How the Water Industry is Evolving and the Impacts of LCRR

The world of water is shifting and evolving. Systems simply cannot operate the same way they did 10 years ago. Like many industries, new technology, updated regulatory requirements, and a changing workforce and cultural landscape are impacting the way the industry must function.

Most significantly, public attention toward water-related issues is growing and regulations that have not been updated in 30 years are being revised. Leaders in the water industry must recognize the impact of this shift and prepare their teams to meet the new challenges. Operationalizing staff with the right mindset and solutions will be vital to keeping up with changes and maintaining compliance with state and federal requirements.

To fully understand the shifting landscape, the team at 120Water sat down with industry executives across the country to discuss what they think is happening in the market and how to best prepare for the coming regulatory changes in the Lead and Copper Rule Revisions (LCRR).

We compiled their insights in this report and are sharing with you their top recommendations for managing through a changing industry as well as their suggestions for preparing your team for LCRR.

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INDUSTRY EXECUTIVES

Charlie Gray
CEO, Chesterfield County Rural Water Co.

President and Lobbyist Principal, South Carolina Rural Water Association (SCRWA)

Charlie began his career in power and light, but has served in the water industry for over 20 years. Charlie has degrees from both Clemson University and the University of North Carolina at Wilmington. In addition to his role with the SCRWA, he is also the chair of the Pee Dee Region Rural Water Association, and is a member of the Water Utility Council of South Carolina, the SC Water Quality Association and the SCHEC Drinking Water Technical Advisory Committee.

Paul Handke
Drinking Water Application Development Manager, Hach

Paul worked at DEP for over 25 years including being the lead in the development of Pennsylvania's Drinking Water Distribution Optimization Program and providing technical and managerial assistance to small systems. Paul was also the Tideflex Mixing System Product Manager for Red Valve Company in Carnegie, PA from 2014-2016. Paul has experience developing and delivering technical training and has a background in drinking water and wastewater.

Dave Hill
Project Manager, Buffalo Water - Veolia North America

David is accountable to the City for reliable water treatment and the distribution network operation, as well as providing excellent service to customers, while assuring compliance with environmental and safety regulations. David got his start in water in 1987 with Indianapolis Water Company and has management experience in private, public, contract operator, and municipal environments. Previously, he worked with Veolia Water out of Indianapolis in multiple management roles from 2003-2010 before becoming the Director of Water at Owensboro Municipal Utilities in Owensboro, KY, from 2010-2014.

Justin Ladner
President, Illinois American Water

Justin reinforces and strengthens customer, regulatory and local government relationships, drives operational and financial results and is the principal external contact for American Water in Illinois. Prior to his current role, Ladner joined American Water in November 2018 as director of National Regulatory Affairs. Before joining American Water, Ladner served as the Governmental Affairs and Policy Manager for Southern Power. In that role, he created and led the government affairs team with a focus on federal, regional, and state legislative and regulatory affairs.

Melissa Meeker
CEO, The Water Tower in Buford, GA

Melissa previously served as the CEO of the Water Environment and Reuse Foundation and was instrumental in the merger of three critical US water-related research foundations. She also served as Executive Director of the South Florida Water Management District and Deputy Secretary of the Florida Department of Environmental Protection.

Isaiah "Ike" Moss
General Manager and Managing Partner, KHAFRA Operation Services

Ike has been in the utility industry for over 40 years with a proven record of success in business development, project management, software solutions, strategic energy initiatives and innovative business plans that generated exceptional revenue to enhance utility operations and network infrastructures. He has developed and marketed smart network solutions for Advanced Metering Infrastructure and Smart Grid Applications.

Jeff Willman
Vice President Water Operations Citizens Energy Group

Jeff has more than 30 years of utility industry experience. His team is responsible for operating the largest water and wastewater utility systems in the state of Indiana, which serve over 600,000 customers. Prior to his current position, Jeff served as Director of Government and External Affairs at Citizens, the Director of Customer Relationships and the Director of Utility Systems Management. Prior to joining Citizens, Jeff was employed at Indianapolis Power & Light Company for 18 years in various management positions.

Top 5 Major Market Trends

How the Market is Shifting and Where to Focus Your Team's Efforts to Maintain Pace

As we spoke with executives, five common themes emerged throughout the interviews, which we've highlighted below:

- 1. Data Management
- 2. Digital Transformation
- 3. Collaboration
- 4. Consumer Education
- 5. Communications

1. Data Management

Historically, most water systems may have kept track of the water assets in their community on paper, and eventually, those paper records were likely transferred to a GIS system or excel spreadsheet. However, the extent of data and assets recorded varies widely from system to system since there has never been significant federal regulation around data collection.

Even the systems that have collected data often find the information to be siloed across various departments, leading to difficulties when attempting to collect and aggregate data. For most utilities, leaning on technology that allows valuable data to be centralized and easily accessible across departments will be a key component of making that data actionable.

