State of Wisconsin Groundwater Research and Monitoring Program FY 21 Request for Proposals

Joint Solicitation

July 1, 2020 – June 30, 2021

FACILITATED BY:
WISCONSIN GROUNDWATER COORDINATING COUNCIL
UNIVERSITY OF WISCONSIN WATER RESOURCES INSTITUTE

PARTICIPATING STATE ORGANIZATIONS:
UNIVERSITY OF WISCONSIN SYSTEM
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION
WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES

Proposal Submission Deadline:
3 p.m. CDT, Friday, November 1, 2019

If you have questions, please contact Jennifer Hauxwell, University of Wisconsin Water Resources Institute (jennifer.hauxwell@aqua.wisc.edu).
To SUBSCRIBE to an RFP email list, send email to: join-rfp_aqua@lists.wisc.edu. You do not need to add a subject or message to the email.

GROUNDWATER Wisconsin's buried treasure

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Date: July 31, 2019

To: Interested Researchers
From: James Zellmer, Groundwater Coordinating Council
           James Hurley, University of Wisconsin Water Resources Institute
Subject: Joint Solicitation for Groundwater Research and Monitoring

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We are pleased to announce the state of Wisconsin Joint Solicitation for Groundwater Research and Monitoring for Wisconsin Fiscal Year 2021. Complete instructions for proposal submission are enclosed. The goal of this solicitation is to identify and support scientific research that will answer key scientific questions and will advance our understanding and effective management of groundwater in Wisconsin.

The solicitation is a coordinated effort of the University of Wisconsin System and the Wisconsin Departments of Natural Resources; Agriculture, Trade and Consumer Protection; and Safety and Professional Services. This cooperative solicitation allows interested individuals to prepare project proposals that can be submitted to several different funding sources simultaneously and eliminates the need to submit similar proposals several times for different solicitation efforts. It is our intent that this joint solicitation will make it easier for interested researchers to prepare proposals, promote coordination among state organizations and researchers, and enhance the ability of state agencies and the UW System to meet their objectives.

Funding is available for new research or monitoring to meet specific state program needs and objectives. Up to $350,000 will be available for new groundwater projects in fiscal year 2021.

You are invited to review the enclosed materials and decide if you wish to submit a proposal. **The deadline for submittals is 3 p.m. CDT, Friday, November 1, 2019**. Investigators are required to submit proposals using _eDrop,_ a Web-based proposal submission system that is now open for registration. Please visit the WRI Joint Solicitation web page for more information.

Wisconsin Groundwater Research and Monitoring Program – FY21 Request for Proposals

OVERVIEW

The University of Wisconsin System (UWS) and the Wisconsin Departments of Natural Resources (DNR); Agriculture, Trade and Consumer Protection (DATCP); and Safety and Professional Services (DSPS) annually participate in a joint solicitation for research and monitoring proposals dealing with groundwater, pesticides and/or on-site wastewater treatment systems. Collectively, since its inception and through state FY20 (July 1, 2019 - June 30, 2020), this annual joint solicitation has funded 475 groundwater research and monitoring projects and has helped establish Wisconsin as an international leader in groundwater research. Up to $350,000 will be available for groundwater-related monitoring and research in fiscal year 2021 (FY21) (July 1, 2020 - June 30, 2021) for new projects. The four programs, collectively called the Wisconsin Groundwater Research and Monitoring Program (WGRMP), are summarized as follows:

UWS Groundwater Research - The UWS, through its Water Resources Institute (WRI), has received funding since FY90 for groundwater research. Projects may be of a fundamental or applied nature on selected aspects of groundwater research in the natural sciences, engineering, social sciences or law. Through FY20, the UWS will have invested $8.2 million on 198 groundwater research projects. Several projects have been co-funded with the DNR, DSPS and/or DATCP, and 18 were co-funded through the National Institutes for Water Resources program (U.S. Geological Survey). WRI has also invested $382,000 on seven additional water-climate projects funded through the National Institutes for Water Resources/USGS. Projects funded in past cycles are listed on the WRI website and FY20 projects are featured here. *After accounting for commitments to ongoing projects, the UWS will have approximately $150,000 in FY21 and anticipates funding two to four new projects.*

DNR Groundwater Monitoring and Research - The DNR has been funding groundwater management evaluation monitoring projects since FY86. The intent of these studies, funded through a segregated account, is to identify appropriate management practices to reduce the risk from potential sources of contamination. In recent years, the DNR has also used alternative state and federal funding to target specific issues of concern, including pathogens and groundwater quantity. Through FY 20, the DNR will have spent approximately $9.7 million on 232 monitoring and research projects. Several of these projects have been co-funded with DATCP, DSPS and/or UWS. *The DNR anticipates having up to $50,000 to support new groundwater research and monitoring studies in FY21.*

DATCP Pesticide Research - From 1989 to 2002, and again since 2017, DATCP has provided funding for research on pesticide issues of regulatory importance. DATCP funding comes from fees paid by pesticide manufacturers to sell products in Wisconsin. Through FY20, DATCP will have spent about $1.9 million on 44 pesticide projects. Some of these projects were co-funded with DNR and/or UWS. *During FY21, DATCP anticipates having up to $150,000 to support new groundwater research and monitoring studies.*

DSPS On-site Wastewater Treatment System Research - The Division of Industry Services (formerly the Division of Safety and Buildings within the Department of Commerce and the

Department of Industry, Labor and Human Relations) received an annual appropriation of $50,000 from 1990 to 1993 to fund research on alternatives to current private sewage-system technology. In 1994, when the appropriation expired, $75,000 generated through plan review and licensing fees became available each year for research on private sewage systems. Through FY20, approximately $600,000 will have been spent on eight projects. Two projects were co-funded with DNR and UWS. *DSPS will not provide funding for research projects in FY21.* DSPS will, however, be invited to take part in the proposal review process.

