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REQUEST FOR PROPOSALS (RFP)

Investigation of Alternative Management Strategies to Prevent PFAS from Entering Drinking Water Supplies and Wastewater (RFP 5082)

Due Date: Proposals must be received by 2:00 pm Mountain Time on **Thursday, October 15, 2020**

WRF Project Contact: Mary Messec Smith, msmith@waterrf.org

Project Sponsors

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

Project Objective

The overall goal of this project is to provide actionable strategies that lead to effective management of per- and polyfluoroalkyl substance (PFAS) sources impacting drinking water treatment plants and water resource recovery facilities. Key objectives include the following:

- Summarize and provide methodologies to identify potential point and nonpoint sources in the watershed and sewershed, elaborating upon the relative importance of different sources in terms of potential health impacts, treatability, source control, and occurrence.
- Investigate categories of nonpoint sources, such as PFAS-containing products commonly used in commercial, institutional, and other sectors, that collectively enter sewers and water supplies, potentially adding significant and diverse quantities of PFAS.
- Summarize appropriate applications of effective pre-treatment and mitigation measures, such as best management practices (BMPs), permitting at point sources, and potential upstream regulatory and legislative measures for nonpoint sources.
- Summarize impacts of wastewater effluent PFAS on drinking water utilities. Available findings of current WRF project 5031 should be incorporated into this summary.
- Develop a roadmap of multiple strategies to mitigate PFAS prior to entry into drinking water treatment plants and water resource recovery facilities.

Budget

Applicants may request up to **\$350,000** in WRF funds for this project. WRF funds requested and total project value are evaluation criteria considered in the proposal selection process.

Background and Project Rationale

PFAS are highly resistant to decomposition in both the environment and in the human body, making them a high priority for state and federal regulatory agencies because of their potentially harmful human health effects at low concentrations. Their persistence, as well as their widespread manufacture and use in a large variety of products, has made PFAS a global problem. Although large sources of PFAS contributions, such as airports and military bases (firefighting foams), PFAS manufacturing facilities,

chrome plating operations, landfills, and others, may be relatively easy to identify, the ubiquitous nature of PFAS can make it difficult to identify the many smaller sources, such as consumer products, which can collectively add a significant quantity and diversity of PFAS to drinking water supplies and wastewater influent.

Pre-treatment and source mitigation are important steps in preventing the entry of PFAS into drinking water treatment plants and water resource recovery facilities. These measures can reduce a utility's capital and operations and maintenance (O&M) outlay substantially by placing some of the burden of PFAS removal back on the source contributor. However, state and local water professionals often struggle to locate and effectively mitigate PFAS at their sources, both for the larger, more obvious sources, and the numerous uncontrolled nonpoint sources such as consumer products. This research effort will lead to strategic guidance and resources to help water professionals address PFAS issues by summarizing steps to identify potential sources and determine effective mitigation measures such as BMPs, permitting criteria, pre-treatment options, consumer education and outreach, and upstream regulatory and/or legislative actions to address nonpoint sources.

This project is funded as part of WRF's Research Area, "Management, Analysis, Removal, Fate and Transport of Per- and Polyfluoroalkyl Substances (PFASs) in Water," which includes the following topics:

- Analytical method assessment
- Sources and vulnerabilities
- Behavior, fate, and transport
- Treatment effectiveness
- Risk communication strategies

This project is intended to address the second topic, though it may include others. It is a natural progression from the most recently funded project under this Research Area, *Occurrence of PFAS Compounds in U.S. Wastewater Treatment Plants* (5031), as the occurrence data will be important in identifying different types of point sources and in investigating the impacts of PFAS from wastewater effluent on drinking water treatment plants. Potential proposers are encouraged to review the online project updates located on the WRF website to avoid duplication of effort and to leverage the ongoing progress of this project. For more information on project 5031, please email Mary Smith at msmith@waterrf.org.

