New York State Water Resources Institute at Cornell University
and New York State Department of Environmental Conservation,
Hudson River Estuary Program

REQUEST FOR APPLICATIONS UNDER THE WATER RESOURCES RESEARCH GRANT PROGRAM

Administered by the U.S. Geological Survey, Department of the Interior and
NYS Department of Environmental Conservation, Hudson River Estuary Program

Closing Date: November 27, 2018

Scope and Program Priorities

The **New York State Water Resources Institute (WRI)** and the **New York State Department of Environmental Conservation (DEC) Hudson River Estuary Program (HREP)**[1] invite New York's higher education faculty to submit research or outreach proposals that contribute to better watershed and water resource management in New York State.

The primary objective of this program is to bring innovative science to watershed planning, management, and policy. Proposals that support strategic goals of the HREP are encouraged since HREP provides significant funding to this WRI grants program. For more information on the Hudson River Estuary Action Agenda, please refer to http://www.dec.ny.gov/lands/5104.html. WRI is most interested in supporting research to assist management and outreach in Benefits 1 (Clean Water), and 2 (Resilient Communities), although research needs in all Benefits are eligible.

Proposals should address one or more of the following:

1) Research that addresses key knowledge gaps or issues of emerging importance to New York's water resources. Research themes that WRI is actively promoting include, but are not limited to:
   a. The current state and effectiveness of water-resource infrastructure including water supply and wastewater treatment facilities; decentralized treatment installations; distribution networks; natural and "green" infrastructure; riparian corridors; constructed wetlands; dams; culverts and bridges; etc.;
   b. Understanding the connections between source watershed protection, drinking water management, and aquatic life needs
   c. Effect of climate change and extreme weather on New York communities; assessment of the resilience of ecosystems, infrastructure, communities, and governance institutions to climate change and/or development of strategies to increase such resiliency
   d. Sources, transport, fate, and management of emerging contaminants and harmful algae
2) Integration of scientific, economic, planning, governmental and/or social expertise to build comprehensive strategies for local infrastructure and watershed managers
3) Outreach materials and approaches that enhance the communication and impact of science-based innovation to water resource managers, policy makers, and the public; we are especially open to novel or innovative methods.
4) The relationship between management in the Hudson watershed and the estuary ecosystem's fish and wildlife, and water quality and quantity.

While this RFA addresses some goals associated with the Hudson Valley and Mohawk watersheds, projects are eligible throughout NYS.

We also offer smaller grants to fund undergraduate and graduate student researcher salaries. These grants do not carry direct cost-share requirements.*

*In an effort to better connect researchers with practitioners, managers, and policymakers in the Hudson and Mohawk watersheds and beyond, all small grant recipients are required to **present their research** at a community meeting, conference, workshop, etc., preferably within the watershed in which the work was conducted, or to state agency staff or other appropriate resource managers. Researchers must **provide a photo** of themselves presenting and a **brief statement** of the relevance of the event to public decision-making. These images and statements may be posted online, and/or used in federal or state legislative outreach materials by WRI.

This solicitation is available on the Internet at:
http://wri.cals.cornell.edu/

[1] Projects funded by HREP may have additional outreach and reporting requirements, which will be explained in the award letter.

Important considerations:

- Proposals must be received **by 5 PM on Tuesday, November 27, 2018**.

- Total available funding is expected to be about $100,000. About half of the funds are from the Federal Water Resources Research Act administered by the US Department of the Interior, Geological Survey, and the remainder from the Hudson River Estuary Program.

- Full projects may request **up to $20,000.** Full project proposal budgets **must reflect a $2 non-federal match for each grant dollar**.

- Charging overhead costs on these grant funds is prohibited. Foregone overhead may be used as a contribution to the non-federal matching requirement.

- **Small grants** supporting undergraduate and graduate student research may request up to $10,000. Small grant budgets **do not** need to demonstrate a match, although, WRI appreciates contribution of foregone overhead as match for the overall program.

- Proposals must be submitted by **researchers affiliated with a university or college based in New York** and qualified to conduct research, through their institution's grant application process.

