Technology Assessment Program (TAP)

Request for Technologies

Issue Date: October 15, 2025
Due Date: December 1, 2025

Table of Contents

1.0 INTRODUCTION

The State of Ohio is soliciting proposals to address algal blooms in Lake Erie with emerging technologies, improved uses of existing technologies, or established technologies currently unused in the Lake Erie basin. This Request for Technologies (RFT) includes the following: a brief overview of the program, its objectives, purpose, and goal; eligibility; submittal requirements; an overview of the selection process; and disclaimers.

1.1 BACKGROUND

H2Ohio (***http://h2.ohio.gov)*** is Governor Mike DeWine's comprehensive, data-driven water quality plan to reduce harmful algal blooms (HABs), improve wastewater infrastructure, and prevent lead contamination.

"We have a moral obligation to preserve and protect our natural resources," Governor DeWine said during a speech at the National Museum of the Great Lakes in Toledo. "My H2Ohio plan is a dedicated, holistic water quality strategy with long-lasting solutions to address the causes of Ohio's water problems, not just the symptoms."

Governor DeWine's H2Ohio plan is an investment in targeted solutions to help reduce phosphorus runoff and prevent algal blooms through increased implementation of agricultural best management practices and the restoration of wetlands; improve wastewater infrastructure; replace failing home septic systems; and prevent lead contamination in high-risk daycare centers and schools.

HABs have been a concern in Lake Erie for decades, and the State of Ohio has a long history of developing solutions to address them. In support of these efforts, state agencies are often presented with new approaches for addressing HABs. Since these approaches often involve technologies and products that are typically innovative, proprietary, and span multiple scientific disciplines, state agencies alone are not best positioned to evaluate the efficacy and feasibility of these proposals.

To guide Ohio in addressing HABs in Lake Erie, H2Ohio initiated a Technology Assessment Program (TAP) to solicit and evaluate technologies with potential application for reducing HABs in Lake Erie. The first round of TAP was initiated in 2020 with the Ohio Lake Erie Commission creation of a public advisory council called the H2Ohio TAP Team to help solicit and prioritize technology proposals for further review by a third-party firm. The H2Ohio TAP Team was comprised of representatives from the private sector, public sector, trade associations, and non-profit companies. A 2021 RFT for the first round of TAP resulted in 40 proposals from which the TAP Team used uniform scoring criteria to select 10 technologies for further evaluation by a third-party consultant.

To date, six of these 10 technologies have been studied further in demonstration projects, some of which are ongoing. Information on the status of these projects and the first round of TAP is available on the H2Ohio website at: ***Exploring Innovative Technologies | H2Ohio***. While the demonstration projects for the first round of TAP are ongoing, H2Ohio is now issuing this current RFT to initiate a second round of TAP, TAP 2.0.

1.2 PROGRAM OBJECTIVES

The objectives of the TAP program are to evaluate technologies that support one or more of the following:

1) Reduction of nutrient loading to rivers, streams, and lakes;
2) Removal of nutrients from rivers, streams, and lakes;
3) Improved nutrient management on agricultural fields; and
4) Recovery of nutrients from animal waste.

1.3 PURPOSE OF RFT

The purpose of this RFT is to allow those with innovative technologies and products to provide information on their proposals, which allows the H2Ohio TAP Team to identify ten promising technologies that can reasonably address the program objectives, as described in Section 4.0. These 10 selected applicants will work closely with a third-party firm, that will conduct detailed evaluations of the technologies, prepare summary reports, and provide recommendations to the H2Ohio TAP team.

1.4 PROJECT GOAL & INCENTIVE FOR PARTICIPATION

After the third-party consultant completes detailed evaluations of the selected technologies, H2Ohio TAP's goal is to facilitate demonstration projects with the proposals determined by the third-party consultant to be viable solutions for Lake Erie (see Section 5.0). H2Ohio TAP will pursue funding for select projects and technologies with appropriate federal, state, and philanthropic funding sources. While specific funding for demonstration projects cannot be guaranteed, six of the 10 technologies from the first round of H2Ohio TAP projects have received funding as follows:[1]

- The Ohio Department of Natural Resources (ODNR), under a $785,000 H2Ohio grant with grant support from the Ohio Water Development Authority (OWDA), demonstrated the Hypernucleation floation technology (HFT) algae harvesting system technology at a lake in SW Ohio for removal of nutrients, toxins and recovery of energy.
- Ohio EPA received three Great Lakes Restoration Initiative non-point source grant awards from U.S. EPA's Great Lakes National Program Office in 2023 and 2024 for a combined total of $2.75 million that is being passed through to fund H2Ohio TAP demonstration projects for five of the TAP technologies organized into four separate projects. For each of these, the technology vendor/innovator is working with a non-profit project sponsor that entered into a subgrant agreement with Ohio EPA.