The Wisconsin Groundwater Coordinating Council (GCC) provides consistency and coordination among the four state entities in funding groundwater monitoring and research to meet state needs. This solicitation is coordinated jointly to facilitate proposal writing, streamline the review process, curtail duplication, improve coordination among state programs and researchers, and enhance communication among state programs and among principal investigators. Joint funding of some projects may be appropriate, but joint funding is not the purpose of this solicitation, as each state organization has its own designated mission and priorities. Although all proposals received will be distributed to each organization, lead investigators are asked to identify the state program whose mission and priorities best match their projects.

Please read the solicitation carefully; it contains a description of the priorities for each state program and other pertinent information, including the online proposal submission process. Please note that each organization has separate requirements for eligibility for WGRMP projects. Review the program-specific sections carefully. Investigators who are new to this opportunity are encouraged to solicit an example proposal from the contacts listed below.

If you have any questions related to university or agency priorities, please contact:

Jennifer Hauxwell, UWS, jennifer.hauxwell@aqua.wisc.edu
William L. Phelps, DNR, William.Phelps@wisconsin.gov
Lori Bowman, DATCP, Lori.Bowman@wisconsin.gov
Brad Johnson, DSPS, Bradley.Johnson@wisconsin.gov

FUNDING PRIORITIES

UWS Groundwater Research Program

The University of Wisconsin System (UWS), through its Water Resources Institute (WRI) and its Groundwater Research Advisory Council (GRAC), seeks projects of a fundamental or applied nature on any aspect of groundwater research in the natural sciences, engineering, social sciences, economics or law. For the purposes of this solicitation, "groundwater research" is defined as research that advances the understanding, protection or management of the groundwater resource. Projects that are primarily focused on wastewater or drinking water treatment technologies, surface water protection or soil science must make a clear link to current groundwater science.

The UWS Groundwater Research Priorities for Wisconsin were developed by the GRAC, whose council members have statewide expertise in groundwater research and policy. UWS funding for groundwater research is administered through the WRI, which is an active member of the National Institutes for Water Resources (NIWR). The National Institutes were established to

implement the provisions of the Water Resources Research Act of 1984 (Public Law 98-242) through the collective activities of the 54 member institutes. The strategic plan for NIWR contains three objectives designed to "provide relevant and timely information that can assist the Nation's water resource managers in their development and implementation of programs aimed at providing a sustainable water supply." These national objectives align well with the UWS Groundwater Research Priorities and were used as a framework to organize the list below. This synergy between local and national goals highlights Wisconsin's leadership in groundwater research and protection.

The UWS will have approximately $150,000 in FY21 and anticipates funding two to four new projects. UWS priorities include:

1) **Maintain or enhance *groundwater quality***
   - Identification and characterization of chemical pollutants in groundwater systems, including emerging contaminants and nitrogen, and their threats to ecosystems and human health, including the type, toxicity and persistence of degradation products
   - Occurrence of viruses and bacteria in groundwater and significance and implications to human health
   - Occurrence of metals and radionuclides in groundwater and effect on human health
   - Effects of environmental conditions and variability on groundwater quality
   - Impact of land-use practices on groundwater quality, including the effects of agricultural, industrial, municipal, residential or waste management activities with infiltration to groundwater
   - Interactions of groundwater and surface water, including chemical transformations in the hyporheic zone; impacts of groundwater withdrawal on groundwater and surface water chemistry; influence of groundwater discharge on surface-water quality; and wetland impacts on groundwater
   - Strategies for ensuring high-quality groundwater under a changing climate
   - Controls on pollutant transport in groundwater, including the development or validation of predictive models
   - Impacts of contaminated groundwater on Wisconsin families, including human health effects on reproduction, development and chronic disease; or on economic losses attributable to groundwater contamination

2) **Maintain or enhance *groundwater quantity***
   - Assessments of water availability and the impacts of human water use on groundwater levels, groundwater storage, surface water features and ecological features
   - Climatic effects on groundwater levels, flow patterns and quantity
   - Impact of land-use practices on groundwater quantity, including the effects of agricultural, industrial, municipal, residential or waste management activities with infiltration to groundwater
   - Strategies for maintaining and enhancing groundwater availability
   - Economic impacts of groundwater withdrawals on Wisconsin and the region

3) **Maintain or enhance *groundwater management***
   - Investigations into the best methods for optimizing groundwater use for human and environmental needs in Wisconsin, including strategies for long-term management that considers extreme weather events and trends
   - Development and evaluation of tools or protocols designed to evaluate the

environmental impacts of proposed high-capacity wells

- Development and use of new technologies for groundwater characterization or management
- Management of groundwater data, including informatics, visualization, access and maintenance
- Analysis of policy alternatives associated with groundwater management
- Economics of groundwater use
- Implications of changing environmental conditions on groundwater management
- Effectiveness of drinking water advisories, including strategies to make them more effective

DNR Groundwater Monitoring and Research Program

The Wisconsin Department of Natural Resources (DNR) supports monitoring and research to answer key questions and evaluate management practices for decisions leading to safe and reliable groundwater supplies. Funding comes from a variety of state and federal sources.

