THE Water Research FOUNDATION

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REQUEST FOR PROPOSALS (RFP)

Incorporating Equity and Social Dimensions into Community Climate Adaptation Planning and Watershed Management (RFP 5180)

Due Date: Proposals must be received by **3:00 pm Mountain Time on Tuesday, November 22, 2022**
WRF Project Contact: Harry Zhang, PhD, PE, hzhang@waterrf.org

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

Project Objectives

- Identify appropriate metrics and measures for building resilient communities with equity and social considerations that blend lived experience of the community with technical expertise.
- Develop holistic mitigation strategies, including planning-level costs to reconcile the social inequities associated with community climate adaptation and watershed management.
- Develop or modify an easy-to-use supporting triple bottom line (TBL) tool and analysis framework that incorporates the ability to identify who receives the benefits and who pays for them so utilities can better assess equity implications of various options.
- Identify the leadership roles and engagement opportunities for communities when defining resilience and desired benefits for their communities (e.g., utilities and municipalities).

Budget
Applicants may request up to $150,000 in WRF funds for this project.

Background and Project Rationale
The current paradigm for how water is managed is going through a rapid evolution, driven by climate change and growing water resource constraints in growing urbanized areas. Though it has provided many benefits to public health, the current paradigm is flawed in that the benefits and the costs to deliver water utility services have not been equally distributed. Climate change and population increases in growing metropolitan areas are exacerbating these inequities in the current paradigm and have been documented partially in U.S. Environmental Protection Agency's (EPA) 2021 report, *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts.* This report details the disproportionate impact of climate change on socially vulnerable populations, pertaining to income, race and ethnicity, age, and educational attainment. Impacts from climate change, including air quality and health, extreme temperature and health, extreme temperature impacts on labor, coastal flooding and property damage, and inland flooding and property damage, were used by the EPA to assess potential for the disproportionate impacts on socially vulnerable communities. In addition to these direct impacts, the

EPA report also identified disproportionate impacts to socially vulnerable populations that extend beyond direct and health-related impacts. These include the compromise of indigenous peoples' treaty rights, as well as "green" gentrification, in which property values and rents are increased in the wake of public investment in neighborhoods, leading to higher housing costs and social disruption of historically under-served neighborhoods. Gentrification is of particular concern, as it can lead to disruption of community support networks that anchor these communities, further restricting pathways to prosperity and generational wealth building.

It is important, yet challenging, for many utilities to identify issues holistically and equitably, and then bring this social dimension into planning for community climate adaptation and holistic watershed management. A few of the factors that must be addressed holistically in the water utility planning process include watershed nutrient management, greenhouse gas emissions, beneficial recreational uses of waterways, and the impacts of utility services and water investments on air quality and health. To maximize the chance for successful, equitable, and sustainable outcomes, utilities and their community partners must make a focused effort to assess how to incorporate equity and social dimension into community climate adaptation and holistic watershed management plans. As evidenced in successful planning processes, an equitable approach can enable individuals and organizations in affected communities to weigh in effectively and consistently throughout the planning process, shaping more effective solutions, as well as identifying partnerships. Federal and regional agencies, as well as other non-traditional partners, can also be engaged to further the reach of funding and other resources. As a new paradigm to manage water resources is developed, research is needed to help utilities determine how to make this major change in their planning processes more efficient to include an intentional equity lens, remove previous structural and institutional equity barriers, and ensure that costs and benefits are equitably distributed. Examples of successful equity-informed planning from leading utilities can help point the way towards more effective approaches for both near- and long-term planning efforts.

The outcome of this research will help outline the essential features of a holistic, equity-informed approach to community climate adaptation planning and watershed management that effectively incorporates equity and social dimensions. Many utilities seeking to incorporate equity and social dimensions can benefit from, as examples, a set of starting questions such as:

- "What is our social baseline?"
- "Where are we now?"
- "What are existing structural and institutional barriers to equity?"
- "What strategies can we use to achieve more equitable outcomes?"
- "How can community voices be engaged and considered effectively in the development and selection of holistic watershed management approaches?"
- "What application of TBL analysis would help ensure that 'who benefits and who pays' factors into the analysis?"

In addition, this project can help utilities define criteria and metrics to inform an enhanced adaptive management framework as part of community climate adaptation and watershed management plans. Related case study applications can provide water utilities with an iterative process for incremental improvements that incorporate equity and social considerations into ongoing adjustments in a changing climate.

Research Approach

The research approach in this project includes three main components: (1) inter-disciplinary literature and case study review of processes and practices for incorporating equity and social vulnerability considerations into utility climate adaption planning and watershed management; (2) a national survey through a network of utilities and municipalities, as well as collaborating partners; (3) preparation of a utility-facing guidance document including expanding TBL analysis framework from previous WRF efforts (e.g., WRF projects 3125, 4570, and 4852) to further incorporate social and equitable considerations into the quantification of community benefits. The guidance document should include case studies of best practices and applications that span different-sized water utilities and geographic regions.

The research team will conduct a comprehensive literature review including a review of WRF's research efforts to date in related areas. In addition, the research team will evaluate the state-of-the-practice and advancement in the field of climate adaption planning and holistic watershed management, as well as TBL analyses that include social and equity components. In addition, the research team will conduct an online survey at a national scale, focusing on the perspective from utilities and municipalities, with a goal to synthesize case studies from different-sized utilities and municipalities, as well as different climate regions. Furthermore, the research team will reach out to related national organizations (e.g., U.S. Water Alliance) and selected community-based organizations (e.g., non-government organizations at regional levels) for information gathering, which are critical to understanding how to bring their perspectives into this process.

