



**Date Posted: Friday, August 14, 2020**

## **REQUEST FOR PROPOSALS (RFP)**

### ***Case Studies on Water Sector Interdependencies (RFP 5086)***

**Due Date:** Proposals must be received by 2:00 pm Mountain Time on  
**Thursday, October 15, 2020**

**WRF Project Contact:** Dr. Jian Zhang, [izhang@waterrf.org](mailto:izhang@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 collect case studies on existing utility practices for determining risk-based organizational interdependencies on systems including water, power, telecom/internet, transportation, fuels, etc. This project will develop a guideline for management of cross-sector interdependencies for small to medium water utilities (drinking water, wastewater, and stormwater) with the goal of achieving improved "co-resilience" of infrastructure systems.

#### **Budget**

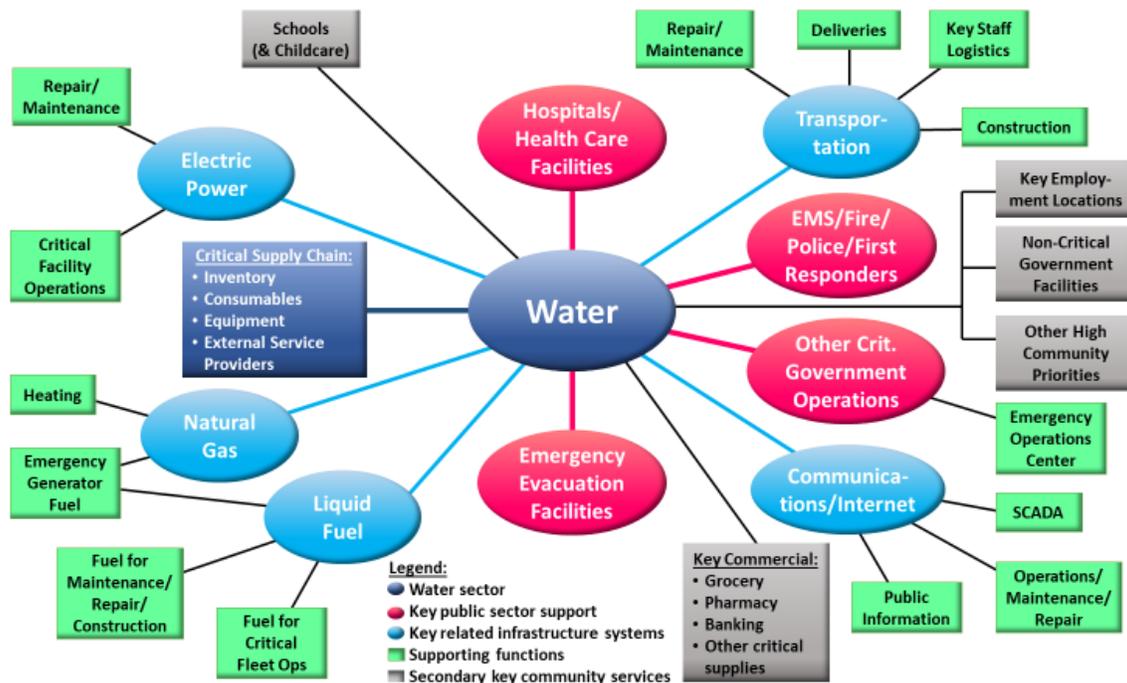
Applicants may request up to \$200,000 in WRF funds for this project. WRF funds requested and total project value are evaluation criteria considered in the proposal selection process.

#### **Background and Project Rationale**

According to the Department of Homeland Security, "Dependencies between critical infrastructure sectors historically have been considered to be either functional or geographic. A functional dependency occurs when an asset or system will not work as intended unless it is supported by another asset or system. A geographic dependency can occur when physical assets are located in the same space, and thus – though not logically connected – are impacted by the same incidents."

There are strong interdependencies between the water sector and other sectors, such as the chemical sector, food and agriculture, fire departments, energy, the government facilities sector, healthcare and public health, etc. (see Figure 1). For example, when an earthquake hits, various infrastructure systems, including water, gas and liquid fuel, transportation, telecommunications, and wastewater facilities, will be impacted, which was demonstrated in the 1994 Northridge and the 1995 Kobe earthquakes. The current COVID-19 pandemic has exposed a lack of response planning in terms of identifying hazards, sharing information, and mitigation measures, across all sectors, such as the shortage of personal protection equipment and other impacts on supply chains for critical inventory. Severe climate events, such as flooding and long-term drought, also have impacts on cross-sector interdependencies. A clear

overview of such interdependencies can be found in the Water Sector Resilience Final Report and Recommendations by the National Infrastructure Advisory Council (NIAC).



