Subject:

Adoption of the Save Our Indian River Lagoon Project Plan 2021 Update unanimously recommended by the Save Our Indian River Lagoon Citizens Oversight Committee

Fiscal Impact:

The recommended plan update recognizes a $5 million decrease in total revenues to be generated by the Save Our Indian River Lagoon Surtax over its 10-year life (reduced from $494 million to $489 million) and a net increase of $1.3 million allocated to projects. These changes are covered by the $6.3 million of trust fund revenue that was left unallocated in the 2020 Plan. The net changes in allocation, broken down by project type, are as follows:

- $2.6 million more for connecting the worst package treatment plants to central sewer;
- $0.4 million less for added treatment at package plant infiltration basins and spray-fields;
- $0.4 million more for additional septic to sewer projects;
- $0.3 million more for stormwater treatments and vegetative harvesting projects;
- $0.3 million more for oyster gardening, per April 7, 2020 Board direction;
- $0.2 million less in the 5% contingency; and
- $1.7 million less for inflation, based on a 2.5% construction index rate.

Dept/Office:

Natural Resources Management

Requested Action:

1) Adopt the Save Our Indian River Lagoon Project Plan 2021 Update, as recommended by the Save Our Indian River Lagoon Citizen Oversight Committee (Committee) on January 15, 2021;
2) authorize associated budget change requests;
3) approve continued signature authority to the Chair (or designee, in accordance with the threshold limits provided in Brevard County Code (B.C.C.)-25, B.C.C.-27, and Administrative Order (A.O.)-29) to execute Interlocal, Non-Governmental Organization, University and Private Agreements, task orders, change orders, and contract renewals, using contract terms and templates previously approved by the Board, subject to review and approval by the County Attorney, Risk Management and Purchasing, as appropriate, to provide cost share from the Save Our Indian River Lagoon Trust Fund for projects and programs approved in the Save Our Indian River Lagoon Project Plan;
4) approve continued authority for the County Manager to execute contract amendments;
5) approve continued authority for the Director of Natural Resources Management to execute up to two no-cost time extensions up to six months each;
6) permission to advertise formal solicitation of bids and proposals, and to award to the qualified bidder having the lowest, responsible and best response for tangible items, capital improvement projects, and/or

equipment, when funding is available; and
7) authorize the County Manager or his designee to submit grant applications for leveraging cost share for projects approved in the Save Our Indian River Lagoon Project Plan.

Summary Explanation and Background:

Each year, in order to account for new information and opportunities, the Save Our Indian River Lagoon Citizen Oversight Committee is tasked with recommending an Update to the Save Our Indian River Lagoon Project Plan (SOIRLPP). The Committee has held monthly public meetings throughout the year to keep informed, gather ideas from the community, review potential changes, and recommend an annual plan update to the County Commission. The Committee's annually recommended SOIRLPP Updates are posted on the Committee's webpage for public access at least 15 days prior to being brought to the County Commission for consideration. The County Commission may adopt or modify the Committee's recommended Plan Update.

An email was sent to cities on July 31st, 2020 to review the process for submitting project requests to be considered for addition in the 2021 annual update. Project requests were due October 1st. Year 5 Project Submissions listed in the summary table (attached) were reviewed by the Committee during a November 20th public meeting. New projects that were recommended in November, as well as other changes based on new information gathered and analyzed throughout the year, were incorporated into the attached Draft Save Our Indian River Lagoon Project Plan 2021 Update, as recommended by the Committee on January 15th.

The draft 2021 Update (attached) includes 26 new projects and two amended projects, bringing the total number of funded projects during the 10-year plan to 327, plus 876 individual quick connections to sewer, 1625 septic upgrades and 20 miles of filter feeding living shorelines. The plan also includes performance updates and refinements on a number of project types. To help readers find all areas of the SOIRLPP that contain proposed updates or modifications, the attached Draft 2021 Update uses yellow highlighted text, table and figure captions to indicate additions and revisions.

Significant updates in the draft 2021 Update include:

- Changing the plan format to consolidate information by project type and eliminate iterative annual update sections;
- Deleting old information made obsolete by more recent updates;
- Recalculating the benefits of wastewater treatment and package treatment plant improvements based on modified state standards adopted in 2020 through Senate Bill 712;
- Expanding the funds for leaky sewer laterals to fund repairs county-wide within the watershed of the Indian River Lagoon;
- Allowing the funds for sewer connections and septic upgrades to be available county-wide with cost share amounts to be prorated based on the load reduction benefit;
- Updating information on an enhanced circulation pilot study being conducted by Florida Institute of Technology with funding from the Florida Legislature and modeling completed by St Johns River Water Management District on the benefits of replacing causeways with bridge spans;
- Adding information on clam restoration and an aquaculture stimulus pilot program;
- Reporting on the costs, benefits, successes and lessons learned from completed projects and resulting, science-based plan modifications;
- Revising the revenue projection and construction index rate to reflect economic changes related to

covid-19; and

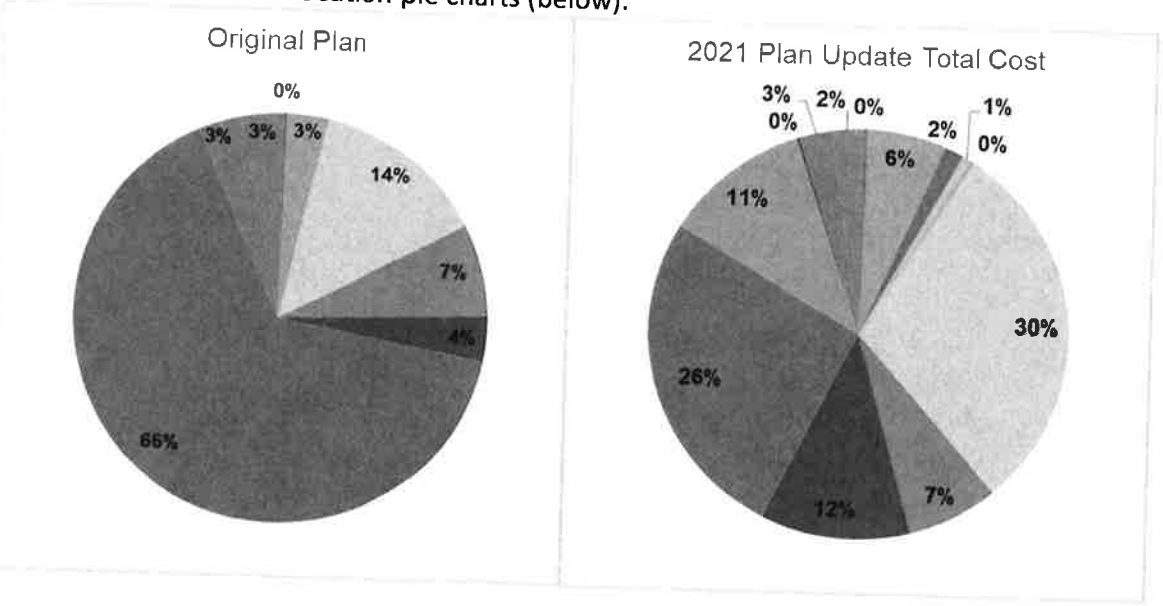
- Making formatting changes to simplify compliance with the Americans with Disabilities Act.

During fiscal year 19/20, tax collections were $46.8 million instead of the budgeted estimate of $47.1 million. Large monthly fluctuations in revenue during the fiscal year led to multiple forecasting iterations for future revenues and modification of economic growth projections and construction price index assumptions. Using actual revenues collected in 2016 through September 2020, the state's latest consumer price index of 1.8% for projecting the last quarter of 2020, and assuming 2% revenue growth in 2021 through 2026, the estimate of 10-year collections was decreased from $494 million to $489 million. Revenue forecasting adjustments will continue to be considered as part of the annual Plan Update process.

Available funding is divided between projects that **reduce** the incoming load of new pollution, **remove** accumulations of old pollution, **restore** natural stabilization and filtration systems, or facilitate processes to **respond** to new information. The original distribution of funds between project types was guided by best available data in 2016 regarding major contributing sources of pollution to the Indian River Lagoon.

In the 2021 Update, $185 million (46%, up from 24% in the original plan) is directed to projects that improve the treatment of human waste through upgraded treatment of reclaimed water, connection of package treatment plants to central sewer, nutrient removal from treatment plant spray-fields and rapid infiltration basins, smoke testing to identify leaky sewer infrastructure coupled with funding to incentivize repairs, conversion of septic neighborhoods to sewer service, connection of septic homes to adjacent sewer lines, and upgrade of high-risk conventional septic to advanced septic systems. The 2021 Update allocates 26% for muck removal (down from 66% in the original plan) plus 11% for stripping nutrients from the dredge outflow water.

The recommended changes in the 2021 update are consistent with the prior year shifts in emphasis that reduced muck dredging and increased human wastewater related projects and stormwater treatment, as illustrated in the cost allocation pie charts (below).



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

Clerk to the Board Instructions:

N/A

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

February 10, 2021

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item J.1., Adoption of the Save Our Indian River Lagoon (SOIRL) Project Plan 2021 Update, Unanimously Recommended by the SOIRL Citizens Oversight Committee (COC)

The Board of County Commissioners, in regular session on February 9, 2021, adopted the SOIRL Project Plan 2021 Update, as recommended by the SOIRL COC on January 15, 2021; authorized associated Budget Change Requests; approved continued signature authority to the Chair, or designee, in accordance with the threshold limits provided in Brevard County Code 25 and 27, and Administrative Order 29, to execute interlocal, non-governmental organization, University and private agreements, task orders, change orders, and contract renewals, using contract terms and templates previously approved by the Board, subject to review and approval by the County Attorney, Risk Management, and Purchasing, as appropriate, to provide cost-share from the SOIRL Trust Fund for projects and programs approved in the SOIRL Project Plan; approved continuing authority for the County Manager to execute contract amendments; approved continued authority for you to execute up to two no-cost time extensions up to six-months each; granted permission to advertise formal solicitation of bids and proposals, and to award to the qualified bidder having the lowest, responsible and best response for tangible items, capital improvement projects, and/or equipment when funding is available; and authorized the County Manager, or his designee, to submit grant applications for leveraging cost-share for projects approved in the SOIRL Project Plan.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK

Kimberly Powell, Clerk to the Board

/ds

cc: County Attorney
County Manager
Contracts Administration
Finance
Budget

CONTINUING PROFESSIONAL SERVICES AGREEMENT FOR:

Condition Assessment, Rehabilitation, and Monitoring of the Groundwater Quality of 13 Communities under the Save Our Indian River Lagoon Project Plan

TASK ORDER NO. 19-4477-009-EC SOIRL

THIS TASK ORDER is made this 17th day of May, 2021, by and between Applied Ecology, Inc., hereinafter referred as the ENGINEER, and Brevard County, Florida, a political subdivision of the State of Florida, hereinafter referred to as the COUNTY.

WHEREAS, on October 1, 2019, the ENGINEER and the COUNTY entered into a continuing professional services agreement for Ecological Consulting Services, hereinafter referred to as the AGREEMENT, which is incorporated herein by this reference; and

WHEREAS, under SECTION I of the AGREEMENT, the ENGINEER agrees to provide certain professional services which shall be implemented by task orders; and

WHEREAS, the ENGINEER agrees to provide certain ecological and environmental services which shall be implemented in accordance with this Task Order.

NOW, THEREFORE, the parties do mutually agree as follows:

Summary

The purpose of the task order is to provide environmental services to the Brevard County Natural Resources Management Department (County) to provide Performance Measurement and Monitoring Services called for in the Respond component (Section 4.4) of the Save Our Indian River Lagoon Project Plan (SOIRLPP). This task provides for continuation of the groundwater monitoring in task order 19-001-003 SOIRL. Also included in this task order is a well condition assessment and limited rehabilitation of up to six (6) wells.

Section I, Scope of the Work

See Exhibit A – Applied Ecology, Inc. proposal

Section II, Contract Schedule

See Exhibit A – Applied Ecology, Inc. proposal

Section III, Deliverables

See Exhibit A – Applied Ecology, Inc. proposal

Section IV, Basis of Compensation

For the Scope of Work described in Section I of this Task Order, compensation from the COUNTY to the ENGINEER shall be on an hourly basis as indicated in the attached Exhibit A (actual expenses by category and tasks may vary from those indicated during the course of work), not to exceed **$199,969.75** unless authorized by a written Change Order executed by the COUNTY. Upon submittal of deliverables as described in Section III of this Task Order, the COUNTY will be invoiced only for actual work performed. The COUNTY shall pay such invoices in accordance with Florida's Prompt Payment Act. The COUNTY reserves the right to refuse payment for or deduct from any invoice, fees for incomplete or defective work. The following is a summary of the fee breakdown:

A. ECOLOGICAL CONSULTING SERVICES

1. Groundwater Data Collection and Laboratory Analysis – $84,062.00
2. Data Analysis and Reporting - $26,432.00
3. Well Condition Assessment - $14,506.00
4. Well Rehabilitation - $11,724.50
5. Lab and Field Expenses - $63,245.25

Section V, Other Terms and Conditions

All of the terms and conditions of the AGREEMENT, and any amendments thereto, shall apply to this Task Order as fully set out herein. In the case of a conflict between the terms of this Task Order and the AGREEMENT, the latter shall control. It is hereby acknowledged that this Task Order is prepared based upon the Master Agreement executed on October 1, 2019 for Ecological Consulting Services between the ENGINEER and the COUNTY. As such, this Task Order is subject to all conditions and stipulations contained in said AGREEMENT, as may be amended.

PURSUANT TO FLORIDA STATUTE SECTION 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF THE ENGINEER MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

Section VI, Effective Date and Authorized to Proceed

This Task Order shall be effective on the date specified in the Notice to Proceed from the COUNTY'S designated representative. This Task Order will expire one (1) year from the date of issuance of the Notice to Proceed, unless otherwise extended through a subsequent change order.

Section VII. Authority

The Parties warrant that the person signing this Task Order has all the requisite authority necessary to bind the Party it represents.

IN WITNESS WHEREOF, the parties hereto set their hands and seals the date and year above written.

BREVARD COUNTY, FLORIDA

By: _____

Print: Rita Pritchett

Title: Chair

Date: 5/13/21

As approved by the Board on: February 9, 2021

Applied Ecology, Inc

By: _____

Print: Claudia M. Listopad, Ph.D., GISP

Title: Principal Scientist

Date: 05/17/2021

Attest

_____

Rachel Sadoff, Clerk

Date: 5/14/2021

EXHIBIT A

SCOPE OF WORK

Condition Assessment, Rehabilitation, and Monitoring of the Groundwater Quality of 13 communities under the Save Our Indian River Lagoon Project Plan, Brevard County.

See attached scope of work for breakdown of tasks, rates, and manhour estimates.

April 30, 2021
Virginia Barker
Director, Brevard County Natural Resources Management Office
2725 Judge Fran Jamieson Way, Bldg. A
Viera, Florida 32940

Subject: **Scope of Work and Fees for the Condition Assessment, Rehabilitation, and Monitoring of the Groundwater Quality of 13 communities under the Save OurIndian River Lagoon Project Plan (SOIRLPP)**

Dear Virginia,

Applied Ecology, Inc. is pleased to submit this scope of work to Brevard County on the above-referenced services. Included, and incorporated as part of this scope, is an outline of the project information provided to us, the proposed scope of services, our fee, and the proposed schedule.

Introduction

This scope of work includes a groundwater monitoring well condition assessment and limited well rehabilitation activities, as well as continuing groundwater monitoring, data analysis, and reporting for 13 distinct communities and three controls (natural areas) within Brevard County (43 total wells). The specific communities were selected in a previous study funded by the State Legislature and based on areas with high potential for retrofit under the SOIRLPP. The following study areas are included in this groundwater monitoring effort: Merritt Island (septic and sewer communities), Melbourne Beach/Satellite Beach (septic, reclaimed, and sewer communities), Turkey Creek (septic, reclaimed, and sewer communities), Suntree (septic, sewer, and reclaimed), and Titusville (sewer and reclaimed). In addition, three natural areas located in close proximity to various selected communities are included and will be used as controls: Coconut Point (Melbourne Beach), Turkey Creek Sanctuary (Turkey Creek), and Enchanted Forest (Titusville). The costs for well condition assessment, well rehabilitation, groundwater monitoring, and reporting are provided in separate tasks. Please refer to Appendix A for a detailed description of the level of effort and costs by subtask.

Proposed Scope of Work

Task 1- Groundwater Data Collection and Laboratory Analysis

This task includes monitoring 12 monthly samples for 43 of the 44 previously installed groundwater monitoring wells. One well in the Merritt Island sewer community will have to be abandoned (not included in this specific scope of work), due to the homeowner's lack of interest in continued

participation. Well sampling will be performed in compliance with FDEP groundwater and general sampling protocols and delivered within hold times to a certified National Environmental Laboratory Accreditation Conference (NELAC) laboratory, when possible. In order to meet the short hold times, duplicate teams are occasionally deployed to collect samples in the vicinity, reducing travel time and the number of rush delivery trips to the laboratory. Marine Resources Council (MRC) will provide field sampling support on the sampling days when two/three teams will be collecting data simultaneously.

Beyond field parameters (pH, temperature, conductivity, and turbidity), the following laboratory parameters will be analyzed in a NELAC certified lab: ammonia (NH-3-N), nitrate-nitrite (NOX-N), total Kjeldahl nitrogen (TKN), and calculated total nitrogen (TN), orthophosphorus (OrthoP, or PO_4^{3-}), and total phosphorus (TP). A total of 516 samples and 52 blank/duplicates are included in the scope of work for all parameters. This task also includes collecting 129 samples (approximately 25% of the collected samples) for isotopic analysis; however, it does not include shipping and lab costs associated with nitrate-nitrite (NOX-N) at the University of California (UC) Davis Laboratory.

Field and laboratory data is entered and quality assured monthly. Summary data tables are updated monthly for quality control.

This task also includes coordination time with the current homeowners to obtain newly signed homeowner agreements to extend the sampling (when necessary), schedule monthly efforts, as well as coordination with the local NELAC certified laboratory.
Task 1 Labor: $84,062.00

Expenses associated with Task 1 include laboratory analyses of standard water quality parameters, field supplies and equipment rental, and express laboratory delivery.

Total Task 1 (labor + expenses) Cost: $84,062.00 + $ $61,975.50 or a total of $146,037.50.

Task 2: Data Analysis and Reporting

Data from all available sites will be analyzed for trends over time for each of the parameters considering changes to the project area (*e.g.*, potential connection to central sewer, upgrading in WWTP treatment) occur. Summary statistics and seasonality will also be examined for the nitrogen and phosphorus species for all available well data. Reporting under this task includes quarterly summary reporting of monitoring activities (3 quarters), such as dates of sample conduction, final laboratory reports, and sampling logs with purge and field data recorded, as well as summary data tables and charts. A brief executive summary highlighting major findings will be included in each quarterly report, but no statistical analyses will be included. The data from the last quarter, along with the previously collected cumulative project data, will be presented in the annual, final report.

In addition, an Annual Draft Project Report will be prepared to include all the laboratory and field-collected data, summary data, graphical representations of trends, and any relevant statistical analysis. MRC will support in reviewing and streamlining AEI's data analysis report during the final reporting effort. This task also includes time for coordination, up to one formal presentation (if requested), and two meetings to discuss the monitoring results, as well as time to incorporate one set of comments in the final report.

Total Task 2 Cost: $26,432.00

Task 2 Deliverables:

- Quarterly summary data reports (3) of monitoring activities that include dates sampling was conducted, final laboratory reports, sampling logs with purge and field data recorded, as well as summary data tables.
- Annual Draft Report that summarizes the field and lab data, any relevant statistical analysis results, and data interpretation.
- Final Annual Report, which incorporates one set of comments received from County staff.

Task 3: Well Condition Assessment

A groundwater monitoring well condition assessment will be conducted at all 43 monitoring wells currently included in the project and will serve three purposes. First, it will serve as a reference document for which to compare future monitoring well conditions in case of degradation or destruction. Second, it will allow the samplers to clean and replace any broken or faulty parts within the well, vault, or well pad for replacement. Finally, it will help guide well rehabilitation prioritization (see **Task 4**).

A well condition assessment standard operating procedure (SOP) and form will be developed first. The SOP and form will be based on recommendations and literature from federal and state government agencies as well as input from field staff. Experienced field staff will implement the SOP to allow consistent assessment to take place at all 33 monitoring wells.

The condition assessment will include a visual inspection of the well pad, lid, vault, and casing and include photographs. Additionally, a submersible camera may be lowered into the well to examine the casing integrity and the presence of any obstructions, where possible. Further assessment will be conducted on the well depth and presence of sediment at the bottom of the well casing. A light cleaning of the monitoring well screen, vault seal, vault, and plug will occur following the assessment; missing or damaged components will be replaced when necessary.

A Well Assessment Summary and Recommendation Report will be drafted to describe the relevant findings, actions taken, and future recommended actions. The report will include forms and field photos as appendices. This report will also incorporate historical observations of turbidity, conductivity, and comments related to debris within purged or sampled water to help prioritize wells for rehabilitation.

Task 3 Labor: $14,506.00

Expenses associated with Task 3 include miscellaneous replacement parts for wells, cleaning supplies, and well equipment rentals.

Total Task 3 (labor + expenses) Cost: $14,506.00 + $689.75 or a total of $15,195.75

Task 3 Deliverables:

- Well Assessment Summary and Recommendation Report including well condition assessment forms and photos.

Task 4: Well Rehabilitation

Well rehabilitation will be conducted on up to six (6) groundwater monitoring wells. Well rehabilitation will include swabbing and/or brushing with proper equipment to remove debris or obstructions in the monitoring well casing and/or screen. Additionally, a high-capacity pump will be deployed to purge well, including any sediment accumulated at the well bottom (where possible). After well rehabilitation has been completed, a submersible camera will be lowered into the well to record conditions. A memo summarizing well rehabilitation activities will be prepared to discuss final well selection and actions taken.

Task 4 Labor: $11,724.50

Expenses associated with Task 4 includes specialized cleaning devices for well screens, cleaning supplies as well as pump and well equipment rentals.

Total Task 4 (labor + expenses) Cost: $11,724.50 + $580.00 or a total of $12,304.50

Task 4 Deliverables:

- Well Rehabilitation Summary Memo including a summary of well rehabilitation activities performed.

Fee and Method of Compensation

We propose performing the above scope of services for a time and materials not to exceed fee of ***$199,969.75*** as follows:

Task 1 – Groundwater Sampling	***$84,062.00***
Task 2 – Data Analysis and Reporting	***$26,432.00***
Task 3 – Well Condition Assessment	***$14,506.00***
Task 4 – Well Rehabilitation	***$11,724.50***
Expenses	***$63,245.25***
Total Project Cost	***$199,969.75***

Monthly invoices will be billed based on the hourly effort performed and expenses during each calendar month. Details on the level of effort and associated cost by task are provided in **Appendix A.**

If unforeseen conditions should require services beyond the scope of services described herein, Applied Ecology will notify you immediately of additional costs necessary to complete the project prior to proceeding. Services beyond those described herein would be invoiced in accordance with our standard schedule of fees at the applicable rates.

Schedule

The project is expected to initiate within one (1) week from NTP. Task 1 (groundwater monitoring) is anticipated to continue the previously funded ongoing effort for all 43 well locations. Subsequent events will take place monthly from the initial sampling event. Task 2 (data analysis and reporting) will be completed within three (3) months after the last sampling event. The well assessment effort will take place between monitoring events, not to disturb the sampling effort, within three (3) months from NTP. Task 4 is anticipated to start within one month after Task 3 is complete, after discussing well condition with the County.

Authorization

Please provide written authorization to proceed consistent with the terms and conditions of the Professional Services Agreement between Brevard County and Applied Ecology, Inc. dated 10/10/2010.

We appreciate the opportunity to offer our professional services on this project. If you have any questions concerning this proposal, please contact us at 321-499-3336.

Sincerely,



Claudia Listopad, Ph.D., GISP
President, Principal Scientist

Attachments:
Attachment A - Detailed level of effort and associated cost by subtask for the Condition Assessment, Rehabilitation and Monitoring of the Groundwater Quality of 13 communities under the Save Our Indian River Lagoon Project Plan (SOIRLPP)

Attachment A
Detailed Level of Effort and Cost Summary

Task 1: Groundwater Sampling

Subtask	Description	Principal Scientist ($152.00)	Senior Scientist ($110.00)	Staff Scientist ($85.00)	Assoc Staff Scientist ($66.00)	Field Technician ($59.50)	Clerical ($40.50)	MRC Contract	Total Hrs	Total Cost
1	Homeowner Notifications and Sampling Preparation	0	0	0	66	48	0	$0	114	$7,212.00
2	Sampling effort for 12 monthly events for Merritt Island (5 wells)	0	0	0	60	96	0	$0	156	$9,672.00
3	Sampling effort for 12 monthly events (Suntree, 9 wells)	0	0	0	120	0	0	$3,600	120	$11,520.00
4	Sampling effort for 12 monthly events (Satellite Beach, 3 wells)	0	0	0	90	0	0	$0	90	$5,940.00
5	Sampling effort for 12 monthly events (Titusville, 7 wells)	0	0	0	72	108	0	$0	180	$11,178.00
6	Sampling effort for 12 monthly events for Melbourne Beach (8 wells)	0	0	0	114	0	0	$2,700	114	$10,224.00
7	Sampling effort for 12 monthly events for Turkey Creek (11 wells)	0	0	0	132	0	0	$3,300	132	$12,012.00
8	Compilation and Reporting of Lab Results and Field Parameters, QA	0	24	0	96	0	0	$0	120	$8,976.00
9	Project management (coordination with laboratory, homeowners, client)	12	12	0	8	0	0	$1,120	32	$4,792.00
10	Contact Homeowners to Obtain Renewals/Abandon Wells	8	0	0	20	0	0	$0	28	$2,536.00
11	Laboratory, Supplies, Equipment Rental Expenses for GW Sampling									$61,975.50
ALL	***TASK 1: GW SAMPLING TASK TOTAL***	***20***	***36***	***0***	***778***	***252***	***0***	***$10,720***	***1088***	***$146,037.50***

Task 2: Data Analysis and Reporting

Subtask	Description	Principal Scientist ($152.00)	Senior Scientist ($110.00)	Staff Scientist ($85.00)	Assoc Staff Scientist ($66.00)	Field Technician ($59.50)	Clerical ($40.50)	MRC Contract	Total Hrs	Total Cost
1	Quarterly Reporting of Lab Results and Field Parameters (3 quarters)	6	18	0	36	0	16	$0	60	$5,916.00
2	Data Analysis	16	0	24	24	0	0	$0	64	$6,056.00
3	Draft and Final Annual Report	8	16	40	12	0	24	$1,280	76	$9,420.00
4	Meetings, Presentations & PM (two meetings)	20	0	16	0	0	0	$640	36	$5,040.00
ALL	***TASK 2: REPORTING TASK TOTAL***	***50***	***34***	***80***	***72***	***0***	***40***	***$1,920***	***236***	***$26,432.00***

Task 3: Well Condition Assessment

Subtask	Description	Principal Scientist ($152.00)	Senior Scientist ($110.00)	Staff Scientist ($85.00)	Assoc Staff Scientist ($66.00)	Field Technician ($59.50)	Clerical ($40.50)	MRC Contract	Total Hrs	Total Cost
1	Well Condition Form and SOP Development	1	8	0	16	0	0	$0	25	$2,088.00
2	Well Condition Assessment and Screen Cleaning (43 wells)	0	50	0	50	0	0	$0	100	$8,800.00
3	Data Entry, Well Assessment Summary and Recommendation Report	2	8	0	20	16	4	$0	46	$3,618.00
4	Equipment rentals and supplies									$689.75
ALL	***TASK 3: WELL CONDITION ASSESMENT TASK TOTAL***	***3***	***66***	***0***	***86***	***16***	***4***	***$0***	***171***	***$15,195.75***

Attachment A
Detailed Level of Effort and Cost Summary

Task 4: Well Rehabilitation

Subtask	Description	Principal Scientist ($152.00)	Senior Scientist ($110.00)	Staff Scientist ($85.00)	Assoc Staff Scientist ($66.00)	Field Technician ($59.50)	Clerical ($40.50)	MRC Contract	Total Hrs	Total Cost
1	Well Rehabilitation Preparation and Homeowner Notification	0	2	0	8	0	0	$0	10	$748.00
2	Well Rehabilitation (up to 6 wells)	2	48	48	0	0	0	$0	98	$9,664.00
3	Well Rehabilitation Summary Memo	1	4	8	0	0	1	$0	13	$1,312.50
4	Equipment rentals and supplies									$580.00
ALL	*TASK 4: WELL REHABILITATION TASK TOTAL*	*3*	*54*	*56*	*8*	*0*	*1*	*$0*	*121*	*$12,304.50*

Major Task Summary

Task	Description	Principal Scientist ($152.00)	Senior Scientist ($110.00)	Staff Scientist ($85.00)	Assoc Staff Scientist ($66.00)	Field Technician ($59.50)	Clerical ($40.50)	MRC Contract	Total Hrs	Total Cost
1	Groundwater Sampling	20	36	0	778	252	0	$10,720	1086	$146,037.50
2	Data Analysis and Reporting	50	34	80	72	0	40	$1,920	236	$26,432.00
3	Well Condition Assessment	3	66	0	86	16	4	$0	171	$15,195.75
4	Well Rehabilitation	3	54	56	8	0	1	$0	121	$12,304.50
ALL	*PROJECT TOTAL*	*76*	*190*	*136*	*944*	*268*	*45*	*$12,640*	*1614*	*$199,969.75*

Description	Total Cost
Project Subtotal (Labor Only)	$136,724.50
Task 1, 3 and 4 Expenses (Labs, Field Equipment and Disposables, Travel - Lab Express Transport) for44 wells	*$63,245.25*
Project Total (with Expenses)	$199,969.75

Natural Resources Management Department
2725 Judge Fran Jamieson Way
Building A, Room 219
Viera, Florida 32940

BOARD OF COUNTY COMMISSIONERS

Inter-Office Memo

TO: The Honorable Rita Pritchett, Chair
Board of County Commissioners

THROUGH: Frank Abbate, County Manager
John Denninghoff, Assistant County Manager
Virginia Barker, Director, Natural Resources Management Department (NRMD)
Tom Belflower, Support Services Manager, NRMD

FROM: Anthony Gubler, Environmental Specialist, NRMD

DATE: May 10, 2021

SUBJECT: Continuation of Save Our Indian River Lagoon Countywide Groundwater Well Monitoring (Task Order No. 19-4477-009-EC SOIRL), Applied Ecology, Inc.

We respectfully request your signature on the attached Task Order No 19-4477-009-EC SOIRL with Applied Ecology, Inc (AEI), in the amount of $199,969.75, for continuation of the groundwater monitoring and limited rehabilitation of up to six wells per the continuing services agreement (CM 4477).

On February 9, 2021, the Board of County Commissioners delegated signature authority to the Chair for executing Save Our Indian River Lagoon task orders as part of the adoption of the 2021 Plan update.

This Task Order will continue the monthly groundwater well monitoring for one year in 13 distinct communities and three natural areas distributed throughout the county. The project will measure the performance of projects directed at reducing nutrient pollution in groundwater in an effort to quantify the cost-effectiveness of various project types. This information will be used to consider or revise the Save Our Indian River Lagoon Project Plan to improve the efficiency and effectiveness of Lagoon Trust Fund investments.

Also included in this Task Order is a well condition assessment and cleaning for all 43 wells and rehabilitation for up to six wells.

The task order will be funded from the Save Our Indian River Lagoon performance monitoring and measurement/Respond budget.

Please contact Anthony Gubler at Anthony.Gubler@brevardfl.gov or 321-205-7712 with questions or to arrange for pick-up.

Thank you.

Attachment A – Clerk's Memo

Attachment B – Task Order

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

February 10, 2021

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item J.1., Adoption of the Save Our Indian River Lagoon (SOIRL) Project Plan 2021 Update, Unanimously Recommended by the SOIRL Citizens Oversight Committee (COC)

The Board of County Commissioners, in regular session on February 9, 2021, adopted the SOIRL Project Plan 2021 Update, as recommended by the SOIRL COC on January 15, 2021; authorized associated Budget Change Requests; approved continued signature authority to the Chair, or designee, in accordance with the threshold limits provided in Brevard County Code 25 and 27, and Administrative Order 29, to execute interlocal, non-governmental organization, University and private agreements, task orders, change orders, and contract renewals, using contract terms and templates previously approved by the Board, subject to review and approval by the County Attorney, Risk Management, and Purchasing, as appropriate, to provide cost-share from the SOIRL Trust Fund for projects and programs approved in the SOIRL Project Plan; approved continuing authority for the County Manager to execute contract amendments; approved continued authority for you to execute up to two no-cost time extensions up to six-months each; granted permission to advertise formal solicitation of bids and proposals, and to award to the qualified bidder having the lowest, responsible and best response for tangible items, capital improvement projects, and/or equipment when funding is available; and authorized the County Manager, or his designee, to submit grant applications for leveraging cost-share for projects approved in the SOIRL Project Plan.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK

Kimberly Powell, Clerk to the Board

/ds

cc: County Attorney
County Manager
Contracts Administration
Finance
Budget

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE WEST MELBOURNE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-123

THIS AGREEMENT ("Agreement") is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of West Melbourne, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund;

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until May 31, 2022 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress

report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Keith Mills
Deputy City Manager
City of West Melbourne
2240 Minton Road
West Melbourne, FL 32904
321-837-7777
E-mail: KMills@WestMelbourne.org

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding

amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a quarterly basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form, Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.

The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld

shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.

a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.

Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the state of Florida beyond the waiver provided for in section 768.28, Fla. Stat., as amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.

a. This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded,

in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm

or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under

subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a

period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 29. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 30. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the

extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the parties' respective sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County Board of County Commissioners

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

Attest

Rachel Sadoff, Clerk

Date: 3/10/2021

West Melbourne, Florida

By: Hal Rose

Name: Hal Rose

Title: Mayor

Date: April 6, 2021

Reviewed for legal form and content for Brevard County

Alex Esseesse 2/23/21

Alex Esseesse, Assistant County Attorney

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE:
Ray Bullard WRF Stormwater Management Area

PROJECT LOCATION:
The project is located at the south end of Park Hill Road in the City of West Melbourne, Brevard County. The address is 1415 Henry Avenue, West Melbourne, FL 32904.

PROJECT BACKGROUND:
The City of West Melbourne's Canal C-1E conveys stormwater from an upstream basin totaling approximately 450 acres. The majority of the 450-acre basin is composed of older, single-family residential subdivisions that were constructed without stormwater treatment systems. The stormwater runoff from this 450-acre basin flows to the City's canals and eventually to the Indian River Lagoon. Currently, the stormwater runoff flows to the lagoon without undergoing any type of stormwater treatment.

PROJECT DESCRIPTION:
The City of West Melbourne proposes to construct a treatment train stormwater management system consisting of a 2.64-acre wet detention pond and a media base filtration (Bold and Gold side bank filter) storing and treating the stormwater runoff from an approximately 450 acres of an upstream basin that drain directly into the Indian River Lagoon. The new wet detention pond will be constructed at the City's wastewater treatment facility, in place of the existing lined reclaim water pond. The lined pond, and the surrounding areas, are no longer in use.

TASKS and DELIVERABLES:
Task #1: Design and Permitting
Task Description:
The City is funding 100% of the design and permitting of this project. Infrastructure Solution Services, the City's Consulting Engineer, will continue to prepare and submit the final design drawings, specifications, and final opinion of probable cost, with permit agency review comments incorporated into the design. The design and permitting are expected to be complete by February 2021.

Task Deliverable:
Biddable Plans & Specifications and Permits

Task #2 Construction of Project
Task Description:
The City will procure a contractor through the bidding process to construct the project. The timeframe for bidding and construction is contingent upon available fund from SWAG-FDEP, (SOIRL and SJRWMD funds already approved and secured), and City fund.

Task Deliverable:

Task	Task Title	Task Start Date	Task End Date
1	Design & Permitting	1/14/2019	2/28/2021
2	Construction of Project	6/1/2021	3/31/2022

Estimated Reimbursement Schedule:
Project reimbursements will be requested quarterly

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 20xx) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	Jul-Sep 2021	Oct-Dec 2021	Jan-Mar 2022
Engineering 1	$ 0	$ 0	$ 0
Construction 2	$25,000	$60,000	$75,674

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds (Adjust the highlighted section and delete the other options that do not apply):
Other: Only a portion of the design and permitting costs for this project were included in the City's FY 2019-2020/2020-2021. Therefore, without the Save Our Indian River Lagoon Funding, the design and permitting would likely not proceed in the near future.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ **Report Number:** _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
FROM:		**To:**	
PAYMENT REQUEST NO.:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
			TOTALS:					$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____ , on behalf of _____ , do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____ _____

Recipient's Grant Manager's Signature | Recipient's Fiscal Agent

_____ _____

Print Name | Print Name

_____ _____

Telephone Number | Telephone Number

ATTACHMENT E

Recipient Name:	City of West Melbourne
Project Name:	Ray Bullard WRF Stormwater Management Area
Agreement Number:	SOIRL 20-123

Estimated Project Cost-Share Table

Task Number	Task Description	Task Cost	Grant 1 (319)	City Funded	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Engineering	$ 132,900		$ 132,900			$ 132,900
2	Construction	$ 1,471,960	$ 750,000	$ 75,539	$ 485,747	$ 160,674	$ 75,539
	Total	$ 1,604,860	$ 750,000	$ 208,439	$ 485,747	$ 160,674	$ 208,439

Funding Eligibility Calculation

Project Type	Stormwater
BMP Type (If stormwater)	Wet Detention/Filter Media
Pounds of Nitrogen Reduction	1317
Eligible Cost Share per Pound	$122
Eligible Tax Funding Cost Share	$ 160,674.00
Reduction so Sum of Grants does not exceed Project Cost	$ -
Eligible Lagoon Tax Cost Share, Adjusted	$ 160,674.00
Percent Cost Share to be contributed by the Lagoon Tax	10%

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE WEST MELBOURNE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-138

THIS AGREEMENT ("Agreement") is made and entered into the date of last signature below by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of West Melbourne, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund;

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until September 31, 2023 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress

report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Keith Mills
Deputy City Manager
City of West Melbourne
2240 Minton Road
West Melbourne, FL 32904
321-837-7777
E-mail: KMills@WestMelbourne.org

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding

amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a quarterly basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form, Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.

The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld

shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.

a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.

Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that respective party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the State of Florida, nor as a waiver of sovereign immunity of the COUNTY or CITY beyond the waiver provided for in section 768.28, Fla. Stat., as may be amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.

a. This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded,

in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm

or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under

subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a

period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 29. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 30. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the

extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the parties' respective sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County Board of County Commissioners

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on March 10, 2020

Attest

_____

Rachel Sadoff, Clerk

Date: 3/10/2021

Reviewed for legal form and content for Brevard County

Alex Esseesse 2/24/21

Alex Esseesse, Assistant County Attorney

West Melbourne, Florida

By: Hal Rose

Name: Hal Rose

Title: Mayor

Date: April 6, 2021

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE:
Ray Bullard Water Reclamation Facility Nutrient Removal Upgrades

PROJECT LOCATION:
1415 Henry Ave, West Melbourne, FL 32904. Approximate coordinates are 28°4'12.92" N, 80°38'40.59" W

PROJECT BACKGROUND:
The City of West Melbourne owns and operates the Ray Bullard Water Reclamation Facility (WRF) treating domestic wastewater. The WRF is a complete-mix type activated sludge wastewater treatment facility with a rated capacity of 3.0 million gallons per day (MGD) on an annual average daily flow (AADF) basis. The WRF disposes of about 50% of its treated secondary effluent as reclaimed water for irrigation of a slow rate public access reuse system.

The City, through its consulting engineer, performed a preliminary design study evaluating several alternatives to provide biological nutrient removal (BNR). The report recommended the following improvements:

1) constructing a BNR basin with anaerobic and anoxic zones to convert the existing biological treatment system into a three stage BNR activated sludge system;
2) replacing the existing centrifugal aeration blowers with new energy efficient hybrid blowers operating with variable frequency drives providing greater process control of the dissolved oxygen concentration necessary for nutrient removal; and
3) replacing the leaking below grade air piping.

The planning level estimated project cost for these improvements was $6.5 million dollars.

The City submitted a substitute project request to the County to obtain SOIRL funding for the proposed nutrient removal improvement as part of the 2020 SOIRL project plan update. The project was approved for funding by the Board of County Commissioners on March 10, 2020.

PROJECT DESCRIPTION:
This project will include design, permitting and construction of facility improvements at the Ray Bullard Water Reclamation Facility reducing the nitrogen and phosphorus concentration of the reclaimed water. The proposed improvements include:

- Constructing a BNR basin with anaerobic and anoxic zones to convert the existing biological treatment system into a three stage BNR activated sludge system;
- Replacing the existing centrifugal aeration blowers with new energy efficient hybrid blowers operating with variable frequency drives;
- Replacing the below grade air piping; and
- Associated civil/site, mechanical, electrical, and controls system improvements.

The City intends to seek up to $1.5 million dollars of additional grant funding for the project from the St. Johns River Water Management District (SJRWMD) through their water quality improvements cost share grant funding program.

TASKS and DELIVERABLES:

Task #1: Design and Permitting

Task Description: The City, through a consulting engineer, will prepare a preliminary engineering report (suitable for Florida Department of Environmental Protection permitting), preliminary drawings/specifications, and final drawings/specifications suitable to be used as for project bidding.

Task Deliverable:

1) Preliminary Engineering Report;
2) Preliminary Drawings/Specifications; and
3) Final Drawings/Specifications.

Task #2 Construction of Project

Task Description: The City will procure a contractor through the usual bidding process to construct the project. The timeframe for bidding and construction is contingent upon the availability of funding from the SOIRL program, SJRWMD cost share funding program, and City funding. Effort under this task will include bidding, procurement, mobilization and project construction.

Task Deliverable:

Quarterly and final project status reports with pictures showing construction progress.

Task	Task Title	Task Start Date	Task End Date
1	Design & Permitting	December 2020	October 2021
2	Construction of Project	Dec 2021	June 2023

Estimated Reimbursement Schedule:

Project reimbursements will be requested quarterly.

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 20xx) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	2Q FY20/21	3Q FY20/21	4Q FY20/21	1Q FY21/22	2Q FY21/22	3Q FY21/22	4Q FY21/22	1Q FY22/23	2Q FY22/23
1	$150,000	$180,000	$180,000	$90,000	$0	$0	$0	$0	$0
2					$610,000	$610,000	$610,000	$610,000	$610,000

Task #	3Q FY22/23	2Q FY22/23	3Q FY22/23	4Q FY22/23
1	$0	$0	$0	$0
2	$610,000	$0	$0	$0

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds:
Only a portion of the design and permitting costs for this project were included in the City's FY 2020-2021 budget. Therefore, without the Save Our Indian River Lagoon Funding, the design and permitting would likely not proceed in the near future.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ **Report Number:** _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
FROM:		To:	
PAYMENT REQUEST NO.:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
			TOTALS:					$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____, on behalf of _____, do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____	_____
Recipient's Grant Manager's Signature	Recipient's Fiscal Agent
_____	_____
Print Name	Print Name
_____	_____
Telephone Number	Telephone Number

ATTACHMENT E

Recipient Name:	City of West Melbourne
Project Name:	Ray Bullard Water Reclamation Facility Nutrient Removal Upgrades
Agreement Number:	21-138

Estimated Project Cost-Share Table

Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Design & Permitting	$ 600,000.00				$ 600,000.00	$ -
2	Construction	$ 5,900,000.00			$ 1,500,000.00	$ 3,660,000.00	$ 740,000.00
	Total	$ 6,500,000.00	$ -	$ -	$ 1,500,000.00	$ 4,260,000.00	$ 740,000.00

Funding Eligibility Calculation

Project Type	Reclaimed Water
BMP Type (If stormwater)	
Pounds of Nitrogen Reduction	11360
Eligible Cost Share per Pound	$375
Eligible Tax Funding Cost Share	$ 4,260,000.00
Reduction so Sum of Grants does not exceed Project Cost	$ -
Eligible Lagoon Tax Cost Share, Adjusted	$ 4,260,000.00
Percent Cost Share to be contributed by the Lagoon Tax	66%

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE CITY OF TITUSVILLE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-174

THIS AGREEMENT ("Agreement") is made and entered into the date of last signature below by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of Titusville, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund;

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until June 30, 2023 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress

report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Sandra Reller
Public Works Deputy Director
City of Titusville
555 S Washington Ave
Titusville, FL 32796
321-567-3846
E-mail: Sandra.reller@titusville.com

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding

amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A.** The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A.** Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a end of Project basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form, Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.

The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld

shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.

a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.

Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that respective party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the State of Florida, nor as a waiver of sovereign immunity of the COUNTY or CITY beyond the waiver provided for in section 768.28, Fla. Stat., as may be amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.

a. This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded,

in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm

or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under

subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a

period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 29. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 30. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the

extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the parties' respective sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County, Florida

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

Attest

_____

Rachel Sadoff, Clerk

Date: 3/24/2021

Reviewed for legal form and content for Brevard County

_____ 3/10/21

Alex Esseesse, Assistant County Attorney

Titusville, Florida

By: _____

Name: Daniel E. Diesel

Title: Mayor

Date: 4-16-21

TITUSVILLE, FLORIDA FOUNDED 1867

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: St. Johns 2 Baffle Box

PROJECT LOCATION: West St, Titusville FL; 29*36'18"N; 80*48'56"W

PROJECT BACKGROUND: In February 2013, the Florida Department of Environmental Protection adopted a Basin Management Action Plan (BMAP) for implementation of the Total Maximum Daily Loads (TMDLs) for the North Indian River Lagoon (IRL) requiring nutrient load reductions of nitrogen and phosphorus. This planned water quality project will assist the City in striving to meet the pollutant removal allocation required by the BMAP. This project is designed to provide removal efficiencies that help meet TMDL requirements for the IRL and will provide a net water quality benefit to the IRL.

PROJECT DESCRIPTION: The City of Titusville will complete the design of the second generation baffle box fitted with nutrient reducing filtration media and obtain all necessary permits for completion of the project. The City will subcontract the construction with a qualified and licensed contractor, selected through the City's competitive bid process. The City shall prepare and solicit bids utilizing a bid package in accordance with state and federal laws and this Agreement. The selected contractor will install the second generation baffle box fitted with nutrient reducing filtration media at the location listed according to the design and specifications in the bid package.

TASKS and DELIVERABLES:

Task #1: Design and Permitting
Task Description: The City will complete the design of the second generation baffle boxes fitted with nutrient reducing filtration media and obtain all necessary permits for completion of the project.
Task Deliverable: Copies of construction plans and permits.

Task #2 Construction of Project
Task Description: The City will construct and install the second generation baffle box fitted with nutrient reducing filtration media and any other incidental work necessary to complete the project in accordance with the final design and required permits.
Task Deliverable: Dated photographs of completed project and signed acceptance of the completed work by the Grantee.

Task	Task Title	Task Start Date	Task End Date
1	Design & Permitting	4/1/21	12/1/21
2	Construction of Project	1/1/22	3/1/23

Estimated Reimbursement Schedule:
Project reimbursements will be requested after project completion.

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 20xx) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	Quarter 1/2023	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year
1								
2	$243,070							

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds (Adjust the highlighted section and delete the other options that do not apply):
This project is not included in the City's FY 2020-2021 budget, therefore without the Save Our Indian River Lagoon Funding the project would not have been executed in the near future.

