



2023 Save Our Indian River Lagoon Project Plan Update Summary

January 20, 2023



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Draft Save Our Indian River Lagoon
Project Plan **2023** Update
for
Brevard County, Florida



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Prepared for:
Brevard County, Natural Resources Management Department



December 2022

Sections 1 – 3 Summary of Changes

- **Section 1. Background**

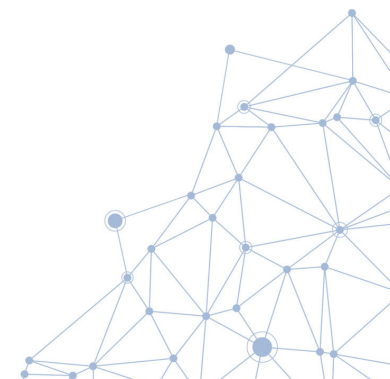
- Clarified what information was developed by CloseWaters for the original plan

- **Section 2. Approach, Outputs, and Outcomes**

- No changes

- **Section 3. Pollutant Sources in the IRL Watershed**

- No changes



Section 4.1 Projects to Reduce Pollutants Changes

•4.1.1 Public Education and Outreach

- Added additional recommended funding for fertilizer ordinance compliance, grass clippings, and septic system maintenance campaigns
- Added newly recommended funding for excess irrigation and stormwater pond maintenance campaigns
- Added recommended funding for boosting project posts paired with related prompts for personal action
- Updated Lagoon Loyal outreach efforts



Section 4.1 Reduce Project Changes – Wastewater

• 4.1.2 WWTF Upgrades

- Added new project recommended during last meeting

• 4.1.3 Sprayfield and Rapid Infiltration Basin Upgrades

- Changed responsible entity to property owner

• 4.1.4 Package Plant Connections

- Added two new recommended projects
- Moved Merritt Island Utility Company project to unfunded section

• 4.1.5 Sewer Laterals Rehabilitation

- Updated information on smoke testing results



Section 4.1 Reduce Project Changes – Septic Systems

- 4.1.6 Septic System Removal and Upgrades

- Updated the cost estimates using actual costs from completed and recently bid projects (Tables 4-16 through 4-18)
- Updated percentage of septic systems to be connected and percent of the nutrient load that will be addressed
- Added approved contingency for Cocoa Zones J and K
- Added four new projects recommended during last meeting
- Updated maps for new projects
- Adjusted homeowner cost-share to use state grant funding
- Added new section “Reimbursement Incentives for Best Available Nitrogen-Reducing Systems”



Section 4.1 Reduce Project Changes - Stormwater

- **4.1.7 Stormwater Treatment**

- Updated all original basin project costs to reflect 2021 update for stormwater treatment costs
- Added 12 new recommended projects
- Removed three least cost-effective basin projects from Banana River Lagoon to offset new project (per November meeting)
- Revised costs and nutrient reductions for original basin projects to exclude portions that were funded as separate projects this year

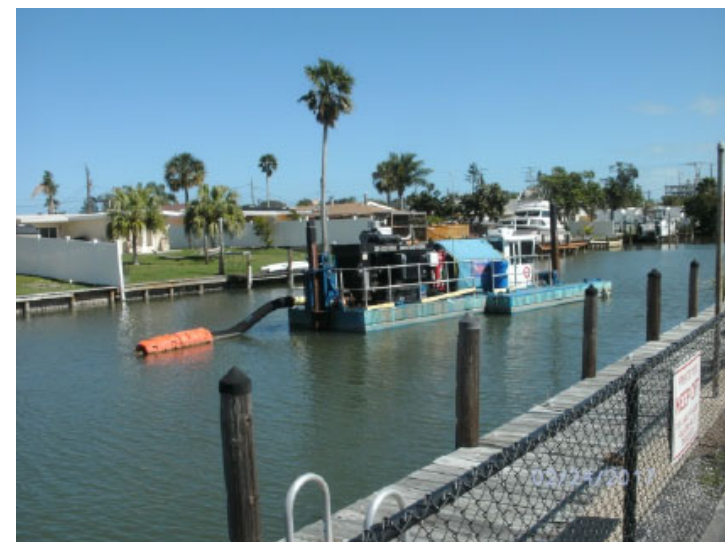
- **4.1.8 Vegetation Harvesting**

- Updated costs for three projects using certified lab results
- Added additional funds for Cocoa Beach project and new countywide harvesting project recommended during last meeting



