



Kentucky Water Resources Research Institute
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U.S. Geological Survey
Department of the Interior

and

Kentucky Water Resources Research Institute

Request for Proposals Fiscal Year 2022

Under Section 104(b) of the
Water Resources Research Act of 1984, as amended

Issue Date: February 25, 2022

**PROPOSALS DUE:
March 31, 2022 5:00 pm**

Direct questions and proposal submissions to:
Kentucky Water Resources Research Institute
kwrri@uky.edu

For Additional Instructions and Required Templates, please visit:
<https://www.research.uky.edu/kwrri/applications>

I. General Information

The Kentucky Water Resources Research Institute (KWRRRI) is requesting proposals for its FY 2022 104b program. This program, funded through the U.S. Geological Survey (USGS), will be targeted toward supporting water-related research efforts conducted by students at universities and colleges in Kentucky.

The following information and instructions apply to the application process for the FY 2022 KWRRRI competitive water research grants through the USGS 104b program. The project period for FY 2022 is anticipated to be from September 1, 2022 through August 31, 2023.

The government's obligation under this program is contingent upon the availability of appropriated funds. However, this program is anticipated to be funded at a level equal to or greater than FY2021. Delays in the project start date are possible contingent on appropriations.

Proposal submissions are due March 31, 2022 at 5:00PM by email to kwrrri@uky.edu. The KWRRRI staff and KWRRRI's Committee on Research and Policy will discuss, review, and score each proposal. If selected for funding, applicants may be required to address reviewer comments and/or provide additional project information.

II. Program Objectives and Research Priorities

KWRRRI is one of 54 federally authorized water resource institutes or centers throughout the United States and its territories. It operates under the authority of the Water Resources Research Act of 1964 (P.L. 88-379 codified at 42 U.S.C. 10301 et seq.) through the Water Resources Research Institutes Program administered by the USGS. KWRRRI's Section 104(b) grant program supports the following objectives specified in the Water Resources Research Act of 1964:

1. Plan, conduct, or otherwise arrange for competent applied and peer reviewed research that fosters:
 - a. improvements in water supply reliability;
 - b. the exploration of new ideas that address water problems and/or expand understanding of water and water-related phenomena;
 - c. the entry of new research scientists into water resources fields; and
 - d. the dissemination of research results to water managers and the public.
2. Cooperate closely with other colleges and universities from the State that have demonstrated capabilities for research, information dissemination, and graduate training in order to develop a statewide program designated to resolve State and regional water and related land problems.
3. Cooperate closely with other institutes and other organizations in the region to increase the effectiveness of the institutes and for the purpose of promoting regional coordination.

Proposals submitted are to be in furtherance of these objectives and promote the national mission and objectives of the USGS which are focused on providing water quality and quantity information, understanding water availability, addressing the influence of climate on water resources, and responding to water-related emerging needs. Proposals will be evaluated based

on these research priorities as well as research priorities specific to Kentucky. Proposals must address one or more of the topics listed below.

Kentucky's Water Research Priorities

- **Water Scarcity and Availability:** Examples include water budgets, karst mapping, environmental flows, demand analysis, source water protection, agricultural use quantification, drought risk, accessibility challenges, and food-water-energy nexus.
- **Water Hazards and Climate Variability:** Examples include outreach and engagement guidelines, hazard literacy, hazard rapid response, relationships between infrastructure and hazards, and natural and ecological system impact.
- **Water Quality:** Examples include harmful algal blooms, emerging contaminants, toxicology and the ecosystem, fate and transport, COVID-19 and wastewater surveillance, and water-borne threats to public health, threats to private well users.
- **Water Policy, Planning, and Socioeconomics:** Examples include public communication and perception of water issues, value of clean water, water resources and environmental justice, water safety and security, utility water loss, cost-benefit analysis of remediation or infrastructure revitalization, social marketing, and water affordability analysis.
- **Watershed and Ecosystem Function:** Examples include unmanned aerial vehicle (UAV) data collection and analysis, remote sensing, long-term ecological research, citizen science applications, data visualization, antimicrobial resistance, BMP performance evaluation, and criteria and indicators for ecosystem and watershed function.
- **Water Technology and Innovation:** Examples include workforce retirement impacts, innovative citizen science and water education, technology transfer to stakeholders, smart metering, green infrastructure, and research and development related to sensors, emerging contaminants, water reuse, or water-to-energy.
- **Workforce Development and Water Literacy:** Examples include risk from retirement wave of water workforce, water professional workshops, training or certification courses, water health literacy, and culturally relevant engagement of Appalachian or minority populations.