Other:

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

ATTACHMENT B

Date: _____

Report Number: _____

Project Information

Project Name:	
Recipient Name:	
Contract Number:	
Nitrogen Reduction Benefit (lbs/yr)	
Phosphorus Reduction Benefit (lbs/yr)	
TSS Reduction Benefit (lbs/yr)	

County Project Manager Email:	
County Project Manager Phone:	
Recipient's Email:	
Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:	
Expended To-date:	
Contract Amount:	

Expended This Period:	
Percent Budget Expended:	
Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:	
RECIPIENT'S EMAIL:	
PROJECT NAME:	
AGREEMENT NO.:	
PERFORMANCE PERIOD:	
OM:	To:
PAYMENT REQUEST NO.:	
DATE OF REQUEST:	
COUNTY'S PROJECT MANAGER:	
PROJECT COST:	
LAGOON TAX COST SHARE PERCENTAGE:	
CONTRACTED LAGOON TAX COST SHARE AMOUNT:	
CURRENT REIMBUREMENT AMOUNT REQUESTED:	

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
		TOTALS:						$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____, on behalf of _____, do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____ _____

Recipient's Grant Manager's Signature

_____

Print Name

_____

Telephone Number

_____

Recipient's Fiscal Agent

_____

Print Name

_____

Telephone Number

ATTACHMENT E

Recipient Name:	City of Titusville
Project Name:	St. Johns 2 Baffle Box
Agreement Number:	21-174

Estimated Project Cost-Share Table							
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering	$ 15,000.00					$ 15,000.00
3	Construction	$ 450,000.00				$ 243,070.00	$ 206,930.00
4	Monitoring						$ -
	Total	$ 465,000.00	$ -	$ -	$ -	$ 243,070.00	$ 221,930.00

Funding Eligibility Calculation	
Project Type	2nd generation baffle box plus media filter
BMP Type (if stormwater)	SW Trad BMP
Pounds of Nitrogen Reduction	1992.38
Eligible Cost Share per Pound	$122
Eligible Tax Funding Cost Share	$ 243,070.36
Reduction so Sum of Grants does not exceed Project Cost	$ 0.36
Eligible Lagoon Tax Cost Share, Adjusted	$ 243,070.00
Percent Cost Share to be contributed by the Lagoon Tax	52%

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE CITY OF TITUSVILLE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-178

THIS AGREEMENT ("Agreement") is made and entered into the date of last signature below by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of Titusville, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund;

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until June 30, 2022 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress

report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Sandra Reller
Public Works Deputy Director
City of Titusville
555 S Washington Ave
Titusville, FL 32796
321-567-3846
E-mail: Sandra.reller@titusville.com

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding

amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a, end of Project basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form, Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.

The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld

shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.

a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.

Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that respective party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the State of Florida, nor as a waiver of sovereign immunity of the COUNTY or CITY beyond the waiver provided for in section 768.28, Fla. Stat., as may be amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.

a. This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded,

in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm

or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under

subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a

period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 29. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 30. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the

extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the parties' respective sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County, Florida

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

Attest

_____

Rachel Sadoff, Clerk

Date: 3/24/2021

Reviewed for legal form and content for Brevard County

_____ 3/10/21

Alex Esseesse, Assistant County Attorney

Titusville, Florida

By: _____

Name: Daniel E. Diesel

Title: Mayor

Date: 4-16-21

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: Marina B Managed Aquatic Plant Systems

PROJECT LOCATION: Marina Park - City of Titusville; 28*37'22"N; 80*48'46"W

PROJECT BACKGROUND: In February 2013, the Florida Department of Environmental Protection adopted a Basin Management Action Plan (BMAP) for implementation of the Total Maximum Daily Loads (TMDLs) for the North Indian River Lagoon (IRL) requiring nutrient load reductions of nitrogen and phosphorus. This planned water quality project will assist the City in striving to meet the pollutant removal allocation required by the BMAP. This project is designed to provide removal efficiencies that help meet TMDL requirements for the IRL and will provide a net water quality benefit to the IRL.

PROJECT DESCRIPTION: Installation of floating islands within a 1-acre City owned pond located within the Marina Park. The contractor will install the floating islands, that will cover 5% of the pond surface. These islands will incorporate dissolved nutrients from the water column into plant biomass as the plants grow. Plants from the floating island will be harvested approximately once a year and the plant tissue will be analyzed for nutrient content and composted offsite, thereby removing accumulated nitrogen and phosphorous from the watershed.

TASKS and DELIVERABLES:

Task #1: Installation of Project

Task Description: Installation of approximately 2,178 sq. ft. of a floating managed aquatic plant system.

Task Deliverable: Dated photographs of completed project and signed acceptance of the completed work by the Grantee.

Task	Task Title	Task Start Date	Task End Date
1	Construction of Project	6/1/2021	3/1/2022

Estimated Reimbursement Schedule:

Project reimbursements will be requested after project completion.

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 20xx) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	Quarter 1/2022	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year
1	$6,670							

Deliverables:

Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds (Adjust the highlighted section and delete the other options that do not apply):

This project is not included in the City's FY 2020-2021 budget, therefore without the Save Our Indian River Lagoon Funding the project would not have been executed in the near future.

Other:

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ **Report Number:** _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
FROM:		**To:**	
PAYMENT REQUEST NO.:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
			TOTALS:					$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____, on behalf of _____, do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____	_____
Recipient's Grant Manager's Signature	Recipient's Fiscal Agent
_____	_____
Print Name	Print Name
_____	_____
Telephone Number	Telephone Number

ATTACHMENT E

Recipient Name:	City of Titusville
Project Name:	Marina B Managed Aquatic Plant Systems
Agreement Number:	21-178

Estimated Project Cost-Share Table							
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering						$ -
3	Construction	$ 14,531.25				$ 6,670.00	$ 7,861.25
4	Monitoring						$ -
	Total	$ 14,531.25	$ -	$ -	$ -	$ 6,670.00	$ 7,861.25

Funding Eligibility Calculation	
Project Type	MAPS
BMP Type (If stormwater)	SW Trad BMP
Pounds of Nitrogen Reduction	54.6721
Eligible Cost Share per Pound	$122
Eligible Tax Funding Cost Share	$ 6,670.00
Reduction so Sum of Grants does not exceed Project Cost	$ (0.00)
Eligible Lagoon Tax Cost Share, Adjusted	$ 6,670.00
Percent Cost Share to be contributed by the Lagoon Tax	46%

SAVE OUR INDIAN RIVER LAGOON PROJECT REIMBURSEMENT CONTRACT BETWEEN BREVARD COUNTY, FLORIDA AND MATTHEW CIRCLE, LLC

CONTRACT NUMBER: SOIRL 21-192

THIS CONTRACT ("Contract") is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter the "COUNTY"), and the Matthew Circle, LLC, a Florida corporation organized and existing under the laws of the State of Florida whose address is located at: 27710 Royal Forest Drive, Westlake, Ohio 44145 (hereinafter the "GRANTEE").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing reimbursement grant funding to the GRANTEE for the purposes provided for herein serves a public purpose; will help protect the public health, safety and welfare; and will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund.

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions, the Parties agree as follows:

Section 1. Documents.
This Contract incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Contract set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the GRANTEE agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. GRANTEE shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Contract is from the date upon which the last party has dated and executed the same ("Effective Date") until June 1, 2022 ("Completion Date"). GRANTEE shall not commence the Project until any required submittals and permits are received and approved. Time is of the essence for every aspect of this reimbursement Contract, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for six (6) months or longer may only be approved by the County Manager or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for up to six (6) months each may be approved by the County Manager, or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Contract, all provisions of this Contract that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Contract constitutes an offer until authorized, signed and returned to the COUNTY by the GRANTEE. This offer terminates sixty (60) days after receipt by the GRANTEE; provided, however, that the GRANTEE may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Contract, does not begin within one hundred eighty (180) days of the Effective Date, this Contract will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resources
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

PROJECT MANAGER
Rodney Honeycutt
President
Honeycutt & Associates, Inc.
3700 S. Washington Ave.
Titusville, FL 32780
321-267-6233
E-mail: rodney@honeycutt.cc

Section 6. Deliverables.

a. The GRANTEE shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The GRANTEE is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the GRANTEE shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the Project when completed and finished in all respects. Upon satisfactory completion of the Project, the GRANTEE will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Contract. Acceptance of the final payment by the GRANTEE shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Contract.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Contract.

Section 7. Progress Reports and Performance Monitoring

a. The GRANTEE shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide details on the progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The GRANTEE shall use the COUNTY'S **Project Progress Report Form, Attachment B**. GRANTEE shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The GRANTEE shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The GRANTEE shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Written Authorization

The GRANTEE authorizes and gives the COUNTY permission to enter the subject property to conduct periodic inspections of the site with reasonable advanced prior notice. In addition, the GRANTEE shall authorize and secure permission for the COUNTY to enter any additional subject property/properties to conduct periodic inspections of the site(s) with reasonable advanced prior notice. This authorization must be obtained prior to beginning work and must contain an indemnification clause that extends to the COUNTY the ability to access the property and/or site where the Project will be constructed. As part of any necessary authorization agreements, the GRANTEE shall include the following language:

> The [property owner] hereby authorizes and permits Brevard County, Florida, its agents, employees, officers, directors, and those under its direction or agency, (the "COUNTY") to access the [property/site] to conduct periodic inspections of the [Project located on the property/site]. The COUNTY shall provide reasonable advanced notice to [the property owner] prior to any inspection or maintenance. As part of this authorization and permission to access the [property/site], [the property owner] shall fully indemnify, defend, and hold the COUNTY harmless from and against any and all claims, suits,

actions, damages, and costs of every name and description, including attorneys' fees, arising from or relating to bodily injury, sickness, disease, death personal injury, damage to property or loss of use of any property or assets resulting therefore, resulting from or arising out of the performance of the services or products for which the COUNTY and/or the GRANTEE is providing to [the property owner].

Section 9. Notifications.

a. *Commencement of Construction*. The GRANTEE shall notify the COUNTY'S Project Manager once construction has started at the site.

b. *Completion of Construction*. The GRANTEE shall notify the COUNTY'S Project Manager once construction has been completed. Any active permits and/or authorizations for the work to be conducted must be closed out in order for the Project to be considered complete.

Section 10. Amount of Funding.

a. Upon completion of the Project, the COUNTY shall pay the GRANTEE the reimbursement amount as stated in **Eligible Tax Funding Cost Share Form**, **Attachment E.** This amount is not to exceed the maximum amount of reimbursement that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY reimbursement amount is not subject to modification based upon price escalation in implementing the Project during the term of this Contract. The GRANTEE shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the GRANTEE must submit the adopted budget for the Project, the amount of all secured grants for the Project, and an estimate of Project costs as defined in Section 10.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The GRANTEE shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Contract. The reimbursement amount shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

Section 11. Payment of Invoices.

a. The GRANTEE shall submit itemized invoices, as per the **Statement of Work, Attachment A**, at the end of the Project for reimbursable expenses by one of the following four methods: (1) mail; (2) hand delivery; (3) national overnight courier to the Brevard County Department of Natural Resource Management, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) By e-mail to terri.breeden@brevardfl.gov.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the GRANTEE's name, address, and authorization to directly deposit payment into the GRANTEE's account; (3) the GRANTEE's invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the GRANTEE's contractor(s); (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

Reimbursement Address
Matthew Circle, LLC
27710 Royal Forest Drive
Westlake, Ohio 44145

c. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the GRANTEE and proof of payment. If necessary for audit purposes, the GRANTEE shall provide additional supporting information as required to document invoices.

e. GRANTEE shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. If any expenses occur between a previous invoice and September 30th, the GRANTEE shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that reimbursement eligible amount achieved during that time interval.

Section 12. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the GRANTEE's final payment to its contractors/vendors for the Project, or October 30th if the GRANTEE's final payment to its contractors/vendors is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The GRANTEE must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 13. Travel Expenses.
If the cost schedule for this Contract includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the GRANTEE.

Section 14. Payments Withheld.
The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Contract. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 15. Multi-Year Contracts.
a. For multi-fiscal year contracts, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Contract, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 16. Indemnification and Insurance.
a. GRANTEE agrees to the fullest extent permitted by law, to indemnify, defend and hold harmless the COUNTY from and against all claims, losses, damages, personal injuries (including but not limited to death), or liability, arising from, out of, or caused by: GRANTEE, its contractors, subcontractors, or agents, negligent or intentional acts, errors, omissions in the operation, maintenance, construction, repair or other activity contemplated in this Contract.

b. The indemnification provided above shall obligate the GRANTEE to defend at its own expense or to provide for such defense, at the option of the COUNTY, as the case may be, of any and all claims of liability and all suits and actions of every name and description that may be brought against the COUNTY which may result under this Contract. In all events, the COUNTY shall be

permitted to choose legal counsel of its sole choice, the fees for which shall be subject to and included with this indemnification provided herein, as long as said fees are not greater than a rate deemed reasonable in Brevard County, Florida.

c. The GRANTEE accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the State of Florida beyond the waiver provided for in Section 768.28, Florida Statutes, as amended. Nothing in this Agreement is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the COUNTY'S sovereign immunity protections. The COUNTY'S liability obligations hereunder shall be subject to the protections of and limitations on damages set forth in Section 768.28, Florida Statutes.

d. GRANTEE shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

e. At its own expense, the GRANTEE shall ensure and at all times maintain and require during the term of this Contract the following minimum levels of insurance including, but not limited to:

1) General Liability Insurance: General Liability Insurance issued by responsible insurance companies as outlined in subsection (c) below, with combined single limits of not less than one million dollars ($1,000,000.00) per occurrence for bodily injury and property damage.
2) Workers' Compensation Coverage: Full and complete Workers' Compensation Coverage, as required by State of Florida law, shall be provided.
3) Insurance Certificates: the GRANTEE shall provide the County with Certificate(s) of Insurance on all policies of insurance and renewals thereof in an industry standard Acord form. Said General Liability Policy shall provide that the COUNTY be included as an additional insured. The COUNTY shall be notified in writing of any reduction, cancellation or substantial change of policy or policies at least thirty (30) days prior to the effective date of said action if replacement insurance meeting the requirements and specifications therein cannot be obtained. All insurance policies shall be issued by responsible companies who are licensed and authorized under the laws of the State of Florida.

Section 17. Funding Contingency; Clawback.

a. This Contract is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations

from other agencies or funding sources. Contracts that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the GRANTEE and this Contract shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Contract, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The GRANTEE agrees that any and all GRANTEE funds budgeted (in the adopted or amended budget) for this Project that are saved by the GRANTEE by virtue of reimbursement or allocation received pursuant to this reimbursement Contract, shall be reallocated and expended by the GRANTEE solely to other GRANTEE, COUNTY or third-party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Contract. Should the GRANTEE choose to not expend such funds in the manner described above, the GRANTEE shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The GRANTEE's obligation under this paragraph shall survive the termination of this Contract.

c. In order to obtain funding, the GRANTEE shall obtain express a Performance and Payment Bond from any contractor or subcontractor that materials used in the Project are defect-free and comply with all Federal, State, and local standards. GRANTEE shall promptly pursue any and all legal remedies available if any defects or failures are identified with respect to the Project. GRANTEE'S failure to diligently prosecute such claim(s) may result in a clawback of COUNTY funds up to and including the full reimbursement amount.

Section 18. Failure to Complete Project.

a. Should the GRANTEE fail to complete the Project, the GRANTEE shall refund to the COUNTY all of the funds provided to the GRANTEE pursuant to this Contract.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the GRANTEE has failed to complete the Project due to circumstances that are beyond the GRANTEE's control, due to termination of this Contract for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the GRANTEE from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the GRANTEE shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional project, this paragraph shall apply in the event the total functional project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional project at the time of execution of this Contract, unless extended by mutual agreement of the parties. Sections 18.a. and b. shall survive the termination or expiration of this Contract.

e. Force Majeure. GRANTEE will not be responsible for failure to carry out any terms of this Contract due to any one of the following circumstances beyond the control of the GRANTEE: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The GRANTEE shall not be subject to any liability for failure to carry out any of the terms of this Contract to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the GRANTEE shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 19. Termination.

a. If the GRANTEE materially fails to fulfill its obligations under this Contract, including any specific milestones established herein, the COUNTY may provide the GRANTEE written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The GRANTEE shall have thirty (30) days following receipt of the notice to cure the breach. If the GRANTEE fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Contract without further notice. In such event, the GRANTEE shall refund to the COUNTY all funds provided to the GRANTEE pursuant to this Contract within thirty (30) days of such termination. The COUNTY may also terminate this Contract upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Contract.

c. This Contract may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, GRANTEE shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the GRANTEE terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 20. Assignment.

The GRANTEE shall not assign this Contract, or any monies due hereunder, without the COUNTY'S prior written consent. The GRANTEE is solely responsible for fulfilling all work elements in any contracts awarded by the GRANTEE and payment of all monies due. No provision of this Contract shall create a contractual relationship between the COUNTY and any of the GRANTEE's contractors or subcontractors.

Section 21. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The GRANTEE shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The GRANTEE shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Contract. In addition, the GRANTEE shall maintain records to demonstrate satisfaction of its obligation under subparagraph 17b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Contract. In the event of an audit, the GRANTEE shall maintain all required records until the audit is completed and all questions are resolved. The GRANTEE will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Contract if, upon audit examination, the COUNTY finds any of the following: (1) the GRANTEE has spent funds for purposes other than as provided for herein; (2) the GRANTEE has failed to perform a continuing obligation of this Contract; (3) the GRANTEE has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the GRANTEE has been advanced or paid unobligated funds; (5) the GRANTEE has been paid funds in excess of the amount the GRANTEE is entitled to receive under the Contract; and/or (6) the GRANTEE has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency reimbursement funding.

Section 22. Dispute Resolution.

The GRANTEE is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Contract by submitting a written statement to the COUNTY'S Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may be subject to judicial review upon completion of the Project.

Section 23. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.

This Contract shall be construed according to the laws of Florida and shall not be construed

more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Contract: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 24. Permits.
The GRANTEE shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The GRANTEE shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Contract and shall not be approved for reimbursement funding.

Section 25. Independent Contractors.
The parties to this Contract, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Contract shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Contract. The GRANTEE is not a contractor of the COUNTY. The COUNTY is providing reimbursement to assist the GRANTEE in accomplishing the Project. The GRANTEE is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The GRANTEE is solely responsible for compliance with all labor, health care, and tax laws pertaining to the GRANTEE, its officers, agents, and employees.

Section 26. Scrutinized Companies.
a. The GRANTEE certifies that its contractors, subcontractors, or agents are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Contract at its sole option if any of GRANTEE'S agents are found to have submitted a false certification; or if any of the GRANTEE'S agents are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Contract.

b. If this Agreement is for more than one million dollars, the GRANTEE certifies that it, its contractors, subcontractors, and agents are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the GRANTEE, its contractors, subcontractors, or agents are found to have submitted a false certification; or if the GRANTEE, its contractors, subcontractors, or agents are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Contract.

c. The GRANTEE agrees to observe the above requirements for applicable contracts and subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 27. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

Section 28. Public Records.
Records of the GRANTEE that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the GRANTEE receives a public records request, the GRANTEE shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Contract for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 29. Royalties and Patents.
The GRANTEE certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The GRANTEE shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 30. Employment Eligibility Verification (E-Verify).
The GRANTEE:
a. shall ensure any and all contractors or agents utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the GRANTEE during the term of the Contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this Contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term; and

c. agrees to maintain records of any contractor's, subcontractor's, or agent's participation and compliance with the provisions of the E-Verify program and to make such records available to

the COUNTY consistent with the terms of the enrollment in the program. This includes maintaining a copy of proof of the contractors', subcontractors', or agents' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 31. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 32. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the COUNTY'S sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Contract to be executed on the day and year written below in its name by its duly authorized representative, and GRANTEE has caused this Contract to be executed on the day and year written below. This Contract may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Contract constitutes the entire Contract of the parties and supersedes all other stipulations, proposals, representations, statements, or understandings, whether written or oral, regarding this subject matter. This Contract cannot be changed by any means other than written amendments referencing this Contract and signed by all parties.

Brevard County, Florida

By: _____

Name: Rita Pritchett, Chair

Brevard County Board of County Commissioners

As Approved by the Board on February 9, 2021

GRANTEE

By: Matija Bilic

Name: Matija Bilic

Title: Property owner of Matthew Circle LLC

Date: 3-24-2021

Attest:

By: _____

Rachel Sadoff, Clerk

Reviewed for legal form and content for Brevard County

3/15/21

Alexander Esseesse, Assistant County Attorney

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: Oak Point Mobile Home Park

PROJECT LOCATION: 240 Matthew Circle, Titusville, FL 32780. The site is located on the Indian River just south of the City of Titusville. Access is from US Highway 1. See map below. Latitude 28.497655 longitude-80.778050

PROJECT BACKGROUND: The Oak Point Mobile Home Park was constructed in 1959 and used Orangeburg Pipe with block manholes with manhole cover lids at the on-site package plant. The treatment system currently discharges into a rapid infiltration basin (RIB) located on the shoreline of the Indian River (there is a 10-foot berm separating the RIB from the IRL). Over time the pipes have decayed and leaked.

PROJECT DESCRIPTION: The Oak Point Mobile Home Park Sanitary Sewerage Project will convert 108 residential properties that are direct waterfront on the Indian River Lagoon (IRL) from an out-of-date package plant system to a modern-day centralized sewer. The proposed project will replace the treatment facility with a sewerage lift station and force main to pump into the City of Titusville central sewer system. The Oak Point Mobile Home Park is not mandated to connect to central sewer, and could instead upgrade their package plant system and still discharge to the RIB that infiltrates nutrient rich water into the lagoon. With the proximity to the lagoon, connection to central sewer is a more economical and beneficial compared to system upgrades.

TASKS and DELIVERABLES:
Task #1: Permitting and Construction Phase Services
Task Description:

1. Coordinate geotechnical work.
2. Complete field surveying for lift station location and force main including US Highway 1 crossing/connection to existing force main.
3. Complete base sheets for design from field survey data.
4. Complete design calculations and report utilizing survey and geotechnical data.
5. Prepare design plans including details for new duplex lift station including valve pad, control panel, remote telemetry tower, standby generator, tie-into existing wastewater collection system and the new force main from the new lift station to the existing City of Titusville force main.
6. Submit and permit with the City of Titusville.
7. Submit and permit with the Florida Department of Environmental Protection (FDEP).
8. Submit and permit with the Florida Department of Transportation (FDOT).
9. Select contractors and bid the project including responding to questions and comments.
10. Review the bids and select a utility contractor for the work.
11. Coordinate a pre-construction meeting(s) as required by the review agencies.
12. Review shop drawings and pay request.

13. Conduct site inspections to verify construction and aid in certifying record drawings.
14. Conduct a pre-final and a final inspection/punch list for the contractor.
15. Close out the project with the City of Titusville, FDEP, FDOT and Brevard County.

Task Deliverable: Copies of project plans, drawings, and permits.

Task #2 Construction of Project
Task Description:

1. Prepare/coordinate shop drawing submittals for the work.
2. Secure performance/payment bond
3. Mobilize and complete initial site preparation.
4. Complete lift station wet well, pump installation, control panel, remote terminal unit, and generator installation.
5. Complete installation of the force main.
6. Coordinate with the city for tie-into the existing force main.
7. Complete testing of all installation.
8. Schedule/coordinate start up.
9. Prepare as-builts and maintenance bonds; submit for final approval.

Task Deliverable: Photos of construction.

Task	Task Title	Task Start Date	Task End Date
1	Design & Permitting	3/2021	8/2021
2	Construction of Project	8/2021	3/2022

Estimated Reimbursement Schedule:
Project reimbursements will be requested monthly.

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 2021) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	$15,500	$13,000	$0	$3,000	$3,000	$3,000	$3,000
2							
Task #	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022
1	$3,000	$3,000	$3,250	$19,250			
2		$37,500	$112,750	$59,750			

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds:

☒ Connection to sewer was not budgeted and would not happen without Save Our Indian River Lagoon Funding.

Oak Point Mobile Home Park

Project Location: 240 Matthew Circle
Titusville, FL 32780



Figure 1 Satellite view of Oak Point Mobile Home Park. The red circle indicates the location of the package plant and rapid infiltration basin.

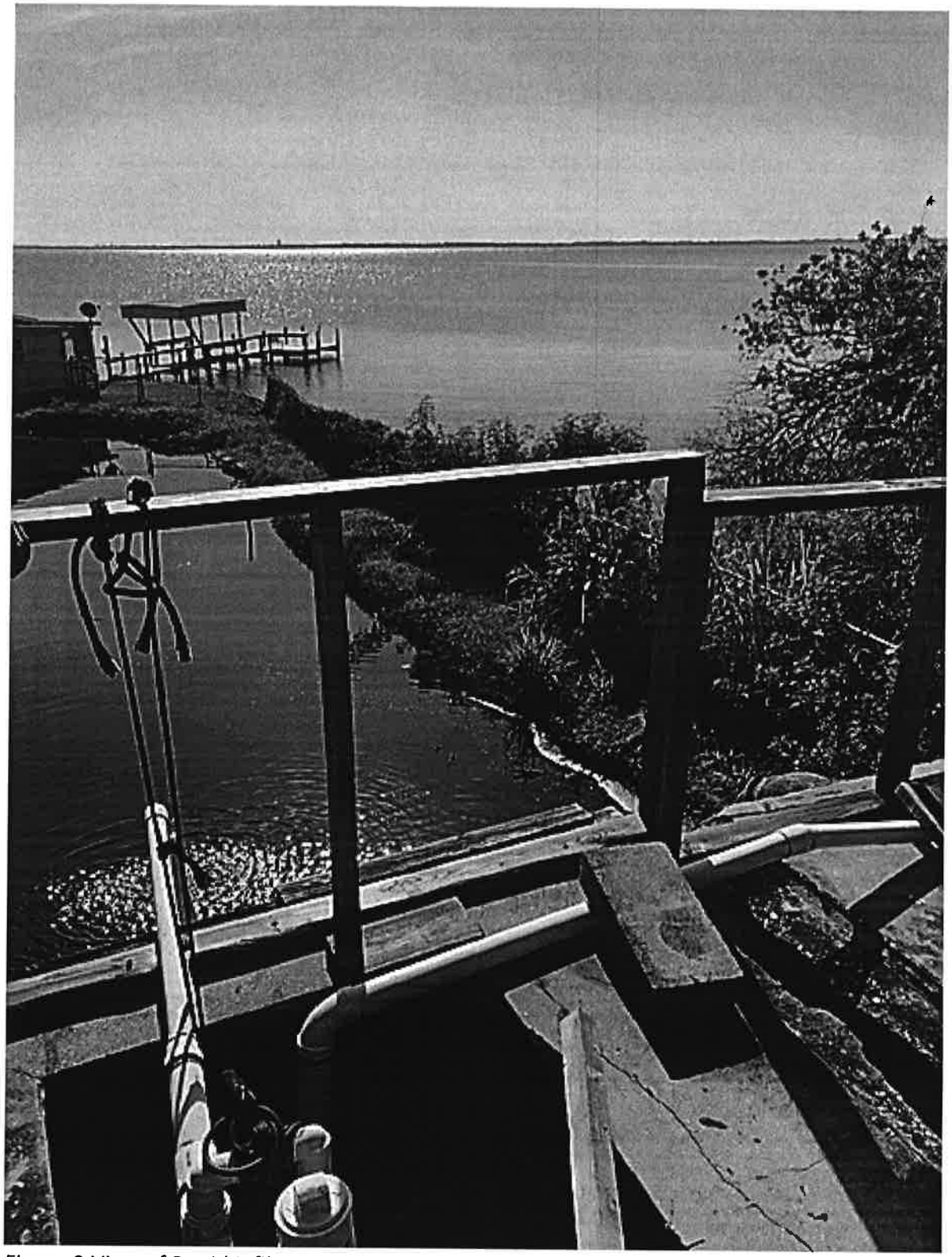


Figure 2 View of Rapid Infiltration Basin and proximity to the Indian River Lagoon at the Oak Point Mobile Home Park.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ Report Number: _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status (Include Overall % Complete)

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Percent Complete	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
FROM:		**TO:**	
PAYMENT REQUEST NO.:			
REMITANCE ADDRESS:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT PAID	CURRENT REIMBURSEMENT AMOUNT REQUESTED
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
						TOTALS:		$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, Print name of Recipient's Grant Manager designated in the Agreement , on behalf of Print name of Recipient , do hereby certify for SOIRL Agreement No. Click here to enter text and Payment Request No. Click here to enter text that:

☒The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☒All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☒All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☒If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☒The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

Recipient's Grant Manager's Signature	Recipient's Fiscal Agent
Print Name	Print Name
Telephone Number	Telephone Number

ATTACHMENT E

Recipient Name:	Matthew Circle, LLC for Oak Point Mobile Home Park
Project Name:	Oak Point Mobile Home Park Package Plant Connection
Agreement Number:	21-192

Estimated Project Cost-Share Table

Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering	$ 37,500.00					$ 37,500.00
3	Construction	$ 587,500.00					$ 587,500.00
4	Monitoring						$ -
	Total	$ 625,000.00	$ -	$ -		$ 279,000.00	$ 625,000.00

Funding Eligibility Calculation

Project Type	
BMP Type (If stormwater)	SW Trad BMP
Pounds of Nitrogen Reduction	186
Eligible Cost Share per Pound	$1,500
Eligible Tax Funding Cost Share	$ 279,000.00
Reduction so Sum of Grants does not exceed Project Cost	$ -
Eligible Lagoon Tax Cost Share, Adjusted	$ 279,000.00
Percent Cost Share to be contributed by the Lagoon Tax	45%

SAVE OUR INDIAN RIVER LAGOON PROJECT REIMBURSEMENT CONTRACT BETWEEN BREVARD COUNTY, FLORIDA AND MATTHEW CIRCLE, LLC

CONTRACT NUMBER: SOIRL 21-192

THIS CONTRACT ("Contract") is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter the "COUNTY"), and the Matthew Circle, LLC, a Florida corporation organized and existing under the laws of the State of Florida whose address is located at: 27710 Royal Forest Drive, Westlake, Ohio 44145 (hereinafter the "GRANTEE").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing reimbursement grant funding to the GRANTEE for the purposes provided for herein serves a public purpose; will help protect the public health, safety and welfare; and will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund.

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions, the Parties agree as follows:

Section 1. Documents.
This Contract incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Contract set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the GRANTEE agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. GRANTEE shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Contract is from the date upon which the last party has dated and executed the same ("Effective Date") until June 1, 2022 ("Completion Date"). GRANTEE shall not commence the Project until any required submittals and permits are received and approved. Time is of the essence for every aspect of this reimbursement Contract, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for six (6) months or longer may only be approved by the County Manager or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for up to six (6) months each may be approved by the County Manager, or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Contract, all provisions of this Contract that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Contract constitutes an offer until authorized, signed and returned to the COUNTY by the GRANTEE. This offer terminates sixty (60) days after receipt by the GRANTEE; provided, however, that the GRANTEE may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Contract, does not begin within one hundred eighty (180) days of the Effective Date, this Contract will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resources
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

PROJECT MANAGER
Rodney Honeycutt
President
Honeycutt & Associates, Inc.
3700 S. Washington Ave.
Titusville, FL 32780
321-267-6233
E-mail: rodney@honeycutt.cc

Section 6. Deliverables.

a. The GRANTEE shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The GRANTEE is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the GRANTEE shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the Project when completed and finished in all respects. Upon satisfactory completion of the Project, the GRANTEE will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Contract. Acceptance of the final payment by the GRANTEE shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Contract.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Contract.

Section 7. Progress Reports and Performance Monitoring

a. The GRANTEE shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide details on the progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The GRANTEE shall use the COUNTY'S **Project Progress Report Form, Attachment B**. GRANTEE shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The GRANTEE shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The GRANTEE shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Written Authorization

The GRANTEE authorizes and gives the COUNTY permission to enter the subject property to conduct periodic inspections of the site with reasonable advanced prior notice. In addition, the GRANTEE shall authorize and secure permission for the COUNTY to enter any additional subject property/properties to conduct periodic inspections of the site(s) with reasonable advanced prior notice. This authorization must be obtained prior to beginning work and must contain an indemnification clause that extends to the COUNTY the ability to access the property and/or site where the Project will be constructed. As part of any necessary authorization agreements, the GRANTEE shall include the following language:

> The [property owner] hereby authorizes and permits Brevard County, Florida, its agents, employees, officers, directors, and those under its direction or agency, (the "COUNTY") to access the [property/site] to conduct periodic inspections of the [Project located on the property/site]. The COUNTY shall provide reasonable advanced notice to [the property owner] prior to any inspection or maintenance. As part of this authorization and permission to access the [property/site], [the property owner] shall fully indemnify, defend, and hold the COUNTY harmless from and against any and all claims, suits,

actions, damages, and costs of every name and description, including attorneys' fees, arising from or relating to bodily injury, sickness, disease, death personal injury, damage to property or loss of use of any property or assets resulting therefore, resulting from or arising out of the performance of the services or products for which the COUNTY and/or the GRANTEE is providing to [the property owner].

Section 9. Notifications.

a. *Commencement of Construction*. The GRANTEE shall notify the COUNTY'S Project Manager once construction has started at the site.

b. *Completion of Construction*. The GRANTEE shall notify the COUNTY'S Project Manager once construction has been completed. Any active permits and/or authorizations for the work to be conducted must be closed out in order for the Project to be considered complete.

Section 10. Amount of Funding.

a. Upon completion of the Project, the COUNTY shall pay the GRANTEE the reimbursement amount as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This amount is not to exceed the maximum amount of reimbursement that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY reimbursement amount is not subject to modification based upon price escalation in implementing the Project during the term of this Contract. The GRANTEE shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the GRANTEE must submit the adopted budget for the Project, the amount of all secured grants for the Project, and an estimate of Project costs as defined in Section 10.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The GRANTEE shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Contract. The reimbursement amount shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

Section 11. Payment of Invoices.

a. The GRANTEE shall submit itemized invoices, as per the **Statement of Work, Attachment A**, at the end of the Project for reimbursable expenses by one of the following four methods: (1) mail; (2) hand delivery; (3) national overnight courier to the Brevard County Department of Natural Resource Management, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) By e-mail to terri.breeden@brevardfl.gov.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the GRANTEE's name, address, and authorization to directly deposit payment into the GRANTEE's account; (3) the GRANTEE's invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the GRANTEE's contractor(s); (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

Reimbursement Address
Matthew Circle, LLC
27710 Royal Forest Drive
Westlake, Ohio 44145

c. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the GRANTEE and proof of payment. If necessary for audit purposes, the GRANTEE shall provide additional supporting information as required to document invoices.

e. GRANTEE shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. If any expenses occur between a previous invoice and September 30th, the GRANTEE shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that reimbursement eligible amount achieved during that time interval.

Section 12. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the GRANTEE's final payment to its contractors/vendors for the Project, or October 30th if the GRANTEE's final payment to its contractors/vendors is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The GRANTEE must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 13. Travel Expenses.
If the cost schedule for this Contract includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the GRANTEE.

Section 14. Payments Withheld.
The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Contract. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 15. Multi-Year Contracts.
a. For multi-fiscal year contracts, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Contract, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 16. Indemnification and Insurance.
a. GRANTEE agrees to the fullest extent permitted by law, to indemnify, defend and hold harmless the COUNTY from and against all claims, losses, damages, personal injuries (including but not limited to death), or liability, arising from, out of, or caused by: GRANTEE, its contractors, subcontractors, or agents, negligent or intentional acts, errors, omissions in the operation, maintenance, construction, repair or other activity contemplated in this Contract.

b. The indemnification provided above shall obligate the GRANTEE to defend at its own expense or to provide for such defense, at the option of the COUNTY, as the case may be, of any and all claims of liability and all suits and actions of every name and description that may be brought against the COUNTY which may result under this Contract. In all events, the COUNTY shall be

permitted to choose legal counsel of its sole choice, the fees for which shall be subject to and included with this indemnification provided herein, as long as said fees are not greater than a rate deemed reasonable in Brevard County, Florida.

c. The GRANTEE accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the State of Florida beyond the waiver provided for in Section 768.28, Florida Statutes, as amended. Nothing in this Agreement is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the COUNTY'S sovereign immunity protections. The COUNTY'S liability obligations hereunder shall be subject to the protections of and limitations on damages set forth in Section 768.28, Florida Statutes.

d. GRANTEE shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

e. At its own expense, the GRANTEE shall ensure and at all times maintain and require during the term of this Contract the following minimum levels of insurance including, but not limited to:

1) General Liability Insurance: General Liability Insurance issued by responsible insurance companies as outlined in subsection (c) below, with combined single limits of not less than one million dollars ($1,000,000.00) per occurrence for bodily injury and property damage.
2) Workers' Compensation Coverage: Full and complete Workers' Compensation Coverage, as required by State of Florida law, shall be provided.
3) Insurance Certificates: the GRANTEE shall provide the County with Certificate(s) of Insurance on all policies of insurance and renewals thereof in an industry standard Acord form. Said General Liability Policy shall provide that the COUNTY be included as an additional insured. The COUNTY shall be notified in writing of any reduction, cancellation or substantial change of policy or policies at least thirty (30) days prior to the effective date of said action if replacement insurance meeting the requirements and specifications therein cannot be obtained. All insurance policies shall be issued by responsible companies who are licensed and authorized under the laws of the State of Florida.

Section 17. Funding Contingency; Clawback.

a. This Contract is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations

from other agencies or funding sources. Contracts that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the GRANTEE and this Contract shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Contract, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The GRANTEE agrees that any and all GRANTEE funds budgeted (in the adopted or amended budget) for this Project that are saved by the GRANTEE by virtue of reimbursement or allocation received pursuant to this reimbursement Contract, shall be reallocated and expended by the GRANTEE solely to other GRANTEE, COUNTY or third-party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Contract. Should the GRANTEE choose to not expend such funds in the manner described above, the GRANTEE shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The GRANTEE's obligation under this paragraph shall survive the termination of this Contract.

c. In order to obtain funding, the GRANTEE shall obtain express a Performance and Payment Bond from any contractor or subcontractor that materials used in the Project are defect-free and comply with all Federal, State, and local standards. GRANTEE shall promptly pursue any and all legal remedies available if any defects or failures are identified with respect to the Project. GRANTEE'S failure to diligently prosecute such claim(s) may result in a clawback of COUNTY funds up to and including the full reimbursement amount.

Section 18. Failure to Complete Project.

a. Should the GRANTEE fail to complete the Project, the GRANTEE shall refund to the COUNTY all of the funds provided to the GRANTEE pursuant to this Contract.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the GRANTEE has failed to complete the Project due to circumstances that are beyond the GRANTEE's control, due to termination of this Contract for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the GRANTEE from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the GRANTEE shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional project, this paragraph shall apply in the event the total functional project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional project at the time of execution of this Contract, unless extended by mutual agreement of the parties. Sections 18.a. and b. shall survive the termination or expiration of this Contract.

e. Force Majeure. GRANTEE will not be responsible for failure to carry out any terms of this Contract due to any one of the following circumstances beyond the control of the GRANTEE: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The GRANTEE shall not be subject to any liability for failure to carry out any of the terms of this Contract to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the GRANTEE shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 19. Termination.

a. If the GRANTEE materially fails to fulfill its obligations under this Contract, including any specific milestones established herein, the COUNTY may provide the GRANTEE written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The GRANTEE shall have thirty (30) days following receipt of the notice to cure the breach. If the GRANTEE fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Contract without further notice. In such event, the GRANTEE shall refund to the COUNTY all funds provided to the GRANTEE pursuant to this Contract within thirty (30) days of such termination. The COUNTY may also terminate this Contract upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Contract.

c. This Contract may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, GRANTEE shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the GRANTEE terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 20. Assignment.

The GRANTEE shall not assign this Contract, or any monies due hereunder, without the COUNTY'S prior written consent. The GRANTEE is solely responsible for fulfilling all work elements in any contracts awarded by the GRANTEE and payment of all monies due. No provision of this Contract shall create a contractual relationship between the COUNTY and any of the GRANTEE's contractors or subcontractors.

Section 21. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The GRANTEE shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The GRANTEE shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Contract. In addition, the GRANTEE shall maintain records to demonstrate satisfaction of its obligation under subparagraph 17b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Contract. In the event of an audit, the GRANTEE shall maintain all required records until the audit is completed and all questions are resolved. The GRANTEE will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Contract if, upon audit examination, the COUNTY finds any of the following: (1) the GRANTEE has spent funds for purposes other than as provided for herein; (2) the GRANTEE has failed to perform a continuing obligation of this Contract; (3) the GRANTEE has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the GRANTEE has been advanced or paid unobligated funds; (5) the GRANTEE has been paid funds in excess of the amount the GRANTEE is entitled to receive under the Contract; and/or (6) the GRANTEE has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency reimbursement funding.

Section 22. Dispute Resolution.

The GRANTEE is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Contract by submitting a written statement to the COUNTY'S Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may be subject to judicial review upon completion of the Project.

Section 23. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.

This Contract shall be construed according to the laws of Florida and shall not be construed

more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Contract: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 24. Permits.
The GRANTEE shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. The GRANTEE shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Contract and shall not be approved for reimbursement funding.

Section 25. Independent Contractors.
The parties to this Contract, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Contract shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Contract. The GRANTEE is not a contractor of the COUNTY. The COUNTY is providing reimbursement to assist the GRANTEE in accomplishing the Project. The GRANTEE is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The GRANTEE is solely responsible for compliance with all labor, health care, and tax laws pertaining to the GRANTEE, its officers, agents, and employees.

Section 26. Scrutinized Companies.
a. The GRANTEE certifies that its contractors, subcontractors, or agents are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Contract at its sole option if any of GRANTEE'S agents are found to have submitted a false certification; or if any of the GRANTEE'S agents are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Contract.

b. If this Agreement is for more than one million dollars, the GRANTEE certifies that it, its contractors, subcontractors, and agents are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the GRANTEE, its contractors, subcontractors, or agents are found to have submitted a false certification; or if the GRANTEE, its contractors, subcontractors, or agents are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Contract.

c. The GRANTEE agrees to observe the above requirements for applicable contracts and subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 27. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

Section 28. Public Records.
Records of the GRANTEE that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the GRANTEE receives a public records request, the GRANTEE shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Contract for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 29. Royalties and Patents.
The GRANTEE certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The GRANTEE shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 30. Employment Eligibility Verification (E-Verify).
The GRANTEE:
a. shall ensure any and all contractors or agents utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the GRANTEE during the term of the Contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this Contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term; and

c. agrees to maintain records of any contractor's, subcontractor's, or agent's participation and compliance with the provisions of the E-Verify program and to make such records available to

the COUNTY consistent with the terms of the enrollment in the program. This includes maintaining a copy of proof of the contractors', subcontractors', or agents' enrollment in the E-Verify Program.

d. Compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach.

Section 31. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 32. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the COUNTY'S sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Contract to be executed on the day and year written below in its name by its duly authorized representative, and GRANTEE has caused this Contract to be executed on the day and year written below. This Contract may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Contract constitutes the entire Contract of the parties and supersedes all other stipulations, proposals, representations, statements, or understandings, whether written or oral, regarding this subject matter. This Contract cannot be changed by any means other than written amendments referencing this Contract and signed by all parties.

Brevard County, Florida

By: Rita Pritchett

Name: Rita Pritchett, Chair

Brevard County Board of County Commissioners

As Approved by the Board on February 9, 2021

GRANTEE

By: Matija Bilic

Name: Matija Bilic

Title: Property owner of Matthew Circle LLC

Date: 3-29-2021

Attest:

By: Rachel Sadoff

Rachel Sadoff, Clerk

Reviewed for legal form and content for Brevard County

Alexander Esseesse 3/15/21

Alexander Esseesse, Assistant County Attorney

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: Oak Point Mobile Home Park

PROJECT LOCATION: 240 Matthew Circle, Titusville, FL 32780. The site is located on the Indian River just south of the City of Titusville. Access is from US Highway 1. See map below. Latitude 28.497655 longitude-80.778050

PROJECT BACKGROUND: The Oak Point Mobile Home Park was constructed in 1959 and used Orangeburg Pipe with block manholes with manhole cover lids at the on-site package plant. The treatment system currently discharges into a rapid infiltration basin (RIB) located on the shoreline of the Indian River (there is a 10-foot berm separating the RIB from the IRL). Over time the pipes have decayed and leaked.

PROJECT DESCRIPTION: The Oak Point Mobile Home Park Sanitary Sewerage Project will convert 108 residential properties that are direct waterfront on the Indian River Lagoon (IRL) from an out-of-date package plant system to a modern-day centralized sewer. The proposed project will replace the treatment facility with a sewerage lift station and force main to pump into the City of Titusville central sewer system. The Oak Point Mobile Home Park is not mandated to connect to central sewer, and could instead upgrade their package plant system and still discharge to the RIB that infiltrates nutrient rich water into the lagoon. With the proximity to the lagoon, connection to central sewer is a more economical and beneficial compared to system upgrades.

TASKS and DELIVERABLES:
Task #1: Permitting and Construction Phase Services
Task Description:

1. Coordinate geotechnical work.
2. Complete field surveying for lift station location and force main including US Highway 1 crossing/connection to existing force main.
3. Complete base sheets for design from field survey data.
4. Complete design calculations and report utilizing survey and geotechnical data.
5. Prepare design plans including details for new duplex lift station including valve pad, control panel, remote telemetry tower, standby generator, tie-into existing wastewater collection system and the new force main from the new lift station to the existing City of Titusville force main.
6. Submit and permit with the City of Titusville.
7. Submit and permit with the Florida Department of Environmental Protection (FDEP).
8. Submit and permit with the Florida Department of Transportation (FDOT).
9. Select contractors and bid the project including responding to questions and comments.
10. Review the bids and select a utility contractor for the work.
11. Coordinate a pre-construction meeting(s) as required by the review agencies.
12. Review shop drawings and pay request.

13. Conduct site inspections to verify construction and aid in certifying record drawings.
14. Conduct a pre-final and a final inspection/punch list for the contractor.
15. Close out the project with the City of Titusville, FDEP, FDOT and Brevard County.

Task Deliverable: Copies of project plans, drawings, and permits.

Task #2 Construction of Project
Task Description:

1. Prepare/coordinate shop drawing submittals for the work.
2. Secure performance/payment bond
3. Mobilize and complete initial site preparation.
4. Complete lift station wet well, pump installation, control panel, remote terminal unit, and generator installation.
5. Complete installation of the force main.
6. Coordinate with the city for tie-into the existing force main.
7. Complete testing of all installation.
8. Schedule/coordinate start up.
9. Prepare as-builts and maintenance bonds; submit for final approval.

Task Deliverable: Photos of construction.

Task	Task Title	Task Start Date	Task End Date
1	Design & Permitting	3/2021	8/2021
2	Construction of Project	8/2021	3/2022

Estimated Reimbursement Schedule:
Project reimbursements will be requested monthly.

Please provide a schedule of estimated amounts in the quarter (1st, 2nd, 3rd, 4th quarter 2021) for each reimbursement that will be requested. Note that quarters go by the County fiscal year so 1st quarter is Oct.-Dec., 2nd quarter is Jan.-Mar., 3rd quarter is Apr.-Jun., 4th quarter is Jul.-Aug.) You do not need to include quarters that reimbursement is not requested. If project goes beyond the two years provided in the table below you may insert another table.

Task #	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	$15,500	$13,000	$0	$3,000	$3,000	$3,000	$3,000
2							
Task #	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022
1	$3,000	$3,000	$3,250	$19,250			
2		$37,500	$112,750	$59,750			

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds:

☒ Connection to sewer was not budgeted and would not happen without Save Our Indian River Lagoon Funding.

Oak Point Mobile Home Park

Project Location: 240 Matthew Circle
Titusville, FL 32780



Figure 1 Satellite view of Oak Point Mobile Home Park. The red circle indicates the location of the package plant and rapid infiltration basin.