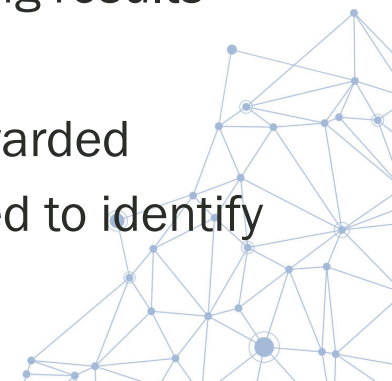
Section 4.2 Projects to Remove Pollutant Changes

- **4.2.1 Muck Removal**
 - Updated muck flux loading estimates based on latest field data (Tables 4-30 and 4-31)
 - Updated original project nitrogen load reduction estimates using latest flux data
 - Added new project recommended during last meeting
 - Updated figure to include new project
- **4.2.2 Treatment of Muck Interstitial Water**
 - No changes
- **4.2.3 Spoil Management Areas**
 - No changes
- **4.2.4 Surface Water Remediation System**
 - No changes
- **4.2.5 Enhanced Circulation**
 - Added latest information about the Florida Institute of Technology inflow study
 - Added update on State Road 528 widening project



Section 4.3 Projects to Restore the Lagoon Changes

- **4.3.1 Oyster Restoration**
 - Corrected the pounds of total nitrogen per acre per year in the text
- **4.3.2 Planted Shorelines**
 - Provided the results of a capstone project about planted shorelines with students at the United States Naval Academy
- **4.3.3 Clam Restoration and Aquaculture**
 - Provided an update on state grant funding and preliminary monitoring results
- **4.3.4 Seagrass Planting**
 - Noted that the grant from the state to test seagrass planting was awarded
 - Updated information on the ArcGIS-based suitability model developed to identify locations of lowest known risk for seagrass pilot studies



Section 4.4 Projects to Respond to New Information Changes

- **Section 4.4.1 Adaptive Management to Report, Reassess, and Respond**
 - No changes
- **Section 4.4.2 Cost-share for Substitute Projects**
 - Reflected latest cost-share information
- **Section 4.4.3 Additional Project Benefits**
 - No changes



Section 4.4.3 Additional Project Benefits

- Section added as part of 2018 Update
- While cost-share is based on nitrogen, projects also address other pollutants
- Could move other pollutant reduction benefits from Section 4.4.3 to Section 2
- Information on pollutants of interest could be added in the future plan updates
- Indian River Lagoon Comprehensive Conservation and Management Plan ranks Contaminants of Concern (including Glyphosate) as a Level 3 Health Concern
Level 1 is Critical. Level 2 is Serious. Level 3 is Undetermined. Level 4 is Stable or Improving Trend.
- Question about potential herbicide impacts on seagrass

Material	¼ of Safe Concentration (pounds per gallon)	Volume of Banana River Lagoon (gallons)	Pounds of Material to Exceed Safe Concentration	Application in United States in 2010 (pounds)	Percent of Use in United States in 2010
Glyphosate	0.01	82.5 billion	6.2 million	2.6 million	Greater than 230%

Note: Estimates in these tables were provided by the St. Johns River Water Management District.

