



REQUEST FOR PROPOSALS (RFP)

Advancing Actionable Climate Resilience Metrics for Water Supply Planning (RFP 5427)

Date Posted

August 17, 2026

Due Date

Proposals must be received by 3:00 pm Mountain Time on Monday, October 5, 2026.

WRF Project Contact

Monica Lee-Masi, PhD, mlee-masi@waterrf.org

Project Sponsors

This project is funded by The Water Research Foundation (WRF) as part of WRF's Research Priority Program.

Project Objectives

1. Catalog existing performance metrics that consistently drive water utility operational and capital decisions, assess their applicability to support future resilience-based decision making under nonstationary climate conditions, and identify adjustments or alternative metrics needed to support forward-looking, resilience-based decision making for water utilities.
2. Determine the appropriate level of climate resilience analysis needed to evaluate and apply climate resilience metrics, with requirements scaled based on metric sensitivity to climate change, decision context, and utility characteristics.
3. Develop guidance to integrate climate resilience metrics into planning and decision processes.

Budget

Applicants may request up to \$250,000 in WRF funds for this project.

Background and Project Rationale

Water utilities increasingly recognize the need to incorporate climate uncertainty and resilience considerations into long-term water supply planning, yet lack clear, practical guidance on which climate, hydrologic, service, and demand-related metrics are relevant for decision making. Without clarity on which metrics matter, utilities continue to rely on traditional metrics that may no longer reflect changing hydrologic conditions, and conversely, risk over-investing in complex analyses that may not meaningfully improve operational or capital decisions.

For the purposes of this project, resilience is defined as the ability of a social, ecological, or socio-ecological system and its components to anticipate, reduce, accommodate, and recover from the effects of climate-related hazards and long-term trends in a timely and effective manner (Denton et al. 2014). This definition reflects the need for utilities to evaluate not only their ability to recover from potential impacts from a wide range of plausible futures, but also their ability to reduce or avoid these potential impacts through proactive adaptation.

Previous WRF research has demonstrated the importance of performance metrics, thresholds, and level-of-service goals in driving water supply decisions and advancing scenario-based planning approaches. Existing levels of service remain a critical component of utility planning and asset management; however, climate change may alter the assumptions, risks, and system conditions under which those service levels are achieved. As a result, utilities continue to express the need for practical guidance and tools to help translate complex climate information into decision-relevant, actionable outcomes. Utilities need guidance on whether their existing system performance metrics remain appropriate under nonstationary climate conditions, how these metrics should evolve to support resilience-based decision making, and how resilience can be evaluated while maintaining desired levels of service across a range of plausible future conditions. This challenge is further compounded by regional differences in climate stressors, variability in supply portfolios, and disparities in analytical capacity. Building on advances in scenario-based planning, there remains a need for practical approaches that help utilities identify appropriate resilience metrics and determine the level of climate resilience analysis necessary to support planning, operational, and capital investment decisions.

This project builds on related efforts, including WRF project 5306, *The Foundations of Water Resource Planning: Guidance for Establishing Water Utility Service Levels*, which addresses the need for service-level guidance in water resource planning. While service-level frameworks are relatively well established in asset management, this project focuses on climate resilience metrics that span both water resource planning and asset management to support utility decision making under changing climate conditions.

A significant gap remains in understanding which water supply metrics are most useful for evaluating climate resilience and informing decisions under nonstationary conditions and deep uncertainty. Utilities differ in size, resources, objectives, and exposure to climate hazards, yet all must balance competing priorities such as reliability, affordability, regulatory compliance, environmental stewardship, customer satisfaction, and long-term sustainability. There is a need for practical guidance that helps utilities identify decision-relevant resilience metrics and determine the level of climate resilience analysis needed to support decisions across a range of utility contexts and future conditions.

Research Approach

The proposal must include the following elements in the research approach. These elements are intended as a general framework; however, this RFP is intentionally flexible to encourage innovative and well-justified approaches. Proposers may modify or expand upon these elements, provided they clearly demonstrate how their approach meets the project objectives.

The project will assemble a diverse cross-section of drinking water and wholesale utilities. Through interviews, structured data collection, and synthesis of existing research, the project will identify and categorize the performance metrics (including climate, hydrologic, and demand-related metrics) that consistently drive utility operational, planning, and capital investment decisions. The project will also examine how these metrics are currently defined, assessed, and applied across different utility types and operating conditions. The project will then assess whether these metrics remain appropriate under nonstationary climate conditions and identify alternative climate resilience metrics or adjustments to existing metrics, including revised definitions or formulations, to support forward-looking and risk-based decision making.

The project will define decision-appropriate levels of climate risk analysis needed to evaluate and apply these metrics. Requirements for data inputs, modeling methods, and scenario complexity will be scaled based on sensitivity to climate change, decision context, and utility context. The project should consider the challenges associated with applying traditional risk-based frameworks to nonstationary climate futures, where deep uncertainty may limit the use of reliable probabilistic approaches, and identify resilience-based approaches that support robust decision making across a range of plausible future conditions. The framework should recognize that appropriate metrics and analytical approaches may vary depending on utility objectives, the climate hazards being evaluated, and the type of decision being supported. Examples may include infrastructure investment, operational planning, reservoir setting, rate setting, regulatory compliance, drought preparedness, wildfire impacts, flooding, and saltwater intrusion. Utility objectives may include reliability, cost, regulatory compliance, financial sustainability, environmental stewardship, customer satisfaction, and other performance goals.