- Federally-funded projects may start on or after March 1, 2019, and must be completed by February 28, 2020. State-funded projects may start on or after April 1, 2019, and must be completed by March 31, 2020.

- Awardees are required to submit to NYS WRI a final technical report detailing the progress and results of the project within two months of the end of the project. If a report is not appropriate, an alternative deliverable must be specified in the project proposal. Awardees are also strongly encouraged to present the results of their work at relevant community events, conferences, workshops, etc.

- Researchers are encouraged to identify and enlist a local or regional partner, (e.g., municipality, watershed group, nonprofit, landowner, agency, etc.) to illustrate the need and applicability of their project to address local and regional priorities, and meet management, outreach, and planning needs. Letters of support are highly encouraged.

- We hope awardees will continue to collaborate and communicate with WRI in the future. Specifically, WRI staff will contact awardees two years following the final report submission to inquire as to whether any publications resulted from their work.

- Proposals **not** eligible for funding include: -- Research on health effects involving human subjects or their surrogates; and research involving oceanography. *NOTE: Estuarine research proposals are suitable if they are relevant to the Hudson River Estuary and its watershed.*

- **Projects proposing to perform water quality monitoring and sampling in the Hudson Estuary system are subject to new quality control and assurance standards,** because half of the funding for this RFA is from the DEC's Hudson River Estuary Program. For work with a water quality sampling component, NYS Public Health Law, Section 502, mandates the use of a NYS DOH ELAP certified lab for the analysis of environmental samples collected within NYS. Additionally, all monitoring projects shall include a Quality Assurance Project Plan to ensure proper sampling methods are followed, and that traceable, reproducible results are generated. For projects that involve the assessment or monitoring of water quality, all monitoring and measurement activities conducted in the field or laboratory shall be:

(A) Performed in accordance with an effective quality system for planning and assessing environmental measurements and tests, and for conducting required quality assurance and quality control procedures to promote and maintain the accuracy and reliability of environmental measurements and test results;

(B) Performed by a laboratory certified by the New York State Department of Health (NYSDOH) under the Environmental Laboratory Approval Program (ELAP) pursuant to Section 502 of the Public Health Law. This requirement shall not apply to specific parameters when ELAP has not issued a certificate for the specific parameter; and

(C) Performed in a manner that ensures all requisite quality control and calibration requirements of the method are met including field testing, sample collection, preservation, and record keeping. When the method does not detail requirements for any or all of these items, the basic quality assurance and quality control requirements defined in 40 CFR Part 136.7 shall be followed.

Note: The US Department of the Interior's FY2019 budget has not been approved. NYS WRI reserves the right to amend this solicitation.

Applicants considering proposals on the Hudson and its watershed are highly encouraged to contact the Hudson River Estuary Watershed program in order to put forward a proposal that meets expectations and needs.

Hudson River Estuary Program contact:
Scott Cuppett
Voice: (845) 256-3029
Email: scott.cuppett@dec.ny.gov

For general questions about this RFA, contact:
Dr. Brian G Rahm
NYS Water Resources Institute
Voice: (607) 254-7163
Email: bgr4@cornell.edu

I. CALENDAR

1.	Oct. 25, 2018	Requests for proposals released
2.	**Nov. 27, 2018**	**Proposals due (5 PM)**
3.	Dec. 2018	Finalists notified
4.	Jan. 2019	Finalists update proposals if necessary
5.	Jan. 15, 2019	Submission of finalist packages to USGS for ratification
6.	*Mar. 1, 2019	First eligible spending by approved projects
7.	April 30, 2020	Final technical report due to NYS WRI (May 30, 2020 for state-funded projects)

***** State funding is available starting April 1st, 2019

II. APPLICANT ELIGIBILITY

Faculty in any institution of higher learning in New York State is eligible to apply for awards.

III. SELECTION CRITERIA

An evaluation panel will rate proposals according to the following criteria:

1. Relevance of Proposed Research/Information Dissemination Activity. Extent to which application addresses the priority topics in this RFA. Documentation of supporting local partners or agencies, and collaborative funding (highly encouraged).

2. Quality of workplan. Technical merit of proposal, probability of successful completion, qualifications of principal investigator and other team members, availability of appropriate equipment and facilities, and transferability of project outcomes throughout New York State.