Research Approach

This RFP is intentionally flexible in the research approach to encourage creativity and originality from proposers. Proposers should describe how they will conduct the research to meet the objectives listed above. The amount of funding available for this project was developed to allow for potential laboratory analyses on a significant scale. Because the requested funding amount is an important consideration for this project, proposals that do not include laboratory analyses are expected to budget for significantly less than the available funding unless extraordinary deliverables and work efforts justify the entire available funding amount. The following approaches are intended as potential starting points:

- Research teams may wish to investigate sources in the watershed and the sewershed through monitoring of PFAS-impacted areas, particularly where sources are unknown. Both groundwater and surface water sources may be monitored using analytical methods to identify unknown PFAS compounds to sufficiently characterize various sources. While such a non-targeted approach is more costly, if thoughtfully executed it may provide a more complete characterization of sources. Multiple monitoring events may be necessary since impacts may vary seasonally or by weather events. To

fully understand the extent, diversity, and impact of sources, proposers may consider a mass loading/mass balance/mass flow approach to the characterization efforts.

- Proposers may wish to include options for utilizing existing information such as the Toxic Release Inventory (TRI), state databases, individual agency monitoring, and other sources to supplement or replace monitoring efforts. If existing resources are difficult for stakeholders to locate and utilize, proposers may wish to develop a website and database of resources, information, and analytical data to serve as a repository to further assist stakeholders in their PFAS management efforts.
- While it is outside the ability of WRF to identify the entirety of nonpoint sources of PFAS, particularly individual products, it would be beneficial to the industry to identify classes of users and products that may individually constitute very small PFAS sources but collectively contribute significantly to the problem faced by utilities. Efforts that provide a more complete characterization of PFAS sources will better inform upcoming regulations, remediation practices, and communications strategies by identifying the diverse types of contributors and relative abundance of the many different chemicals that comprise PFAS.

Expected Deliverables

Research teams should utilize the most effective delivery formats to help stakeholders in their PFAS management journeys. These may include the following deliverables:

- Guidance to help utilities characterize what is in their influent and determine steps necessary to address management.
- Guidance on outreach to sewer users, including commercial, industrial, and institutional users.
- Data collection/monitoring strategies with recommendations on how to determine the most appropriate compounds to analyze.
- Management strategies, including permitting and working with dischargers to use BMPs to eliminate/reduce contaminants.
- Database of project analyses and sources, as well as existing resources, to be made available to other researchers.
- Updates on current efforts and on less commonly addressed compounds that are of potential interest. A full literature review is not desired as there are numerous recent literature reviews available.
- Utility case studies on strategies successfully used to manage PFAS.
- Communications to utility customers on how they can help prevent the entry of PFAS into treatment plants and water sources, including the use of alternative products.

Communications Plan

Please review WRF's *Project Deliverable Guidelines* for information on preparing a communications plan. The guidelines are available at <http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx>. 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 24 months from the contract start date, but the actual duration will be dependent on the tasks identified in the proposal.

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.

- North Carolina DEQ GenX Investigation, <https://deq.nc.gov/news/key-issues/genx-investigation>

- Minnesota Pollution Control Agency, <https://www.pca.state.mn.us/waste/pfas-pollution>
 - Toxics Release Inventory, <https://www.epa.gov/toxics-release-inventory-tri-program>
 - U.S. Environmental Protection Agency, www.epa.gov/pfas/epa-pfas-data-and-tools
 - WRF project 5031, *Occurrence of PFAS Compounds in U.S. Wastewater Treatment Plants* (ongoing), <https://www.waterrf.org/research/projects/occurrence-pfas-compounds-us-wastewater-treatment-plants>
 - WRF State of the Science paper on PFAS, https://www.waterrf.org/sites/default/files/file/2019-09/PFCs_StateOfTheScience.pdf
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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 20 points)
- Communication Plan, Deliverables, and Applicability (maximum 15 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 <http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx>, 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.

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 <http://www.waterrf.org/funding/Pages/policies.aspx>. 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 <http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx>.

Budget and Funding Information

The maximum funding available from WRF for this project is \$350,000. 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 \$350,000. **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 <http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx> 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 <http://www.waterrf.org/funding/Pages/policies.aspx>.

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 2:00 pm Mountain Time on Thursday, October 15, 2020. All proposal documents must be compiled into two (2) PDF files consisting of your technical review documents and your financial review documents. All forms and components of the proposal are available in the *Proposal Component Packet* zip file on the proposal website at <https://proposals.waterrf.org/Pages/RFPs.aspx>. An FAQ and a tutorial are also available. A login is required to access the proposal website and download the packet. Proposers are encouraged to create logins and verify the validity and compatibility of the system well in advance in order to avoid last-minute errors or delays.

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.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Mary Messec Smith, at 303-347-6134 or msmith@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.

5082 Utility and Organization Participants

The following utilities have indicated 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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