




**Enhanced Aquifer Recharge Performance and
Potential Risk in Different Regional and
Hydrogeologic Settings**

Informational Webinar for Applicants

EPA STAR RFA

September 29, 2022

- Review application information for the EPA RFA:

“Enhanced Aquifer Recharge Performance and
Potential Risk in Different Regional and Hydrogeologic
Settings”
- Provide guidance for eligibility, submission, technical aspects of application process 
- Answer questions about the application process

Webinar Ground Rules



- You may type your questions in the comments box.
- We will address questions at the end of the presentation.
- No specific research project or idea can be discussed but clarifying questions regarding what is written in the RFA announcement may be answered.
- Note: These slides are available on the webpage for this funding opportunity.

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RFA & Award Information

- RFA will close on November 9, 2022, at 11:59:59 p.m. Eastern Time
- Estimated Number of Awards: 4 grants
- Anticipated Funding Amount: \$2M per grant, over 3 years
- Cost sharing is not required.
- Proposed budget must not exceed \$2M.
- Details in the section **II. Award Information** of the RFA.

Read the RFA very carefully, all necessary information is provided



Research Areas



1. Research on the effect of local subsurface geology and hydrology on EAR effectiveness for enhancing water quality and ensuring a safe supply of drinking water.
2. Research on the effect of source water (excluding oil and gas produced water) and the ability of sub-surface geology to degrade or attenuate conventional and emerging contaminants (including pathogens) that might be found in different sources of water.
3. Research on methods and technologies for monitoring and maintenance of EAR systems to improve and maintain performance and operational efficiency (both source water quality and quantity) and reduce potential environmental and public health risk.
4. Research on computational modeling and scientific visualization.

Applicants should propose research that addresses **at minimum, three of the four** research areas below. Applications which **do not** address **at least three** of the research areas described below may not be rated as highly under the evaluation process described in Section V as those that do. Bulleted topics are listed under each research area for applicants to consider in shaping their research project. Applicants are not required to respond to all of the bulleted topics or limit the research scope to these topics.

Research on the effect of local subsurface geology and hydrology on EAR effectiveness for enhancing water quality and ensuring a safe supply of drinking water.

To enhance understanding of how subsurface geology affects successful aquifer recharge, applicants should propose research on subsurface characteristics to enable site characterization.

This can include but is not limited to:

- Aquifer type (unconsolidated, consolidated, unconfined, confined, mixed, anisotropy in properties)
- Potential for contaminant mobilization
- Potential for induced seismicity from groundwater recharge
- Impact of discrete subsurface heterogeneity
- Lithology (geochemical properties)

Research on the effect of source water (excluding oil and gas produced water) and the ability of sub-surface geology to degrade or attenuate conventional and emerging contaminants (including pathogens) that might be found in different sources of water.



Research Area 2 Continued

This can include but is not limited to:

- Vadose zone physical, mineralogical, and chemical properties
- Aquifer types (sedimentary, carbonate-karst, igneous and metamorphic)
- Various sources of waters (stormwater, agricultural drainage and return flows, recycled municipal wastewater)
- Characterization of background water quality prior to EAR implementation
- Treatment of water both before recharge and after extraction, especially where groundwater is used as a source of drinking water
- Mobilization of natural contaminants

Research on methods and technologies for monitoring and maintenance of EAR systems to improve and maintain performance and operational efficiency (both source water quality and quantity) and reduce potential environmental and public health risk.

This can include but is not limited to:

- Monitoring needs, new methods and technologies
- Target parameters for monitoring and monitoring frequency and risk
- Maintenance needs, new methods and technologies (e.g., to reduce clogging)

Research on computational modeling and scientific visualization.

This can include but is not limited to:

- Better predictive modeling and characterization of uncertainty to represent performance and risk
- Linked geohydrological and geochemical modeling
- Improved models in karst and fractured rock aquifers
- Integrated measurements and modeling of surface and ground water when applicable
- Demonstration of useful modeling in practice



Example Outputs

Outputs may include:

- Publications of research results in peer-reviewed journals, guidance documents, decision support tools, models, demonstrations and case studies, reports, and presentations related to EAR analysis and strategies.
- Models/tools which are transferable to different regions of the United States, account for regional variations in costs, and be applicable in different physical/site and hydroclimatic settings
- Models/tools which allow individual communities to insert place-specific data and other local factors that contribute to variations in EAR implementation and success.