III. Eligibility

Proposals will only be considered from faculty members, post-doctoral fellows, or students with faculty sponsors at accredited colleges or universities in Kentucky (public or private). Proposals from university research staff may be considered, however investigators should contact KWRRI for guidance before submitting a proposal. KWRRI cannot contract directly with students. Faculty applicants will be considered the Principal Investigator and should ensure that the specifications listed in this RFP are met.

Faculty are strongly encouraged to collaborate with their student(s) in the proposal development process. Faculty are encouraged to collaborate with federal employees under this program, but

federal employees may not serve as the Principal Investigator (they may however serve as Co-principal investigator) and may not receive federal funds for any purpose or serve as a source of matching funds.

Proposals not meeting the specifications of this RFP will not be considered for funding and will be returned without review. Proposals should focus on a research question or address need-based objectives rather than simply characterizing a community or situation or focusing on monitoring only.

The following are not eligible for funding:

- Research on health effects involving human subjects.
- Research conducted outside of Kentucky.
- Proposals that focus exclusively on aquatic biology or biological systems (unless to be used as an indicator or wider application).
- Proposals that fund students who have been previously supported by a USGS 104b grant. However, previously funded faculty may apply to support a different student.

IV. Funding

All awards are subject to the availability of funds, quality of the proposals submitted, and other applicable considerations. Funds have not yet been allocated for FY2022, but for planning purposes it is assumed that \$75,000 will be available for grants. Proposals will be assessed in two categories based on award size: Larger research grants (\$10,000 to \$20,000 award) and student research seed grants, environmental education grants, or research enhancement grants (\$5,000 to \$10,000 award). Student research seed grants and research enhancement grants are intended to be incubators for future research funding or enhancements to existing funding.

Grant funds may be used for student salary, travel, equipment, lab materials, supplies, analytical devices, services, or other items that improve the quality of the student's research experience. **Funds may not be requested for student tuition and fees, indirect costs, major equipment purchases, meals for meetings or events, or honoraria.**

Proposals involving direct collaboration with the USGS Ohio-Kentucky-Indiana Water Science Center (see personnel at <https://www.usgs.gov/centers/oki-water/employee-directory>) are encouraged.

V. Matching Funds

Requirements:

- For USGS funding, each applicant must match each Federal (USGS) dollar provided with not less than one dollar from non-federal sources (*1:1, Non-Federal:Federal*).
- Matching funds shall be obligated during the period of performance.
- The matching requirement should be met during the 12-month budget period.

- *Note: Matching funds in excess of the required 1:1, Non-Federal:Federal, match are acceptable and appreciated.*
- Signed letters of cost-share commitment must be submitted as per the instructions in this RFP.
- Matching funds may contain indirect costs and non-federal salaries and benefits. The applicant's negotiated indirect cost rate (NICR) may be applied to **both** qualifying federal and non-federal direct costs, and the result used to satisfy part of the matching requirement under the non-federal share. The NICR shall *not* be applied to equipment costs. **Federal funds shall not be used to pay for indirect costs.**

VI. Scoring Criteria

Proposals must comply with the proposal submission instructions and be written following the templates provided in Attachments A, B, and C. Proposals which meet the requirements of this RFP will be evaluated by a two-step process. First, the KWRRRI Committee on Research and Policy and/or subject expert peer reviewers will evaluate the merit of the proposals and make recommendations on what projects should be considered for funding. Second, KWRRRI will consider these recommendations as well as other criteria to make final funding decisions dependent upon the Congressional allocation.