[1] Innovation applicants should be aware that federal funding sources for demonstration projects follow federal Uniform Grants Guidance that requires funding recipients and subrecipients to be nonprofit entities. As such, technology innovators that are for-profit entities will need to contract with an eligible non-profit for such funding opportunities.

- Project 1: pass-through grant of $900,000 to Maumee Watershed Alliance (MWA) for demonstrating QuickWash® and Regen technologies. QuickWash® was demonstrated at two Western Lake Erie Basin(WLEB) farms for reducing phosphorus, nitrogen and liquid from swine manure. Regen is being demonstrated for production of soil health products using in part, solids processed from the QuickWash® demonstration project.
- Project 2: pass-through grant of $850,000 to The Ohio State University (OSU) for demonstrating the use of Struvite DG® technology as a phosphorus replacement for commercial fertilizer. OSU is testing this technology in plot studies and field trials over four years (two growing cycles of corn and soybeans).
- Project 3: pass-through grant of $500,000 to OSU for demonstration of Automated Drainage Water Management (ADWM) technology. The project aims to demonstrate a turnkey approach by installing ADWM systems at 10 locations in the WLEB Lost River watershed where they will be monitored for 3 growing seasons.
- Project 4: pass-through grant of $500,000 to Cleveland Water Alliance for demonstrating the Electric Cell Lysis Technology that uses controlled electrical pulses to break down liquid organic wastes such as manure thereby reducing nutrients, pathogens and odor in land-applied manure using no chemicals or additives.

For more information on the first round of the H2Ohio TAP program, please visit ***Technology Assessment Program | H2Ohio***.

2.0 ELIGIBILITY

H2Ohio TAP has identified the following eligibility requirements to participate in this program.

2.1 APPLICANTS

Eligible applicants are those with innovative technologies or products, improvements to existing technologies or products, or established technologies or products that are new approaches for the Lake Erie basin that address HABs, or nutrient removal or reduction. H2Ohio TAP reserves the right to request that any applicant submitting improvements to an existing technology or product provide an affidavit addressing ownership rights to the existing technology or product.

2.2 TECHNOLOGIES

H2Ohio TAP is specifically interested in evaluating technologies that meet at least one of the following objectives:

Improve use or application of nutrients, manure, or fertilizers on agricultural fields: For example, technologies that (1) make legacy phosphorous in soil available to crops, (2) cost-effectively convert animal waste into a valuable and transportable fertilizer resource, or (3) improve the percentage of nutrients applied to a field that is utilized by crops.

Reduce nutrient loading to rivers, streams, and lakes: For example, technologies or products, such as new fertilizers, that reduce nutrient loading by (1) intercepting nutrients on land or in shallow ground water, (2) improving nutrient application to farmland, or (3) reducing the mobility of nutrients on farmland.

Remove nutrients from rivers, streams, and lakes: For example, technologies used in Lake Erie's tributaries that (1) efficiently remove nutrients from large volumes of water, (2) produce a valuable product rather than a waste stream, or (3) require minimal operational efforts.

Reduce the intensity or toxicity of algal blooms: For example, technologies that remove algae or prevent the growth of algal blooms and (1) can scale to the size of Lake Erie, (2) require minimal operational efforts, or (3) convert HABs into a product.

2.3 READINESS

Preference will be given to technologies that meet a National Oceanic and Atmospheric Administration (NOAA) Readiness Level of 5 or above, meaning that the technology, system, or concept has been validated in a relevant environment or laboratory (***NOAA Readiness Level***). H2Ohio TAP will give preference to technologies with more advanced levels of readiness. The goal of this process is to help Ohio innovate its HABs response; therefore, technologies already in widespread use in the Lake Erie basin will not qualify.

3.0 SUBMITTAL REQUIREMENTS

H2Ohio TAP has developed the following requirements for technology proposals.

Due Date & Time: December 1, 2025, 4:00 PM (EST).

Technology proposals must not exceed fifteen single-sided pages in length (maximum 15 pages, including all appendices and attachments). Proposal narratives should be in Calibri font with minimum 11-point font size and one-inch margins.

