



# AWIA 2018 PROVIDES GLOBAL LEADERSHIP FOR THE DRINKING WATER INDUSTRY

by Dr Tom Iseley, Buried Asset Management Institute – International, Louisiana, US; Charles Burtron, Applied Engineering & Science Consulting, Alabama, US; Ron Thompson, Applied Engineering & Science Consulting, South Carolina, US; Dan Hilyer, Opelika Utilities, Alabama, US; and Saleh Behbahani, Louisiana Tech University, Louisiana, US

In 2018 the US passed a new water infrastructure act that will have a major impact on all facets of the drinking water and water utilities industry, including asset maintenance and installation.

In 2018 the US Congress passed new infrastructure guidance, America's *Water Infrastructure Act* (AWIA 2018). The Buried Asset Management Institute-International (BAMI-I) believes that AWIA will be the catalyst that drives American water utilities to develop a Total Asset Management Program (TAMP). BAMI-I has already incorporated the basic requirements of AWIA into its Certified Training in Asset Management (CTAM) 100 course and has formed a partnership with Applied Engineering and Science Consultants, LLC (AES) to provide technical assistance to the

public water system (PWS) manager on the full requirements of AWIA 2018.

## PRIOR TO 2018

In response to the single largest terrorist attack on America, the US Congress passed the *Drinking Water Security and Safety* law in 2002. This law required each PWS to conduct a System Vulnerability Assessments against human and natural threats by no later than 2004.

## AWIA 2018

Across America, public water system managers are planning to dust off their 2004

assessments and update them, but *beware!* The AWIA of 2018 requires community water systems do much more than simply update the 2004 assessment. The scope of inclusion for what is now titled a Risk and Resilience Assessment (R&R) cuts directly to the core of daily PWS planning and operations including water filtration, conveyance and information technology.

## REGULATORY DIVERGENCE

Despite much similarity in structure, the 2018 legislation has several important points of divergence from the 2002 act. The greatest

## THE BURIED ASSET MANAGEMENT INSTITUTE-INTERNATIONAL BELIEVES THAT AWIA WILL BE THE CATALYST THAT DRIVES AMERICAN WATER UTILITIES TO DEVELOP A TOTAL ASSET MANAGEMENT PROGRAM

repercussion is the inclusion of the idea of system resilience as it relates to capital assets. Every asset manager understands that capital asset resilience cannot be established without a comprehensive approach to assessment, planning and policy, the foundational components to TAMP development.

### IS A TAMP REQUIRED?

There are likely few people in America who will state AWIA 2018 explicitly requires the development of a TAMP; however, without conducting assessment and planning activities core to a TAMP, professional ethics standards might be challenged in certifying an R&R assessment.

### COMPLIANCE ASSURANCE

The US EPA (EPA), the national organisation that will establish specific compliance requirements, does not prescribe a specific approach or format for the required R&R assessment and provides a word of warning to anyone who assumes otherwise.

On the EPA website, it pointedly states that "regardless of the use of any standard, method, or tool, the community water system is responsible for ensuring that its R&R assessment and emergency response plan fully address all AWIA requirements".

### ENGINEERING CANON OF ETHICS

The American Society of Professional Engineers includes in its canon of ethics the concepts of complying with published standards and informing a client when a project is likely to not succeed. If the measure of success in the R&R assessment is the achievement of regulatory compliance and the EPA is non-committal to what constitutes a compliant assessment, then a professional

engineer would do well to meet published standards for system resilience assessment such as the EPA's *Best Practices for Asset Management*, ISO 55001 or the professional practices taught in BAMI-I's CTAM course.

### UNINTENDED CONSEQUENCE?

Could the requirement of a TAMP be what the EPA intended? The EPA has been working to proliferate TAMPs for some time with:

- the establishment of published best practices in the early 2000s
  - assessment of the state of asset management program development in the US in 2012 and again in 2018
  - the funding of two asset management training certification programs, including the CTAM in partnership with BAMI-I.
- The primary intent of the 2002 law was to assess a system's vulnerability to a terrorist attack or other intentional disruption and was couched in a national security act.

In contrast, the 2018 requirements place a much greater focus on system resilience against natural risks as part of a water infrastructure act update. Intentional or not, AWIA 2018 creates a clear path forward for the EPA to proliferate TAMPs throughout American PWSes.

