

DISTRIBUTION SYSTEM WATER QUALITY STRATEGIC INITIATIVE

REQUEST FOR BRIEF PROPOSALS

TARGETED UNSOLICITED PROGRAM (RFP 4192)

Distribution System Water Quality Strategic Initiative

The Water Research Foundation Strategic Research Initiatives Program focuses resources on critical drinking water issues through a coordinated, long-term research effort that comprises multiple focused projects. This sustained approach allows for a continuing momentum of research in selected topic areas, including multiple sequenced projects building on information and understanding originally derived from earlier projects. Projects within an initiative serve as discrete steps toward common strategic objectives. The program also fosters a more complete and timely research response to key issues than does a collection of stand-alone projects.

The Water Research Foundation has undertaken the Distribution System Water Quality (DSWQ) Strategic Initiative (SI) to develop integrated projects focused on water quality changes that take place within drinking water distribution systems, including premise plumbing. The Water Research Foundation will commit up to \$1.0 million in funding per year for the initiative. The initiative will be sustained until the three key goals established for the initiative are achieved; the target timeframe is 5-7 years.

Applicants are encouraged to review additional information about the DSWQ SI at:
<http://www.waterresearchfoundation.org/theFoundation/ourPrograms/ResearchProgramSIDSWQ.aspx>.

Objective

Submitters may submit a brief proposal, as detailed in the instructions below, related **to one or more** of the three technical objectives of the DSWQ SI identified below. While a multiple year research plan has been prepared by the Expert Panel that is expected to yield significant new understanding in each of the goal areas, the Expert Panel and Water Research Foundation seek further opinions and research directions to address these goal areas. While the DSWQ SI research plan addresses some of the key issues for each goal area, many other technical issues could be addressed, and innovative approaches likely to yield leaps forward in knowledge and understanding are sought from the research community.

- **Goal 1: Premise Plumbing Water Quality Changes**
 Although drinking water utilities do not generally assume direct responsibility for water quality changes caused by premise plumbing, these changes can reflect negatively on customer perception of tap water quality and utility performance, and are thus an important issue for utilities. The Distribution System Water Quality Strategic Initiative will **achieve a substantial understanding of water quality changes caused by premise plumbing, and methods to control the negative impacts of these changes.** It will produce new and specific understanding of water quality impacts caused by premise plumbing, a new set of forensic tools to determine causes of premise plumbing water quality impacts, and an improved ability to positively impact water quality at the tap. This knowledge will enable drinking water utilities to take appropriate action in helping customers improve water quality at the tap.
- **Goal 2: Implementing Multiple Barriers for Distribution System Integrity**
 The Distribution System Water Quality Strategic Initiative will develop tools and approaches to thoroughly evaluate the benefits and costs of multiple barriers used to ensure distribution system water quality. New approaches for measuring distribution system integrity will be carefully evaluated. As an example, secondary disinfection is a key component of distribution system management in the US, but the value of this activity as well as other barriers to water quality degradation are not quantitatively measured. Work on this goal could involve quantifying the value of secondary disinfection. Work on this goal will enable water utilities to **quantitatively evaluate the value of different barrier approaches, and substantially increase the ability of utilities to measure the “health” of their system.**
- **Goal 3: Chloramines – Filling in the Gaps.**
 For a variety of reasons, the use of chloramines as a secondary disinfectant by U.S. drinking water utilities has been increasing, and this trend is expected to continue. Although the use of chloramines for secondary disinfection has already been studied extensively, considerable knowledge gaps remain. As an example, while the literature provides considerable information on minimizing the possibility of a nitrification episode occurring, once one occurs there is very little information available on effective methods to recover from it, especially without resorting to the use of free chlorine. The Distribution System Water Quality Strategic Initiative will develop additional guidance and understanding to help address these gaps. Water utilities will benefit from **a more comprehensive understanding of chloramines and how to monitor and manage chloraminated systems**, as well as an increased number of tools to prevent or control potential negative impacts from the use of chloramines.

The projects sought by the Expert Panel should be relatively new projects or concepts likely to be valuable to one or more of the goal areas of the SI. The tie of the proposed work to the goal area must be specifically addressed in the proposal, and why the proposed project is particularly important to the DSWQ Strategic Initiative should also be addressed. In addressing why the proposed area of work is strategically important, the proposer should consider these questions and address them in the brief proposal submitted to the Foundation:

1. What critical information is missing that will be provided by the suggested work?
2. What breakthrough in understanding or control from a water utility perspective is likely to be demonstrated by the work?

