

WATER ENVIRONMENT FEDERATION

Title: Wastewater-based Surveillance Position Statement

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Expiration Date: May 5, 2027

BACKGROUND

As infectious disease outbreaks continue to occur across the world at an accelerated pace due to the impact of globalization, organizations like the World Health Organization, the National Institutes of Health, and the United States Agency for International Development have supported the need for adaptive, population health surveillance systems. Wastewater-based epidemiology, or wastewater-based surveillance (WBS), offers one such infection monitoring and trending tool. WBS is the systematic testing, analysis, and interpretation of these wastewater data to inform public health practice and potentially develop early warning systems to reduce the impact and costs of outbreaks. Infectious agents, pharmaceuticals, biomarkers, and metabolites shed in feces, urine, sweat, saliva, or other bodily excretions that end up in sanitary wastewater can provide a snapshot of the status of population health in communities served by collection systems. Emerging infectious disease (such as *Candida auris*), endemic pathogens (such as foodborne bacteria like *Campylobacter*, *Salmonella*, Shiga toxin-producing *E. coli*), and antibiotic resistance genes can all be tracked through the monitoring of untreated, sanitary wastewater.

WBS is a rapidly developing technology that highlights the critical public health role the water sector plays; however, support for wastewater utility engagement is needed to effectively implement the meaningful collaborations needed for sustainable WBS programs.

ALIGNMENT WITH WEF'S MISSION AND CRITICAL OBJECTIVES

Since 1928, it has been the mission of WEF and its members to protect public health and the environment. This position statement is consistent with our mission and the following critical objectives:

- [2](#) – Providing a broad range of professional content and programming that is relevant and widely valued by the water sector worldwide;
- [3](#) - Generating an increased public awareness of the value of water leading to increased funding to protect water quality through appropriate levels of infrastructure, management approaches, and services; and

POSITION

WEF, in leading the effort to implement WBS, supports the following actions towards effective participation in WBS by the water sector:

- Leading WBS engagement opportunities for the water sector by building and sustaining peer networks that facilitate information sharing.
- Supporting development of standardized sampling and analytical methods in collaboration with government water sector partners.
- Providing relevant and current information on WBS theory and practice, including descriptions of roles and responsibilities, funding opportunities, sampling and analytical methods, and expectations of the appropriate use of the data.
- Identifying and addressing barriers to water sector participation in WBS activities, especially those that apply to small, resource-limited utilities.
- Promoting robust government funding of WBS programs.
- Facilitating connections between public health departments and wastewater utilities mutually interested in WBS activities.
- Working with partners to advance the development of ethical guidelines for WBS implementation.
- Continuing to contribute to the establishment of protocols for workforce protection at WRRFs and within the collection system.
- Promoting alliances, partnerships, or collaboration agreements for sharing wastewater surveillance data across WBS organizations around the world.