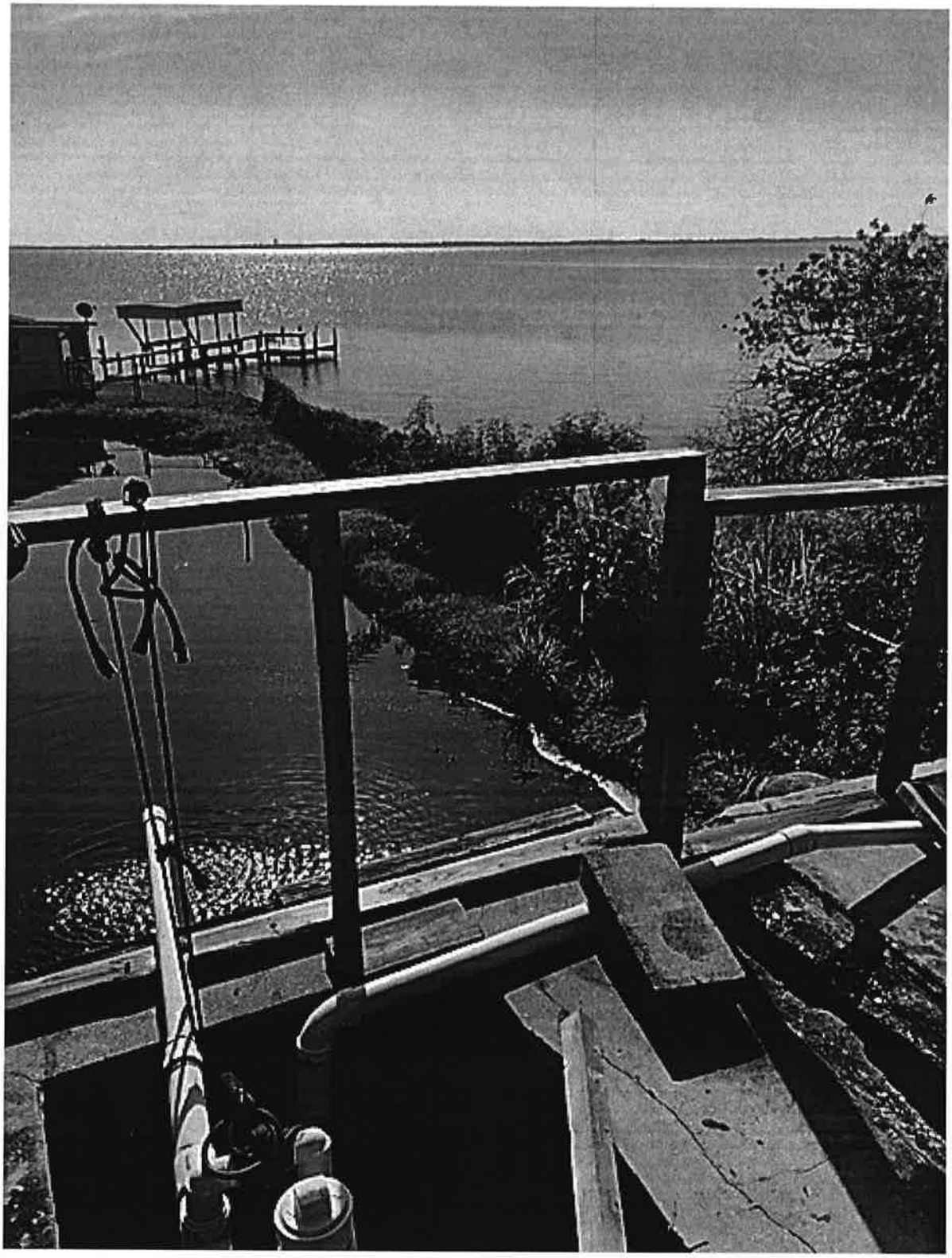


Figure 2 View of Rapid Infiltration Basin and proximity to the Indian River Lagoon at the Oak Point Mobile Home Park.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ Report Number: _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:	
Expended To-date:	
Contract Amount:	

Expended This Period:	
Percent Budget Expended:	
Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status (Include Overall % Complete)

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Percent Complete	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
FROM:		**TO:**	
PAYMENT REQUEST NO.:			
REMITANCE ADDRESS:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT PAID	CURRENT REIMBURSEMENT AMOUNT REQUESTED
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
						TOTALS:		**$ -**	**$ -**

Attachment D

Recipient's Certification of Payment Request

I, Print name of Recipient's Grant Manager designated in the Agreement , on behalf of Print name of Recipient , do hereby certify for SOIRL Agreement No. Click here to enter text and Payment Request No. Click here to enter text that:

☒The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☒All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☒All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☒If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☒The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

Recipient's Grant Manager's Signature	Recipient's Fiscal Agent
Print Name	Print Name
Telephone Number	Telephone Number

ATTACHMENT E

Recipient Name:	Matthew Circle, LLC for Oak Point Mobile Home Park
Project Name:	Oak Point Mobile Home Park Package Plant Connection
Agreement Number:	21-192

Estimated Project Cost-Share Table

Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering	$ 37,500.00					$ 37,500.00
3	Construction	$ 587,500.00					$ 587,500.00
4	Monitoring						$ -
	Total	$ 625,000.00	$ -	$ -		$ 279,000.00	$ 625,000.00

Funding Eligibility Calculation

Project Type	
BMP Type (If stormwater)	SW Trad BMP
Pounds of Nitrogen Reduction	186
Eligible Cost Share per Pound	$1,500
Eligible Tax Funding Cost Share	$ 279,000.00
Reduction so Sum of Grants does not exceed Project Cost	$ -
Eligible Lagoon Tax Cost Share, Adjusted	$ 279,000.00
Percent Cost Share to be contributed by the Lagoon Tax	45%

AMENDMENT 1 TO THE SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND MATTHEW CIRCLE, LLC

AGREEMENT NUMBER: SOIRL 21-192

THIS FIRST AMENDMENT is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and Matthew Circle, LLC, a Florida corporation organized and existing under the laws of the State of Florida (hereinafter "GRANTEE").

WHEREAS, the parties have previously entered into that certain Save Our Indian River Lagoon Project Cost-Share Funding Interlocal Agreement No. SOIRL 21-192 on March 29, 2021 ("Agreement"), which is incorporated herein by this reference, for the mutual benefit of Matthew Circle, LLC, a Florida limited liability company, and Brevard County; and

WHEREAS, the COUNTY has obtained additional funds to support the Oak Point Mobile Home Park Project from St. Johns River Water Management District in the amount of $350,000.00 through the Indian River Lagoon Water Quality Improvement Projects Grants.

NOW, THEREFORE, in consideration of the promises and mutual covenants herein contained, the parties hereby agree as follows:

1. Section 17. Funding Contingency; Clawback. is hereby amended to include two new subsections, Subsections 17.d. and 17.e., to read as follows:

d. The level of Save Our Indian River Lagoon funding is independent of the Cost-Share Agreement for the Oak Point Mobile Home Park Project, identified as Contract #36535. No impact to said funding will occur if St. Johns River Water Management District terminates or otherwise modifies Contract #36535 for budgetary reasons.

e. Notwithstanding anything herein to the contrary, should GRANTEE fail to complete the Project due to the early termination of Contract #36535 for lack of funding or changes in budgets, COUNTY shall make a good faith determination that such unforeseen changes make the Project economically unfeasible, and GRANTEE will not be required to refund any funds already expended under this Contract. GRANTEE shall attempt in good faith to secure alternative funding sources to complete the Project in the case that Contract #36535 is terminated. If the Project is not to be completed for reasons outside the GRANTEE's control within thirty (30) days of the Completion Date, COUNTY and GRANTEE shall in good faith discuss and execute a mutually-accepted revision to the Project timeline or scope for completion of the Project.

2. As a result of the additional funds made available through the Cost-Share Agreement between St. Johns River Water Management District and Brevard County, "Attachment A – Statement of Work" of the Agreement is hereby amended as follows:

Task #	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	$15,500	$13,000	$0	$3,000	$3,000	$3,000	$3,000
2							$102,500
Task #	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022
1	$3,000	$3,000	$3,250	$19,250			
2	$152,500	~~$37,500~~ $132,500	$112,750	$59,750			

3. As a result of the additional funds made available through the Cost-Share Agreement between St. Management District and Brevard County, "Attachment E – Eligible Funding Cost Share Form" of tl amended as follows:

Attachment E

Recipient Name:		Matthew Circle, LLC for Oak Point Mobile Home Park
Project Name:		Oak Point Mobile Home Park Package Plant Connection
Agreement Number:		21-192

Estimated Project Cost-Share Table						
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoo Cost Share, A
1	Permitting					
2	Engineering	$37,500.00				$37,500.00
3	Construction	~~$587,500.00~~ $591,500.00			$350,000.00	$241,500.00
4	Monitoring					
	Total	~~$625,000.00~~ $629,000.00	$ -	$-	$350,000.00	~~$279,000.00~~ $629,000.00

Funding Eligibility Calculation	
Project Type	
BMP Type (If stormwater)	
Pounds of Nitrogen Reduction	
Eligible Cost Share per Pound	
Eligible Tax Funding Cost Share	
Reduction so Sum of Grants does not exceed Project Cost	
Eligible Lagoon Tax Cost Share, Adjusted	
Percent Cost Share to be contributed by the Lagoon Tax	

4. The Cost-Share Agreement for the Oak Point Mobile Home Park Project between the St. Johns River Water Management District and Brevard County, as may be amended, is incorporated herein by this reference and attached hereto as "Attachment F – Cost-Share Agreement Between the St. Johns River Water Management District and Brevard County Contract #36535."

5. All terms and conditions of the Agreement, incorporated herein by this reference, not inconsistent with the provisions of this First Amendment, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the date last written below.

BREVARD COUNTY, FLORIDA

By: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

GRANTEE

By: Matija Bilic

Name: Matija Bilic

Title: _____

Date: 6-11-2021

Reviewed for legal form and content for Brevard County

_____ 6/9/21

Alexander Esseesse, Assistant County Attorney

ATTEST

By: _____

Rachel M. Sadoff, Clerk

Date: 6/23/2021

Attachment F

COST-SHARE AGREEMENT
BETWEEN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
AND BREVARD COUNTY

THIS AGREEMENT ("Agreement") is entered into by and between the GOVERNING BOARD of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (the "District"), whose address is 4049 Reid Street, Palatka, Florida 32177, and BREVARD COUNTY, FLORIDA, a political subdivision of the State of Florida ("Recipient"), 2725 Judge Fran Jamieson Way, Building A, Room 219, Viera, Florida 32940. All references to the parties hereto include the parties, their officers, employees, agents, successors, and assigns.

RECITALS

The waters of the state of Florida are among its basic resources, and it has been declared to be the policy of the Legislature to promote the conservation, development, and proper utilization of surface and ground water. Pursuant to chapter 373, Fla. Stat., the District is responsible for the management of the water resources within its geographical area.

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

The District has determined that providing cost-share funding to Recipient for the purposes provided for herein will benefit the water resources and one or more of the District's missions and initiatives.

At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding. The parties have agreed to jointly fund the following project in accordance with the funding formula further described in the Statement of Work, Attachment A (hereafter the "Project"):

Oak Point Park Project

In consideration of the above recitals, and the funding assistance described below, Recipient agrees to perform and complete the activities provided for in the Statement of Work, Attachment A. Recipient shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein. This Agreement consists of all of the following documents: (1) Agreement, (2) Attachment A — Statement of Work; and (3) all other attachments, if any. The parties hereby agree to the following terms and conditions.

1. **TERM; WITHDRAWAL OF OFFER**

(a) The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until December 31, 2021 ("Completion Date"). Recipient shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions. Any request for an extension of time beyond the Completion Date must be made before October 1, 2021. Timely requests to extend, for longer than six months, the Completion Date of the Agreement for projects whose District contribution exceeds $100,000 may only be approved by the District's Governing

Board. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date survive termination or expiration hereof (e.g., delivery of a final report, will remain in full force and effect after the Completion Date as necessary to effect performance).

(b) This Agreement constitutes an offer until authorized, signed and returned to the District by Recipient. This offer terminates 45 days after receipt by Recipient; provided, however, that Recipient may submit a written request for extension of this time limit to the District's Project Manager, stating the reason(s) therefor. Request for extension of time after the 45 days will be denied. The Project Manager shall notify Recipient in writing if an extension is granted or denied. If granted, this Agreement shall be deemed modified accordingly without any further action by the parties.

2. **DELIVERABLES**. Recipient shall fully implement the Project, as described in the Statement of Work, Attachment A. Recipient is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, Recipient shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project. The District's Project Manager shall make a final acceptance inspection of the Project when completed and finished in all respects. Upon satisfactory completion of the Project, the District will provide Recipient a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by Recipient shall constitute a release in full of all claims against the District arising from or by reason of this Agreement.

3. **OWNERSHIP OF DELIVERABLES.** Unless otherwise provided herein, the District does not assert an ownership interest in any of the deliverables under this Agreement.

4. **AMOUNT OF FUNDING**

(a) For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total Project cost, but in no event shall the District cost-share exceed $350,000. The District cost-share is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. Recipient shall be responsible for payment of all costs necessary to ensure completion of the Project. Recipient shall notify the District's Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement.

(b) "Construction cost" is defined to include actual costs of constructing Project facilities, including construction management. Land acquisition, engineering design, permitting, and solicitation costs are excluded. Construction cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work. Costs that are excluded will not be credited toward Recipient's cost-share.

(c) Work performed or expenses incurred after the Completion Date are not eligible for Cost-Share reimbursement.

5. **PAYMENT OF INVOICES**

(a) Recipient shall submit itemized invoices as per the Statement of Work, Attachment A for reimbursable expenses by one of the following two methods: (1) by email to acctpay@sjrwmd.com (preferred) or (2) by mail to the St. Johns River Water Management District, Finance Director, 4049 Reid Street, Palatka, Florida 32177-2571. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to Recipient and proof of payment. Recipient shall be

reimbursed for 100% of approved cost or the not-to-exceed sum of $350,000, whichever is less. The District shall not withhold any retainage from this reimbursement. District reimbursement is subject to annual budgetary limitation, if applicable, as provided in subsection (g). If necessary for audit purposes, Recipient shall provide additional supporting information as required to document invoices.

(b) **End of District Fiscal Year Reporting**. The District's fiscal year ends on September 30. Irrespective of the invoicing frequency, the District is required to account for all encumbered funds at that time. When authorized under the Agreement, submittal of an invoice as of September 30 satisfies this requirement. The invoice shall be submitted no later than October 30. If the Agreement does not authorize submittal of an invoice as of September 30, Recipient shall submit, prior to October 30, a description of the additional work on the Project completed between the last invoice and September 30, and an estimate of the additional amount due as of September 30 for such Work. If there have been no prior invoices, Recipient shall submit a description of the work completed on the Project through September 30 and a statement estimating the dollar value of that work as of September 30.

(c) **Final Invoice**. The final invoice must be submitted no later than 45 days after the Completion Date; provided, however, that when the Completion Date corresponds with the end of the District's fiscal year (September 30), the final invoice must be submitted no later than 30 days after the Completion Date. **Final invoices that are submitted after the requisite date shall be subject to a penalty of ten percent of the invoice. This penalty may be waived by the District, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. Recipient must request approval for delayed submittal of the final invoice not later than ten days prior to the due date and state the basis for the delay.**

(d) All invoices shall include the following information: (1) District contract number; (2) Recipient's name, address, and authorization to directly deposit payment into Recipient's account (if Recipient has not yet provided the District with a completed Direct Deposit Authorization form); (3) Recipient's invoice number and date of invoice; (4) District Project Manager; (5) Recipient's Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the Statement of Work), in addition, see Attachment D, "CONTRACT PAYMENT REQUIREMENTS FOR STATE FUNDED COST REIMBURSEMENT CONTRACTS," (7) Progress Report (if required); (8) Diversity Report (if otherwise required herein). Invoices that do not correspond with this paragraph shall be returned without action within 20 business days of receipt, stating the basis for rejection. Payments shall be made within 45 days of receipt of an approved invoice.

(e) **Travel expenses.** If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the project budget and are not otherwise compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by Recipient and are only compensable when specifically approved by the District as an authorized District traveler. In such instance, travel expenses must be submitted on District or State of Florida travel forms and shall be paid pursuant to District Administrative Directive 2000-02.

(f) **Payments withheld.** The District may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the District from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; (3) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

(g) **Annual budgetary limitation.** For multi-fiscal year agreements, the District must budget the amount of funds that will be expended during each fiscal year as accurately as possible. The Statement of Work, Attachment A, includes the parties' current schedule for completion of the Work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Annual Spending Plan"). If Recipient anticipates that expenditures will exceed the budgeted amount during any fiscal year, Recipient shall promptly notify the District's Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the Work without increasing the Total Compensation. The last date for the District to receive this request is August 1 of the then-current fiscal year. The District may in its sole discretion prepare a District Supplemental Instruction Form incorporating the revised work schedule and Annual Spending Plan during the then-current fiscal year or subsequent fiscal year(s).

6. **LIABILITY AND INSURANCE.** Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party, its officers, employees and agents. Recipient accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the state of Florida beyond the waiver provided for in §768.28, Fla. Stat., as amended. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

7. **FUNDING CONTINGENCY.** This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the District's Governing Board; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the District's Governing Board for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the District shall so notify Recipient and this Agreement shall be deemed terminated for convenience five days after receipt of such notice, or within such additional time as the District may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

8. **PROJECT MANAGEMENT**

(a) The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three business days' prior written notice to the other party. Written notice of change of address shall be provided within five business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) email. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date transmitted and received.

DISTRICT
Derek Busby, Project Manager
St. Johns River Water Management District
4049 Reid Street
Palatka, Florida 32177-2571
Phone: 386-329-4459
Email: dbusby@sjrwmd.com

RECIPIENT
Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A-219
Viera, Florida 32940-6605
Phone: 321-350-8407
Email: terri.breeden@brevardfl.gov

(b) The District's Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating District policies and decisions regarding all matters pertinent to performance of the Project. The District's Project Manager may issue a District Supplemental Instruction (DSI) form, Attachment C, to authorize minor adjustments to the Project that are consistent with the purpose of the Project. Both parties must sign the DSI. A DSI may not be used to change the District cost-share or percentage, quantity, quality or the Completion Date of the Project, or to change or modify the Agreement.

9. **PROGRESS REPORTS AND PERFORMANCE MONITORING.**

(a) **Progress Reports.** Recipient shall provide to the District quarterly Project update/status reports as provided in the Statement of Work. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule. Recipient shall use the District's Project Progress Report form, Attachment B. Recipient shall submit the Project Progress Reports to the District's Project Manager and District's Budget Manager within 30 days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

(b) **Performance Monitoring.** For as long as the Project is operational, the District shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. Recipient shall make available to the District any data that is requested pertaining to performance of the Project.

10. **WAIVER.** The delay or failure by the District to exercise or enforce any of its rights under this Contract shall not constitute or be deemed a waiver of the District's right thereafter to enforce those rights, nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or the exercise of any other right.

11. **FAILURE TO COMPLETE PROJECT**

(a) Should Recipient fail to complete the Project, Recipient shall refund to the District all of the funds provided to Recipient pursuant to this Agreement. However, the District, in its sole judgment and discretion, may determine that Recipient has failed to complete the Project due to circumstances that are beyond Recipient's control, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the District may excuse Recipient from the obligation to return funds provided hereunder. If the Project has not been completed within 30 days after the Completion Date, Recipient shall provide the District with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within 90 days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

(b) In the event the Project constitutes a portion of the total functional project, this paragraph shall apply in the event the total functional project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 11(a) and 11(b) shall survive the termination or expiration of this Agreement.

12. **TERMINATION.** If Recipient materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the District may provide Recipient written notice of the deficiency by forwarding a Notice to Cure, citing the specific nature of the breach. Recipient shall have 30 days following receipt of the notice to cure the breach. If Recipient fails to cure the

breach within the 30-day period, the District shall issue a Termination for Default Notice terminating this Agreement without further notice. In such event, Recipient shall refund to the District all funds provided to Recipient pursuant to this Agreement within 30 days of such termination. The District may also terminate this Agreement upon ten days' written notice in the event of any material misrepresentations in the Project Proposal.

Delay or failure by the District to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the District's rights or remedies for any subsequent breach or continued breach of this Agreement.

ADDITIONAL PROVISIONS (Alphabetical)

13. **ASSIGNMENT.** Recipient shall not assign this Agreement, or any monies due hereunder, without the District's prior written consent. Recipient is solely responsible for fulfilling all work elements in any contracts awarded by Recipient and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the District and any of Recipient's contractors or subcontractors.

14. **AUDIT; ACCESS TO RECORDS; REPAYMENT OF FUNDS**

    (a) **Maintenance of Records**. Recipient shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. Recipient shall keep the records of receipts and expenditures, copies of all reports submitted to the District, and copies of all invoices and supporting documentation for at least five years after expiration of this Agreement. In accordance with generally accepted governmental auditing standards, the District shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, Recipient shall maintain all required records until the audit is completed and all questions are resolved. Recipient will provide proper facilities for access to and inspection of all required records.

    (b) **Repayment of Funds.** District funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the District finds any of the following: (1) Recipient has spent funds for purposes other than as provided for herein, including but not limited to construction materials not used in the Project; (2) Recipient has failed to perform a continuing obligation of this Agreement; (3) Recipient has received duplicate funds from the District for the same purpose; (4) Recipient has been advanced or paid unobligated funds; (5) Recipient has been paid funds in excess of the amount Recipient is entitled to receive under the Agreement; and/or (6) Recipient has received more than 100% contributions through cumulative public agency cost-share funding.

15. **CIVIL RIGHTS.** Pursuant to chapter 760, Fla. Stat., Recipient shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, age, handicap, or marital status.

16. **COOPERATION WITH THE INSPECTOR GENERAL, PURSUANT TO §20.055(5) FLA. STAT.** Recipient and any subcontractors understand and will comply with their duty, pursuant to §20.055(5), Fla. Stat., to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

17. **DISPUTE RESOLUTION.** Recipient is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the District's Project Manager no later than ten business days after the precipitating

event. If not resolved by the Project Manager, the Project Manager shall forward the request to the District's Office of General Counsel, which shall issue a written decision within ten business days of receipt. This determination shall constitute final action of the District and shall then be subject to judicial review upon completion of the Project.

18. **DIVERSITY REPORTING.** The District is committed to the opportunity for diversity in the performance of all cost-sharing agreements, and encourages Recipient to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as contractors. The District will assist Recipient by sharing information on W/MBEs. Recipient shall provide with each invoice a report describing: (1) the company names for all W/MBEs; (2) the type of minority, and (3) the amounts spent with each during the invoicing period. The report will also denote if there were no W/MBE expenditures.

19. **FLORIDA SINGLE AUDIT ACT**

(a) **Applicability.** The Florida Single Audit Act (FSAA), §215.97, Fla. Stat., applies to all sub-recipients of state financial assistance, as defined in §215.97(1)(q), Fla. Stat., awarded by the District through a project or program that is funded, in whole or in part, through state financial assistance to the District. In the event Recipient expends a total amount of state financial assistance equal to or in excess of $750,000 in any fiscal year of such Recipient, Recipient must have a state single or project-specific audit for such fiscal year in accordance with §215.97, Fla. Stat.; applicable rules of the Department of Financial Services; and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. In determining the state financial assistance expended in its fiscal year, Recipient shall consider all sources of state financial assistance, including state financial assistance received from the District, other state agencies, and other non-state entities. State financial assistance does not include Federal direct or pass-through awards and resources received by a non-state entity for Federal program matching requirements. Recipient is solely responsible for complying with the FSAA.

If Recipient expends less than $750,000 in state financial assistance in its fiscal year, an audit conducted in accordance with the provisions of §215.97, Fla. Stat., is not required. In such event, should Recipient elect to have an audit conducted in accordance with §215.97, Fla. Stat., the cost of the audit must be paid from the non-state entity's resources (i.e., Recipient's resources obtained from other than State entities).

(b) Program Information. This Agreement involves the disbursement of state funding by the Florida Department of Environmental Protection (FDEP). Funding is provided under the State of Florida, Statewide Water Quality Restoration Projects, in the amount of $350,000. The Florida Catalog of State Financial Assistance (CSFA) number for this program is CSFA No. 39.039.

(c) Additional Information. For information regarding the state program under the above CSFA number, Recipient should access the Florida Single Audit Act website located at https://apps.fldfs.com/fsaa/catalog.aspx for assistance. The following websites may be accessed for additional information: Legislature's Website at http://www.leg.state.fl.us/, State of Florida's website at http://myflorida.com, District of Financial Services' website at http://www.fldfs.com/ and the Auditor General's Website at http://www.myflorida.com/audgen/.

(d) Allowable Costs. Recipient may only charge allowable costs to this Agreement, as otherwise provided herein. Any balance of unobligated cash that have been advanced or paid that is not authorized to be retained for direct program costs in a subsequent period must be returned to the District.

(e) **Audit Requirements.** Recipient shall ensure that the audit complies with the requirements of §215.97(7), Fla. Stat. This includes submission of a financial reporting package as defined by §215.97(2), Fla. Stat., and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. Recipient shall comply with the program requirements described in the Florida Catalog of State Financial Assistance (CSFA) [https://apps.fldfs.com/fsaa/catalog.aspx]. The services/purposes for which the funds are to be used are included in the Statement of Work.

(f) **Financial Reporting.** Recipient shall provide the District with a copy of any reports, management letters, or other information required to be submitted in accordance with chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, as applicable, no more than 20 days after its preparation. Recipient shall indicate the date the reporting package was delivered to Recipient in correspondence accompanying the reporting package. This information shall be directed to: St. Johns River Water Management District, Finance Director, Office of Financial Services, 4049 Reid Street, Palatka, FL 32177. A copy of the report shall also be provided to the Auditor General's Office at the following address: State of Florida Auditor General, Room 401, Claude Pepper Building, 111 West Madison Street, Tallahassee, Florida 32399-1450.

(g) **Monitoring.** In addition to reviews of audits conducted in accordance with §215.97, Fla. Stat., as revised, monitoring procedures may include, but not be limited to, on-site visits by District staff, limited scope audits, and/or other procedures. Recipient agrees to comply and cooperate with any monitoring procedures/processes deemed appropriate by the District. In the event the District determines that a limited scope audit of Recipient is appropriate, Recipient agrees to comply with any additional instructions provided by the District to Recipient regarding such audit. Recipient agrees to comply and cooperate with any inspections, reviews, investigations, or audits deemed necessary by the District's Inspector General or the state Chief Financial Officer or Auditor General.

(h) **Examination of Records.** In addition to the District's audit rights otherwise provided for herein, Recipient shall permit the District or its designated agent, the state awarding agency, the Department of Financial Services, the state's Chief Financial Officer and the state's Auditor General to examine Recipient's financial and non-financial records to the extent necessary to monitor Recipient's use of state financial assistance and to determine whether timely and appropriate corrective actions have been taken with respect to audit findings and recommendations, which may include onsite visits and limited scope audits.

(i) **Records Retention.** Notwithstanding any other provision of this Agreement to the contrary, Recipient shall retain sufficient records demonstrating its compliance with the terms of this Agreement for a period of five years from the date the audit report is issued, and shall allow the District, or its designee, state Chief Financial Officer, or Auditor General access to such records upon request. Recipient shall ensure that audit working papers are made available for such access for a period of three years from the date the audit report is issued, unless extended in writing by the District.

20. **GOVERNING LAW, VENUE, ATTORNEY'S FEES, WAIVER OF RIGHT TO JURY TRIAL.** This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) venue for any state or federal legal proceedings shall be in Orange County; (2) each party shall bear its own attorney's fees, including appeals; (3) for civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

21. **INDEPENDENT CONTRACTORS.** The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. Recipient is not a contractor of the District. The District is providing cost-share funding as a cooperating governmental entity to assist Recipient in accomplishing the Project. Recipient is solely responsible for accomplishing the Project and directs the means and methods by which the Project is accomplished. Recipient is solely responsible for compliance with all labor, health care, and tax laws pertaining to Recipient, its officers, agents, and employees.

22. **CONFLICTING INTEREST IN RECIPIENT.** Recipient certifies that no officer, agent, or employee of the District has any material interest, as defined in §112.312, Fla. Stat., either directly or indirectly, in the business of Recipient to be conducted hereby, and that no such person shall have any such interest at any time during the term of this Agreement.

23. **NON-LOBBYING.** Pursuant to §216.347, Fla. Stat., as amended, Recipient agrees that funds received from the District under this Agreement shall not be used for the purpose of lobbying the Legislature or any other state agency.

24. **PERMITS.** Recipient shall comply with all applicable federal, state and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. Recipient shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

25. **PUBLIC ENTITY CRIME.** A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in §287.017, Fla. Stat., for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

26. **PUBLIC RECORDS.** Records of Recipient that are made or received in the course of performance of the Project may be public records that are subject to the requirements of chapter 119, Fla. Stat. If Recipient receives a public records request, Recipient shall promptly notify the District's Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of chapter 119, Fla. Stat., as amended.

27. **ROYALTIES AND PATENTS.** Recipient certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. Recipient shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the District harmless from loss to the extent allowed by Florida law.

IN WITNESS WHEREOF, the St. Johns River Water Management District has caused this Agreement to be executed on the day and year written below in its name by its Executive Director, or duly authorized designee, and Recipient has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives, and, if appropriate, has caused the seal of the corporation to be attached. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

By: Wendy L. Cox

Ann B. Shortelle, Ph.D., Executive Director, or designee

Date: 4/1/21

BREVARD COUNTY, FLORIDA

As Approved by the Board on August 4, 2020

By: Frank Abbate

Frank Abbate, County Manager

Typed Name and Title

Date: 3/31/21

Attest: Joy Roth

Joy Roth, Administrative Assistant to the County Manager

Typed Name and Title

Attachments:
Attachment A — Statement of Work
Attachment B — Project Progress Report Form
Attachment C — District Supplemental Instructions Form
Attachment D — Contract Payment Requirements for State-Funded Cost Reimbursement Contracts

Approved for legal form and content
for Brevard County, Florida

3/19/21

Assistant County Attorney

ATTACHMENT A - STATEMENT OF WORK
OAK POINT PARK PROJECT

I. INTRODUCTION/BACKGROUND

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

On November 18, 2020, the Florida Department of Environmental Protection (FDEP) endorsed projects on the District's scored and ranked project list. At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding.

Brevard County (Recipient) requested funding for their Oak Point Park project (Project) for the not-to-exceed amount of $350,000 towards the estimated construction cost of $587,500. The Recipient is located in Brevard County.

II. OBJECTIVES

The objective of this contract is to provide cost share dollars that will enable the Recipient to connect 108 residential properties that are located directly on the lRL, that are currently utilizing an out-of-date package plant, and connect them to centralized sewer.

III. SCOPE OF WORK

The package plant currently discharges into a rapid infiltration basin (RlB) located on the shoreline of the IRL with a 1O-foot berm separating the RIB from the IRL. The proposed Project will replace this system with a sewerage lift station, standby power generator and force main to pump into the City of Titusville central sewer system.

IV. PROJECT ADMINISTRATION AND DELIVERABLES

The Recipient shall be responsible for the following:

- Complete and obtain final project design, construction plans, and specifications;
- Obtain all required permits, including right of access to the project sites, related to project construction and subsequent operation and maintenance of the completed work;
- Assure compliance with all permits and permit conditions;
- Provide procurement for project construction;
- Perform supervision and inspection of construction;
- Perform construction contract administration;
- Assure compliance with cost accounting practices and procedures required for reimbursement of cost share funds expended.

The Recipient shall provide the following to the District's Project Manager:

- Timely invoices for actual construction costs in accordance with this cost share agreement (i.e. quarterly, with appropriate substantiation that demonstrates that the applicant has paid for the total work cost and is seeking reimbursement up to the match amount) to enable proper review by

the District's Project Manager prior to payment authorization. Deliverables to be submitted with invoices include (as applicable):

- Interim progress status summaries including inspections, meeting minutes and field notes and dated color photographs of the construction completed to include on-going work that represents the time-period being invoiced;
- Final invoice submittals for completed construction including inspections and dated color photographs of the construction site prior to, during and immediately following completion of the construction task;
- Construction plans, specifications, and contract documents for the site work must be made available upon request;
- Written verification that the record drawings and any required final inspection reports for the project are received;

- Quarterly progress reports identifying project progress to date, key milestones reached, overall project schedule versus time for project completion, an updated spend-down plan, key issues to be resolved, project construction photos including preconstruction, construction and postconstruction with dates. Quarterly reports shall also be emailed to the District's Budget Analyst at hnbarber@sjrwmd.com.
- Certification of construction completion by a Professional Engineer registered in the state of Florida.

The Recipient shall ensure the task in the Task Identification section below is completed.

V. TASK IDENTIFICATION AND TIME FRAMES

The expiration date of this cost share agreement is December 31, 2021. The projected schedule is as follows:

Task Description	Anticipated Start Date	Anticipated Completion Date
Construction	5/30/21	12/31/21

VI. BUDGET/COST SCHEDULE

For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total construction cost of the Project, but in no event shall the District's cost-share exceed $350,000.

Recipient shall invoice the District quarterly with appropriate documentation. The District's Project Manager shall provide an invoice template that will be used. Invoices shall include a copy of the contractor's invoices submitted to the Recipient, proof of payment by Recipient, and other required supporting documentation for reimbursement up to match amount. For in-house expenses, Recipient shall provide copies of all receipts for materials and a system report showing documentation of staff time or other proof of staff time expenses for the Project. The final invoice shall be submitted with the final project report. If the total actual cost of this project is less than originally estimated, the District's cost-share amount shall be reduced accordingly. Recipient may invoice more frequently submitting all required documentation and include general status information. Recipient may invoice the District for Project work beginning January 12, 2021. The District will not reimburse for any expenditures that occur prior to January 12, 2021.

Recipient shall submit quarterly progress reports to the District's Project Manager and the District's Budget Analyst within 15 days of the end of quarter for work accomplished during each quarter. The email address for the District's Budget Analyst is hnbarber@sjrwmd.com. The Recipient shall submit a final project report within 15 days of Final Completion and acceptance by Brevard County detailing the Project's accomplishments and any issues resolved during the course of the work.

Estimated Cost Schedule for Reimbursement

Description	Estimated Task Amount	Estimated Reimbursement Amount
Construction	$587,500	$350,000

ATTACHMENT B
PROJECT PROGRESS REPORT

St. Johns River Water Management District
Project Progress Report

Date: _____

Report Number: _____

Contract/Project Identification

Project Name:	Oak Point Park Project
Recipient:	Brevard County

SJRWMD Contract Number:	36535	SJRWMD Project Manager:	Derek Busby
		Recipient's Project Manager:	Terri Breeden

Construction Schedule

Construction Start Date:	
Construction Completion Date:	
Contract Expiration Date:	

Reporting Period

Beginning Date:	
Ending Date:	

Cost-Share Budget

Total Cost-Share Budget:		Cost-Share Amount Expended This Period:	
Cost-Share Amount Expended To-date:		Percent Cost-Share Budget Expended:	

Spend-Down Plan

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Readiness and Schedule Tracking

Project Phase	% Complete Shown in Application	% Complete Currently	Start Date Shown in Application	Completion Date Shown in Application	Current Start Date	Current Completion Date	Notes: Explain anticipated deviations from schedule
Planning							
Design							
Permitting							
Bidding & Award							

SOW Construction Tasks/Milestones/Deliverables

Task Number	Tasks/Milestones/Deliverables	Total Construction % Complete	Start Date Shown in SOW	Completion Date Shown in SOW	Current Start Date	Current Completion Date
1						

Project update including problems, issues and solutions. Explain in detail.

Include digital photographs of work accomplished during reporting peroid. Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

ATTACHMENT C — DISTRICT'S SUPPLEMENTAL INSTRUCTIONS (sample)

DISTRICT SUPPLEMENTAL INSTRUCTIONS #

DATE:

TO: Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A
Viera, FL 32940-6605

FROM: Derek Busby, Project Manager

CONTRACT NUMBER: 36535

CONTRACT TITLE: Oak Point Park Project

The Work shall be carried out in accordance with the following supplemental instruction issued in accordance with the Contract Documents without change in the Contract Sum or Contract Time. Prior to proceeding in accordance with these instructions, indicate your acceptance of these instructions for minor adjustments to the work as consistent with the Contract Documents and return to the District's Project Manager.

Sample

1. RECIPIENT'S SUPPLEMENTAL INSTRUCTIONS:

2. DESCRIPTION OF WORK TO BE CHANGED:

3. DESCRIPTION OF SUPPLEMENTAL INSTRUCTION REQUIREMENTS:

RECIPIENT's approval: (choose one of the items below):

Approved: _____ Date: _____

(It is agreed that these instructions shall not result in a change in the Total Compensation or the Completion Date.)

Approved: _____ Date: _____

(N/A agrees to implement the Supplemental Instructions as requested but reserves the right to seek a Change Order in accordance with the requirements of the Agreement.)

Approved: _____ Date: _____
Derek Busby, District Project Manager

Acknowledged: _____ Date: _____
Carol Miller, District Senior Procurement Specialist

c: Contract file
Financial Services

ATTACHMENT D – CONTRACT PAYMENT REQUIREMENTS FOR STATE-FUNDED COST REIMBURSEMENT CONTRACTS

Invoices for state-funded cost reimbursement contracts must be supported by an itemized listing of expenditures by category (salary, travel, expenses, etc.). Supporting documentation must be provided for each amount for which reimbursement is being claimed, indicating that the item has been paid. Check numbers may be provided in lieu of copies of actual checks. Each piece of documentation shall clearly reflect the dates of service. Only expenditures for categories in the approved contract budget will be reimbursed.

Listed below are examples of the types of documentation representing the minimum requirements by cost category:

Salaries: Submit a payroll register or similar documentation showing gross salary charges, fringe benefits, other deductions, and net pay. If an individual is paid by the hour, a document reflecting the hours worked times the rate of pay is acceptable.

Fringe Benefits: Fringe benefits should be supported by invoices showing the amount paid on behalf of the employee (e.g., insurance premiums paid). If the contract specifically states that fringe benefits will be based on a specified percentage, rather than the actual cost of fringe benefits, then the calculation for the fringe benefits amount must be shown.

Exception: Governmental entities are not required to provide check numbers or copies of checks for fringe benefits.

Travel: Reimbursement for travel must be in accordance with §112.061, Fla. Stat., which includes submission of the claim on the approved State of Florida (State) or District travel voucher.

Other direct costs: Reimbursement is based upon paid invoices/receipts. If nonexpendable property is purchased using State funds, the contract should include a provision for the transfer of the property to the State when services are terminated. Documentation must be provided to show compliance with Department of Management Services Rule 60A-1.017, F.A.C., regarding the requirements for contracts which include services and that provide for the contractor to purchase tangible personal property as defined in §273.02, Fla. Stat., for subsequent transfer to the State.

In-house charges: Charges which may be of an internal nature (e.g., postage, copies, etc.) may be reimbursed on a usage log which shows the units, times the rate being charged. The rates must be reasonable.

Indirect costs: If the contract specifies that indirect costs will be paid based on a specified rate, then the calculation should be shown.

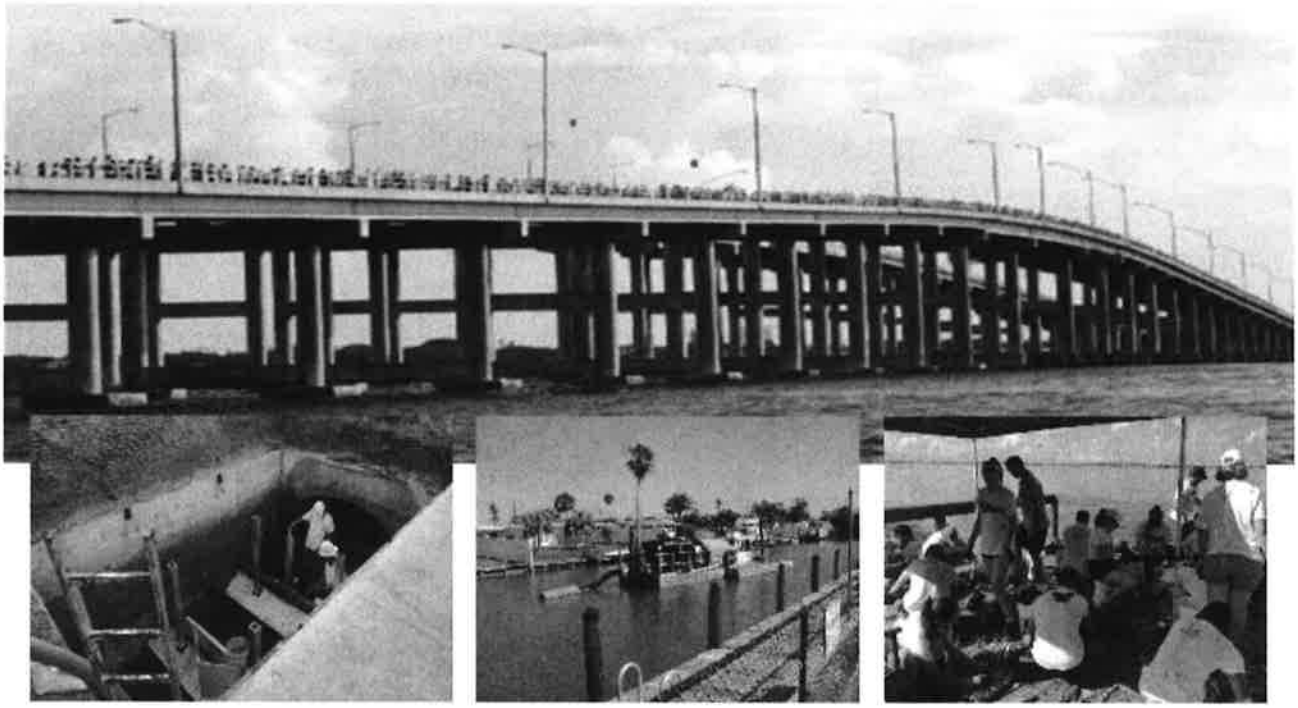
The "Reference Guide for State Expenditures" prepared by the Florida Department of Financial Services can be found at this web address: http:/www.fldfs.com/aadir/reference_guide.htm

Project Number	Project Name	Entity	Project Type	TN Reduction (pounds/year)	Total Cost TN ($/pound)	Total Cost	Eligible Tax Funding Cost Share	Eligible Tax Funding ($/pound TN)	Dollar Amount Secured Grants
171	Mechanical Aquatic Vegetation Harvesting	Melbourne-Tillman Water Control District	Vegetation Harvesting	16,636	$ 61	$ 1,011,976	$ 1,011,976	$ 61	
172	Horseshoe Pond Vegetative Harvesting	Brevard County Stormwater	Vegetation Harvesting	74	$ 730	$ 54,000	$ 8,140	$ 110	
173	North and South Lakemont Ponds Vegetation Harvesting	City of Cocoa	Vegetation Harvesting	18	$ 596	$ 10,720	$ 1,980	$ 110	
174	St Johns 2 Baffle Box	City of Titusville	Stormwater Projects	1,992	$ 233	$ 465,000	$ 243,070	$ 122	
123	Ray Bullard WRF Stormwater Management Area Amendment	City of West Melbourne	Stormwater Projects	1,317	$ 1,294	$ 1,704,160	$ 160,674	$ 122	
175	High School Baffle Box	City of Melbourne	Stormwater Projects	1,183	$ 668	$ 790,000	$ 144,326	$ 122	
176	Funeral Home Baffle Box	City of Melbourne	Stormwater Projects	481	$ 967	$ 465,000	$ 58,682	$ 122	
177	North and South Lakemont Ponds Floating Wetlands	City of Cocoa	Stormwater Projects	107	$ 467	$ 50,000	$ 13,054	$ 122	
178	Marina B MAPS	City of Titusville	Stormwater Projects	55	$ 266	$ 14,531	$ 6,670	$ 122	
179	Lori Laine Basin Pipe Improvement Project	City of Satellite Beach	Stormwater Projects	117	$ 25,453	$ 2,973,641	$ 17,525	$ 150	
180	Scottsmoor Impoundment	Marine Resources Council	Planted Shoreline	44	$ 240	$ 10,560	$ 10,560	$ 240	
181	Riveredge	Marine Resources Council	Planted Shoreline	17	$ 240	$ 4,080	$ 4,080	$ 240	
182	Newfound Harbor Drive	Marine Resources Council	Planted Shoreline	7	$ 240	$ 1,680	$ 1,680	$ 240	

Project Number	Project Name	Entity	Project Type	TN Reduction (pounds/year)	Total Cost TN ($/pound)	Total Cost	Eligible Tax Funding Cost Share	Eligible Tax Funding ($/pound TN)	Dollar Amount Secured Grants
183	Brevard Zoo North Indian River Lagoon Plant Project 3	Brevard Zoo	Planted Shoreline	4	$ 240	$ 960	$ 960	$ 240	
184	Brevard Zoo North Indian River Lagoon Oyster Project 3	Brevard Zoo	Oyster	1,056	$ 397	$ 419,232	$ 419,232	$ 397	
185	Brevard Zoo Central Indian River Lagoon Tributary Pilot Oyster Project	Brevard Zoo	Oyster	581	$ 397	$ 230,657	$ 230,657	$ 397	
186	Brevard Zoo North Indian River Lagoon Individual Oyster Project	Brevard Zoo	Oyster	436	$ 397	$ 173,092	$ 173,092	$ 397	
187	Brevard Zoo Central Indian River Lagoon Oyster Project 3	Brevard Zoo	Oyster	218	$ 397	$ 86,546	$ 86,546	$ 397	
188	Brevard Zoo Banana River Oyster Project 3	Brevard Zoo	Oyster	143	$ 397	$ 56,771	$ 56,771	$ 397	
189	Avenida del Rio Septic to Sewer	City of Melbourne	Septic Removal/ Extend	71	$ 986	$ 70,000	$ 70,000	$ 986	$ 30,000
190	Bowers Septic to Sewer	City of Melbourne	Septic Removal/ Extend	120	$ 1,225	$ 147,000	$ 147,000	$ 1,225	$ 72,000
191	Kent and Villa Espana Septic to Sewer Conversion	City of Melbourne	Septic Removal/ Extend	542	$ 1,310	$ 710,000	$ 710,000	$ 1,310	$ 294,000
3	Micco Sewer Line Extension (Phase I & II) Amendment	Brevard County	Septic Removal/ Extend	1,493	$ 1,811	$ 2,704,444	$ 2,239,500	$ 1,500	$ 214,920
192	Oak Point Wastewater Treatment Facility Improvements	Oak Point Mobile Home Park	Septic Removal/ Extend	186	$ 3,251	$ 604,750	$ 279,000	$ 1,500	$ 350,000
193	Oyster Gardening	Brevard Zoo	Oyster			$ 300,000	$ 300,000		$ -
194	Clam Aquaculture Pilot	Clam Farmers	Clam	1,000	$ 60	$ 60,000	$ 60,000	$ 60	$ -

Project Number	Project Name	Entity	Project Type	TN Reduction (pounds/year)	Total Cost TN ($/pound)	Total Cost	Eligible Tax Funding Cost Share	Eligible Tax Funding ($/pound TN)	Dollar Amount Secured Grants
197	South Shores Utility	South Shores Utility	Package Plant Connection to Sewer	929	$ 1,401	$ 1,301,154	$ 1,301,154	$ 1,401	$ -
199	River Grove I & II Mobile Home Park	River Grove I & II Mobile Home Park	Package Plant Connection to Sewer	697	$ 1,441	$ 1,004,640	$ 1,004,640	$ 1,441	$ -

Draft
Save Our Indian River Lagoon Project Plan 2021 Update for Brevard County, Florida



Prepared by:
Tetra Tech, Inc.
TETRA TECH
and
Closewaters, LLC
CloseWaters LLC

Prepared for:
Brevard County, Natural Resources Management Department
Brevard County

January 2021

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Top from http://spacecoastdaily.com/2013/09/hands-across-lagoon-set-for-sept-28/
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Bottom middle from the muck dredging project in the City of Cocoa Beach
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- City of Titusville
- City of West Melbourne

Executive Summary

The Indian River Lagoon (IRL) system includes Mosquito Lagoon, Banana River Lagoon, and Indian River. This is a unique and diverse system that connects Volusia, Brevard, Indian River, St. Lucie, Martin, and Palm Beach counties. The IRL is part of the National Estuary Program, one of 28 estuaries of National Significance, and has one of the greatest diversity of plants and animals in the nation. A large portion of the IRL system, 71% of its area and nearly half its length, is within Brevard County and provides County residents and visitors many opportunities and economic benefits.