The DNR anticipates having up to $50,000 to fund new monitoring and research projects in state FY21. The DNR has identified the following immediate needs for groundwater monitoring and research. Funding preference will be given to project proposals that address one or more of these priorities.

1) **Evaluation of Nitrogen Fertilizer Management Systems for Protection of Groundwater and Drinking Water Wells**
   Nitrogen and bacteria are leading causes of drinking water well contamination in Wisconsin. Research is needed to determine effective management practices and site characteristics for fertilizer application that are protective of drinking water wells and groundwater. Projects should address acute and/or chronic impacts to groundwater and may focus on developing and/or evaluating one or more of the following:
   - Assessment and decision support tools to help agricultural and other landowners cost effectively apply fertilizers while reducing the potential for groundwater contamination
   - Nitrogen mass balance accounting analysis for common crops under efficient nitrogen fertilizer management, including quantification for all nitrogen inputs (applied, air deposition, irrigation water) and exports (harvest, leaching to groundwater, volatilization)
   - New cost-effective monitoring designs and analytical tools

2) **Information to Reduce Risk from Pathogenic Viruses and Other Microbial Contaminants**
   Public water systems are increasingly contaminated by viruses and other microbial agents. Private wells are also at risk. Work is needed to:
   - Evaluate well construction methods for susceptibility to viruses
   - Research pathogen types, occurrence and transport in groundwater, routes of exposure, potentially affected populations of people and drinking water implications

3) **Information to Support Management of Water Use to Protect Groundwater and Surface Water Supplies**
   To carry out existing state laws protecting public utility wells, springs or groundwater protection areas and addressing water loss greater than 95%, the DNR needs additional

data and information on the following topics:
- Achieving sustainable water use (methods to predict, evaluate and mitigate impacts of groundwater pumping to determine sustainable pumping levels)
- Evaluating impacts of individual high-capacity wells (refine our understanding of groundwater-surface water interaction, e.g., streambed conductance, stream-flow depletion; recharge area identification, assessment of irrigation practices and consumptive use coefficients for agricultural applications, evaluation of land-use change impacts)
- Other groundwater quantity goals needing support from monitoring and research include:
  - Improving understanding of water budget components, particularly evapotranspiration and recharge
  - Identification of groundwater recharge areas and enhancement of natural recharge
  - Assessment of extent of stormwater contaminant conveyance to groundwater
  - Relationship between high groundwater use and changes in groundwater quality
  - Development of basin-scale groundwater budgets

4) **Source Water Protection Tools**
   Research is needed on the following topics to help communities protect their drinking water sources:
   - Hydrogeologic methods to characterize the vulnerability of municipal drinking water systems to contaminants and to set priorities for managing contaminant sources
   - Development of simple economic analysis tools to help communities evaluate investments in groundwater protection as compared to water treatment
   - Assessments of the extent and effectiveness of source water protection efforts, including evaluation of local protection mechanisms and training and professional outreach programs

5) **Additional Ongoing Needs**
   While the department will give preference to proposals that meet the priorities above, the following important ongoing needs may be considered:
   - **Occurrence of Groundwater Contaminants** – Refined information is needed about the extent, causes and forecasting of elevated nitrate, pathogens, arsenic, radium and organic contaminants and the geochemical conditions affecting their mobility in groundwater in order to advise public water systems, well-drilling and water industry professionals and private well owners.
   - **Health Effects of Groundwater Contaminants** – Research is needed to better characterize risks posed by contaminated groundwater to public health.
   - **Emerging Groundwater Contaminants** – Research is needed to determine whether certain emerging substances (pharmaceuticals, antibiotics and hormones, pesticide breakdown products, viruses, prions and other microbial agents) pose a threat to our groundwater resources and to human health.
   - **Protecting Groundwater from Impacts by Stormwater Infiltration** – Research is needed to evaluate the impacts of stormwater management practices in areas susceptible to groundwater contamination to assess the extent of contamination and to develop and demonstrate innovative techniques to reduce contamination.
   - **Groundwater Monitoring and Data Analysis** – Development of a process for routine analysis of currently gathered data (Groundwater Retrieval Network, DATCP, Wisconsin Groundwater Center and others) is needed to detect emerging trends and

proactively address groundwater and drinking water contamination issues.

DATCP Pesticide Research Program

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) Pesticide Research Program is administered by the Agricultural Resource Management Division.

DATCP anticipates having up to $150,000 in FY21 to support new groundwater research related to pesticides and other agricultural contaminants in groundwater. In general, the focus of the DATCP program is on pesticide and nutrient research, which includes but is not limited to groundwater issues. Proposals for DATCP funds are typically one to two years in duration. The agency may agree to fund longer duration studies. Research proposals may be submitted to meet the following general or specific areas of DATCP interest.

