PROTECTING FLORIDA TOGETHER

BLUE-GREEN ALGAE TASK FORCE

June 23, 2021

INNOVATIVE TECHNOLOGY VENDOR SURVEY TO PREVENT, REDUCE OR ELIMINATE BLUE-GREEN ALGAE

1. Business Name
2. Contact Person
3. Phone Number
4. Email Address
5. Business Address
6. Website/Organization
7. Name of Product, if applicable – *please submit only one at a time.*
8. Please select which best describes your technology:
   - **Mechanical**
     Please describe the mechanical process [500 character limit]
   - **Chemical**
     Please describe the chemical process [500 character limit]
   - **Biological**
     Please describe the biological process [500 character limit]
   - **Other/Combination**
     Please describe the process [500 character limit]

9. Select all the areas that your product or technology is typically applied:
   - Within a surface waterbody
     Which type of water is this product suitable for? *(select all that apply)*

     ☐ **Fresh**
     ☐ **Estuarine**
     ☐ **Marine**

     Provide details for each waterbody type on how this technology has been used in the past for this purpose.

   - Has this product or technology received all required authorizations for use in waters, such as algaecide approval from EPA and registration by FDACS?
     - Yes - *Please provide all authorizations (agency and approval number).*
     - No

   - Has this product received authorization for use in Florida waterbodies by FWC?
     - Yes, *Please provide all authorization identifying which waterbody.*
     - No

   - Has this product received authorization by DEP for use in Florida waterbodies?
     - Yes, *Please provide all authorization identifying which waterbody.*
     - No

     ☐ **To wastewater effluent**
     ☐ **In a stormwater pond**
     ☐ **At a lift station**
     ☐ **Other** - *Please provide a brief description [250 character limit]*

10. Are there any waste or by-products typically produced with this technology?
    - Yes, *Please identify all wastes or by-products [250 character limit]*
    - No

11. Select the appropriate demonstration studies that have been performed. For algae technology, please be sure to state how your study measured toxins and the detection limit.
    - **Laboratory bench test**
      Briefly describe the analytical methods used, including specific, scientific information, including but not limited to: controls/tests, concentrations, volumes, dose, duration, parameters tested and measured, analytical methods used, detection limits, results, quality control.

      Upload study results
    - **Field study**
      Briefly describe the analytical methods used, including specific, scientific information, including but not limited to: controls/tests, concentrations, volumes, dose, duration, parameters tested and measured, analytical methods used, detection limits, results, quality control.

      Upload study results
    - **Other**
      Briefly describe the analytical methods used, including specific, scientific information, including but not limited to: controls/tests, concentrations, volumes, dose, duration, parameters tested and measured, analytical methods used, detection limits, results, quality control.

      Upload study results

12. Select the statement that best fits your company's use of raw materials or equipment.
    - My service or product requires raw materials or equipment that I have in my possession.
    - My service or product requires raw materials or equipment that I have under contract.
        - If selected to perform work, please state the estimated time frame it would take to secure delivery of the raw materials or equipment to selected site in Florida.
            - Less than 2 weeks
            - Between 2 - 4 weeks
            - Greater than 4 weeks
    - My service or product requires raw materials or equipment that would require sourcing prior to implementation. *Please list the needed materials or equipment needed.*
    - My service or product does not require consumable materials.

13. Are you limited in locations in which you can operate?
    - We are currently able to deploy anywhere in Florida.
    - We are currently able to deploy only to some regions in Florida. *Please list areas you are able to deploy.*
    - Due to the nature of our innovative technology, all operations are at my company location. *Please list location.*

14. Please indicate how large an area you are currently capable of treating. *Please provide a brief description [250 character limit].*

15. If placed under contract, how long would it take you to mobilize to a selected location in Florida with all necessary equipment and materials to begin work? *Please provide a brief description [250 character limit].*

16. What infrastructure, if any, are needed for this method on-site (e.g., power sources, water resources, concrete pads, boat ramps, or other resources)? *Please be sure to include approximate quantities or volume. Please provide a brief description [250 character limit].*

17. *Please select all that identify the target contaminant of your service or product:*
    - Turbidity
    - Nutrients
    - Algae
    - Other

18. Please indicate how the pricing typically is structured. *Please provide a brief description [250 character limit].*

SUPPLEMENTAL APPLICATION FOR GRANT FUNDING CONSIDERATION
PART I – GENERAL INFORMATION

PROPOSAL FOR GRANT FUNDING CONSIDERATION

PROJECT CATEGORY: Check all that apply
- ☐ Prevention
- ☐ Clean-up
- ☐ Water Quality Monitoring Only
- ☐ Other Water Quality (describe)
- ☐ Reduce or prevent eutrophication of ambient water

PROJECT SUB-CATEGORY: Check all that apply
- ☐ Chemical
- ☐ Biological
- ☐ Mechanical
- ☐ Other (describe)
- ☐ Early Detection or Forecasting

PROJECT FUNDING STATUS: Check one
- ☐ New project that was not previously funded with state or federal funds through the department.
- ☐ Phase of proposed project (or existing/ongoing project) previously funded through the department. If any phase of project previously funded with state or federal funds through the department, provide project name, funding amount (grant and match, if applicable) and DEP agreement number(s).

