Integrated Resource Management, Inc.

October 19, 2022

The Honorable Gene Yaw
Pennsylvania Senate
362 Main Capitol
Harrisburg, PA 17120

Re: Legionnaires' Disease Prevention

Dear Senator Yaw:

On behalf of Integrated Resource Management, Inc. (IRM), an innovative water resources development, environmental compliance and project management firm comprised of water resources professionals with extensive experience providing solutions and assistance related to water, wastewater and environmental issues in both the private and public sectors, I am writing to thank you for holding the upcoming meeting regarding Legionnaires' disease prevention in Pennsylvania.

Access to safe drinking water is a human right and one that I have fought to protect for decades. For this reason, I am eager to participate in the briefing to discuss how to have a meaningful impact on preventing waterborne illness.

Specific to drinking water, we face significant challenges in ensuring that consumers receive water free of contaminants. This includes *legionella*, the bacteria that causes Legionnaires' disease. *Legionella* bacteria is commonly found in our environment in water and soil. The bacteria is present in our water sources and is introduced into our public water system. As drinking water travels from reservoirs and other water sources to treatment plants and into what can be miles of piping in water distribution systems before reaching our homes, facilities and workplaces for human use, *legionella* bacteria can survive and thrive in this system.

In fact, there are many factors that can cause the bacteria to proliferate in the public water distribution system including biofilm which houses the bacteria and serves as its food source, water temperature, stagnation, depleted disinfectant, water treatment changes and others. Further, disruptive events, such as source water changes, water main breaks, service interruptions, construction, and heavy rainfall can cause *legionella* bacteria that has amplified in the system to become dislodged and enter our homes where the average family of four uses as much as 300 gallons a day with direct exposure during bathing/showering, drinking and other direct contact uses.

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A critical fact that is often overlooked is that 96% of Legionnaires' disease cases reported to the CDC annually as required are individual cases, unrelated to outbreaks (two or more cases in common area and short timeframe). Given the intensity of water use and exposure in homes, especially among our most vulnerable populations who are homebound with comorbidities and immune compromised, our focus must be on ensuring that water is delivered *legionella* free. To be clear, *legionella* doesn't just materialize in plumbing systems – it is introduced with the water supply. Preventing Legionnaires' disease requires ensuring that our water supply is contaminant and bacteria free, through proper management and treatment techniques which both kill and starve *legionella* so it cannot proliferate.

The role that public water systems play in causing Legionnaires' disease is well documented[1]. The water crisis in Flint, Michigan serves as an egregious example of a public water system implicated as the source of a significant Legionnaires' disease. A cluster of 87 cases of Legionnaires' disease were reported in the months following the decision by the city of Flint, Michigan to switch water sources from Lake Huron to the Flint River. There are numerous instances when public water systems have been implicated in Legionnaires' investigations, and a growing acknowledgement by the U.S. EPA.

Effective prevention of Legionnaires' disease must address the systemic nature of this bacteria. Proper management and monitoring of water from source to treatment plant and throughout our complex public water systems is the most effective method to address *legionella* at the most proximal source before it can expose humans to the bacteria with water use.

For these reasons, I strongly urge that state efforts should be focused on ensuring that our public distribution systems are properly managed, treated and monitored to prevent legionella and other pathogens from entering our homes, workplaces and facilities. As an expert in this field, I would welcome the opportunity to work with you and your Committee to enact meaningful policy to address waterborne pathogens like *legionella* at its source in Pennsylvania.

Sincerely,

Robert W. Bowcock
Integrated Resource Management, Inc.
Founder

[1] Gleason, J. A., & Cohn, P. D. (2022). A review of legionnaires' disease and public water systems–Scientific considerations, uncertainties and recommendations. International Journal of Hygiene and Environmental Health, 240, 113906.