**Figure 1.** Water Sector Interdependencies (Source: Britch et al. (2020). Adapted from 2010 Water Sector Specific Plan [DHS, 2010])

Compared with large utilities, small and medium utilities need more help in learning from existing practices regarding interdependencies in the industry, developing their own preparedness plans, and taking practical mitigation measures in case of disruptions to their dependencies on other sectors.

This project is funded under the WRF Research Area, *Advancing System-Level Resilience for Water Infrastructure*, and aims to achieve two goals: 1) to specify interdependencies with other systems, such as water, power, telecom/internet, chemicals, fuels, transportation, and specialized services; and 2) to develop resilience guidelines for operational aspects of a water/wastewater/stormwater infrastructure system.

### Research Approach

The proposal must include the following elements in the research approach:

- Conduct case studies on existing utility practices for determining risk-based organizational upstream interdependencies.
  - All types of water utilities should be included: drinking water, wastewater, and stormwater.
  - Systems to be studied for interdependencies should include, but are not limited to, water, power, telecom/internet, chemicals, fuel, transportation, and specialized services.
- Compare emergency preparedness plans in critical situations around these dependencies.

- Develop a general guideline for management of cross-sector interdependencies for small to medium-sized water utilities.

### **Expected Deliverables**

Compilation of case studies and a guideline.

### **Communication Plan**

Please review WRF's *Project Deliverable Guidelines* for information on preparing a communication plan. The guidelines are available at <https://www.waterrf.org/project-report-guidelines>. Conference presentations, webcasts, peer review publication submissions, and other forms of project information dissemination are typically encouraged.

### **Project Duration**

The anticipated period of performance for this project is 18 to 24 months from the contract start date.

### **References and Resources**

Britch, M., Havekost, M., and Robless, B. (June 20, 2020). *Seismic Guidelines and Minimum Design Requirements*. Willamette Water Supply Program. Version 1.1.

Department of Homeland Security (DHS) (2010), Water Sector-Specific Plan. *An Annex to the National Infrastructure Protection Plan*. Office of Ground Water and Drinking Water, Water Security Division.

Department of Homeland Security (DHS) (February 25, 2015). *Infrastructure System Overview Water Systems*.

National Infrastructure Advisory Council (NIAC) (June 2016). *Water Sector Resilience Final Report and Recommendations* (<https://www.cisa.gov/sites/default/files/publications/niac-water-resilience-final-report-508.pdf>)

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### **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 20 points)
- Communication Plan, Deliverables, and Applicability (maximum 15 points)
- Budget and Schedule (maximum 15 points)

### **Proposal Preparation Instructions**

Proposals submitted in response to this RFP must be prepared in accordance with the WRF document *Guidelines for Research Priority Program Proposals*. The current version of these guidelines is available at <https://www.waterrf.org/proposal-guidelines>, along with *Instructions for Budget Preparation*. The guidelines contain instructions for the technical aspects, financial statements, indirect costs, and administrative requirements that the applicant must follow when preparing a proposal.

### **Eligibility to Submit Proposals**

Proposals will be accepted from domestic or international 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. The policy can be reviewed at <https://www.waterrf.org/policies>. 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*, both available at <https://www.waterrf.org/proposal-guidelines>.

### **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 percent 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 percent to the project, but the maximum WRF funding available remains fixed at \$200,000. **Proposals that do not meet the minimum 33 percent of the project award will not be accepted.** Consult the *Instructions for Budget Preparation* available at <https://www.waterrf.org/proposal-guidelines> 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. The policy can be reviewed at <https://www.waterrf.org/policies>.

### **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 2:00 pm Mountain Time on Thursday, October 15, 2020.** All proposal documents must be compiled into two PDF files consisting of your technical review documents and your financial review documents. All forms and components of the proposal are available in the *Proposal Component Packet* zip file on the proposal website at <https://proposals.waterrf.org/Pages/RFPs.aspx>. An FAQ and a tutorial are also available. A login is required to access the proposal website and download the packet. Proposers are encouraged to create logins and verify the validity and compatibility of the system well in advance in order to avoid last-minute errors or delays.

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.

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](mailto: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](mailto:cbruck@waterrf.org).

## 5086 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 upon your settings, you may need to click refresh on your browser to load the latest file.)**

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