> **"A lot of utilities don't even know who owns (manages) the data that is needed...things are often siloed in utilities. Knowing where the data is, knowing how to access the data, knowing who owns the data and then pulling it together can be a real challenge. Small utilities in particular don't often have the resources. They may not have a dedicated IT person...there's [often] not enough hours in the day."**
>
> **- Melissa Meeker**, CEO, The Water Tower

While the acquisition of data can be complex for many water systems, the market is forcing utilities to take action when it comes to how they manage their assets and data. From a regulatory perspective, the Lead and Copper Rule Revisions will require systems to have a complete service line inventory, including both public and private portions of the line, and that inventory will need to be made available to the public. The LSLI will require careful tracking of assets and detailed management of data in order to maintain compliance and provide accurate results to the public.

Public awareness of water quality issues is also driving the market toward increased transparency when it comes to their water. The crisis in Flint, Michigan, drew public attention toward the state of drinking water across the country, and more consumers than ever before are interested in knowing the quality of the water they receive from their local utility.

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> **"If you're really going to educate a customer about water, you're going to have to provide them some data so they can have some means of analysis."**
>
> **- Ike Moss**, General Manager and Managing Partner KHAFRA Operations Services

Well-managed data is a critical component to compliance, consumer education and transparency, and informed decision-making. Forward-thinking utilities must not only collect accurate data, but utilize it to advise the decisions they make regarding replacements and other water projects. Water systems that prioritize data and asset management will, in many cases, find themselves in a better position to access funding for their projects, more prepared to answer consumer and stakeholder questions, and ready to tackle future compliance requirements.

2. Digital Transformation

Whether a large or small system, one consistent market trend we heard was the usage of digital technology and solutions. The digital transformation has come upon the water industry, and systems can no longer ignore or avoid using digital solutions.

Increased regulatory expectations, aging infrastructure and a retiring workforce are creating the perfect storm of efficiency gaps in the world of water, but incorporating digital solutions can bridge those gaps for many systems.

Whether it's technology such as digital meters or software to collect data and manage communications, utilities must find ways to tackle both large projects and day-to-day work more efficiently. Discovering the tasks that can be automated or operated with greater speed and less effort will allow systems of all sizes to focus on those tasks that cannot be automated or done without human intervention.

> **"It's hard to live on paper anymore. [Digital solutions] help ease the workload for operators."**
>
> **- Paul Handke**, Application Development Manager at Hach

For many systems, beyond the obvious budgetary considerations, digital solutions are weighed by ease of implementation and the time it will take to train staff. Limited resources in terms of time and team members can be a stumbling block for adopting new technologies, but utilities must take a long-term approach. Additional resources used on the front end to administer new solutions will certainly be made up in the long run through enhanced efficiencies.

> **"[Utilities] have to be looking at their long-term plan. They need to consider the systems they have in place and whether they're serving the needs of what you need to be doing... if not, then you need to re-tool."**
>
> **- David Hill**, Project Manager at Buffalo Water - Veolia North America

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In other industries, we've seen the rise of technology lead to the decline in staffing needs, a concern that undoubtedly crosses the mind of many water professionals today. But for systems across the country, digital solutions are not replacing workers; rather, they're allowing systems to focus on the most important tasks and projects, and **work faster** with the same amount of manpower.

"Digital technology is not taking your job away, it's making your job more efficient," said Meeker.

3. Collaboration

Like many of the trends we found throughout our interviews, the increasing value of cross-departmental collaboration is driven largely by new regulatory requirements. The Lead and Copper Rule Revisions are going to force collaboration within a water system like never before, from lead service line inventorying and replacement to school sampling and increased public transparency requirements.

Systems of all sizes will likely run into challenges when it comes to internal communication and collaboration. For smaller systems, there are fewer individuals and departments to collaborate with, but finding time to do so can be trickier when there are other vital tasks at hand. For larger systems, the number of cross-departmental stakeholders increases in terms of managing ongoing compliance, so the challenge lies in creating a task force and ensuring each individual involved is aware of their responsibilities and expectations.

"It's a two-edged sword I think...we know there's not a lot of barriers to break down to communicate, but by the same token...carving out the time to put all this information together in an adjustable and presentable format is a challenge in and of itself."

- Charlie Gray, CEO of Chesterfield County Rural Water and President of the South Carolina Rural Water Association

"There are different things [we will] need to do in terms of administering the [new] programs...We just have to make sure we have a well-documented process and people assigned to [tasks]...[The new ruling] will bring on new responsibilities that we just need to make sure are addressed and assigned."

- Jeff Willman, Vice President of Water Operations at Citizens Energy Group

No matter the size of your utility, proper task management across your team or departments will be a vital component of maintaining accuracy and compliance, as well as setting your system up for long-term success.

