



Protecting **FLORIDA** Together

Innovative Technologies

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INNOVATIVE TECHNOLOGIES

INNOVATIVE TECHNOLOGY GRANTS OVERVIEW



WHO CAN APPLY?

- Available to local governmental entities.

WHAT TYPE OF PROJECTS ARE CONSIDERED?

- Projects that can prevent, mitigate or clean up harmful algal blooms.
- Projects that can prevent blooms through nutrient reductions are key.

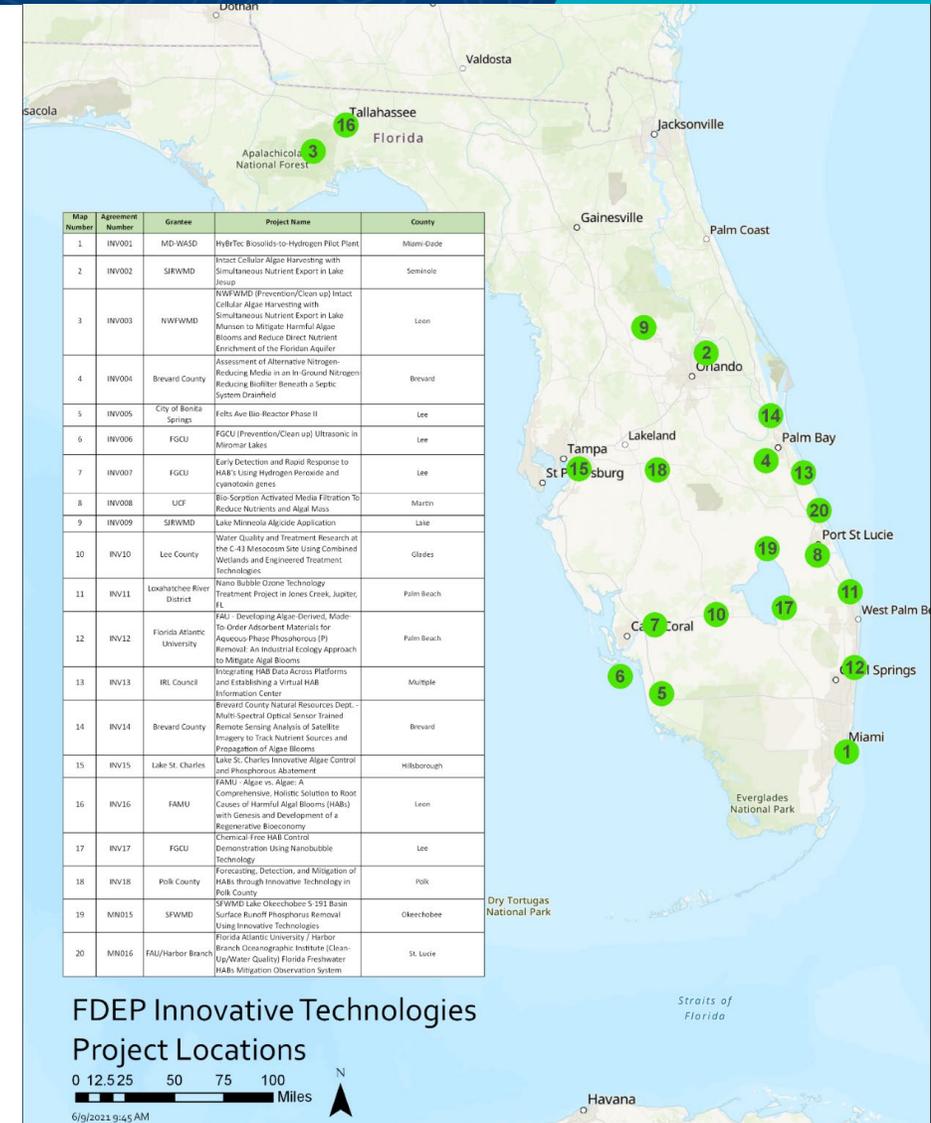
WHAT ARE SOME OF THE KEY FUNDING CONSIDERATIONS?

- New technology or new application of known technology.
- Technology has been shown to achieve the proposed benefits without environmental harm.
- Technology is scalable.
- Technology has water quality benefits.
- Technology is ready to construct.
- Technology is to be applied in an area with a water quality restoration plan (e.g., Basin Management Action Plan or Reasonable Assurance Plan).

INNOVATIVE TECHNOLOGIES LOCATIONS



- Diverse Portfolio
- Historic Areas of Occurrence
- Heighten Concern
- Areas with BMAPs
- Greatest Benefit



INNOVATIVE TECHNOLOGIES

NUTRIENT REDUCTION



WHAT IS IT?

- Reducing the supply of nutrients, nitrogen and phosphorus, can help decrease the intensity and duration of blue-green algal blooms.
- Seven projects selected dedicated towards nutrient reductions.

WHAT ARE THEY?

- Miami-Dade Water and Sewer Department
 - Brevard County
 - City of Bonita Springs
 - Lee County
 - Florida Atlantic University
 - Florida Agricultural & Mechanical University
 - South Florida Water Management District
- HyBrTec Biosolids to Hydrogen Pilot Plant
 - Nitrogen-Reducing Media in Septic Systems
 - Felts Ave. Bio-Reactor: Phase II
 - Water Quality and Treatment Study
 - Aqueous Phase Phosphorus Removal
 - Synthetic Fertilizer Replacement Project
 - S-191 Phosphorus Removal

INNOVATIVE TECHNOLOGIES

CITY OF BONITA SPRINGS - FELTS AVE. BIO-REACTOR: PHASE II



FELTS AVENUE BIO-REACTOR PHASE 2 OFF-SITE IMPROVEMENTS



Project Location



LEE COUNTY – NITROGEN REDUCTION PROJECT



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ALGAE REDUCTION AND REMOVAL



WHAT IS IT?

- Nine projects primarily focused on addressing algae in waterways.
- Technologies being evaluated include algicides, nanobubble technology, soundwaves and mechanical harvesting.

WHAT ARE THEY?

- | | |
|---|--|
| • St. Johns River Water Management District | Intact Cellular Algae Harvesting and Nutrient Export |
| • Northwest Florida Water Management District | Intact Cellular Algae Harvesting and Nutrient Export |
| • Florida Gulf Coast University | Ultrasonic Algal Bloom Control |
| • Florida Gulf Coast University | Growth Inhibition of HABs – Hydrogen Peroxide |
| • University of Central Florida | Nutrient Reduction Using Activated Media Filtration |
| • St. Johns River Water Management District | Lake Guard Oxy® Control of HAB Formation |
| • Loxahatchee River ECD | Nanobubble Ozone Technology Treatments |
| • Lake St. Charles CDD | Ultrasonic Combined with Bubble and Adsorbent Mat |
| • Florida Gulf Coast University | Nanobubble (Enriched Air, Pure Oxygen, Ozone) |

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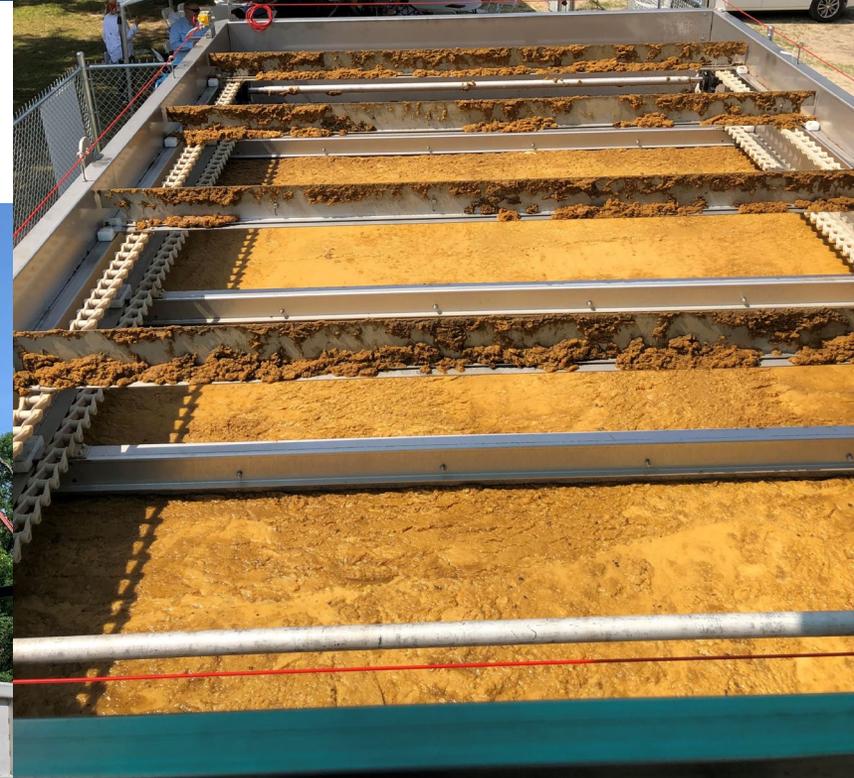
NWFWMD – ALGAL HARVESTING AND NUTRIENT REMOVAL



Lake Munson



Harvester Unit



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SJRWMD – LAKE MINNEOLA HAB PREVENTION PROJECT



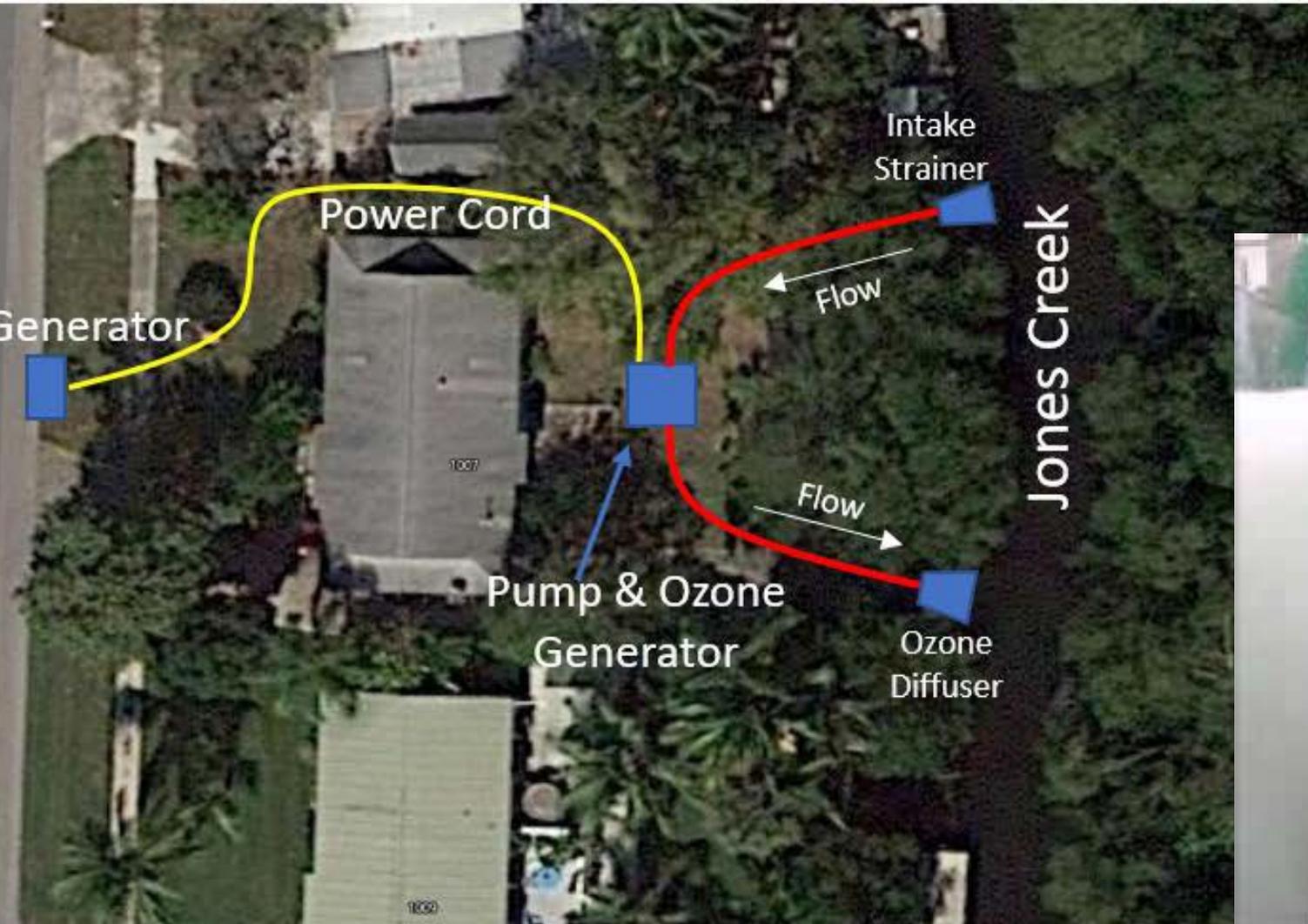
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FGCU – ULTRASONIC SYSTEMS PROJECT



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LOXAHATCHEE RIVER ECD – NANO BUBBLE OZONE TECHNOLOGY PROJECT



Planned Deployment Locations:

1. 1007 Sioux St, Jupiter, FL 33458
2. 990 Mohican Blvd, Jupiter, FL 33458
3. 602 S. Caloosahatchee Ave, Jupiter, FL 33458



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ALGAE DETECTION AND PREDICTION



WHAT IS IT?

- Four projects designed to identify means by which we may better predict formation of algal blooms.

WHAT ARE THEY?

- IRL Council Integrating HAB Data Across Platforms
- Brevard County Multi-Spectral Optical Sensor Trained Remote Sensing
Analysis of Satellite Imagery
- Polk County Forecasting, Detection and Mitigation of HAB
- FAU Harbor Branch Harmful Algal Bloom Assessment of Lake Okeechobee
System (HALO)

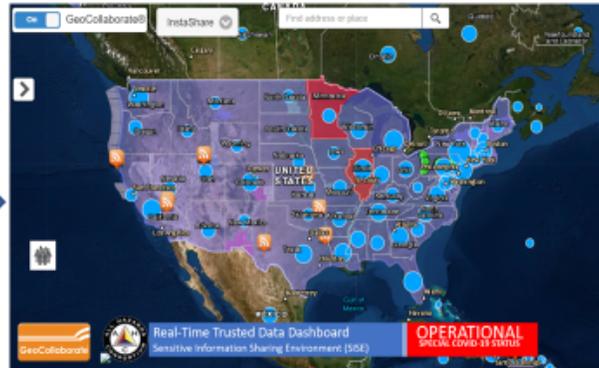
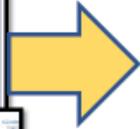
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IRL – COUNCIL - GEOCOLLABORATE PROJECT



IRLNEP: Putting Data to Work Using GeoCollaborate® to Integrate and Communicate Harmful Algal Bloom Data for the Indian River Lagoon and State of Florida

GeoCollaborate: Making the Complex...Simple



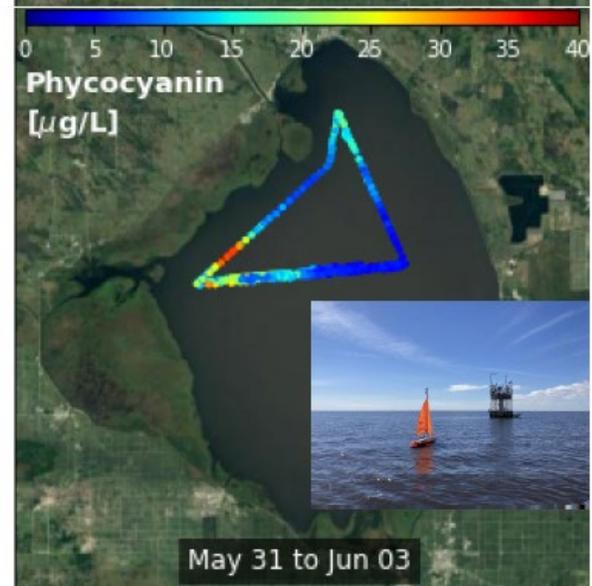
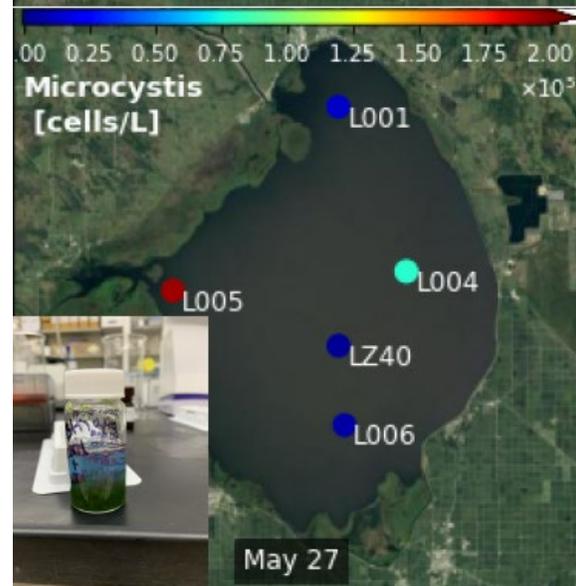
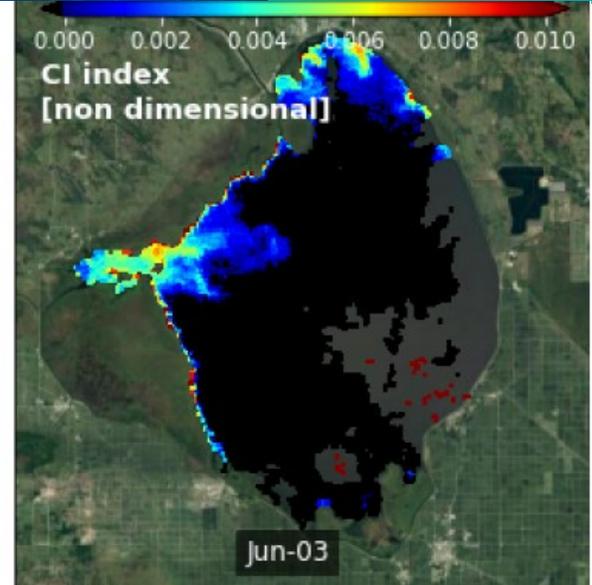
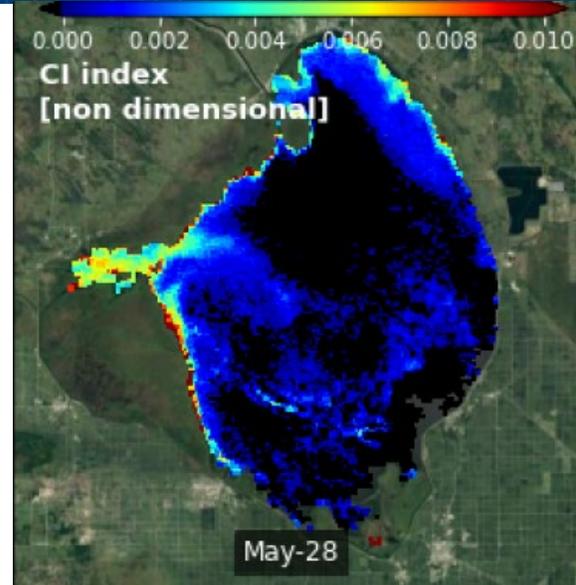
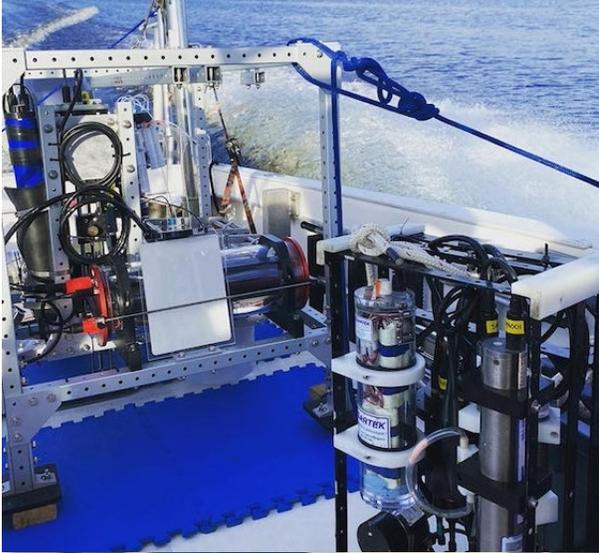
One site delivers trusted data from disparate sources, in real-time, onto any map, and source data never leaves its 'owner's' control.

Many websites, each with pieces of information.

Banana River, Brevard County, Summer 2020

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FAU/HARBOR BRANCH – HALO PROJECT



INNOVATIVE TECHNOLOGIES GRANT PORTAL



PORTAL IS OPEN

- Accepting applications through July 15, 2021.
- ProtectingFloridaTogether.gov/state-action/grants-submissions.

TWO-STEP APPLICATION PROCESS

- Portal Application.
- Supplemental Application.

VENDOR SURVEY

- New for this year.
- Expand the universe of available technologies.

PROTECTING TOGETHER

The department remains ready to coordinate with our partners in the water management districts and local governments.