



March 31, 2010

REQUEST FOR PROPOSALS

FRAMEWORK FOR INFORMED PLANNING DECISIONS REGARDING INDIRECT POTABLE REUSE AND DUAL PIPE SYSTEMS (WRF-09-02)

Project Sponsors

This project is sponsored by the Water Reuse Foundation as part of the Foundation's Solicited Research Program. The Bureau of Reclamation is a funding partner for this project.

Objectives:

The project objective is to develop a tool to help enable utilities to make an informed and sustainable decision regarding their investment into reuse options at the project, city, or regional level. Specifically, this tool will address issues, advantages, and obstacles in the implementation of an Indirect Potable Reuse (IPR) project, dual pipe reuse system with or without point of use treatment, or combinations therein to enable utilities to objectively plan projects against triple bottom line objectives. This will be accomplished by creating a planning framework, such as a decision tree matrix, that considers all aspects – social and legal, economic, and environmental – of IPR and dual pipe reclaimed water distribution systems that can include point of use treatment requirements.

Introduction:

Many urban areas are now experiencing severe limitations in delivering water resources to meet a range of water supply needs, including drinking water, low to high grade industrial water, and water for irrigation of landscapes, sports fields, and crops. These limitations are due to a variety of reasons, including climate changes and growing populations. Alternative water sources, such as recycled water, desalinated seawater, brackish water and groundwater, are becoming increasingly available, making water resource planning increasingly complex. Community expectations are that investments will provide sufficient resources to meet the long-term planned water demands. A robust planning framework is needed to assist utilities to transparently evaluate a broad range of variables to assist in choosing the most appropriate recycled water system for any particular region or local area. A transparent planning framework will help planners work with regulators and other stakeholders in balancing different objectives, such as a level of desired water quality against a target energy use objective.

Task 1: Background Review and Data Collection

Conduct a thorough background review, including data collection from utilities, of recent economic costs (including legal), environmental costs, and social implications to date of instituting IPR, dual plumbing systems, or a combination therein. Any utility profiles should include the type of recycled water and extent of treatment used for the project, as well as the number and type of recycled water users, i.e. industrial, irrigation, or agricultural.

The review should highlight repeat issues different utilities have had in instituting these technologies. How were the agreements with the end users developed? Were feasibility studies or the development of recycled water master plans used to develop the project? Were those studies or plans used to develop the cost agreement? How were projects financed? Were costs shared between the utility and the end user? In addition, any up and coming technologies related to these systems should be mentioned. A thorough review will assesses the current issues, include an evaluation of various planning methodologies used, and therefore help lay the structure for the framework.

The WaterReuse Foundation and other water research organizations have several currently running projects that are collecting data that can be incorporated into this project. The technical approach and communication plan within the proposal should include a short description of how this project will be enhanced by these other projects.

Task 2: Case Studies

At least three regions or utilities will be chosen for case studies. They should vary in needs and geography to give the user of the toolkit a good background on the variability in regional differences. The case studies will highlight the range in program costs associated with the various reuse system options developed. Although the absolute costs may be 'out of date' within the medium term, the inclusion of costs, energy and climate change impacts, environmental benefits and social and community views means that the framework will remain useful over the longer term. The case studies should be tested against the finished framework tool.

Task 3: Framework Development

In developing the sustainability planning framework, the research team should build a robust and generic methodology that can be regularly updated and improved over time and should, as a minimum, include a triple bottom line analysis, including the following:

Social/Legal:

- The broader social and community implications of implementing recycled water systems and the means by which community views are included in planning options;
- The critical legal, political, institutional, technical, regulatory, and logistical issues associated with IPR and dual pipe reuse systems with or without point of use treatment;
- Legal issues, such as water rights, liability, and public access issues;

Economic:

- The quantification of all costs (e.g., breakdown of fixed, capital, operating including labor and maintenance, etc.) associated with IPR and dual pipe reuse systems, with or without point of use treatment;
- The use of grants or loans to finance the projects;

- Relative risk or costs of treatment options as they affect performance, lack of service, and user inconvenience;

Environmental:

- The externals attached to planning reuse systems, in particular the environmental benefits and impacts that are often not quantified (i.e. land purchases; traffic interruptions; city permits for construction, etc.);
- The energy and greenhouse gas impacts of various recycled water systems; and
- The potential advantages and disadvantages of implementing each option.

The framework tool should be able to incorporate information from other planning sources such as a Multi Criteria Assessment (MCA), Life Cycle Analysis (LCA), or summary regional data from predictive tools that estimate future resource availability, when necessary. It should be applicable to a wide audience with international relevance and able to weigh all the inputs into a decision matrix and reflect both the quality of the data and/or the importance to the proposal to be analyzed. This framework will be most useful to water planners considering water recycling options.