However, the balance of this delicate ecosystem has been disturbed as development in the area has led to harmful impacts. Stormwater runoff from urban and agricultural areas, wastewater treatment facility (WWTF) discharges, septic systems, and excess fertilizer applications have led to harmful levels of nutrients and sediments entering the lagoon. These pollutants create cloudy conditions in the lagoon and feed algal blooms, both of which negatively affect the seagrass community that provides habitat for much of the lagoon's marine life. In addition, these pollutants lead to muck accumulation, which releases (fluxes) nutrients and hydrogen sulfide, depletes oxygen, and creates a lagoon bottom that is not hospitable to seagrass, shellfish, or other marine life.

Efforts have been ongoing for decades to address these sources of pollution. Despite significant load reductions, in the last five years, signs of human impact to the IRL system have been magnified. In 2011, the "superbloom" occurred, an intense algal bloom in the Mosquito Lagoon, Banana River Lagoon, and North IRL, as well as a secondary, less intense bloom in the Central IRL. There have also been recurring brown tides; unusual mortalities of dolphins, manatees, and shorebirds; and large fish kills due to low dissolved oxygen from decomposing algae.

Local governments and the St. Johns River Water Management District have been proactive in implementing projects over the last several decades. However, to restore the lagoon to health and prosperity, additional funds are needed to eliminate current excess loading and remove the legacy of previous excess loading. Therefore, the County placed a Save Our Indian River Lagoon 0.5 cent sales tax referendum on the ballot in November 2016, which passed and will provide a funding stream for the types of projects listed in this plan for Brevard County and its municipalities.

The Save Our Indian River Lagoon Project Plan outlines local projects planned to meet water quality targets and improve the health, productivity, aesthetic appeal, and economic value of the lagoon. Implementation of these projects is contingent upon funding raised through the 0.5 cent sales tax. This sales tax funding would also allow the County to leverage additional dollars in match funding from state and federal grant programs because the IRL ecosystem is valued not only in Florida but also nationally. Funding implementation of this plan would help to restore this national treasure. Lagoon ecosystem response may lag several years behind completion of nutrient reductions; however, major steps must begin now to advance progress on the long road to recovery.

In the development of this plan, Subject Matter Experts were consulted to provide feedback on the plan elements. The experts all agreed that there is a "critical mass" of nutrient reductions that must be achieved to see a beneficial result in the IRL. This critical level of nutrient reduction will be achieved through the implementation of the projects in this plan. During plan development, it was estimated that the benefit of restoring the lagoon has a present value of $6 billion and a cost of $300 million. Therefore, implementing this plan to restore the IRL is an

excellent investment in the future of Brevard County's community and economy with a benefit to cost ratio of 20:1.

In order to restore the lagoon's balance, Brevard County seeks to accelerate implementation of a multi-pronged approach to **Reduce** pollutant and nutrient inputs to the lagoon from fertilizer, reclaimed water from WWTFs, septic systems, and stormwater; **Remove** the accumulation of muck from the lagoon bottom; **Restore** water-filtering oysters and related lagoon ecosystem services; and monitor progress to **Respond** to changing conditions, technologies, and new information by amending the plan to include actions that will be most successful and cost-effective for significantly improving the health, productivity, and natural resilience of the IRL.

The portfolio of projects in this plan were selected as the most cost-effective suite of options to achieve water quality and biological targets for the lagoon system. Investment has been distributed among a set of project types with complimentary benefits to reduce future risk of failure. Nearly half (originally one-third) of the effort and expense is split among multiple projects to reduce incoming load to healthy levels, restore natural filtration, measure success, and respond with annual plan updates. Slightly more than half (originally two-thirds) of the effort and expense is directed toward muck removal to address decades of past excess nutrient loading. Nitrogen and phosphorus released each year as muck decays are now larger than any current source of nutrient pollution to lagoon waters.

The plan projects have been prioritized and ordered to deliver improvements to the lagoon in the most beneficial spatial and temporal sequence so that the implementation of this plan is expected to result in a healthy IRL system. If a future project is ready to move forward earlier than scheduled in the plan, if such advancement is consistent with temporal sequencing goals in the plan and is recommended by the Citizen Oversight Committee, and if there are sufficient Trust Fund dollars available, the County Manager (for budget changes less than $100,000) or Brevard County Commission have the authority to adjust the project schedule at any time to ensure that approved projects funded in the plan move forward as soon as feasible.

This 2021 Update to the Save Our Indian River Lagoon Project Plan contains the fifth set of project updates, new approved projects, and schedule accelerations to the plan. Local stakeholders submitted projects annually to Brevard County for inclusion in the plan. The appointed Citizen Oversight Committee reviewed the submitted projects and made a recommendation to the Board of County Commissioners on which projects should be added to the Save Our Indian River Lagoon Project Plan. This update includes those projects that were reviewed by the Citizen Oversight Committee and approved for inclusion by the Board of County Commissioners.

The timing of the projects is shown in **Figure ES-1**. A summary of the types of projects included in the plan, as well as the associated costs and total nitrogen (TN) and total phosphorus (TP) reduction benefits are shown in **Table ES-1**. Despite the considerable cost of restoration, analysis demonstrates that the economic cost of inaction is double the cost of action. Furthermore, although there are many tangible and intangible benefits for saving the lagoon, the readily estimated return on investment for three benefits – tourism, waterfront property values, and commercial fisheries – is approximately 10% to 26%.

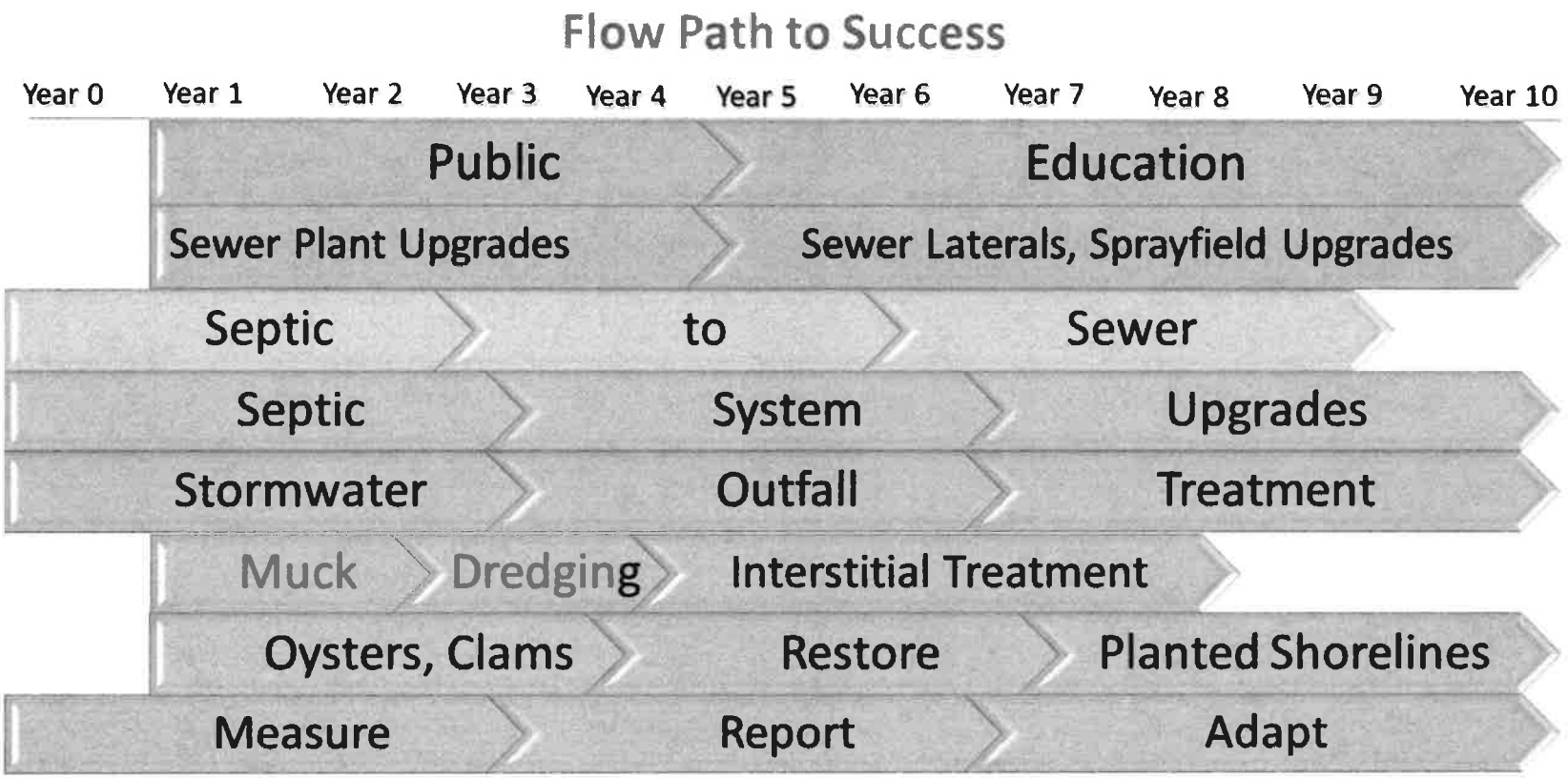


Figure ES-1: Save Our Indian River Lagoon Project Implementation Schedule

Table ES-1: Summary of Project Types, Costs, and Nutrient Reductions in the 2020 Update of the Save Our Indian River Lagoon Project Plan

Project Category	Project Type	Estimated Total Project Cost	Nitrogen Reductions (lbs/yr)	Average Cost per Pound per Year of TN	Phosphorus Reductions (lbs/yr)	Average Cost per Pound per Year of TP
Reduce	Public Education	$1,425,000	28,879	$49	2,013	$708
Reduce	WWTF Upgrades for Reclaimed Water	$24,711,400	64,458	$383	13,760	$1,796
Reduce	Rapid Infiltration Basin/Sprayfield Upgrades	$6,265,507	8,965	$699	2,141	$2,926
Reduce	Package Plant Connection	$2,584,794	1,812	$1,426	To be determined	To be determined
Reduce	Sewer Lateral Rehabilitation	$1,580,000	6,196	$255	188	$8,404
Reduce	Septic System Removal by Sewer Extension	$110,990,852	94,547	$1,174	To be determined	To be determined
Reduce	Septic System Removal by Sewer Connection	$11,280,000	21,446	$526	To be determined	To be determined
Reduce	Septic System Upgrades	$29,248,485	37,981	$770	To be determined	To be determined
Reduce	Stormwater Projects	$47,261,101	275,359	$172	38,211	$1,237
Remove	Muck Removal	$108,152,240	207,990	$520	17,815	$6,071
Remove	Treatment of Muck Interstitial Water	$46,945,641	481,059	$98	28,361	$1,655
Remove	Vegetation Harvesting	$1,086,096	17,442	$62	1,703	$638
Restore	Oyster Bars	$9,832,825	24,766	$397	781	$12,590
Restore	Planted Shorelines	$107,280	447	$240	152	$706
Restore	Clam Restoration	$60,000	1,000	$60	To be determined	To be determined
Respond	Projects Monitoring	$10,000,000	-	-	-	-
Respond	Contingency	$20,258,580	-	-	-	-
Respond	Inflation	$57,065,372	-	-	-	-
Total	***Total***	***$488,855,173***	***1,272,347***	***$384 (average)***	***105,125***	***$4,650 (average)***

Section 1. Background

The Indian River Lagoon (IRL) system includes Mosquito Lagoon, Banana River Lagoon, and Indian River. A large portion of the IRL system, 71% of its area and nearly half its length, is within Brevard County (County) and provides County residents and visitors many opportunities.

However, the balance of this delicate ecosystem has been disturbed as development in the area has led to harmful impacts. Stormwater runoff from urban and agricultural areas, wastewater treatment facility (WWTF) discharges, septic systems, and excess fertilizer applications have led to harmful levels of nutrients and sediments entering the lagoon. In addition, these pollutants lead to muck accumulation on the lagoon bottom, which fluxes nutrients and creates a lagoon bottom that is not conducive to seagrass, shellfish, or benthic invertebrate growth.

Efforts have been ongoing to address these sources of pollution. The Indian River Lagoon System and Basin Act of 1990 (Chapter 90-262, Laws of Florida) was enacted to protect the IRL system from WWTF discharges and the improper use of septic tanks. The act includes three objectives: elimination of surface water discharges, investigation of feasibility of reuse, and centralization of wastewater collection and treatment facilities (Florida Department of Environmental Protection 2016). This act led to the removal of effluent discharges to the lagoon from more than 40 WWTFs (St. Johns River Water Management District, 2016a).

Stormwater regulations were adopted in unincorporated Brevard County in 1978 and adopted statewide in 1989. Due to stormwater regulations, stormwater treatment systems were constructed along with all new development exceeding size thresholds. Privately owned and operated stormwater treatment systems have prevented more than a million pounds of sediments from entering the lagoon since 1989 (St. Johns River Water Management District, 2016a). Stormwater treatment projects also reduce nutrient inputs to the lagoon. In addition, dredging projects have been ongoing since 1998 to remove muck from the lagoon and major tributaries, including Crane Creek, Turkey Creek, and St. Sebastian River (St. Johns River Water Management District, 2016a). These stormwater treatment and muck removal projects contributed to significant improvements in water quality and water clarity in the lagoon, which allowed for a great expansion of seagrass from 2000–2010.

However, recently, human impacts on the IRL system have been magnified. In 2011, the "superbloom" occurred, an intense algal bloom in the Mosquito Lagoon, Banana River Lagoon, and North IRL, as well as a secondary, less intense bloom in Central IRL. The extent and longevity of the bloom had a detrimental impact on seagrass. There have also been recurring brown tides; unusual mortalities of dolphins, manatees, and shorebirds; and large fish kills due to low dissolved oxygen from decomposing algae.

In 2009, to improve lagoon water quality and restore seagrass, the Florida Department of Environmental Protection adopted total maximum daily loads for total nitrogen (TN) and total phosphorus (TP) allowed to discharge to the Banana River Lagoon, North IRL, and Central IRL. The purpose of these total maximum daily loads is to reduce nutrients that lead to algae growth, which block sunlight from seagrass and create low dissolved oxygen conditions that affect fish in the lagoon. To implement these total maximum daily loads, the Florida Department of Environmental Protection adopted three basin management action plans that outline responsibilities for reductions by the local stakeholders, list projects, and stipulate a timeline for implementation. The intent of the nutrient reductions is to provide water quality conditions that should result in seagrass growth in the lagoon at historical levels. Brevard County has a major

responsibility in all three basin management action plans along with its 16 municipalities, Florida Department of Transportation District 5, Patrick Air Force Base, National Aeronautics and Space Administration – Kennedy Space Center, and agriculture. The Florida Department of Environmental Protection updated all three basin management action plans in 2020.

From 2012 to 2015, Brevard County led an effort with its municipalities, Florida Department of Transportation District 5, and Patrick Air Force Base to update the estimates of nutrient loadings to the lagoon. The County and its partners teamed with several consultants to develop the Spatial Watershed Iterative Loading model that revised the estimates of loading by source to the lagoon (refer to **Section 2** for more details). The revised loading estimates were compared to seagrass area to recommend refinement of state and federal approved total maximum daily loads. The loading estimates and total maximum daily load targets referenced in this plan are from these local efforts, as they are based on the most up-to-date data and analyses even though the state and federal total maximum daily loads have not been officially updated.

Damage to the lagoon has been occurring for decades and will require time and money to reverse. An important example is the accumulation of muck on the bottom of 10% of the IRL. This muck kills marine life and releases stored pollutants into the IRL. To address the damage to the IRL system, in 1990, Brevard County implemented a stormwater utility assessment, which established an annual assessment rate of $36 per year per equivalent residential unit that stayed at this level until 2014. The rate increased to $52 per equivalent residential unit for 2014 and 2015 and increased to $64 per equivalent residential unit in 2016. This raised collections from $3.4 million (in 2014) to $6.0 million (in 2016). Of the funding raised, a portion is available for capital improvement programs or other stormwater best management practices and is split between water quality improvement programs and flood control and mitigation programs. In addition, funding is spent on annual program operating expenses. Operation and maintenance includes National Pollutant Discharge Elimination System permit compliance activities (street sweeping, trap and box cleaning, and aquatic weed harvesting), outfall/ditch treatments, small scale oyster restoration, as well as harvesting and replanting of floating vegetative islands.

While revenues from this stormwater assessment have funded many projects, a significant portion of projects have been partially funded by grants. When applicable, federal water quality grants provide up to 60% matching funds, state total maximum daily load grants provide up to 50% match, and St. Johns River Water Management District cost-share grants fund up to 33% of construction. All these grant programs are highly competitive and subject to variable state and federal appropriations, as well as changing priorities.

Due to funding limitations and the continuing degradation of key indicators of health in the IRL, such as seagrass and fish, Brevard County identified a need for additional funding to implement projects identified as critical to lagoon restoration. Therefore, the County placed a Save Our Indian River Lagoon 0.5 cent sales tax referendum on the ballot in November 2016. This referendum passed by more than 60% of the votes and provides a funding mechanism for the projects listed in this plan and annual updates for the County and its municipalities. Revenue collection from the sales tax began in January 2017.

This Save Our Indian River Lagoon Project Plan outlines projects planned to meet updated total maximum daily load targets and improve the health, productivity, aesthetic appeal, and economic value of the lagoon. Almost all these projects require sales tax funding to be implemented. Furthermore, the local sales tax funding could be used to leverage significantly more in match funding from state and federal grant programs. The IRL ecosystem is an asset valued not only in Florida but also nationally; therefore, implementation of this plan would help

to restore this national treasure. If additional funding is provided through matching funds from other sources, additional projects may be implemented, which would increase the overall plan cost, and/or project timelines may be moved up to allow the benefits of those projects to occur earlier than planned. Response of the lagoon ecosystem may lag for several years behind completion of nutrient reduction implementation; however, action must be accelerated now to ensure restoration succeeds over time.

1.1. Return on Investment and Economic Value

The economic value of the lagoon system was evaluated during development of this plan. It was estimated that at least a total present value of $6 billion is tied to restoration of the Indian River Lagoon (IRL). There is approximately $2 billion in benefits from restoration and an estimated $4 billion in damages if the IRL is not brought back to health during the next decade. If viewing this project plan purely as a financial investment that pays the $2 billion in benefits alone (i.e. not counting the avoidance of the $4 billion loss), the projected pretax internal rate of return is 10%, if the plan takes 10 years to implement.

Table 1-1 documents projections of three economic engines likely to have significant economic impacts on Brevard County residents with positive impacts if the IRL is restored versus negative impacts if the IRL is not restored. Additional detail on each of these impacts is provided in **Section 1.1.1**. The upper part of the table lists the economic benefits for restoring a healthy IRL while the lower part of the table lists the economic costs of declining IRL health in the absence of restoration through plan implementation.

Economic impacts in the table are expressed both as annual cash flows and as the discounted expected present value of those cash flows over a 30-year financial plan period. Expected present value is an economic indicator used in business to express the present monetary value of a future stream of cash flows. This expected monetary value discounts the future stream by an interest rate and discounts it further by a probability factor to account for the uncertainty of future events. Therefore, the expected present value of IRL economic benefits shown in **Table 1-1** is much less than the sum of those future cash flows.

Table 1-1: Economic Impact Scenarios Based Upon the Condition of the IRL

Economic Benefits for Restoring a Healthy IRL and Costs of Declining IRL Health	Annual Cash Flow	Expected Present Value
Tourism and Recreation Growth Benefits	$95 million	$997 million
Property Value Growth Benefits	$81 million	$852 million
Rebirth of Commercial Fishing Benefits (excludes indirect benefits)	$15 million	$159 million
Healthy Residents and Tourists Benefits	Not quantified	Not quantified
Total Benefits	***$191 million***	***$2.01 billion***
Tourism and Recreation at Risk Damages	-$237 million	-$3 billion
Property Value at Risk Damages	-$92 million	-$1.2 billion
Decline of Commercial Fishing (excludes indirect impacts)	-$6 million	-$87 million
Potential Pathogen Impacts to Residents and Tourists	Not quantified	Not quantified
Total Damages	***-$335***	***-$4.29 billion***

Today there is a $6 billion decision point for the IRL. Despite unprecedented algae blooms and fish kills, conditions could become worse. If large-scale fish kills continue with increasing frequency, algae blooms continue or become toxic, or there is a pathogen outbreak, then real estate, tourism, and the quality of life and health for Brevard County residents would likely suffer.

1.1.1 Areas of Economic Value at Risk

Tourism and Recreation

Today's tourism revenue in Brevard County comes primarily from the beaches. To diversify the tourism base and increase revenue, Brevard County has developed a plan to increase ecotourism, a globally growing and high value sector of tourism that depends on restoration and maintenance of a healthy Indian River Lagoon (IRL). High value ecotourism relies on exceptional natural experiences including fishing, bird watching, kayaking, paddle boarding, camping, hiking, and nature tours. In the short-term, there are opportunities for tourists to participate in restoration experiences, such as collecting mangrove seeds by kayak or canoe, planting mangrove seedlings, or establishing colonies of clams, oysters, or mussels. A successful example of Brevard County ecotourism is the world famous annual Space Coast Birding and Wildlife Festival that brings $1.2 million annually to the County and attracts approximately 5,000 visitors.

Property Value

While the economic benefits of IRL restoration are likely to increase property value throughout the County, to be conservative this plan assessed the exposure only to properties with frontage on Mosquito Lagoon, IRL, Banana River Lagoon, Sykes Creek, and connected waterways. Approximately 11.2% of the County's $27 billion in taxable property value is directly on the IRL. Therefore, more than $3 billion in taxable property value is directly at risk with ongoing IRL issues, such as algal blooms and fish kills. Furthermore, a weighted-average millage rate of 18.58 results in an estimated annual tax revenue of $56 million that is also at risk in the absence of IRL restoration. The $852 million of incremental expected present value assumes a 20% improvement in IRL frontage property value, which would be 90% likely after 10 years with the IRL restored.

Consultants for the County surveyed the Space Coast Association of REALTORS® to assess the likely impacts of IRL health on the waterfront property value. Approximately 170 REALTORS® most familiar with the waterfront market replied to the survey. These professionals assessed that waterfront IRL property values would increase 22% on average over five years if the IRL were healthy and would decrease by 25% over five years if the lagoon were not restored.

Commercial Fishing

IRL restoration is critical to the recovery of a once thriving, valuable, and world-class fishery, both commercial and recreational. In 1995, the commercial fish harvest in Brevard County was $22 million annually. While a 1995 ban on commercial net fishing marked economic decline, the degradation of the lagoon system contributed considerably to a severe reduction in value of only $6.7 million annually in 2015, based on Florida Fish and Wildlife Conservation Commission data (see **Figure 1-1**). These numbers do not include the many indirect benefits of a robust commercial fishing industry including fresh local fish for restaurants, employment, commerce of supplies and services for the industry, and benefits of local fresh fish for residents and visitors.

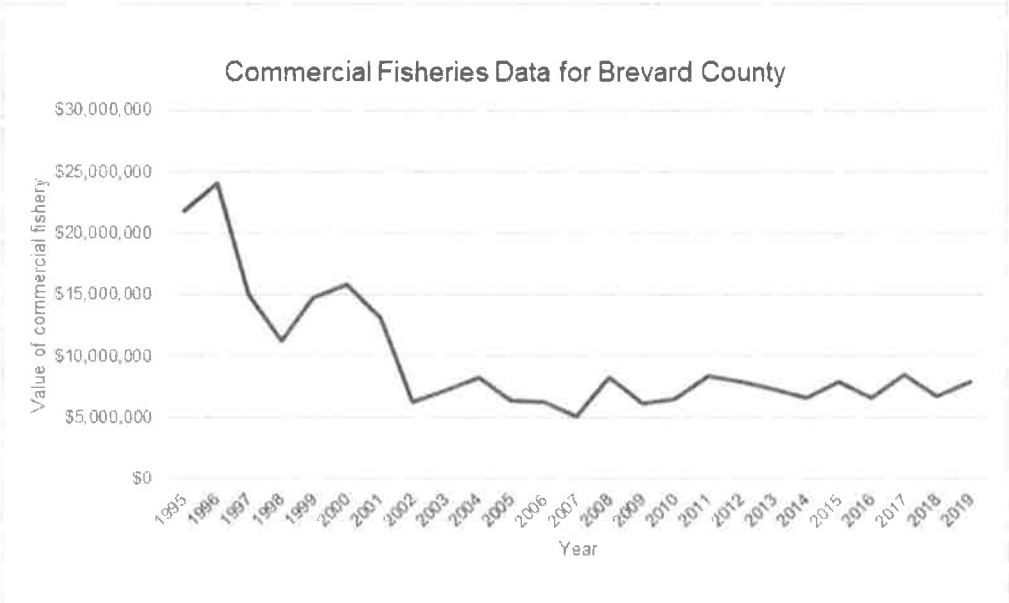


Figure 1-1: Decline of Commercial Fishing in Brevard County

Figure 1-1 Long Description

In addition, a healthy fish population is critical to the brand of any coastal community. Historically Brevard County was once home to a world-class abundance and diversity of rare and widespread species of fish, crabs, shrimp, and clams that made the IRL a global brand. That brand can be restored along with the fish and shellfish of the IRL.

Healthy Residents and Tourists

Septic systems within Brevard County can pollute groundwater that migrates to the lagoon. This groundwater moves slowly toward the lagoon through soils that attenuate some but not all these pollutants. It would cost at least $1.19 billion to convert all 59,500 septic tanks to central sewage treatment. While total conversion is cost prohibitive, this plan targets the septic systems with the highest potential impacts to the lagoon. Targeted action includes connection to the central sewer system or upgrade to advanced treatment systems that remove significantly more nutrients and pathogens than traditional septic systems.

Although there are studies that have identified pathogens migrating from septic systems into waterways, it is not possible to estimate the economic impact of potential disease from these waterborne pathogens. The conversion of septic systems is expensive relative to other types of nutrient reduction projects; however, the additional health benefits associated with septic system upgrades make this option a priority beyond only the abatement of nutrients.

1.2. Maximizing Benefits and Managing Risk

There is much at stake with regard to both economic outcomes and the incremental funding critical to restoration; therefore, the County chose to address the unavoidable risks inherent in a multi-year, large-scale restoration plan in a transparent and objective manner. To help ensure objectivity, the County retained outside consultants to assess risk and to estimate potential positive or negative outcomes.

The approach for this plan to evaluate the different project options included using expected monetary value models; a decision science tool used in business to improve decision-making and planning in a context of unavoidable uncertainty. Expected monetary value is a financial model of probability-weighted outcomes expressed in quantified financial terms that are comparable across multi-year planning periods. To compare outcomes, expected present value was used as a key metric. Expected present value has the benefit of valuing future financial costs and benefits in common present day terms to take into account the value of time and to facilitate comparisons of initiatives spanning long periods of time.

As part of this methodology, consultants engaged Subject Matter Experts to assess the uncertainties of project scenarios. Subject Matter Experts include scientists, property value experts, tourism experts, lagoon advocates, and agency staff. Subject Matter Experts brought expertise in Indian River Lagoon (IRL) science, nutrient reduction technologies, waterborne pathogens, and relevant law or county financial and accounting parameters needed for the expected monetary value models. Information gathered during these assessments was used to document the key interdependence of initiatives, minimize risk, and maximize the likely return on investment.

1.2.1 Project Selection to Maximize Return on Investment

Assessment of risk by Subject Matter Experts determined that the amount and speed of nutrient reductions are the two most critical factors affecting the success of restoring Indian River Lagoon (IRL) health. Therefore, those projects with the greatest nutrient reduction benefit for the least cost are recommended for funding and, of those, the projects with the greatest benefits are planned for implementation first. Three other key criteria drove this plan:

1. Achieving sufficient nutrient abatement through a blend of options was a key success factor for restoration.
2. No one type of project alone could achieve an adequate nutrient abatement.
3. The target for nutrient reduction must be sufficient to minimize the need for recurring expensive muck removal, which is important for future cost avoidance.

The plan sequences a diversity of project types, implementing the highest nutrient reduction impact early and implementing other projects concurrently to achieve a multi-pronged blend of total nutrient abatement as quickly as possible with minimal risk. Another important consideration for project sequencing was how quickly projects could produce significant nutrient pollution reduction. For decades, man-made nutrient pollution from fertilizers, septic systems, and stormwater runoff have been introduced at varying distances from the IRL. The soils are still saturated with those nutrients. Therefore, if all sources of nutrient pollution ended today, groundwater would continue to transport nutrients accumulated in the soil into the IRL with every rain event for decades in the future. However, soils next to the IRL will purge themselves quickly, in days or weeks. Septic system conversions near the lagoon or near drainage conduits into the lagoon are likely to produce water quality and reduced pathogen benefits in the lagoon in weeks or months whereas septic conversions more distant from waterways are not anticipated to generate lagoon benefits for several decades. Therefore, whenever possible, project selection and sequencing scheduled nutrient abatements closest to the IRL first.

Undoing the damage to a unique and complex biological system as large as the IRL carries inherent risk. The County made the decision to be open and transparent about that risk. Assessing that risk diligently has allowed the County to mitigate and manage risk proactively in the development of this plan.

Two subjective risk assessments were conducted by an independent consultant working with top science Subject Matter Experts most knowledgeable about the IRL. The first assessment was conducted with individual Subject Matter Experts and occurred before plan projects were defined. These experts assessed that the likelihood of a healthy fish population in the IRL would begin to rise faster after reaching a critical point of nutrient reduction. Therefore, there is a "critical mass" of nutrient reduction needed to achieve significant and sustainable IRL health benefits. The Subject Matter Experts also assessed that the likelihood of recovery would continue to improve as more nutrients are removed from the IRL and then begin to decline if too many nutrients were removed. The result of that first risk assessment reinforced the objective of reducing nutrients in the IRL as quickly as possible through the definition and sequencing of the projects in this plan.

A second uncertainty assessment was conducted in a meeting at the Florida Institute of Technology with a group of water quality, toxicity, muck, fish, algae, invertebrates, and seagrass Subject Matter Experts. First, the experts were briefed about the projects proposed in this plan. The experts were then asked their subjective assessment of the likelihood of a healthy lagoon after this plan was implemented in each sub-lagoon. Sub-lagoons were assessed because the experts had commented previously that each sub-lagoon functioned differently. This group assessment indicated higher likelihoods of success than the first assessment. However, the scientists continued to voice concern about the restoration of the IRL in the absence of regulatory reform needed to prevent new development from adding more septic system and stormwater pollution to the lagoon. Therefore, updated regulations are needed as a complement to this plan to ensure timely and sustained success in restoring health to the IRL.

Figure 1-2 represents the input from the Subject Matter Experts.

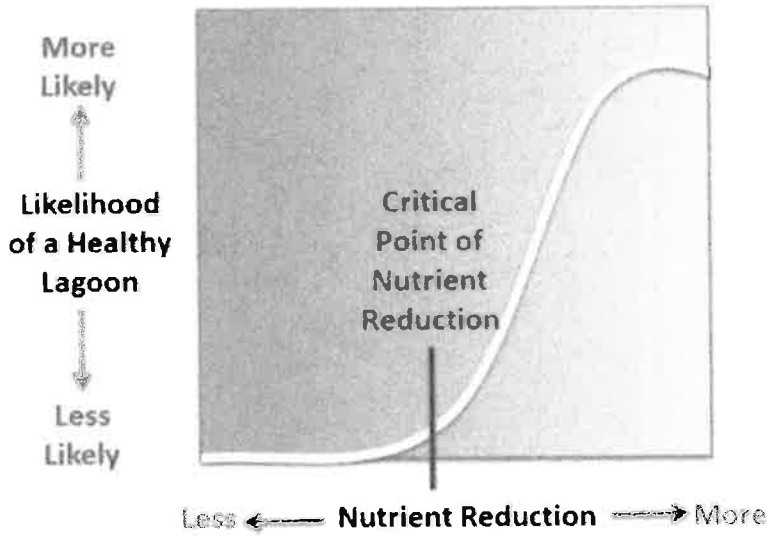


Figure 1-2: Likelihood of a Healthy IRL as Nutrients are Removed

There are other large-scale aquatic system restoration efforts that have been successful in achieving restoration. Some of these systems were damaged even more so than the IRL, but they have recovered through the implementation of extensive, multi-year, and multi-pronged restoration plans. These include the Chesapeake Bay, Cuyahoga River, Lake Erie, and Tampa Bay. These areas have reaped enormous economic and quality of life benefits as a result of dedicated investments in their restoration.

Section 2. Approach, Outputs, and Outcomes

The amount and distribution of nutrient loading from the sources described in **Section 3** were examined to determine the key locations where nutrient reduction projects are needed and the extent of reductions required from each source to achieve the County's proposed total maximum daily loads for each sub-lagoon. For each source, a reduction goal is set and projects are proposed to meet the goal. The estimated cost for each project is also included. Information on expected project efficiencies and project costs were gathered from data collected by the County in implementation of similar projects, as well as literature results from studies in Florida, where available, and across the country. The most cost-effective projects are selected and prioritized to maximize the nutrient reductions that can be achieved.

2.1. Plan Focus Area

This plan focuses on projects implemented in three sub-lagoons in the Indian River Lagoon (IRL) system: Banana River Lagoon, North IRL, and Central IRL. **Figure 2-1** shows the locations of these sub-lagoons. All the Banana River Lagoon watershed and the majority of the North IRL watershed are located within Brevard County. However, only a portion of the Central IRL watershed is located within the County. As shown in **Figure 2-1**, Central IRL Zone A is located entirely in Brevard, whereas Zone SEB straddles Brevard and Indian River counties. For Zone SEB, the County has completed several projects in this area and the St. Johns River Water Management District is completing projects along the C-54 Canal and on the Wheeler property to treat the Sottile Canal. The reductions from these projects (in pounds per year [lbs/yr] for total nitrogen [TN] and total phosphorus [TP]) should be sufficient to meet the estimated need for reductions in the Brevard County portion of Zone SEB, as shown in **Table 2-1**. This plan includes some additional beneficial projects located in Zone SEB to help ensure that the necessary reductions are achieved throughout Brevard County; however, most of the projects proposed in this plan for the Central IRL fall within Central IRL Zone A.

Table 2-1: Summary of Load Reductions and Projects in Central IRL Zone SEB

Category	Annual TN Load (lbs/yr)	Five-Month TN Load (lbs/yr)	Annual TP Load (lbs/yr)	Five-Month TP Load (lbs/yr)
Stormwater and Baseflow Loading	248,233	79,956	34,901	11,242
Atmospheric Deposition Loading	22,371	7,206	404	130
Point Sources Loading	0	0	0	0
Total Loading	270,604	87,162	35,305	11,372
Target Percent Reductions	18.0%	38.0%	16.0%	35.0%
Targeted Reductions	***48,709***	***33,121***	***5,649***	***3,980***
Completed County Projects (2010-February 2016)	29,890	12,454	9,643	4,018
C-54 Project	65,974	27,489	10,558	4,399
Wheeler Property Project	36,582	15,243	21,784	9,077
Total Project Reductions	***132,446***	***55,186***	***41,985***	***17,494***
% of Targeted Reductions Achieved	***271.9%***	***166.6%***	***743.2%***	***439.5%***

In addition, a small portion of the County is located within the Mosquito Lagoon. Brevard County does not have stormwater outfalls, septic systems, or point sources in this sub-lagoon.

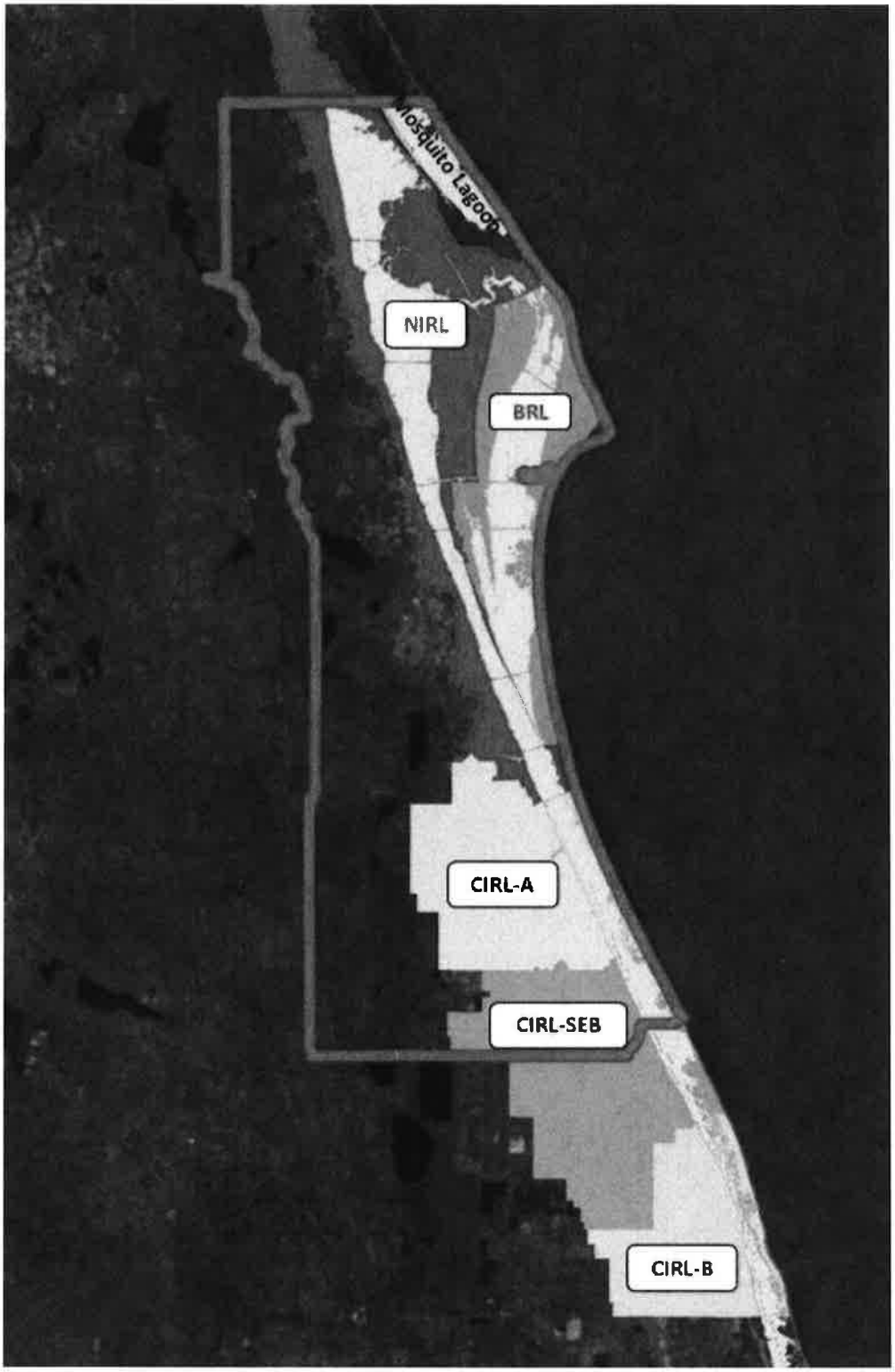


Figure 2-1: Locations of the Banana River Lagoon (BRL), North IRL (NIRL), and Central IRL (CIRL) Sub-lagoons

2.2. Plan Outputs and Outcomes

There are several outcomes expected from implementation of the plan. The plan outputs represent the project types included to Reduce external loads to the lagoon, Remove internal sources from the lagoon, Restore the natural filtration systems, and Respond to the changing conditions and opportunities. The outcomes from these outputs are the results, impacts, and accomplishments that will occur due to plan implementation (**Figure 2-2**). The timeframes for reaching various outcomes may be impacted by many factors outside Brevard County control, including federal and state legislation and weather; however, division of outcomes into short-term, mid-term, and long-term categories is meant to illustrate the sequence and approximate schedule of anticipated natural recovery.

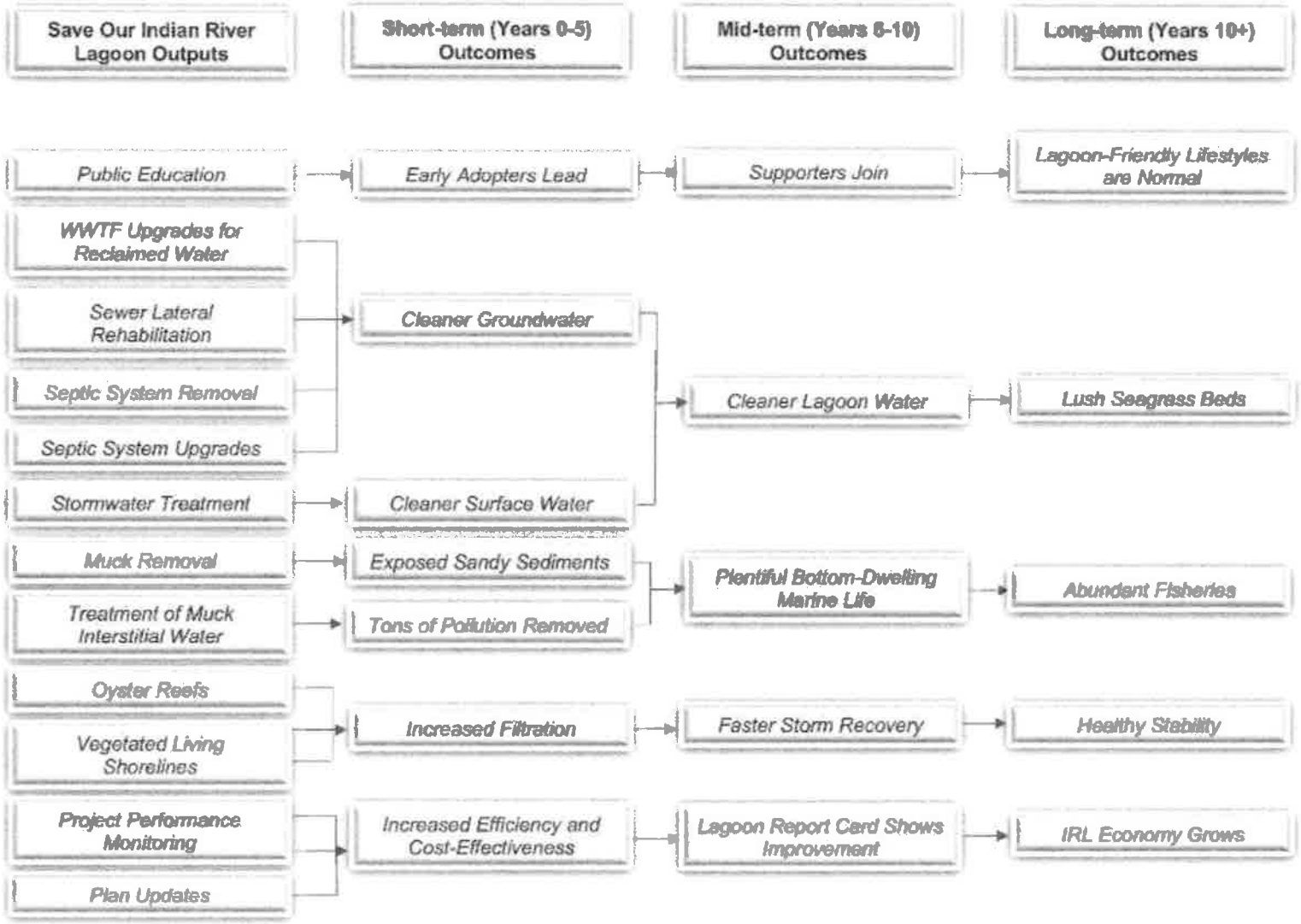


Figure 2-2. Summary of the Save Our Indian River Lagoon Outputs and Outcomes

Figure 2-2 Long Description

Section 3. Pollutant Sources in the IRL Watershed

Pollutant loads in the Indian River Lagoon (IRL) watershed are generated from multiple external sources that discharge to the lagoon. Excess loads also accumulate in nutrient sinks within the lagoon, which release nutrients to the water column during certain conditions.

External sources fall into the following major categories:

- Stormwater runoff that occurs when rainfall hits the land and cannot soak into the ground:
  - Urban stormwater runoff is generated by rainfall and excess irrigation on impervious areas associated with urban development. Urban runoff picks up and transports nutrient loading from fertilizers, grass clippings, and pet waste, as well as other pollutants including sediments, pesticides, oil, and grease. Stormwater ponds and baffle boxes reduce the nutrient loading in stormwater; however, proper maintenance of these systems is necessary to maintain their performance.
  - Agricultural stormwater runoff occurs on agricultural land and this runoff also carries nutrients from fertilizers, as well as livestock waste, pesticides, and herbicides. This source of stormwater runoff is not addressed in this plan as the County does not have jurisdiction over agricultural use. The Florida Department of Agriculture and Consumer Services has an agricultural best management practice program, and they work with agricultural producers to control the loading from this source.
  - Natural stormwater runoff comes from the natural lands in the basin. This source is not addressed by this plan as natural loading does not need be controlled.
- Baseflow is the groundwater flow that contributes loading to the IRL. Due to the sandy soils in the basin and excess irrigation, nutrients can soak quickly into the groundwater with little removal. This groundwater can recharge surface water in ditches, canals, tributaries, or the IRL.
  - Excess fertilizer that soaks into the ground past the root zones.
  - Septic systems, both functioning and failing, contribute nutrient loading to the groundwater.
  - Leaking sewer pipes located above the water table can contribute nutrient loading to the groundwater.
- Atmospheric deposition that falls on both the land and the lagoon itself:
  - Nutrients in the atmosphere fall into the basin largely during rainfall events. The sources of these nutrients are from power plants, cars, and other sources that burn fossil fuels. However, because of atmospheric conditions and weather patterns, not all the nutrients from atmospheric deposition are generated within the watershed. Atmospheric loading is not directly addressed by this plan as air quality and air emission standards are regulated by the federal Clean Air Act and are not within the County's control. However, the stormwater projects and in-lagoon projects will treat some of the nutrient loading from atmospheric deposition that falls on the land and lagoon surface.
- Point sources that treat collected sewage and discharge treated effluent:
  - The direct wastewater treatment facility (WWTF) discharges to the lagoon have been largely removed, and most of the facilities in the basin use the treated effluent for reclaimed water irrigation. However, depending on the level of treatment at the WWTF, the reclaimed water can have an excessive concentration of nutrients that may contribute loading to the baseflow.

- There have been issues with inflow and infiltration into the sanitary sewer collection system. Large rain events can result in large amounts of water entering the sewer collection system, and this additional water can cause sewer overflows that contribute nutrients and bacteria to local waterbodies.

In addition to these external sources of loading to the lagoon, nutrients from muck (muck flux) is an internal source of loading within the lagoon itself. Muck is made up of organic materials from soil erosion on the land and from decay of organic matter (leaves, grass clippings, algae, and aquatic vegetation) in the lagoon. As these organic materials decay, they constantly flux nutrients into the water column above, where they add to the surplus of nutrients coming from external sources.