Submission Procedure: All proposals must be submitted via email to ***OhioEPAH2OhioTAP@epa.ohio.gov.*** Paper copies and faxes will not be accepted. Please attach the proposal and all supporting documentation as one PDF file. The email submissions can contain a maximum of one attachment. Please label the PDF file and the subject of the email with the word "proposal," the proposal name and the company name. For companies submitting multiple technologies, please send a separate email for each proposal. If the attachment will exceed 20 MB, which is Ohio EPA's email capacity, please submit the proposal through Ohio EPA's file sharing website: ***https://fileshare.epa.ohio.gov.***

Instructions to self-register and send large files to Ohio EPA can be found at ***LiquidFiles Instructions.pdf***. If you have any questions about how to submit a proposal, please submit those questions to ***OhioEPAH2OhioTAP@epa.ohio.gov*** with the word "question" in the subject of the email.

Question and Answer Period: Questions about the RFT and H2Ohio TAP 2.0 program will be accepted up until November 7, 2025. Please submit these questions to ***OhioEPAH2OhioTAP@epa.ohio.gov*** with the word "question" in the subject of the email. These questions and answers to these questions will be publicly posted through a link on the H2Ohio website: ***H2Ohio TAP Round Two.***

Public Records: Please note that these technology proposals will become public records, so refrain from including proprietary information at this phase of the process.

If there is relevant information that applicants desire to remain confidential, applicants should note the potential availability of that information, describing the information to the extent that can be made public at this time. Technologies that advance to the in-depth evaluation phase, will have an opportunity to submit proprietary data and information directly to the independent third-party firm under the protection of a non-disclosure agreement that will be provided and may submit a separate request to Ohio EPA utilizing the following guidance for trade secret protection under Ohio's public records law: ***TradeSecretProtectionRequests.pdf***.

Award date: H2Ohio TAP will notify technologies by January 31, 2026, on its determination of which technologies will advance to the third-party evaluation.

Content of Proposals: Applicants are requested to respond to all eight of the following items as part of the project narrative in their proposal submittal:

1. Introduction

a. What is the name of the technology?

b. What objective(s) does the technology address (i.e., which bullet under Section 2.2 above)?

c. How does the technology advance that objective?

2. Contact Information and Company Profile

a. Who is the primary point of contact?

b. What is the primary contact's mailing address, email address and phone number?

c. What is the size of the company (e.g., number of staff, number of offices, annual revenue)?

d. How many years has the company been in business?

3. Narrative Description of the Technology

a. What is the technology, how is it used and who are the main beneficiaries?

b. What does the technology do, how does it do it and what physical, chemical and biological factors are involved in the process?

c. How is the technology innovative and what makes this technology different from other technologies on the market?

d. How is the technology similar to other technologies on the market?

e. What materials does the technology use, convert, treat, or act upon (e.g., animal waste, wastewater, surface water, algae, etc.)?

f. Does the technology reduce/remove nitrogen, phosphorus, or both?

g. Has this technology been successful in similar land uses/soils/water bodies as those that are located within the Lake Erie basin?

h. What are the technology's maintenance and operation requirements?

i. What is the expected lifespan of the technology before major re-charge or maintenance is required?

4. Readiness for Implementation and User Receptiveness

a. What is the technology's NOAA Readiness Level? (***NOAA Readiness Level***).

b. What are the types of entities that would use/purchase this service/technology?

c. Is the technology applied to land or water and how is it applied?

d. What is the lead time needed for implementation?

e. What anticipated permitting requirements are associated with use of the technology and are there any permitting concerns?

5. Risk/Concerns

a. How will environmental, health, and safety risks/concerns associated with the technology be mitigated?

b. How will any negative impacts to local communities be mitigated or negative perceptions be addressed?

6. Past Validation or Use of the Technology and Available Data

a. Has this technology been previously validated or used in a relevant environment? Where and how?

b. Has this technology been previously validated in a laboratory? Where and how?

c. Has this technology been previously validated in a mesocosm or pilot project study? Where and how?

d. What are the previous uses of this technology in pilot-scale or field applications (narrative project description, location, size, references, results/outcomes, cost)?

e. What types of performance or validation data can be provided upon request?

f. What other information about the technology can be provided upon request?

7. Costs

a. What are the operational, material, capital, maintenance, decommissioning, and other costs?

b. Please provide costs relative to the scale of treatment (e.g., cost per pound removed or number of acres treated).

8. Demonstration Project

a. Please provide a high-level proposal—if selected and funded—of a project demonstrating your technology. Include estimated cost, objectives, timelines, and potential partners.[2] This proposal is to help streamline future demonstration projects and to help assess readiness.