General interests include:

1) **Evaluation of Nutrient Management Practices on Water Quality**
   This research should focus on the effects of nitrogen and phosphorus management practices on groundwater or surface water quality, evaluate models for predicting nutrient impacts on water resources or evaluate the success of applied nutrient-management plans.

2) **Evaluation of Factors Influencing the Patterns of Groundwater Contamination by Pesticides and Pesticide Metabolites in Wisconsin**
   This topic involves examining factors that influence pesticide leaching and persistence to determine areas of the state that are susceptible to groundwater contamination by specific pesticides.

3) **Use-Related Monitoring of Pesticides and Pesticide Metabolites in Groundwater**
   This project should study groundwater contamination by field application of pesticides in key environmental settings such as fractured bedrock areas.

4) **Use-Related Monitoring of Pesticides in Surface Water and the Effects of Management Practices on Contaminant Levels**
   Projects on this topic should determine the impacts of pesticide-use practices on surface water quality and evaluate the ability of various management practices, such as stream setbacks, to reduce contamination.

Specific areas of interest for FY21 include:

1) **Data review, groundwater research, modeling or other studies to develop and recommend use-related management practices for reducing the occurrence and concentration of the insecticide imidacloprid in groundwater to concentrations less than newly proposed enforcement standards and preventative action limits.**

2) **Studies to evaluate the economic cost of contamination of water supply wells to rural property owners. Evaluation of the costs for bottled water, water treatment, well replacement and loss of property value, using nitrate and the pesticides atrazine and/or imidacloprid as contaminants of concern.**

3) **Continuous nitrate and pesticide monitoring studies on small streams in sandy agricultural areas to help determine mass contributions through groundwater base flow and seasonal loading of nitrate and pesticides to streams.**

4) **Studies to determine the effects of sub-lethal concentrations of complex mixtures of numerous pesticides on populations of aquatic invertebrates or other organisms in small streams of the Wisconsin Central Sands region.**

DSPS On-Site Wastewater Treatment System Research Objectives

The Department of Safety and Professional Services (DSPS) has supported research focused on the performance of on-site sewage system designs, products and management practices that can be incorporated into the administrative rules regulating on-site sewage systems. These designs, products or management practices must be 1) directed toward protecting public health, groundwater and surface water quality; 2) result in on-site sewage treatment that is consistent with the provisions of the Groundwater Protection Law; 3) affordable by the average owner of an on-site sewage system; and 4) practical for the climate and soils of Wisconsin. The department also intends to monitor, on an ongoing basis, the performance of various on-site sewage system methods and technologies. The purpose of the performance monitoring is to provide additional information on the long-term performance of the various on-site sewage system methods and technologies to confirm their reliability, to provide data for improvements and to monitor long-term compliance with the groundwater standards. The DSPS is currently interested in the long-term performance of various mechanical pretreatment devices commonly referred to as aerobic treatment units and their treatment of common nutrients in wastewater (total suspended solids; biochemical oxygen demand; fats, oils and grease; and nitrates) in private onsite wastewater treatment systems. Systems with design flows greater than 12,000 gallons per day in the state are jointly regulated by the DSPS and the DNR.

DSPS will not have funding available in FY21. However, the department will be invited to participate in the review of proposals and make recommendations to the other organizations participating in the solicitation to help meet department priorities.

APPLICANT AND PROJECT REQUIREMENTS

Eligibility
Eligibility requirements for Principal Investigators are listed below:

UWS   **Funds are restricted for use by faculty within the UW System or by academic staff who have achieved principal investigator status. Non-UWS researchers may be included as associate investigators.**

DNR and DATCP **Funds are restricted for use by faculty within the UW System or by academic staff who have achieved principal investigator status, and by state and local agencies with demonstrated capacity for applicable research or monitoring. Others may submit proposals by collaborating with a UWS, state or local co-investigator. The DNR and DATCP encourage applicants to include a UWS-eligible**

principal investigator to maximize funding eligibility options.

Projects that appear to be continuations of previously funded projects with two years of support and projects that have been submitted with minimal modification and twice rejected (unless otherwise encouraged) will not be considered. The UWS and DNR also strive to avoid funding situations in which the name of a PI or co-PI appears on more than two projects during any given fiscal year.

Principal investigators who are significantly overdue with completed final reports to this program will not be eligible for new funding. Reports are considered significantly overdue six months after project completion dates. Funding organizations may consider extenuating circumstances on a case-by-case basis.

Budget Requirements and Considerations
Please keep in mind the following budget considerations that may affect eligibility and/or be important aspects for project selection:
- Budget items should include personnel costs, supplies, equipment and necessary travel.
- Projects will not be approved in any one budget cycle for a period of more than two years.
- Contracts will be approved on an annual basis.
- Second-year funding will be contingent on satisfactory progress.
- In general, faculty salaries and fringe benefits to be paid from any project should not exceed 10 percent of the total individual grant, but if needed, please provide justification.
- Overhead or indirect costs are not allowed.
- In general, budget categories "Supplies" and "Other Costs" together should not exceed 20 percent of the total individual grant,[*] but if needed, please provide justification.
- No capital equipment (more than $5,000 per item) may be purchased.
- Travel for attendance at scientific conferences will not be accepted.
- Project cost/value will be a factor in selection.
- Preference may be given to projects that support and/or incorporate graduate and undergraduate students.