Table 3-1 summarizes the estimated total nitrogen (TN) and total phosphorus (TP) loading in pounds per year (lbs/yr) from these sources in the Banana River Lagoon (including canals), North IRL, and Zone A of the Central IRL. The stormwater runoff and baseflow/septic systems loading estimates are from the Spatial Watershed Iterative Loading model, the point source loading estimates were based on the facility monthly operating reports and discharge monitoring reports, and the atmospheric deposition loads are from measured data at nearby stations. The muck flux load estimates are calculated based on the muck area in each portion of the lagoon and flux estimates from studies in the lagoon (refer to **Section 4.2.1** for more details). The loading from these sources is also shown graphically in **Figure 3-1, Figure 3-2**, and **Figure 3-3**.

Table 3-1: Loading from Different Sources in Each Sub-lagoon

Source	Banana River Lagoon TN (lbs/yr)	Banana River Lagoon TP (lbs/yr)	North IRL TN (lbs/yr)	North IRL TP (lbs/yr)	Central IRL Zone A TN (lbs/yr)	Central IRL Zone A TP (lbs/yr)
Stormwater Runoff	119,923	15,064	328,047	45,423	279,351	43,193
Baseflow/Septic, Leaking Sewer, Reclaimed Water	164,225	22,613	344,111	47,383	370,129	50,966
Atmospheric Deposition	175,388	3,222	301,977	5,505	49,456	892
Point Sources	17,484	3,370	14,711	1,029	0	0
Muck Flux	393,948	43,216	247,078	17,583	16,927	2,277

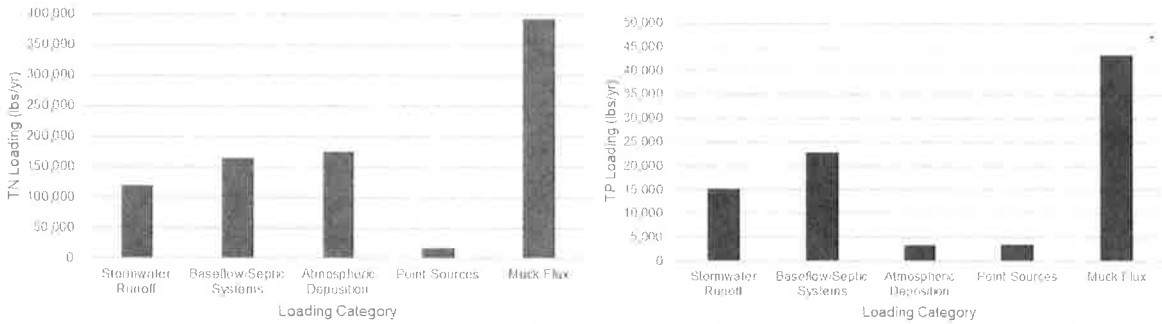


Figure 3-1: Banana River Lagoon TN (left) and TP (right) Annual Average Loads by Source

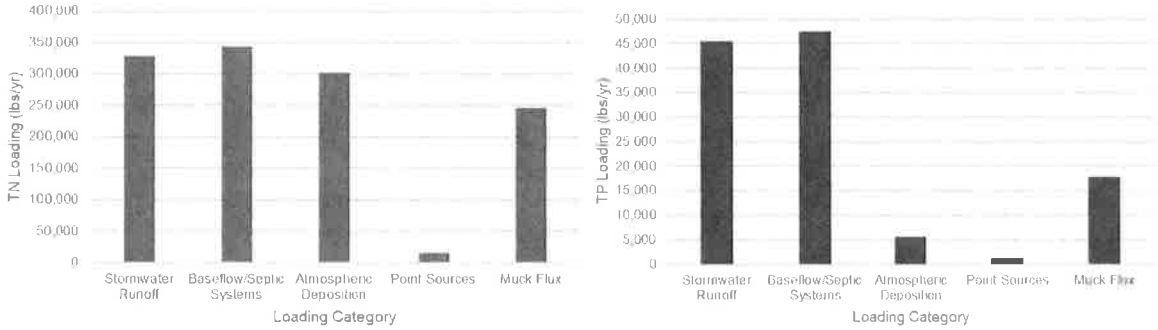


Figure 3-2: North IRL TN (left) and TP (right) Annual Average Loads by Source

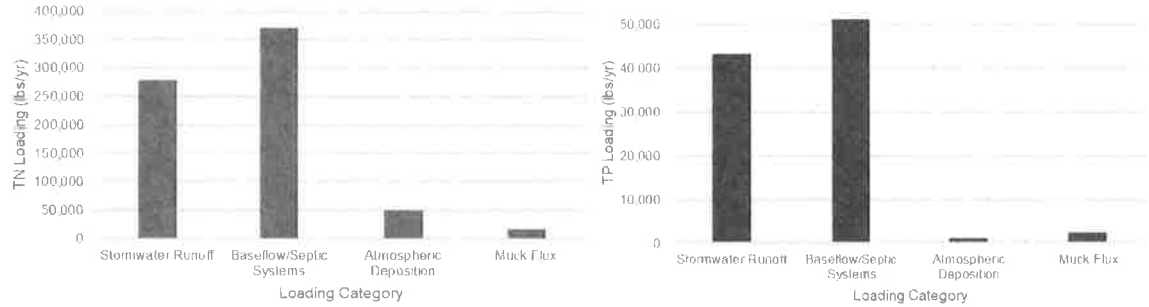


Figure 3-3: Central IRL TN (left) and TP (right) Annual Average Loads by Source

Section 4. Project Options

To restore the lagoon's balance, Brevard County has been implementing a multi-pronged approach to **Reduce** pollutant and nutrient inputs to the lagoon, **Remove** the accumulation of muck from the lagoon bottom, and **Restore** water-filtering oysters and related lagoon ecosystem services. This plan also recommends funding for project monitoring, needed for accountability and to **Respond** to changing conditions and opportunities. Response funds will be used to track progress, measure cost effectiveness, and report on performance. Each year, the Citizen Oversight Committee (additional details are included in **Section 4.4.1**) will review monitoring reports and make recommendations to the Brevard County Board of County Commissioners to redirect remaining plan funds to those efforts that will be most successful and cost-effective. Although research is important to better understand factors that significantly impact the health, productivity, and natural resilience of the Indian River Lagoon (IRL), funding for research is not included in this project plan.

Several goals were set to help select the projects for this plan. The goal for the **Reduce** projects is to achieve the proposed total maximum daily load for each sub-lagoon (refer to **Section 6** for additional details on the total maximum daily loads). The goal for the **Remove** projects is to achieve about a 25% reduction in estimated recycling of internal loads. The goals for the **Restore** projects are to filter the entire volume of the lagoon annually and to reduce shoreline erosion. The most cost-effective projects in each category were selected to maximize nutrient reductions, minimize lag time in lagoon response, reduce risk, and optimize the return on investment.

Section 4.1 through **Section 4.5** provide information on the proposed projects, estimated nutrient reduction benefits, and costs, as well as the ongoing studies needed to measure and assess the project efficiencies and benefits to the lagoon system.

4.1. Projects to Reduce Pollutants

An important step in restoring the lagoon system is reducing the amount of pollutants that enter the Indian River Lagoon (IRL) through stormwater runoff and groundwater. Reduction efforts include source control (such as fertilizer reductions) to reduce the amount of pollutants generated, as well as treatment to reduce pollutants that have already been discharged before they are washed off in stormwater runoff or enter the groundwater system and ultimately discharge to the IRL. Monitoring of these projects will be performed to verify the estimated effectiveness of each project type implemented (refer to **Section 4.4**).

The benefits from fertilizer management and public education, wastewater treatment facility (WWTF) upgrades for reclaimed water, and stormwater treatment are seen fairly quickly in the lagoon system. Public education about fertilizer and other sources of pollution addresses nutrients at their source and prevents these nutrients from entering the system. WWTF upgrades result in reduced nutrients in the treated effluent, which is then used throughout the basin for reclaimed water irrigation. The stormwater projects will capture and treat runoff, which is currently untreated or inadequately treated, before it reaches the lagoon.

While greatly beneficial, septic system removal or upgrade projects may take longer to result in a nutrient reduction to the lagoon. The septic systems in key areas must be removed or upgraded to see the full benefits. In addition, septic systems contribute nutrient loading to the lagoon through groundwater, and the travel time of the nutrient plumes through the groundwater to a waterbody vary throughout the basin depending on watershed conditions.

The following subsections summarize (1) public education and outreach efforts; (2) infrastructure improvements for WWTFs; (3) sprayfield and rapid infiltration basin upgrades; (4) package plant connections; (5) sewer laterals rehabilitation; (6) septic system removal and upgrades; and (7) stormwater treatment projects.

4.1.1 Public Outreach and Education

The education and outreach campaigns are summarized in the sections below.

> *Approximately 81,700 lbs/yr of TN and 4,200 lbs/yr of TP enter the lagoon watershed from excess fertilizer application.*

Fertilizer Management

It is a common practice to apply fertilizer on urban and agricultural land uses. However, excessive and inappropriately applied fertilizer pollutes surrounding waters and stormwater. To help address fertilizer as a source of nutrient loading, local governments located within the watershed of a waterbody or water segment that is listed as impaired by nutrients are required to adopt, at a minimum, the Florida Department of Environmental Protection's Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes (Section 403.067, Florida Statutes). Brevard County and its municipalities adopted fertilizer ordinances that included the required items from the Model Ordinance in December 2012, as well as additional provisions in 2013 and 2014. Local fertilizer ordinances are posted online at the Brevard County Extension website. These ordinances require zero phosphorus year-round, nitrogen to be at least 50% slow release, no nitrogen use during the rainy season, and variable surface water protection buffers.

Florida Department of Agriculture and Consumer Services compiled information on the fertilizer sales by county, as well as the estimated nutrients from those fertilizers. It is important to note that all fertilizer sold in a county may not be applied within that county because a portion of that fertilizer may be transported to another county. However, details on the amount of fertilizer transported between counties is not tracked. Therefore, the information in the Florida Department of Agriculture and Consumer Services reports is simply the best estimate of the amount of fertilizer used, and the associated nutrient content, in a county.

Based on the Florida Department of Agriculture and Consumer Services information, the lawn fertilizer sold in Brevard County in fiscal year 2014-2015 contained 408,220 pounds of nitrogen and 32,520 pounds of phosphorus. The fertilizer applied is attenuated through several naturally occurring physical, chemical, and biological processes including uptake by grass. The environmental attenuation/uptake for urban fertilizer is 80% for nitrogen (Florida Department of Environmental Protection, 2017) and 90% for phosphorus. The estimated total nitrogen (TN) and total phosphorus (TP) that is applied but is not naturally attenuated is shown in **Table 4-1**. It is important to note that not all the un-attenuated nutrients will migrate to the lagoon, either through runoff or baseflow (groundwater that enters ditches, canals, and tributaries), but these numbers provide an idea of the excess nutrients that could be reduced as a result of public education and changes in fertilizer use.

Table 4-1: Estimated TN and TP Not Attenuated in Fiscal Year 2014-2015

Parameter	Pounds Sold Fiscal Year 2014-15 (Lawn Only)	Environmental Attenuation (%)	Fiscal Year 2014-15 Pounds (Lawn Only) after Attenuation
TN	408,220	80%	81,644
TP	32,520	90%	3,252

When recent sales data are compared to the fertilizer sold in fiscal year 2013-2014, which is before adoption of the more protective amendments to the ordinance, significant reductions are observed. These reductions in pounds per year (lbs/yr) from the implementation of the ordinance are shown in **Table 4-2**.

Table 4-2: Reductions from Fertilizer Ordinance Compliance as of Fiscal Year 2014-2015

Parameter	Fiscal Year 2013-14 Pounds (Lawn Only) after Attenuation: Pre-Ordinance	Fiscal Year 2014-15 Pounds (Lawn Only) after Attenuation: Post-Ordinance	Reductions from Ordinance to Date (lbs/yr)
TN	127,540	81,644	45,896
TP	12,640	3,252	9,388

Based on studies by the University of Florida, approximately 0.03% of applied nitrogen ends up in runoff during establishment of sodded Bermudagrass on a 10% slope. Nitrogen leaching ranged from 8% to 12% of the amount applied (Trenholm and Sartain, 2010). Therefore, nitrogen leaching from fertilizer into the groundwater is 300 to 400 times as much as the nitrogen running off in stormwater. To help address the leaching issue, the Brevard County fertilizer ordinance encourages the use of slow release nitrogen fertilizer. Slow release fertilizer decreases nitrogen leaching by about 30% (University of Florida-Institute of Food and Agricultural Sciences, 2012). In addition, the ordinance requires that fertilizer with zero phosphorus is used.

The public education and outreach campaign will be expanded to include focus on slow release and zero phosphorus fertilizers. An important component of this will be to reach out to stores within the County to ensure they are making slow release and zero phosphorus fertilizers more visible and to add signage to let buyers know which fertilizers are compliant with all local ordinances. This would cost approximately $125,000 per year for a period of five years. If an additional 25% of fertilizer users switch to 50% slow release nitrogen and zero phosphorus formulations, compliant with the ordinance, this would result in a reduction of 6,123 lbs/yr of TN and 813 lbs/yr of TP.

In 2019, the University of Florida Institute of Food and Agricultural Sciences and MTN Marketing conducted a survey that was concentrated on fertilizer awareness questions. The results from the 2019 survey were compared to similar questions from the 2015 Blue Life survey to evaluate changes in fertilizer use. Based on the survey results, 33.33% of respondents in 2019 stated that they use slow release nitrogen fertilizer compared to only 6.30% in 2015, which is a 27% increase in the usage of slow release fertilizer. Therefore, as part of the 2021 Update, the estimated nitrogen reductions from the expanded fertilizer education was updated to 27%, which results in an estimated reduction of 6,613 lbs/yr of TN. The TP reductions were kept at 25% compliance because, the way the survey was setup, participants were only able to select one option for the type of fertilizer used. Therefore, an update on the use of zero phosphorus formulas could not be obtained. The estimated reductions are shown in **Table 4-3**.

Table 4-3: Project for Additional Fertilizer Ordinance Compliance

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
Original	58a	Expanded Fertilizer Education*	Brevard County	All	6,613	$95	813	$769	$625,000

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan.

In 2018, the Citizen Oversight Committee recommended extending the fertilizer education and outreach beyond the original plan recommendation of five years to all ten years of the plan. The $625,000 for this project will be redistributed as follows: (1) $125,000 in Year 1 to create the education campaign and begin implementation, (2) $50,000 per year to continue implementation in Years 2–10, and (3) an additional $50,000 in Year 6 (for a total of $100,000 in this year) to evaluate program success and update the outreach materials, as needed.

Grass Clippings

Grass clippings contain nutrients and those nutrients are released in stormwater or the lagoon as they decompose (Brevard County Natural Resources Management Department, 2017). St. Augustine grass contains 2.5% nitrogen and 0.2–0.5% (average of 0.5%) phosphorus and Bahia grass contains 2% nitrogen (University of Florida-Institute of Food and Agricultural Sciences, 2015). According to Okaloosa County Extension (2017), a 7,500-square foot lawn produces about 3,000 pounds of clippings per year. Unfortunately, the percentage of those total clippings that end up in stormwater is not known.

To estimate the potential nutrient reduction impact of a grass clippings campaign, it was assumed that the average home lot size is 10,000 square feet with a 100-foot by 100-foot boundary, with 2,500 square feet of built space and 7,500 square feet of lawn. The University of Florida-Institute of Food and Agricultural Sciences estimated that 3,000 pounds of grass clippings are produced annually from a healthy lawn of this size. It was assumed that most of the grass clippings in Brevard County are from St. Augustine grass, which means that 3,000 pounds of clippings contains approximately 75 pounds of TN and 10.5 pounds of TP.

It was also assumed that the standard mower size is two feet wide. From one roadside pass along 100 feet of the average lawn with a two-foot wide mower, 200 square feet or 2.6% of the total lawn clippings could be cast into the road. This equals 0.02 pounds of TN and 0.0027 pounds of TP per foot per year left in the road. With about 3,800 miles of roads in the Indian River Lagoon (IRL) Basin within Brevard County, of which approximately 1,250 miles are paved with curb and gutter and are most likely to allow the ready transport of grass clippings to the lagoon in stormwater, the potential nutrient release from those grass clippings could be up to 260,000 lbs/yr of TN and 35,640 lbs/yr of TP from mowing along both sides of the road.

If Brevard County expects a similar rate of awareness of 24% as Alachua County (2012), then a potential 200,000 lbs/yr of TN and 27,000 lbs/yr of TP may be entering the stormwater. If a successful grass clippings campaign in Brevard County can capture an increase of awareness similar to Alachua County (from 24% to 69%), then there is a potential reduction of 88,920 lbs/yr of TN and 12,189 lbs/yr of TP. In addition, assuming the environmental attenuation/uptake for grass clippings is similar to the urban fertilizer uptake of 80% for nitrogen and 90% for phosphorus, the estimated reductions would be 17,800 lbs/yr of TN and 1,200 lbs/yr of TP.

This estimate assumes a simplified worst-case scenario in which everyone leaves a portion of their clippings in the road; however, it does not take into account the number of driveways, sidewalks, medians, and other impervious surfaces that grass clippings could be falling or the grass clippings being directly cast into the IRL, canals, and other waterways. Using the available information, this provides an order of magnitude estimate of the potential benefits of a grass clippings campaign for the IRL.

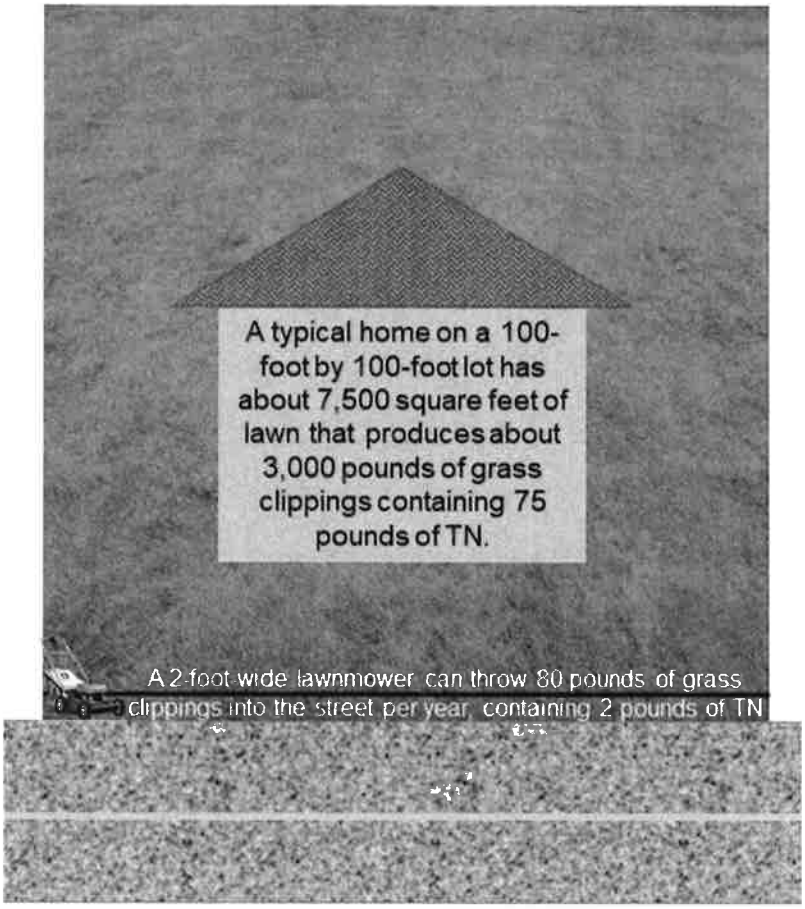


Figure 4-1: Grass Clippings Example for a Typical Lot

Figure 4-1 Long Description

The Marine Resources Council proposed a partnership between the IRL Basin counties to pursue a grass clippings campaign similar to the Alachua County campaign. The Citizen Oversight Committee recommended contributing $20,000 in Year 1 of the plan towards the research and marketing to develop the campaign. This was followed by an annual investment of $20,000 per year for Years 2 through 10 for media and promotional materials targeting Brevard County. Therefore, the total project cost is $200,000. **Table 4-4** summarizes the costs and benefits of implementing the grass clippings campaign.

Table 4-4: Project for Grass Clippings Campaign

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2018	58b	Grass Clippings Campaign+	Brevard County	All	17,800	$11	1,200	$167	$200,000

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

Market research needed to guide development of a grass clipping campaign was contracted through the Marine Resources Council to a community-based social marketing firm, Uppercase Inc. Survey results from 2018 are reported in **Section 4.4.3**.

Excess Irrigation

Fertilizer nutrients are more susceptible to leaching if turfgrass is overwatered, carrying nutrients beyond the reach of the turf roots. During excess watering, soluble nutrients, such as highly mobile nitrate, wash through the soil from the root zone too quickly. Excess irrigation is easy to accomplish in Florida's sandy soils as these soils typically hold no more than 0.75 inches of water per foot of soil depth (Hochmuth et al., 2016). This excess irrigation is part of the baseflow contributing nutrient loading to the IRL.

From June 2015 to May 2016, 470,737 pounds of TN in fertilizer were sold within Brevard County. Florida Department of Agriculture and Consumer Services Urban Turf Fertilizer Rule (RE-1.003[2], Florida Administrative Code) does not specify a percentage of slow-released nitrogen in fertilizer or separately track slow-release nitrogen from all nitrogen sources. However, if it is assumed that 50% of fertilizer was soluble nitrogen (compliant with local fertilizer ordinances), then the total soluble nitrogen sold in Brevard County could be as high as 235,368 lbs/yr. If 13% of soluble nitrogen were leached, up to 30,597 lbs/yr of TN could potentially be entering the groundwater. If like South Florida survey respondents 50% of irrigation users in Brevard County are not over-irrigating, and if an outreach campaign can impact half of those who do over-irrigate, fertilizer leaching could be reduced by 7,649 lbs/yr of TN. As noted above, the environmental attenuation/uptake for urban fertilizer is 80% for nitrogen (Florida Department of Environmental Protection, 2017). Therefore, the total amount of TN that could be reduced by reducing excess irrigation is 1,530 lbs/yr.

Conducting an outreach campaign with an initial $50,000 social marketing research and development investment and $25,000 in annual implementation, the total 10-year budget would be $300,000. This results in an average of $196 per pound of TN reduced per year (see **Table 4-5**). Funding for this education campaign is not recommended at this time.

Table 4-5: Estimated TN Reductions and Costs from Reducing Excess Irrigation

Project	Cost	Estimated TN Reductions (lbs/yr)	Cost per Pound per year of TN Removed
Irrigation Education	$300,000	1,530	$196

Stormwater Pond Maintenance

Wet detention ponds, also known as stormwater ponds, are one method used to remove nutrients from stormwater as mandated by Florida Statutes 403.0891. Retention/detention time of water in the pond accommodates the removal of accumulated nutrients by allowing material to settle and be absorbed. By itself, an optimally sized and properly maintained stormwater pond typically provides a 35–40% removal of nitrogen and 65% removal of phosphorus through settling (Florida Department of Environmental Protection and Water Management Districts, 2010). Additional behaviors and technologies can be combined with ponds to increase removal rates. On the other hand, poor pond maintenance practices can decrease nutrient removal rates or worse yet, release nutrients to downstream waterbodies.

A stormwater pond maintenance program would initially focus on vegetative buffers and their appropriate maintenance to reduce stormwater pollution. Brevard County contains 4,175 stormwater ponds covering 13,276 acres with 6,976,338 linear feet of shoreline. The average size of a pond is 3.2 acres with 1,671 linear feet of shoreline. These numbers include ponds affiliated with both residential and commercial areas. The average load to stormwater ponds is 11.4 pounds of TN per acre of land surrounding the pond annually according to the Florida Department of Environmental Protection's Spreadsheet Tool for Estimating Pollutant Loads. Assuming that a 50-foot perimeter directly impacts the pond, there are 8,008 acres contributing

91,288 pounds of TN annually to the ponds. Of this, up to 40% of the TN is removed through retention in the pond leaving a potential 54,773 lbs/yr of TN to enter the lagoon. For TP, approximately 18,836 lbs/yr is entering the stormwater pond. Of this, up to 65% of the TP is removed through retention in the pond leaving a potential of 6,593 lbs/yr TP to enter the lagoon.

Creating a 10-foot-wide low-maintenance buffer zone of un-mowed ornamental grasses has the potential to remove about 25% of the TN and TP entering the pond (United States Environmental Protection Agency, 2005). This amount increases with the width of the buffer and the addition of woody vegetation. For the plan calculations, the assumption was made that convincing homeowners to not mow a 10-foot buffer is the easiest practice to achieve. The pond will remove up to 40% of the remaining TN. Assuming that the education campaign can reach at least half of the 48% of people unaware of what stormwater is, the reduction could be 3,286 lbs/yr of TN and 396 lbs/yr of TP.

Conducting an outreach campaign with an initial $50,000 social marketing research and development investment plus $25,000 in annual implementation, would require a 10-year total budget of $300,000. This would result in reductions at $91 per pound of TN and $750 per pound of TP (see **Table 4-6**). Additionally, during focus group research in the first year, it may be possible to identify other best management practices that homeowners' associations are willing to adopt that would further improve the performance of their stormwater pond. This would improve the cost effectiveness of this campaign. Funding for this education campaign is not recommended at this time.

Table 4-6: Estimated TN and TP Reductions and Costs from Stormwater Best Management Practice Maintenance

Project	Cost	Estimated TN Reductions (lbs/yr)	Cost per Pound Per Year of TN Removed	Estimated TP Reductions (lbs/yr)	Cost per Pound per Year of TP Removed
Stormwater Best Management Practice Maintenance Education	$300,000	3,300	$91	400	$750

Septic Systems and Sewer Laterals Maintenance

Nationwide, 10–20% of septic systems are failing from overuse, improper maintenance, unsuitable drainfield conditions, and high-water tables. When septic systems are older and failing or are installed over poor soils close to the groundwater table or open water, they can be a major contributor of nutrients and bacterial and viral pathogens to the system (De and Toor 2017; United States Environmental Protection Agency, 2002).

A properly functioning septic tank and drainfield system reduces TN by 30–40%. However, the reduction has been measured at 0–20% in adverse conditions. The best available studies estimate a 10% reduction in nitrogen within a properly maintained tank versus an improperly maintained tank. The remaining 20–30% of nitrogen removal occurs in a properly functioning drainfield (Anderson 2006). If 15% of systems are failing and failing systems attenuate 30% less of the nitrogen load, these systems may pose far greater impacts to the groundwater, tributaries, and lagoon than the average impact reported for properly functioning systems. Without the 30% reduction, the potential load to the IRL and its tributaries is estimated to be 27.2 lbs/yr of TN for properties within 55 yards (instead of 19 lbs/yr of TN for functioning systems), 5.2 lbs/yr of TN for properties between 55 and 219 yards away (instead of 3.6 lbs/yr of TN for functioning systems), and 1.1 lbs/yr of TN for properties more than 219 yards away (instead of 0.8 lbs/yr of TN for functioning systems).

There are an estimated 53,204 septic systems in Brevard County within the IRL Basin. As noted in **Section 4.1.6**, the total loading of septic systems within 55 yards of the IRL and its tributaries is calculated at 299,590 lbs/yr of TN, the total loading of systems between 55 and 219 yards is 86,575 lbs/yr of TN, and the total loading of septic systems further than 219 yards is 10,805 lbs/yr of TN. If the failure rate in Brevard County is about 15%, and if failing systems receive 30% less attenuation, then failing systems within 55 yards of open water are contributing 13,481 lbs/yr of TN, failing systems between 55 and 219 yards of open water are contributing 3,896 lbs/yr of TN, and failing tanks further than 219 yards are contributing 486 lbs/yr of TN. By factoring in this failure rate, the total additional loading to the IRL from failing septic systems is approximately 17,863 lbs/yr of TN.

A 10-year outreach campaign budget of $300,000, which includes $50,000 for research and campaign development and $25,000 per year for implementation to improve septic system maintenance, reduce excess use, and prevent harmful additives, would strive to reduce the number of failing systems countywide by 25%, thereby reducing the excess loading from failing systems by 4,466 lbs/yr of TN. This would result in average cost of $67 per pound of TN (see **Table 4-7**).

Table 4-7: Project for Septic System Maintenance Program

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2018	58c	Septic System Maintenance Education+	Brevard County	All	4,466	$67	Not applicable	Not applicable	$300,000

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

Market research needed to guide development of a septic maintenance campaign was contracted with state grant funding through the Marine Resources Council to the University of Central Florida. Survey results from 2018 are reported in **Section 4.4.3**. In reaching out to citizens to participate in the survey, it was found that many people are unsure of whether they are on central sewer or a septic system. When developing the septic system maintenance education program, Brevard County will identify opportunities to educate people who are on central sewer about proper maintenance of their sewer laterals. Adding this education component to the septic system maintenance education campaign is not anticipated to require additional funding.

Lagoon Loyal Program

Using funding from the fertilizer education and septic system maintenance education programs, the marketing company MTN Advertising was contracted to create an outreach campaign to engage Brevard citizens in IRL restoration efforts. The Lagoon Loyal campaign uses an incentive program to motivate positive actions that benefit the IRL (website). Citizens can create an online Lagoon Loyal profile that suggests various activities that benefit the lagoon. Completing each activity earns points, which can accumulate and be redeemed for discounts to local area businesses. The businesses providing discounts are given display materials that indicate their participation, which also advertises the program to their customers. Combined with social media marketing and traditional media advertising, the program uses the slogan "Let's Be Clear…" to share easy actions that citizens can take to reduce their contribution to lagoon pollution. Message selection is guided by focus groups and survey responses from citizens who either care for a yard or maintain a septic system. The program also maintains landing pages to facilitate the septic upgrade and removal grants available to the owners of eligible locations.

Oyster Gardening Program

Most of the IRL system in Brevard County no longer has a sufficient oyster population to allow for natural recruitment of oysters to suitable substrate (Futch, 1967). Therefore, to create the oyster bars, the oysters must be grown and then carefully placed on appropriate substrate in the selected locations. To help grow the oyster population, in fiscal year 2013–2014, the Board of County Commissioners approved $150,000 to launch the Oyster Gardening Program. This program is a citizen-based oyster propagation program where juvenile oysters are raised under lagoon-front homeowners' docks for about six months before being used to populate constructed oyster bar sites. Oyster Gardening participants receive spat-on-shell oysters plus all supplies needed to care for their oysters. The Oyster Gardening Program is executed in partnership with the Brevard Zoo. The project continued during fiscal year 2014–2015 with funding from the state and has continued with annual County funding.

In 2020, the Citizen Oversight Committee approved $300,000 from the Save Our Indian River Lagoon Tax to fund the Oyster Gardening Program through September 2021 (**Table 4-8**).

Table 4-8: Project for Oyster Gardening Program

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2020	193	Oyster Gardening Program+	Brevard County	All	Not applicable	Not applicable	Not applicable	Not applicable	$300,000

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.1.2 WWTF Upgrades

88% of reclaimed water in the County is used in public access areas and for landscape irrigation.

The direct wastewater treatment facility (WWTF) discharges to the Indian River Lagoon (IRL) have been largely removed, and the majority of facilities in the basin use the treated effluent for reclaimed water irrigation. While the use of reclaimed water for irrigation is an excellent approach to conserving potable water, if the reclaimed water is high in nutrient concentrations, the application of the reclaimed water for irrigation can result in nutrients leaching into the groundwater. It is important to note that there are no regulations on the concentration of nutrients in reclaimed water that is used for irrigation. However, University of Florida-Institute of Food and Agricultural Sciences studies indicate that a nitrogen concentration of 5 to 9 milligrams per liter is optimal for turfgrass growth, and each year a maximum amount of 1 pound of nitrogen can be applied per 1,000 square feet of turf (University of Florida-Institute of Food and Agricultural Sciences, 2013a and 2013b). Nitrogen leaching increases significantly when irrigation is greater than 2 centimeters per week (0.75 inches per week), even if the nitrogen concentrations are half of the maximum Institute of Food and Agricultural Sciences recommendation of 9 milligrams per liter.

In Brevard County, 88% of the reclaimed water is used in public access areas and for landscape irrigation. The total reclaimed water used countywide is approximately 18.5 million gallons per day, which is applied over 7,340 acres. The unincorporated County and city WWTFs with the reclaimed water flows, total nitrogen (TN) concentrations based on permit data and loads in pounds per year (lbs/yr) are shown in **Table 4-9**. This table also summarizes the excess TN in the reclaimed water after environmental attenuation/uptake (75% for TN [Florida Department of

Environmental Protection, 2017]), for both the current TN effluent concentration and if the facility were upgraded to achieve a TN effluent concentration of 6 milligrams per liter (the City of Palm Bay Water Reclamation Facility update will achieve a TN effluent concentration of 7.5 milligrams per liter and the City of Melbourne Grant Street WWTF will achieve a TN effluent concentration of 5 milligrams per liter).

Table 4-9: TN Concentrations in WWTF Reclaimed Water

Facility	Permitted Capacity (million gallons per day)	Reclaimed Water Flow (million gallons per day)	TN Concentration (milligrams per liter)	TN After Attenuation (lbs/yr)	TN After Attenuation and Upgrade (lbs/yr)
City of Palm Bay Water Reclamation Facility	4.0	1.20	29.4	27,305	6,966
City of Melbourne Grant Street WWTF	5.5	2.08	21.0	33,806	8,049
City of Titusville Osprey WWTF	2.75	1.67	12.7	16,415	7,755
Brevard County Port St. John WWTF	0.5	0.35	12.6	3,413	1,625
Cape Canaveral Air Force Station WWTF	0.8	0.80	11.9	7,368	3,714
City of West Melbourne Ray Bullard Water Reclamation Facility	2.5	0.85	11.1	7,302	3,947
Brevard County Barefoot Bay Water Reclamation Facility	0.9	0.48	10.3	3,826	2,229
Brevard County South Beaches WWTF	8.0	1.12	9.3	8,061	5,201
Brevard County North Regional WWTF	0.9	0.26	8.9	1,791	1,207
Rockledge WWTF	4.5	1.40	7.0	7,584	6,501
Brevard County South Central Regional WWTF	5.5	3.79	6.7	19,653	17,600
City of Titusville Blue Heron WWTF	4.0	0.84	4.8	4,993	Not applicable
City of Cape Canaveral Water Reclamation Facility	1.8	0.88	3.8	4,141	Not applicable
City of Cocoa Jerry Sellers Water Reclamation Facility	4.5	1.44	3.5	6,241	Not applicable
Brevard County Sykes Creek WWTF	6.0	1.48	3.4	3,895	Not applicable
City of Cocoa Beach Water Reclamation Facility	6.0	3.66	2.5	11,331	Not applicable

Based on a 2007 study by United States Environmental Protection Agency, the cost to upgrade WWTFs to meet advanced wastewater treatment standards is approximately $4,200,000 per plant. This cost is in 2006 dollars, which, when inflated to 2016 dollars and costs are included for design and permitting, is approximately $6,000,000 per facility. Where cost estimates were available for facility upgrades, these costs were used instead of the inflated estimated costs. Due to the high cost per pound of TN and total phosphorus (TP) removed to upgrade some of these facilities compared to other projects in this plan, only those facilities in **Table 4-10** are recommended for upgrades as part of this plan. This table also includes the WWTF upgrade projects submitted as part of an annual update to the plan.

As part of the public education and outreach efforts, customers who use reclaimed water for irrigation should be informed of the nutrient content in the reuse water because they can and should eliminate or reduce the amount of fertilizer added to their lawn and landscaping. This information can be provided to the customers through their utility bill.

Table 4-10: Projects for WWTF Upgrades to Improve Reclaimed Water

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Removed	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Removed	Plan Funding
Original	2016-17	City of Palm Bay Water Reclamation Facility*	City of Palm Bay	Central IRL	20,240	$180	102	$35,656	$3,636,900
Original	2016-02a	City of Titusville Osprey WWTF*	City of Titusville	North IRL	8,660	$1,016	Not applicable	Not applicable	$8,800,000
2018	59	Grant Street Water Reclamation Facility Nutrient Removal Improvements+	City of Melbourne	Central IRL	18,052	$375	9,671	$700	$6,769,500
2019	99	Cocoa Beach Water Reclamation Facility Upgrade+	City of Cocoa Beach	Banana	2,520	$375	685	$1,380	$945,000
2020	2016-2b	City of Titusville Osprey Nutrient Removal Upgrade Phase 2+	City of Titusville	North IRL	3,626	$83	Not applicable	Not applicable	$300,000
2020	138	Ray Bullard Water Reclamation Facility Biological Nutrient Removal Upgrade+	City of West Melbourne	Central IRL	11,360	$375	3,302	$1,290	$4,260,000
-	-	***Total***	-	-	***64,458***	***$383 (average)***	***13,760***	***$1,796 (average)***	***$24,711,400***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.1.3 Sprayfield and Rapid Infiltration Basin Upgrades

Another opportunity to reduce the nutrient loading from the wastewater treatment facilities (WWTFs) is to upgrade the disposal locations, either sprayfields or rapid infiltration basins, for the treated effluent. The sprayfields and rapid infiltration basins could be modified to include biosorption activated media to provide additional nutrient removal. Examples of biosorption activated media include mixes of soil, sawdust, zeolites, tire crumb, vegetation, sulfur, and spodosols (Wanielista et al., 2011). Based on a pilot project in the City of DeLand, the potential removal of adding biosorption activated media to a sprayfield or rapid infiltration basin is 83% for total nitrogen (TN) and 66% for total phosphorus (TP) (City of DeLand and University of Central Florida, 2018). The loads for the facilities in Brevard County that dispose of reclaimed water to a sprayfield or rapid infiltration basin were estimated based on permit and discharge monitoring report information (where available). Attenuation rates were based on ArcGIS-Based Nitrate Load Estimation Toolkit (Rios et al., 2013) model results for each specific package plant location. Then the biosorption activated media efficiency rate was applied to determine the TN that could be removed (in pounds per year [lbs/yr]). Costs were estimated for each upgrade and the upgrades that could be made for the least cost per pound of TN are recommended for pilot project funding as part of this plan (see **Table 4-11** and **Table 4-12**). Information on nutrient concentrations or the size of the sprayfield/rapid infiltration basin were missing from several facilities. As this information is gathered, additional upgrades may be found to be cost-effective.

Table 4-11: Projects for Sprayfield or Rapid Infiltration Basin Upgrades for Public Facilities

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)*	TN Cost per Pound per Year	TP Reduction (lbs/yr)*	TP Cost per Pound per Year	Plan Funding
2017	6	Long Point Park Upgrade+	Brevard County Parks Department	Central IRL	163	$625	Not applicable	Not applicable	$101,854
2019	2016-51	Port St. John Wastewater Treatment Plant – Rapid Infiltration Basin+	Brevard County	North IRL	4,116	$238	915	$1,071	$980,100
2019	204	Cape Canaveral Air Force Station Regional WWTF – Rapid Infiltration Basin+	Brevard County	Banana	4,625	$1,130	1,226	$4,264	$5,227,200
-	-	***Total***	-	-	***8,904***	***$709 (average)***	***2,141***	***$2,947 (average)***	***$6,309,154***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.
* The starting TN and TP concentrations assume that the facility has been upgraded to achieve the basin management action plan effluent requirements.

Table 4-12: Projects for Sprayfield or Rapid Infiltration Basin Upgrades for Private Facilities

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2019	2016-20	Canebreaker Condo – Sprayfield+	Brevard County	North IRL	61	$590	To be determined	To be determined	$36,000
-	-	***Total***	-	-	***61***	***$590***	***To be determined***	***To be determined***	***$36,000***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.1.4 Package Plant Connections

Package plants are miniature wastewater treatment facilities (WWTFs) that serve small communities producing more than 2,000 gallons of effluent per day. The most common package plant treatment methods are extended aeration, sequencing batch reactors, and oxidation ditches; the same biological treatment methods used in larger wastewater treatment plants. The smallest package plants often use the same technology as advanced septic systems. Following this treatment, the effluent is disposed of in rapid infiltration basins (ponds), sprayfields, or drainfields (United States Environmental Protection Agency, 2000).

Most package plants were removed in the 1990s following the Indian River Lagoon System and Basin Act of 1990. However, opportunities still exist to address some of the worst remaining package plants by upgrading the existing plant, adding nutrient scrubbing technology, or preferably connecting them to central sewer where the wastewater will receive further treatment and disposal far from the lagoon. A few of these package plants are located along the Indian River Lagoon (IRL) and, therefore, pose a substantial nutrient risk due to their effluent concentration and disposal methods. **Table 4-13** lists the estimated total nitrogen (TN) reductions in pounds per year (lbs/yr) and costs to connect the package plants to the sewer system. Based on the information in this table, the cost to connect the package plants to the sewer are higher than the cost per pound of other projects in this plan; therefore, none of the package plant projects are recommended at this time.

Table 4-13: Projects for Package Plant Connection

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2021	197	South Shores Utility Connection+	Brevard County	Central IRL	929	$1,401	To be determined	To be determined	$1,301,154
2021	199	River Grove I & II Mobile Home Park Connection+	Brevard County	Central IRL	697	$1,441	To be determined	To be determined	$1,004,640
2021	192	Oak Point Wastewater Treatment Facility Improvements+	Oak Point Mobile Home Park	North IRL	186	$1,500	0	Not applicable	$279,000
-	-	***Total***	-	-	***1,812***	***$1,426 (average)***	***To be determined***	***To be determined***	***$2,584,794***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.1.5 Sewer Laterals Rehabilitation

Sewage overflows following heavy rainfall events are an indicator of illegal connections or inadequate sewer asset conditions. There are three major components of wastewater flow in a sanitary sewer system: (1) base sanitary (or wastewater) flow, (2) groundwater infiltration, and (3) rainfall inflow. Virtually every sewer system has some infiltration and/or inflow. Historically, small amounts of infiltration and/or inflow are expected and tolerated. However, infiltration and/or inflow becomes excessive when it causes overflows, health, and/or environmental risks. Overflows from the South Beaches Wastewater Treatment Facility (WWTF) sewer system have occurred 7 of the last 13 years, including significant overflows following Hurricane Matthew in 2016 and Hurricane Irma in 2017. Less frequent overflows and line breaks have occurred in other sewer service areas.

In 2012, in recognition of aging infrastructure and increasingly frequent issues, the Brevard County Utility Services Department engaged seven professional engineering firms to perform independent field evaluations of the condition of the sewage infrastructure assets located in each of the County's seven independent sewer service areas. The output of this investigation was identification of $134 million in specific capital improvement needs required over a ten-year period to bring County-owned sewer system assets up to a fully-functional, reliable, affordable, efficient, and maintainable condition (Brevard County Utility Services, 2013). The field evaluation results and corresponding 10-year Capital Improvement Program Plan were presented to the Brevard County Commission in 2013. In response, the Commission approved financing the entire Capital Improvement Program Plan and increased the County's sewer service rates to repay the debt. Plan implementation began in 2014 and projects are progressing quickly.

Because there was already a capital improvement plan and funding mechanism for updating the County's aging sewer system infrastructure, the original Save Our Indian River Lagoon Project Plan did not include analysis or funding for sewer system repairs. Unfortunately, even in areas where capital improvements have been made, infiltration and/or inflow continues to be a problem that contributes to overflows that discharge untreated wastewater into the Indian River Lagoon (IRL). This indicates the probability of problems outside the County-owned assets and could include illegal connections and/or leaks in the privately owned lateral connections of homes and businesses to the County sewer system.

Identifying problems on the customer side of the connection required smoke testing each building or private residence to determine if leaks or illegal connections are present. The extent of infiltration and/or inflow on the customer side of the connections is unknown and, therefore, the nutrient loading associated with these issues are also unknown. As a first step to determine the extent of infiltration and/or inflow problems with the sewer laterals, the County partnered with the City of Satellite Beach on a pilot project to perform smoke testing of more than 12,000 buildings and residences within the area of concern in March through July of 2018. Smoke testing results are included in **Section 4.4.3**.

Repair of privately-owned portions of the sewer system is not funded in the County's adopted Capital Improvement Program Plan for the Wastewater Utility; therefore, consideration has been given to the use of the Save Our Indian River Lagoon Tax funding. The Brevard County Utility Services Department estimates that infiltration and/or inflow due to rainfall and flooding associated with Hurricane Irma, caused 1,835 pounds per year (lbs/yr) of total nitrogen (TN) and 350 lbs/yr of total phosphorus (TP) to enter the lagoon from sewer overflowing from the South Beaches Regional WWTF sewer system. Staff reviewed 13 years of storm-related release data

(2004–2017) to estimate the average annual nutrient load to the lagoon from emergency sewage overflows. If repairing private connections could prevent similar overflows in the future, then the average annual nitrogen reduction benefit of such repairs would be approximately 988 lbs/yr of TN. The average cost effectiveness of sewer expansion projects funded in the 2017 Plan Supplement was $852 per pound of nitrogen removed, thus the cost to reduce 988 lbs/yr of TN loading by implementing septic to sewer projects would be $841,842. Therefore, the 2018 Update allocated $840,000 to assist property owners with the cost to repair leaky sewer connections expected to be found through smoke testing.

After smoke testing was complete, based on the leaks identified, the cost to make the repairs in the pilot area was estimated at $646,200. A second pilot area for smoke testing was added in 2019 and three more areas were added in 2020; however, funds were not added to assist owners with making repairs in these areas. Instead, the Citizen Oversight Committee and Brevard County Board of County Commissioners decided in 2020 to make the $840,000 of funding available to offer grants county-wide for the repair of leaky laterals within the watershed of the IRL. **Table 4-14** summarizes the sewer laterals rehabilitation projects. It should be noted that smoke testing alone does not result in nutrient load reductions; identified issues must be repaired to achieve a nutrient load reduction benefit. Therefore, the funding for this type of project is focused on repairs to achieve reductions.

The Save Our Indian River Lagoon Trust Fund will also be used to conduct performance monitoring to measure the nutrient reduction benefits of repairing privately-owned leaky lateral connections. In addition to documenting less groundwater leaking into pipes and overwhelming the sewer infrastructure, monitoring will also seek to document improvement in groundwater quality that may occur when the leaks are repaired. The results of performance monitoring will be used to consider expansion of this program from the Satellite Beach pilot areas to other city and county sewer service areas. The lessons learned from this pilot study and a pilot study in Titusville (added in the 2019 Update) will be applied to future sewer lateral evaluation and repair projects.

Table 4-14: Projects for Sewer Laterals Rehabilitation

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per year of TN Removed	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Removed	Plan Funding
2018, 2021	63ab	Satellite Beach Lateral Smoke Testing and Countywide Repair/ Replacement+	Brevard County	Banana	988	$850	188	$4,468	$840,000
2019	100	Osprey Basin Lateral Smoke Testing+	City of Titusville	North IRL	640	Not applicable	Not applicable	Not applicable	$200,000
2020	114	Barefoot Bay Lateral Smoke Testing+	Brevard County Utility Services Department	Central IRL	864	Not applicable	Not applicable	Not applicable	$90,000
2020	115	South Beaches Lateral Smoke Testing+	Brevard County Utility Services Department	Central IRL	1,662	Not applicable	Not applicable	Not applicable	$200,000
2020	116	Merritt Island Lateral Smoke Testing+	Brevard County Utility Services Department	North IRL	2,042	Not applicable	Not applicable	Not applicable	$250,000
"	"	***Total***	"	"	***6,196***	***$1,230 (average)***	***188***	***$8,404 (average)***	***$1,580,000***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.1.6 Septic System Removal and Upgrades

Septic systems are commonly used where central sewer does not exist. When properly sited, designed, constructed, maintained, and operated, septic systems are often a safe means of disposing of domestic waste but still add nutrients to the system. However, when septic systems are older and failing or are installed over poor soils close to the groundwater table or open water, they can be a major contributor of nutrients and bacterial and viral pathogens to the system. To address this source, options for both septic system removal and septic system upgrades were evaluated. It is important to note that although the County is taking the lead on these projects, the Florida Department of Health is responsible for the regulation and permitting of septic systems. The County will coordinate with Florida Department of Health on the septic system projects recommended in this plan.

