



Date Posted: Monday, September 26, 2022

REQUEST FOR PROPOSALS (RFP)

Integrating Wastewater-Based Epidemiology and Clinical Surveillance for Public Health and Utility Operations (RFP 5182)

Due Date: Proposals must be received by **3:00 pm Mountain Time on Tuesday, December 13, 2022**

WRF Project Contact: Lola Olabode, lolabode@waterrf.org

Project Sponsors

This project is funded by The Water Research Foundation (WRF) as part of WRF's Research Priority Program.

Project Objectives

- Identify what data elements are being generated with clinical surveillance and how wastewater-based epidemiology (WBE) methods can be employed to expand the scope and integrity of the typical clinical data spectrum inform public health decision makers and the general public.
- Inventory and characterize ubiquitous historical and emerging infectious micro agents present in water systems that are usually difficult to detect and propose how WBE methods can improve the scope and timeliness of watershed and community surveillance.
- Compare and explain how to blend clinical data with WBE metrics to help generate actionable information for timely, reassuring decision making regarding mitigation of infectious agents' potential risk in water systems, and system damage causing closure or failure.
- Through new modelling, demonstrate how WBE metrics and clinical data can inform responsive public health policy for the mitigation of potential disease outbreaks originating in water systems.
- Contrast and justify minimum thresholds of clinical data and WBE metrics for when a water system should implement mitigation measures at utilities to preempt potential and latent disease outbreaks.

Budget

Applicants may request up to \$225,000 in WRF funds for this project.

Note: Proposers should align project objectives/tasks with the budget using a stepwise/task order approach in the research scope of work or work plan. This can be presented in a gantt-style chart.

Background and Project Rationale

Community health conditions and drinking water quality are inextricably linked in many communities due to the impact of water reuse on source waters—especially in the context of climate change. Therefore, sudden changes in community health (e.g., disease outbreaks) could potentially challenge

water infrastructure and increase public health risks. Similarly, it is well known that waterborne pathogens can also be the initial drivers of changes in community health.

Wastewater systems provide an important public health function; however, water and wastewater treatment functions and public health protection functions are largely treated as separate entities at all levels of government. This investigation should focus on finding new ways to bridge that gap. WBE successes during the COVID pandemic opened the door; it's time to step through the doorway.

WBE appears to be a largely untapped resource for understanding inputs into wastewater systems and, ultimately, into drinking water sources and recreational waters. For example, norovirus outbreaks could be communicated to wastewater/water utilities so they might be aware of spikes in pathogen loads. The potential value of using WBE to inform public health decision making has been demonstrated over the last two years through the COVID-19 pandemic. More recently, WBE has also demonstrated potential value through supplementing clinical surveillance of monkeypox virus infections; monkeypox DNA is being detected in some communities' wastewater before any cases are reported. In addition, although WBE has been used for poliovirus surveillance off and on since the 1930s, recently, interest in using it to track the extent of vaccine-derived poliovirus infections in the United States has increased. In New York state, wastewater was found to contain poliovirus genetically linked to a case of paralytic polio.

This project would expand the types of parameters tracked through WBE, enabling the integration of public health assessment (e.g., disease incidence tracking) with drinking, wastewater, and recreational water systems. Prior to COVID-19, communication between local public health agencies and water/wastewater utilities was limited in many communities, presenting an opportunity to better leverage the data generated in each of these sectors for their mutual benefit.

Research Approach

This RFP is intentionally flexible in the research approach to encourage creativity and originality from proposers. Study design is a critical element to a successful public and community health study, including practice and tracking activities. Proposers should describe how they will conduct the research to meet the objectives listed above.

The following items should be considered in the study/research approach as a starting point.

- This project can compare and contrast 'novel' datasets across communities of varying sizes.
- This project can focus on data being generated by local stakeholders but could also leverage new national-level datasets (e.g., the National Wastewater Surveillance System of the Centers for Disease Control and Prevention (CDC)).
- Proposers can explore and review what is reportable versus what is routinely tracked nationally and internationally.
- Proposers should describe current and potential funding models to cover the cost—beyond the initial wastewater sample collection and shipping—of wastewater-based epidemiology sample analysis, interpretation of results, and dissemination of results to the public, public health, and One Water sectors.