Contractual Requirements
Projects must meet all departmental requirements and guidelines related to groundwater monitoring wells (installation, documentation and abandonment/filling and sealing), sampling, laboratory analysis and data management. See chapters NR 141 and 149, Wis. Adm. Code, for more information.

PROJECT SELECTION

Review of Proposals
The two most important considerations for the reviewers are 1) whether the proposal meets state program priorities as outlined in this solicitation and 2) whether the proposal is well written and scientifically sound. Other criteria include project cost, proposed timeline, whether the proposed project methodology meets the stated objectives, whether the resources requested meet eligibility requirements and are adequate to carry out the project, whether the project investigators have the abilities to complete the proposed project, whether the proposal incorporates and/or supports

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[*] DNR and DATCP-targeted proposals may allow for flexibility on these costs. Consult with agency contacts prior to submitting a proposal.

graduate and undergraduate students, and, if applicable, how the proposed project relates to past WGRMP-funded projects and how it may extend our knowledge. Proposals should contain a clear discussion of the expected practical application of the project results and include an outreach plan that describes how researchers will share the results of their work with stakeholders and the public. This will help the reviewers understand the importance of the proposed research and will ensure that the researcher designs the project with the practical application of results in mind.

All proposals received through the WGRMP joint solicitation process receive reviews from the following four groups:

1) External peer review – The WRI solicits and obtains a minimum of three external peer reviews of all proposals from national and international experts in the field, with a focus on the technical merits of the proposal. Reviewers are asked to comment on and rate each of the following aspects of the proposal ranging from excellent (5) to poor (1):

   1. **Rationale:** Please evaluate the degree to which the proposed activity addresses an important issue, problem or opportunity in development, use or management of groundwater resources.
   2. **Scientific or Professional Merit:** Please evaluate the degree to which the activity will advance the state of the science or discipline.
   3. **Clarity of Objectives and Feasibility:** Are the objectives of the proposed research clearly presented and is the proposed research feasible as written?
   4. **Innovativeness:** Please evaluate the degree to which new approaches to solving problems and exploiting opportunities in resource management or development, or in public outreach on such issues will be employed; alternatively, the degree to which the activity will focus on new types of important or potentially important resources and issues.
   5. **Qualification and Past Record of Investigators:** Please evaluate the degree to which investigators are qualified by education, training and/or experience to execute the proposed activity; record of achievement with previous funding.
   6. **Outreach:** Please evaluate the degree to which investigators have incorporated an outreach plan for the research findings or tools they plan to develop, the degree to which stakeholder or end-user awareness or buy-in has been sought, and the likelihood the work will inform the public and decision-makers as a result of the outreach efforts.
   7. **Budget/Value:** Please evaluate the degree to which the budget will adequately (but not excessively) support the project.
   8. **Overall Summary:** Is the project worthy of funding? Please provide a brief summary of and rating for your evaluation of the overall merit of this proposal.

2) The Research and Monitoring Subcommittee of the GCC – This group reviews proposals for technical merit and relevance to stated priorities as well as applicability for target funding organizations.
3) The Groundwater Research Advisory Council for UWS – Provided with the external peer reviews and the GCC subcommittee recommendations, this group reviews proposals for technical merit and relevance to stated priorities.
4) Staff from the funding organizations.

Final Decision-Making
Further detail on UWS, DNR and DATCP decision-making processes are outlined below:

UWS: The GRAC, which consists of university, state and federal agency and public representatives, meets as a body to discuss the results of the review process. The GRAC pays close attention to UWS priorities and direct relevance to groundwater issues in their deliberations. The GRAC recommends a priority list of projects that the UWS should strive to fund in accordance with budgetary resources. A suitable UWS Groundwater Research

Program is then assembled by the WRI and submitted to the GCC, which advises the Department of Administration on the release of UWS research funds upon passage of a state budget.

DNR: DNR staff and managers from groundwater-related programs review proposals to evaluate expected practical application of the project results. In making final funding decisions, the Bureau of Drinking Water and Groundwater will formulate its recommendations based on input from all project reviewers and available funds. Considering input from all reviewers and extent of available funds, the DNR Secretary's GCC designee makes the final selection of projects to receive funding from DNR sources.

DATCP: DATCP staff and managers from environmental programs review proposals to evaluate need and practical application of the project results. In making final funding decisions, the Bureau of Agricultural Chemical Management will form recommendations based on input from all project reviewers. Considering input from reviewers and extent of available funds, the DATCP Secretary's GCC designee makes the final selection of projects to receive DATCP funds.

Funding decisions will be made by the end of March. Proposals that are not chosen for funding through this solicitation may be referred to other funding sources for their consideration with permission of the investigators. Likewise, other funding organizations may refer proposals to the funding programs involved in this solicitation.

PROJECT ADMINISTRATION AND REPORTING

Proposals that are funded become the property of the granting Wisconsin state organization. Please note that each organization has separate mechanisms for administering funds and separate requirements for reporting described below. All investigators will be asked to make a copy of the final report available to the Wisconsin Water Library, housed at WRI.