Alternative water sources, such as recycled water, desalinated seawater, brackish water and groundwater, are becoming increasingly available, making water resource planning increasingly complex. This master planning document will clearly differentiate advantages and disadvantages of both IPR and dual pipe in the midst of various other factors such as other water sources, climate change, etc.

Task 4: Final Toolkit

Develop a user friendly, but comprehensive toolkit with a detailed planning process that can be useful for utilities of various sizes. The toolkit should contain at a minimum a framework tool, such as a decision tree matrix, as well as a master planning document that can guide one through the tool.

A final report will summarize all work accomplished and results achieved, including a detailed description of methodology, its applications, results and conclusions. Descriptions of case studies, their lessons learned and future recommendations must also be part of the completed deliverable. The report shall be clearly and concisely written, including all pertinent details from the research to enable any person skilled in the art to achieve the results of the project performed.

Note: Proposals should be applicable to a wide audience with international relevance.

Proposal Instructions

When planning a proposal, a respondent should review the Foundation's *Guidelines for Solicited Proposals* (<http://www.watereuse.org/foundation/research/research-templates>). These guidelines outline the requirements for submitting proposals under the Foundation's Solicited Research Program and contain the required attachments referred to below. The guidelines also provide information on the process used by the Foundation to review, rank, and fund research projects.

Proposals should be structured as follows:

1. Attachment A: WateReuse Foundation Proposal Cover Sheet
2. Understanding of the Problem
3. Technical Approach and Task Breakdown
4. Management, Communication, and Quality Assurance Plans
5. Schedule and Deliverables
6. Attachment B and Budget Narrative
7. Attachment C and Letters of Support
8. Attachment D and Résumés or other Personnel Information
9. Qualifications, Organizational Charts, Technical Resources, and other Supplemental Information

Sections 2 through 5 are limited to no more than **15 Pages** in combined length, not including the required attachments. Résumés and other personnel information are limited to two pages per person in Section 7. Section 9 is limited to 35 pages. The only other items that may be included in a proposal are: a proposal cover and back page; a table of contents; and blank section dividers.

The electronic copy of the proposal should be delivered as one file, preferably in PDF format.

A respondent should determine, prior to proposal submission, whether the Foundation's standard contract conditions (<http://www.watereuse.org/foundation/research/research-templates>) are acceptable to the respondent, its subcontractors, and other participants.

Budget

The maximum amount of funding available from the Foundation for this project is **\$250,000**.

This project will require matching funds of **at least 25%** of the total project costs. Therefore, if \$250,000 (75%) of funding is requested from the Foundation, the project team will need to commit to covering at least \$83,333 (25%) of project costs, bringing the total project cost to \$333,333. Respondents may elect to contribute more than 25% to the project; however the Foundation's maximum contribution remains fixed at \$250,000. Proposals that request less than the \$250,000 from the Foundation need only contribute 25% of the total project cost.

Respondents are encouraged to identify other co-funding sources and in-kind services that would contribute to the funding of the project. One of the evaluation criteria will be the percentage match that the respondent is able to provide. Support for all funding identified by the project team must be included in the proposal. Utility participation is highly recommended and can be integrated into the project through participation or contribution.

Respondents should provide a budget showing separate cost estimates for salaries, fringe benefits, supplies, services, travel, subcontracts, and other direct costs. All personnel costs need to be presented on an hourly basis. WRF managed Funds may not be used to pay individual tuition costs. The cost of quarterly progress reports and responding to Foundation comments should also be included in the respondent's budget.

Schedule

The estimated period of investigation for this project is **18 Months**.

The respondent should include a detailed timeline of the project, such as a Gantt chart, including start and end dates for each task. Quarterly progress reports will be due every three months throughout the investigation. At the end of the investigation, the Contractor will submit a report to the Foundation. The contractual period of performance will include additional time for required revisions.

Project Advisory Committee

A Project Advisory Committee (PAC) will be organized by the Foundation to provide guidance, review all reports and significant materials, and generally monitor project performance on behalf of the Foundation and other sponsoring organizations. The PAC will consist of approximately five members, including technical experts and representatives from the Foundation's funding partners.

Utility Participation

The Foundation encourages respondents to include both participation and contribution of resources from water and wastewater utilities in the research effort.

Application Procedure and Deadline

Questions to clarify the intent of this RFP may be addressed to Caroline Sherony at 703-548-0880 ext. 107 or emailed to csherony@watereuse.org.

An electronic and three (3) paper copies of the proposal are to be submitted to be received by **Wednesday May 12, 2010 at 5:00 PM Eastern Time**. **Late proposals will not be considered**. The electronic copy of the proposal should be sent to Caroline Sherony at:

csherony@watereuse.org

The paper copies of the proposals should be sent to the attention of Caroline Sherony at the following addresses:

WateReuse Foundation
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