3. What approach could bring the pieces of the bigger puzzle together to make a significant improvement?

This initial one year award should not be viewed as the entire body of work on an issue – it is an opportunity to further define and develop ideas and to craft a research approach that might be funded in a follow-on Phase 2 project. The decision of whether or not to fund a follow-on Phase 2 work will be entirely as the discretion of the Expert Panel. The Expert Panel desires to see proposals that are addressing new and innovative ideas, approaches, and concepts to solving distribution system water quality issues as defined in the goals of the SI. The submittal of proposals that are focused on an increment of work that is part of a larger body of work already underway or anticipated is discouraged.

Background

The Water Research Foundation Board of Trustees created the DSWQ SI in January 2007. In accordance with Board directives, an expert workshop was held, and a DSWQ SI Plan was prepared. This plan identifies the technical objectives of this multi-year, multi-project initiative, and identifies the expected projects and funding levels year-by-year covering a five year period. The plan, *Distribution System Water Quality Strategic Initiative Plan, 2009 Update*, can be found at: <http://www.waterresearchfoundation.org/theFoundation/ourPrograms/ResearchProgramSIDSWQ.aspx>

While the expert workshop approach has produced valuable outcomes which are reflected in the solicited projects under this initiative, it is recognized that the research and development community will likely have additional ideas to help the initiative address the identified technical objectives. The intent of this targeted unsolicited request for proposals is to allow the research and development community to propose such ideas for funding consideration.

Research Approach

This Request for Proposals (RFP) seeks Targeted Unsolicited brief proposals under the DSWQ SI. These projects must be targeted to one or more of the goal areas defined for the DSWQ SI, but the focus of the work and approach of the work is not being specified by the Expert Panel. The Expert Panel hopes to review a wide ranging set of brief proposals addressing new and innovative ideas to address distribution system water quality issues as defined in the SI goals. These brief proposals must explain why the project is strategically important, how it is supportive of the SI goals, and how it is envisioned that the results of a successful project or series of projects would be used by water utilities.

The brief proposal can entail either basic, fundamental research (e.g. proof of concept at laboratory or bench scale) or more applied research (e.g. pilot-scale or demonstration-scale studies), but in any case must describe how the proposed research addresses one or more of the technical objectives of the SI. The proposed work, whether basic or applied, should anticipate and described how it could eventually be used by water utilities.

Funding under this Request for Brief Proposals is for an initial project period of ten to fourteen months. At the end of this initial project period, two separate deliverables are required from each project. One deliverable is a White Paper of 25 – 50 pages that establishes and advances the understanding of the research topic. The White Paper should particularly present:

1. An improved quantitative or qualitative description of the importance of the issue to be addressed in the research and why it is important for the DSWQ SI to address this issue;
2. A basis for your research including assumptions, background understanding, etc.;
3. Some demonstration that your approach has merit based on a new or innovative analysis/interpretation of the literature and data available on the issue, bench or pilot studies, or full-scale or case study evaluations.

The second deliverable is a detailed proposal for further research on the topic, addressing how you would progress through one or more projects to more fully pursue your approach in addressing the issue. (If the results of the initial research indicate that further research is not needed, the requirement for the detailed research plan will be waived.) Directly applicable results do not have to be achieved by the end of the initial targeted unsolicited project period. In most cases it is expected that further research and development of the concept will be necessary before the results can be applied in a utility setting.

Brief (3-5 page) bimonthly update reports will be required for review by the Water Research Foundation Project Advisory Committee (PAC) during the project period. At the end of the ten to fourteen month period, Water Research Foundation will evaluate the results of the initial research and plan for further research, and will determine whether to pursue a second phase of research. The follow-on research, if funded, would be in the funding range of \$150,000 to \$300,000. Some of the initial Targeted Unsolicited projects are likely to move into this second phase of research; however, applicants should be aware that award of funding for the initial targeted unsolicited project period does not ensure that The Foundation will fund follow-on work.

Instructions for Brief Proposals

All applicants who seek funding under this request are required to submit a brief proposal in accordance with these instructions and requirements. There is no limit to the number of pre-proposals that an applicant may submit, but the body of a proposal should be no more than four pages in length. This DSWQ SI Targeted Unsolicited process is entirely stand-alone; it is not related to any other unsolicited proposal process at Water Research Foundation, including other Strategic Initiatives. All requirements for DSWQ SI Targeted Unsolicited brief proposals are specified in this RFP.

Brief Proposals must include the following components:

A. Brief Proposal Cover Worksheet (Attachment 1 – not included in page count).

B. Title

C. Research Objectives. The research objective should be clearly identified and must explain why this project is important to conduct under the DSWQ SI, as well as the specific DSWQ SI goal area the project addresses.