ENTITY/SPONSOR NAME:
Government entity/sponsor as defined in 287, F.S.?
☐ Yes ☐ No
Registered to do business with the state of Florida? My Florida Marketplace
☐ Yes ☐ No

GRANTEE INFORMATION:
Project Manager Name:
Position Title:
Street Address:
City, State, Zip:
Telephone:
Email:
Signature Authority Name:
Position Title:
Street Address:
City, State, Zip:
Telephone:
Email:
Vendor/Recipient FEID, (nine-digit Federal Employer Identification Number):
Proof of Insurance (see file, “Attachment 2” for requirements)

PROJECT NAME:

PROJECT BACKGROUND:
Describe how the entity/sponsor has determined the need for this project. This may be any decision-making process(s) and/or legislative mandate(s) and/or stormwater master plan(s) and/or operations and maintenance

plan(s) that identifies this project as a priority and/or describes how this project will benefit water quality in the project area.

PROJECT LOCATION
If the project is covering a large area, please describe the extent of the project area, and include the centroid latitude/longitude. If known, additional latitudes/longitudes may also be included. If available, please attach GIS files (maps) for the project(s).

1. Geographic location of project (e.g. city, county, street address, GPS coordinates):
2. Size of project impact (area needed to build project):
3. Size of area being treated:

PROJECT FUNDING REQUEST AMOUNT
Total Cost: (Sum of proposed project funding request and entity local commitment amounts):

Please describe the project cost under these three categories:

1. **Capital Cost** - Capital costs are fixed, one-time expenses incurred on the planning, permitting, site preparation, purchase land or easements, buildings, construction, and equipment used in the project to render the service. In other words, it is the total cost needed to bring a project to an operable status. Keep in mind that the monitoring plan is designed before starting the implementation of your project.
2. **Operational Cost** - Operating costs are expenses associated with the maintenance and administration of the proposed project on a day-to-day basis. Please describe anticipated costs of: monitoring, supplies, rental equipment, repair and maintenance, utility usage, salary and wage expenses, and other operational costs. When appropriate, link costs to volume of treatment. For example, the volume of water treated, or area of treatment may correspond with the volume of supplies consumed during water treatment.
3. **Demobilization and After-Action Report Cost** - DEP grants will require the grantee to provide an After-Action Report. The Report is a key activity for demonstrating that the project has met DEP grant requirements and will quantify the suitability of the method for future use.

Does the total cost shown above equal the total cost of the entire project?
☐ Yes ☐ No

If no, what is the total cost of the proposed project (e.g. funding request is for a phase of a larger project or there are other expected funding contributing partners)?

If no, what are the other funding sources for the total cost of this project? List all expected funding sources and amount required to complete the project.

Do you have all of the required equipment and supplies for this project?
☐ Yes ☐ No

Are you dependent on a contractor?
☐ Yes ☐ No

Has a contract been established?
☐ Yes ☐ No

COST EFFECTIVENESS:
Describe how this project is cost effective for preventing, combating or cleaning up harmful algal blooms or eutrophication that leads to algal blooms. For all projects, describe how the cost effectiveness of the project will be measured, including the methods used (e.g. monitoring, cost comparison to current processes, etc.).

Design Status: (check one)
☐ Project is 100% designed
☐ If checked, has a proof of concept scale study been completed?
☐ Yes ☐ No

☐ Project is between 60% and 100% designed.
☐ Project is partially designed but less than 60%.
☐ Project is at the conceptual stage, design has not started.
☐ Design is not required for this project.

Required Permit Types: (check all applicable)
☐ Federal (e.g., 401-Water Quality Certification, 404-Discharge of Dredge and Fill, 408-Use or Alteration of Civil Works).
☐ State (e.g., Generic permits for construction including dewatering and management of stormwater, Wastewater Treatment-NPDES).
☐ Local (e.g., water management district - right of way/water use, county-well Installation).