- **Section 4.4.4 Responding to Implemented Projects**

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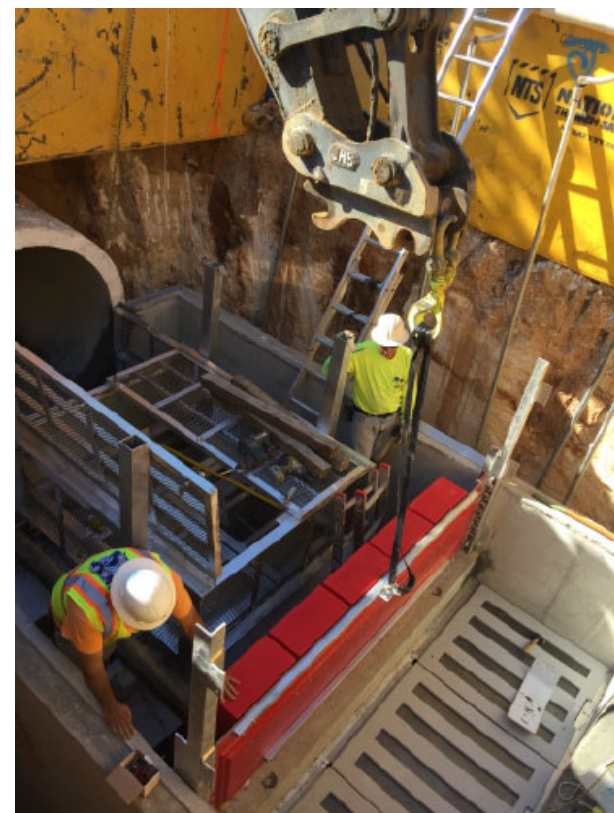
Section 4.4 Respond Project Changes, continued

- **Section 4.4.4 Responding to Implemented Projects (continued)**
 - Updated information and figure in Measuring Performance
 - Added new information on the smoke testing for Sewer Lateral Rehabilitation
 - Updated costs in Septic System Removal
 - Updated costs in Septic System Upgrades
 - New section on AECOM Algae Harvesting Pilot Project
 - Updated model results for Muck Removal
 - New section on General Performance of Interstitial Water Treatment
 - Updated study findings for Oyster Restoration and Planted Shorelines
 - Updated study findings for Remote Sensing of Harmful Algal Blooms in IRL and Connected Waterways



Section 4.4 Respond Projects, continued

- **Section 4.4.5 Research Needs**
 - No changes
- **Section 4.5 Unfunded Projects**
 - Updated the list of unfunded package plant connections and rapid infiltration basin/sprayfield upgrade tables based on latest data



Sections 5. Project Funding

- **Section 5.1 Project Funding, Schedule, and Scope Adjustments**

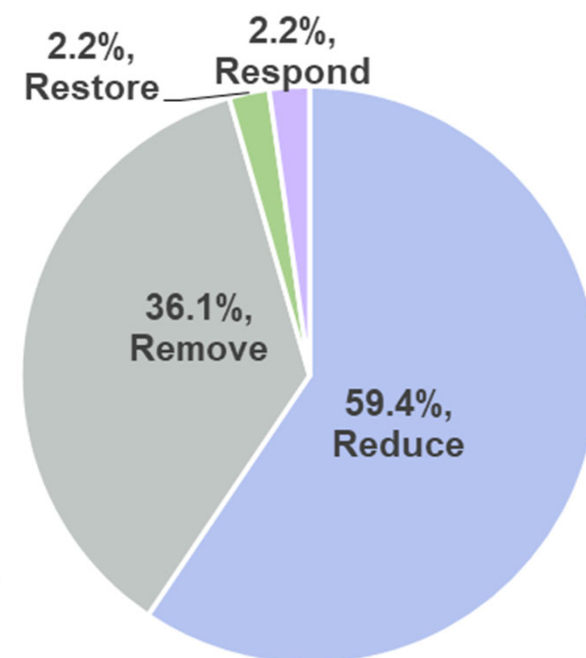
- Section 5.1.1 Contingency Fund Reserve – updated inflation rates
- Section 5.1.2 Schedule Acceleration – no changes
- Section 5.1.3 Scope Reduction – no changes

