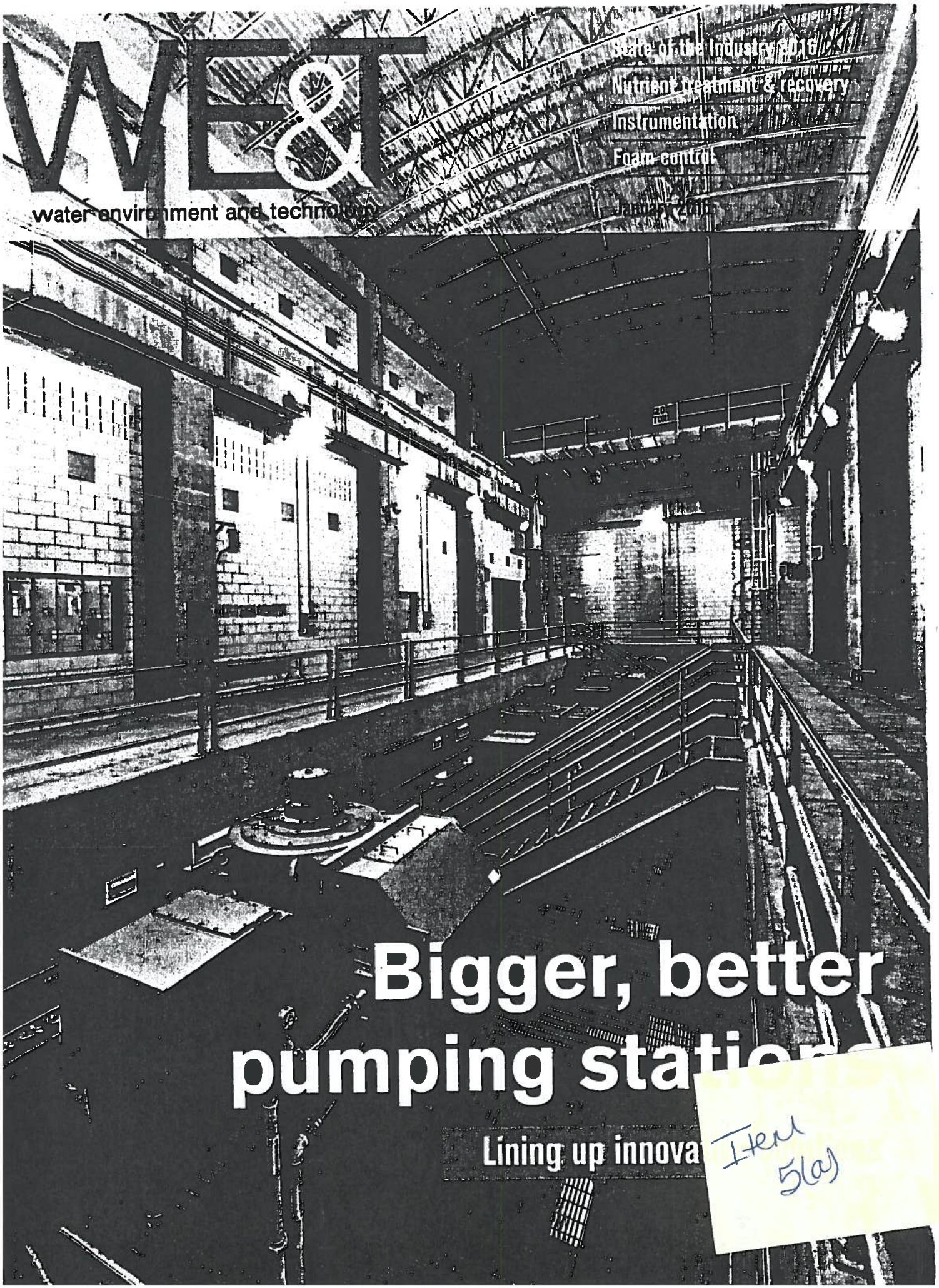
WE&T
water environment and technology

State of the Industry 2016
Nutrient treatment & recovery
Instrumentation
Foam control
January 2016



Bigger, better pumping stations

Lining up innova

Item 5(a)

The water sector's 'image shift'

Evolving challenges are helping shape a new paradigm

Meaningful and increasingly rapid changes in key areas of the water quality field are driving a fundamental shift in the water utility model and also in the water sector as a whole. Heading into 2016, as energy and recovery processes are adopted increasingly, the core identity of water resource recovery facilities has begun to take on a new and more sustainably minded stance. In line with this evolution – and as technology becomes more mainstream – the role of the operator likewise has begun to change.