The research team will create an interactive utility-facing "state-of-the-practice" guidance document, including a synthesis of case studies across different geographic and climate regions. One chapter of this guidance document should summarize the knowledge gaps, research needs, and preliminary project concepts for recommended research projects. To facilitate feedback, the research team should host at least one invitation-only virtual workshop. The workshop participants will include the Project Advisory Committee (PAC) members, representatives from participating utilities, WRF's collaborators and partners, and other invitees recommended by the project team and WRF.

For broader community outreach, the research team will conduct a webcast hosted by WRF and collaborating organizations on the overall findings of this project. The research team should submit at least one open access peer-reviewed journal paper, which can be done after the completion of the project. In addition, the research team should consider additional outreach activities (through the applicant's cost share, if possible), such as presenting project findings at conferences.

Expected Deliverables

- A stand-alone literature review synthesis document, including annotations for the list of publications and resources used.
- One invitation-only virtual workshop, along with workshop planning and all supporting materials (e.g., agenda, presentations, meeting notes, and workshop summary).
- An interactive utility-facing document
    - This document will include case studies and a decision support framework that can identify major attributes of communities across different climate regions and how to measure success.
    - In addition, this document will include a chapter and supporting technical appendix that summarizes the knowledge gaps, research needs, and preliminary project concepts for recommended research projects.
- Broader outreach:

- Webcast and public outreach materials (e.g., infographics that can help communicate research findings to utilities, municipalities, and general public).
- Submitting at least one open access peer-reviewed journal paper and additional outreach products as applicable.

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 24 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.

- Clements, J., J. Henderson, and A. Flemming. 2021. *Economic Framework and Tools for Quantifying and Monetizing the Triple Bottom Line Benefits of Green Stormwater Infrastructure.* Project 4852. Denver, CO: The Water Research Foundation. (https://www.waterrf.org/research/projects/economic-framework-and-tools-quantifying-and-monetizing-triple-bottom-line)

- EPA (U.S. Environmental Protection Agency). 2017. *Prioritizing Wastewater and Stormwater Projects Using Stakeholder Input.* Report Number EPA 830-R-17-002.

- EPA (U.S. Environmental Protection Agency). 2019. *EJSCREEN: Environmental Justice Screening and Mapping Tool.* Technical Documentation for EJSCREEN (https://www.epa.gov/ejscreen/technical-documentation-ejscreen)

- EPA (U.S. Environmental Protection Agency). 2021. *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts.* (https://www.epa.gov/cira/social-vulnerability-report)

- EPA (U.S. Environmental Protection Agency). 2022. *Climate Resilience Evaluation and Awareness Tool (CREAT)* and *Resilient Strategies Guide for Water Utilities*.

- Fischbach, J., D. Knopman, K. R. Grocholski, A. Cohn, and J. Brock. 2020. *An Action Agenda for the Water Sector to Advance Methods for Achieving Integrated Climate Resilience.* Project 5058. Denver, CO: The Water Research Foundation.

- Kenway, S, C. Howe, and S. Maheepala. 2007. *Triple Bottom Line Reporting of Sustainable Water Utility Performance.* Project 3125. Denver, CO: The Water Research Foundation. (https://www.waterrf.org/research/projects/triple-bottom-line-reporting-sustainable-water-utility-performance)

- NASEM (National Academies of Sciences, Engineering, and Medicine). 2019. *Framing the Challenge of Urban Flooding in the United States.* Washington, DC: The National Academies Press. (https://www.nap.edu/catalog/25381/framing-the-challenge-of-urban-flooding-in-the-united-states)

- NASEM (National Academies of Sciences, Engineering, and Medicine) . 2022. *Equitable and Resilient Infrastructure Investments.* Washington, DC: The National Academies Press. (https://nap.nationalacademies.org/catalog/26633/equitable-and-resilient-infrastructure-investments)

- University of North Carolina - Environmental Finance Center. 2022. *Leveraging the Integrated Planning Framework for Advancing Climate Resilience and Environmental Justice.* (https://efc.sog.unc.edu/resource/leveraging-the-integrated-planning-framework-for-advancing-climate-resilience-and-environmental-justice/)

- U.S. Water Alliance. 2020. *Water Rising: Equitable Approaches to Urban Flooding.* (http://uswateralliance.org/sites/uswateralliance.org/files/publications/Final_USWA_Water%20Rising_0.pdf)

- WSAA (Water Services Association of Australia). 2015. *Source Catchments as Water Quality Treatment Assets: Industry Best Practices and Triple Bottom Line Cost Evaluation of Catchment Management Practices.* Project 4570. Denver, CO: The Water Research Foundation. (https://www.waterrf.org/research/projects/source-catchments-water-quality-treatment-assets-industry-best-practices-and)

- WRF (The Water Research Foundation). 2021. *Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs (CLASIC).* (https://www.waterrf.org/clasic)

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 15 points)
- Communication Plan, Deliverables, and Applicability (maximum 20 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.

Proposals that include the production of web- or software-based tools, such as websites, Excel spreadsheets, Access databases, etc., must follow the criteria outlined for web tools presented in the Web Tool Criteria and Feasibility Study for The Water Research Foundation Project Deliverables at https://www.waterrf.org/project-report-guidelines#deliverables.

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 $150,000. 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 $150,000. **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 3:00 pm Mountain Time on Tuesday, November 22, 2022.

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. Submit your proposal at: https://forms.waterrf.org/222616939029866.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Harry Zhang, PhD, PE, at (571)384-2098 or hzhang@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**.**

5180 Utility and Organization Participants

The following utilities have indicated an 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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