

Current Systems and Regulatory Support

Problem Summary and Decision Context

Problem: Regulatory mandates under the Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) require periodic review. The Contaminant Candidate List (CCL) undergoes revision on a five year cycle, and contaminants listed on the CCL are monitored under the Unregulated Contaminant Monitoring Rule (UCMR). Many water systems, particularly small systems, continue to face challenges from existing regulations.

Objectives:

- Supply research results to support federal regulations and guidance.
- Provide strategies to regions, states, and communities for improved regulatory compliance.
- Provide rapid and effective response to emergencies, such as harmful algal bloom outbreaks, where appropriate.

Utility to Agency

This project will provide EPA with the following:

- Research support for existing water-related rules in close collaboration with EPA Regions and Program Offices.
- Technical support for imminent issues, such as direct potable water reuse.
- Research results to help communities improve compliance with existing regulations—with an emphasis on small systems.

Tasks and Projected Deliverables

Task 6.01A: *Evaluating current wastewater treatment plants for contaminant removal*

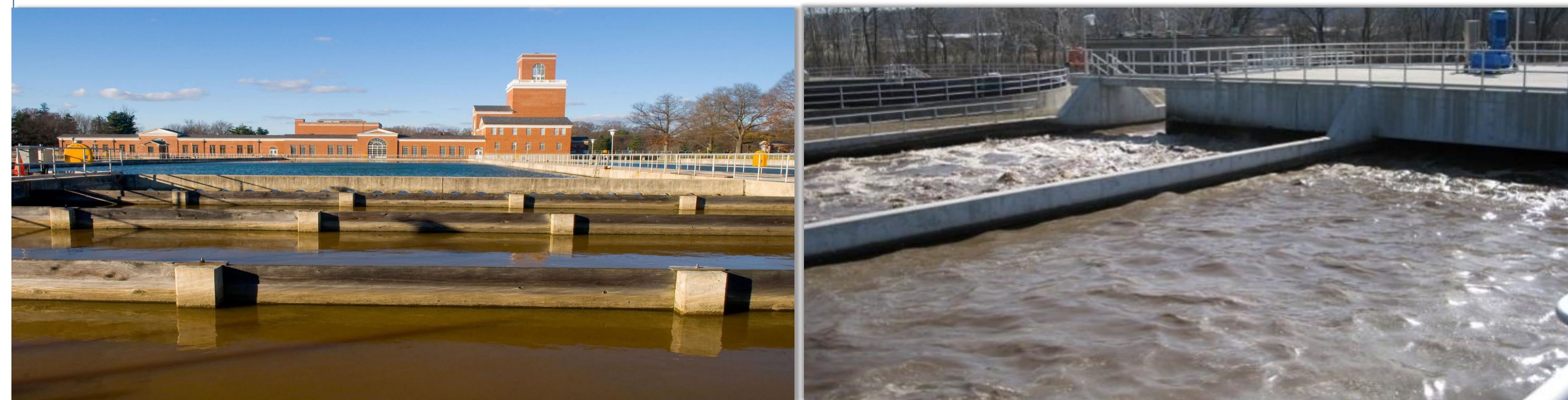
Task 6.01B: *Analytical methods and monitoring for regulatory and utility purposes*

Task 6.01C: *Cost and effectiveness of water treatment to achieve regulatory compliance*

Task 6.01D: *Improving the scientific foundation of regulatory decisions*

Examples of expected deliverables:

- Evaluation of currently existing and market-ready water resource recovery systems.
- Improved analytical methods and tools for rapid quantitative assessment of CCL, UCMR, and emerging contaminants.
- Evaluation of existing and market-ready technologies for the collection, treatment, and distribution of water.
- Health effects data on contaminants that are prioritized based on existing, but incomplete, health information including individual and groups of contaminants.



Future Directions

- Development of analytical tools for comprehensive and rapid assessment of algal toxins, disinfection by-products (DBP), microbes, and other emerging contaminants.
- Apply a suite of physiologically-based pharmacokinetic models to assess human health impacts from regulated trihalomethanes.
- Advance our understanding of changing source water characteristics and water treatment scenarios on DBP formation and contaminant transformation products.

Partner Engagement Opportunities

Partners and potential collaborators:

- EPA Program Offices and Regions
- Water Research /Water Environment Research Foundation
- Water Reuse Research Foundation
- Environmental Research Institute of the States
- Association of State DW Administrators
- National Association of Clean Water Administrators