3. Awareness of Previous and On-going Work. Evidence that investigators are building upon relevant literature and existing projects in New York State. Proposals that duplicate prior work will not be funded.

4. Social Impact Component. 1) The extent to which the proposed research uses students in a capacity to further their training as scientists, engineers, or technical professionals **and / or** 2) the extent to which the work is likely to improve the capability of government agencies or community-based watershed groups to address water resource management needs.

IV. APPLICATION SUBMISSION

Please submit an electronic copy of your proposal by email to Brian Rahm at: **bgr4@cornell.edu**. Submit in **Microsoft Word** or a compatible format.

Budgets may be incorporated into submission documents, but separate Excel files containing budget details are encouraged.

NYS WRI will acknowledge all applications shortly after receipt. Contact us if your application is not acknowledged by December 1, 2018.

V. APPLICATION CONTENTS

A. Cover page

Please submit a form from your institution, or a letter, that contains the following information:

1. Contact information for one principal investigator and one official associated with grant processing for your institution who has knowledge of your application.

2. Evidence that you have institutional permission to submit the proposal.

3. A statement committing your institution to provide matching funds, if necessary, **with the exact amount specified**.

For Cornell University applicants only: An original Form 10 having signatures through the Dean's level is necessary and sufficient. NYS WRI will arrange OSP reviews for finalists.

B. Workplan.

A proposal workplan shall consist of the following elements. **Use no more than five pages for workplan elements 1 through 18**, not counting principal investigator resumes or budget forms.

1. Title.

2. Project type. Choose from the following: Research, Information Transfer, Information Management System, Education, or Other (please specify).

3. Focus categories. Choose a maximum of three from the list provided (Attachment F).

4. Research category. Choose from the following the one that most closely applies: Social Sciences, Ground-water Flow and Transport, Water Quality, Biological Processes, Engineering, or Climate and Hydrological Processes.

5. Keywords. Enter keywords of your choice.

6. Duration. (month/year to month/year).

7. Funds requested.

8. Matching funds pledged. If necessary.

9. Principal investigator(s) name(s) and university.

10. Congressional district. Of the institution to which the funds would be awarded, as well as other districts in which the work may be conducted.

11. Abstract. A brief description of the problem, methods, and objectives.

12. Map of project area - municipalities and watersheds impacted (if applicable).

13. Statement of critical regional or State water problems. Include an explanation of the need for research, who wants it, and why (one paragraph maximum). Explicit identification of a local, regional, or state partner is encouraged.

14. Statement of results or benefits. Specify the type of information that is to be gained and how it will be used (one paragraph maximum).

15. Nature, scope, and objectives. Please include a rough timeline of work to be completed.

16. Methods, procedures, and facilities. Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives. Information dissemination proposals should specifically define target audiences, media, dissemination tactics, and evaluation methods.

17. Related work. Show by literature and communication citations the similarities and dissimilarities of the proposed project to completed or on-going research on the same topic. Show why your work does not duplicate that done by others before.

18. Training potential. Estimate the number and level of graduate and undergraduate students, by field of study and degree that are expected to receive training in the project.

19. Data management plan. Describe: (a) types of data or materials the project will produce; (b) standards for data and metadata format and content; (c) plans for archiving data; and (d) policies for access to and sharing of these data. Note: If you do not have a repository you are already familiar with, WRI staff are available to assist with the formatting and submission of datasets to eCommons, an open-access digital repository used by Cornell University.

20. Investigator's qualifications. Include a resume(s) of one or two principal investigator(s). **No resume shall exceed two pages.**

C. Budget

*** Budget template worksheets are available at the end of this document**

Please supply:

- A budget breakdown compatible with the form at the end of this package (Attachment C); and
- A budget justification (narrative) for line items compatible with the form at the end of this package (Attachment D)

When preparing your budget, we require that you use the following definitions for *direct* and *indirect* costs:

1. Direct costs. Direct costs are those costs which can be identified specifically with a particular research or information dissemination project, an instructional activity or which can be directly assigned to such activities relatively easily with a high degree of accuracy. Identifiable benefit to the

research or information dissemination work rather than the nature of the goods and services involved is the determining factor in distinguishing direct from indirect costs of research agreements. Typical transactions chargeable to an agreement as direct costs are compensation of employees for performance of work under the agreement, including related staff benefit and pension plan costs to the extent that such items are consistently treated by the educational institution as direct rather than indirect costs; costs of materials consumed or expended in the performance of such work; and other items of expense incurred for the agreement, including extraordinary utility consumption. The cost of materials supplied from stock or services rendered by specialized facilities or other institutional service operations may be included as direct costs of agreements provided such items are consistently treated by the institution as direct rather than indirect costs and are charged under a recognized method of costing or pricing designed to recover only actual costs and conforming to the institution's generally accepted cost accounting practices.

2. Indirect costs (matching funds only). Indirect costs are those that have been incurred for common or joint objectives and therefore cannot be identified specifically with a particular project, an instructional activity, or any other institutional activity. At educational institutions such costs normally are classified under the following functional categories: (a) General administration and general expenses; (b) Research administration expenses; (c) Operation and maintenance expenses; (d) Library expenses; and (e) Departmental administration expenses.

There are some requirements specific to matching funds:

A. The applicant shall have its matching funds committed by February 28, 2019 if the applicant's proposal is chosen as a finalist. Commitment means that the applicant shall supply NYS WRI with an institutional cost-sharing agreement (letter) signed by an official authorized to commit the applicant to all or part of the matching share or a third party, in-kind contribution signed by an official authorized to commit the third party.

B. Matching funds shall be obligated during the period of performance.

C. Matching funds may contain indirect costs including those that would have been charged to the grant were they allowable.

Applicants should consult with NYS WRI on questions relating to matching funds.

Instructions for Budget Breakdown Page – see justification worksheet for more detailed instructions

1. Salaries and wages. Identify individuals or categories of salaries and wages, estimated hours or percent of time, and the rate of compensation proposed for each person or category. Explain amounts included for projected increases if the rate of pay shown is higher than the current rate of pay. Identify each person with a task in the project. Tuition remission for students performing necessary work should be listed separately.

2. Fringe benefits. Indicate the rates/amounts in conformance with normal accounting procedures. Explain what costs are covered in this category and the basis of the rate computations. Indicate whether rates are used for proposal purposes only or whether they are also fixed or professional rates for billing purposes.

3. Tuition. This is allowable provided that the tuition or other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of the work.

4. Supplies. Include the cost of office, laboratory, computing, and field supplies separately. Provide detail on any specific item which represents a significant portion of the proposed amount. If fabrication of equipment is proposed, list parts and materials required for each and show costs separately from the other items.

5. Equipment. Show the cost of all special-purpose equipment necessary for achieving the objectives of the project. "Special-purpose equipment" means scientific equipment having a useful life of more than 1 year and having an acquisition cost of $5,000 or more per item. Each item should be itemized and justified. General-purpose equipment must be purchased from the applicant's operating funds. Title to non-expendable personal property shall be vested solely with the Recipient. Under no circumstances shall property title be vested in a sub-tier recipient.

6. Services or consultants. Identify the tasks or problems for which such services would be used. List the contemplated sub-recipients by name (including consultants), the estimated amount of time required, and the quoted rate per day or hour. If known, state whether the consultant's rate is the same as s/he has received for similar services or under Government contracts or assistance awards.

7. Travel. State the purpose of the trip and itemize the estimated travel costs to show the number of trips required, destinations, number of people traveling, per diem rates, cost of transportation, and any miscellaneous expenses for each trip. Calculations of other special transportation costs (such as charges for use of applicant-owned vehicles or vehicle rental costs) should also be shown. **Note that small grant recipients are unlikely to be reimbursed for *out-of-state* travel.**

8. Other direct costs. Itemize the different types of costs not included elsewhere; such as shipping, telemetry, computing, equipment-use charges, age dating, or other services. Provide breakdown showing how the cost was estimated; for example, computer time should show the type of computer, estimated time of use, and the established rates.