The Committee on Research and Policy will review proposals according to the following criteria:

- **25% Significance and Need.** Does the proposal define the water problem and justify the needs and benefits of the research? Does the research address an area of regional or state need as defined in the research priorities outlined in Section II? Is enough background information and justification provided to enable a reviewer outside of your discipline to evaluate the project merits?
- **25% Research Impact.** Will the proposed research achieve meaningful contributions to the field? Will the research objectives result in meaningful outcomes? Specific, measurable deliverables should be outlined where possible. Examples include, but are not limited to, dissertations, proposals for follow on funding, journal articles, conference proceedings, factsheets, draft legislation, workshop or coursework materials, pre- and post- surveys of stakeholders, and economic analysis.
- **25% Scientific Merit and Research Approach.** To what extent does the proposal's scope, objectives, methods, procedures, facilities, and related research sections demonstrate (1) the potential to expand fundamental knowledge through the stated goals and objectives; (2) scientifically sound approach and objectives; and (3) cognizance of past and on-going work on the same topic?
- **25% Training.** Does the proposal promote student and/or post-doctoral education and training? How many students will participate in or benefit from the project? To what depth (master's thesis, doctoral dissertation, workshop, course content)? Research that funds and informs a student's master's thesis or doctoral dissertation is a funding priority.

KWRRRI staff will review the following additional criteria:

- **Qualifications and Past Performance of the Investigators.** Are the qualifications of the investigators and the adequacy of the facilities and equipment commensurate with the proposed research? The development of early career investigators and/or the entry of established investigators into new areas of research are considered funding priorities of this program. If investigators have previously been funded through this program, their performance under prior projects will be considered.
- **Budget.** Is the budget reasonable and adequate for the work proposed? Proposals with budgets providing student support are a funding priority.
- **Regional Distribution.** The geographic distribution of projects by congressional district will be considered in the final selection of project funding.

VII. Proposal and Project Timelines

Proposals must be submitted electronically by email to kwrrri@uky.edu by **March 31, 2022 at 5:00 PM**. Questions may also be submitted to kwrrri@uky.edu.

The following table presents the anticipated timeline of KWRRRI's proposal review and selection process, the application submission to USGS, and the project timeline. The USGS typically releases its RFP at the end of October. The government's obligation of support for this program is contingent upon the availability of appropriated funds. **Delays in the federal budget and appropriations process may result in potential delays in the project start dates.**

Date	Milestone
February 25, 2022	RFP is Released
March 31, 2022	Proposal Submissions Due
May 2, 2022	Expected USGS RFP Submission Due Date
September 1, 2022	Expected Project Start Date
March 1, 2023	Expected Mid-Year Project Status Update (6 months from Project Start Date)
August 31, 2023	Expected Project End Date (12 months from Project Start Date)
Fall 2023	KWRRRI Annual Symposium Presentation
May 1, 2023	Final Report Due Date (60 days after Project End Date)

VIII. Proposal Instructions

Each proposal to KWRRRI shall consist of the items detailed below. Please respond with the file formats specified below (MS Word, Excel, or PDF). All templates are available for download on the KWRRRI website here:

<https://www.research.uky.edu/kwrrri/applications>.

1. Basic Information (Attachment A – MS Word Template)
2. Project Proposal (Attachment A – MS Word Template)
3. Budget (Attachment B– MS Excel Template)
4. Budget Justification (Attachment C– PDF Template)
5. Letter(s) of Support (see items 21 and 22 below for more information)

Basic Information (Use Attachment A):

Enter responses to items 1 through 10 in the template provided to you (Attachment A).