These trends are developing against a backdrop of ever-limited water supplies and an emerging water crisis that is helping define a new mindset toward the value of water and how it should be maximized – a dynamic that also is steering the sector's transformation.

Stepping out of the shadows

Utilities are realizing the value of more public interaction and positive messaging

Traditionally, the water sector always has operated behind the scenes. Utilities became accustomed to maintaining low profiles while continuing to deliver services – good work that largely went unnoticed. But in recent years utilities have begun to realize the benefits of engaging with the community, an approach that in many cases has proven far better than facing the ongoing struggles that can result from staying silent. Indeed, a recognition and positive awareness among ratepayers can pay dividends especially in an era of increasing costs.

It's equally important, however, that utilities are known for what they are. To help drive this perception, the Water Environment Federation (WEF; Alexandria, Va.) in January 2013 changed the term *wastewater treatment plants* to *water resource recovery facilities* (WRRFs) in all its publications. While some may argue that this type of rebranding constitutes another example of "greenwashing," in the case of WRRFs, it's simply a recognition of the truth.

"The water sector as a whole is beginning to take a new approach toward wastewater," said Matt Ries, WEF's chief technical officer. "We are moving beyond treatment to viewing wastewater as an asset with resources to recover."

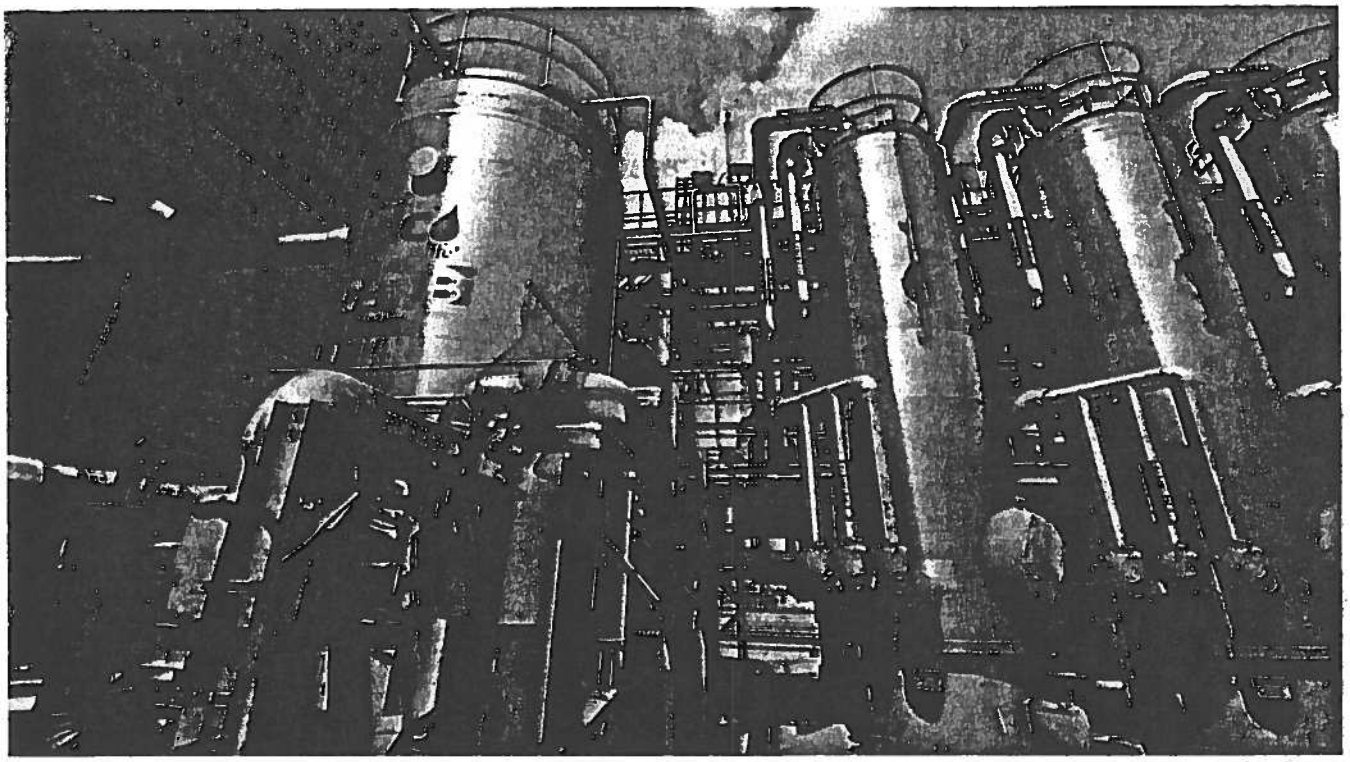
WEF's shift to the WRRF term is representative of this new mindset, according to Ries, but it's also reflective of a broader movement in the water sector.