Example Outcomes

Outcomes may include:

- Increased adoption of fit for purpose EAR including better ability for state, tribal, and local water-quality managers to plan, construct, maintain, and monitor EAR practices
- Increased understanding of the risks, benefits, and consequences of EAR practices, given particular source waters, subsurface geology, and groundwater end use
- Improved groundwater sustainability



Collaboration/ Engagement Plan

Applicants should describe the following:

- Type of collaboration/engagement proposed and what role it will play in the overall project.
- How the collaboration will enhance the capacity of the project
- How will results be usable by state/local , states, tribes, municipalities, academia, industry groups, utilities, non-profit organizations, associations, and local communities/community-based organizations
- How related or complementary projects/studies will be coordinated with activities of the project.
- How you will ensure that the collaboration will materialize during project performance
- Describe the partner(s) intent to participate in the proposed research including evidence of support of an active partnership with states, tribes, municipalities, academia, industry groups, utilities, non-profit organizations, associations, and/or local communities/community-based organizations



Innovation and Sustainability

- Research applications must include a discussion on how the proposed research is innovative (see Section IV.C.5.iii.a).
- Innovation for the purposes of this RFA is defined as the process of developing new or novel technology-based projects (methods, devices, creative solutions or concepts) that contribute to improved social, environmental, and economic well-being
- Research applications must include a discussion on how the proposed research will seek sustainable solutions that protect the environment and strengthen our communities (see Section IV.C.5.iii.a). Reviewers will draw from all of the above-mentioned innovation and sustainability definitions in the review/evaluation process of research applications (see Section V.A).



Eligibility Information

Eligible to Apply (Section III. Eligibility Information)

Public and private nonprofit institutions/organizations

Public and private institutions of higher education

Hospitals located in the U.S

State and local governments

Federally Recognized Indian Tribal Governments

Foreign collaborators, data collection or use is OK

- Entities that are **NOT eligible**
 - Profit-making companies
 - Foreign governments
 - International organizations
 - Federally-Funded Research and Development Centers (FFRDCs)
 - Federal agencies



Eligibility Information Pt. 3

- Some non-eligible institutions/organizations may be on subawards of eligible applicants
- For profit companies are NOT eligible and may NOT be subawardees
 - For profit companies may be consultants
 - Consultants are not to be considered key personnel on a grant application
 - Contracts/Consultants are subject to competitive procurement requirements (see Section IV.C.5.iv.f)
- Other eligibility criteria
 - Application must include Collaboration/Engagement Plan
 - Application must stay within funding and performance period limits
 - Applicants must use Grants.gov – no changes after deadline



Application Materials and Process

- **Section IV. Application And Submission Information** of the RFA
- To apply under this solicitation, use the application package available at **Grants.gov**
- For further submission information see: **RFA Section IV.F.** “Submission Instructions and other Submission Requirements”
- Note: All necessary forms are included in the electronic application package, with the exception of the current and pending support form, available at: **Research Funding Opportunities: How to Apply and Required Forms**

Make sure to include the current and pending support form as part of the Project Narrative of your Grants.gov submission



Other Information

Please refer to the following RFA sections for additional Information:

IV. Application And Submission Information

- Required application package materials including:
 - EPA Human Subjects Research Statement (HSRS)
 - Scientific Data Management Plan (SDMP)
 - Quality Assurance Statement (QAS)
 - Innovation and Sustainability

V. Application Review Information

- Peer Review Criteria
- Relevancy Review Criteria



Application Review Information

Peer Review Criteria

1. Research Merits
2. Responsiveness
3. Project Management
4. Collaboration/ Engagement
5. Other Factors (innovation & sustainability)

Relevancy Review Criteria

1. The degree to which the proposed science/research is relevant to EPA's priorities as described in this solicitation and Goal 5: Ensure Clean and Safe Water for All Communities, Objective 5.2: Protect and Restore Waterbodies and Watersheds, of EPA's [FY2022-2026 Strategic Plan](#).
2. The degree to which results (i.e., outputs/outcomes) of the research have broad application or affect large segments of society.
3. The degree to which the research is designed to produce data and methods that can immediately and/or with little to no translation be utilized by the public, states, and tribes to better assess or manage environmental problems.

See Section V for more detail on the above criteria and other review components

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Thank you!