REQUEST FOR PROPOSAL

AN ASSET MANAGEMENT FRAMEWORK FOR FORESTED AND NATURAL ASSETS (RFP #4727)

Project Objective

The project will develop and test a framework and supporting tools for integrating acquisition and management of forested lands for source water protection into an overall strategic asset management program for a water utility. Although the primary focus of this project is forested land, other types of natural land assets should also be included. The framework will be applicable to a range of models of utility ownership of and access to forested land in the watershed.

Budget

Proposals may request WRF funds in the amount of $180,000 - $220,000. WRF funds requested and total project value will be criteria considered in the proposal selection process. The project has been co-funded by the U. S. Endowment for Forestry and Communities.

Background

An asset management program used by water utilities generally includes the following components: inventory assets, assess condition of assets, assess criticality of assets, assign risk factors, determine remaining life and replacement cost, communicate with stakeholders, set targets for service levels, determine appropriate maintenance, determine capital improvement program (CIP), and fund the program. This approach has generally been successfully used by utilities to manage engineered or built assets (engineered infrastructure), but applied less often by utilities to manage forested watershed and natural assets for source water protection.

The World Resources Institute (WRI) has stated that investing in natural infrastructure, such as forested watersheds, can reduce or avoid built infrastructure costs, and enhance water services and security as part of an integrated system to cost-effectively deliver safe water. Forested watershed management is an important function of some water utilities to manage both the quality and quantity of source waters, helping to regulate water flow, control flood waters, improve water quality, and regulate water temperature. Investment in forested watersheds (land purchase, land management, other) represents an integrated approach to water resource management.
Barriers must be overcome to effectively integrate forested watershed management into water utility asset management programs, including but not limited to the following examples.

**Bias related to capital.** Water utilities generally seek to achieve financial efficiency, which translates to reducing operating expenditures and growing capital expenditures or capital value. Most watershed management investments are treated as operating expenditures, so there is a disincentive to establishing a watershed management program. The WRI has observed that accounting standards generally do not allow capitalization of operations and maintenance spending on natural infrastructure as part of normal business practices.

**Watersheds as financial assets.** Although watersheds can be considered as an important asset in the water supply system, in many cases they are not included in the financial calculation of business. The forested watershed asset value is typically established based on the value of raw land plus merchantable timber, but not its effect to reduce treatment costs. This oversight means there is a reluctance to invest in watershed protection and maintenance compared to built-assets.

**Quantifying and validating watershed management strategies.** Forested watershed management solutions are more uncertain and difficult to quantify, compared to more traditional engineered solutions that provide a well-defined outcome. Appropriate tools and methods are needed to understand the biophysical characteristics of the natural assets, the corresponding services they provide, and the value of those services if they had to be provided by an alternate means.

**Risk aversion or regulations requiring redundancy.** Even if natural infrastructure would be sufficient, built infrastructure may still be required, despite natural infrastructure’s impact on increasing the overall resiliency of the water treatment system.

**Longer Timeframes.** Natural infrastructure, such as forested watersheds, tends to provide benefits over a long-time period (decades); built infrastructure provides benefits in the near term (years). Natural infrastructure appreciates in value over time. This is generally true of forest ecosystems that better protect water quality and regulate water quantity as the forest matures, but value may depreciate if tree mortality occurs through poor management or infrequent stochastic processes, such as wildfire. Built capital depreciates over time.

**Staff competencies needed.** The knowledge, skills and abilities of staff to identify, measure and manage natural infrastructure differ from those required for engineered assets.

Forest Research, the research agency of the United Kingdom’s Forestry Commission has noted that there is currently no agreed-upon framework to evaluate forested watershed costs and benefits on equal footing with built infrastructure costs and benefits. This presents a barrier to public infrastructure investment managers considering investment in natural rather than built infrastructure (Forest Research 2010). The lack of a framework to incorporate natural infrastructure into a water utility’s asset management program is a barrier to implementing forested watershed source water protection programs. There is a need to evaluate methodologies to incorporate forested watershed management and natural assets in a utility’s asset management program.

Although the primary focus of this RFP is forested lands, applicants are encouraged to include examples of water utilities that have successfully integrated other land or cover types (green infrastructure) into
asset management planning, such as agricultural lands or urban green infrastructure. These examples should serve as models that can be adapted for forested lands.

Research Approach

The successful research team must have demonstrated expertise and experience in: asset management and capital improvement planning; forest management; source water protection and watershed management; water supply planning; infrastructure decision making; risk management; natural resource economics, and measurement of ecosystem services. A research approach must support the following tasks, and include, but not be limited to:

1. Conduct a literature review:
   - Review of published literature related to asset management programs for drinking water, wastewater and storm water utilities to identify typical asset management approaches, components, and tools;
   - Review of published and grey literature related to forested watershed management and protection to identify: leading management practices; estimated costs and benefits; tools and approaches for measuring biophysical services, economic valuation, and integration into asset management frameworks; barriers; and organizational factors that are necessary for integration into a water utility’s asset management program;
   - Review of published and grey literature to identify drinking water, wastewater, and storm water utilities that have used a formalized asset management approach for forested watershed management to identify components of the programs, including drivers, tools used, process used, costs and benefits;
   - Synthesis of literature to identify the opportunities for and challenges to integrating forested watershed management with water utility asset management programs;
   - Identify components of a framework to integrate forested watershed management into a utility asset management program.