4.0 TECHNOLOGY SELECTION PROCESS

Of the technologies received, the H2Ohio TAP Team will narrow the list of technology proposals to ten using the following selection process:

Reviewers will provide scores of 0-10 for each category listed below, which are derived from the information requested in Section 3.0. The ten highest-scoring proposals will advance to the in-depth third-party evaluation phase.

Innovation (0-10)

- Readiness
- Benefits (monetary and otherwise)
- Users/Marketplace
- Problems that the technology addresses

Feasibility (0-10)

- Past Validation and Available Data
- Company Profile
- Risk
- Community Perception and Disproportionate Impact

Cost (0-10)

- Financial Aspects
- Maintenance and Operational Requirements
- Scalability and Nutrient Reduction Potential in Lake Erie Basin
- Would the cost be prohibitive?

[2] Innovation applicants should be aware that federal funding sources for demonstration projects follow federal Uniform Grants Guidance that requires funding recipients and subrecipients to be nonprofit entities. As such, technology innovators that are for-profit entities will need to contract with an eligible non-profit for such funding opportunities.

5.0 THIRD PARTY EVALUATION PROCESS

The top ten applicants selected by the H2Ohio TAP committee will be asked to participate in further evaluation and submit additional information to the independent third-party firm. Technologies wishing to submit proprietary information to the third- party firm will be able to enter into a non-disclosure agreement that will be provided by the third-party firm and may seek protection under Ohio EPA's trade secret process addressed above in Section 3.0.

The independent third-party firm will conduct a comprehensive desktop assessment of each selected technology, which involves a more in-depth evaluation than the initial screening. The third-party firm will use additional information provided by applicants to perform the following evaluations:

1. Proof of concept review
2. Fatal flaw analysis
3. Review of previous implementation of the technology or similar technologies
4. Review of data quality objectives
5. Review of quality assurance/quality control procedures and reports
6. Evaluation of scalability
7. Information gap evaluation
8. Evaluation of cost; both total and by unit, such as nutrient reduced/removed
9. Feasibility review for a proposed demonstration project
10. Feasibility review for full scale implementation
11. Statement of probability of success

The primary objective of this comprehensive evaluation is to assess reliable, quality performance and cost data on these technologies. The procedures used in this analysis are critical, and the third-party firm will stringently apply a QA/QC plan throughout each assessment to ensure consistency and reliability across all evaluations.

5.1 TECHNOLOGY VENDOR EXPECTATIONS

It is anticipated that each applicant who has submitted one of the ten selected technology proposals will support the third-party firm evaluation process by providing additional and more detailed information, responding in a timely manner to inquiries by e-mail and telephone, and participating in periodic conference calls.

5.2 ADDITIONAL INFORMATION FOR EVALUATION PROCESS

Technologies advancing to this assessment will be evaluated on existing data and information provided by each technology applicant and not based upon new studies or data generating activities. It is anticipated that each applicant will support the third-party firm by providing additional information as requested by the third-party consultant:

Upon completion of this comprehensive assessment, the independent third-party firm will prepare assessment reports for each technology and provide recommendations to H2Ohio TAP.

6.0 DISCLAIMERS

For the purposes of this RFT, H2Ohio TAP makes the following statements:

1. Please note that proposals submitted in response to this RFT will become public records, so refrain from including proprietary information at this phase of the process.
2. Note that applicants that are selected for evaluation by the independent third-party firm may seek protection under Ohio EPA's trade secret process addressed above in Section 3.0 and may enter into a non- disclosure agreement with the independent third-party.
3. No funding or compensation will be provided to any applicant for preparation of their proposal or for their participation in this evaluation process.
4. There are no guarantees made to any applicant participating in this evaluation process.
5. Technology proposals are due by 4:00 p.m., December 1, 2025.
6. Technology proposals must not exceed fifteen (15) single-sided pages in length, which includes narrative and all appendices/attachments.
7. Proposal narrative should be in Calibri font with minimum 11-point font size and one-inch margins.
8. Proposals will be accepted in electronic file format only, preferably PDF.
9. The H2Ohio TAP Team, Ohio EPA, and the third-party technical consultant will not discriminate, by reason of race, color, religion, sex, military status (past, present, or future), national origin, disability, age, or ancestry in soliciting, scoring, or evaluating technology proposals under this program.
10. Participation in the program does not entitle the selected applicants to any endorsement or approval of proposed technologies from the State of Ohio, Ohio EPA, H2Ohio, or H2Ohio TAP. Further, the State of Ohio, Ohio EPA, H2Ohio, and H2Ohio TAP do not make any warranty of validity or guarantee of the success for the proposed technologies.