1. **Title.** Concise but descriptive.
2. **Project Type.** Please specify whether your project is (1) Research, (2) Information Transfer, (3) Information Management System, (4) Education, or (5) Other (please specify).
3. **Focus Categories.** Choose a maximum of three focus categories from the list provided in Attachment D and list in order of preference.
4. **Research Category.** Choose one category that most closely applies: (1) Water Scarcity and Availability, (2) Water Hazards and Climate Variability, (3) Water Quality, (4) Water Policy, Planning, and Socioeconomics, (5) Watershed and Ecosystem Function, (6) Water Technology and Innovation, or (7) Workforce Development and Water Literacy.
5. **Keywords.** Enter keywords of your choice that are descriptive of the work.
6. **Start Date.** Enter the actual beginning date for the project (September 1, 2022, or after).
7. **End Date.** Enter the estimated end date for the project (August 31, 2023, or before).
8. **Principal investigator(s).** Provide name, academic rank, university, email address and phone number of the principal investigator(s).
9. **Congressional District.** Identify the congressional district of the university where the work is to be conducted (Note: enter the district of your university, even if field work is being conducted in another district).
10. **Abstract.** Provide a brief (one-page or 250 to 500 word) description of the problem, methods, and objectives. This information will be published in the USGS and KWRRRI annual reports.

Project Proposal (Use Attachment A):

Enter responses to items 11 through 18 in the template provided to you (Attachment A). This should be written in narrative form- you do not need to number the items. This document shall not exceed ten (10) single-spaced pages (12-point type, 1-inch margins) exclusive of citations and resume(s) (item 18).

11. **Title.** Please use the same title as entered for Item 1, above.
12. **Statement of regional or state water problem.** Describe the water problem or issue and how it relates to the region or the state. Discuss how the research relates to the research priorities described in Section II of this RFP. Document the magnitude of the situation and relevance of the issue/problem to the stakeholders of the research and why they are interested in this topic. Be sure to indicate how the research will benefit the region/state and how the research fits into the broader scientific field.

13. **Statement of results or benefits.** Specify the type of information that is to be gained and how it will be used. Include plans for information transfer, follow on funding potential, and community or stakeholder collaboration or participation.
14. **Nature, scope, and objectives of the project, including a timeline of activities.**
15. **Methods, procedures, and facilities.** Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives.
16. **Related research.** (Research projects only) Cite relevant literature by the investigators and others that adequately supports the proposed research. Collaborative proposals with the USGS should describe the nature of the project and the responsibilities for all investigators involved.
17. **Training potential.** Provide the number of post-doctoral fellows, graduate students, and undergraduate students, including degree level, who are expected to receive training on the project. If the information is available, please include each student's name, major, and expected graduation date, and indicate if the research will be used to inform his or her master's thesis or doctoral dissertation.
18. **Investigator qualifications.** Include resume(s) of the investigator(s). No resume shall exceed two pages or list more than 15 pertinent publications. Please provide the telephone number, postal address, and email address of all project participants (post-doctoral fellows, students, and faculty).

Budget Breakdown and Justification (Use Attachments B and C)

Enter responses to items 19 and 20 in the templates provided to you (Attachments B and C).

19. **Budget Breakdown.** See Attachment B (MS Excel).
20. **Budget Justification.** See Attachment C (PDF). Proposals lacking adequate detail in the budget justification will be eliminated from consideration. USGS employees may not receive compensation for participation in the project.