Expected Deliverables

The Foundation anticipates innovative, proactive, forward-thinking deliverables and products and encourages creativity and originality from proposers. Ideally, deliverables should outline and showcase the data generated by each sector—public health (e.g., clinical surveillance data) and water/wastewater (e.g., wastewater-based epidemiology)—and be leveraged to more rapidly respond to emerging

challenges, mitigate challenge impacts, and better protect public health, thus demonstrating the value of WBE in supporting community health.

Proposers are expected to articulate and outline what a successful deliverable(s) will look like.

Traditional deliverables such as the following could facilitate more ideas that will be useful to the water and public health sector.

- Guidance Research Report/Manual
- Webcast, Conference Presentation, Workshop (consider plan to document workshop)
- Field Demonstration, Research Roadshow
- Fact Sheet, Case Study, Infographic, Video, etc.
- Web Tool (consider plan for maintenance)
- Peer-Reviewed Journal Article
- Standard Operating Procedures (SOPs)
- Decision-trees

Communication Plan

Please review WRF's *Project Deliverable Guidelines* for information on preparing a communication plan. The guidelines are available at <https://www.waterrf.org/project-report-guidelines>. Conference presentations, webcasts, peer review publication submissions, and other forms of project information dissemination are typically encouraged.

Project Duration

The anticipated period of performance for this project is 18 months from the contract start date.

References and Resources

The following list includes examples of research reports, tools, and other resources that may be helpful to proposers. It is not intended to be comprehensive, nor is it a required list for consideration.

Diaz, J. H. 2021. "The Disease Ecology, Epidemiology, Clinical Manifestations, Management, Prevention, and Control of Increasing Human Infections with Animal Orthopoxviruses." *Wilderness & Environment Medicine*, 32 (4): 528-536. <https://doi.org/10.1016/j.wem.2021.08.003>.

Ersel, M. 2016. "Water and Sanitation Standards in Humanitarian Action." *Turkish Journal of Emergency Medicine*, 15 (Suppl 1): 27-33. <https://doi.org/10.5505/1304.7361.2015.48753>.

Paulson, C., W. Broley, L. Stephens, and Brown and Caldwell. (2017) *Blueprint for One Water*. Project 4660. Denver, CO: Water Research Foundation.

Sobsey, M. D. 2022. "Absence of Virological and Epidemiological Evidence that SARS-CoV-2 Poses COVID-19 Risks from Environmental Fecal Waste, Wastewater, and Water Exposures." *Journal of Water and Health*, 20 (1): 126-138. <https://doi.org/10.2166/wh.2021.182>.

Water Environment Federation. 2022. "Public Health and Water Conference & Wastewater Disease Surveillance Summit." Accessed September 16, 2022. <https://www.wef.org/PublicHealth>.

Wurtzer, S., P. Waldman, A. Ferrier-Rembert, G. Frenois-Veyrat, J. M. Mouchel, M. Boni, Y. Maday, OBEPINE Consortium; V. Marechal, and L. Moulin. 2021. "Several Forms of SARS-CoV-2 RNA Can Be Detected in Wastewaters: Implications for Wastewater-Based Epidemiology and Risk Assessment." *Water Research*, 198: 117183. <https://doi.org/10.1016/j.watres.2021.117183>.

Proposal Evaluation Criteria

The following criteria will be used to evaluate proposals:

- Understanding the Problem and Responsiveness to RFP (maximum 20 points)
- Technical and Scientific Merit (maximum 30 points)
- Qualifications, Capabilities, and Management (maximum 15 points)
- Communication Plan, Deliverables, and Applicability (maximum 20 points)
- Budget and Schedule (maximum 15 points)

Proposal Preparation Instructions

Proposals submitted in response to this RFP must be prepared in accordance with the WRF document *Guidelines for Research Priority Program Proposals*. The current version of these guidelines is available at <https://www.waterrf.org/proposal-guidelines>, along with *Instructions for Budget Preparation*. The guidelines contain instructions for the technical aspects, financial statements, indirect costs, and administrative requirements that the applicant must follow when preparing a proposal.