### NOT JUST FOR LOCAL WATER UTILITIES

With a further review of AWIA 2018, the local water manager would see some interesting requirements placed on both the EPA and the 50 autonomous states. For the EPA, some requirements include:

- assessment of costs to replace all lead service lines
- school and childcare lead testing grants

- drinking water fountain replacement grants (due to lead contamination). For the states, some requirements include:
- establish practices to encourage development of asset management plans by PWSes
- provide technical assistance and train operators to implement asset management plans
- requirements for failing public water systems to assess ownership/management options.

### LEAD CONTAMINATION

AWIA 2018 comes amid one of the largest environmental failures in US history that exposed thousands of citizens to lead contaminants in Flint, Michigan through the PWS. This event has placed the safety of public water at the top of many news cycles across America and has led to significant activity in the regulatory community.

Even as this article is produced, the EPA has just announced a revision to the national lead contamination rule.

### A BUSTLE OF ACTIVITY

In response to each of the requirements in AWIA 2018, people and institutions will begin to act. The EPA will issue reports on failing system interaction, water system improvement needs and cost to replace lead service lines.

The EPA will pump out many new regulatory and program guidelines, advertise and manage high-profile lead testing and remediation grants in public schools, and conduct national communication campaigns to advertise its work. States will establish new programs surrounding asset management programs, revise high-profile infrastructure loan programs, develop and advertise numerous rules with stimulating words and phrases such as 'risk', 'resilience', 'lead testing', 'interaction', 'consumer confidence' and 'emergency response'.

Even the local water utility will get in on the action through the R&R and emergency response plan (ERP) with all the necessary public notices and agency coordination efforts associated with them. Add to that the

## AS THESE PROGRAMS MATURE, SIGNIFICANT ADDITIONAL INPUT WILL BE NEEDED FOR ALTERNATIVES FOR MAINTENANCE, NEW CONSTRUCTION AND EMERGENCY RESPONSE ACTIVITIES TO SUPPORT IMPLEMENTATION AND LONG-TERM SUSTAINABILITY.

introduction of phrases to the annual Consumer Confidence Report such as 'corrosion control' and an increased frequency in its publication.

The local education community will also mobilise to seek voluntary lead testing grants and drinking water replacement grants. Should lead be discovered in a school, entire communication campaigns will be generated to appropriately engage students, parents and the community.

Of course, emergency managers may be overwhelmed with the amount of coordination by water utilities and the demand to exercise ERPs that will generate years of rulemaking and funding quests across the entire emergency management community.

### UNINTENDED CONSEQUENCES

The adoption of AWIA 2018, in the full context of current events, will lead to many unintended consequences for the drinking water utility. These consequences will largely result in increased costs and increased scrutiny. Costs will be driven by increased labour, increased operational velocity, increased technology demands and increased professional services. Scrutiny will increase from all sources and certain water systems are likely to see their management teams taxed to breaking points.

The utility can offset some of these challenges by proactively addressing the anticipated consequences now and identifying the likely actions the water utility will have to take, assigning an internal champion and establishing a date to finalise preparation will help minimise the anticipated strains on local water systems.

AES has established a free poster to assist the PWS to anticipate the potential local consequences from this bustle of activity and proactively organise responses that mitigate demands on the organisation.

The poster can be found under the 'tools' section at [www.awiacompliance.com](http://www.awiacompliance.com)

### BAMI-I'S CTAM PROGRAM

The CTAM initiative – which eventually became BAMI-I – began in 2003 within Atlanta's Department of Watershed Management. As BAMI-I conducted an EPA grant program (2006–08) with Louisiana Tech University, Virginia Tech, The University of Texas at Arlington and the Georgia Rural Water Association as subcontractor. It became clear that vulnerability assessment was a necessary component of an asset management program.

BAMI-I's CTAM course teaches fundamentals of asset management: how to develop, implement and finance a TAMP. BAMI-I also teaches how strategic, operational and tactic planning are critical components of developing and implementing a TAMP.

### BAMI-I'S AWIA PROGRAM

BAMI-I provides a comprehensive four-course program with two levels of certification. At a recently conducted four-day CTAM classroom course with Atlanta's Department of Watershed Management, Dr Iseley asked the cohort about their level of familiarity with AWIA 2018 and the actions they were taking to achieve compliance.

It was not surprising – based on the polling of drinking water managers that Dr Iseley has conducted since January – to find that only 1 in 34 drinking water professionals are aware AWIA was passed. This is frightening, considering that significant regulatory deadlines are now a mere six months away.

Fortunately, many forward-thinking members in the industry who have been working tirelessly to prepare for the scenario as we see today. AES Principal Ron Thompson taught the CTAM 100 content on

day one of the training in Atlanta.