D. Technical Approach. Describe how the research will be conducted and the tasks necessary to accomplish the objective. This information should be adequate for technical experts to evaluate the potential for a successful outcome. Identify the sequence of technical steps and the specific technical challenges associated with the work.

E. Originality and Innovation of the Research Approach. The work plan should describe the specific objectives of the research and include the technical questions it will attempt

to answer so that the technical feasibility and potential application of the research results can be evaluated.

F. Potential Relevance and Future Applications. Provide rationale and insight about why this work should be funded. State the anticipated results of the research and how the results would help support one or more of the three Technical Objectives of this Strategic Initiative.

G. Qualifications. Provide information on the qualifications and experience of the research team to conduct the identified work. The facilities and equipment available to complete this work should also be briefly described. Resumes (not to exceed two pages in length) of key project personnel can be attached to support this narrative description of qualifications. (Attached resumes are not included in the page count.) The narrative description of qualifications should not exceed two pages in length.

H. Budget and Schedule. A detailed, task-specific budget and schedule is not required in the brief proposal; however, the project duration should not be in excess of fourteen months. A firm date for completion of the work will be established before the contract for this project is finalized. The budget information should include the amount of funds requested, an estimate of the hours or percentage of time that will be spent on this work by the key project personnel, and also source(s) and amount(s) of in-kind support. The budget and schedule portion of the proposal should not exceed one-half page in length. If your brief proposal is selected for funding, more detailed budget information will be required for the contract.

Eligibility to Submit Proposals

The Request for Brief Proposals solicits submittals from all technically qualified U.S.-based and non-U.S.-based applicants, including educational institutions, research organizations, federal or state agencies, local municipalities, and consultants or other for-profit entities.

The Foundation's Board of Trustees has established a Timeliness Policy that addresses researcher adherence to project schedule. The policy can be reviewed at <http://www.waterresearchfoundation.org/research/projectAdmin/policies.aspx>. Researchers who are late on any ongoing Water Research Foundation-sponsored studies without an approved no-cost extension are not eligible to be a named participant in any proposal.

Budget and Funding Information

A maximum of \$75,000 per project is available under this Request for Brief Proposals. The total available funding through this solicitation in 2009 is \$150,000. It is anticipated that up to two Targeted Unsolicited Phase 1 projects will be funded under this solicitation, if adequate proposals are received. The Foundation reserves the right to change either the number of awards or the total available funding depending on the outcome of the selection process.

A minimum 25 percent of the total project value must be contributed by the applicant (i.e. the applicant's minimum contribution must equal one-third of the The Foundations funds requested). If the applicant requests the full \$75,000 available for one of these projects, the minimum in-kind contribution from the research team is \$25,000, for a total project value of \$100,000. Acceptable forms of applicant contribution include cost-share, applicant in-kind or third-party in-kind that

meet Code of Federal Regulation (CFR) requirements in 2 CFR Part 215.23, or the requirements of Office of Management and Budget (OMB) Circular A-102.24. The applicant may elect to contribute more than 25 percent to the project but the maximum Water Research Foundation funding available remains fixed at \$75,000. Proposals that request less than \$75,000 from The Foundation need only contribute 25 percent of the total project value.

Indirect costs are allowable based on the rate approved by the applicant's cognizant federal agency, or an independent CPA audited statement or an independent accountants' compiled Statement of Direct Labor, Fringe Benefits and General Overhead. Detailed budget preparation instructions are provided in the "Guidelines for Solicited Proposals."

Period of Performance

The project performance period for the initial project period of the Targeted Unsolicited projects is ten to fourteen months from signing of the contract (see "Approach" above).

Project Oversight

This project will be conducted under the Distribution System Water Quality Strategic Initiative. The strategic initiative is overseen by an Expert Panel that develops and administers the long-term research plan for the initiative and recommends projects to the AwwaRF Board of Trustees for funding. As part of the strategic initiative process, an annual review is held in which PIs for all ongoing projects under the initiative present findings and upcoming project activities to the Expert Panel. The annual review is supplemental to the Project Advisory Committee (PAC) process described in the "Guidelines for Solicited Proposals." It is expected that the PI for this project will participate in these annual reviews during the research phase of the project. Travel costs for the PI to participate in the annual review should be included in the proposed budget for the initial targeted unsolicited project. Additional information concerning the annual review is available at <http://www.awwarf.org/research/projectAdmin/proposalGuidelines.aspx>

Utility Participation

The Water Research Foundation is interested in proposals that include both participation and contribution of resources from water utilities in the research effort. While the Foundation will make any utility participation volunteers known to applicants, it is the applicant's responsibility to negotiate utility participation in their particular pre-proposal, and the utilities are under no obligation to participate.