Septic System Removal by Sewer Extension

In 2018, Brevard County conducted a more detailed evaluation of septic system impacts to surface waters through both groundwater monitoring and modeling using the Florida Department of Environmental Protection-approved ArcGIS-Based Nitrate Load Estimation Toolkit (Rios et al., 2013). This evaluation found that groundwater conductance and soil types were more important for nitrogen transport from septic systems than was previously accounted for in the approach used for ranking in the original Save Our Indian River Lagoon Plan. Therefore, for the 2019 Update, the approach to prioritize areas for septic system connection to the sewer system was modified. The updated approach and recommended projects are summarized below.

The updated approach to rank areas for septic system impacts used information on the potential nutrient contribution from the ArcGIS-Based Nitrate Load Estimation Toolkit (Rios et al., 2013). Potential nutrient contributions were determined based on numerous factors, but after testing model sensitivity to these factors, a simplified approach was developed for Brevard County that was based primarily on the spatial location of the septic system (i.e. Barrier Island, Merritt Island, Mainland, or Melbourne Tillman Water Control District), soil type (soil hydraulic conductance), and the minimum distance to waterbodies (Applied Ecology, 2018).

A direct comparison between the previous model that adapted studies from Martin and St. Lucie counties (**Table 4-15**) and the new model tailored to Brevard County's soil and water (**Table 4-16**) is difficult. For loading in pounds per year (lbs/yr), the previous study estimated total nitrogen (TN), which is the sum of nitrate, nitrite, ammonia, and organic nitrogen, whereas the new approach using the ArcGIS-Based Nitrate Load Estimation Toolkit estimated only nitrate and ammonia. Through the detailed ArcGIS-Based Nitrate Load Estimation Toolkit analysis it was also determined that there are 6,260 fewer septic systems in the IRL Basin than estimated in the original plan.

Table 4-15: Original Estimate of TN Loading and Cost to Connect for Septic Systems

Septic System Distance from Surface Water	Number of Septic Systems	TN Load Per System (lbs/yr)	TN Load (lbs/yr)	Cost per System to Connect	Total Cost	Cost per Pound per Year of TN
Less than 55 yards	15,090	27.095	408,863	$20,000	$301,800,000	$738
Between 55 and 219 yards	25,987	6.865	178,395	$20,000	$519,740,000	$2,913
Greater than 219 yards	18,361	0.001	10	$20,000	$367,220,000	$37,624,010
Total in IRL Basin	***59,438***	***9.880 (average)***	***587,268***	***$20,000***	***$1,188,760,000***	***$2,024 (average)***

Table 4-16: Updated Estimate of TN Loading based on ArcGIS-Based Nitrate Load Estimation Toolkit and Updated Cost to Connect for Septic Systems

Septic System Distance from Surface Water	Number of Septic Systems	TN Load per System (lbs/yr)	TN Load (lbs/yr)	Cost per System to Connect	Total Cost	Cost per Pound per Year of TN
Less than 55 yards	15,737	19.037	299,590	$33,372	$525,175,164	$1,753
Between 55 and 219 yards	23,969	3.612	86,575	$33,372	$799,893,468	$9,239
Greater than 219 yards	13,472	0.802	10,805	$33,372	$449,587,584	$41,611
Total in IRL Basin	***53,178***	***7.465 (average)***	***396,970***	***$33,372***	***$1,774,656,216***	***$4,471 (average)***

Those septic systems within 55 yards of surface waters were further analyzed by soil hydraulic conductivity since it was found to be a highly influential variable in nutrient loading from septic systems. Hydraulic conductance is the ability of water to move through pore space in the soil with sandy soils having a higher conductance compared to loamy and clay soils. As shown in **Table 4-17**, nitrogen loading is much higher in the very high and high conductivity soils compared to the average for all soils within 55 yards. Although only half of the septic systems are in very high and high conductance soils, these account for 76% of the nitrogen loading.

Table 4-17: Septic Systems by Soil Hydraulic Conductance Class within 55 Yards of Surface Waters

Hydraulic Conductivity of Septic Systems Within 55 yards of Surface Water	Number of Septic Systems	TN Load per System (lbs/yr)	TN Load (lbs/yr)	Cost per System to Connect	Total Cost	Cost per Pound per Year of TN
Very High	1,899	34.926	66,324	$33,372	$63,373,428	$956
High	6,304	26.021	164,039	$33,372	$210,377,088	$1,283
Medium	3,230	12.198	39,401	$33,372	$107,791,560	$2,736
Low	3,396	5.930	20,141	$33,372	$113,331,312	$5,628
Very Low	908	10.664	9,683	$33,372	$30,301,776	$3,129
Total	***15,737***	***19.037 (average)***	***299,588***	***$33,372***	***$525,175,164***	***$1,753 (average)***

Table 4-18 shows those properties with septic systems in very high and high hydraulic conductance soils distributed by distance to surface waterbodies. Waterfront properties served by septic systems, including those properties adjacent to the lagoon, tributary rivers and creeks, or on canals or drainage ditches that discharge to the lagoon contribute 48% of all septic system loading in the IRL watershed in Brevard County. Changes in the 2019 Update shifted septic to sewer and septic upgrade projects as much as feasible to areas of high conductivity soils located adjacent to waterways that contribute the greatest loading to the IRL.

Table 4-18: Septic Systems in Very High and High Hydraulic Conductance Soils Distributed by Distance to Surface Waters

Septic System Distance from Surface Water (yards)	Number of Septic Systems	TN Load per System (lbs/yr)	TN Load (lbs/yr)	Cost per System to Connect	Total Cost	Cost per Pound per Year of TN
0-11	5,584	33.838	188,956	$33,372	$186,349,248	$986
12-22	1,207	16.404	19,799	$33,372	$40,280,004	$2,034
23-33	465	17.466	8,121	$33,372	$15,517,980	$1,911
34-44	384	12.458	4,784	$33,372	$12,814,848	$2,679
45-55	563	15.456	8,702	$33,372	$18,788,436	$2,159
Total in IRL Basin	***8,203***	***28.083 (average)***	***230,362***	***$33,372***	***$273,750,516***	***$1,188***

For the funded opportunities that were identified using the new ranking method, the number of lots that could be connected, associated cost of the connection, and estimated TN reductions are shown in **Table 4-19**. **Figure 4-10** through **Figure 4-14** show the location of each of these areas. These funded opportunities, including the quick connection projects described below, represent the connection of approximately 4% of the septic systems in Brevard County within the IRL Basin but reduce over 17% of the nutrient load contribution attributed to existing septic systems in Brevard.

Another opportunity for removing septic systems is to use a hybrid septic tank effluent pumping system. In this system, effluent from the septic tank is connected to sewer pressure lines. Small-diameter pipes, which can be installed relatively quickly, are used instead of the gravity sewer system. A high pressure ½ horse power pump (115 volt) pumps the effluent from the septic system to a force main or gravity sewer system. The City of Vero Beach is installing these systems and they are leaving the drainfields in place, which saves money and allows for a backup in the event that a power outage affects the septic tank effluent pumping system. If the drainfield is not left in place, a 500-gallon pump chamber is installed to allow enough reserve capacity to address power outages. Each septic tank effluent pumping system also has an emergency generator receptacle to address long-term power outages associated with hurricanes. The estimated cost per connection is $6,000 to $10,000, which includes the cost of the pipes. The City of Vero Beach maintains the septic tank effluent pumping system and pumps out the septic tank when needed. The customer pays the electrical costs to operate the pump for this system.

For highly ranked properties located within the vicinity of a pressure line or gravity sewer system, the septic tank effluent pumping system may be a good option instead of the septic system upgrades described below. If septic tank effluent pumping systems are selected as a preferred option anywhere in Brevard County, specific locations for septic tank effluent pumping system installation can be submitted for funding consideration through the annual project funding request and plan update process.

Table 4-19: Projects for Septic System Removal

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
Original	2016-47	Sykes Creek - Zone N*	Brevard County	Banana	2,784	$935	Not applicable	Not applicable	$2,603,016
Original	2016-48	Sykes Creek - Zone M*	Brevard County	Banana	1,798	$1,039	Not applicable	Not applicable	$1,868,832
Original	2016-49	Sykes Creek - Zone T*	Brevard County	Banana	3,360	$1,470	Not applicable	Not applicable	$4,939,056
Original	2016-29	South Banana - Zone B*	Brevard County	Banana	915	$1,495	Not applicable	Not applicable	$1,368,252
Original	2016-30	City of Rockledge*	City of Rockledge	North IRL	712	$703	Not applicable	Not applicable	$500,580
Original	2016-31	City of Cocoa - Zone K*	City of Cocoa	North IRL	1,663	$722	Not applicable	Not applicable	$1,201,392
Original	109	City of Titusville - Zones A-G*	City of Titusville	North IRL	1,563	$769	Not applicable	Not applicable	$1,201,392
Original	203	South Central - Zone A*	Brevard County	North IRL	3,655	$922	Not applicable	Not applicable	$3,370,572
Original	2016-35	South Beaches - Zone A*	Brevard County	North IRL	1,306	$945	Not applicable	Not applicable	$1,234,764
Original	2016-32	City of Cocoa - Zone J*	City of Cocoa	North IRL	3,259	$963	Not applicable	Not applicable	$3,136,968
Original	2016-36	South Beaches - Zone O*	Brevard County	North IRL	136	$979	Not applicable	Not applicable	$133,488
Original	2016-33	City of Melbourne*	City of Melbourne	North IRL	878	$988	Not applicable	Not applicable	$867,672
Original	2020-34	South Central - Zone F*	City of Melbourne	North IRL	1,688	$1,008	Not applicable	Not applicable	$1,701,972
Original	2016-37	South Beaches - Zone P*	Brevard County	North IRL	489	$1,024	Not applicable	Not applicable	$500,580
Original	2016-27	Sharpes - Zone A*	Brevard County	North IRL	5,248	$1,183	Not applicable	Not applicable	$6,207,192
Original	2016-38	City of Titusville - Zone H*	City of Titusville	North IRL	910	$1,284	Not applicable	Not applicable	$1,168,020
Original	2016-40	Rockledge - Zone B*	City of Rockledge	North IRL	4,037	$1,323	Not applicable	Not applicable	$5,339,520
Original	2016-28	South Central – Zone D (Melbourne)*	City of Melbourne	North IRL	177	$1,500	Not applicable	Not applicable	$265,500
Original	2016-39	City of Palm Bay – Zone A*	City of Palm Bay	Central IRL	2,136	$1,203	Not applicable	Not applicable	$2,569,644
Original	2016-46	City of Palm Bay – Zone B*	City of Palm Bay	Central IRL	6,809	$1,220	Not applicable	Not applicable	$8,309,628
2017	1	Breeze Swept Septic to Sewer Connection+	City of Rockledge	North IRL	2,002	$440	Not applicable	Not applicable	$880,530
2017	2a	Merritt Island Septic Phase Out Project+	Merritt Island Redevelopment Agency	North IRL	2,501	$128	Not applicable	Not applicable	$320,000
2017	4	Hoag Sewer Conversion+	City of Melbourne	Central IRL	101	$852	Not applicable	Not applicable	$86,031
2017	5	Pennwood Sewer Conversion	City of Melbourne	Central IRL	48	$847	Not applicable	Not applicable	$40,632

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2018	60	Sylvan Estates Septic-to-Sewer Conversion+	City of West Melbourne	Central IRL	1,073	$1,455	Not applicable	Not applicable	$1,561,215
2018	61	Riverside Drive Septic-to-Sewer Conversion+	City of Melbourne	North IRL	305	$872	Not applicable	Not applicable	$265,960
2018	62	Roxy Avenue Septic-to-Sewer Conversion+	City of Melbourne	North IRL	102	$872	Not applicable	Not applicable	$88,944
2020	145	Merritt Island - Zone F+	Brevard County Utility Services Department	Banana	1,292	$851	Not applicable	Not applicable	$1,100,000
2020	50b	South Central - Zone C+	Brevard County Utility Services Department	North IRL	5,146	$1,283	Not applicable	Not applicable	$6,600,000
2020	136	Micco - Zone B+	Brevard County Utility Services Department	Central IRL	8,687	$1,036	Not applicable	Not applicable	$9,000,000
2020	146	Merritt Island - Zone C+	Brevard County Utility Services Department	Banana	1,419	$1,113	Not applicable	Not applicable	$1,580,000
2020	147	Sykes Creek - Zone R+	Brevard County Utility Services Department	Banana	2,925	$1,197	Not applicable	Not applicable	$3,500,000
2020	150	South Central - Zone D+	Brevard County Utility Services Department	North IRL	3,387	$1,410	Not applicable	Not applicable	$4,774,500
2020	148	North Merritt Island - Zone E+	Brevard County Utility Services Department	Banana	2,541	$1,431	Not applicable	Not applicable	$3,635,000
2020	151	Merritt Island - Zone G+	Brevard County Utility Services Department	Banana	11,078	$1,500	Not applicable	Not applicable	$16,617,000
2020	152	Sharpes - Zone B+	Brevard County Utility Services Department	North IRL	2,692	$1,500	Not applicable	Not applicable	$4,038,000
2020	153	Cocoa - Zone C+	Brevard County Utility Services Department	North IRL	3,499	$1,500	Not applicable	Not applicable	$5,248,500
2021	3	Micco Sewer Line Extension (Phase I and II)+	Brevard County	Central IRL	1,493	$1,500	Not applicable	Not applicable	$2,239,500
2021	189	Avendia del Rio Septic to Sewer+	City of Melbourne	Central IRL	71	$986	Not applicable	Not applicable	$70,000
2021	190	Bowers Septic to Sewer+	City of Melbourne	North IRL	120	$1,225	Not applicable	Not applicable	$147,000
2021	191	Kent and Villa Espana Septic to Sewer Conversion+	City of Melbourne	North IRL	542	$1,310	Not applicable	Not applicable	$710,000
-	-	***Total***	-	-	***94,547***	***$1,174 (average)***	***Not applicable***	***Not applicable***	***$110,990,852***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