The Wisconsin Water Library catalogs all WRI research reports into WorldCat and MadCat, two library indexing tools that provide worldwide access to the research. By having this information permanently indexed, the results are easily available to other scientists, policy makers and stakeholders. The library has also partnered with the University of Wisconsin-Madison Ecology and Natural Resources Digital Collection to make full-text reports available.

Additional reporting details for the funding organizations are below:

UWS: Principal investigators on awarded projects shall submit a progress report at the end of each project year in July using WRI's online project reporting system. A 15-page final report and a two-page project summary shall be submitted through the reporting system within 60 days after the project end date.

DNR: The project investigator shall submit brief quarterly project status reports to the DNR project manager within 30 days of the end of each quarter. A final report and a two-page project summary shall be submitted to the project manager within 60 days of the end of the contract period. The final report must contain thorough documentation of methods, all the data collected, and a discussion of how the results of the project can be used by decision makers.

<u>DATCP</u>: Specified by contract. Generally, project investigators must submit brief project status reports quarterly, within 30 days of the end of each quarter. A final report with two-page project summary is required within 60 days of the end of the contract period.

PROPOSAL SUBMISSION

WGRMP proposals will be submitted via *eDrop*, a Web-based proposal submission system located at https://edrop.aqua.wisc.edu/. The *eDrop* system is open for registration and submittal of proposals.

Applicants should contact Tom Xiong (WRI) at tomxiong@aqua.wisc.edu or 608-262-6170 with any difficulties associated with the proposal submission process using *eDrop*.

Investigators will be required to provide the following information when submitting proposals:
1) A title, an abstract, location of the research, list of investigators (please note the *eligibility* requirements on page 7) and 2-page curriculum vitaes, target funding organizations, the name of the department and the administrator(s) responsible for financial management of the project if funded, and five suggested reviewers and their areas of expertise (note - suggested reviewers <u>must</u> be from outside Wisconsin). Investigators will enter this information directly into *eDrop*.
   In addition, researchers will upload a Word document containing similar information as a proposal cover sheet. A Microsoft Word template for the proposal cover sheet is available for download from the WRI Joint Solicitation Web page.
2) A proposal narrative in Adobe Portable Document File (PDF) format. A Microsoft Word template for the proposal narrative is available for download from the WRI Joint Solicitation Web page.
3) A budget spreadsheet in Microsoft Excel format. An Excel template for the budget spreadsheet is available for download from the WRI Joint Solicitation Web page. Please note the *Budget Requirements and Considerations* on page 8.
4) Letters of support from collaborators or stakeholders (optional).
5) Administrative approval from an official authorized to sign proposal submissions.

All components of proposals must be submitted by the submission deadline of 3 p.m. CDT on Friday, November 1, 2019, to be considered. The Web-based submission system (eDrop) will close promptly at 3 p.m.

Detailed step-by-step guidelines for proposal submission follow, and a checklist is available for download on the WRI Joint Solicitation Web page. All proposals must be submitted using these instructions.

Step-by-Step Guidelines for Proposal Submission

The steps for entering information and uploading a proposal are relatively simple. The overall proposal format is similar to that of previous years, but there are a few modifications including a new Web-based submission system, so please read closely. There are twelve steps in the full proposal assembly process, and we recommend that investigators concentrate on steps one through four prior to submitting online.

Please adhere to the page limits for certain sections that are listed below. All pages should be 8.5 x 11 inches, all margins should be no less than 0.75 inches, and all sections use no smaller than 11-point type. The project summary, project description, references, and current and pending support pages should each start on a new page. The project summary and project description should have at least 1.5 line spacing (except for figure and table legends). The proposal must be consecutively paginated on the bottom of the page. Any section of a proposal that exceeds the specified maximum page limits will be grounds for returning the proposal to the author.

STEP 1: Prepare proposal cover sheet. Please use the Microsoft Word template titled "Proposal Cover Sheet Template" that can be downloaded from the WRI Joint Solicitation Web page. The proposal cover sheet is the only element of the proposal that will be shared with potential reviewers when they are initially invited to conduct a review of the proposal and will consist of the following items:
- A. Title
- B. Abstract (**not to exceed 300 words**, this is a condensed version of the 2-page project summary as described in the proposal narrative below)
- C. Principal Investigator(s) & Affiliation (Department and Organization)
  1. Lead Principal Investigator:
  2. Co-Investigator(s):
  3. Associate Investigator(s) & Affiliation (Department and Organization)
- D. Location of Research
- E. Budget
  1. Year 1 Request
  2. Year 2 Request

After the proposal cover sheet is prepared, save it on your local computer or network. When you submit your proposal package online you will be uploading this **Word** file. Do NOT convert the Word file to PDF. In addition, several items prepared for the cover sheet will be entered directly into *eDrop* as described in Step 7 below.