- **Section 5.2 Revenue Projection Update**

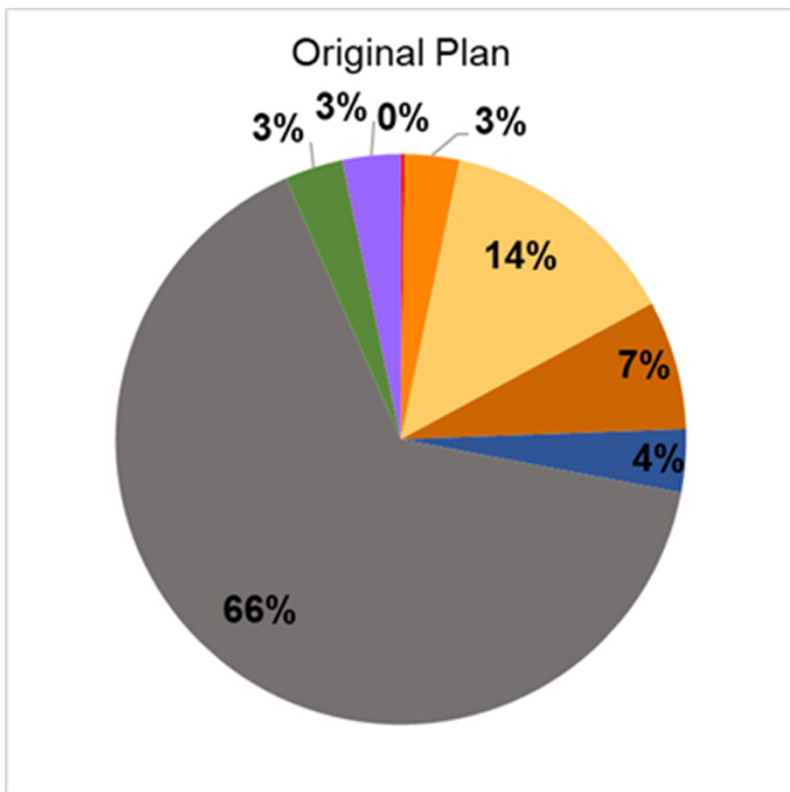
- Updated with current revenue projection

- **Section 5.3 Project Funding Allocation**

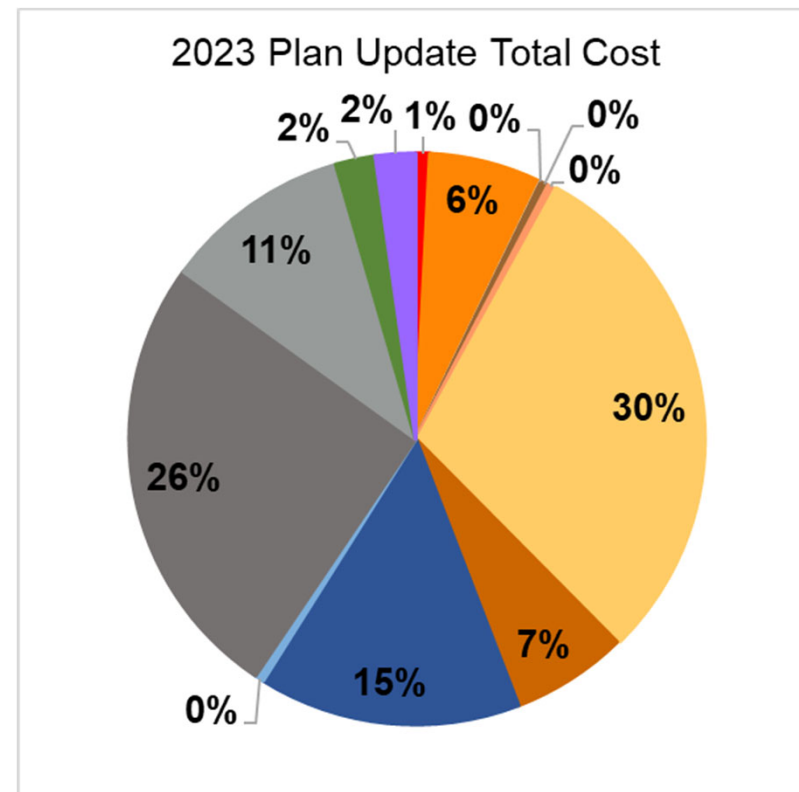
- Updated pie chart for split between Reduce, Remove, Restore, and Respond projects
- Added 2022 Update pie chart for comparing funding allocation by year



Comparison of Plan Costs



- Public Education
- WWTF Upgrades for Reclaimed Water
- Rapid Infiltration Basin/Sprayfield Upgrades
- Package Plant Connection
- Sewer Laterals
- Septic-to-Sewer
- Septic System Upgrades
- Stormwater Projects
- Vegetation Harvesting
- Muck Removal
- Treatment of Interstitial Water
- Oyster Reef Living Shorelines
- Project Monitoring