Since the release of AWIA 2018, Mr Thompson and his team have devoted much time and effort to studying AWIA 2018, both the enumerated requirements as well as the implied requirements. To assist others in understanding these implications and achieving compliance in each utility's upcoming round of state sanitary surveys, AES has developed tools, programs and templates. Mr Thompson also successfully updated the CTAM course to demonstrate the high impact relationship of AWIA to asset management.

Knowing the significant impacts of AWIA on asset management and having seen AES' thoughtful and common-sense approach, BAMI-I has formed a partnership with AES to ensure all PWS managers appreciate the core need for TAMP development at the centre of AWIA 2018 compliance.

### TRENCHLESS INDUSTRY INPUT

The implementation of AWIA 2018 requirements necessitate maximising cost-effective approaches to asset management. This puts more than 100,000 American PWSes in a situation of needing immediate technical assistance by the trenchless industry for assessment and replacement of assets to enhance resiliency of the water distribution systems. As these programs mature, significant additional input will be needed for alternatives for maintenance, new construction and emergency response activities to support implementation and long-term sustainability.

### GLOBAL IMPACTS

With the implementation of AWIA 2018, the macro-economic forces within the US will finally be brought to bear on the challenges of water system reliability and sustainability. This creates a powerful new opportunity to fund related research and development within the global water industry. The resulting approaches will be especially beneficial in developing countries, as technical and policy advancements in service reliability and sustainability are applied beyond the American water ecosystem. **i**

For more information visit [www.awiacompliance.com](http://www.awiacompliance.com)

# BRANCHING INTO THE AMERICAS

Market innovator ImpulseRadar has appointed new distribution partners in Central and South America. With these new partnerships, the company hopes to expand the reach of its cutting-edge GPR technologies to even more work sites around the globe.

ImpulseRadar's ground penetrating radar (GPR) products allow trenchless companies to maximise productivity through the rapid collection of high-quality data and a modular system able to meet a user's specific needs.

These GPR solutions are built on the latest real-time sampling technology, offering exceptional bandwidth and dynamic range, making them ideal for infrastructure companies looking to obtain information about what lies beneath the surface of the earth. Headquartered in Sweden, ImpulseRadar is making inroads all around the world, including new deals in Central and South America that will help maximise the use of the company's innovative technology.

### SOUTH AMERICA

DRM Latinoamérica signed with ImpulseRadar to become the company's new distribution partner in Argentina, Chile, Peru and Uruguay. DRM is a network of regional companies that provide a variety of technology solutions, including GPR, resistivity, electromagnetics, seismics and more.

The new partnership will give ImpulseRadar customers in these regions access to DRM's full suite of support services, including training and the provision of expert geophysical services. DRM President Dr Macario Conti says the company's customers were excited to gain access to ImpulseRadar's quality GPR products.

"We are very impressed with their new GPR technology, particularly the data quality from the antennas, the wireless capability, and the overall ease-of-use in the field," says Dr Conti.

"From long-established personal relationships with key ImpulseRadar team members, we know they are committed to listening to both their representatives and their customers alike to continuously push for new and better GPR solutions."

### MEXICO AND CENTRAL AMERICA

In Mexico and Central America, ImpulseRadar has found a new distribution partner in Instrumentos Geocientíficos, S. de R.L. (Goelec). Goelec has been heavily

involved in the supply of a broad range of equipment for geophysics, mining, geotechnics, security and other specialised applications for more than 30 years and the company represents some of the world's leading brands in these fields.

As with the South American partnership, ImpulseRadar's new agreement will increase the geographic reach of its services and provide an access point into new markets. Goelec also offers instrument rental, geophysical exploration services and special consulting services to satisfy all of its customers' needs. ImpulseRadar CEO Tommy Leijon says the company is very pleased to be working with Goelec.

"Their expertise in the provision of products and services, including GPR, for geophysical and geotechnical applications, makes them the ideal partner to support our growth in this unique market and across the Central American region," he says.

Goelec is headquartered in Aguascalientes, Mexico. **i**

For more information visit [www.impulseradar.se](http://www.impulseradar.se)



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ImpulseRadar Sweden AB, Storgatan 78  
SE 939 32 Malå, Sweden | +46 953 100 08

ImpulseRadar USA, Inc., 4000 Faber Place Drive  
Suite 300, Charleston, SC 29405 | +1 843 412 0206

[www.impulseradar.se](http://www.impulseradar.se)  
[info@impulseradar.se](mailto:info@impulseradar.se)