2. Develop a framework for water utilities to integrate forested watershed management into their asset management programs, including the development of, or reference to, tools (e.g., business case evaluations) that utilities can use to support their efforts. The identification and discussion of existing tools and approaches for measuring biophysical services, economic valuation, and integration into asset management frameworks will be important for success of the framework. The framework will:
   - Identify the elements necessary to manage forests as assets that are congruent with the utility asset management program, such as accounting for risk and uncertainty, (including catastrophic risk) and funding the purchase, operation and maintenance of forest assets. Risk management as it relates to forested lands is an important piece of this. With forests under threats from climate change, invasive pests and plants, and fires, the asset base isn’t static over time, and the framework needs to be flexible
enough to incorporate forested assets as they exist today, but also as they change over time through proactive management and reactive event responses.

- Identify other ecosystem or regulatory drivers that may influence the utility asset management program, and approaches for integration;
- Identify the steps needed for integrating forested watershed management into the utility asset management program;
- Identify barriers that water utilities encounter, and success factors needed for integrating forested watershed management into asset management programs; and
- Identify tools, templates, examples, case studies and references that will support water utilities in using the framework.

3. Test the framework at a minimum of two water utilities;
4. Finalize the framework and prepare a final deliverable using a format that is easy to apply by water utilities.

The research approach must detail how the research team will involve water utilities to inform the development of the framework, how water utilities will vet and then test the framework to assure the deliverable is robust and useful, and how the final framework will be presented to water utilities to facilitate its use and uptake.

**Budget and Funding Information**

The maximum funding available from WRF for this project is $220,000. 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 WRF funds requested). 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 25 percent to the project but the maximum WRF funding available remains fixed at $220,000. **Proposals that do not meet the minimum 25 percent of the total project value will not be accepted.**

**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 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](http://www.waterrf.org/funding/Pages/policies.aspx).

**Utility and Organization Participation**

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

Proposals should be submitted to EmOpp@waterrf.org by 3PM MT on September 12, 2017. For proposal submittal questions please contact Caroline Bruck, Senior Administrative Assistant, at cbruck@WaterRF.org (303-347-6118). For technical questions about the RFP, please contact Linda Reekie at lreekie@WaterRF.org or 303.734.3423. Proposals must be submitted in Adobe Acrobat (.pdf) format in one file. The Emerging Opportunities Program has unique proposal requirements. Please follow the submission instructions below and do not reference requirements of other research programs. Proposals not adhering to the restrictions below will not be accepted.

The entire proposal, excluding the proposal cover worksheet, resumes, budget form, budget narrative, co-funding support form (when applicable), schedule, and references, should not exceed 22 pages in length. Proposals must include the following components.

1. **Proposal Cover Worksheet** - See the Emerging Opportunity Program Worksheets section at: http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx
2. **Cover Letter**
3. **Project Description (22 pages)**
   - **Background**: Provide a detailed description of the relevant topic background including your current understanding of the problem, the current state of knowledge, regulatory perspective where applicable, and significance to water utilities.
   - **Research Approach**: Provide a clear and detailed work plan, which includes the objectives of the research, the tasks to achieve the objectives, the methods that will be followed, and the nature and extent of the anticipated results.
   - **Evaluation Criteria**: Provide specific criteria and performance metrics that will be used to evaluate the development and success of each project objective.
   - **Benefit to WRF Subscribers** – Identify the practical benefits of the proposed research to water utilities and the water community.
   - **Communication Plan** – Provide a draft plan for how the project results and key outcomes will be communicated effectively and in a timely manner to WRF subscribers and other end users who will apply the results for the benefit of the water community.
4. **Management Plan (2 pages)** – Identify the individuals and organizations participating in the project, their specific roles and responsibilities and their time commitment to the project. Describe how the PI will maintain accountability for the individuals and organizations involved in the project. Include a concise organizational chart showing the relationships and the lines of communication among the research team and all project participants.
5. **Research Team and Other Participants** – Identify the key members of the research team and provide brief statements of their qualifications to conduct the proposed research. Identify any other organizations that have committed to collaborate on the proposed research. Curriculum vitae or resumes for research team members are required.
6. **Budget** – A detailed budget is required. The researcher should identify the amount of WRF funds requested and any other cost-share, in-kind, or cash support for the proposed research. The following items will need to be included with the budget. They can be found in the Emerging Opportunities Research Program Worksheets section at http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx
Budget Form for Proposals
Budget Narrative
Emerging Opportunities Co-Funding Support Form (when applicable): Each co-funding organization providing cash to the project payable directly to WRF must complete a separate Emerging Opportunities Co-Funding Support Form and include it with the proposal package.

7. Schedule - A detailed schedule is required.

8. References (optional) – detailed citations are not required in the proposal, but may be provided at the discretion of the researcher.

Proposal Review and Funding Decision

WRF will form a Project Advisory Committee (PAC) composed of volunteer professionals with expertise in the research subject area to oversee the project(s) funded through this solicitation. Proposals will be reviewed by WRF staff and the PAC against established evaluation criteria. WRF may request additional information from the researcher based on this review, and interviews may be conducted for the top three proposals. Proposals are treated confidentially and will not be shared outside of WRF.

The proposal review and selection process, from initial submittal through final decision, generally will not exceed 3-4 weeks.
4727- 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.)

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