



RFP 4320 July 2010

DISTRIBUTION SYSTEM WATER QUALITY STRATEGIC INITIATIVE

REQUEST FOR PROPOSALS

ASSESSING POTENTIAL SHORT-TERM IMPACTS OF CHLORAMINATION (RFP 4320)

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 projects. This sustained approach allows for a continuing momentum of research in selected topic areas, and projects within an initiative serve as discrete steps toward a common strategic objective. The program also fosters a more complete and timely research response to key issues than does a collection of stand-alone projects.

The Foundation has undertaken the Distribution System Water Quality Strategic Initiative to develop integrated projects focused on water quality changes that take place within drinking water distribution systems, including premise plumbing. The 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 Distribution System Water Quality Strategic Initiative at

<http://www.waterrf.org/Research/ResearchPrograms/StrategicResearchInitiatives/Pages/DistributionSystemWaterQualityStrategicInitiative.aspx>.

Objective

The main objective of this project is to determine if acute health effects can be attributed to exposure to chloraminated or chlorinated drinking water. This project will use human health data to determine if potential acute health impacts (e.g., skin rashes, eye irritation, respiratory problems, etc.) are associated with the use of chloramine as a secondary (distribution system) disinfectant, compared to chlorine or no secondary disinfectant. This project will identify data sources and examine the potential acute health impacts for future communication and management efforts related to chloramine use in drinking water.

This project is specifically intended to support Goal 3: Chloramines – Filling in the Gaps of the Distribution System Water Quality Strategic Initiative. See <http://www.waterrf.org/Research/ResearchPrograms/StrategicResearchInitiatives/Pages/DistributionSystemWaterQualityStrategicInitiative.aspx> for a description of this goal and for additional information.

Background

The USEPA requires all public water systems (PWSs) using surface water to disinfect the water provided to their customers. In addition, these PWSs are required to maintain a residual disinfectant through the water distribution system. Because chloramine produces fewer disinfection by-products that are currently regulated by the USEPA, using chloramine as a secondary disinfectant is becoming more common among utilities that have disinfection by-product regulation compliance issues. Chloramine is produced by combining chlorine and ammonia in water and, under the typical operating conditions, monochloramine is the principal end product and disinfectant. Chloramine has been approved for use by the USEPA.

Although chloramine has been used as a disinfectant for nearly 100 years, in the past five years, concerns have been raised about possible health effects associated with use and exposure to chloramine. Citizen groups opposed to the use of chloramine in drinking water have identified a number of health effects that they attribute to the use of and exposure to chloramine. Some examples of these groups include Citizens Concerned about Chloramine (www.chloramine.org) in the San Francisco bay area, and People Concerned about Chloramine and Vermonters for a Clean Environment (www.vce.org) both in Vermont. However, as noted by the Centers for Disease Control and Prevention (CDC), the reports of adverse health outcomes that they cite are based on anecdotal evidence rather than studies using accepted epidemiologic methodology. Due to concerns about chloramine use, utilities, the USEPA, the CDC and others have conducted studies and prepared information on chloramine use. Some examples of these studies and/or information sources have been summarized by the USEPA: (www.epa.gov/ogwdw/disinfection/chloramine/index.html) and the San Francisco water department (www.sfwater.org/mto_main.cfm/MC_ID/13/MSC_ID/166/MTO_ID/399), amongst others.

The CDC attempted to study complaints of rashes and similar health effects in Vermont, as a follow-up to a changeover to chloramine. No conclusion could be drawn as the survey was too strongly biased by local media and public attention. A case series in San Francisco found complaints were so heterogeneous that it was difficult to hypothesize a common etiology (<http://www.ehjournal.net/content/5/1/18>). Key limitations of these studies include the lack of baseline incidence data on the most commonly reported symptoms in these populations and limited information on other possible confounding variables. Thus, studies need to be conducted in communities that have not been subjected to public attention on the issue, since rashes and dry skin complaints can result from reasons other than exposure to chloramine.