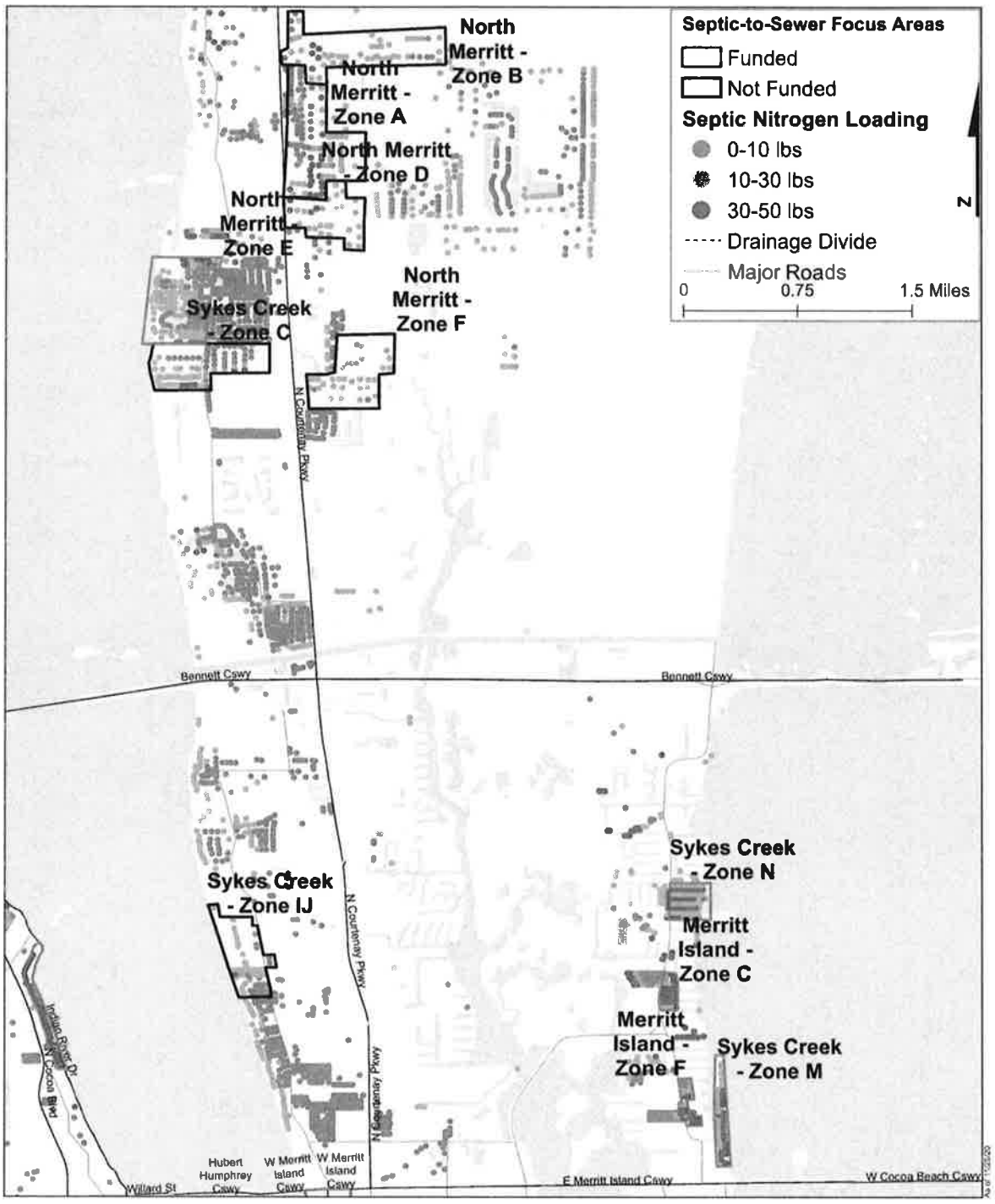


Figure 4-2: Septic System Removal Projects in Banana River Lagoon

Figure 4-2 Long Description

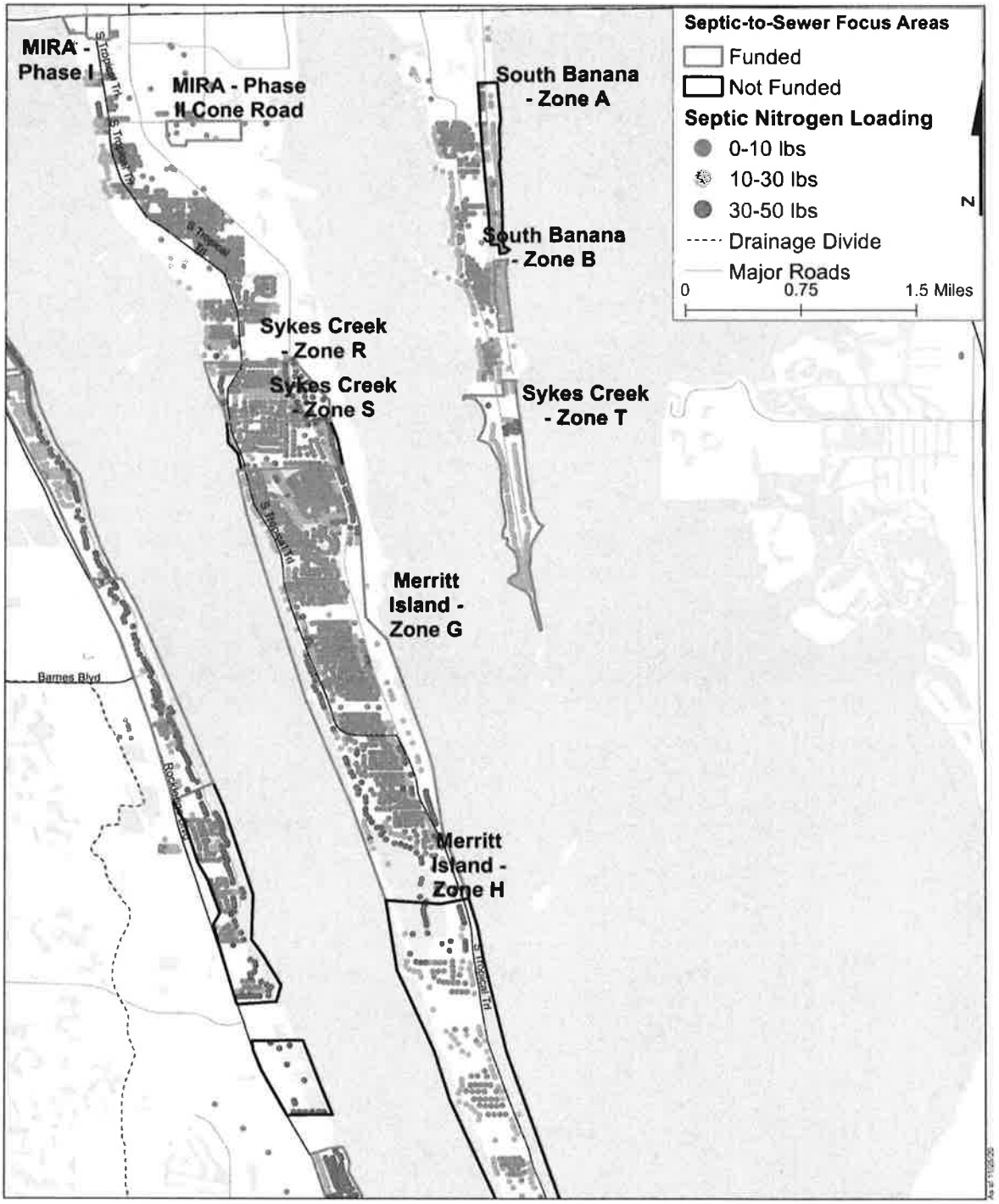


Figure 4-3: Septic System Removal Projects in Banana River Lagoon, continued

Figure 4-3 Long Description

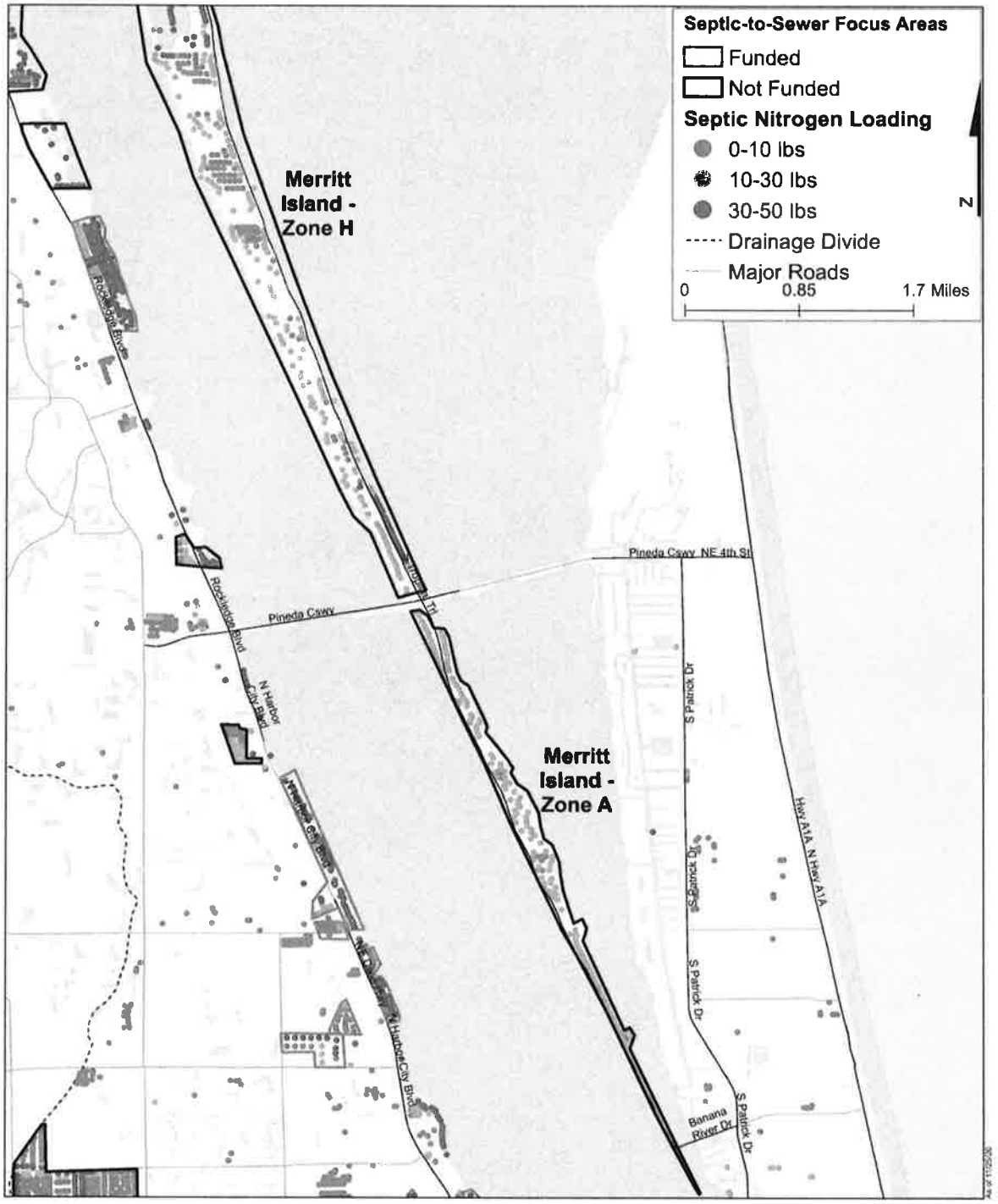


Figure 4-4: Septic System Removal Projects in Banana River Lagoon, continued

Figure 4-4 Long Description

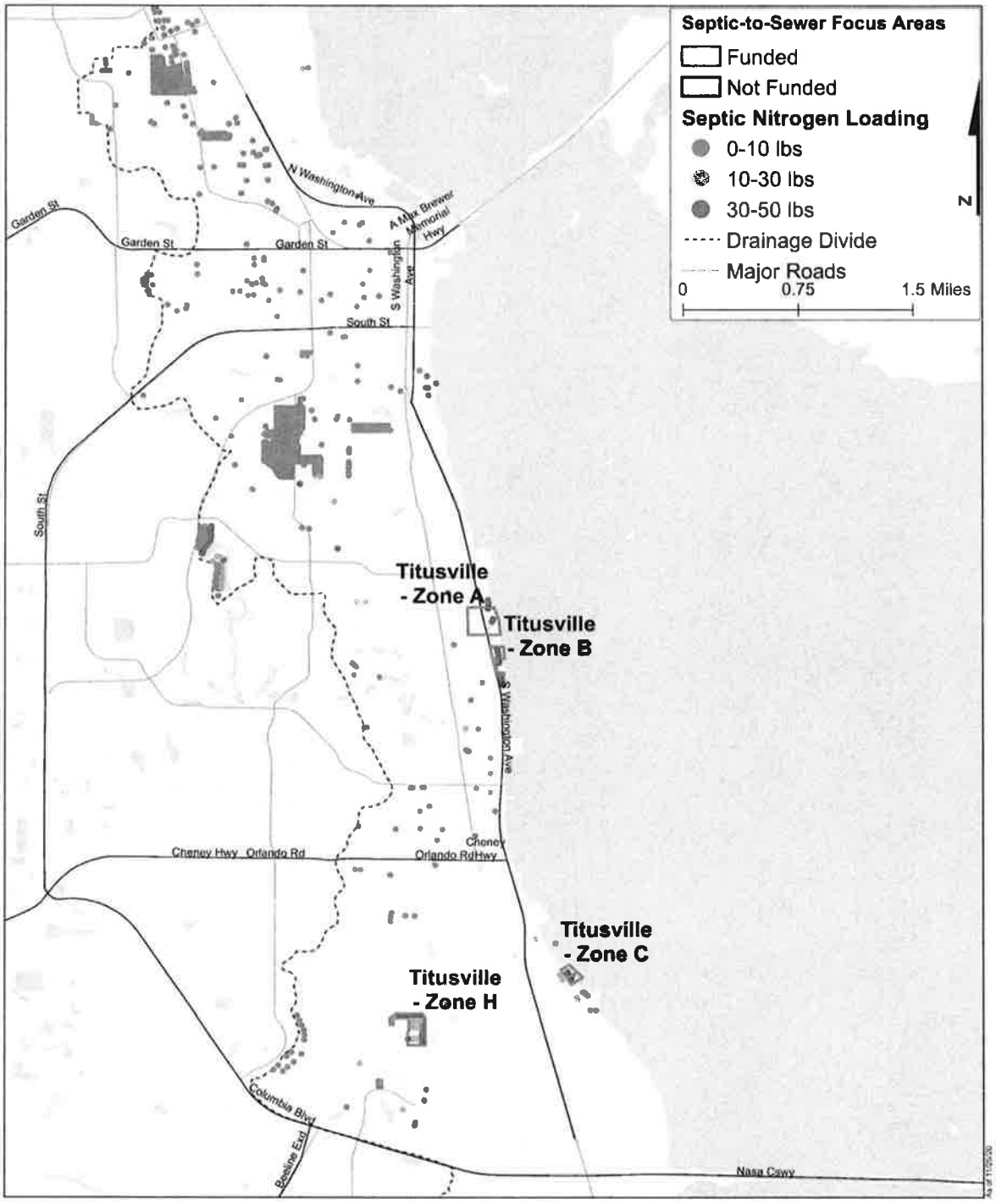


Figure 4-5: Septic System Removal Projects in North IRL

Figure 4-5 Long Description

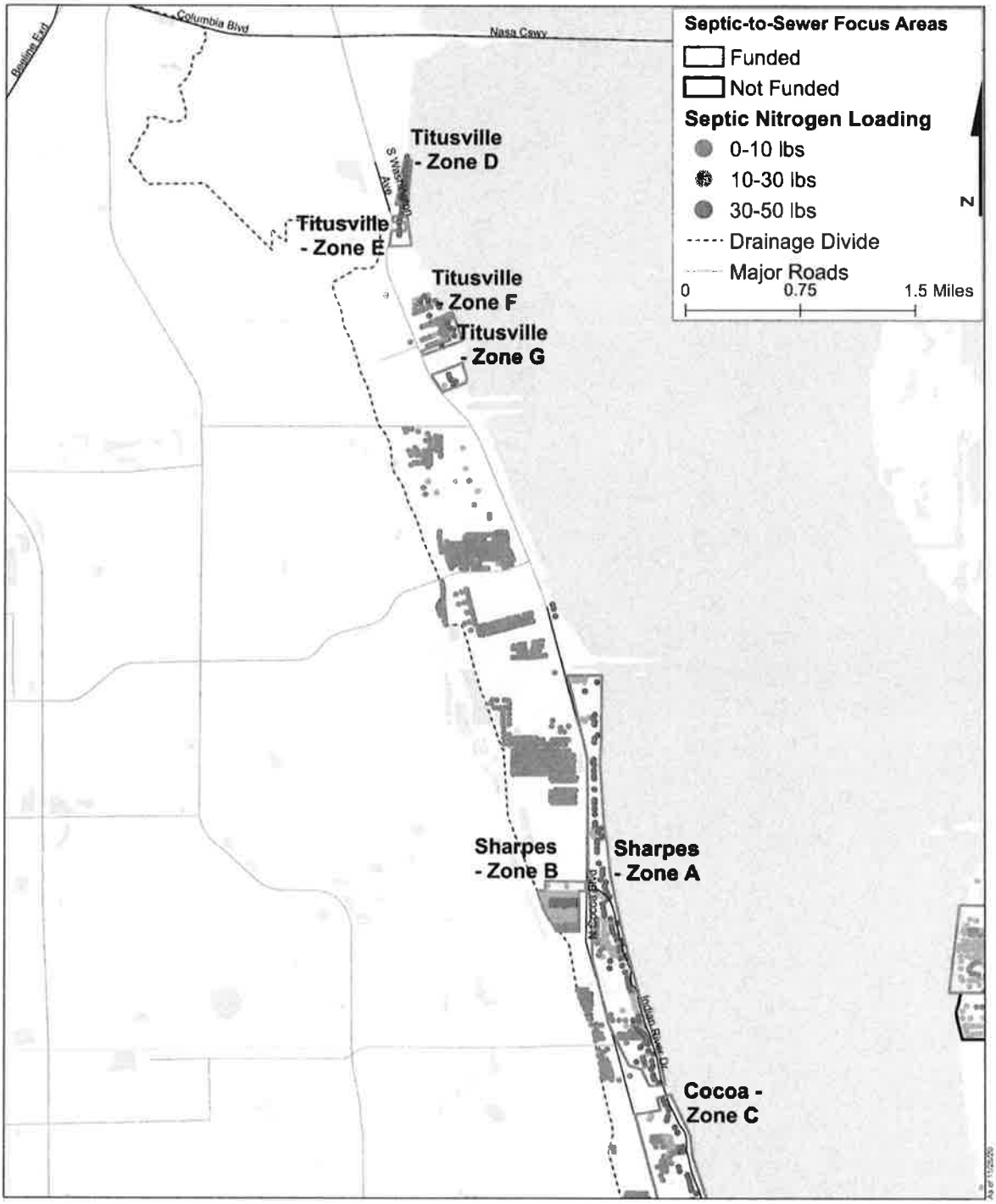


Figure 4-6: Septic System Removal Projects in North IRL, continued

Figure 4-6 Long Description

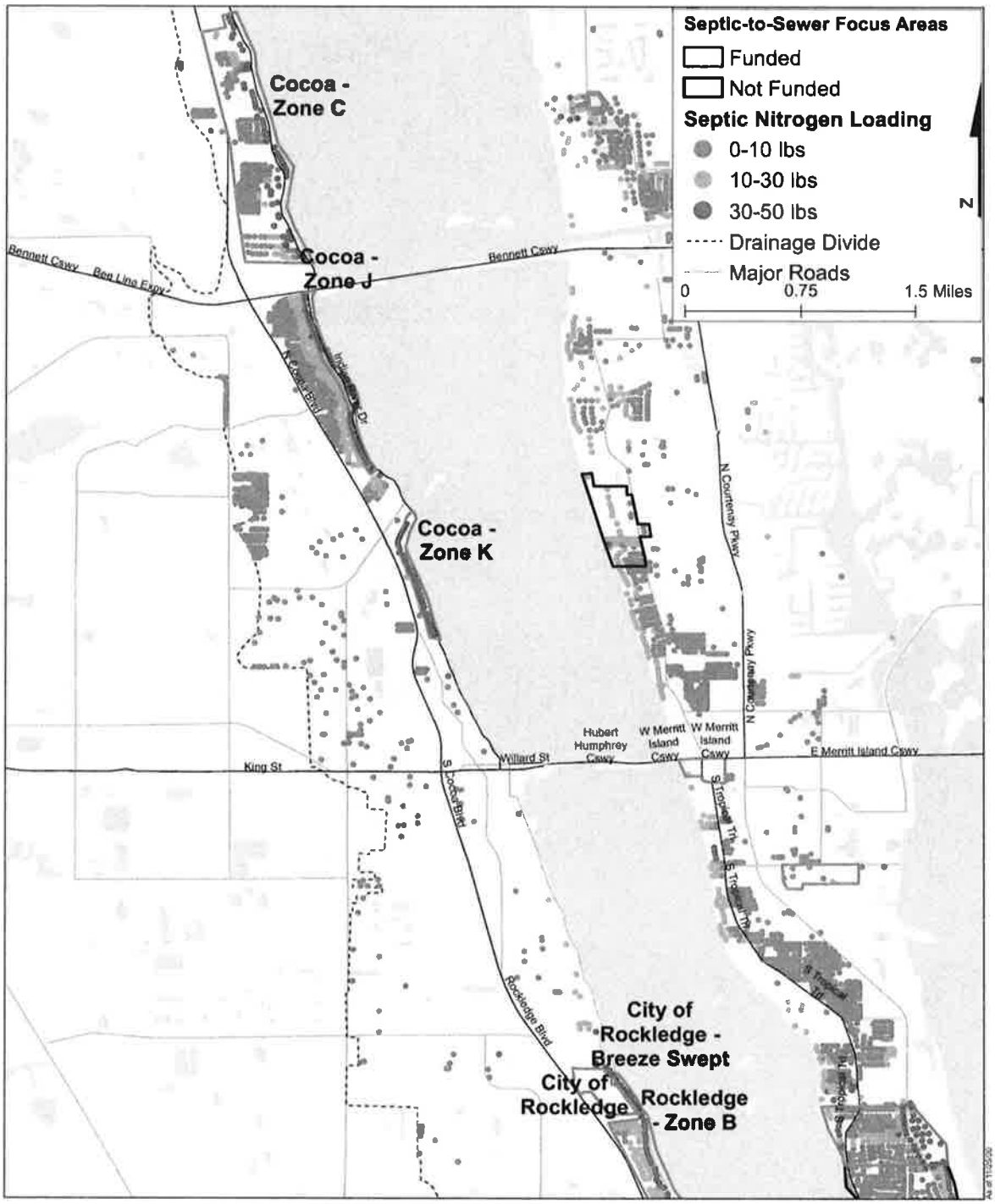


Figure 4-7: Septic System Removal Projects in North IRL, continued

Figure 4-7 Long Description

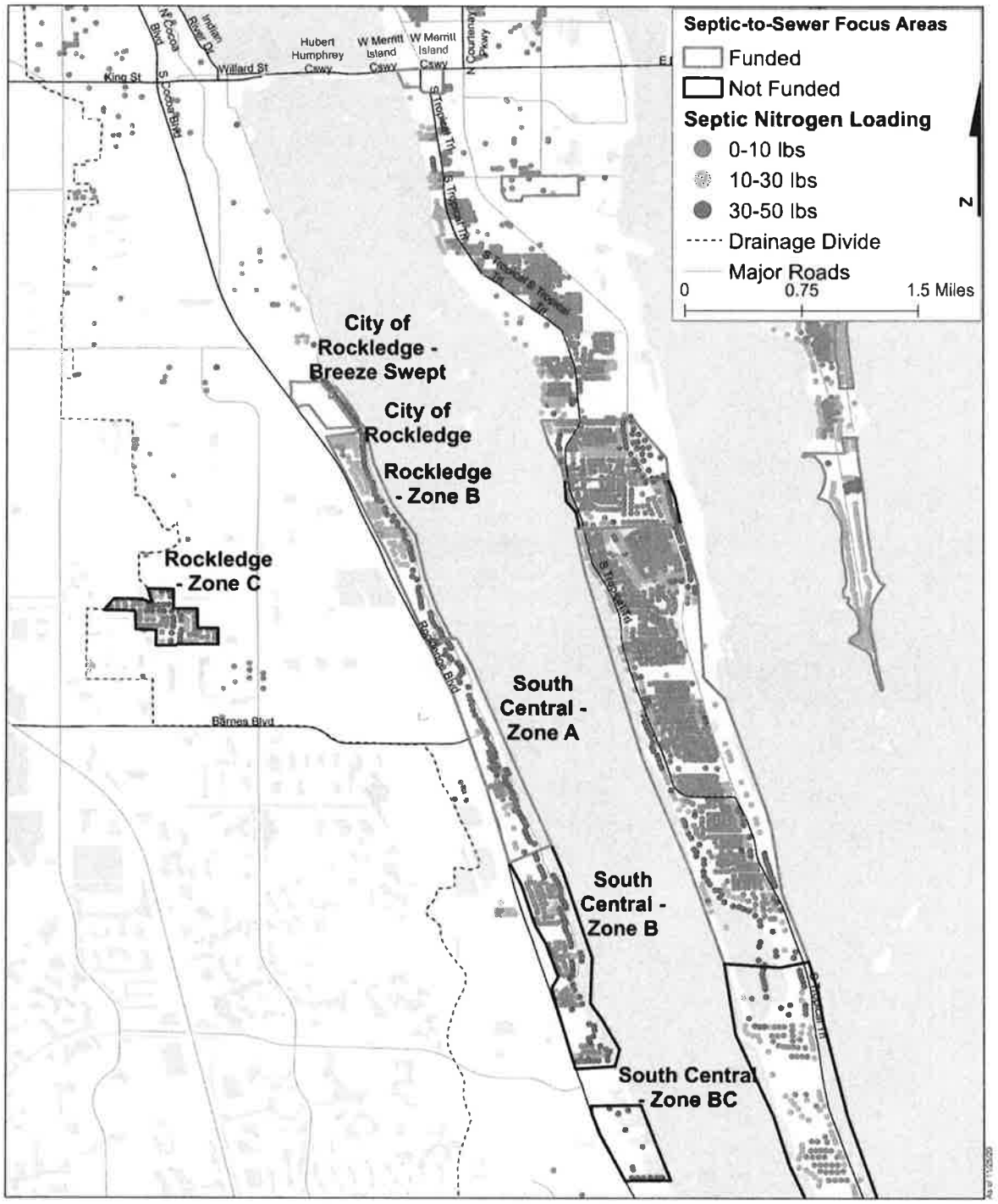


Figure 4-8: Septic System Removal Projects in North IRL, continued

Figure 4-8 Long Description

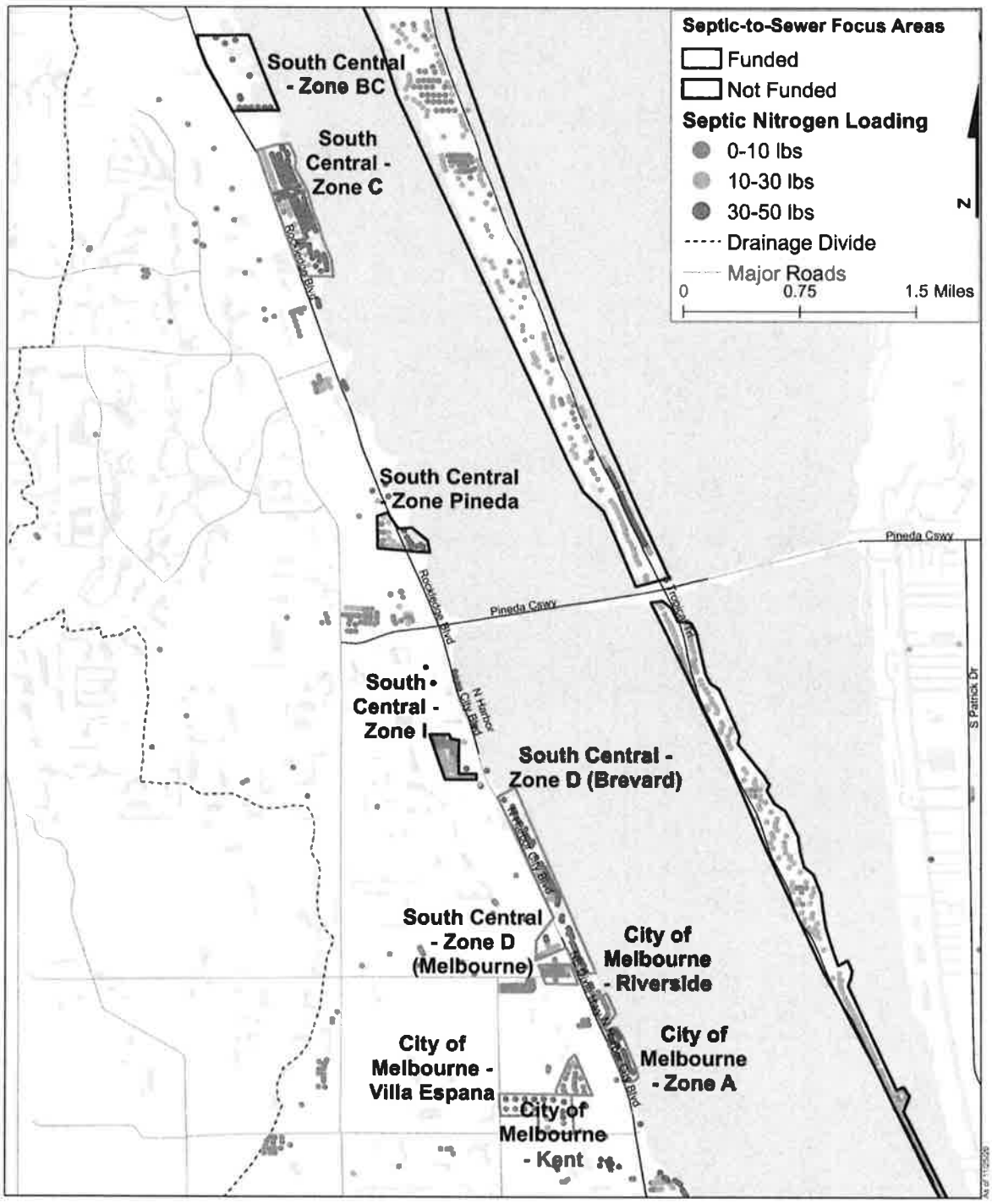


Figure 4-9: Septic System Removal Projects in North IRL, continued

Figure 4-9 Long Description

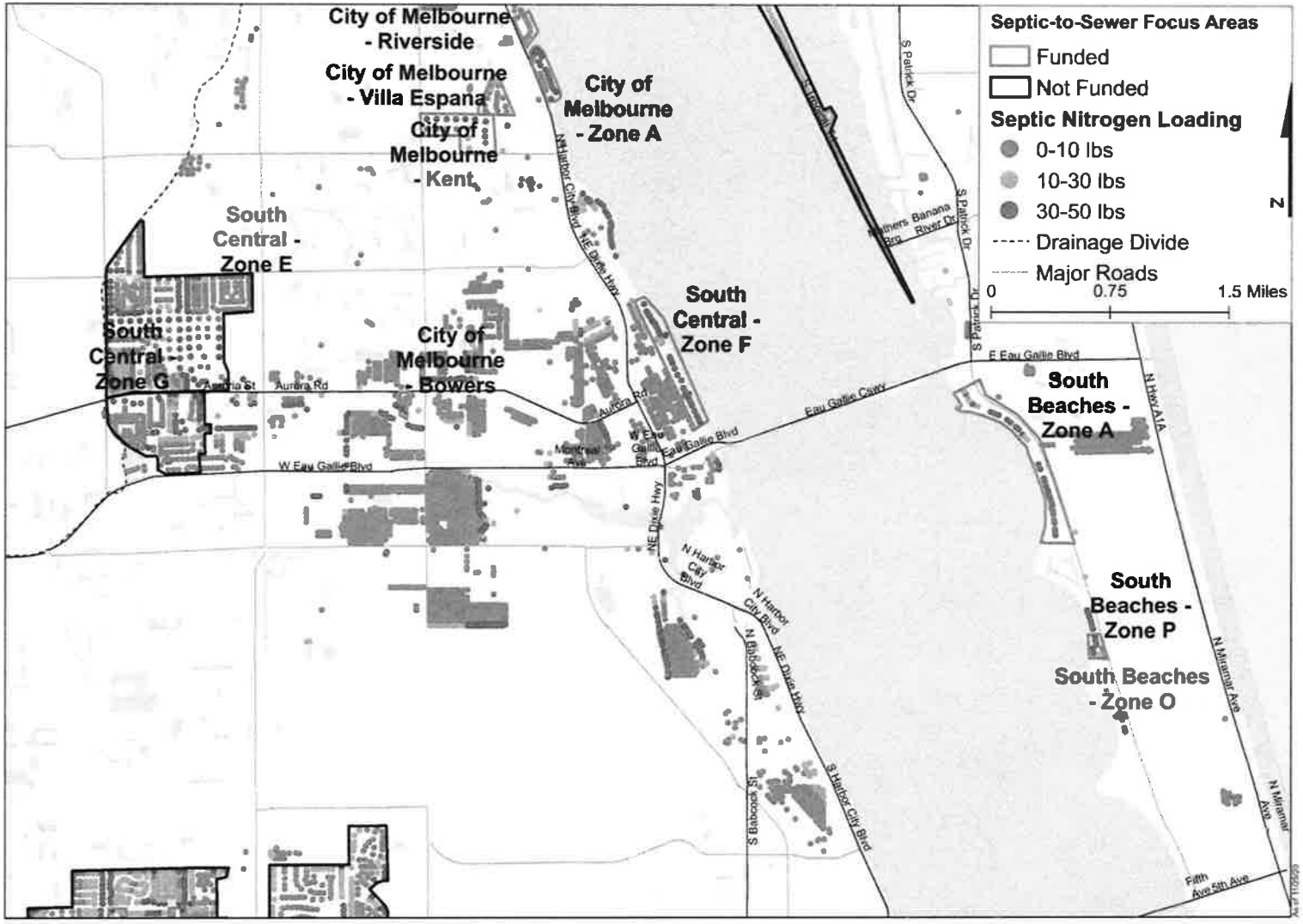


Figure 4-10: Septic System Removal Projects in North IRL, continued

Figure 4-10 Long Description

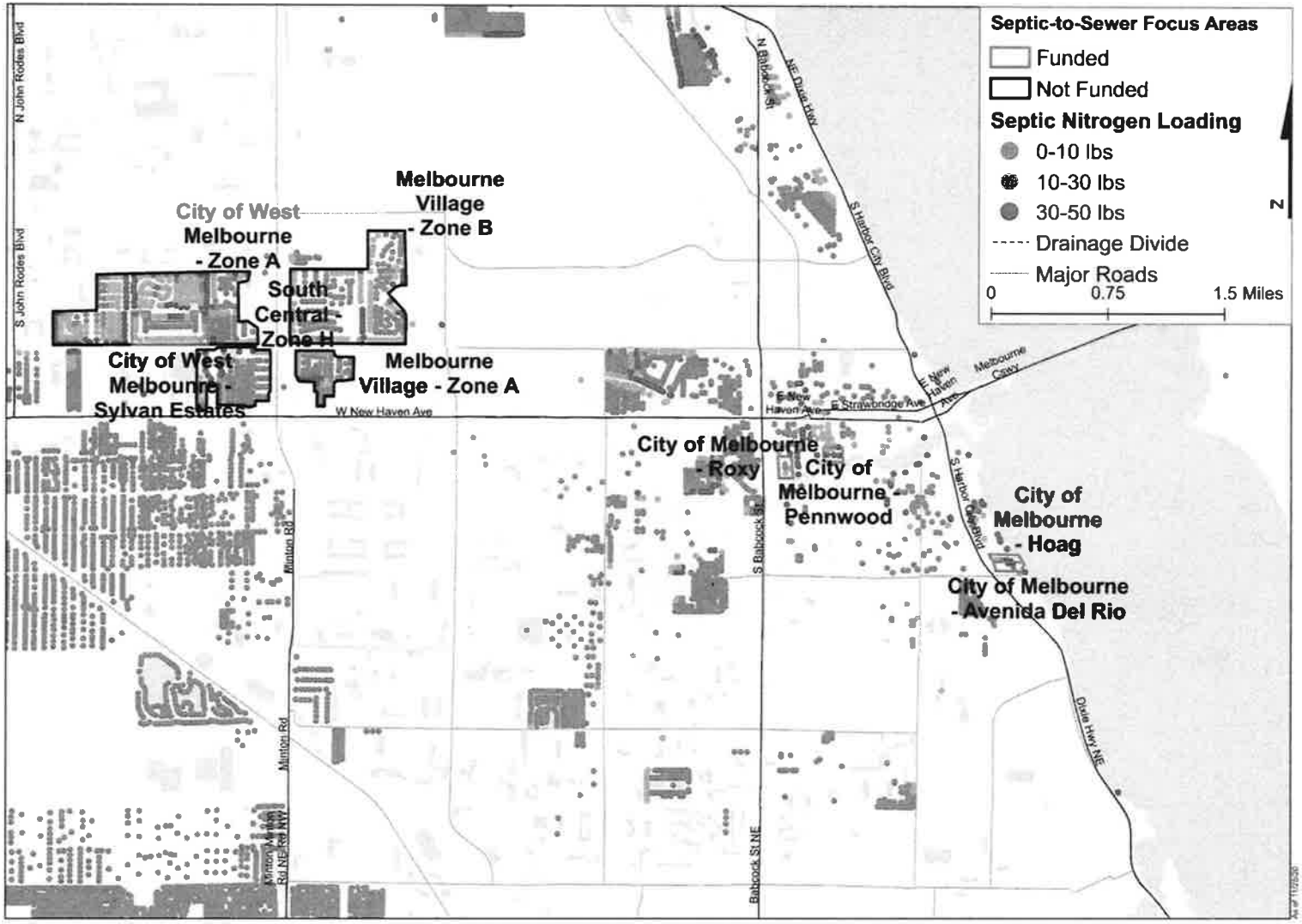


Figure 4-11: Septic System Removal Projects in Central IRL

Figure 4-11 Long Description

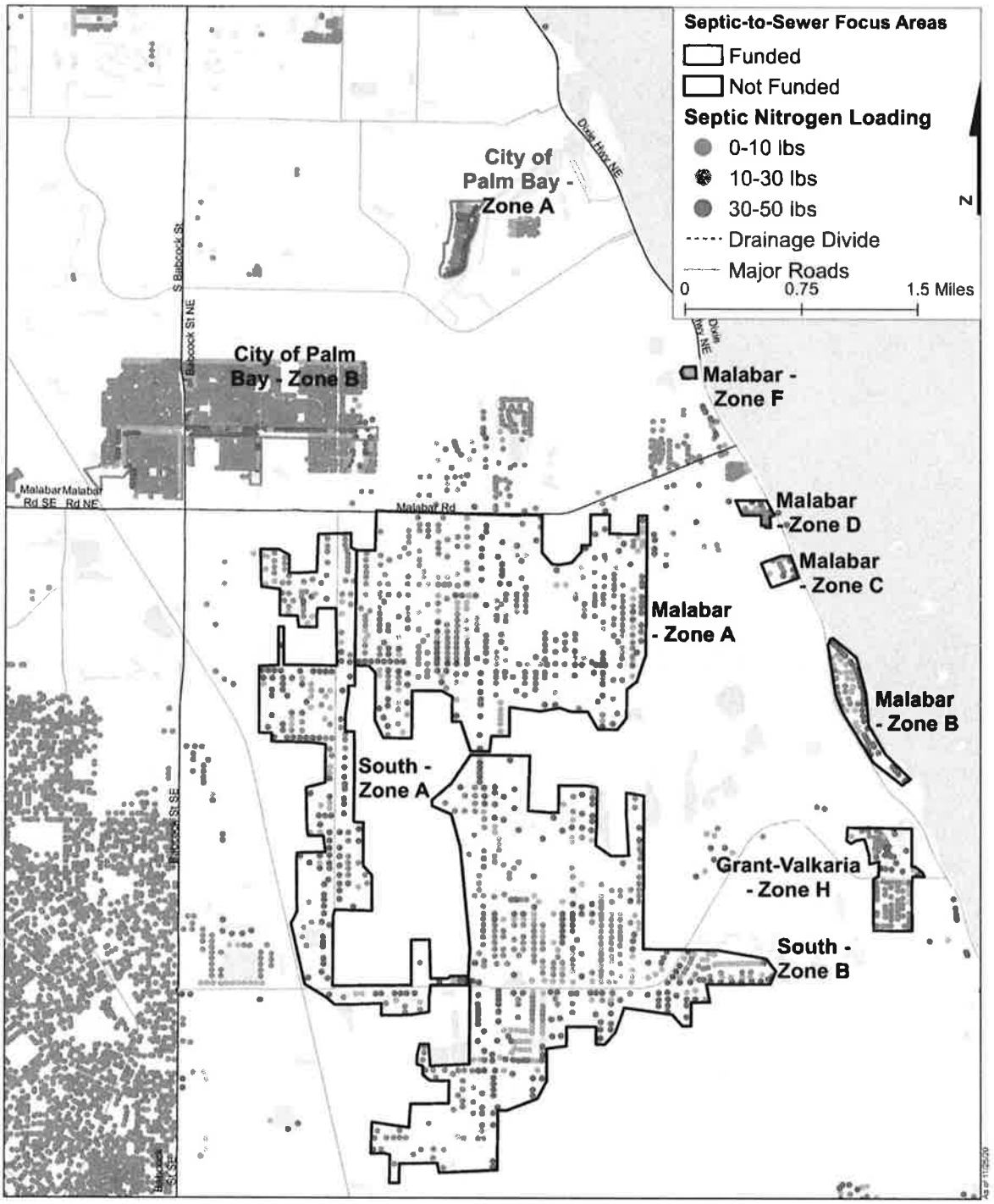


Figure 4-12: Septic System Removal Projects in Central IRL, continued

Figure 4-12 Long Description

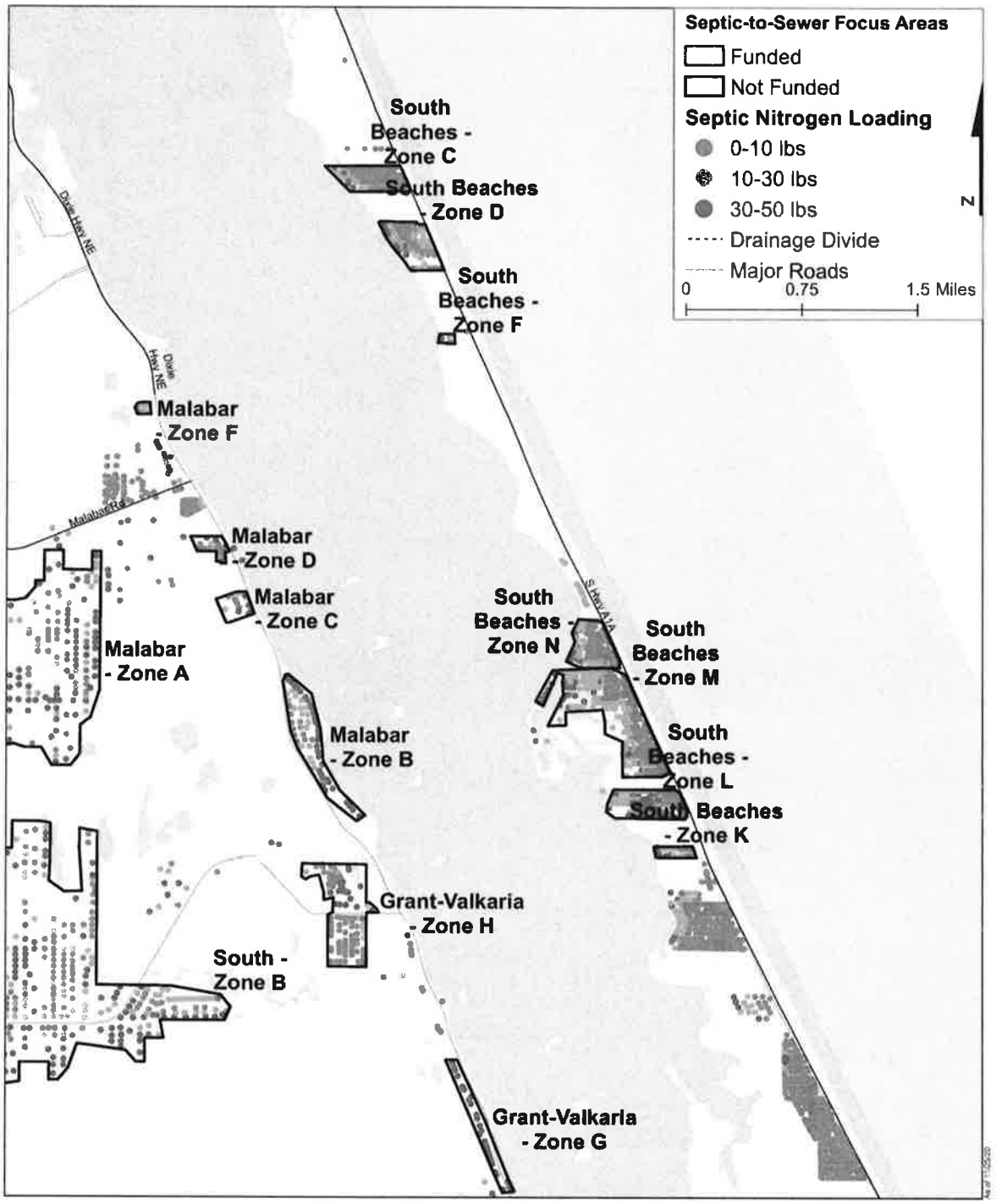


Figure 4-13: Septic System Removal Projects in Central IRL, continued

Figure 4-13 Long Description

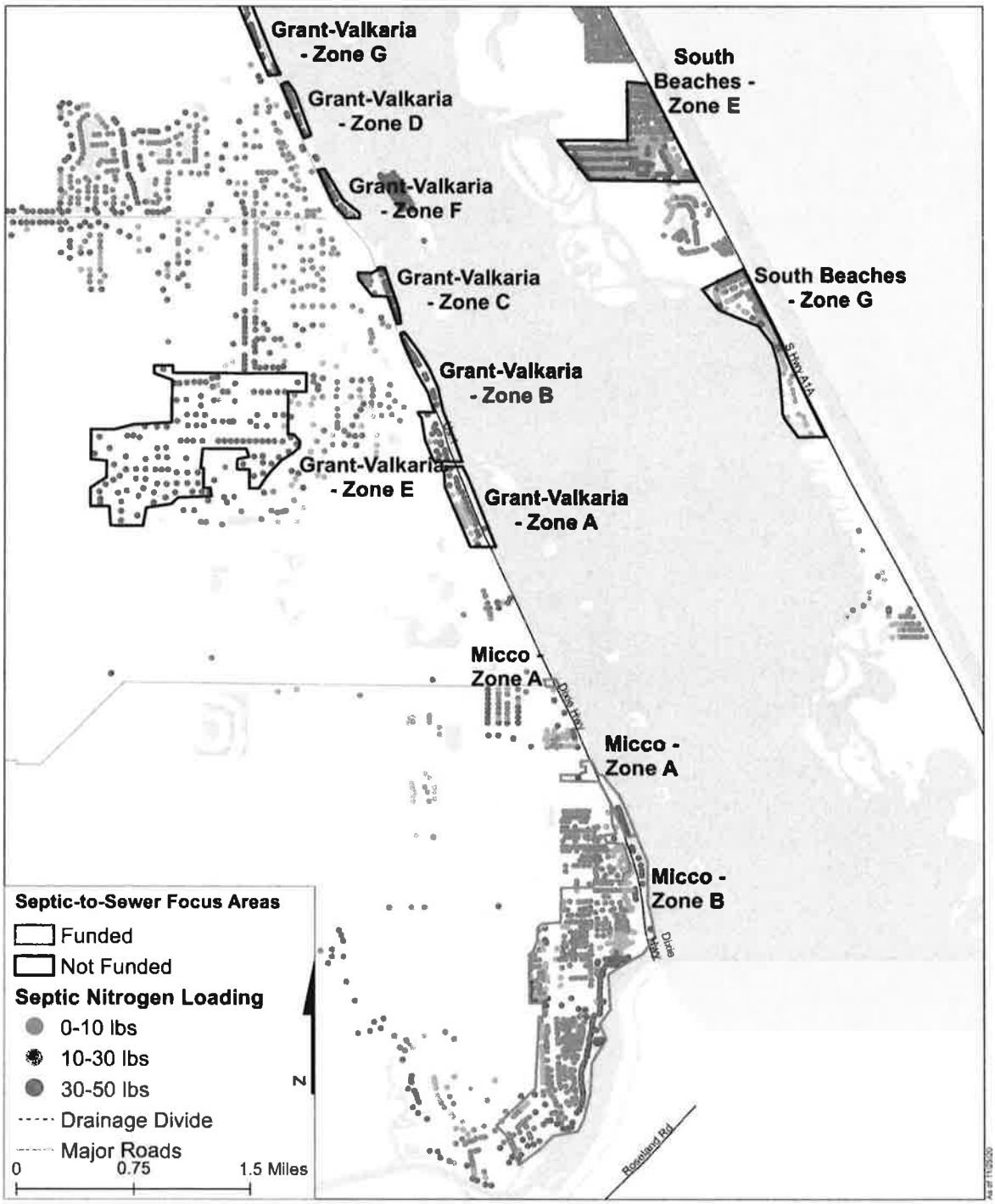


Figure 4-14: Septic System Removal Projects in Central IRL, continued

Figure 4-14 Long Description

Septic System Removal by Sewer Connection

The detailed septic analysis also identified 4,496 properties located within 30 feet of existing sewer infrastructure; however, not all potential opportunities have been identified due to incomplete records. The highest loading "Quick Connect" opportunities are included in **Table 4-20** based on their ability to connect to gravity or force main sewer and are shown in **Figure 4-15** through **Figure 4-17**.

Quick Connects to gravity sewer will be funded on a prorated basis of $700 per pound of nitrogen loading to the lagoon reduced, up to a maximum of $18,000 for connection to force main sewer and a maximum of $12,000 for connection to gravity sewer. Funding allocation for this grant program is based on the number of highest priority connection opportunities within each sub-lagoon as reported in **Table 4-20**.

Table 4-20: Projects for Septic System Removal by Sewer Connection

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	TN Cost per Pound per Year	TP Reduction (lbs/yr)	TP Cost per Pound per Year	Plan Funding
2019	2016-16	Banana Quick Connects – 144 lots+	Brevard County	Banana	3,224	$592	Not applicable	Not applicable	$1,908,000
2019	2016-18	North IRL Quick Connects – 463 lots+	Brevard County	North IRL	11,339	$531	Not applicable	Not applicable	$6,018,000
2019	2016-19	Central IRL Quick Connects – 269 lots+	Brevard County	Central IRL	6,883	$487	Not applicable	Not applicable	$3,354,000
-	-	***Total***	-	-	***21,446***	***$526 (average)***	***Not applicable***	***Not applicable***	***$11,280,000***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

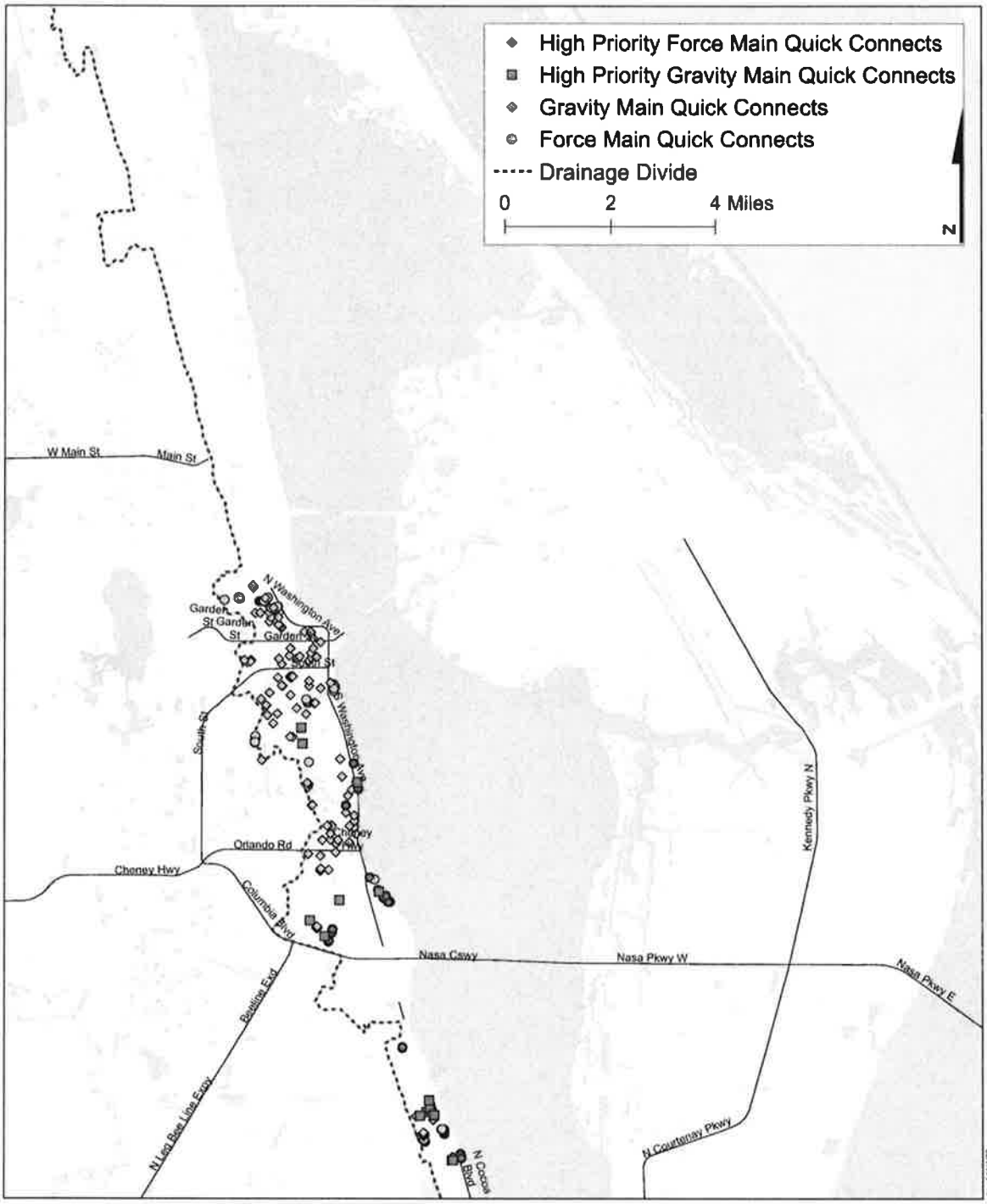


Figure 4-15: Quick Connection Septic System Removal Locations in North Brevard County

Figure 4-15 Long Description

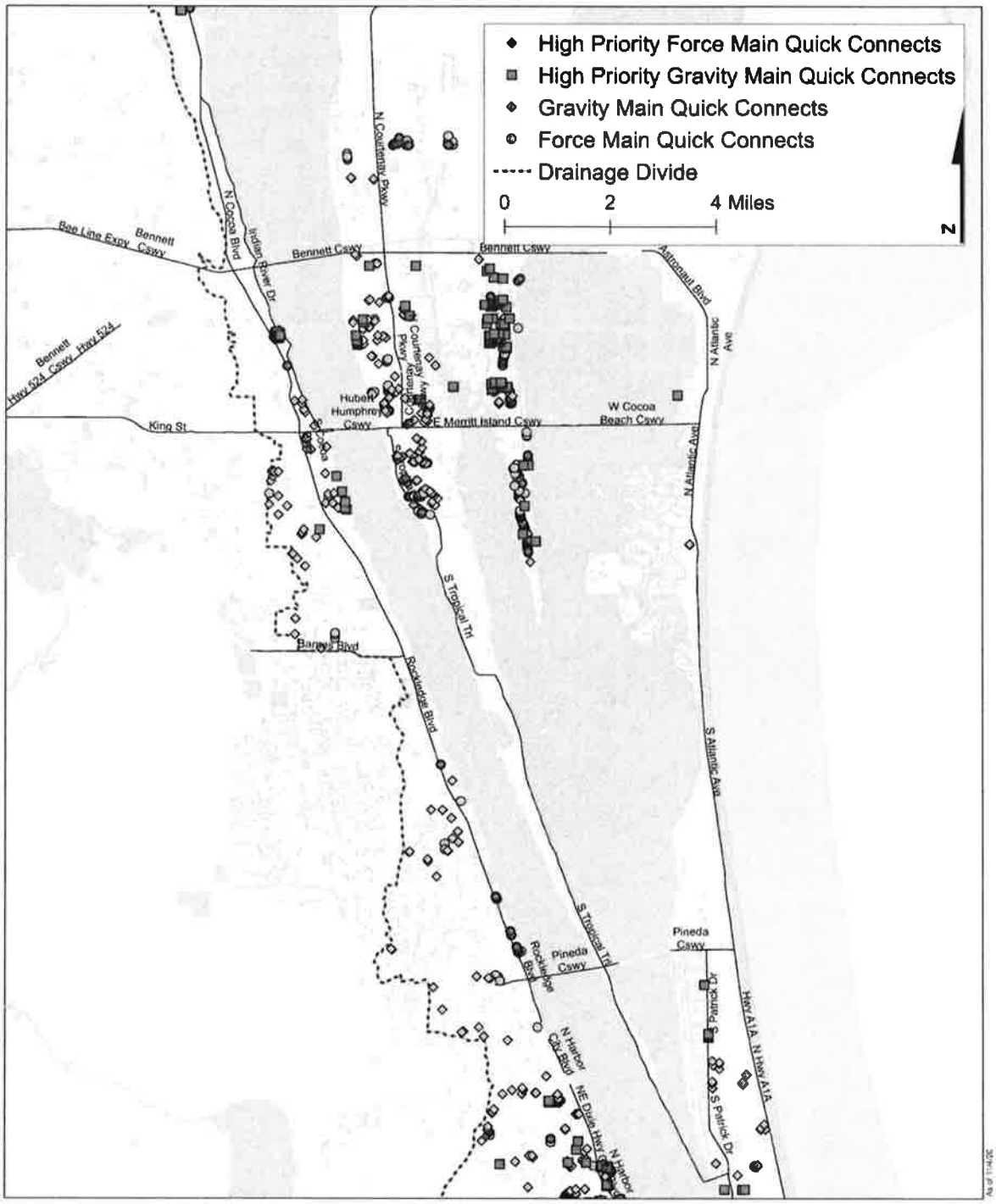


Figure 4-16: Quick Connection Septic System Removal Locations in Central Brevard County

Figure 4-16 Long Description

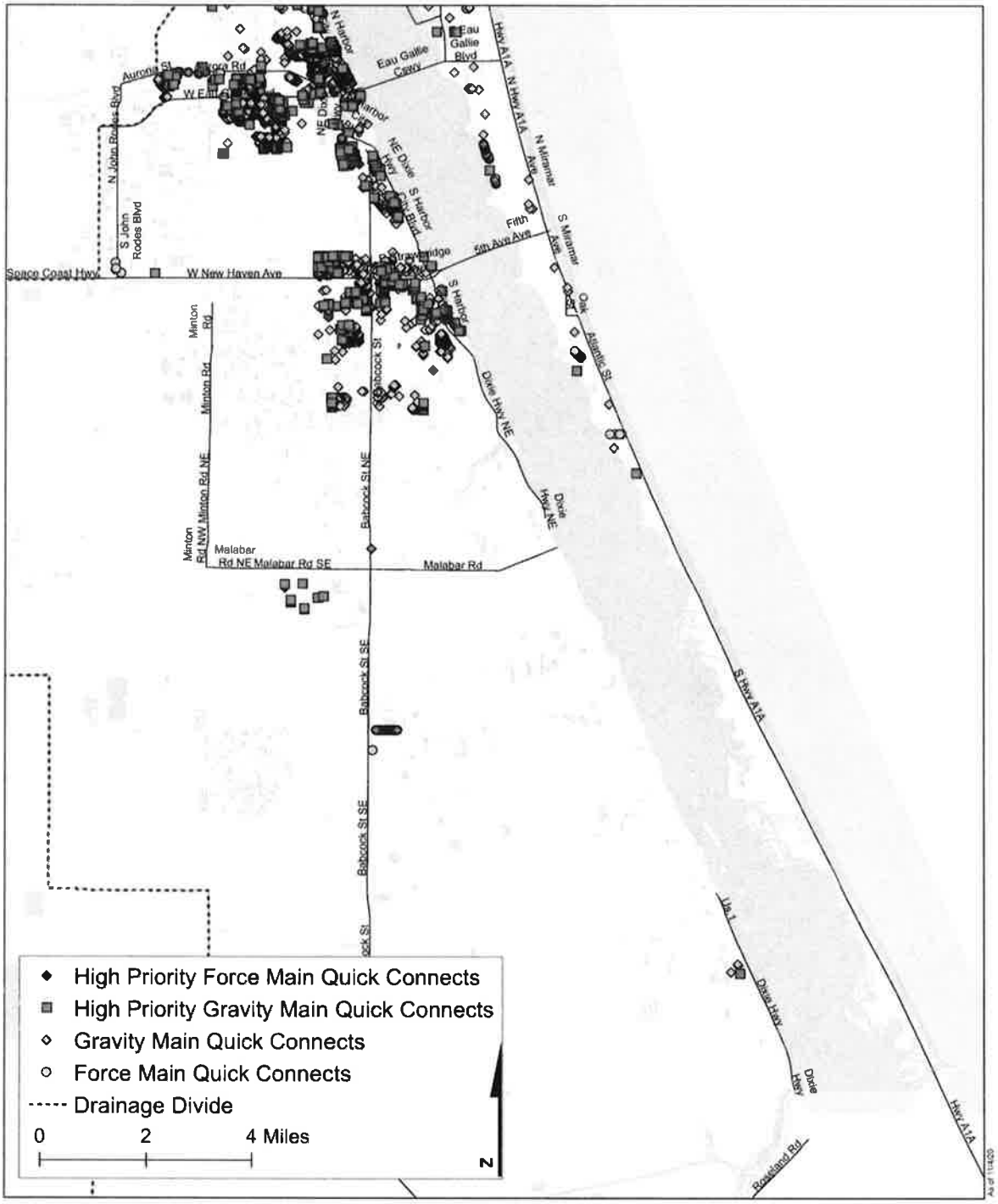


Figure 4-17: Quick Connection Septic System Removal Locations in South Brevard County

Figure 4-17 Long Description

Septic System Upgrades

In locations where providing sewer service is not feasible due to distance from sewer infrastructure, facility capacity, or insufficient density of high-risk systems, there are options to upgrade the highest risk septic systems to increase the nutrient and pathogen removal efficiency. In recent years, research has been conducted on passive treatment systems, which provide significant treatment efficiencies without monthly sewer fees or highly complex maintenance needs for mechanical features.

In July 2018, the Florida Department of Health adopted new rules that allow for In-Ground Nitrogen-Reducing Biofilters under the drainfield of septic systems (**Figure 4-18**). This passive nitrogen-reducing technology is a result of the Florida Onsite Sewage Nitrogen Reduction Strategies project and the Springs and Aquifer Protection Act. Pilot projects to install this new system are currently in progress throughout the state and Brevard County is a participating partner in these initial installations. This passive In-Ground Nitrogen-Reducing Biofilter system is expected to remove 65% of nitrogen from the effluent and cost an extra $4,000 above the typical costs of a conventional septic system. This system requires 51" of soil above the groundwater and, therefore, may not be appropriate in areas with shallow groundwater.

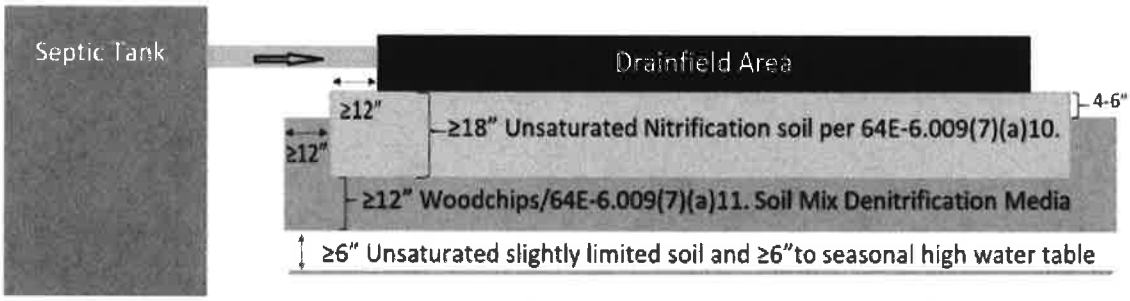


Figure 4-18: Example In-Ground Nitrogen-Reducing Biofilter Septic System

Figure 4-18 Long Description

The current ruling by Florida Department of Health only allows woodchips within the denitrification layer of this system; however, other biosorption activated media can also enhance nutrient and bacterial removal before the effluent reaches the drainfield or groundwater and potentially remove more than 65% of nitrogen from effluent. A test of the biosorption activated media removal capacity was conducted at Florida's Showcase Green Envirohome in Indialantic, Florida. This test location is a residential site built with stormwater, graywater, and wastewater treatment in a compact footprint onsite (Wanielista et al., 2011). The media used in this study was Bold & Gold®, which is a patented blend of mineral materials, sand, and clay. In this study, the effluent to the septic tank was evenly divided between a sorption filter media bed/conventional drainfield (innovative system) and to a conventional drainfield. The study found that the TN and TP removal efficiencies were 76.9% and 73.6%, respectively, for the Bold & Gold plus drainfield system, which was significantly higher than the 45.5% TN removal and 32.1% TP removal from a conventional drainfield alone.

In 2019, Brevard County entered into agreement with the Florida Department of Health to test In-Ground Nitrogen Reducing Biofilter septic systems with known nitrogen-reducing media. The first six septic systems under this agreement were installed in summer 2020 using Bold & Gold wastewater filtration media. To measure effectiveness of the alternative media, these systems will be monitored quarterly for one year. The agreement allows for testing of other nitrogen-reducing media as they become available.

In areas where septic systems are in close proximity to a surface waterbody but are not in a location where connection to the sewer system is feasible, adding biosorption activated media to the drainfield or upgrading to the passive nitrogen removing systems could be used to retrofit the existing septic systems. The estimated cost for these retrofits was increased from $16,000 per septic system in the original plan to $18,000 each in the 2019 Update. Any operations and maintenance costs associated with these upgrades, once installed, will be the responsibility of the owner. To be conservative and to match the Florida Department of Health rule, the estimates of the TN reductions that could be achieved are based on an efficiency of 65% removal, which is the average efficiency from the two studies described above that tested biosorption activated media in the drainfield.

In areas where the In-Ground Nitrogen-Reducing Biofilters system or biosorption activated media retrofits are not appropriate, National Sanitation Foundation 245 certified aerobic treatment units would be the best option. National Sanitation Foundation 245 certification verifies that these advanced septic systems remove at least 50% of nitrogen within the septic tank, although some systems have been shown to remove up to 80% of nitrogen. The drainfield is credited with removing another 15% of nitrogen, which brings the total nitrogen removed by the advanced septic system to 65%. Due to the electrical plumbing requirements of aerobic treatment units, the owner is required to have a maintenance agreement with a septic company and an operating permit from the Florida Department of Health.

There are options for other types of distributed onsite sewage treatment systems that are approved by the Florida Department of Environmental Protection as miniature sewage treatment plants sized for residential and commercial use. These systems provide additional opportunities to improve nutrient removal from sites where connection to central sewer is not feasible and are eligible options for septic system upgrades as part of this plan. Both the Save Our Indian River Lagoon Project Plan and Springs and Aquifer Protection Act have highlighted the need for other wastewater options that have less impact on surface water and groundwater. Brevard County will continue to vet these options as they become available in Florida.

To prioritize the septic systems for upgrade, the scoring matrix used in the original Save Our Indian River Lagoon Project Plan was replaced in the 2019 Update based on ArcGIS-Based Nitrate Load Estimation Toolkit modeling performed during determination of the Nitrogen Reduction Overlay area adopted in the Countywide Septic Ordinance, as noted above.

The septic systems with the highest loading in each sub-lagoon are recommended for retrofit upgrades to reduce the impacts of these septic systems on the waterbodies. The costs and nutrient reductions by sub-lagoon are shown in **Table 4-21**. The locations of these septic system upgrades are shown in **Figure 4-19**, **Figure 4-20**, and **Figure 4-21**. This upgrade opportunity addresses 2% of the septic systems in the IRL drainage basin.

Septic retrofit upgrades will be funded on a prorated basis of $700 per pound of nitrogen loading to the lagoon reduced, up to a maximum of $18,000 per septic parcel. Funding allocation for this grant program is based on the number of highest priority upgrade opportunities within each sub-lagoon as reported in **Table 4-21**. Septic retrofit upgrades are available to properties not included within a funded septic to sewer project area. **Table 4-21** also summarizes the septic system upgrade projects approved as part of an annual update.

In some circumstances, properties qualified for septic system upgrade funding may be near a sewer line. These septic upgrade funds can be used to connect the qualified property to sewer as this option results in a greater reduction in nitrogen loading to the lagoon.

Table 4-21: Projects for Septic System Upgrades

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN	TP Reduction (lbs/yr)	Cost per Pound per Year of TP	Plan Funding
Original	51	Banana River Lagoon – 100 lots*	Brevard County	Banana	1,934	$931	Not applicable	Not applicable	$1,800,000
Original	52	North IRL – 586 lots*	Brevard County	North IRL	13,857	$761	Not applicable	Not applicable	$10,548,000
Original	53	Central IRL – 939 lots*	Brevard County	Central IRL	22,190	$762	Not applicable	Not applicable	$16,902,000
-	-	***Total***	-	-	***37,981***	***$770 (average)***	***Not applicable***	***Not applicable***	***$29,250,000***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

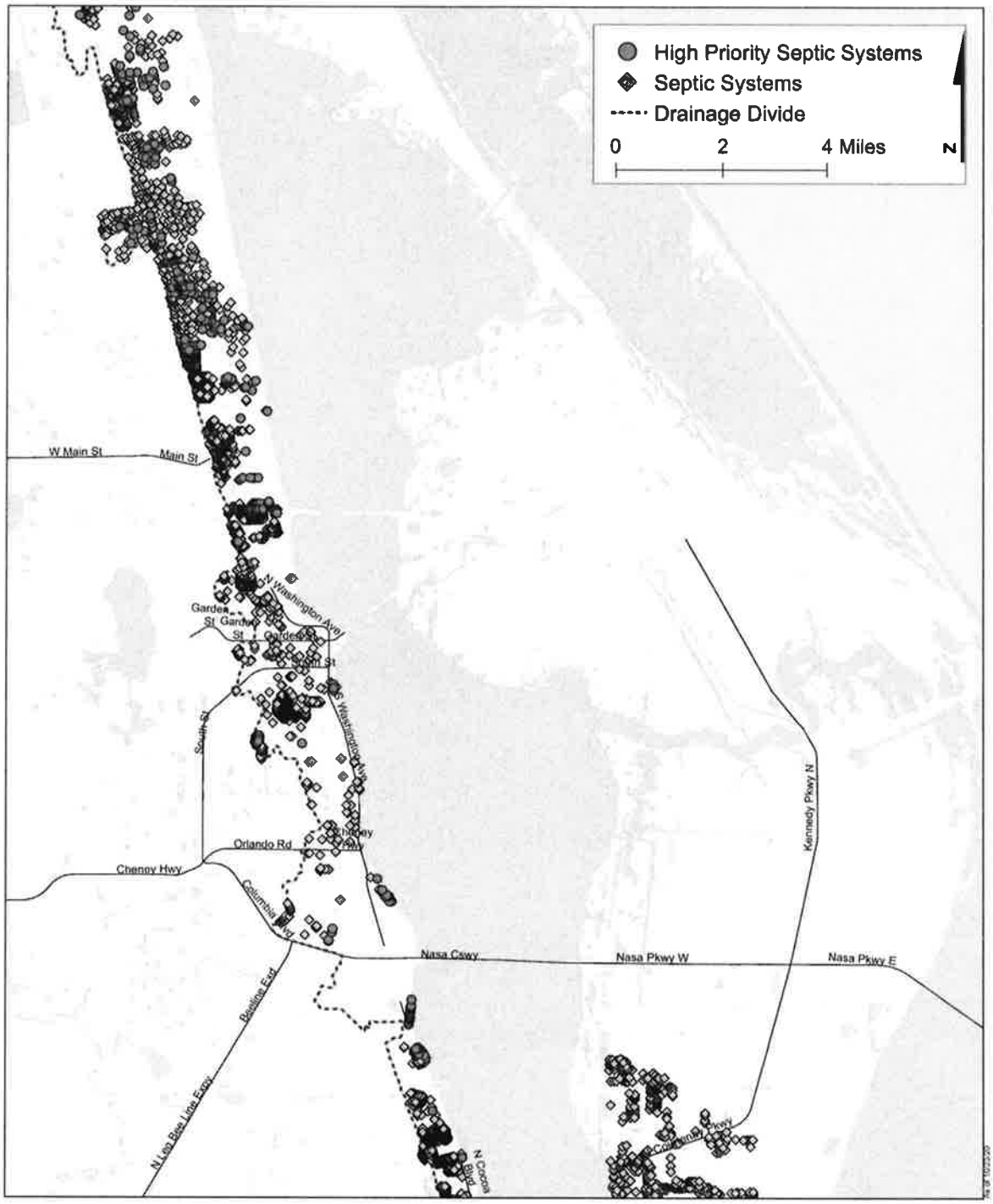


Figure 4-19: Septic System Upgrades in North Brevard County

Figure 4-19 Long Description

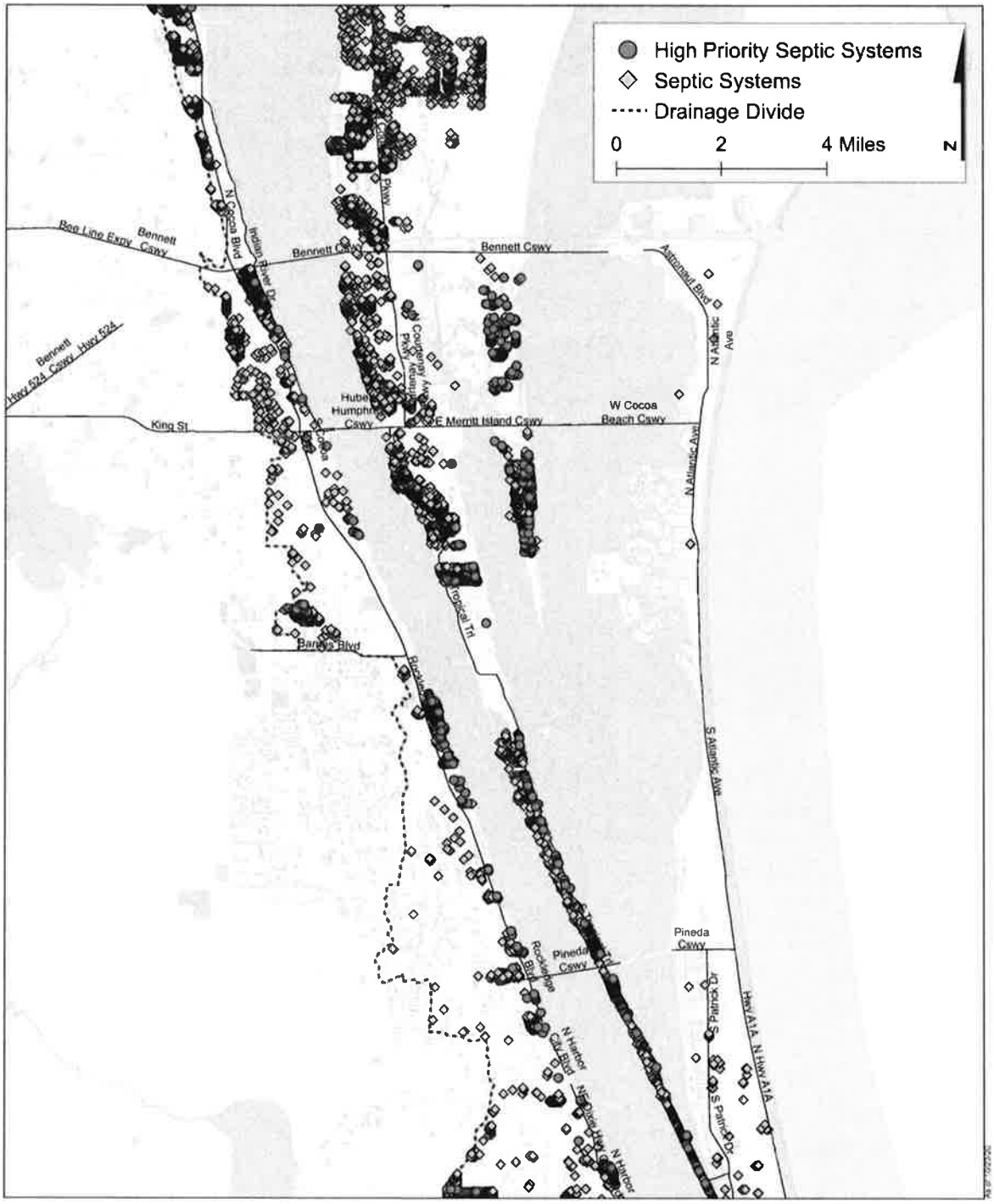


Figure 4-20: Septic System Upgrades in Central Brevard County

Figure 4-20 Long Description

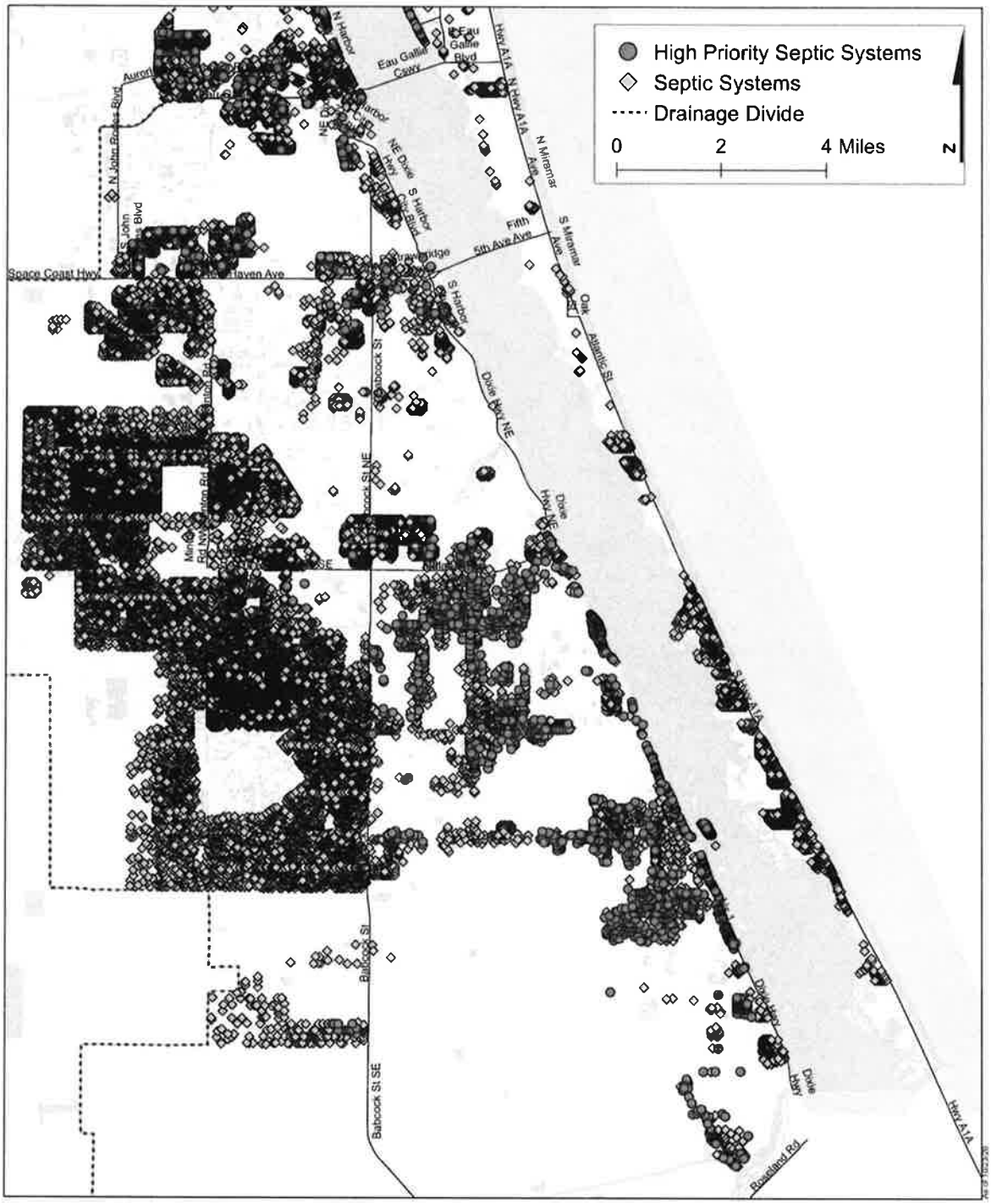


Figure 4-21: Septic System Upgrades in South Brevard County

Figure 4-21 Long Description

4.1.7 Stormwater Treatment

Stormwater runoff contributes 33.6% of the external TN loading and 43.4% of the external TP loading to the lagoon annually.