9. Total direct costs. Total items I through 8.

10. Indirect cost/general and administrative (G&A) cost. Show the proposed rate, cost base, and proposed amount for allowable indirect costs based on the cost principles applicable to the Applicant's organization If the Applicant has separate rates for recovery of labor overhead and G&A costs, each charge should be shown Explain the distinction between items included in the two cost pools. The Applicant should propose rates for evaluation purposes which they are also willing to establish as fixed or ceiling rates in any resulting award.

11. Total project cost Total Federal and non-Federal amounts, if any.

ACID DEPOSITION	ACD
AGRICULTURE	AG
CLIMATOLOGICAL PROCESSES	CP
CONSERVATION	COV
DROUGHT	DROU
ECOLOGY	ECL
ECONOMICS	ECON
EDUCATION	EDU
FLOODS	FL
GEOMORPOLOGICAL PROCESSES	GEOMOR
GEOCHEMICAL PROCESSES	GEOCHE
GROUNDWATER	GW
HYDROGEOCHEMISTRY	HYDGEO
HYDROLOGY	HYDROL
INVASIVE SPECIES	INV
IRRIGATION	IG
LAW, INSTITUTIONS, AND POLICY	LIP
MANAGEMENT AND PLANNING	M&P
METHODS	MET
MODELS	MOD
NITRATE CONTAMINATION	NC
NON POINT POLLUTION	NPP
NUTRIENTS	NU
RADIOACTIVE SUBSTANCES	RAD
RECREATION	REC
SEDIMENTS	SED
SOLUTE TRANSPORT	ST
SURFACE WATER	SW
TOXIC SUBSTANCES	TS
TREATMENT	TRT
WASTEWATER	WW
WATER QUALITY	WQL
WATER QUANTITY	WQN
WATER SUPPLY	WS
WATER USE	WU
WETLANDS	WL

BUDGET BREAKDOWN*

Project Number: (Number will be provided by the application system)
Project Title:

Cost Category	Federal	Non-Federal	Total
1. Salaries and Wages - Principal Investigator(s) - Graduate Student(s) - Undergraduate Student(s) - Others Total Salaries and Wages	$	$	$
2. Fringe Benefits - Principal Investigator(s) - Graduate Student(s) - Undergraduate Student(s) - Others Total Fringe Benefits			
3. Tuition - Graduate Student(s) - Undergraduate Student(s) Total Tuition			
4. Supplies			
5. Equipment			
6. Services or Consultants			
7. Travel			
8. Other direct costs			
9. Total direct costs			
10a. Indirect costs on federal share	XXXXXXXX XXXXXXXX		
10b. Indirect costs on non-federal share	XXXXXXXX XXXXXXXX		
11. Total estimated costs	$	$	$
Total Costs at Campus of the University on which the Institute or Center is located.	$	$	$
Total Costs at other University Campus Name of University:	$	$	$

* This form is provided as a worksheet only

BUDGET JUSTIFICATION*

Project Number: (Number will be provided by the application system)
Project Title

Salaries and Wages for PIs. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.
Salaries and Wages for Graduate Students. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)
Salaries and Wages for Undergraduate Students. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)
Salaries and Wages for Others. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.
Fringe Benefits for PIs. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.
Fringe Benefits for Graduate Students. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable.
Fringe Benefits for Undergraduate Students. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable
Fringe Benefits for Others. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.
Tuition for Graduate Students.
Tuition for Undergraduate Students
Supplies. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies. Provide a breakdown of the supplies in each category.
Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items. A detailed breakdown is required.
Services or Consultants. Identify the specific tasks for which these services, consultants, or subcontracts would be used. Provide a detailed breakdown of the services or consultants to include personnel, time, salary, supplies, travel, etc.
Travel. Provide purpose and estimated costs for all travel. A breakdown should be provided to include location, number of personnel, number of days, per diem rate, lodging rate, mileage and mileage rate, airfare (whatever is applicable).
Other Direct Costs. Itemize costs not included elsewhere, including publication costs. Costs for services and consultants should be included and justified under "Services or Consultants (above). Please provide a breakdown for costs listed under this category.
Indirect Costs. Provide negotiated indirect ("Facilities and Administration") cost rate.

* This form is provided as a worksheet only.