Permit Status: (check one)
☐ Project is fully permitted (100%).
☐ Between 50% and 100% of the permits have been obtained.
☐ Less than 50% of the permits have been obtained.
☐ Permitting process has begun but no permits have been obtained.
☐ Permitting process has not started.
☐ Permits are not required for this project.

Project Start Date: (check one)
Project construction/eligible grant can start:
☐ Immediately after notice of award funding.
☐ Within six months after notice of award funding.
☐ Within 12 months after notice of award funding.
☐ After 12 months after notice of award funding.

Length of Time Expected to Complete Proposed Project:
How long will the entire scope of work for the project take to complete, if requested amount covers all work for the entire project? If part of a larger project, how much time will be needed to complete all work for the funding requested and local funds and/or match commitment provided?

Include the estimated timeframe in number of months for each applicable task so that the reviewers will know how much time is needed, regardless of when the project evaluation process takes place. Tasks may take place concurrently (e.g., monitoring may take place throughout the entire project period). If tasks are performed concurrently, do not add time to the overall project timeframe unless the task(s) need additional time to complete.

Add applicable tasks if they are not listed below. If a task does not apply for the proposal, mark the task N/A so that reviewers will know that this section was not overlooked.

Do not include the time for work that has already been completed.
Number of months for:
- Design and permitting:
- Bidding/subcontracting:
- Construction/implementation:
- Verification of success:
- Reporting:
- From contract execution to completion (demobilization):

ADDITIONAL PROPOSAL INFORMATION
Is the project expected to be located in or primarily benefit a financially disadvantaged community? (e.g., Rural Economic Development Initiative)? Information on REDI can be found at the following website: Rural Economic Development Initiative - FloridaJobs.org
☐ Yes ☐ No
If yes, name the community:

Does the Proposal Organization have an Operations and Maintenance plan and expected funding identified (including in-kind contributions) that will be needed to operate and maintain this proposed project?
☐ Yes ☐ No
If yes, please describe.

PART II: PROJECT WATERSHED CHARACTERISTICS

WATERBODY ADDRESSED:

1. Provide the name of the waterbody(s) that this project addresses:
2. Provide the WBID number(s) for the waterbody segment(s) that this project addresses: Waterbodies are typically divided into segments which are identified by Water Body Identification (WBID) numbers. Water quality impairments are associated with the WBIDs, not the entire waterbody. The following is where that information can be found: Basin 411 | Florida Department of Environmental Protection.
3. List the parameter(s) for which the waterbody is impaired, if applicable.
4. Does the project treat water currently being discharged directly into an impaired WBID(s)?
☐ Yes ☐ No, If no, describe how the project contributes to reductions of the parameters impairing the WBID(s).

IMPLEMENTATION OF A WATER QUALITY RESTORATION PLAN(s):
If available, please attach GIS files for the project(s).

5. TMDL Report Name that project is addressing, if applicable:

   If addressing a TMDL, identify the pollution reductions and parameters specified in the TMDL:

6. Does this project fall within the geographical boundaries of any of the following?
☐ Adopted BMAP
☐ Developing Reasonable Assurance Plan
☐ Approved TMDL Alternative Plan/Alternative Restoration Plan

   If any of the following are checked, please complete the following:
   - Enter the name of water quality restoration plan(s):
   - Identify if this project contributes to pollutant reductions specified in the water quality restoration plan(s):
     ☐ Yes ☐ No
     If yes, briefly describe the nonpoint source issues or pollutant reductions specified in the water quality restoration plan(s) that the project is addressing. Include/reference plan page numbers and a hyperlink to the document where applicable.

   - In addition to being located within a plan area, is this project also listed in the Florida Statewide Annual Report on TMDLs, BMAPs, MFLs, and recovery or prevention strategies?
     ☐ Yes ☐ No
     i. If yes, provide the BMAP project number:
     ii. and/or, provide the RAP project number:
     iii. and/or, provide the TMDL alternative/alternative restoration plan project number:
     iv. And/or, provide the recovery or prevention strategy/project name:

   - If the project is located within a springshed area, Outstanding Florida Spring springshed area, or Priority Focus Area for an Outstanding Florida Spring, does the project address: *(check all applicable)*:
     ☐ Water quality improvement or protection(describe):
     ☐ Water quantity (describe how the project will benefit the spring, including quantity of water made available in MGD):
     ☐ Is the project listed in a recovery/prevention strategy or identified in a Regional Water Supply Plan as benefiting an MFL?
       - If so, name the strategy and project title:

Land Ownership Status: (check one)
☐ The proposed project is on state-owned lands.
If on state-owned lands, is there an agreement in place? ☐ Yes ☐ No
☐ Land necessary for the construction of treatment infrastructure has been acquired. Title is held by:
☐ Land necessary for the construction of treatment infrastructure is under a legal option to buy *(please provide documentation of the option-to-buy and funding to execute the purchase).*
☐ Land necessary for the construction of treatment infrastructure is under an easement that allows for construction and access.