The project should evaluate the generalizability of proposed metrics and analytical approaches across utilities of varying sizes and operating conditions and assess the sensitivity of resulting recommendations to utility characteristics, assumptions, climate conditions, and decision contexts. Consideration should also be given to approaches for validating proposed metrics and demonstrating their applicability across different utility settings. Where feasible, the project should evaluate how the use of proposed climate resilience metrics may influence utility decisions relative to traditional metrics and whether they provide improved support for planning and decision making.

The project will culminate in actionable, utility-ready guidance that enables water utilities to (1) select appropriate and applicable climate-risk metrics; (2) evaluate and apply the metrics using decision-appropriate climate resilience analyses; and (3) integrate resulting insights into long-term planning, asset management, operational decision making, financial planning, and resilience strategies. The guidance will also help utilities prioritize analytical and technical investments and will include real-world examples of demonstrating the application of climate resilience metrics across different utility sizes, hazards, objectives, and decision contexts.

Expected Deliverables

- Research report (must use WRF's [Research Report Template](#))
 - Survey findings and utility engagement summary

- Summary of utility decision-making models and performance metrics
- Evaluation of existing and alternative climate resilience metrics
- Framework for determining decision-appropriate levels of climate resilience analysis
- Webcast, conference presentation, etc.
- Utility-ready guidance
 - Guidance for selecting, evaluating, and applying climate resilience metrics
 - Guidance for integrating resilience metrics into planning and decision-making processes
- Calculation tools – Tool(s) to support the evaluation and application of climate resilience metrics and decision-appropriate climate resilience analyses

Proposers are encouraged to suggest other types of deliverables, if appropriate. A few examples are provided below:

- Literature review
- Peer-reviewed journal article
- Field demonstration/pilot project
- Fact sheet, case study, white paper, etc.
- Workshop (consider plan to document workshop)
- Technology Deliverables (must follow the [Technology Deliverables Guidance](#))

Communication Plan

Please review WRF's [Project Deliverable Guidelines](#) for information on preparing a communication plan. Conference presentations, webcasts, peer-reviewed publication submissions, and other forms of project information dissemination are typically encouraged.

Project Duration

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

References and Resources

The following list includes examples of research reports, tools, and other resources that may be helpful to proposers. It is not intended to be comprehensive, nor is it a required list for consideration.

Denton, F., T.J. Wilbanks, A.C. Abeysinghe, I. Burton, Q. Gao, M.C. Lemos, T. Masui, K.L. O'Brien, and K. Warner. 2014. *Climate-Resilient Pathways: Adaptation, Mitigation, and Sustainable Development*. Cambridge, UK and New York, NY: The Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/report/ar5/wg2/climate-resilient-pathways-adaptation-mitigation-and-sustainable-development/>.

Pending Proposal Award. Forthcoming. *The Foundations of Water Resource Planning: Guidance for Establishing Water Utility Service Levels*. Project 5306. Denver, CO: The Water Research Foundation.

Buchanan, M. K. Harpham, J. Summers, et al. 2026. *Back to the Future: Guidance for Adaptive and Scenario Supply Planning Approaches*. Project 5184. Denver, CO: The Water Research Foundation. <https://www.waterrf.org/research/projects/back-future-guidance-adaptive-and-scenario-supply-planning-approaches>.

Tebyanian, N., J.R. Fischback, P.B. Kane, A. DeJong, and C. Cameron. 2026. *A Beginners Guide to Decision Making Under Deep Uncertainty for Water Utilities*. 2026. Water Utility Climate Alliance. Clearwater, FL: Water Utility Climate Alliance. <https://www.wucaonline.org/resource-library>.

Gold, D.F., T. Asefa, H. Wang, and P.M Reed. 2025. *How do North American Water Agencies Define Water Supply Level of Service?*. Clearwater, FL: Water Utility Climate Alliance. <https://www.wucaonline.org/resource-library>.

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 WRF's [Guidelines for Research Priority Program Proposals](#). The guidelines include instructions on technical aspects, financial statements, indirect costs, and administrative requirements that the applicant must follow when preparing a proposal.

Proposals that include the production of web- or software-based tools, such as websites, spreadsheets, databases, etc., must follow the criteria outlined for web tools presented in the [Technology Deliverables Guidance](#).

Eligibility to Submit Proposals

Proposals will be accepted from both U.S.-based and non-U.S.-based entities, including educational institutions, research organizations, governmental agencies, consultants, or other for-profit entities.

WRF's Board of Directors has established a [Timeliness Policy](#) that addresses researchers' adherence to the project schedule. 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. 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](#).

Budget and Funding Information

The maximum funding available from WRF for this project is \$250,000. The applicant must contribute additional resources equivalent to at least 33% 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% to the project, but the maximum WRF funding available remains fixed at \$250,000. Proposals that do not meet the minimum 33% of the project award will not be accepted. Consult the *Instructions for Budget Preparation* on the [Outbound Grants page](#) 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 are contractually obligated to adhere to it. 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.

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 for utilities and other organizations that have indicated an interest in this research. Proposers are responsible for negotiating utility and organization participation in their proposals. The listed utilities and organizations are under no obligation to participate, and the proposer is not obligated to include them in their proposal.

Application Procedure and Deadline

Proposals are accepted exclusively through WRF's Portal, and they must be fully submitted before 3:00 pm Mountain Time on Monday, October 5, 2026.

To learn how to submit a proposal for this RFP, please visit www.waterrf.org/proposals and follow the instructions on the page.

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. Monica Lee-Masi at 571.384.2115 or mlee-masi@waterrf.org. Questions about how to submit proposals through WRF's Portal should be directed to [WRF's Customer Care Form](#).