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4. Consumer Education

While public awareness of water quality and water-related issues has increased in recent years, the general public's knowledge and understanding of their water has not in most cases. Most residents have little to no awareness of clean drinking water: water sources, what it takes to keep drinking water clean and how lead and other contaminants even end up in their taps and fixtures.

"In fact, the lead issue doesn't have anything to do with your water per say, it's with the [pipes and plumbing] it goes through...there's a big misconception about that," said Gray.

All of the industry experts we spoke with agreed that consumers need to be educated on the value of water and how it ends up in their homes and facilities. Particularly in the ongoing aftermath of the Flint water crisis, there is significant public fear around the cleanliness of drinking water, which has unfortunately only increased misconceptions. Many consumers don't realize that not only do most lead and contaminants come from pipelines, plumbing and fixtures rather than the water itself but that in many cities, pipes were installed prior to when most staff began working at the utility.

"I think water has, historically, been taken for granted...just general awareness of the value of water is one of the biggest opportunities [water systems] have...an informed customer base is always good. [Consumers need to] understand there is an aging infrastructure issue in general with water and wastewater...you have to manage expectations. Where there's a need, you have to communicate that need repeatedly so when you address the need, you minimize surprises or disconnects or miscommunication," said Willman.

Keeping consumers engaged and informed about the needs of your local water system builds trust and community support for your efforts. According to the Beverage Marketing Corporation and Kantar Media Intelligence, the bottled water industry spent $203 million on advertising in 2019, which means public water systems are fighting against a strong budget from private companies when it comes to promoting and discussing clean drinking water.

Although there will always be unhappy customers, a more educated consumer base will likely lead to more understanding when upgrades are required and rate increases are needed. When it comes to the long-term vision and goals, systems that inform their consumers will find navigating large projects easier than those who don't take the time to educate.

5. Communications

Working hand in hand with consumer education is communication, both with consumers and other relevant stakeholders.

From a compliance perspective, systems are going to be required to communicate relevant information and efforts around lead removal like never before. The Lead and Copper Rule Revisions will require systems to not only create an inventory of lead service lines, but also make that inventory readily available to the public, which in today's world means an easy-to-navigate dashboard or website. In developing a solid communication strategy, providing good data and easy access to that data will be a key component to success.

"The Lead and Copper Rule will require strategic communication to the customer...there is a chance to cause a lot of fear, so if you don't go about it in a way that easily explains [what is happening] and will help mitigate that, responses will be emotion-based," said Meeker.

Communicating about lead exposure and exceedances certainly has the potential to cause panic in the public's eyes, which means planning communication strategies need to be thought out and planned in advance to avoid PR crises.

Proactive rather than reactive communication when it comes to water programs and projects (lead in particular) is more than just a compliance requirement, but a vital transparency and trust-building exercise within the community as well.

"Customer outreach, education and raising awareness on what the rule is [and] what the actions are to help ensure compliance is very important. In general, transparency, maintaining open lines of communication and a willingness to talk about [lead] and discuss plans all build trust and credibility within the community."

- Justin Ladner, President of Illinois American Water

Water systems that are willing to communicate effectively about their efforts around lead removal and remediation will likely find better understanding and trust from consumers and community stakeholders. Taking this compliance requirement one step further to promote community confidence around utility efforts will ultimately set you up for longer-term success.

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LCRR Recommendations

What Water Execs are Focusing On

The Lead and Copper Rule Revisions (LCRR) represent a major operational burden for utilities and will require significant operative changes from water systems of all sizes to maintain compliance. From our conversations, here's what we heard from industry professionals to put our utility in a position of success.

Understand the rule in totality

Do your research. There are many nuances, new requirements and **updated actions** that will need to be addressed under LCRR. From building out full service line inventories and brand new communications requirements to 1st/5th liter sampling and different trigger levels, there is a lot to tackle.

Depending on the size of your system or the state you operate in, regulations may look different. More will be required of larger systems and some states already have stricter regulations that must be followed, so the industry experts we spoke with recommend taking the time to dive into the ruling and determine which compliance elements will be expected of your specific utility (and when) as the first step in successful compliance planning.

If you're unsure where to start, state agencies or local associations are great resources in supporting water systems and helping them understand the regulatory requirements expected of them.

Start now

For those in the water industry, there has been discussion around potential updates to LCR for years. While the new ruling was put out by the EPA in December of 2020, delays have meant it has not yet officially passed. These legislative setbacks have led many water systems to postpone preparations for LCRR. However, utilities must understand it is not a matter of **will** the new mandate be passed but **when and how stringent** will it be.

The extensive nature of LCRR means delaying the inevitable could be costly in a variety of ways. The Association of State Drinking Water Administrators (ASDWA) **estimates** that the revisions could create between 3.8 million to 5 million additional hours of workload for systems over the next 5 years, which means utilities that begin now will be able to spread out resources more appropriately.