"We have enormous challenges related to water stress and the need to rebuild our infrastructure, and we need to start thinking differently about the way we do business," Ries said. "Utilities at the forefront have demonstrated the advantages of being in the public eye for all the right reasons. It comes down to helping the public understand the significance of water infrastructure. Ratepayers are bound to be more supportive of rate increases if they understand where their money is going and the value of what we bring."

A new economic model drives a new utility identity

As wastewater treatment continues to evolve into resource recovery, more utilities are adopting advanced solutions that recover water, energy, and nutrients. In doing so, WRRFs can realize that benefits from these types of projects can be much more than a monetary payback.

"In addition to bringing economic improvement to the utility, WRRFs that implement sustainable programs can



The Class A biosolids produced at the end of the thermal hydrolysis process (pictured above) are used throughout the D.C. area as compost for green infrastructure projects. DC Water expects to save $10 million in energy costs, $11 million in trucking expenses, and about $2 million in chemical costs from this project. DC Water

also create jobs and drive positive social change and economic advancement for the community as a whole," Ries said. "In turn, these types of actions can build a favorable image with the public."

DC Water (Washington, D.C.) represents an example of how a water utility can emerge from the shadows and forge a new, positive identity among its customer base. The organization, which changed its name and logo in 2010, has become recognized as a leading-edge water sector utility in the adoption of innovative resource and energy recovery initiatives. DC Water also has developed a major capital program with multiple large-scale infrastructure projects planned for the next 10 years, including dedicated spending for green infrastructure, which will create numerous jobs in the region.

DC Water general manager and CEO George Hawkins said utilities can build support for their programs by taking a more active and visible role in the community.

"Our industry is faced with the reality that many of our systems have reached the end of their useful life and need to be updated, and the infrastructure that we build not only needs to be designed to that next level of performance, but capable of handling climate extremes that can include droughts and severe flooding," Hawkins said. "When it comes to rebuilding systems of this caliber, there are no cheap answers. That's why our industry must be more present with the people we serve."

DC Water's $470 million waste-to-energy program includes a combined heat and power facility for producing a net 10 MW of electricity from wastewater treatment processes. High-pressure steam recovered from the facility's clean-burning recuperative turbine is routed back and used for powering DC Water's new thermal hydrolysis system, the largest in the world. The Class A biosolids that are produced at the end of the process are used throughout the D.C. area as compost for green infrastructure projects. On an annual basis, the utility expects to save $10 million in energy costs, $11 million in trucking expenses, and about $2 million in chemical costs.

"Building a strong case to our ratepayers in a very transparent way has allowed us to pursue these recovery projects and develop our DC Water Works job program," Hawkins said. "A very positive outcome from these efforts has been the increased level of interest and qualified candidates that want to work for us. We are just getting tremendous talent coming into our organization."

The significance of a name

In some cases, invoking a new utility identify can be as simple as a name change. In Ohio, Avon Lake Regional Water (formerly Avon Lake Municipal Utilities), conducted brand research and began a rebranding project to make the utility more recognizable to its customers.

The utility's chose its new name – Avon Lake Regional Water – based on the need to differentiate and to help customers better understand the utility's roles in their lives, said Todd Danielson, chief utilities executive.

"We felt it was important to help people better comprehend and appreciate what we, as a utility, provide to them," Danielson said.

The utility's decision to rebrand also was driven by the need to implement a 10-year, $100 million capital improvement plan (CIP), which includes water line replacements and combined sewer separations. The CIP necessitates construction that would disrupt customers. Additionally, a large portion of the CIP would involve a major renovation at the utility's water resource recovery facility, leading to a 75% rate increase and benefits virtually invisible to customers.

"Customers need to know what they are paying for, but they also need a better understanding in regard to the water challenges we face," Danielson said. "It's critical that they realize that the time to reinvest in the systems that our predecessors paid for us is now."

– Jeff Gunderson, *WE&T*