PART III: DETAILED PROJECT DESCRIPTION

Include a full description of the proposed project. Project elements that are described on other submitted attachments but are not described in PART III may not be considered as part of the project when evaluating the proposal for funding consideration.

1. **Description of the proposed grant and (where applicable) local funds commitment activities:** Provide sufficient detail so that the project evaluators will know exactly what is being constructed/implemented and how it will function.
   - Provide a detailed description of all project activities for which grant funding is requested.
   - Describe how the project is expected to address the issue of harmful algal blooms and how the results will be used to improve the state's ability to prevent, mitigate or clean up harmful algal blooms.

2. **Objective:** Explain how the activities in the grant funded project proposal will achieve the goals of the grant solicitation.

3. **Proof of Concept:** Describe why this technology is expected to work for the problem being addressed in the project. If the technology has not been used in field scale operations, please include any publications, reports, preliminary pilot scale data/results, etc.

4. **Project Effectiveness Evaluation:** Describe how the success of the project will be evaluated, such as water quality monitoring, surveys, etc. Provide enough detail to indicate how project will be monitored and how the information will be used to improve effectiveness. Define and describe project success criteria and the scientifically robust method to success will be demonstrated.

5. **Project Funding and Timeline:** In the table below, provide the estimated funding amounts and timeline for each grant step in the proposed project. Examples of typical descriptions have been provided but can be edited as needed.

ACTION DESCRIPTION	GRANT FUNDING REQUIRED	TASK DURATION
Planning, Design, Permitting	$	
Construction, Implementation, Demobilization	$	
Monitoring, Verification	$	
Success Criteria Analysis	$	
Final Report	$	
Total	**$**	

6. **Additional Information:** Include other relevant information about the project that has not been addressed in the previous questions (e.g., the presence of protected species at the site).

7. **Does the project use Innovative Technologies/Best Management Practices (BMPs)?**
   For example, stormwater projects that include an extensive treatment train such as a combination of retention ponds, exfiltration trenches, and swales; or enhancements such as denitrification walls, alum and other polymer treatments, electrostatic panels, and parameter specific filters, etc., will be considered more innovative than projects that install a single conventional BMP.
   ☐ Yes ☐ No

   If yes, please explain how the BMPs are innovative. For prevention or clean-up technologies, please provide estimates of the technology performance and safety (if the technology involves potentially toxic substances or byproducts), information to support these estimates, and examples of where the innovative technologies have been successfully used.

8. **For Agricultural BMP Project Proposals:** Check all that apply and attach supporting documentation, if applicable:
   ☐ Project is supported by both state or local grower associations.
   ☐ Project complements an existing BMP project or U.S. Department of Agriculture (USDA) program or

other federal financial support.

PART IV – CERTIFICATION, ATTACHMENTS, AND REFERENCES

By signing this form, you are agreeing to all of the following terms (check each statement):

- ☐
- ☐ Department contractual boilerplate language (provide FTP site);
- ☐ Grant will be for cost reimbursement; advance payment is not authorized;
- ☐ Equipment necessary for the project will be approved on a limited case by case basis;
- ☐ DEP will retain ownership if equipment is purchased with grant funds;
- ☐ No reimbursements will be authorized for land, vehicle or boat purchases;
- Grantee's subcontractors will be selected in compliance with state law, competitive or sole source.

I, the undersigned authorized representative of the project proposal, hereby certify that all information contained herein and in the attached is true, correct, and complete to the best of my knowledge and belief.

I further certify that I have been duly authorized to file the proposal for consideration of funding and to provide these assurances.

Authorized representative signature: _____

Authorized representative (name typed): _____

Signed this _____ day of _____, 20_____

List the file names for all attachments that are included with this project proposal (such as maps, design plans, GIS files, letters of support, operations and maintenance plans), a description of what the attachment contains, and the total number of attachments submitted, including the project proposal.

Total number of files submitted (include the project proposal in the total number):

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INNOVATIVE TECHNOLOGY GRANTS

The Innovative Technology Grant program is available to local governmental entities for projects that evaluate and implement innovative technologies and short-term solutions to combat algal blooms and nutrient enrichment; restore and preserve Florida waterbodies; and implement certain water quality treatment technologies. Project proposals must prevent, mitigate or clean up harmful algal blooms, with an emphasis on those that prevent blooms through nutrient reductions. Projects that improve the ability to predict and monitor harmful algal blooms will also be considered for funding.

Key funding considerations include that the project is innovative (new technology or new application of known technology); shown to achieve the proposed benefits without environmental harm; scalable; has water quality benefits; is ready to construct; and is geographically located in an area with a water quality restoration plan (e.g., reasonable assurances plan or BMAP).

Eligible project proposals must be submitted by a local government, academic institution or nonprofit organization. Funding cannot be provided by the department directly to a vendor or private, for-profit entity. For the past two years, the department received Legislative appropriations for the exploration of innovative technologies to address harmful algal blooms.

In total, $15,000,000 has been appropriated towards this grant program. The department has allocated these funds towards 20 innovative technology projects totaling $14.9 million. These technologies are being deployed in locations throughout the state. Some of these projects also include match, which provides an additional $5.5 million towards these efforts. These grants have been provided to local governments, universities and water management districts to develop and test these technologies which are designed to help predict, prevent and mitigate harmful algal blooms.

MAP OF INNOVATIVE TECHNOLOGY PROJECTS

Note: Not all projects are physical deployments.

Map Number	Agreement Number	Grantee	Project Name	County
1	INV001	MD-WASD	HyBrTec Biosolids-to-Hydrogen Pilot Plant	Miami-Dade
2	INV002	SJRWMD	Intact Cellular Algae Harvesting with Simultaneous Nutrient Export in Lake Jesup	Seminole
3	INV003	NWFWMD	NWFWMD (Prevention/Clean up) Intact Cellular Algae Harvesting with Simultaneous Nutrient Export in Lake Munson to Mitigate Harmful Algae Blooms and Reduce Direct Nutrient Enrichment of the Floridan Aquifer	Leon
4	INV004	Brevard County	Assessment of Alternative Nitrogen-Reducing Media in an In-Ground Nitrogen-Reducing Biofilter Beneath a Septic System Drainfield	Brevard
5	INV005	City of Bonita Springs	Felts Ave Bio-Reactor Phase II	Lee
6	INV006	FGCU	FGCU (Prevention/Clean up) Ultrasonic in Miromar Lakes	Lee
7	INV007	FGCU	Early Detection and Rapid Response to HAB's Using Hydrogen Peroxide and cyanotoxin genes	Lee
8	INV008	UCF	Bio-Sorption Activated Media Filtration To Reduce Nutrients and Algal Mass	Martin
9	INV009	SJRWMD	Lake Minneola Algicide Application	Lake
10	INV10	Lee County	Water Quality and Treatment Research at the C-43 Mesocosm Site Using Combined Wetlands and Engineered Treatment Technologies	Glades
11	INV11	Loxahatchee River District	Nano Bubble Ozone Technology Treatment Project in Jones Creek, Jupiter, FL	Palm Beach
12	INV12	Florida Atlantic University	FAU - Developing Algae-Derived, Made-To-Order Adsorbent Materials for Aqueous-Phase Phosphorous (P) Removal: An Industrial Ecology Approach to Mitigate Algal Blooms	Palm Beach
13	INV13	IRL Council	Integrating HAB Data Across Platforms and Establishing a Virtual HAB Information Center	Multiple
14	INV14	Brevard County	Brevard County Natural Resources Dept. - Multi-Spectral Optical Sensor Trained Remote Sensing Analysis of Satellite Imagery to Track Nutrient Sources and Propagation of Algae Blooms	Brevard
15	INV15	Lake St. Charles	Lake St. Charles Innovative Algae Control and Phosphorous Abatement	Hillsborough
16	INV16	FAMU	FAMU - Algae vs. Algae: A Comprehensive, Holistic Solution to Root Causes of Harmful Algal Blooms (HABs) with Genesis and Development of a Regenerative Bioeconomy	Leon
17	INV17	FGCU	Chemical-Free HAB Control Demonstration Using Nanobubble Technology	Lee
18	INV18	Polk County	Forecasting, Detection, and Mitigation of HABs through Innovative Technology in Polk County	Polk
19	MN015	SFWMD	SFWMD Lake Okeechobee S-191 Basin Surface Runoff Phosphorus Removal Using Innovative Technologies	Okeechobee
20	MN016	FAU/Harbor Branch	Florida Atlantic University / Harbor Branch Oceanographic Institute (Clean-Up/Water Quality) Florida Freshwater HABs Mitigation Observation System	St. Lucie