And when considering costs, estimates range between **$28 to $47 billion** to replace lead service lines across the country, which excludes other pricey aspects of the ruling such as testing water in schools and facilities. Once again, the systems that begin now will be able to better manage the inevitable costs that lie ahead.

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"Get started now. There are going to be funds available but you have to put your programs together and you've got to be ready to verify and justify what you're trying to do in order to receive those funds. So the sooner you get started, the better," said Moss.

Create a task force

Whether your system boasts 5 employees or 500, developing the team who will be tasked with managing and implementing the rule is a vital aspect of the planning process. Since many new aspects of the rule have a timeline associated with them, assigning proper roles and ensuring deadlines are met will be critical for compliance.

Almost every single one of the executives interviewed stressed the value of taking a team approach and working collaboratively internally to keep up with the plethora of tasks associated with LCRR and to maintain ongoing compliance.

This may look like monthly meetings to discuss progress toward specific elements of the rule, a detailed project management system and check-ins to discuss roadblocks. No matter how LCRR is managed, our experts suggest putting together the team and keeping everyone accountable to their portion, as this will be a key driver to compliance success.

"Build the muscle"

Many aspects of the rule will not be a simple "one and done." Elements such as school and daycare sampling will be an ongoing compliance expectation that is likely brand new depending on your state. This compliance "muscle" can take time to develop and many of our industry experts suggested beginning the process of compliance before requirements even hit.

"Having an intelligence before it is even required, [will help] you know what you're getting into...Make it easier...the more you know on the front end will save you time and money on the backend," said Hill.

Taking the time to develop a process and gather data before anything is required will allow your system to learn and be more successful once regulations hit. A well-trained team can work more efficiently and effectively than a team unprepared to tackle new expectations and workloads.

Resource funding

One of the biggest questions most utilities have is, "how are we going to pay for these new regulatory requirements?" Unfortunately, the water industry has been historically under-resourced, but there are still plenty of local, state and federal options for funding water programs. Understanding where and how to pay for LCRR requirements is obviously critical, but our experts recommend going beyond just knowing the how.

Actively seeking out **funding sources** now is extremely beneficial. Many funding opportunities may involve conversations with local officials, completing applications or filing grants, all of which take time. Starting down the path of funding now may not only open up more doors but also make resources available exactly when you need them, so your projects aren't delayed by lack of funding.

Find a partner

No matter the size of your team, our experts seemed in agreement that utilities would not be able to tackle such an extensive mandate alone. Even the largest and most sophisticated systems in the nation have gaps that can likely only be filled through external efforts, which is why those interviewed suggested systems begin to search for a partner(s) to fill the areas where you have concerns.

Each utility has unique needs and areas of strength, so finding a partner to support your goals will look different across the board. For some, this may look like working with an engineering firm to fill a gap in project execution. For others, it may look like investing in digital solutions or connecting with consultants to fill data gaps and determine best practices for project success. For many, it will be a combination of engineering, digital solution and consultant support collaborating together with your internal team to manage lead programs efficiently and effectively.

What Does This Look Like in Action?

Implementing strategies for success

In 2019, the City of Asheville, NC, began preparations for the impending Lead and Copper Rule Revisions. Asheville assigned an internal program manager to oversee all elements of their LCR compliance initiatives, including lead service line inventory development, school and childcare facility sampling, standard LCR monitoring events, and eventual replacement work that may be needed. Recognizing their gaps, Asheville sought out a centralized, cloud-based platform to unite all of the data for each element of the program, guidance on how best to approach these efforts, and sampling logistics support to meet the significant increase in sample volume.

Asheville discovered 120Water and recognized their solution could fill each of those gaps. Since 2019, 120Water has helped Asheville map out a multi-year phased approach, starting with inventory development and beginning school sampling now with a small group of schools. 120Water is providing a combination of data aggregation and review services, predictive modeling, and physical validation via potholing to create the final inventory.

Public communication is a key element to LCRR, and 120Water is collaborating with the Asheville communications and project team to develop and execute the communications strategy, including a public-facing dashboard online for validated inventory, a public school sampling results dashboard, training for school administrators on lead sampling communications, and other public campaign content creation such as letters and postcards. Asheville is also utilizing 120Water's sample kits and logistics for each phase, and pitcher/filter kits for any replacements or exceedances at childcare facilities.

Asheville is a prime example of a system that is leaning in to each of the LCRR suggestions brought up by our interviewees. The city is setting itself up for future success by understanding what is expected of them, creating an internal task force, beginning the process now, addressing key areas of compliance, spreading out its budget over the course of several years and bringing in a partner where they need support beyond their internal team.

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If you'd like to learn more about 120Water and see if our solution is the right fit for your LCRR needs, visit us at 120water.com.