Letter(s) of Support

21. **Institutional Matching Funds Commitment Letter (non-University of Kentucky applicants only).*** The applicant shall provide an institutional cost sharing agreement (letter) signed by an official authorized to commit the applicant to all or part of the matching share. This letter should be addressed to “Director, Kentucky Water Resources Research Institute.” The letter should be from the University Office of Sponsored Research or equivalent authorizing unit. For institutions that do not have such an office, the letter should come from the unit that will receive and administer the funds, if awarded. The total amount committed must match the amount entered in the Budget Breakdown (Item 19, above).
 - a. ***Project proposals from the University of Kentucky do not need to submit a letter from their college at the time of submission.** Projects selected for funding from the University of Kentucky will be required to complete the electronic Internal Approval Form (eIAF) process to verify contribution of the required level of matching when KWRRRI’s application is submitted to the USGS (**do not complete the eIAF until informed that your project has been selected**). For University of Kentucky proposals utilizing third-party cost share commitments or commitments outside of their department, commitment letters from these entities should be submitted with the proposal (see Item 22, below).
22. **External cost-share commitment letter(s).** If cost share commitments are made by third parties, a commitment letter is required from each of these entities. Similar to Item 21, the applicant shall provide a cost sharing agreement (letter) addressed to KWRRRI indicating the commitment amount and signed by an official authorized to commit from the third party. The total amount committed must match the amount entered in the Budget Breakdown (Item 19, above).

After notification of award by KWRRRI, proposals chosen for funding will be required to submit information to assist KWRRRI in developing a "Data Management Plan" (DMP) for the application. This supplementary 1-2 page document will describe how all proposals will conform to USGS policy on the dissemination and sharing of research results and associated data. Additional guidance on data management plans is available from the USGS Data Management web site here: <https://www.usgs.gov/products/data-and-tools/data-management/data-management-plans>.

IX. Project Reporting Requirements

If selected for funding, you will be required to complete a mid-year project status report (6 months from project start date), give an oral or poster presentation at the KWRRRI Annual Symposium (Fall 2023), and complete a final report summary (14 months after project award date). If the project funding is delayed, you may be asked to submit a revised timeline.

The USGS tracks project productivity such as research publications, conference proceedings, patents, student participation, training sessions, etc., and you will be required to provide this information in your project reports. Additionally, all outputs of your 104b supported research must acknowledge **both the USGS and KWRRRI** for the 104b grant opportunity and must include the project number assigned to your research.

The following information is to be provided to KWRRRI as a reporting requirement:

1. **PROJECT IMPACT SUMMARY:** Provide a plain language 250-word synopsis of the primary findings and/or impact of this project for a general audience.
2. **PHOTO or GRAPHIC:** At least one photo or graphic with a descriptive caption that may be used to highlight the project. Photos highlighting students engaging in the research work are encouraged.
3. **TECHNICAL REPORT:** A 2-3 page technical report summarizing the problem and research objectives, methodology, principal finding and significance, and references.
4. **PUBLICATIONS AND PRODUCTS:** A list of all reports, journal articles, book chapters, theses, dissertations, and other published works developed as a result of the grant during or subsequent to the reporting period. Electronic copies of these works should be submitted to KWRRRI, where possible. All works (written or verbal) should contain the USGS acknowledgement of support as follows:
 - a. Acknowledgement in any publication (including World Wide Web pages) of any material based on or developed using funds, in the following terms, "This material is based upon work supported by the U.S. Geological Survey under Grant/Cooperative Agreement No. (enter USGS award number)." It should also include the disclaimer: "The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Geological Survey. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Geological Survey."
 - b. Orally acknowledge support during all news media interviews, including popular media such as radio, television, and news magazines.
5. **INFORMATION TRANSFER:** A brief description of information transfer activities conducted within the project period, such as workshops, course materials, or other outreach.
6. **STUDENT SUPPORT:** Contact information of all students working on the project including major, academic year, and email. If the 104b supported research informed a thesis or

dissertation, please provide detailed information about that effort including title and date of defense.

7. **NOTABLE ACHIEVEMENTS AND AWARDS:** Provide a brief description of any notable achievements and awards resulting from grant supported work during the reporting period. This applies to PIs, Co-PIs, and any students working on the project.
8. **FOLLOW ON FUNDING:** Provide a list of any follow-on funding awards, unfunded applications, or planned funding applications resulting from this project.