STEP 2: Prepare proposal narrative. Please use the Microsoft Word template titled "Proposal Narrative Template" that can be downloaded from the WRI Joint Solicitation Web page. The proposal narrative will consist of the following items:
- A. Title, Investigators, Affiliations of Investigators (top of first page)
- B. Project Summary (begin on same page; **not to exceed 2 pages**; minimum of 11-point font and 1.5 line spacing)
  1. Specific groundwater or related problem addressed by research/monitoring proposal
  2. How will findings contribute to understanding or solving the problem? Describe expected practical application of the project results.
  3. Project objectives
  4. Project approach to achieve objectives, including methods and procedures
  5. Potential users of project findings
- C. Project Description (begin on new page; **not to exceed 10 pages**; minimum of 11-point

font and 1.5 line spacing)
1. Objectives
2. Background information describing prior research/monitoring relevant to objectives and, if applicable, relationships to other projects funded through the WGRMP; references to ongoing projects and how they relate to proposed investigation; information gaps that will be filled by the proposed project
3. Project plan outlining experimental design and schedule
4. Methods detailed enough to convince the reviewer that the investigators are using modern techniques; a general statement alluding to techniques is not acceptable
5. Relevance to groundwater-related problems and state program priorities
6. Training support (if any) provided by the project, including a description of how students would be supported or incorporated
7. Outreach plan that describes how researchers will engage with and share the results of their work with end-users, stakeholders and the public [Suggestions and tools can be found at the Wisconsin Sea Grant "Actionable Science" website]
8. Brief budget justification (paragraph or less), including details for any funding designated for outside of the UW System and any funding items that exceed recommendations described in the "Budget Requirements and Considerations" section of the RFP.
9. Brief description of each investigator's role on the project and state the percentage of time that each will spend on the project (whether funding is requested for that individual or not)
D. References Cited (begin on new page; **no specified page limit;** minimum of 11-point font)
E. Current and Pending Support (begin on new page; **not to exceed 2 pages**)

After the proposal narrative is prepared, convert it to Adobe PDF format and save it on your local computer or network. When you submit your proposal package online you will be uploading this PDF file. The system requires that the proposal be in Adobe Acrobat PDF format (.pdf).

STEP 3: Prepare budget. Please use the Microsoft Excel budget spreadsheet titled "Budget Template" that can be downloaded from the WRI Joint Solicitation Web page. The budget will consist of the following items:
A. Salaries and Wages
B. Fringe Benefits
C. Tuition Remission Charges (if applicable)
D. Supplies and Publication Costs (list office, lab, computer and field supplies separately)
E. Travel (to support completion of the project only; travel for conferences is not allowed)
F. Other Costs (e.g., equipment maintenance and fabrication, subcontracts, rentals, etc.)

Please note: At the point of submission, the funding source should be considered State of Wisconsin General Program Revenue funds. *Campus indirect costs do not apply.* In the event a proposal from a UW System campus is selected for funding by the DNR or DATCP, the budget may need to be revised to include the campus' indirect costs, depending on the source of the funding the agency uses to fund the proposal.

Save the Excel budget file on your local computer or network as you work on it. When you submit your proposal package online you will be uploading this Excel file. Do NOT convert the Excel file to PDF.

STEP 4: Prepare curriculum vitae of principal and associate investigators. Upload a pdf of

the curriculum vitae (including recent publications) for each investigator under the appropriate section in Step 7 below (**not to exceed 2 pages per person**; minimum of 11-point font).

STEP 5: Log in or register in *eDrop*. *eDrop* is an online tool for submitting your proposal. Investigators must log in (previous users) or register (new users) online (https://edrop.aqua.wisc.edu/) before submitting proposals. Instructions on the site will assist you in entering your proposal package. Note to new users – the registration process involves a 2-step verification, requiring you enter both an email address (step one) and phone number (step two) to receive two different verification codes that you must enter in order to complete the registration.

STEP 6: Select the RFP associated with this request for proposals in *eDrop*.
Select the "Current Tasks" category on the left side menu.
Select "WRI FY 2021 State of WI Groundwater Research and Monitoring Program."

STEPS 7 through 12 (below) may be completed separately.
You do not need to upload your entire preproposal package in a single session; however, you must hit the "SAVE" button to avoid losing anything you enter AND as you navigate between pages in *eDrop*. Do not hit the "NEXT" button until you have successfully saved your information. We encourage you to frequently SAVE your updates. If you exceed word limits, then SAVEs will not be successful, and you can lose data. A successful SAVE is indicated by this prompt:
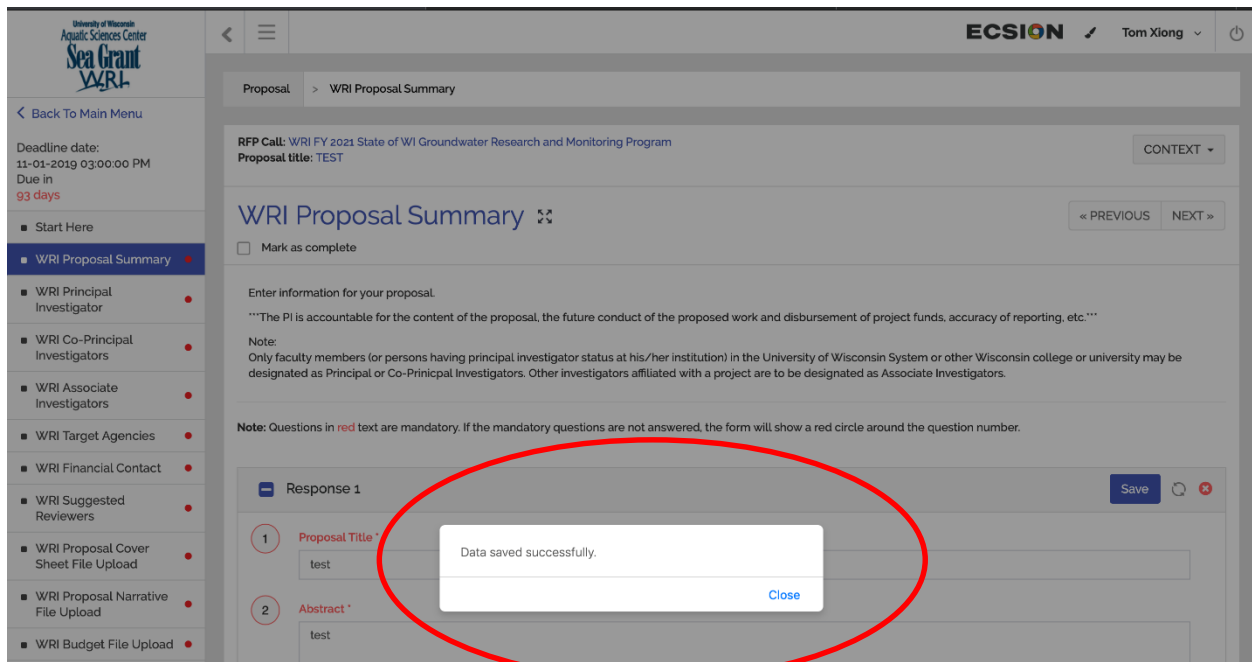
Your account will remain active through the submission deadline, and you may edit each section until your proposal is officially submitted (see Step 12). If you log out of a session, click on "Current Tasks" to resume working on your proposal.
Once you have completed a section, click on the "Mark as complete" box in the upper left of the screen.
Note: Your proposal is not officially submitted until you click on the "SUBMIT" button in the "Submission Preview" tab.