Application Procedure and Deadline

Brief proposals must be submitted by email by 5 PM Mountain Time on May 11, 2009, to Tamara Rimpley at trimpley@waterresearchfoundation.org. Submittals should use the subject line "Proposals – RFP 4192." Proposals must be submitted in Microsoft Word® (.doc) and Excel® (.xls) or Adobe Acrobat® (.pdf) format.

Questions to clarify the intent of this Request for Proposals may be addressed to the project manager, Frank Blaha, at 303-347-6244 or by e-mail at: fblaha@waterresearchfoundation.org.

Proposal Selection and Award Administration

The Water Research Foundation technical staff will screen all brief proposals received for completeness. Those accepted as complete will be further evaluated for technical content and value by the SI Expert Panel. The Expert Panel will select up to two brief proposals for funding in 2009. Brief proposals will be evaluated using the criteria shown in the Brief Proposal Rating Sheet (Attachment 2). The Foundation may choose not to fund any of the brief proposals submitted in response to this solicitation, based on Expert Panel review.

Applicants will be notified of the Expert Panel's selection within four weeks of the brief proposal submittal deadline. All proposals and proposal reviews are treated confidentially and are available only to staff, PAC members and our Board of Trustees.

The Water Research Foundation will enter into a project funding agreement (PFA) with the selected researcher. The Foundation's standard PFA for solicited projects is available at <http://www.waterresearchfoundation.org/research/projectAdmin/contractsAndForms.aspx>. The selected researcher and any subcontractors will be expected to comply with the terms and conditions of this PFA. The Water Research Foundation has established a 60-day period for PFA negotiation, commencing on the issue date of the draft agreement and ending on the return date of the fully executed agreement. The Water Research Foundation will conduct PFA negotiations in good faith and in a timely manner during this period. If agreement cannot be reached within this 60 day period, The Foundation may choose, at their sole discretion, to terminate the negotiations.

ATTACHMENT 1
BRIEF PROPOSAL COVER WORKSHEET

RFP # 4192

Title: _____

Personnel: *(Please attach CV or brief resume for PI, Co-PIs and other key research team members)*

Principal Investigator: *Individual responsible for the technical completion of the proposed work.*

Name: _____

Title: _____

Organization: _____

Complete Address: _____

Phone: _____ FAX: _____ E-mail: _____

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name: _____

Title: _____

Organization: _____

Address: _____

Phone: _____ FAX: _____ E-mail: _____

Administrative Contact: *Individual from Sponsored Programs office to contact concerning administrative matters (i.e., indirect cost rate computation, re-budgeting requests, etc.).*

Name: _____

Title: _____

Organization: _____

Address: _____

Phone: _____ FAX: _____ E-mail: _____

Other Personnel

Name: _____

Title: _____

Organization: _____

Complete Address: _____

Phone: _____ FAX: _____ E-mail: _____

All Other Participating Organizations (not listed above):

Organization	City/State/Country
_____	_____
_____	_____
_____	_____

Project Period: _____

ATTACHMENT 2
WATER RESEARCH FOUNDATION DSWQ SI TARGETED UNSOLICITED PROGRAM
BRIEF PROPOSAL RATING SHEET
For Information Only – Do Not Submit with Proposal

Proposal No.:

Researcher:

Reviewer:

- | | | |
|----|---|--------------|
| A. | Technical Merit (maximum 40 points)
Are the objectives of the work in alignment with one or more of the goals of this Strategic Initiative? Are the objectives and/or proof-of-concepts proposed likely to be achieved? Assuming success of this work, and possibly additional projects to develop the idea further, is a practical outcome likely that could be used by water utilities or the water community? Is the proposed approach technically defensible? Is the approach practical, and can the project be performed within the ten to fourteen month time period and with the proposed effort? | Score |
| B. | Qualifications (maximum 30 points)
Do the principal investigator and key project personnel have experience in the proposed research area? Will all key project personnel contribute a significant commitment of time to the project? Is the team well-qualified and suited to the type of work proposed? | Score |
| C. | Originality/Applicability (maximum 20 points)
Does the brief proposal reflect creativity or other special qualities that lend weight to its attractiveness and potential usefulness? Has the applicant displayed an innovative approach or innovative idea? | Score |
| D. | Budget and Schedule (maximum 10 points)
Are the budget and schedule reasonable for the amount and type of work proposed (maximum \$75,000)? Will the principal investigator and key project personnel contribute an appropriate percentage of time to this project? Are overhead, indirect costs, cost of laboratory analysis, etc. reasonable? Is the level of effort allocated to each task reasonable? | Score |

TOTAL SCORE:

Proposal Strengths:

Proposals Weaknesses: