IRL COUNCIL MANAGEMENT BOARD

This meeting is open to the public

February 9, 2021
10:15 am– 1:00 pm

Virtual Meeting held on Zoom
Zoom Web Link: https://us02web.zoom.us/j/87540134356?pwd=YW96QlJ3dnFRYV1Hb1A4YWp5WDhWZz09

The order of items appearing on the agenda is subject to change during the meeting and is at the discretion of the presiding officer.

1. Call to Order and Pledge of Allegiance – Bob Ulevich, Chair

2. Introductions & Public Comments - Bob Ulevich, Chair

3. Agenda Revisions - Bob Ulevich, Chair

4. Approval of Minutes - Bob Ulevich, Chair
   Approval of Minutes from the meeting of July 28, 2020

5. Finance Sub-Committee Report
   Financial Subcommittee (Finance Subcommittee Chair)

   Requested Action: Accept Committee Reports.

6. Old Business
   None

7. New Business
   a. Management Board Chair/Co-Chair Election

      Requested Action: Elect Chair and Co-Chair for Calendar Year 2021

   b. FY 2022 RFP: Review of projects recommended for funding based on proposal review and rankings from RFP review committees (Duane De Freese, Daniel Kolodny)
**Requested Action:** Motion to recommend the IRL Council Board of Directors accept the IRLNEP Management Conference recommendations and approve the final ranked list of proposals; and accept the Management Conference recommendations to fund the top proposals contingent and consistent with available funds and budgetary authority. Authorize staff to negotiate and enter into contracts with those applicants.

c. FDEP grant announcement and FY 2021 Budget Amendment (Duane De Freese, Daniel Kolodny).

**Requested Action:** Recommend the IRL Council Board of Directors adopts Resolution 2021-01 amending FY 2021 budget to include new grant revenues and expenditures.

d. FY 2022 Preliminary Budget (Daniel Kolodny)

**Requested Action:** Recommend the IRL Council Board of Directors adopts Resolution 2021-02, the tentative FY 2022 budget.

e. FY 2021 Request for Qualifications – RFQ for CCMP revisions and project list support services (Kathy Hill)

**Requested Action:** Recommend the IRL Council Board of Directors accept the recommended vendor(s) and authorize staff to enter into a service contract with the recommended vendor(s).

f. FY 2021 Request for Qualifications – RFQ for Contract support for graphic, editorial, and ADA services for graphic and print collaterals (Kathy Hill)

**Requested Action:** Recommend the IRL Council Board of Directors accept the recommended vendor(s) and authorize staff to enter into a service contract with the recommended vendor(s).

8. **IRLNEP Staff reports**
   a. Project update (Daniel Kolodny)
   b. Communication Report (Kathy Hill)
   c. Executive Director Report (Duane De Freese)

8. **General Public Comments**

9. **Adjourn**

*NOTE: If a person decides to appeal any decision made by the Board with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Section 286.0105, Florida Statutes (2014).*
Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Stephanie Jackson at (305) 764-4319. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800) 955-8771 (TDD) or 1(800) 955-8770 (Voice). For more information, contact: Stephanie Jackson, IRL Council, 1235 Main St, Sebastian, FL 32958, (305) 764-4319, or by email at jackson@irlcouncil.org.
Meeting Minutes
Tuesday, July 28, 2020
10:15 am

Virtual Meeting held via Zoom
These minutes have been abbreviated to only reflect agenda and actionable items. To view the meeting in its entirety please visit this link to YouTube.


Guests in Attendance: Yesenia Escribano, Kristen Kneifl, Marcy Frick, Danielle Huffner, Leesa Souto, Dennis Hanisak, Stacey Cecil, T. Saltos, Molly Klinepeter, Abby Johnson, Eric Charest

Agenda Item 1. Call to Order and Pledge of Allegiance (Bob Ulevich, Chair)
Meeting was called to order at 10:17 p.m.

Agenda Item 2. Agenda Revisions (Bob Ulevich, Chair)
None

Agenda Item 3. Introductions and New Member Welcome (Bob Ulevich, Chair)

Agenda Item 4. Minutes Approval (Bob Ulevich, Chair)

Requested Action: Approval of Minutes from Management Board meeting on May 5, 2020.

MOTION MADE BY CHRIS HENDRICKS, SECONDED BY KEVIN SHROPSHIRE TO APPROVE THE MINUTES FOR THE MAY 5, 2020 MEETING, MOTION CARRIED UNANIMOUSLY.

Agenda Item 5. Public Comment
None

Agenda Item 6. Finance Subcommittee Report (Stu Glass)

MOTION MADE BY MARK CROSLEY, SECONDED BY TOM CAREY TO APPROVE THE FINANCE SUBCOMMITTEE REPORT AS PROVIDED, MOTION CARRIED UNANIMOUSLY.
Agenda Item 7. Water Quality Reports
   Central and Northern Lagoon (Dr. Chuck Jacoby, SJRWMD)
   Southern Lagoon (Dianne Hughes, Martin County)

Agenda Item 8. Presentations (Speed Round, Three Slides - Three Minutes)
Planning Documents – Brief Progress Updates
   i. Monitoring Plan; Dr. Dennis Hanisak, HBOI
   ii. Habitat Restoration Plan, Rob Baron, Tetra Tech, Inc.
   iv. Boaters Guide; Dr. Leesa Souto, MRC
   v. Climate Ready Estuary; Dr. Duane De Freese, IRLNEP
      Dr. De Freese reported that RW Parkinson has completed the Final Draft Action Plan
   vi. Strategy for Funding the CCMP; Dr. Duane De Freese, IRLNEP

Agenda Item 9. Old Business
   a. FY 2022 RFPs (Duane De Freese)
      Requested Action: Recommend that the IRL Council Board of Directors authorize staff to develop and issue FY 2022 RFPs pursuant to tentative FY 2022 budget allocation amounts for each RFP.
      MOTION MADE BY STU GLASS, SECONDED BY PAUL CARLISLE TO RECOMMEND THAT THE IRL COUNCIL BOARD OF DIRECTORS AUTHORIZE STAFF TO DEVELOP AND ISSUE FY 2022 RFPs PURSUANT TO TENTATIVE FY 2022 BUDGET ALLOCATION AMOUNTS FOR EACH RFP, MOTION CARRIED UNANIMOUSLY.
   b. COVID Bridge Funding Grants – Update (Kathy Hill)
   c. IRL Project Update (Daniel Kolodny)
   d. SR528 Update (Duane De Freese)

Agenda Item 10. New Business
   a. EPA Competitive Grants Program administered by Restore America’s Estuaries Staff recommendation of projects for IRLNEP partnering (Duane De Freese)
      Requested Action: Approval of IRLNEP participation as a partner in Letters of Intent.
      MOTION MADE BY KATHY LAMARTINA, SECONDED BY STU GLASS TO RECOMMEND APPROVAL OF IRLNEP PARTICIPATION AS A PARTNER IN LETTERS OF INTENT, MOTION CARRIED UNANIMOUSLY.
   b. Meeting Calendar for 2021 (Kaylene Wheeler)

Agenda Item 11. IRLNEP Executive Director Report

Agenda Item 12. Final Comments (Management Board, Staff, Public)

Agenda Item 13. Adjourn
   Meeting Adjourned at 1:00 p.m.
Water Quality Proposals
Executive Summary

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Tressler Drive Water Quality Improvement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>City of Stuart, Tim Voelker, P.E.</td>
</tr>
<tr>
<td>Project Location:</td>
<td>The project is located at the end of Tressler Drive, west of US Highway 1 Latitude 27°11'10.20&quot;N Longitude 80°15'1.52&quot;W</td>
</tr>
<tr>
<td>Key CCMP Vital Signs(s)</td>
<td>Impaired Waters and Stormwater</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$80,000.00, IRL Council</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$80,000.00 (50%) Match</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$160,000.00</td>
</tr>
</tbody>
</table>

Project Description:
The project is in the City of Stuart, Florida (Latitude 27°11'10.20"N, Longitude 80°15'1.52"W) in the Poppleton Creek drainage basin. Stormwater runoff from a 13.7-acre urban residential development currently discharges directly to Poppleton Creek. This project proposes to construct a 2nd generation baffle box and bioswale to treat runoff prior to discharge. The project will remove nutrients and sediment and provide stormwater retention and is important for the City of Stuart to continue progress towards meeting BMAP requirements for the St. Lucie River. An annual reduction estimate is 40.92 pounds of TN and 7.67 pounds of TP. The design of this project is complete, and it qualifies for a General Permit from SFWMD; therefore, it is construction ready.

Map and Photo(s):
As instructed, a Project Location Map and Photo are attached to this application.

Key Outputs (Deliverables):
Stormwater runoff will be directed to a treatment train, where a 2nd Generation Baffle Box will provide nutrient and sediment removal. The baffle box will discharge to a Bioswale, which will provide retention with filter media, removing additional nutrients and sediment prior to discharge to Poppleton Creek and ultimately to the St. Lucie River. It is estimated that 40.92 pounds per year of TN and 7.67 pounds per year of TP will be removed because of this project (Source: Spreadsheet Tool for Estimating Pollutant Load, STEPL, 2007). The project will meet the four criteria that are critical to managing dispersed stormwater runoff. Volume and peak discharge will be addressed by routing the existing urban runoff to a bioswale for retention prior to discharge. Water quality will be improved by nutrient removal in the baffle box and bioswale, and the baffle box will provide sediment removal.

Key Outputs Benefits:
Short-term (1-2 years): The City continues implementing strategies to improve the quality of runoff entering the St. Lucie River and to advance toward BMAP goals.
Medium-term (3-4 years): The City of Stuart reaches the required 5-year nutrient reduction targets specified in the St. Lucie River and Estuary BMAP.
Long-term (5-10+ years): The City reduces nutrient and sediment loads to the St. Lucie River, whereby removing the St. Lucie River from the Impaired Waters designation list. The project will reduce nutrient and sediment loads to the St. Lucie River, decreasing stormwater pollution to the IRL system.
Title of Project: Application and continued optimization of an environmentally friendly, biological denitrification system developed for use in the Indian River Lagoon using recycled materials; water treatment to remove 70% of dissolved ammonium nitrogen.

Lead Organization and Partners: Florida Institute of Technology (Florida Tech, Lead organization) (Austin Fox Ph.D., role: project manager and scientific evaluation/optimization, 150 W University BLVD. Melbourne FL 32901, afox@fit.edu, (321)674-7463), Oxsolve and Lapin Services (Dan Young, role: treatment system operation, 3031 40th Street, Orlando, FL 32839, danyoung@lapinservices.com, (407) 499-0284). Logistical support from Central Sand Inc. (Dale Morris, role: logistical support, 6855 Tico Rd. Titusville, FL 32780, centralsand@aol.com, (321) 632-0308).

Project Location: This project will be carried out in the Banana River lagoon associated with a Dredge Material Management Area (DMMA) located in Sykes Creek at 28°21'55"N and 80°40'45"W. This proposed system will provide water treatment supplemental to any other treatment efforts. Collaboration with dredging provides logistical support and a location for the system, completed permitting and a supply of flowing lagoon water and or dredge slurry. This collaboration is especially ideal because it provides a location for the system in Sykes Creek, an area known for degraded water quality thus providing water with the most potential and need for treatment/improvement.

Key CCMP Vital Signs: Impaired waters, legacy loads, contaminants, harmful algal blooms, 21st century communities, monitoring and data, science & technology innovation plus citizen engagement.

IRLNEP Contribution and Source: $86,500
Partner Match: $87,000
Total Project Cost: $173,500

- **Project Map:** Attached JPEG image per proposal guidelines (Figure ES1, Attachment A).

- **Brief Project Description:** We propose to use and optimize a simple, innovative biological denitrification system developed and successfully demonstrated to remove 70% of ammonium nitrogen (N) from water in the IRL. The system was developed at Florida Tech based on a thorough search of the literature plus examination of existing wastewater, aquaculture and aquarium systems, followed by extensive laboratory and field-testing in the IRL. This innovative system for treatment of natural waters manages environmental conditions (e.g., dissolved oxygen) in flow-through treatment cells containing denitrification media in order to promote the growth and proliferation of denitrifying and or anammox bacteria already present in IRL water and sediments. Following extensive testing of various media, recycled plastics (BPA-free bottle caps) similar in function to media used in home and large commercial aquaria have yielded >70% ammonium nitrogen (N) removal from IRL water and dredge slurry. With expected inflow concentrations of nitrogen at ~3 mg/L, 70% removal would decrease concentrations to <1 mg/L and this system would remove hundreds of pounds of nitrogen from the IRL during the NEP funded project period. Outcomes include removal of hundreds of pounds of N and associated P from the lagoon water, implementation of an innovative 21st century enhanced biological denitrification system into city and county storm water and muck management plans. This project also promotes citizen engagement and support for environmentally friendly, sustainable 21st century treatment of lagoon water using recycled materials.
Executive Summary

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Hobe Heights-Jimmy Graham Park Drive Water Quality Improvement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>Martin County, James Gorton, P.E.</td>
</tr>
<tr>
<td>Project Location:</td>
<td>The project is located in Hobe Sound, Martin County, Florida (Latitude 27° 5' 59.89&quot;N, Longitude 80° 8' 47.72&quot;W).</td>
</tr>
<tr>
<td>Key CCMP Vital Signs(s)</td>
<td>Impaired Waters and Stormwater</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$150,000.00, IRL Council</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$300,480.00 (66.7%) Match</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$450,480.00</td>
</tr>
</tbody>
</table>

Project Description:
The Hobe Heights neighborhood has had severe and recurring flooding, documented back to 1992. Modeling has confirmed that 53 homes and 1 ten-unit townhome building are currently below the 100 year elevation in the basin, in a zero-discharge scenario. In order to provide flood protection for the Hobe Heights neighborhood, untreated stormwater runoff from 78.76 acres is currently pumped north to East Fork Creek, ultimately discharging to the Indian River. This project proposes to redirect the stormwater discharge to a treatment train consisting of Dry Retention and Wetland Detention, to provide treatment prior to discharge. In addition, 11.36 acres of currently untreated runoff from Jimmy Graham Park will be captured in the treatment train. The proposed discharge point to the Indian River will be south of the BMAP boundary for the St. Lucie River and Estuary.

Map and Photo(s):
As instructed, a Project Location Map and Photo are attached to this application.

Key Outputs (Deliverables):
Stormwater runoff will be directed to a treatment train, where treatment consisting of Dry Retention and Wetland Detention will be applied to the currently untreated discharge. The Wetland Detention areas will discharge to existing on-site wetlands prior to ultimately discharging to the Indian River. It is estimated that the treatment train will remove 246.69 pounds per year of TN and 43.69 pounds per year of TP per year (Source: Spreadsheet Tool for Estimating Pollutant Load, STEPL, 2007). The project will meet the four criteria that are critical to managing dispersed stormwater runoff: Volume, Peak Discharge, Water Quality, and Maintenance. In addition, untreated stormwater will be diverted from East Fork Creek to the Indian River, outside of the BMAP limits for the St. Lucie River and Estuary.

Key Outputs Benefits:
Short term (1-2 years) project benefits include Martin County continuing to implement strategies to improve the quality of runoff entering the St. Lucie River and Estuary and to advance toward BMAP goals.
Medium-term (3-4 years) benefits include helping Martin County reach the required 5-year nutrient reduction targets specified in the St. Lucie River and Estuary BMAP.
Long-term (5-10+ years) outcomes include reducing nutrient and sediment loads to the St. Lucie River and Estuary, with the goal of removing the St. Lucie River and Estuary from the Impaired Waters designation list. The project will reduce nutrient and sediment loads to the Indian River, helping to decrease stormwater pollution to the IRL system.
Executive Summary

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>The Martin County Connect-to-Protect Septic-to-Sewer Nutrient Removal Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>Martin County Board of County Commissioners/No partners</td>
</tr>
<tr>
<td>Project Location:</td>
<td>MCU Septic-to-Sewer grinder pump stations projects are located within Martin County’s service area. The latitude and longitude of each project area is listed on Attachment A-1 Project Map.</td>
</tr>
<tr>
<td>Key CCMP Vital Sign(s):</td>
<td>Seagrasses, filter feeders, harmful algae blooms, impaired waters, wastewater, and contaminants</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$150,000, IRL Council (23% project funding)</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$510,000, Martin County (77% project funding match)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$1,710,000 ($1,200,000 residential cost plus $510,000 County funding discount for connection within the first year of service availability)</td>
</tr>
</tbody>
</table>

Project Description:
The Martin County Board of County Commissioners adopted a 10-year Septic-to-Sewer Program that will provide for the elimination of over 10,000 on-site septic systems. Septic-to-sewer projects are prioritized based on their impact on the IRL. Funding is requested for FY2022 small community grinder sewer system connections projects. Grant funds would provide 150 homeowners an incentive for early connection to the grinder sewer system providing significant reduction of the nitrogen and phosphorous loads on the Indian River Lagoon (IRL or Lagoon). The removal of the 150 septic tanks will reduce the Total Nitrogen (TN) discharging into the IRL in the region by 4,050 lbs. TN/yr. based on 27 lbs./yr. of TN per septic tank located within 55 yards of the waterways as calculated using the Brevard County Save Our Indian River Lagoon program methodology.

This project for 150 connections is estimated to cost $1,710,000 ($11,400 per connection). Martin County Utilities (MCU) offers a discount of $3,400 to reduce the customer cost to connect to $8,000. MCU’s project funding match is $510,000 (77% project funding match). The funding request is $150,000. If awarded, this grant would further reduce the cost of homeowner connection by $1,000 for 150 households (23% project grant funding).

Map and Photo(s):
Attachment A1–Project Map (via email) provides a map of grinder pump project sites within Martin County service area included in this grant proposal.
Attachment B1-Project Photo (via email)

Key Outputs (Deliverables):
The Connect-to-Protect Program provides for shovel-ready residential grinder pump connection to Martin County’s central sewer system based on an established timeline for community connections. Martin County will obtain 150 connections on a first-come, first-served basis prior to the end of FY2022 and will provide deliverable documentation to IRL Council in the form of quarterly and final report summaries. The estimated reduction in TN per connection is 27 lbs./yr. or an estimated total project reduction of 4,050 lbs. TN/yr.

Key Outcomes (Benefits to the IRL):
Short term benefit: Proposed septic tank removal will reduce the amount of nitrogen, phosphorus and fecal coliform that are leached into the IRL.
Medium benefit: Reduction in nutrient contribution decreases the potential for harmful algae blooms and massive fish kills.
Long-term Benefit: Project will reduce contribution to nutrient-related algal growth, improve water clarity, support seagrass photosynthesis and increase habitat and lagoon health.
**Title of Project**  
Septic to Sewer Conversion Along the Elkcam Waterway

**Lead Organization and Partners**  
City of Port St. Lucie

**Project Location**  
The project location is in central Port St. Lucie along the Elkcam Waterway, which empties into the North Fork of the St. Lucie River. The project area is approximately 1,909 acres in the Elkcam Hot Spot with 8.5 of those acres covering 34 residential lots

Latitude: 27.279234  
Longitude: -80.329331

**Key CCMP Vital Sign(s)**  
Impaired Waters, Wastewater, Contaminants of Concern, Monitoring and Data Sharing, Citizen Engagement and Education

**IRLNEP Contribution and Source**  
$100,000, IRL Council

**Applicant Match**  
$100,000 from 34 voluntary households

**Total Project Cost**  
$200,000

**Project Description**  
The North Fork of the St. Lucie Estuary has experienced degraded water quality leading to recurring closures of the water body for recreational use. To determine the sources of this impairment, the City of Port St. Lucie contracted with Harbor Branch Oceanographic Institute-Florida Atlantic University to conduct a microbial source tracking study. That study confirmed elevated fecal coliform levels. The greatest concentrations consistently occurred in 5 dense urbanized areas of the City, including along the Elkcam Waterway which drains directly into the North Fork of the St. Lucie River. Older septic systems near the Elkcam Waterway are believed to be contributing to this bacterial pollution. IRLNEP funding will enable the City to expand its septic-to-sewer program. The proposed Elkcam Septic Hot Spot Grant Program will support the conversion of approximately 34 residential septic systems in the target area to the City’s low-pressure, centralized sewer system. Property owners within 50’ of the Elkham Waterway or a ditch that discharges into the Waterway will be eligible to participate in the septic grant program, which covers 50% of the conversion cost. The City will also offer 10-year interest-free connection fee loans to all participating septic owners. The project is expected to benefit the Indian River Lagoon by removing 6.11 pounds of total nitrogen per septic system or 207.74 pounds of total nitrogen annually. Nutrient pollution is the main cause of toxic algal blooms in the Indian River Lagoon system. Fewer algal blooms will protect marine life and preserve key habitat.

**Map and Photos**  
See attached.

**Key Outputs (Deliverables)**  
Approximately 34 homes converted from septic to sewer system; elimination of a combined total of 207.74 pounds of total nitrogen annually

**Key Outcomes (Benefits to the IRL)**  
**Short-term benefits:** Enhanced community understanding in Elkcam area; initial nutrient reductions  
**Mid-term benefits:** Incentivizing the conversion of 34 residential septic systems in the Elkcam Hot Spot area; significant nutrient reductions; better Indian River Lagoon protection  
**Long-term benefits:** Fewer algal blooms; habitat improvements; restoration of Indian River Lagoon biological diversity to a stable and resilient state
Habitat Restoration Proposals
Executive Summary

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Tucker Cove Seagrass Restoration Project Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>Sea &amp; Shoreline LLC (Lead) Carter Henne, P.O. Box 783549, Winter Garden, FL 34778, (863) 412-8275, <a href="mailto:carter@seaandshoreline.com">carter@seaandshoreline.com</a>, St. Lucie County (Partner) James Oppenborn, 2300 Virginia Avenue Fort Pierce, FL 34982, (772) 462 1713, <a href="mailto:oppenbornj@stlucieco.org">oppenbornj@stlucieco.org</a></td>
</tr>
<tr>
<td>Project Location</td>
<td>The project area is located in St. Lucie County, FL, centered at (27°28'40.57&quot;N 80°18'4.73&quot;W). The project site will comprise a 2.0-acre area in north-central Tucker Cove that has experienced a considerable amount of seagrass loss in the past two decades.</td>
</tr>
<tr>
<td>Key CCMP Vital Sign(s):</td>
<td>Seagrasses, Biodiversity, Fisheries, Monitoring &amp; Data, Science &amp; Technology Innovation</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$88,500, IRL Council</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$110,933 (S&amp;S, 54.2%), $5,000 (St. Lucie Co, 2.4%)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$204,433</td>
</tr>
</tbody>
</table>

**Project Description:**
The purpose of this project is to restore another two (2.0) acres of seagrass habitat within the Indian River Lagoon (IRL) and to document the factors that influence project success. This project presents a unique opportunity to restore an area that has excluded motorized vessel access due to their role in seagrass loss. The information gathered from this project will be used to inform future efforts and enhance community outreach and education regarding seagrass conservation. The funds requested from the IRLNEP will be used to install, protect, and maintain nursery-grown seagrass planting units for a period of one (1) year and to monitor project success for a period of three (3) years.

**Map and Photo(s):**
Please see attached Map Package and Representative Project Photo

**Key Outputs (Deliverables):**
1. Demonstrate the technique of planting nursery-grown seagrasses (*Halodule wrightii*) to directly restore a 2.0 acre site within the IRL
2. Monitor seagrass restoration and collect data on the factors influencing seagrass recovery in the IRL.

**Key Outcomes (Benefits to the IRL):**
Outcome 1: seagrass restoration, sediment stabilization, nutrient reduction, habitat creation, increased biodiversity
Outcome 2: Document how factors including grazing, light transmittance, and sediment transport affect seagrass recovery, and apply these data to create a scalable model for future seagrass restoration efforts within the IRL. Demonstrate the effectiveness of various seagrass planting techniques
Executive Summary

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Category 2 Habitat Restoration Proposal: Restoration of clam populations in the Indian River Lagoon for water quality improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners</td>
<td>University of Florida (lead), St. Johns River Water Management District, Florida Fish and Wildlife Conservation Commission, Coastal Conservation Association, Riverside Conservancy, Addictive Fishing Television, Florida Oceanographic Society, Ducks Unlimited</td>
</tr>
<tr>
<td>Project Location</td>
<td>Titusville-Sebastian-Ft. Pierce, and Banana River (80° 48’ W, 28° 43’ N, to 80° 11’53” 27° 12’02”W)</td>
</tr>
<tr>
<td>Key CCMP Vital Signs</td>
<td>Habitats, Filter Feeders &amp; Seagrasses Living Resources, Fisheries &amp; Harmful Algal Blooms, Water Quality, Impaired Waters, Legacy Loads, and Contaminants</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source</td>
<td>$199,994 IRL Council</td>
</tr>
<tr>
<td>Partner Match</td>
<td>$204,171 – UF (40.6%) SJRWMD (4.2%) CCA (16.6%) FWC (3.9%) AFT (12.2%) FOS (2.6%) RC (19.6%) (total match rate 51%)</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td>$404,164</td>
</tr>
</tbody>
</table>

**Project Description:** Hard clams have historically been significant contributors to healthy water quality in the Indian River Lagoon (IRL) via filter-feeding that both reduces turbidity from algae and detritus and removes organic nutrients from the water column and deposits them in sediments. Unfortunately, overfishing and environmental degradation have led to the collapse of native clam populations in the IRL. We propose to leverage recent environmental stressors (algal blooms, hypoxia) that have naturally selected for the hardiest, most stress resistant filter-feeding bivalves in the IRL, by collecting surviving individuals of historically abundant species (e.g., hard clam, Mercenaria mercenaria / campechiensis) in these environmentally stressed areas for use in ecosystem restoration.

**Key Outputs:** We propose to continue our ongoing efforts (yr 1&2 funded by IRLNEP) to restore filter feeding clam populations in the IRL by: (1) spawning broodstock collected previously from areas identified as highly stressed by deleterious environmental conditions in recent years, making them exceptional genetic stock from which to produce IRL specific stress resistant clams; (2) growing clams to out-plant size in nursery facilities; and (3) repatriating nursery raised native clam populations to selected locations at densities necessary to support successful reproduction, (4) reporting.

**Key Outcomes:** Restoration of clam populations will result in: (1) reduced turbidity and improved water quality, (2) nutrient reduction, (3) improved condition for seagrass recruitment
Community-Based Restoration Proposals
Title of Project | Restore Our Shores: Clam Gardening Project (Community-Based Restoration Proposal)
--- | ---
Lead Organization and Partners | East Coast Zoological Society of Florida, Inc. (d/b/a Brevard Zoo) (Applicant)
Ashley Rearden, Conservation Curator
8225 N. Wickham Rd.
Melbourne, FL 32940
321-254-9453, ext. 284
arearden@brevardzoo.org
University of Florida Whitney Laboratory for Marine Bioscience (Partner)
Todd Osborne, Associate Professor
9505 Ocean Shore Blvd.
St. Augustine, FL 32080
352-256-3826
osbornet@ufl.edu
--- | ---
Project Location | 20 locations throughout the Brevard County portion of the IRL, 28°23′09.6″N 80°41′31.1″W
Key CCMP Vital Sign(s): | Filter Feeders Vital Sign within the One Lagoon portion of the wheel
Citizen Engagement Vital Sign within the One Voice portion of the wheel
--- | ---
IRLNEP Contribution and Source: | $65,000, IRL Council
Partner Match: | $29,040, Brevard Zoo
$19,000 UF Whitney Laboratory for Marine Bioscience
--- | ---
Total Project Cost: | $113,040

**Project Description:** Brevard Zoo began a community-based oyster gardening program, alongside Brevard County, in 2014, from which the zoo has learned how to design and implement an impactful and engaging community-based program. This project seeks to expand upon the Brevard County funded oyster gardening project to create a clam gardening project which will restore 7,000 square feet of clam beds, repatriate 200,000 clams, and provide outreach opportunities aimed at enhancing STEM education programs. Twenty individual properties throughout Brevard County will be selected based on careful site selection criteria to receive a 350 square foot clam restoration plot, seeded with native “super clams” produced by Todd Osborne at University of Florida Whitney Laboratory for Marine Bioscience, and maintained and monitored by community volunteers and local students throughout Brevard County.

**Map and Photos:** attached to this emailed application

**Key Outputs (Deliverables):**
1. Quarterly progress reports starting after the first quarter following contract execution
2. 7,000 square feet of clam beds restored
3. Brevard Zoo shall organize at least 20 volunteer events to engage students and the community in installing, maintaining, and monitoring the clam beds, totaling at least 1,000 hours in volunteer time.

**Key Outcomes (Benefits to the IRL):**
1. 7,000 square feet of clam beds restored. (Short-, Medium-, and Long-term benefits)
   a. The clams restored will provide filtering benefits to the water immediately, but the population will increase over time, leading to exponential growth of filtering ability each year. A conservative estimate of the filtration rate is 25 gallons of water per day, per each adult clam. (Short-, medium- and long-term benefit)
   b. Clam filtration reduces turbidity, thereby increasing light availability for seagrass. (long-term benefit)
2. Knowledge gained through community engagement/education (Short-, Medium-, and Long-term benefits)
   a. The knowledge gained by the Zoo and its partners through this pilot will be used to guide the future of community-based clam restoration projects. (medium and long-term benefit)
   b. The knowledge gained by students and the community will inspire conservation action. (long-term benefit)
Validation of Inexpensive and Effective Modifications of Mosquito Impoundment Management Strategies to Increase Their Value as Vital Fish Nurseries – Year 2

| Lead Organization and Partners | Indian River Land Trust (Lead)  
| Dr. Jonathan Shenker (Co-PI), FIT  
| Dr. Aaron Adams (Co-PI), FAU/HBOI  
| Dr. Dennis Hanisak (Co-I), FAU/HBOI  
| Indian River Mosquito Control District (Co-I) |

| Project Location | Three mosquito control impoundments in Indian River County, as shown on attached map, with sizes ranging from 30 to 150 acres. Locations between 27° 41.25′N x 80° 22.794′W to 27° 33.803′N x 80° 19.717′W. |

| Key CCMP Vital Signs | Fisheries 3 – Improve effectiveness of fish habitat conservation and restoration  
| Fisheries 4 – Identify and assess ... finfish ... important habitats within the IRL  
| Wetlands 3 – Implement programs supporting wetlands protection and management on privately owned and non-profit organization owned wetlands  
| Wetlands 5: Develop a Habitat Restoration Plan for the IRL system |

| IRLNEP Contribution and Source | $61,500 |

| Partner Match | IRLT = $30,946; Shenker = $15,800; Adams = $5,000; Volunteers = $10,385 |

| Total Project Cost | $123,631 |

Brief Project Description: This proposal represents Year 2 of a project currently underway in Year 1 funded by the IRL Council. Our privately-funded earlier study (2015-2016) at one mosquito control impoundment showed that the Rotational Impoundment Management strategy used for many mosquito control impoundments prevents juvenile snook and tarpon from leaving their initial nursery habitat to join older populations. We identified habitat characteristics that influenced production of juveniles within the impoundment habitats, and a simple and inexpensive modification of RIM that dramatically improves juvenile emigration of these very valuable recreational fishery species. This proposal seeks to replicate this modification in other impoundments, with the ultimate goal of boosting the fishery productivity of thousands of acres of impoundments in the Indian River Lagoon.

Key Outputs (deliverables):  
- Activity reports to IRL Council, as requested  
- Collection of environmental data and fish tagging and emigration data  
- Analysis of emigration rates and impoundment management strategies  
- Presentation of results to mosquito control district boards and Subcommittee on Managed Marshes  
- Publication of study results in research paper

Key Outcomes (benefits to the IRL):  
- Development of a simple, inexpensive modification to Rotational Impoundment Management strategy that increases juvenile fish emigration to the Indian River Lagoon through summer drawdowns that briefly allow water exchange between the impoundments
and the IRL during the period when culverts are usually closed
- Presentation of this modification to impoundment managers for adoption throughout the Indian River Lagoon watershed
- Increased production of juveniles into the populations of iconic fishery species from nursery habitat that is otherwise isolated from the Indian River Lagoon during key emigration periods
Category 3 - Community-Based Restoration Proposal: Expanding the Scope of Non-Plastic Restoration Materials in Mosquito Lagoon and Tomoka Basin

Lead Organization & Partners: Jessy Wayles, Marine Discovery Center (MDC), 520 Barracuda Blvd., New Smyrna Beach, FL 32169, jessy@marinediscoverycenter.org, 386-428-4828. Project Role: Overall Project Lead, Shuck & Share Coordinator. Dr. Linda Walters, The University of Central Florida (UCF), 4000 Central Florida Blvd., Orlando, FL 32816; linda.walters@ucf.edu, 407-823-2148. Project Role: Lead for oyster restoration and monitoring efforts. Dr. Melinda Donnelly, UCF, melinda.donnelly@ucf.edu, 321-403-0278. Project Role: Lead for living shoreline deployments and monitoring efforts.

Project Location: Mosquito Lagoon for 300’ living shoreline stabilization and restoration of 4 oyster reefs (29°04’18.97”N, 80°54’58.15”W; 28°44’16.11”N, 80°45’08.21”W), Tomoka State Park for 300’ shoreline stabilization (29.3489802,-81.0918905), Shuck & Share based at Marine Discovery Center, New Smyrna Beach, FL (29°03’61.29”N, 80°91’80.38”W).

Key CCMP Vital Signs: Filter Feeders-1, 2; Living Shorelines-1, 2, 3; Biodiversity-1, 2, 3; Commercial and Recreational Fisheries -1, 2, 3, 4; Citizen Engagement and Education-1, 3; Monitoring and Data Sharing -2.

IRLNEP Contribution & Source: $55,000 Partner Match: $61,236 Total Project Cost: $116,236

Project Description: This project will improve water quality (reduce nutrients, increase clarity) and make the IRL more climate-ready for sea level rise impacts by restoring 4 (~0.25 acre) oyster reefs and stabilizing 600 feet of highly eroded shoreline in Mosquito Lagoon and Tomoka State Park. We will continue our highly successful, community-based, and partner-driven restoration and monitoring efforts; oyster restoration has run continuously since 2007 and living shoreline stabilization since 2010. This will be our third year of only deploying non-plastic materials in the IRL as we continue to expand and improve these biodegradable designs to find the best matches for IRL conditions. Volunteers are the heart of our efforts and will be involved in all aspects of the project starting with retirees collecting shells from local restaurants to elementary school students from underserved communities growing mangroves from propagules at their schools. All permits from SJRWMD, USACE, and the National Park Service are in hand, so we are shovel-ready for both living shoreline stabilization of culturally important, highly eroded sites and intertidal oyster reef restoration to ensure high densities of this keystone filter feeder in the IRL.

Map and Photos: Maps of restoration/stabilization locations are provided as Attachment 1. Representative photographs are provided as Photos 1 & 2.

Key Outputs (Deliverables):
Deliverable 1: 4 restored oyster reefs (~0.25-acre footprint) in Mosquito Lagoon using BESE™ biodegradable mesh with oyster shell attached with stainless wire or BESE™ reef paste (to remove step of attaching shells to mesh). Deliverable 2: 600 linear feet of stabilized shoreline in Mosquito Lagoon and Tomoka Basin with BESE™ wave breaks or oyster shell-filled gabion wave breaks specifically designed for IRL/Tomoka waters. Deliverable 3: Recycle and distribute 50,000 pounds of oyster shell through the Shuck & Share Program. Deliverables 4 & 5: A minimum of 10 community restoration events plus quarterly/final reports to IRLNEP.

Key Outcomes (Benefits to the IRL):
Restored oyster reefs in Mosquito Lagoon. Short-term Outcome: 1,600 live oysters in 1-3 yrs; Mid-term Outcome: 3,200 live oysters in 3-5 yrs; Long-term Outcome: 4,000 additional oysters after 5 yrs, in Mosquito Lagoon. Stabilized shoreline in Mosquito Lagoon and Tomoka State Park. Short-term Outcome: 1,200 plants and 0.5 cm accretion of sediment in 1-3 yr; Mid-term Outcome: Plant retention plus 1-2 cm accretion in 3-5 yrs; Long-term Outcome: Retention of reproductive plants plus 4 cm accretion after 5 yr. Recycle and distribute 50,000 pounds of oyster shell through the Shuck & Share Program. Short-term Outcome: Reduction of waste in landfills. Mid-term Outcome: Community of stakeholders engaged in entire restoration process. Long-term Outcome: Stable source of shell for regional IRL restoration.

Science and Innovation Proposals
EXECUTIVE SUMMARY

Integrated Sampling to Assess Toxins Produced by Harmful Algal Blooms in the Indian River Lagoon

Lead Organization and Partners

**Lead Organization:** Harbor Branch Oceanographic Institute at Florida Atlantic University  
**Applicants:** Abdiel E. Laureano-Rosario; Michael S. Twardowski  
**Partners:** Charles Jacoby; St. Johns River Water Management District (SJRWMD)

Project Location

**Site 1:** South Mosquito Lagoon (Lat: 28.732, Lon: -80.717),  
**Site 2:** Titusville (Lat: 28.620, Lon: -80.799),  
**Site 3:** Northern Indian River Lagoon (Lat: 28.393, Lon: -80.735),  
**Site 4:** Banana River Lagoon (Lat: 28.366, Lon: -80.633), and  
**Site 5:** Melbourne (Lat: 28.125, Lon: -80.616)

Key CCMP Vital Sign(s)

1) Harmful Algal Blooms (HABs) and 2) Monitoring (MON)

IRLNEP Contribution and Source

$68,267

Partner Match (%)

FAU $18,076; SJRWMD $ 6,500; Total $ 24,576 (26.4%)

Total Project Cost

$92,843

Project Description

The proposed study will document temporal variability in toxin concentrations from Harmful Algal Blooms in the Northern Indian River Lagoon, Banana River Lagoon, and Mosquito Lagoon and combine them with data on environmental conditions to identify biogeochemical drivers of toxin production. Currently, toxins are not analyzed as part of ambient water quality surveys, and adaptive sampling of blooms may miss periods when toxins are produced. To address these gaps, the proposed project will deploy Solid Phase Adsorption Toxin Testing (SPATT) bags on existing water quality towers maintained by the St. Johns River Water Management District (Attachment 1). These SPATT bags will integrate exposure to toxins over one-month periods. Targeted toxins will be selected using information on blooms reported during deployments. Multivariate statistical models will be used to identify associations between integrated toxin concentrations and potential biogeochemical drivers. Overall, monthly deployments of SPATT bags will provide insights into the presence of toxins, correlations between toxicity and ambient conditions that can inform management, and valuable information on the cost:benefit ratio associated with a network to monitor toxins.

Key Outputs (Deliverables)

The proposed project will involve at least 12 sampling events. Deliverables include 1) temporal concentrations of toxins (µg/L) at each site; 2) multivariate statistical assessments to identify potential biogeochemical drivers of toxins; 3) quarterly and final reports with preliminary and overall results; and 4) at least one peer-reviewed publication near the end of the project.

Key Outcomes (Benefits for the IRL)

In the short-term, concentrations of toxins will be reported to the IRL NEP and other agencies, such as the St. Johns River Water Management District. These results provide immediate insights into the spatiotemporal dynamics of toxicity. Long-term goals revolve around identifying potential biogeochemical drivers for the production of targeted toxins and providing guidance for future work to confirm causal links and design strategies to mitigate or control the production of toxins.
## EXECUTIVE SUMMARY

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Controlling <em>Pyrodinium</em> Outbreaks in the Indian River Lagoon Estuarine System (IRLES) by Low-cost Biochars Prepared from <em>Sargassum</em></th>
</tr>
</thead>
</table>
| Lead Organization and Partners                            | Lead: Florida Institute of Technology  
Partner: National Oceanic and Atmospheric Administration                                                                 |
| Project Location                                           | Melbourne, FL                                                                                                                    |
| Key CCMP Vital Sign(s)                                     | Harmful Algal Bloom                                                                                                             |
| IRLNEP Contribution and Source                            | $59,969                                                                                                                          |
| Partner Match                                              | Florida Institute of Technology $67,014 / NOAA $0.00                                                                              |
| Total Project Cost                                         | $126,983                                                                                                                          |

### Project Description

Florida's Indian River Lagoon (IRL) frequently experiences harmful algal blooms (HABs), with *Pyrodinium bahamense* as one of the major bloom-forming species. *Pyrodinium* produces saxitoxins (STX), a group of neurotoxins which cause paralytic fish poisoning and result in major economic losses along the Atlantic coast. Traditional methods of HAB control, such as biological, chemical, or genetic control have proven to be either costly or ineffective. According to our prior research experience, biochars might have tremendous potential to control HABs in the IRL. Therefore, Florida Institute of Technology in collaboration with National Oceanic and Atmospheric Administration is proposing a one-year project to synthesize biochars from *Sargassum* seaweed and use this material to adsorb *Pyrodinium* cells and STX from water. Specific objectives are: (1) Establish relationship between biochar morphologies produced from *Sargassum* at varying conditions and assess their capacity for *Pyrodinium* (and STX) adsorption; and (2) Evaluate the fate of STX during *Pyrodinium* adsorption, and its elimination from water. This project will identify the key aspects on how to control HAB outbreaks from IRL. Two graduate students will be funded from this project, while their tuition will be provided as cost-share. The project outputs will be presented and discussed in panel at the annual IRL Symposium. This project will also result in valuable preliminary results for upcoming NOAA PCMHAB and EPA South Florida Geographic Initiative proposals. Implementing this technology will benefit multiple management authorities including, but not limited to: IRLNEP, St John’s River Water Management District, local fisheries businesses, and local tourism.

### Map and Photo(s): Attached with the email

### Key Outputs (Deliverables)

Outline the specific project deliverables as a list with brief descriptions of each. Be sure to quantify any nutrient reduction estimates, acres of linear feet restored, etc.

- Presentation at IRL Symposium. Scientific discoveries of this project will be presented at the IRL Symposium.
- Peer-reviewed manuscripts. A manuscript describing HAB will be submitted to Journal of Environmental Chemical Engineering or similar journal
- EPA SFGI grant proposal. An EPA South Florida Geographic Initiative (SFGI) proposal will be submitted to move this technology to Phase II.
- Final report. Final report will be submitted to IRLNEP

### Key Outcomes (Benefits to the IRL)

- Demonstration of proof of concept for a new technology that has a HAB mitigation application
- All-natural route of mitigation for containing/controlling HABs, or a combined way to rid beaches of nuisance algae while using it to treat HABs in specific, targeted areas
- Long term: benefits the local IRL HAB community in providing new avenues for pursuing mitigation efforts during HABs.
**EXECUTIVE SUMMARY**

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Fingerprinting emerging contaminants of concern in the Central Indian River Lagoon (IRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>Florida International University (FIU); Natalia Soares Quinete, Lead PI, 3000 NE 151st Street, North Miami, FL, 33181, <a href="mailto:nsoaresq@fiu.edu">nsoaresq@fiu.edu</a>, (305) 919-4113; Piero Gardinali, Co-PI, 3000 NE 151st Street, North Miami, FL, 33181, <a href="mailto:gardinal@fiu.edu">gardinal@fiu.edu</a>, (305)348-6354; Henry Briceño, Co-PI, 11200 SW 8th Street, Miami, FL, 33199, <a href="mailto:briceno@fiu.edu">briceno@fiu.edu</a>, (305) 348-1269</td>
</tr>
<tr>
<td>Project Location</td>
<td>Central IRL (28° 8'10.68&quot;N, 80°19'4.77&quot;W to 27°33'57.09&quot;N, 80°39'48.96&quot;W)</td>
</tr>
<tr>
<td>Key CCMP Vital Sign(s):</td>
<td>Contaminants and Science and Technology</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$99,559.16, IRL Council</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$33,529.60 (25.2%)</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td>$133,088.76</td>
</tr>
</tbody>
</table>

**Project Description:** The goal of this research is to assess the occurrence of emerging contaminants by non-targeted analysis (NTA) in surface waters of the Central IRL Basin, identifying chemicals of concern, their seasonal trends and exploring the role played by the unintentional release of treated or untreated sewage by tracing sucralose, a powerful indicator of wastewater intrusion. Currently, there is a significant knowledge gap in the identification and assessment of emerging contaminants of concern (ECC) discharged into the IRL surface waters. Some ECC can act as endocrine disruptor chemicals and are not effectively removed during conventional wastewater treatment. Recently, citizens have expressed serious concerns on the water quality in the IRL watershed, blaming the intrusion of effluents from onsite treatment systems (septic tanks) as a source of pollution to nearby waters, contributing to surface water degradation and leading to algae blooms, seagrass die-off and fish kills at the IRL. Therefore, to address this issue and to improve our understanding on anthropogenic pollutants impacting the IRL, we will conduct and analyze surface water and wastewater samples from five WWTP (NPDES sites), nine river and nine lagoon waters, during the wet and dry seasons, spanning from Melbourne to Vero Beach.

**Map and Photo(s):** Project Map with sampling locations and description (Fig 1) and a representative scheme of the proposed project (Fig 2) is provided as two JPEG images in annex.

**Key Outputs (Deliverables):** The following outputs are expected to be produced in this project:
- **Quarterly Report #1:** Bibliographic Summary; Final Execution Plan. Quality Assurance and Quality Control (QA/QC) management plan; Sampling Event #1 report. **Date: Month 5th**
- **Quarterly Report #2:** Analytical Results of Sampling #1; Statistics of existing water quality data for Central IRL; QA/QC Audit; **Date: Month 7th**
- **Quarterly Report #3:** Analytical results of Sampling #2; Statistical correlations; **Date: Month 10th**
- **Quarterly Report #4:** Critical data and an online open-access database on ECC species, distribution, and variations in Central IRL. Outreach activities with NGOs and partnerships. **Date: Month 12th**

**Final Report Draft:** Draft final with quantitative sucralose data to elucidate effluent migration from septic tanks to nearshore surface water, including probable sources of pollution; potential correlation with traditional water quality parameters and the presence of specific ECC. Areas of concerns will be identified. Public and expedite access to results via internet to inform on impacts of ECC on water quality and conditions in the IRL. **Date: Month 12th**

**Key Outcomes (Benefits to the IRL):** This project will provide critical information on ECC occurrence, identity, changes, and sources on the IRL watershed as well as the influence of wastewater on surface water, serving as a base to identify areas of concern and to inform IRL partners and stakeholders on priority ECC to be included in monitoring efforts.
EXECUTIVE SUMMARY

<table>
<thead>
<tr>
<th>Title of Project</th>
<th>Monitoring Improved Hydrology, Water Quality, and Mangrove Recovery in the Jensen Beach Impoundment (Category 4 Science and Innovation Proposal)</th>
</tr>
</thead>
</table>
| Lead Organization and Partners:                                                 | **Lead Organization:** Florida Fish and Wildlife Conservation Commission  
Ryan P. Moyer, Ph.D., ryan.moyer@myfwc.com, 727-892-4153;  
Kara Radabaugh, Ph.D., kara.radabaugh@myfwc.com, 727-502-4986;  
100 8th Avenue SE, St. Petersburg FL 33701  
Erin McDevitt, erin.mcdevitt@myfwc.com, 772-774-9490.  
19100 SE Federal Hwy, Tequesta, FL, 33469.  
**Project Partner:** Florida Oceanographic Society  
Loraë T. Simpson, Ph.D., lsimpson@floridaocean.org, 772-225-0505 x 114, 890 NE Ocean Blvd, Stuart, FL 34996 |
| Project Location:                                                               | Hutchinson Island, Jensen Beach Impoundment (27.257560, -80.206672), 170-acre impounded mangrove forest. See map and photo.                                                                        |
| Key CCMP Vital Sign(s):                                                         | Impaired waters, stormwater, hydrology, wetlands, connected waters, biodiversity, monitoring and data, state of the lagoon                                                                 |
| IRLNEP Contribution and Source:                                                 | $42, 519, IRL Council                                                                                                                                                                            |
| Partner Match:                                                                  | $12,604 (FWC, 21.6 %) + $3,292 (FOS, 5.6 %) = $15,897 total (27.2 %)                                                                                                                           |
| Total Project Cost:                                                             | $58,416                                                                                                                                                                                          |

**Project Description:** The Jensen Beach Impoundment (JBI) is a 170-acre impounded mangrove wetland which was originally created for mosquito control (see included map and photos). The stress of altered hydrology (chronic) and standing water (acute) following Hurricane Irma in 2017 led to the death of over 50 acres of mangroves and stressed an additional 30 acres. Externally funded habitat restoration in the JBI is being implemented through a partnership with FWC and Martin County, with planned completion of construction by October 2021. This proposed study will monitor the water quality, hydrology, forest elevation, vegetation, and soil in areas that show signs of low, moderate, and severe stress within the JBI. Information on appropriate hydrologic conditions will help manage other impounded wetlands and prevent future mortality events. This study will also provide information on how rapidly ecosystem services such as nutrient filtration and soil stabilization are restored in a mangrove mortality zone following restoration.

**Key Outputs:** Water quality, vegetation, and soil characteristics will be monitored to assess the recovery of the JBI forest and its ecosystem services. A final report evaluating the success of the JBI hydrologic restoration in forests with low, moderate, and severe degrees of stress will be produced (**Deliverable 1**). A set of recommendations for appropriate hydrologic conditions in impounded mangrove forests will enable adaptive management of the JBI and enable improved hydrologic management of other IRL impoundments (**Deliverable 2**). All scientific findings will be prepared into one or more manuscripts for peer-reviewed journal publication (**Deliverable 3**), as very limited information on the recovery of ecosystem services in mangrove-mortality zones is available.

**Key Outcomes:** 1) Restoration success will be evaluated in the JBI and enable adaptive management of the site (short-term benefit). 2) Changes in water quality, hydrology, elevation, and vegetative growth, will be compared before and after restoration (medium- to long-term benefit). 3) Recommendations on appropriate hydrologic conditions for other impounded IRL wetlands will be provided to avoid future habitat mortality events due to storms and sea-level rise (long-term benefit).
Title of Project: Innovative means and methods to facilitate prioritization of future stormwater capture, treatment, and restoration projects using existing data in a cost-effective manner

Lead Organization and Partners: Lead: Randall Parkinson, Ph.D., P.G., RWParkinson Consulting, Melbourne, Florida 32935, (321) 373-0976, rwparkinson.inc@gmail.com
Partner: Indian River County Board of County Commissioners, Eric Charest, Natural Resource Manager, Vero Beach, Florida 32960, (772) 567-8000

Project Location: Indian River Lagoon Central sub-basin, Indian River County. Center point is 27°45’ (N) and 80°25” (W). Area: ~100 km².


IRLNEP Contribution and Source: $16,666.67, IRL Council
Partner Match: $5,833.33 (26%)
Total Project Cost: $22,500.00

Project Description:
The Indian River Lagoon (IRL) has been densely sampled, monitored, and measured to assess hydrology and water quality. And while it is clear the basin receives significant nutrient loading from stormwater point sources, we do not currently understand the spatial and temporal scale or associated water quality implications of these freshwater plumes as they enter, evolve, and disseminate in the IRL. Can they be detected and tracked over time? How large are they and what controls the spatial scale? How long do they persist and what dictates their duration? What effect does proximity to a tidal inlet have on their temporal and spatial evolution? Our pilot project is designed to answer these questions using existing data, innovative means (e.g., remotely sensed water quality proxies) and methods (e.g., machine learning models) in a cost-effective manner. Although our project will focus on the Central IRL, located in Indian River County, we anticipate the resulting information and modeling protocol (outputs) will be useful to resource managers during their consideration and prioritization of large-scale restoration projects designed to reduce impairment and HABs throughout the IRL (outcome).

Map and Photo(s):
Map of project location (Attachment I). Photo (Attachment II).

Key Outputs (Deliverables):
Deliverable 3 - An innovative/novel and cost-effective methodology to evaluate the spatial and temporal scale hotspots and hot moments to two contrasting stormwater point-source locations located in the Central IRL sub-basin.
Deliverable 4 - In collaboration with our partner (Indian River County) and others (e.g., Brevard County, St. Johns River Water Management District), to model will be constructed to: (1) optimize end-user confidence and ensure (2) it is both user friendly and (3) can be readily applied by resource management stakeholders and practitioners responsible for improving water quality in the IRL.

Key Outcomes (Benefits to the IRL):
This project proposes to generate an innovative/novel tool capable of transforming the decision-making structure for prioritizing stormwater mitigation/restoration projects designed to reduce water quality impairment and HAB. Utilization of the tool by resource practitioners will be facilitated by our outreach efforts and intent to design a relatively rapid and cost-effective tool that does not require the collection of new water quality data.
**Executive Summary**

<table>
<thead>
<tr>
<th><strong>Title of Project</strong></th>
<th>Category 4: Science and Innovation Projects: Employing eDNA to Impaired Waterway Restoration Efforts to Revolutionize Biomonitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Organization and Partners</strong></td>
<td>University of Central Florida (UCF): Dr. Michelle Gaither, Dr. Geoffrey Cook, Dr. Linda Walters, and Dr. Melinda Donnelly</td>
</tr>
<tr>
<td><strong>Project Location</strong></td>
<td>Brevard County-Marina Isles Community: 28° 9’2.81”N, 80°36’20.88”W; Ahmed-Niland: 28° 4’37.57”N, 80°34’27.39”W; Coconut Point EEL Preserve: 28° 0’38.90”N, 80°32’14.41”W; Hog Point EEL Preserve: 27°59’50.55”N, 80°31’33.41”W</td>
</tr>
<tr>
<td><strong>Key CCMP Vital Sign(s):</strong></td>
<td>One Lagoon: Impaired Waters (Critical), Filter Feeders (Serious), Biodiversity (Serious); One Voice: Science &amp; Technology Innovation (Undetermined), Monitoring and Data (Serious)</td>
</tr>
<tr>
<td><strong>IRLNEP Contribution and Source:</strong></td>
<td>$50,000, IRL Council</td>
</tr>
<tr>
<td><strong>Partner Match:</strong></td>
<td>$16,762</td>
</tr>
<tr>
<td><strong>Total Project Cost:</strong></td>
<td>$66,762</td>
</tr>
</tbody>
</table>

**Project Description:** By leveraging ongoing and highly successful, community-based and partner-driven restoration and monitoring efforts sponsored by Brevard County’s SOIRL (Save Our Indian River Lagoon) program, we propose to develop protocols that will revolutionize the way biomonitoring is conducted in the Indian River Lagoon (IRL) and beyond. We will combine innovative eDNA sequencing technologies with traditional monitoring efforts, including seine and visual surveys, to compare the efficacy of each technique and then combine these datasets to optimize a biomonitoring protocol that capitalizes on the strengths of each method and that will maximize the derived value from our limited restoration dollars.

**Map and Photos:** See Attachment 1 and Attachment 2

**Key Outputs (Deliverables):** Deliverable 1: Biodiversity assessments at five restoration sites using eDNA metabarcoding of two primer sets that target fishes and invertebrates. Deliverable 2: Traditional biodiversity assessments at five restoration sites using seine nets for fish which will be combined with ongoing visual surveys of restoration materials for fishes and invertebrates. Deliverable 3: Optimized biomonitoring protocols that combine eDNA sampling and traditional survey techniques that will reduce the time and money required for monitoring efforts. Deliverable 4: Quarterly and final reporting of progress. Deliverable 5: Engagement and training of a minimum of 10 UCF undergraduates (340 hours).

**Key Outcomes (Benefits to the IRL):** Many millions of taxpayer dollars have been spent on restoration projects to improve impaired waterways and restore habitat in the IRL. These efforts are usually accompanied by labor-intensive and time-consuming biomonitoring to measure project efficacy. Here we will develop a cost-effective and efficient biomonitoring strategy that combines traditional techniques with innovative sequencing technologies that will provide a more complete assessment of biological communities and their recovery, that can be employed in any estuarine system, and that will make the most efficient use of limited restoration dollars.
EXECUTIVE SUMMARY

<table>
<thead>
<tr>
<th>Title of Project:</th>
<th>Category 4 Science and Innovation Proposal: Advancing Filter Feeder Habitat Restoration Approaches for a Changing Lagoon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Organization and Partners:</td>
<td>University of Central Florida and Florida State University</td>
</tr>
<tr>
<td>Project Location</td>
<td>Mosquito Lagoon (28°54'24.73&quot;N, 80°49'16.44&quot;W)</td>
</tr>
<tr>
<td>Key CCMP Vital Sign(s):</td>
<td>ONE LAGOON. Water Quality: Contaminants of Concern - 1. Habitat Quality: Filter Feeders-1, 2, 3. Living Shorelines - 1. Living Resources: 2; Biodiversity-, 3.; ONE VOICE: Monitoring and Data Sharing -2.</td>
</tr>
<tr>
<td>IRLNEP Contribution and Source:</td>
<td>$56,342, IRL Council</td>
</tr>
<tr>
<td>Partner Match:</td>
<td>$17,612 from UCF; $2,374 FSU; $19,986 TOTAL (26.18%)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$76,328</td>
</tr>
</tbody>
</table>

Project Description: Two critical science and innovation areas required for continued success of filter feeder habitat restoration will be addressed. First, the use of biodegradable restoration materials has been prioritized by the IRL community to maintain trash-free waters. We will monitor the ability of BESE-elements® mats created from potato chip waste and jute-infused cement structures to support successful oyster reef habitat restoration using traditional oyster restoration metrics, while also gaining an understanding of the impacts of these novel materials on carbon, nitrogen, and phosphorus cycling to inform future decisions on the deployment of the optimal biodegradable materials. Second, field experiments investigating accelerated ocean acidification (OA) at the site-scale will improve the climate readiness of restored reef habitats for calcifying organisms. The rapid expansion of red mangroves in and near reefs creates hot spots of organic-rich, acidic soils. We will be the first scientific team to evaluate whether mangrove proximity negatively impacts oyster success by experimentally quantifying oyster shell dissolution (mass loss and compressive strength) in tandem with quantifying the corrosivity of surface and porewater on oyster reefs with and without mangroves present.


Key Outputs (Deliverables): 1: Oyster reef restoration monitoring data for 2 biodegradable materials. 2: Site-scale water and sediment chemistry data on accelerated OA on oyster reefs. 3: Experimental data assessing the importance of mangrove proximity on oyster health. 4: Dissemination of research findings through two peer-reviewed publications. 5: Quarterly and final reports.

Key Outcomes (Benefits to the IRL): 1: Short, case-study data of BESE and jute-cement success in the IRL; Mid, data to compare to other novel materials; Long, large-scale adoption of the optimal biodegradable materials in the IRL. 2: Short, shared dataset on site-scale OA in the IRL; Mid, background data to inform and energize further IRL OA research; Long, scientific understanding of OA on oyster reefs. 3: Short, experimental field data on the impacts of mangrove colonization of oyster reefs; Mid, data-informed mangrove management and placement of new oyster reef restoration projects in the IRL; Long, predictive modeling capabilities of mangrove/oyster interactions. 4 & 5: Short, IRLNEP and public access to scientific research data; Mid & Long, robust scientific understanding for deliverables 1 through 3.
**Executive Summary**

<table>
<thead>
<tr>
<th><strong>Title of Project</strong></th>
<th>Development of a Shoreline Restoration Model for the Southern Indian River Lagoon</th>
</tr>
</thead>
</table>
| **Lead Organization and Partners** | University of Central Florida (UCF)  
Melinda Donnelly, Kelly Kibler, and David Cannon  
Community Stakeholders: Vincent Encomio (FL Sea Grant), Molly Klipner (Indian River County), Irene Arpayoglou (Indian River Lagoon Aquatic Preserve) |
| **Project Location** | Comprehensive shoreline dataset for the entire Indian River Lagoon system, Ponce Inlet 29°4'18.97"N, 80°54'58.15"W to Jupiter Inlet 26°56'38.89"N, 80°4'17.27"W |
| **Key CCMP Vital Sign(s):** | Hydrology & Hydrodynamics, Stormwater, Seagrasses, Filter Feeders, Living Shorelines, Wetlands, Spoil Islands, Biodiversity, Species of Concern, Exotic & Invasive, Monitoring and Data, State of the Lagoon, Science and Innovative Technology, Climate Ready Estuaries |
| **IRLNEP Contribution and Source:** | $88,721, IRL Council |
| **Partner Match:** | $29,998 |
| **Total Project Cost:** | $118,719 |

**Project Description:** This project will complete a high-resolution spatial dataset documenting the contemporary state of all shorelines in the IRL, with a final project output of a lagoon-wide mapping asset and model that prioritizes IRL shorelines according to need for stabilization. The proposed shoreline data collection will encompass 180 miles of shorelines from Sebastian Inlet to Jupiter Inlet, which will be combined with previous efforts completed in North and Central IRL to provide a Lagoon-wide assessment of shorelines and associated habitats. Shoreline assessment and prioritization model can be used directly by resource managers and restoration stakeholders and supports future hydrodynamic modeling for the expansion of the living shoreline suitability model developed for the North and Central regions into the South IRL. This lagoon-wide dataset directly addresses the Indian River Lagoon Council’s priorities for FY2022 by using innovative and transformative science and technology to improve habitat restoration, decrease restoration costs, and improve water quality. Deliverables will guide the Planning, Design & Engineering of shoreline stabilization, habitat conservation, and restoration efforts, which will support water quality improvement from increased wetland and filter feeder habitat as well as support a climate-ready estuary by facilitating emergency management efforts and post-event recovery.

**Map and Photos:** See Attachment 1 and Attachment 2

**Key Outputs (Deliverables):** This project will create a publicly accessible database of critical baseline data for current conditions on mainland, barrier island, and spoil island shorelines, including extent of natural habitats (wetland, seagrass, filter feeders) and locations of non-native species, stormwater outfalls and other water inputs. These data will be incorporated into a shoreline restoration prioritization model for the study area. Hydrodynamic conditions in South IRL will be characterized to support future hydrodynamic modeling.

**Key Outcomes (Benefits to the IRL):** Short-term outcomes: improved knowledge to support conservation, management and restoration decisions; Mid-term outcomes: improved conservation and restoration strategies; Long-term outcomes: increased area of high-quality shoreline habitats supporting biodiversity and recovery of ecosystem services and improved water conditions from a decrease in erosion and turbidity and an increase in biotic filtration.
RESOLUTION NO. 2021-01

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE IRL COUNCIL AMENDING THE FINAL BUDGET FOR THE 2021 FISCAL YEAR

WHEREAS, the IRL Council was created via Interlocal Agreement to carry out the goals of the Indian River Lagoon National Estuary Program; and

WHEREAS, the IRL Council previously amended a Budget for Fiscal year 2021 on November 6, 2020; and

WHEREAS, the IRL Council finds it necessary and essential to amend the Budget for the 2021 Fiscal Year as set forth in this Resolution; and

WHEREAS, adoption of the 2021 Fiscal Year budget amendments set forth in this Resolution serves a valid public purpose.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE IRL COUNCIL, THAT:

Section 1. The above recitals are ratified and incorporated into this resolution

Section 2. The funds and available resources and revenues that are set out in Exhibit “A” and incorporated herein by reference, are appropriated to provide the monies to be used to pay the necessary operating and other expenses of the IRL Council.

Section 3. Except as amended in Exhibit “A” the remainder of the Budget for the 2021 Fiscal Year remains in full force and effect

Section 4. This Resolution shall become effective immediately upon passage.
DONE at______________________, Florida, this____day of__________, 2021.

ATTEST:

By: _____________________________
    Chair, IRL Council

_________________________
Secretary, IRL Council

Approved as to legal form and sufficiency:

________________________
Glen Torcivia
IRL Council, Legal Counsel
# IRL Council
## FY 2021 Amended Budget
### Exhibit A

**REVENUES**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
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</thead>
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<tr>
<td>Federal</td>
<td>$662,500</td>
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<tr>
<td>IRL License Plate</td>
<td>$125,000</td>
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<tr>
<td>Member Contributions</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>External Grant</td>
<td>$963,470</td>
</tr>
<tr>
<td><strong>TOTAL REVENUES</strong></td>
<td><strong>$3,250,970</strong></td>
</tr>
</tbody>
</table>

**EXPENDITURES**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Expenditures&lt;br&gt; IRL Council Strategic Program, IRLNEP FY2021 EPA Work Plan, Online Store, FDEP Innovation Grant, Unplanned Contingency Reserve</td>
<td><strong>$2,837,653</strong></td>
</tr>
<tr>
<td>Salaries &amp; Benefits</td>
<td>$420,498</td>
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<tr>
<td>Facilities Expenses&lt;br&gt; Rent, Utilities, Equipment Maintenance, Communications</td>
<td>$35,500</td>
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<tr>
<td>Administrative Costs&lt;br&gt; Postage, Office Supplies, Insurance, Printing, Travel, Licenses &amp; Subscriptions, Dues, Professional Development</td>
<td>$75,500</td>
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<tr>
<td>Administrative Services&lt;br&gt; Legal, Accounting, Auditing, IT Services, Legal Ads</td>
<td>$130,200</td>
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<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
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<tr>
<td>Agency Balance Beginning of Year</td>
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<tr>
<td>Fund Balance - Beginning of Year</td>
<td>$5,627</td>
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<tr>
<td>Fund Balance – End of Year</td>
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## FY 2021 Amended Budget

**Approved November 6, 2020**

### REVENUES

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<td><strong>TOTAL REVENUES</strong></td>
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### EXPENDITURES

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<td>Postage, Office Supplies, Insurance, Printing, Travel, Licenses &amp; Subscriptions, Dues, Professional Development</td>
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<td>$130,200</td>
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**Fund Balance Beginning of Year**

### FY 2021 New Amended Budget

**Pending**

### REVENUES

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### EXPENDITURES

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<td>Other Expenditures</td>
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<td>FY21 Work Plan, Unplanned</td>
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<td>Innovation Grant, Unplanned Contingency Reserve</td>
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**Fund Balance Beginning of Year**

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<td>(1)</td>
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<td>(2)</td>
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<td>(3)</td>
<td>$963,470</td>
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</tbody>
</table>

**Higher**

**Lower**

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**RESOLUTION 2021-01**

FY 2021 Amended Budget

Page 4 of 5
FY 2021 Budget Amendment Detail (Narrative)

(1) Increase “TOTAL REVENUES” $963,470 from $2,287,500 to $3,250,970.
   a. An FDEP External Grant Award of $963,470 was awarded to the IRL Council on December 3, 2020.

(2) Increase “Other Expenditures” $963,470 from $1,874,183 to $2,837,653.
   The detail of “Other Expenditures” is as follows:
   a. IRLNEP FY2021 Work Plan - $662,500
   b. FDEP Innovation Grant - $963,470 and includes the following:
      a. Contractual Services to Florida Atlantic University and Stomcenter Communications Inc. - $723,581.79
      b. GIS IT Coordinator Salary - $97,500
      c. Miscellaneous/Other Expenses - $8,400
      d. Supplies - $881
      e. Indirect costs @16.03% (Rent, Utilities, Insurance, Travel, Information Tech Hardware) - $133,107.16
   c. IRL Strategic Program - $1,134,811.69
   d. Online Store - $20,000
   e. Unplanned Contingency Reserve - $56,871.56

(3) Increase “TOTAL EXPENDITURES” $963,470 from $2,535,881 to $3,499,351.
   a. This increase represents the increase in “Other Expenditures” from the FDEP Innovation Grant. No other changes are made.
RESOLUTION NO. 2021-02

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE IRL COUNCIL ADOPTING THE TENTATIVE BUDGET FOR THE 2022 FISCAL YEAR

WHEREAS, the IRL Council was created via Interlocal Agreement to carry out the goals of the Indian River Lagoon National Estuary Program; and

WHEREAS, the IRL Council held a public hearing to consider the tentative Budget;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE IRL COUNCIL, THAT:

Section 1. The Fiscal Year 2022 Tentative Budget is attached as Exhibit “A”.

Section 2. The Fiscal Year 2022 Tentative Budget is hereby adopted.

Section 3. This Resolution shall become effective immediately upon passage.

DONE at____________________, Florida, this______day of____________________, 2021.

By: _________________________
IRL Council Chair

ATTEST:

_____________________________
IRL Council Secretary

Approved as to legal form and sufficiency:

_____________________________
Glen J. Torcivia
IRL Council, Legal Counsel
IRL Council  
FY 2022 Tentative Budget  
Exhibit A

**REVENUES**

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<tr>
<td><strong>TOTAL REVENUES</strong></td>
<td><strong>$2,325,000</strong></td>
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**EXPENDITURES**

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<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Expenditures</td>
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</tr>
<tr>
<td>IRL Council Strategic Program, IRLNEP 2022 EPA Work Plan,</td>
<td></td>
</tr>
<tr>
<td>Unplanned Contingency Reserve</td>
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</tr>
<tr>
<td>Salaries &amp; Benefits</td>
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<tr>
<td>Facilities Expenses</td>
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<td>Administrative Costs</td>
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<td>Postage, Office Supplies, Insurance, Printing, Travel,</td>
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<td>Licenses &amp; Subscriptions, Dues, Professional Development</td>
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<td>Administrative Services</td>
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<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>$2,325,000</strong></td>
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<tr>
<td>Agency Balance Beginning of Year</td>
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<tr>
<td>Fund Balance - Beginning of Year</td>
<td>$0</td>
</tr>
<tr>
<td>Fund Balance – End of Year</td>
<td>$0</td>
</tr>
</tbody>
</table>
FY 2022 Tentative Budget Expenditure Detail (Narrative)

• OTHER EXPENDITURES ($1,679,295)
  1. IRL Council Strategic Program ($955,000) includes the following:
     a. Water Quality Restoration Projects - $500,000
     b. Habitat Restoration - $200,000
     c. Community-Based Restoration - $200,000
     d. Small grants program - $25,000
     e. IRLNEP Technical Support of Conferences and Workshops - $30,000
  2. IRLNEP FY2022 EPA Workplan ($700,000) includes the following:
     a. Science and innovation RFP project(s) - $100,000
     b. State of the Lagoon Technical Report Y3 - $75,000
     c. Communication Support: Service contracts for web/graphics/design support, scientific and
        other publications, other contract support as needed, and expanded social media and
        support for communication intern - $205,225
     d. Biodiversity Inventory Contract Y3 - $25,000
     e. Atmospheric Deposition Monitoring Y3 - $28,000
     f. Harmful Algal Bloom Monitoring Contracts - $150,000
     g. Grant Writing Support contracts - $40,000
     h. EPA Travel (mandatory) - $10,000
     i. CCMP project inventory and prioritization service contract(s) - $66,775
  3. Unplanned Contingency Reserve - $24,295

• SALARIES AND BENEFITS ($404,505)
  1. Executive Director - $146,250
  2. Deputy Director - $105,755
  3. Chief Operating Officer – $94,908
  4. Administrative Coordinator - $57,592

• FACILITIES EXPENSES ($35,500)
  1. Utilities - $2,000
  2. Rent and Leases - $8,500
  3. Equipment Maintenance - $5,000
  4. Equipment and Communications - $20,000

• ADMINISTRATIVE COSTS ($75,500)
  1. Travel General - $20,000
  2. Postage and Mailing - $1,000
  3. Office Supplies - $5,000
  4. Dues, Licenses, and Subscriptions - $10,000
  5. Printing - $25,000
  6. Insurance - $6,500
  7. Staff Training and Professional Development - $8,000

• ADMINISTRATIVE SERVICES ($130,200)
  1. Legal - $65,000
  2. Accounting - $28,500
  3. Auditing - $11,200
  4. IT Services and Compliance - $25,000
  5. Legal Ads - $500