Proposals that include the production of web- or software-based tools, such as websites, Excel spreadsheets, Access databases, etc., must follow the criteria outlined for web tools presented in the Web Tool Criteria and Feasibility Study for The Water Research Foundation Project Deliverables at <https://www.waterrf.org/project-report-guidelines#deliverables>.

Eligibility to Submit Proposals

Proposals will be accepted from domestic or international entities, including educational institutions, research organizations, governmental agencies, and consultants or other for-profit entities.

WRF's Board of Directors has established a Timeliness Policy that addresses researcher adherence to the project schedule. The policy can be reviewed at <https://www.waterrf.org/policies>. Researchers who are late on any ongoing WRF-sponsored studies without approved no-cost extensions are not eligible to be named participants in any proposals. Direct any questions about eligibility to the WRF project contact listed at the top of this RFP.

Administrative, Cost, and Audit Standards

WRF's research program standards for administrative, cost, and audit compliance are based upon, and comply with, Office of Management and Budget (OMB) Uniform Grants Guidance (UGG), 2 CFR Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, and 48 CFR 31.2 Contracts with Commercial Organizations. These standards are referenced in WRF's *Guidelines for Research Priority Program Proposals*, and include specific guidelines outlining the requirements for indirect cost negotiation agreements, financial statements, and the Statement of Direct Labor, Fringe Benefits, and General Overhead. Inclusion of indirect costs must be substantiated by a negotiated agreement or appropriate Statement of Direct Labor, Fringe Benefits, and General Overhead. Well in advance of preparing the proposal, your research and financial staff should review the detailed instructions included in WRF's *Guidelines for Research Priority Program Proposals* and consult the *Instructions for Budget Preparation*, both available at <https://www.waterrf.org/proposal-guidelines>.

Budget and Funding Information

The maximum funding available from WRF for this project is \$225,000. The applicant must contribute additional resources equivalent to at least 33 percent of the project award. For example, if an applicant requests \$100,000 from WRF, an additional \$33,000 or more must be contributed by the applicant. Acceptable forms of applicant contribution include cost-share, applicant in-kind, or third-party in-kind that comply with 2 CFR Part 200.306 cost sharing or matching. The applicant may elect to contribute more than 33 percent to the project, but the maximum WRF funding available remains fixed at \$225,000. **Proposals that do not meet the minimum 33 percent of the project award will not be accepted.** Consult the *Instructions for Budget Preparation* available at <https://www.waterrf.org/proposal-guidelines> for more information and definitions of terms.

Period of Performance

It is WRF's policy to negotiate a reasonable schedule for each research project. Once this schedule is established, WRF and its sub-recipients have a contractual obligation to adhere to the agreed-upon schedule. Under WRF's No-Cost Extension Policy, a project schedule cannot be extended more than nine months beyond the original contracted schedule, regardless of the number of extensions granted. The policy can be reviewed at <https://www.waterrf.org/policies>.

Utility and Organization Participation

WRF encourages participation from water utilities and other organizations in WRF research. Participation can occur in a variety of ways, including direct participation, in-kind contributions, or in-kind services. To facilitate their participation, WRF has provided contact information, on the last page of this RFP, of utilities and other organizations that have indicated an interest in this research. Proposers are responsible for negotiating utility and organization participation in their particular proposals. The listed utilities and organizations are under no obligation to participate, and the proposer is not obligated to include them in their particular proposal.

Application Procedure and Deadline

Proposals are accepted exclusively online in PDF format, and they must be fully submitted before 3:00 pm Mountain Time on Tuesday, December 13, 2022.

The online proposal system allows submission of your documents until the date and time stated in this RFP. To avoid the risk of the system closing before you press the submit button, do not wait until the last minute to complete your submission. Submit your proposal at:

<https://forms.waterrf.org/222554567956873>.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Lola Olabode at (571) 384-2109 or lolabode@waterrf.org. Questions related to proposal submittal through the online system may be addressed to Caroline Bruck at (303) 347-6118 or cbruck@waterrf.org.

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The following utilities have indicated an interest in possible participation in this research. This information is updated within 24 business hours after a utility or an interested organization submits a volunteer form, and this RFP will be re-posted with the new information. **(Depending upon your settings, you may need to click refresh on your browser to load the latest file.)**

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