Research Approach

This project will focus on the most common acute health concerns raised by these citizen groups, (such as skin rash, or respiratory ailments, eye irritation) and determine whether there is any association with exposure to chloramine or chlorine in drinking water. This project will focus on collection of objective data with a population basis in order to better quantify potential health impacts associated with chloramine, if any. This study can rely on secondary data sources such as the National Health and Nutrition Examination Survey or other primary or secondary data sources available from jurisdictions where the water system has known disinfection practices. Data should be compared to similar communities that did not change to chloramine as a secondary disinfectant, or in communities that alternate use of chlorine and chloramine as part of their usual operations. Appropriately designed studies that consider changes in health effects in a single community may be considered. The research design and analysis should take into account spatial and temporal changes in exposure variables and health outcomes as well as health seeking behaviors.

As appropriate, respondents should demonstrate qualifications and affiliation with an institution that can review, approve, or exempt the research on human subjects.

Among the deliverables anticipated from this research effort is a manuscript ready for submittal to a peer review medical, public health, or epidemiology journal as well as a description of the results presented in a manner appropriate for use by water professionals. The researcher should understand the Foundation's outreach options for Water Research Foundation projects. The most current version of the guidelines is available at <http://www.waterrf.org/Research/Administration/ProposalGuidelines/ProposalDocuments/OutreachOptionsfortheWaterResearchFoundationResearchProjects.pdf>.

The final report should be in language accessible to utility managers, US-EPA, and CDC, and should include some interpretation that will be useful for public communication efforts. The final results should comment clearly on the evidence that the studied acute health effects are associated with exposure to chloramine in drinking water compared to chlorine or no disinfection.

Proposal Preparation Instructions

Proposals submitted in response to this RFP must be prepared in accordance with the Water Research Foundation "Guidelines for Solicited Proposals." The most current version of these guidelines is available at <http://www.waterrf.org/Research/Administration/ProposalGuidelines/ProposalDocuments/SolicitedProposalGuidelines.pdf>. The guidelines contain instructions that the applicant must follow when preparing a proposal.

Eligibility to Submit Proposals

This RFP solicits proposals from all technically qualified U.S. based or 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.waterrf.org/Research/Administration/Policies/Policies/TimelinessPolicy.pdf>. Researchers who are late on any ongoing Foundation-sponsored studies without an approved no-cost extension are not eligible to be a named participant in any proposal. If you have any questions about your eligibility for Foundation projects, please contact your current Foundation project manager directly.

Budget and Funding Information

The maximum funding available from the Foundation for this project is \$250,000. 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 Foundation funds requested). Therefore, the minimum total value of this project is \$333,333, (\$250,000 in Foundation funds and \$83,333 in applicant contribution). 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 Foundation funding available remains fixed at \$250,000. Proposals that request less than \$250,000 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 proposed project schedule should be realistic, allowing ample time for the preparation of final reports and for review of project results. It is the Foundation's policy to negotiate a reasonable schedule for each research project. Once this schedule is established, the Foundation and its contractors have a responsibility to adhere to the agreed-upon schedule. Under the Foundation'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/Research/Administration/Policies/>.

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 Foundation 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 reviews should be included in the proposed budget for the project. Additional information concerning the annual review is available at <http://www.waterresearchfoundation.org/research/projectAdmin/proposalGuidelines.aspx>.

Utility Participation

The Foundation is especially interested in receiving proposals which include both participation and contribution of resources from water utilities in the research effort. Information on utilities that have indicated an interest in participating in this research project is attached. While the Foundation makes utility participation volunteers known to applicants, it is the applicant's responsibility to negotiate utility participation in their particular proposal, and the utilities are under no obligation to participate.

Application Procedure and Deadline

Proposals must be postmarked or date-stamped by the carrier on or before August 23, 2010. Seven copies, plus one unbound copy (8 copies total) of the proposal should be sent to:

**Proposals – RFP 4320
Water Research Foundation
6666 W. Quincy Avenue
Denver, CO 80235**

Questions to clarify the intent of this Request for Proposals may be addressed to the project manager, Hyunyoung Grace Jang, Ph.D., at 303.347.6112 or by e-mail at hjang@waterresearchfoundation.org.

4320- UTILITY VOLUNTEERS

The following utilities have indicated an interest in possible participation in this research. This information is updated within 12 business hours when a utility 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.)**

Peter Zhou
Water Quality Engineer
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
USA
408.265.2607 x2365
pzhou@valleywater.org

Andrew Fairey
Chief Operating Officer
Charleston Water System
103 St. Philip St. PO Box B
Charleston, South Carolina 29402
USA
843.727.6856
843.727.7121
faireyaw@charlestoncpw.com