# REQUEST FOR PROPOSALS (RFP)

## *Technology and Innovation for Assessing Operability and Full Closure of High-Consequence Valves (5241)*

**Date Posted**
Monday, July 1, 2024

**Due Date**
Proposals must be received by 3:00 pm Mountain Time on Thursday, August 29, 2024

**WRF Project Contact**
Jian Zhang, PhD, PE, jzhang@waterrf.org

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

**Project Objectives**
This project will evaluate existing maintenance approaches for high-consequence valves, provide guidance on the evaluation of the approaches for valve assessment and maintenance (including the application of artificial intelligence (AI)), and inform an exploration of new maintenance approaches. Lastly, this project will provide useful communications materials and statistics to convey the importance of valves in a resilient distribution system, as well as valve rebuild methods for larger, more expensive valves.

**Budget**
Applicants may request up to $200,000 in WRF funds for this project.

**Background and Project Rationale**
Valves are integral to the operation of a water distribution system and are particularly important in risk management of catastrophic main breaks, as they facilitate isolating the break and minimizing losses and damages. However, valves are often ignored until they are needed due to limited budgets and resources; by then, they may be inoperative—if they can be located at all. There is insufficient research on how to assess the condition of valves and appropriate valve renewal methods. Operation and maintenance of valves involves more than simply determining if they can be located and if they are open or closed.

High-consequence gate valves are of particular interest in this work. They are often on transmission mains and are generally 24 inches in diameter or larger. Some utilities have an active maintenance program for high-consequence valves. Data from these utilities may be

used, along with detailed case studies, to provide an objective evaluation of existing maintenance approaches and to inform the exploration of new maintenance approaches. Empirical data and utility experiences will guide the evaluation of the "good," "better," and "best" approaches for valve assessment and maintenance. If adequate data are available, AI may be applicable. This project should be comprehensive and include useful communications materials and statistics to convey the importance of valves in a resilient distribution system and valve rebuild methods for larger, more expensive valves.

**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 following approach is intended as a starting point.

- Conduct a literature review to define high-consequence valves
- Rely on existing data collected from utilities and/or their contractors actively engaged in maintenance activities on high-consequence valves
- Conduct detailed case studies
- Provide guidance for utilities to conduct the evaluation of approaches for valve assessment/maintenance and provide recommendations for minimizing interruptions to operations during valve inspection/testing/maintenance
- Explore the application of AI

**Expected Deliverables**
Typical deliverables include the following, but proposers are encouraged to propose deliverables practical for utility use and to show creativity and originality:

- Research report
- Guidance manual
- Case studies
- Webcast

**Communication Plan**
Please review WRF's *Project Deliverable Guidelines* for information on preparing a communication plan. Conference presentations, webcasts, peer-reviewed 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.

**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.

- Marlow, D., and D. Beale. 2012. *Condition Assessment of Water Main Appurtenances*. Project 4188. Denver, CO: The Water Research Foundation. https://www.waterrf.org/research/projects/condition-assessment-water-main-appurtenances
- Godin, F., T. Brueck, S. Iyer, C. Williams, J. Crumpton, and J. Haider. 2015. *Best Management Practices for the Maintenance of Water Distribution Assets*. Project 4237. Denver, CO: The Water Research Foundation. https://www.waterrf.org/research/projects/best-management-practices-maintenance-water-distribution-assets


**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 WRF's *Guidelines for Research Priority Program Proposals* and *Instructions for Budget Preparation*. These 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 deliverables, such as websites, Excel spreadsheets, Access databases, etc., must follow the criteria outlined for technology deliverables presented in the *Technology Deliverables Guidance*.

**Eligibility to Submit Proposals**
Proposals will be accepted from both U.S.-based and non-U.S.-based 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. 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.*

**Budget and Funding Information**
The maximum funding available from WRF for this project is $200,000. The applicant must contribute additional resources equivalent to at least 33% 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% to the project, but the maximum WRF funding

available remains fixed at $200,000. Proposals that do not meet the minimum 33% of the project award will not be accepted. Consult the *Instructions for Budget Preparation* 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.

**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 Thursday August 29, 2024.

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/cbruck/rfp-5241.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Dr. Jian Zhang at 303.347.6114 or jzhang@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.

## *5241 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 on your settings, you may need to click refresh on your browser to load the latest file.**

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