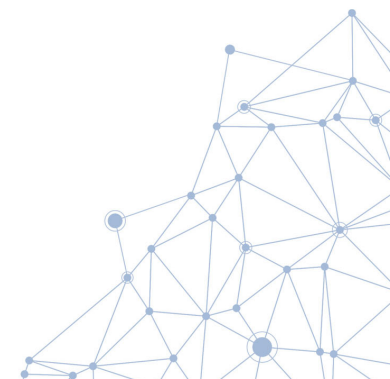


Change in Costs from 2022 to 2023 Update

Project Type	2022 Estimated Cost	2023 Estimated Cost	Change in Cost
Public Education and Outreach	\$2,425,000	\$3,530,000	\$1,105,000
Wastewater	\$190,822,052	\$193,100,693	\$2,278,641
Stormwater	\$48,926,530	\$68,065,209	\$19,138,679
Muck and Interstitial	\$155,395,014	\$160,604,114	\$5,209,100
Restoration	\$10,000,105	\$10,000,105	\$0
Monitoring	\$10,000,000	\$10,000,000	\$0
Contingency and Inflation	\$124,654,881	\$141,215,460	\$16,560,579
Total	\$542,223,582	\$586,515,581	\$44,291,999

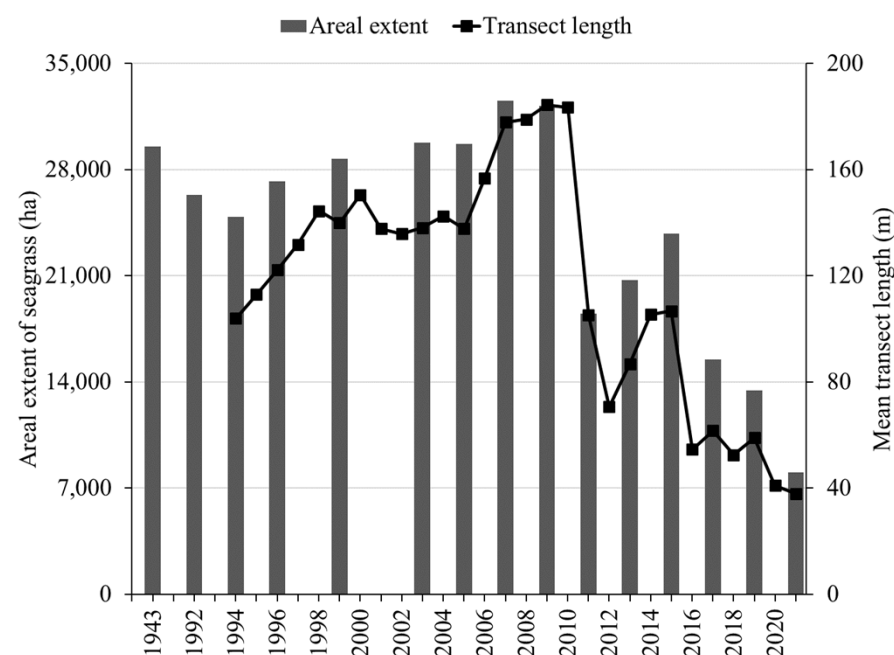
Section 6. Summary of the Plan through the 2023 Update

- Updated all tables comparing project reductions to locally proposed total maximum daily loads
- Updated table with reductions from Remove and Restore projects
- Updated table with project summary, estimated TN and TP reductions, and costs
- Updated rainbow table



Appendices

- **Appendix A: Funding Needs and Leveraging Opportunities**
 - Updated sales tax projection
 - Added new funding sources
- **Appendix B: References**
 - New references are highlighted
- **Appendix C: Seagrasses**
 - Updated figure for seagrass coverage to add data through 2021
- **Appendix D: Withdrawn Projects**
 - Added projects withdrawn as part of this 2023 Plan Update
- **Appendix E: Long Descriptions of Figures**
 - Updated descriptions for new/revised figures



Questions and Comments

