

# Request for Information

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The WATER and Environmental Research Systems (WATERS, <http://watersnet.org>) Network Project Office (WNPO) is requesting information from the natural and social science and engineering communities to inform a proposed national network design study during Phase 2 of the WATERS Network Project Office. Responses are requested no later than April 7, 2008. The information will be used by the WATERS Network Chief Scientist/Engineer (selection pending – <http://www.watersnet.org/docs/NoO-Chf-Sci.pdf>) and the WATERS Network design team to inform an unsolicited proposal to the National Science Foundation for Phase 2. The Phase 2 proposal will be for a two-year project with a funding request of \$5.4M to the National Science Foundation's Hydrologic Science program in the Geosciences Directorate and the Environmental Engineering program in the Engineering Directorate and is due to NSF on June 1, 2008. Further background information on the WATERS Network and plans for Phase 2 can be found here: <http://www.watersnet.org/docs/WATERS-Bckgrd.pdf>.

## Information Requested

Two types of responses to this RFI are requested:

- Available resources that could be used for the national network design study, such as:
  - Relevant models. The models should be as comprehensive and multi-scale as possible, including water and waterborne constituents in the entire hydrologic cycle, interactions between the built and natural environment, performance of engineered components of the cycle, and the role of human interventions and surface earth processes in the hydrologic cycle.
  - Tools or algorithms that can be used for network design; for example, methods that will permit a quantitative determination of the value of information relative to a specific hypothesis or objective
  - Available data sets from sites and facilities (both observational and for controlled experiments), especially high frequency datasets in multiple environments. These include sites and facilities in the built, natural, and managed environment.
- Network-wide analyses (including both analytical approach and data sets) to define national network design. The analyses should involve multiple observatory locations and be focused on defining network designs to address a specific set of scientific hypotheses and experiments. Example hypotheses and experiments can be found in the WATERS Network Science, Education, and Design Strategy (SEDS) document, to be released in late February.

***Responders to this RFI should carefully review the SEDS document, particularly the “Next Steps” chapter that outlines the WATERS Network design team’s recommendations for Phase 2 activities.*** A community workshop to discuss the SEDS document and the national network design study will be held on March 24 and 25, 2008 in Arlington VA. To receive notification of release of the SEDS document in late February and further information on the community workshop, please subscribe to the WATERS Network listserv by sending an email to [majordomo@ncsa.uiuc.edu](mailto:majordomo@ncsa.uiuc.edu) with the following in the email body:  
subscribe waters <youremail@somewhere> (e.g., subscribe waters <johndoe@home.com>)

## Guidelines for Information Submissions

To submit to this RFI, please follow these guidelines:

- Limit your submission to five pages, in 11 pt font with 1” margins, plus a reference list.
- Include the following in your submission:
  - Title that best represents the information submitted
  - Lead contact for further information (name, institution, e-mail address, phone number).
  - List of other key contacts or partners who are relevant to the information submitted (name, institution, e-mail address, phone number, and role in the information submitted).
  - Introduction, including purpose of the submission for informing the Phase 2 project office proposal preparation process
  - Details on one of the following:
    - Description of resources (models, facilities, tools, or data sets) that could be used for the national network design study. Include Web sites or publication lists for further information. For sites and facilities, include a list of existing data (or Web link for details) and their spatial and temporal data density. For models and tools, include capabilities and limitations of the models and tools, any prior validation, and Web links to available documentation.
    - Description of network-wide analyses that could be included in the national network design study. Explain how the analyses would enable quantitative evaluation of the value of information for a specific set of scientific hypotheses and experiments at multiple observatory locations. Include key references for the analyses (including available data and models to support the activities) and the scientific importance of the topic, relevance of the topic to the infrastructure proposed in the SEDS document, and spatial and temporal scales of the analyses.
  - Intellectual merit and broader impacts of the information provided.
  - Any other comments that the Chief Scientist should consider in scoping the Phase 2 project office proposal.
- *Note that collection of new data is not anticipated during the network design study, but leveraging of existing or planned data collection activities funded by other projects is possible and encouraged.*
- Submit the above information in PDF format to [watersinfo@ncsa.uiuc.edu](mailto:watersinfo@ncsa.uiuc.edu) no later than **April 7, 2008**.
- Questions about this RFI should be addressed to [watersinfo@ncsa.uiuc.edu](mailto:watersinfo@ncsa.uiuc.edu) or brought to the community workshop.

## Review of Submissions

Note that this RFI is **not** a request for Phase 2 project office or network design proposals, and submissions will **not** undergo a formal proposal review process. Submitted white papers will be reviewed by the Chief Scientist to inform his/her development of a **single** unsolicited Phase 2 project office proposal to NSF, which will involve national network design activities to better define needs for the WATERS Network (see [background information document](#)). As with any

NSF unsolicited proposal, the Chief Scientist as PI will select and scope resources, analyses, and personnel to include in the Phase 2 project office proposal, there is no guarantee of funding, and competing proposals are possible. In selecting resources and analyses for inclusion in the proposal, the Chief Scientist is likely to consider:

- Relevance of the resources and network-wide analyses to the WATERS Network vision, as outlined in the forthcoming SEDS document.
- Extent to which the resources and network-wide analyses contribute to the Chief Scientist's vision for integrated network design activities.
- Intellectual merit and broader impacts of the submitted information.
- For data sets, spatial and temporal density and heterogeneity of information sources of multiple types (including remote and embedded sensing), nested spatial scales (from plot to large river basin scale), and real-time to long-term temporal scales.
- For models, extent of prior validation, feasibility for addressing multiple scales, and comprehensiveness, including water and waterborne constituents in the entire hydrologic cycle, interactions between the built and natural environment, performance of engineered components of the cycle, and the role of human interventions and surface earth processes in the hydrologic cycle.
- For tools, extent to which they can support a quantitative determination of the value of information relative to a broad set of specific hypotheses or objectives.

It is expected that portions or all of some RFI submissions will be included in the proposal to be submitted to NSF. Some or all of the contacts associated with those RFIs may participate in the project in some role, but the exact nature of the participation and the level of compensation, if any, for that participation cannot be guaranteed. *By providing information in response to this RFI, you are granting unrestricted permission for the submitted information to be used in part or in whole, with or without modification, in the WATERS Network proposal to NSF at the discretion of the Chief Scientist.*