THE Water Research FOUNDATION

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REQUEST FOR PROPOSALS (RFP)

Occurrence of PFAS Compounds in U.S. Wastewater Treatment Plants (RFP 5031)

Due Date: Proposals must be received by 2:00 pm Mountain Time
on **Thursday, September 12, 2019**

WRF Project Contact: Kenan Ozekin, kozekin@waterrf.org

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

Project Objective
The objective of this study is to evaluate PFAS occurrence in U.S. wastewater treatment plants and determine the fate of PFAS compounds during wastewater treatment.

Budget
Applicants may request up to **$250,000** 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
Per- and Polyfluoroalkyl Substances (PFAS) are a class of anthropogenic chemicals used in industrial processes and consumer products, including surfactants, surface-protecting agents, and processing aids to produce polymers. A few PFAS such as perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) occur ubiquitously in the aquatic environment, biota, and humans. PFAS enter waters through point sources (e.g., wastewater treatment plants, industrial emissions from PFAS production sites, commercial and military airports, and landfills that contain PFAS-contaminated waste) and non-point sources (e.g., urban stormwater, agricultural runoff, and atmospheric deposition).

Because of PFAS use in a wide variety of consumer care products, PFAS have been found in wastewater treatment plant influent and effluent, with municipal wastewater effluents and biosolids now being viewed as potential sources of PFAS to the aquatic environment. During wastewater treatment, polyfluoroalkyl compounds (often called precursors) can degrade into perfluoroalkyl compounds (PFAAs). However, due to their chemical nature, PFAAs are not efficiently removed during conventional wastewater and sludge treatment processes. Thus, the release of treated effluent as well as the widespread land application of biosolids, provide an opportunity for re-release of PFAS into receiving environments. In 2003, a total of 7.18 million tons (dry weight) of biosolids were generated in the U.S., with approximately 55% being land applied. Therefore, land-applied biosolids represent a potentially large and significant source of PFAS into the environment. To date, limited studies have investigated the

fate of PFAS compounds during wastewater treatment processes, but the occurrence, fate, and behavior of PFAS in wastewater plants is largely unknown. The objective of this project is to evaluate PFAS occurrence in U.S. wastewater treatment plants and conduct a mass balance approach calculation to determine the fate of PFAS compounds during wastewater treatment processes.

Research Approach
The proposal should include the following elements in the team's research approach:

- Literature review.
- Collect samples from wastewater plants and measure influent and effluent concentrations of PFAS compounds. Samples should be collected in different seasons to capture seasonal effect and consider in-plant detention time.
- Perform mass balance calculations on subset of wastewater plants by measuring PFAS concentrations in biosolids.
- Evaluate impact of wastewater treatment processes on PFAS removal by sampling subset of wastewater plants in detail.

Teams proposing on this project should clearly justify the approach used, as well as the selection of sampling sites and times, and they should provide a well-defined experimental design and data quality assurance / quality control plan.

Expected Deliverables
- Final Report.
- A WRF-sponsored webcast following project completion.

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.

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 **$250,000**. 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 **$250,000**. **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, September 12, 2019. 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, Kenan Ozekin at 303.734.3464 or kozekin@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**.**

5031 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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