STEP 7: Enter basic information about the proposal. Select "Add Proposal" to begin to enter your proposal into the *eDrop* online system. Once you have entered a project title you will see a list of proposal sections/tabs on the left side of the screen.

Starting with "Start Here," work your way down the list of tabs, being sure to click "SAVE" at the bottom of each page. You can select any category or modify any section at any time before you submit your entire proposal. Note, you only need to enter the required information indicated by an * in each section.

WRI Proposal Summary	Enter title, abstract, location of research, budget (total year 1 and year 2 request), and keywords
WRI Principal Investigator	Enter information about principal investigator (including uploading a pdf of a 2-page curriculum vitae)
WRI Co-Principal Investigators	Enter information about co-principal investigator(s) (including uploading a pdf of a 2-page curriculum vitae)
WRI Associate Investigator	Enter information about associate investigator(s) (optional - including uploading a pdf of a 2-page curriculum vitae)
WRI Target Agencies	Enter/prioritize funding agencies
WRI Financial Contact	Enter financial contact and department/organization where project would be administered
WRI Suggested Reviewers	Enter names, affiliations and email addresses for five qualified reviewers currently working outside Wisconsin

STEP 8: Upload the Word file of the proposal cover sheet into the online system. This is the file that you prepared in Step 1. ("WRI Proposal Cover Sheet File Upload" tab)

STEP 9: Upload the PDF file of the proposal narrative into the online system. This is the file that you prepared in Step 2. ("WRI Proposal Narrative File Upload" tab)

STEP 10: Upload Excel file of the budget into the online system. This is the file that you prepared in Step 3. ("WRI Budget File Upload" tab)

STEP 11: Letters of support. Investigators may upload letters of support from collaborators or stakeholders. This step is optional. Only Adobe PDF format is accepted. ("WRI Additional File Upload" tab)

STEP 12: Submit your proposal. Click on the "Submission Preview" tab. Please review the accuracy of the information provided before submitting your proposal. **To formally submit your proposal package, select the "SUBMIT" button at the top right of your screen. This step MUST be done by the submission deadline.**

STEP 13: Provide administrative approval. All proposal submissions require administrative approvals and clearances before they can be considered. Please refer administrative staff reviewing your submission to Step 3 of these guidelines, "Prepare budget," for details about the source of funds used for this competition.

Campuses or institutions other than UW-Madison: An email stating that the proposal has received all required approvals and clearances must be sent to Melissa Boyce (maboyce@wisc.edu). This email must be from a campus official who is authorized to approve extramural grant applications and include "WGRMP FY21" on the email subject line. The body of the email must identify the PI, the approved budget amount, and the submitting institution name. Attachment of official transmittal documents or electronically

routed authorization forms are also acceptable as long as they show the required institutional approvals. **This administrative approval must be sent by the submission deadline.**

UW-Madison: Applicants should use the WISPER electronic routing application to secure department and dean/director/division-level authorizations. Division-authorized WISPER records should be routed to WISPER user MELISSA A BOYCE in department 34-9600. Please set the "submission method" field in the WISPER record to "internal routing only." The "Short Title" should be "WGRMP FY21." If you happen to have multiple proposals that you will be submitting, please use WGRMP-1, -2, etc. The record does not need to be routed through RSP at this time. If the proposal is ultimately selected for funding by the DNR or DATCP, the record may then be required to be routed through RSP with a revised budget to include the campus' indirect costs, depending on the source of the funding the agency uses to fund the proposal. **The division-authorized WISPER record must be routed by the submission deadline.**