Stormwater runoff from urban areas carries pollutants that affect surface waters and groundwater. These pollutants include nutrients, pesticides, oil and grease, debris and litter, and sediments. In Brevard County, there are more than 1,500 stormwater outfalls to the IRL.

There are a variety of best management practices that can be used to capture and treat stormwater to remove or reduce these pollutants before the stormwater runoff reaches a waterbody or infiltrates to the groundwater. Potential stormwater best management practices that could help restore the Indian River Lagoon (IRL) system include:

- Traditional best management practices – These are the typical practices used to treat stormwater runoff and include wet detention ponds, retention, swales, dry detention, baffle boxes, stormwater reuse, alum injection, street sweeping, catch basin inserts/inlet filters, floating islands/managed aquatic plant systems. Descriptions of these traditional best management practices and expected total nitrogen (TN) and total phosphorus (TP) efficiencies are shown in **Table 4-22**.
- Low impact development/green infrastructure – These practices use natural stormwater management techniques to minimize runoff and help prevent pollutants from getting into stormwater runoff. These best management practices address the pollutants at the source so implementing them can help decrease the size of traditional retention and detention basins and can be less costly than traditional best management practices (University of Florida Institute of Food and Agricultural Sciences, 2016). Descriptions of low impact development and green infrastructure best management practices and estimated efficiencies are shown in **Table 4-23**.
- Denitrification best management practices – These practices use a soil media, known as biosorption activated media to increase the amount of denitrification that occurs, which increases the amount of TN and TP removed. Biosorption activated media includes mixes of soil, sawdust, zeolites, tire crumb, vegetation, sulfur, and spodosols. Additional details about denitrification best management practices are included below.
- Best management practices to reduce baseflow intrusion – These practices are modifications to existing best management practices help reduce intrusion of captured groundwater baseflow into stormwater drainage systems. These best management practices include backfilling canals so that they do not cut through the baseflow, modifying canal cross-sections to maintain the same storage capacity while limiting the depth, installing weirs to control the water levels in the best management practice, or adding a cutoff wall to prevent movement into the baseflow.
- Re-diversion to the St. Johns River – There are portions of the current IRL Basin that historically flowed towards the St. Johns River. By re-diverting these flows back to the St. Johns River, the excess stormwater runoff, as well as the additional freshwater inputs, to the IRL would be removed. The re-diversion projects would include a treatment component so that the runoff is treated before being discharged to the St. Johns River. The St. Johns River Water Management District has taken the lead on large-scale projects while the County has re-diverted more than 400 acres in the Crane Creek basin and partnered with the St. Johns River Water Management District to increase re-diversion from the Melbourne-Tillman Water Control District canal system.

Table 4-22: Traditional Stormwater Best Management Practices with TN and TP Removal Efficiencies

Best Management Practice	Definition	TN Removal Efficiency	TP Removal Efficiency	Source
Wet detention ponds	Permanently wet ponds that are designed to slowly release a portion of the collected stormwater runoff through an outlet structure. Recommended for sites with moderate to high water table conditions. Provide removal of both dissolved and suspended pollutants through physical, chemical, and biological processes.	8%-44%	45%-75%	Florida Department of Environmental Protection et al., 2010
Off-line retention	Recessed area that is designed to store and retain a defined quantity of runoff, allowing it to percolate through permeable soils into the groundwater aquifer. Runoff in excess of the specified volume of stormwater does not flow into the retention system storing the initial volume of stormwater.	40%-84%	40%-84%	Harper et al., 2007
On-line retention and swales	Recessed area that is designed to store and retain a defined quantity of runoff, allowing it to percolate through permeable soils into the groundwater aquifer. Runoff in excess of the specified volume of stormwater does flow through the retention system that stores the initial volume of stormwater.	30%-74%	30%-74%	Harper et al., 2007
Dry detention	Designed to store a defined quantity of runoff and slowly release it through an outlet structure to adjacent surface waters. After drawdown of the stored runoff is completed, the storage basin does not hold any water. Used in areas where the soil infiltration properties or seasonal high-water table elevation will not allow the use of a retention basin.	10%	10%	Harper et al., 2007
2nd generation baffle box	Box chambers with partitions connected to a storm drain. Water flows into the first section of the box where most pollutants settle out. Overflows into the next section to allow further settling. Water ultimately overflows to the stormwater pipe. Floating trays capture leaves, grass clippings, and litter to prevent them from dissolving in the stormwater.	19.05%	15.5%	GPI, 2010
Stormwater reuse	Reuse of stormwater from wet ponds for irrigation. Compare volume going to reuse to total volume of annual runoff to pond.	Amount of water not discharged annually	Amount of water not discharged annually	Not applicable
Alum injection	Chemical treatment systems that inject aluminum sulfate into stormwater systems to cause coagulation of pollutants.	50%	90%	Harper et al., 2007
Street sweeping	Cleaning of pavement surfaces to remove sediments, debris, and trash deposited by vehicle traffic. Prevents these materials from being introduced into the stormwater system.	TN content in dry weight of material collected annually	TP content in dry weight of material collected annually	University of Florida, 2011
Catch basin inserts/inlet filters	Devices installed in storm drain inlets to provide water quality treatment through filtration of organic debris and litter, settling of sediment, and adsorption of hydrocarbon by replaceable filters.	TN content in dry weight of material collected annually	TP content in dry weight of material collected annually	University of Florida, 2011

Best Management Practice	Definition	TN Removal Efficiency	TP Removal Efficiency	Source
Managed Aquatic Plant System	Aquatic plant-based best management practices that remove nutrients through a variety of processes related to nutrient uptake, transformation, and microbial activities.	10% with 5% pond coverage	10% with 5% pond coverage	Florida Department of Environmental Protection, 2018

Table 4-23: Low Impact Development and Green Infrastructure Best Management Practices and TN and TP Removal Efficiencies

Best Management Practice	Definition	TN Removal Efficiency	TP Removal Efficiency	Source
Permeable pavement	Hard, yet penetrable, surfaces reduce runoff by allowing water to move through them into groundwater below (University of Florida Institute of Food and Agricultural Sciences, 2016).	30%-74%	30%-74%	Harper et al., 2007
Bioswales	An alternative to curb and gutter systems, bioswales convey water, slow runoff, and promote infiltration. Swales may be installed along residential streets, highways, or parking lot medians (University of Florida Institute of Food and Agricultural Sciences, 2016). Must be designed for conveyance, greater in length than width, have shallow slopes, and include proper landscaping.	38%-89%	9%-80%	Florida Department of Environmental Protection, 2014
Green roofs	These systems can significantly reduce the rate and quantity of runoff from a roof and provide buildings with thermal insulation and improved aesthetics (University of Florida Institute of Food and Agricultural Sciences, 2016). Retention best management practice covered with growing media and vegetation that enables rainfall infiltration and evapotranspiration of stored water. Including a cistern capture, retain, and reuse water adds to effectiveness.	45% (without cistern) 60%-85% (with cistern)	Not applicable	Florida Department of Environmental Protection, 2014
Bioretention basins/rain gardens	Small vegetated depressions in the landscape collect and filter stormwater into the soil (University of Florida Institute of Food and Agricultural Sciences, 2016). Constructed adjacent to roof runoff and impervious areas.	30%-50%	30%-90%	Florida Department of Environmental Protection, 2014
Tree boxes	Bioretention systems with vertical concrete walls designed to collect/retain specified volume of stormwater runoff from sidewalks, parking lots and/or streets. Consists of a container filled with a soil mixture, a mulch layer, under-drain system, and shrub or tree (Florida Department of Environmental Protection, 2014).	38%-65%	50%-80%	Florida Department of Environmental Protection, 2014

Due to the importance of treating dry season baseflow to the lagoon, Brevard County has found that ditch denitrification is the most cost-effective best management practice. Biosorption activated media can be added in existing best management practices or to new best management practices to improve the nutrient removal efficiency. The removal efficiencies of using biosorption activated media in various stormwater treatment projects (Wanielista, 2015) are summarized in **Table 4-24**. While the efficiencies in **Table 4-24** are only for Bold & Gold, other types of biosorption activated media may be used in a project, if there is Florida-specific information available on the removal efficiencies for that media.

Table 4-24: TN and TP Removal Efficiencies for Biosorption Activated Media

Location in Best Management Practice Treatment Train	Material	TN Removal Efficiency	TP Removal Efficiency
Bold & Gold as a first best management practice, example up-flow filter in baffle box and a constructed wetland	Expanded Clay Tire Chips	55%	65%
Bold & Gold in up-flow filter at wet pond and dry basin outflow	Organics Tire Chips Expanded Clay	45%	45%
Bold & Gold in inter-event flow using up-flow filter at wet pond and down-flow filter at dry basin	Expanded Clay Tire Chips	25%	25%
Bold & Gold down-flow filters 12-inch depth at wet pond or dry basin pervious pavement, tree well, rain garden, swale, and strips	Clay Tire Crumb Sand and Topsoil	60%	90%

Note: From Wanielista, 2015

The County's proposed total maximum daily loads include two components: (1) a total maximum daily load for the five-month period (January – May) that is critical for seagrass growth, and (2) a total maximum daily load for the remaining seven months of the year to avoid algal blooms and protect healthy dissolved oxygen levels. In 2019, Brevard County updated the estimates for nutrient loading entering the lagoon through each stormwater ditch and outfall. The update incorporated more recent land use data, more recent rainfall and evapotranspiration data, and improved stormwater infrastructure mapping and topography. There are more than 2,000 hydrologically distinct catchment basin areas within the lagoon watershed countywide. These connect to the lagoon through more than 1,500 stormwater ditches and outfall structures. For the purpose of maximizing seagrass response to stormwater treatment, these new loading estimates for catchment basins were prioritized based on the amount of nutrients migrating into the stormwater system as groundwater baseflow during a five-month season found to be most critical to annual seagrass expansion or loss.

The stormwater project benefits were estimated, as follows, to ensure both components of the total maximum daily load are adequately addressed. The five-month total maximum daily load covers the dry season in this area when there is minimal rainfall and stormwater runoff; therefore, the benefits of stormwater biosorption activated media projects during this period were based only on January–May baseflow loading estimates from the Spatial Watershed Iterative Loading model. The estimated project treatment efficiencies used for January to May baseflow only are 55% for TN and 65% for TP. To estimate annual load reduction benefits, the annual baseflow and stormwater loading estimates from the Spatial Watershed Iterative Loading model were used with a project efficiency of 45% for TN and 45% for TP. The estimated TN and TP reductions in pounds per year (lbs/yr) accomplished by using biosorption activated media upstream of these priority outfalls are summarized in **Table 4-22**. The locations of the basins to be treated are shown in **Figure 4-22**, **Figure 4-23**, and **Figure 4-24**. Projects approved as part of an annual update to the plan are also included in **Table 4-25**.

Table 4-25: Projects for Stormwater Treatment

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
Original	-	Basin 1329*	Brevard County	Banana	51	$76	8	$483	$3,864
Original	-	Basin 611*	Brevard County	Banana	1,354	$130	115	$873	$176,300
Original	-	Basin 828*	Brevard County	Banana	1,397	$155	127	$785	$215,900
Original	-	Basin 951*	Brevard County	Banana	1,562	$166	154	$812	$258,900
Original	-	Basin 691*	Brevard County	Banana	1,749	$172	183	$682	$300,600
Original	-	Basin 984*	Brevard County	Banana	1,412	$178	143	$873	$251,100
Original	-	Basin CCB-E*	Brevard County	Banana	1,335	$182	210	$596	$243,400
Original	-	Basin 873*	Brevard County	Banana	775	$182	69	$1,439	$141,500
Original	-	Basin CCB-F*	Brevard County	Banana	1,043	$195	158	$632	$203,100
Original	-	Basin 497*	Brevard County	Banana	952	$196	95	$1,051	$186,700
Original	-	Basin 925*	Brevard County	Banana	895	$197	90	$1,115	$176,000
Original	-	Basin 1066*	Brevard County	Banana	1,150	$202	173	$579	$232,200
Original	-	Basin 602*	Brevard County	Banana	1,135	$203	122	$817	$230,000
Original	-	Basin 998*	Brevard County	Banana	953	$204	144	$696	$194,400
Original	-	Basin 1002*	Brevard County	Banana	903	$205	126	$792	$185,300
Original	-	Basin CCAFS-4A*	Brevard County	Banana	2,091	$208	296	$675	$435,000
Original	-	Basin 979A*	Brevard County	Banana	1,162	$209	173	$721	$242,300
Original	-	Basin 781*	Brevard County	Banana	817	$209	82	$1,224	$170,900
Original	-	Basin CCB-G*	Brevard County	Banana	956	$211	147	$680	$201,300
Original	-	Basin 539*	Brevard County	Banana	935	$212	98	$1,023	$198,200
Original	-	Basin CCAFS-6B*	Brevard County	Banana	3,907	$212	545	$505	$829,500
Original	-	Basin 1037*	Brevard County	Banana	708	$212	97	$1,029	$150,400
Original	-	Basin CCAFS-3A*	Brevard County	Banana	2,896	$221	450	$611	$640,700
Original	-	Basin CCAFS-5A*	Brevard County	Banana	1,967	$225	281	$713	$442,300
Original	-	Basin CCB-B*	Brevard County	Banana	760	$226	110	$905	$172,100
Original	-	Basin CC-B2A*	Brevard County	Banana	774	$228	125	$803	$176,700
Original	-	Basin CCAFS-1A*	Brevard County	Banana	2,531	$229	390	$705	$580,100
Original	-	Basin 674*	Brevard County	Banana	1,206	$230	145	$859	$277,900
Original	-	Basin 650*	Brevard County	Banana	1,251	$232	160	$937	$289,900
Original	-	Basin 1222*	Brevard County	Banana	931	$235	135	$739	$218,800
Original	-	Basin CCAFS-6D*	Brevard County	Banana	905	$236	107	$931	$213,200
Original	-	Basin 1024*	Brevard County	Banana	668	$237	104	$960	$158,700
Original	-	Basin CCAFS-6A*	Brevard County	Banana	734	$243	81	$1,231	$178,300
Original	-	Basin CCAFS-2A*	Brevard County	Banana	1,778	$244	309	$648	$434,200
Original	-	Basin 1304*	Brevard County	Banana	736	$245	110	$905	$180,200
Original	-	Basin CCB-C*	Brevard County	Banana	525	$249	83	$1,209	$130,700
Original	-	Basin 1172*	Brevard County	Banana	919	$249	133	$754	$228,800
Original	-	Basin CCB-D*	Brevard County	Banana	628	$250	103	$972	$156,700

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
Original	-	Basin 1067*	Brevard County	Banana	811	$250	114	$876	$202,600
Original	-	Basin 484*	Brevard County	Banana	445	$251	40	$2,495	$111,800
Original	-	Basin CCB-I*	Brevard County	Banana	1,337	$253	187	$934	$338,000
Original	-	Basin 730*	Brevard County	Banana	576	$255	61	$1,628	$146,900
Original	-	Basin 483*	Brevard County	Banana	708	$261	84	$1,189	$184,400
Original	-	Basin CCB-H*	Brevard County	Banana	629	$261	102	$977	$163,900
Original	-	Basin 601*	Brevard County	Banana	506	$261	52	$1,912	$132,100
Original	-	Basin 1309*	Brevard County	Banana	593	$262	89	$1,118	$155,500
Original	-	Basin 1280B*	Brevard County	Banana	551	$263	81	$1,228	$145,100
Original	-	Basin 350*	Brevard County	Banana	695	$266	85	$1,174	$184,500
Original	-	Basin 997*	Brevard County	Banana	545	$266	83	$1,206	$144,900
Original	-	Basin 476*	Brevard County	Banana	680	$266	78	$1,274	$181,100
Original	-	Basin 479*	Brevard County	Banana	445	$268	42	$2,379	$119,300
Original	-	Basin 520*	Brevard County	Banana	400	$269	35	$2,843	$107,600
Original	-	Basin 1037A*	Brevard County	Banana	540	$270	79	$1,258	$145,700
Original	-	Basin 537*	Brevard County	Banana	591	$272	68	$1,464	$161,100
Original	-	Basin 543*	Brevard County	Banana	511	$272	54	$1,853	$139,300
Original	-	Basin 1187*	Brevard County	Banana	645	$275	85	$1,182	$177,400
Original	-	Basin CCAFS-9A*	Brevard County	Banana	614	$277	129	$774	$170,100
Original	-	Basin 1124*	Brevard County	Banana	533	$278	78	$1,287	$148,100
Original	-	Basin 585*	Brevard County	Banana	474	$279	48	$2,083	$132,000
Original	-	Basin 591*	Brevard County	Banana	399	$279	37	$2,698	$111,200
Original	-	Basin 508*	Brevard County	Banana	546	$281	59	$1,683	$153,600
Original	-	Basin 673*	Brevard County	Banana	595	$282	70	$1,421	$167,900
Original	-	Basin CCAFS-4C*	Brevard County	Banana	801	$288	115	$1,085	$230,900
Original	-	Basin 638*	Brevard County	Banana	445	$292	47	$2,112	$130,200
Original	-	Basin 940B*	Brevard County	Banana	523	$293	75	$1,329	$153,200
Original	-	Basin CC-B2C*	Brevard County	Banana	430	$298	63	$1,579	$128,000
Original	-	Basin CC-B4B*	Brevard County	Banana	411	$304	66	$1,506	$125,100
Original	-	Basin 592*	Brevard County	Banana	359	$305	34	$2,903	$109,500
Original	-	Basin 716*	Brevard County	North IRL	1,157	$108	84	$1,188	$124,800
Original	-	Basin 622*	Brevard County	North IRL	1,172	$130	86	$1,162	$152,100
Original	-	Basin 608*	Brevard County	North IRL	744	$138	69	$1,455	$102,800
Original	-	Basin 286*	Brevard County	North IRL	839	$154	63	$1,578	$129,500
Original	-	Basin 668*	Brevard County	North IRL	1,508	$156	139	$720	$235,400
Original	-	Basin 659*	Brevard County	North IRL	784	$157	56	$1,797	$122,700
Original	-	Basin 384*	Brevard County	North IRL	986	$161	84	$1,193	$158,700
Original	-	TV-St. Johns Basin*	Brevard County	North IRL	2,588	$162	351	$569	$419,300
Original	-	Basin 253*	Brevard County	North IRL	1,242	$167	132	$760	$207,100

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
Original	-	Basin 911*	Brevard County	North IRL	1,004	$168	90	$1,108	$168,500
Original	-	Basin 560*	Brevard County	North IRL	572	$169	41	$2,447	$96,800
Original	-	TV-ST Teresa Basin*	Brevard County	North IRL	2,872	$171	426	$528	$492,400
Original	-	Basin 16*	Brevard County	North IRL	1,095	$172	176	$567	$188,800
Original	-	Basin 338*	Brevard County	North IRL	1,938	$176	210	$713	$340,900
Original	-	Basin 1419*	Brevard County	North IRL	1,735	$181	249	$603	$313,800
Original	-	TV-Addison Canal Basin*	Brevard County	North IRL	7,070	$181	914	$301	$1,280,300
Original	-	Basin 199*	Brevard County	North IRL	1,125	$181	108	$929	$204,100
Original	-	Basin 973*	Brevard County	North IRL	2,134	$182	307	$570	$387,600
Original	-	TV-Chain of Lakes Basin*	Brevard County	North IRL	4,707	$182	683	$403	$857,100
Original	-	Basin 498*	Brevard County	North IRL	1,243	$183	118	$847	$227,900
Original	-	Basin 662*	Brevard County	North IRL	977	$184	101	$995	$180,000
Original	-	Basin 1399*	Brevard County	North IRL	1,498	$185	232	$539	$276,500
Original	-	Basin CO-2K*	Brevard County	North IRL	1,448	$186	204	$612	$269,500
Original	-	Basin 1430*	Brevard County	North IRL	2,361	$186	347	$576	$439,700
Original	-	TV-La Paloma Basin*	Brevard County	North IRL	2,146	$186	314	$557	$399,600
Original	-	Basin CO-2QA*	Brevard County	North IRL	1,354	$187	199	$627	$253,200
Original	-	Basin 895*	Brevard County	North IRL	1,130	$189	135	$740	$213,100
Original	-	TV-South Marine Basin*	Brevard County	North IRL	1,252	$189	176	$567	$237,200
Original	-	Basin 176*	Brevard County	North IRL	797	$191	74	$1,357	$152,400
Original	-	Basin 1396*	Brevard County	North IRL	1,011	$192	147	$680	$193,900
Original	-	Basin RL-2A*	Brevard County	North IRL	1,715	$192	246	$610	$329,500
Original	-	Basin 62*	Brevard County	North IRL	721	$192	118	$847	$138,500
Original	-	Basin 141*	Brevard County	North IRL	1,049	$193	163	$614	$202,100
Original	-	Basin 19*	Brevard County	North IRL	818	$193	128	$779	$157,600
Original	-	TV-Main Street Basin*	Brevard County	North IRL	1,298	$193	189	$662	$250,200
Original	-	Basin 94*	Brevard County	North IRL	1,141	$194	178	$562	$221,500
Original	-	Basin 115*	Brevard County	North IRL	1,372	$194	199	$627	$266,900
Original	-	Basin 478*	Brevard County	North IRL	896	$195	80	$1,254	$174,400
Original	-	Basin RL-3B*	Brevard County	North IRL	2,158	$196	307	$652	$422,400
Original	-	Basin 992*	Brevard County	North IRL	1,241	$197	186	$671	$244,000
Original	-	Basin 865*	Brevard County	North IRL	879	$198	109	$918	$174,300
Original	-	Basin 388*	Brevard County	North IRL	1,203	$198	130	$768	$238,700

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
Original	-	Basin 116*	Brevard County	North IRL	936	$199	142	$703	$185,700
Original	-	Basin 193*	Brevard County	North IRL	1,297	$199	193	$646	$257,700
Original	-	Basin 1377*	Brevard County	North IRL	1,324	$199	200	$625	$263,400
Original	-	TV-Parrish Basin*	Brevard County	North IRL	1,070	$199	163	$612	$213,200
Original	-	Basin 26*	Brevard County	North IRL	900	$200	138	$726	$179,500
Original	-	Basin RL-3*I	Brevard County	North IRL	3,009	$200	423	$650	$600,700
Original	-	Basin 1392*	Brevard County	North IRL	1,050	$200	159	$629	$210,600
Original	-	Basin 204*	Brevard County	North IRL	622	$201	55	$1,810	$125,000
Original	-	Basin 451*	Brevard County	North IRL	1,075	$201	123	$811	$216,100
Original	-	Basin 1335 (Sherwood Park)*	Brevard County	North IRL	1,452	$201	209	$598	$292,400
Original	-	Basin 72*	Brevard County	North IRL	1,038	$202	150	$668	$209,300
Original	-	TV-Sycamore Basin*	Brevard County	North IRL	1,246	$202	184	$680	$251,900
Original	-	Basin 1387*	Brevard County	North IRL	890	$203	125	$799	$180,400
Original	-	Basin 474*	Brevard County	North IRL	801	$204	76	$1,309	$163,100
Original	-	Basin 157*	Brevard County	North IRL	898	$204	90	$1,110	$183,500
Original	-	Basin 816*	Brevard County	North IRL	678	$205	130	$770	$138,800
Original	-	TV-Marina Basin*	Brevard County	North IRL	1,169	$205	170	$587	$239,500
Original	-	Basin 410*	Brevard County	North IRL	1,322	$205	158	$791	$271,300
Original	-	Basin 1456*	Brevard County	North IRL	952	$205	138	$727	$195,400
Original	-	Basin 824*	Brevard County	North IRL	721	$206	103	$967	$148,500
Original	-	Basin 833*	Brevard County	North IRL	1,083	$207	183	$545	$224,300
Original	-	Basin 254*	Brevard County	North IRL	581	$207	45	$2,229	$120,200
Original	-	Basin 575*	Brevard County	North IRL	662	$208	54	$1,859	$137,600
Original	-	Basin 218*	Brevard County	North IRL	491	$208	39	$2,562	$102,100
Original	-	Basin CO-2I*	Brevard County	North IRL	979	$209	146	$687	$204,500
Original	-	Basin 155*	Brevard County	North IRL	913	$209	94	$1,068	$191,100
Original	-	Basin 1464*	Brevard County	North IRL	968	$210	134	$746	$202,800
Original	-	Basin 1368*	Brevard County	North IRL	1,125	$211	162	$616	$237,200
Original	-	Basin 738*	Brevard County	North IRL	497	$211	51	$1,980	$104,900
Original	-	Basin 832*	Brevard County	North IRL	962	$211	159	$629	$203,400
Original	-	Basin 314*	Brevard County	North IRL	827	$212	86	$1,166	$175,100
Original	-	Basin 1458*	Brevard County	North IRL	947	$212	128	$780	$200,500
Original	-	Basin 901*	Brevard County	North IRL	1,895	$212	232	$860	$401,100
Original	-	Basin 1256*	Brevard County	North IRL	1,580	$213	236	$635	$337,000
Original	-	TV-South Street Basin*	Brevard County	North IRL	900	$215	131	$762	$193,300
Original	-	Basin 829*	Brevard County	North IRL	812	$216	161	$621	$175,200

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
Original	-	Basin 6*	Brevard County	North IRL	716	$216	84	$1,191	$154,900
Original	-	Basin 22*	Brevard County	North IRL	622	$217	69	$1,458	$134,800
Original	-	Basin 439*	Brevard County	North IRL	585	$217	53	$1,898	$127,100
Original	-	Basin 10*	Brevard County	North IRL	953	$218	144	$696	$207,400
Original	-	Basin 413*	Brevard County	North IRL	915	$218	103	$975	$199,200
Original	-	Basin 1263*	Brevard County	North IRL	914	$218	132	$759	$199,500
Original	-	Basin 758*	Brevard County	North IRL	533	$219	49	$2,023	$116,900
Original	-	Basin 835*	Brevard County	North IRL	1,134	$220	159	$785	$249,000
Original	-	Basin 1078*	Brevard County	North IRL	1,017	$221	150	$666	$224,800
Original	-	Basin 831*	Brevard County	North IRL	733	$221	105	$950	$162,200
Original	-	TV-Royal Palm Basin*	Brevard County	North IRL	878	$223	127	$786	$195,500
Original	-	Basin 499*	Brevard County	North IRL	761	$223	78	$1,289	$169,800
Original	-	Basin 1381*	Brevard County	North IRL	968	$224	146	$686	$216,500
Original	-	Basin 1342*	Brevard County	North IRL	1,034	$224	157	$637	$231,700
Original	-	Basin 1298*	Brevard County	North IRL	1,667	$224	229	$765	$374,200
Original	-	Basin 112*	Brevard County	North IRL	734	$226	107	$931	$165,700
Original	-	Basin RL-3A*	Brevard County	North IRL	796	$226	113	$881	$179,800
Original	-	Basin 89*	Brevard County	North IRL	1,084	$226	150	$835	$245,100
Original	-	Basin 2159*	Brevard County	Central IRL	2,754	$148	350	$500	$407,500
Original	-	Basin 2185*	Brevard County	Central IRL	1,208	$162	94	$1,064	$196,200
Original	-	Basin 2163*	Brevard County	Central IRL	1,264	$163	89	$1,118	$205,500
Original	-	Basin 1736*	Brevard County	Central IRL	4,263	$167	551	$499	$710,600
Original	-	Basin 1604*	Brevard County	Central IRL	2,916	$167	425	$529	$486,400
Original	-	Basin 2239*	Brevard County	Central IRL	1,643	$169	261	$479	$276,900
Original	-	Basin 1762*	Brevard County	Central IRL	4,250	$169	621	$443	$716,700
Original	-	Basin 2222*	Brevard County	Central IRL	1,534	$169	226	$552	$258,700
2017	13	Central Boulevard Baffle Box+	City of Cape Canaveral	Banana	481	$72	14	$2,479	$34,700
2017	14	Church Street Type II Baffle Box+	City of Cocoa	North IRL	937	$94	135	$652	$88,045
2017	15	Bayfront Stormwater Project+	City of Palm Bay	Central IRL	348	$88	83	$369	$30,624
2017	16	Gleason Park Reuse+	City of Indian Harbour Beach	Banana	48	$88	9	$469	$4,224
2017	18	Denitrification Retrofit of Johns Road Pond+	Brevard County	North IRL	1,199	$88	Not applicable	Not applicable	$105,512

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
2017	19	St. Teresa Basin Treatment+	City of Titusville	North IRL	3,100	$88	459	$594	$272,800
2017	20	South Street Basin Treatment+	City of Titusville	North IRL	987	$88	156	$557	$86,856
2017	21	La Paloma Basin Treatment+	City of Titusville	North IRL	2,367	$88	346	$602	$208,296
2017	22	Kingsmill-Aurora Phase Two+	Brevard County	North IRL	4,176	$88	814	$451	$367,488
2017	23	Denitrification Retrofit of Huntington Pond+	Brevard County	North IRL	1,190	$88	Not applicable	Not applicable	$104,720
2017	24	Denitrification Retrofit of Flounder Creek Pond+	Brevard County	North IRL	856	$88	Not applicable	Not applicable	$75,328
2017	34	Cliff Creek Baffle Box+	City of Melbourne	North IRL	3,952	$88	797	$436	$347,781
2017	35	Thrush Drive Baffle Box+	City of Melbourne	North IRL	3,661	$88	773	$417	$322,200
2018	64	Stormwater Low Impact Development Convair Cove 1 – Blakey Boulevard+	City of Cocoa Beach	Banana	30	$155	3	$1,550	$4,650
2018	65	Stormwater Low Impact Development Convair Cove 2 – Dempsey Drive+	City of Cocoa Beach	Banana	29	$155	3	$1,498	$4,495
2018	66	Big Muddy at Cynthia Baffle Box+	City of Indian Harbour Beach	Banana	269	$155	48	$869	$41,695
2018	67	Grant Place Baffle Box+	City of Melbourne	Central IRL	937	$88	193	$427	$82,481
2018	68	Crane Creek/M-1 Canal Flow Restoration+	St. Johns River Water Management District	Central IRL	23,113	$88	2,719	$748	$2,033,944
2018	69	Apollo/GA Baffle Box+	City of Melbourne	North IRL	3,381	$88	479	$621	$297,522

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
2019	66b	Big Muddy at Cynthia Baffle Box Expansion+	City of Indian Harbour Beach	Banana	167	$155	10	$2,584	$25,837
2019	85	Basin 1304 Bioreactor+	Brevard County	Banana	958	$94	127	$709	$90,000
2019	87	Fleming Grant Biosorption Activated Media+	Brevard County	Central IRL	602	$94	91	$622	$56,588
2019	88	Espanola Baffle Box+	City of Melbourne	Central IRL	1,119	$94	148	$711	$105,186
2019	89	Basin 1298 Bioreactor+	Brevard County	North IRL	917	$94	116	$743	$86,198
2019	90	Johns Road Pond Biosorption Activated Media+	Brevard County	North IRL	245	$94	37	$622	$23,030
2019	91	Burkholm Road Biosorption Activated Media+	Brevard County	North IRL	685	$94	104	$619	$64,390
2019	92	Carter Road Biosorption Activated Media+	Brevard County	North IRL	665	$94	101	$619	$62,510
2019	93	Wiley Avenue Biosorption Activated Media+	Brevard County	North IRL	954	$87	144	$575	$82,735
2019	94	Broadway Pond Biosorption Activated Media+	Brevard County	North IRL	456	$94	69	$621	$42,864
2019	95	Cherry Street Baffle Box+	City of Melbourne	North IRL	980	$94	174	$529	$92,120
2019	96	Spring Creek Baffle Box+	City of Melbourne	North IRL	1,057	$94	232	$428	$99,358
2019	97	Titusville High School Baffle Box+	City of Titusville	North IRL	1,190	$94	166	$674	$111,813
2019	98	Coleman Pond Managed Aquatic Plant System+	City of Titusville	North IRL	1,240	$28	198	$177	$35,000
2020	110	Osprey Plant Pond Managed Aquatic Plant Systems+	City of Titusville	North IRL	606	$99	88	$682	$60,000

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
2020	117	Basin 10 County Line Road Woodchip Bioreactor+	Brevard County Stormwater	North IRL	597	$122	90	$809	$72,773
2020	118	Basin 26 Sunset Road Serenity Park Woodchip Bioreactor+	Brevard County Stormwater	North IRL	605	$122	92	$802	$73,810
2020	119	Basin 141 Irwin Avenue Woodchip Bioreactor+	Brevard County Stormwater	North IRL	567	$122	86	$804	$69,174
2020	120	Draa Field Pond Managed Aquatic Plant Systems+	City of Titusville	North IRL	256	$122	38	$823	$31,281
2020	121	Basin 2258 Babcock Road Woodchip Bioreactor+	Brevard County Stormwater	Central IRL	412	$122	62	$810	$50,203
2020	122	Basin 22 Hunting Road Serenity Park Woodchip Bioreactor+	Brevard County Stormwater	North IRL	329	$122	50	$802	$40,077
2020	124	Floating Wetlands to Existing Stormwater Ponds+	City of Cocoa	North IRL	12	$125	3	$499	$1,497
2020	125	Diamond Square Stormwater Pond+	City of Cocoa	North IRL	85	$122	23	$451	$10,383
2020	127	Basin 5 Dry Retention+	Town of Indialantic	North IRL	113	$148	18	$927	$16,680
2020	128	Jackson Court Stormwater Treatment Facility+	City of Satellite Beach	Banana	56	$148	8	$1,033	$8,266
2020	129	Forrest Avenue 72-inch Outfall Baseflow Capture/Treatment+	City of Cocoa	North IRL	94	$148	12	$1,163	$13,956
2021	169	Sherwood Park Enhancement+	City of Melbourne	North IRL	1,762	$57	670	$149	$99,708
2021	174	St. Johns 2 Baffle Box+	City of Titusville	North IRL	1,992	$122	611	$398	$243,070

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed	Plan Funding
2021	123	Ray Bullard Water Reclamation Facility Stormwater Management Area+	City of West Melbourne	Central IRL	1,317	$122	400	$402	$160,674
2021	175	High School Baffle Box+	City of Melbourne	North IRL	1,183	$122	319	$452	$144,326
2021	176	Funeral Home Baffle Box+	City of Melbourne	North IRL	481	$122	129	$455	$58,682
2021	177	North and South Lakemont Ponds Floating Wetlands+	City of Cocoa	North IRL	107	$122	25	$522	$13,054
2021	178	Marina B Managed Aquatic Plant Systems+	City of Titusville	North IRL	55	$122	7	$953	$6,670
2021	179	Lori Laine Basin Pipe Improvement Project+	City of Satellite Beach	Banana	117	$150	21	$835	$17,525
-	-	***Total***	-	-	***275,3659***	***$172 (average)***	***38,211***	***$1,237 (average)***	***$47,284,663***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.



Figure 4-22: Stormwater Projects in North Brevard County

Figure 4-22 Long Description



Figure 4-23: Stormwater Projects in Central Brevard County

Figure 4-23 Long Description



Figure 4-24: Stormwater Projects in South Brevard County

Figure 4-24 Long Description

4.2. Projects to Remove Pollutants

The purpose of the projects in this section is to remove pollutants that have accumulated in the lagoon. Brevard County has already begun to remove deep accumulations of muck from the lagoon bottom. Dredging to remove muck in other locations of the lagoon will continue, as well as treatment of the interstitial water when feasible. These muck removal projects have more immediate benefits on the lagoon water quality than external reduction projects because the nutrient flux is reduced as soon as muck is dredged from the system whereas it takes time for the external load reduction benefits to reach the lagoon. The County is also evaluating opportunities to use new treatment technologies to provide surface water remediation. In addition, the St. Johns River Water Management District, Indian River Lagoon (IRL) National Estuary Program, and Florida Institute of Technology are evaluating opportunities for enhanced circulation projects, which will allow additional water to flow into the lagoon system to help remove the built-up sediments and muck. The following sections describe the County's proposed muck removal projects, scrubbing of muck interstitial water, as well as potential surface water remediation and potential circulation enhancement projects.

4.2.1 Muck Removal

Muck flux contributes 45% of the TN and 49% of TP load to the Banana River Lagoon each year.

The muck in the Indian River Lagoon (IRL) increases turbidity, inhibits seagrass growth, promotes oxygen depletion in sediments and the water above, stores and releases nutrients, covers the natural bottom, and destroys healthy communities of benthic organisms (Trefry, 2013). When muck is suspended within the water column due to wind or human activities such as boating, these suspended solids limit light availability and suppress seagrass growth. Even for deeper water areas without seagrass growth, muck remains a nutrient source that potentially affects a broader area of the lagoon through nutrient flux and resuspension of fine sediments and their subsequent transport. As shown in **Table 3-1,** the annual release of nutrients from decaying muck is almost as much as the annual external loading delivered by stormwater and groundwater baseflow combined. The muck deposits cover an estimated 6,700 acres of the lagoon system bottom in Brevard County (Trefry, 2018).

The muck deposits in the lagoon flux nutrients that enter the water column and contribute to algal blooms and growth of macroalgae. Muck flux rates for nitrogen and phosphorus have been estimated through studies in the IRL system. For this plan, the average flux rates used are 150 pounds of total nitrogen (TN) per acre per year and 20 pounds of total phosphorus (TP) per acre per year (Trefry, 2018) except where specific measurements indicate otherwise.

The focus of the muck removal projects for this plan is on large deposits of muck in big, open water sites within the lagoon itself. Several of the canal systems that directly connect to the lagoon are also included for muck removal. The goal of the muck removal is to reduce TN and TP muck flux loads by 25%, which should result in a significant improvement in water quality and seagrass extent, as well as a reduced risk of massive algal blooms and fish kills. A 70% efficiency for muck removal projects was applied. This efficiency accounts for two factors: (1) each target dredge area has less than 100% muck cover, and (2) some pockets of muck within dredged areas will inevitably be left behind regardless of the dredge technology used. In 2018 and 2019, the Florida Institute of Technology conducted evaluations of the muck deposits throughout the lagoon system for Brevard County (Fox and Trefry, 2018; Fox and Trefry, 2019; Shenker, 2018; Souto, 2018; Trefry et al., 2019a and 2019b; Zarillo and Listopad, 2019). The updated muck acreage estimates are shown in **Table 4-26**.

Table 4-26: Muck Acreages in the IRL System

Muck Reduction Targets	Open Banana	Banana Canals	North IRL	North IRL Canals	Central IRL	Central IRL Canals	Mosquito Lagoon
Muck area (acres)	1,276	752	3,035	51	59	37	398
Muck flux (pounds of TN per year)	281,148	112,800	233,992	7,650	40,226	5,550	7,164
Funded dredging sites (acres)	223	0	251	0	0	0	0
Flux from funded dredging sites (pounds of TN per year)	123,723	0	85,325	0	0	0	0
Flux reduction from funded sites (pounds of TN per year)	86,606	0	59,728	0	0	0	0
Percent of total flux reduced by dredging the funded sites	31%	0%	26%	0%	0%	0%	0%

Using the information from the Florida Institute of Technology, Brevard County reevaluated the priority muck locations for dredging. The estimated area and nutrient flux in pounds per year (lbs/yr) using average flux rates for Brevard County or site-specific data collected by the Florida Institute of Technology are shown in **Table 4-27** for the recommended projects. **Table 4-28** provides a summary of the recommended projects and the projects submitted as part of an annual plan. The locations of these projects are shown in **Figure 4-25** and **Figure 4-27**.

As dredging proceeds, upland input of muck components must be reduced to prevent new muck accumulation. Therefore, land-based source control measures for nutrients, organic waste, and erosion are needed. Without source controls, muck removal will need to be frequently repeated, which is neither cost-effective nor beneficial to the lagoon's health. Public awareness and commitment are needed to control future muck accumulation. Activities that contribute organic debris and sediment to stormwater and open water must be curtailed. Additional scientific assessment should be carried out to evaluate and optimize the dredging process.

Table 4-27: Banana River Lagoon Estimated Costs and Nutrient Reductions for Muck Removal Project Areas

Location	Sub-Lagoon	Cubic Yards	Acres	TN Flux (pounds per acre per year)	TP Flux (pounds per acre per year)
Port Canaveral South	Banana	420,000	55	919	50
Pineda Banana River Lagoon	Banana	195,000	28	767	35
Patrick Air Force Base	Banana	205,000	26	357	21
Cocoa Beach Golf	Banana	975,000	140	303	21
Titusville Railroad West	North IRL	90,000	70	294	12
National Aeronautics and Space Administration Causeway East	North IRL	285,000	34	919	44
Rockledge A	North IRL	125,000	38	285	31
Titusville Railroad East	North IRL	115,000	36	214	9
Eau Gallie Northeast	North IRL	250,000	73	205	29

Table 4-28: Projects for Muck Removal

Year Added	Project Number	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Removed	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Removed	Plan Funding
Original	2016-10a	Port Canaveral South*	Brevard County	Banana	35,382	$415	1,925	$7,636	$14,700,000
Original	2016-5a	Pineda Banana River Lagoon*	Brevard County	Banana	15,033	$454	686	$9,949	$6,825,000
Original	2016-11a	Patrick Air Force Base*	Brevard County	Banana	6,497	$1,104	382	$18,783	$7,175,000
Original	168a	Cocoa Beach Golf*^	Brevard County	Banana	29,694	$719	2,058	$10,374	$21,350,000
Original	2016-06a	Titusville Railroad West*	Brevard County	North IRL	14,406	$219	588	$5,357	$3,150,000
Original	2016-07a	National Aeronautics and Space Administration Causeway East*	Brevard County	North IRL	21,872	$456	1,047	$9,527	$9,975,000
Original	2016-04a	Rockledge A*	Brevard County	North IRL	7,581	$577	825	$5,303	$4,375,000
Original	2016-08a	Titusville Railroad East*	Brevard County	North IRL	5,393	$746	227	$17,731	$4,025,000
Original	54a	Eau Gallie Northeast*	Brevard County	North IRL	10,476	$835	1,482	$5,904	$8,750,000
2017	41a	Grand Canal Muck Dredging+	Brevard County	Banana	10,185	$240	1,358	$1,797	$2,440,971
2017	42a	Sykes Creek Muck Dredging+	Brevard County	Banana	19,635	$240	2,618	$1,797	$4,705,428
2018	70a	Cocoa Beach Muck Dredging – Phase III+	City of Cocoa Beach	Banana	4,095	$336	780	$1,764	$1,376,305
2018	71	Merritt Island Muck Removal – Phase 1+	Brevard County	Banana	8,085	$957	1,540	$5,022	$7,733,517
2018	72a	Muck Removal of Indian Harbour Beach Canals+	City of Indian Harbour Beach	Banana	3,780	$961	720	$5,044	$3,631,815
2018	2016-3a	Muck Re-dredging in Turkey Creek+	Brevard County	Central IRL	5,691	$38	221	$973	$215,000
2019	101	Cocoa Beach Muck Dredging Phase II-B+	City of Cocoa Beach	Banana	6,300	$939	840	$7,045	$5,917,650
2020	144	Satellite Beach Muck Dredging+	City of Satellite Beach	Banana	3,885	$485	518	$3,638	$1,884,225
-	-	***Total***	-	-	***207,990***	***$520 (average)***	***17,815***	***$6,075 (average)***	***$108,229,911***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

^ The Cocoa Beach Golf project is not fully funded at this time. A total of $21,350,000 is available and Brevard County is looking for options to fund the remaining $12,775,000 for dredging plus associated interstitial water treatment.

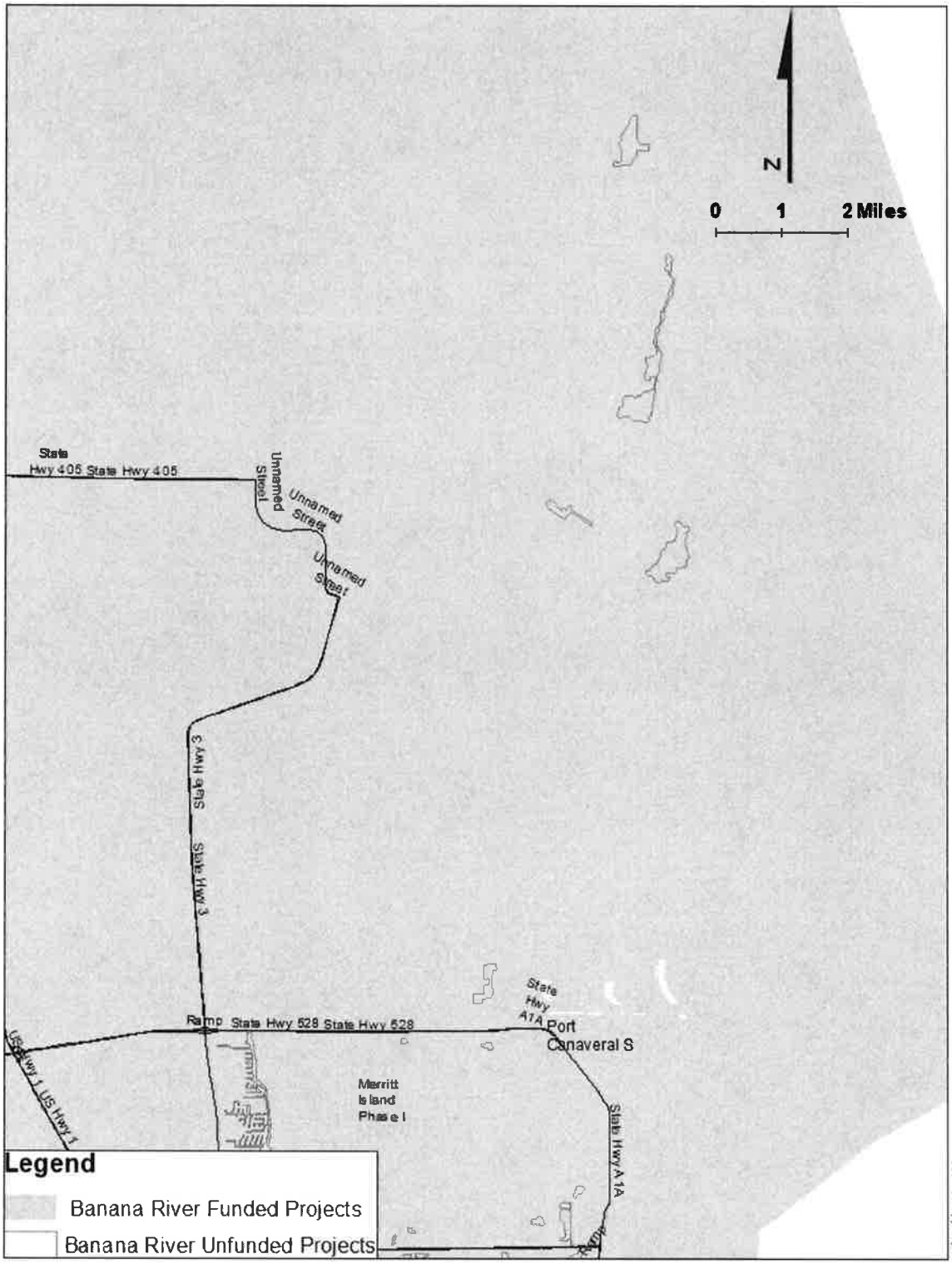


Figure 4-25: Location of Muck Removal Projects in the Northern Banana River Lagoon

Figure 4-25 Long Description

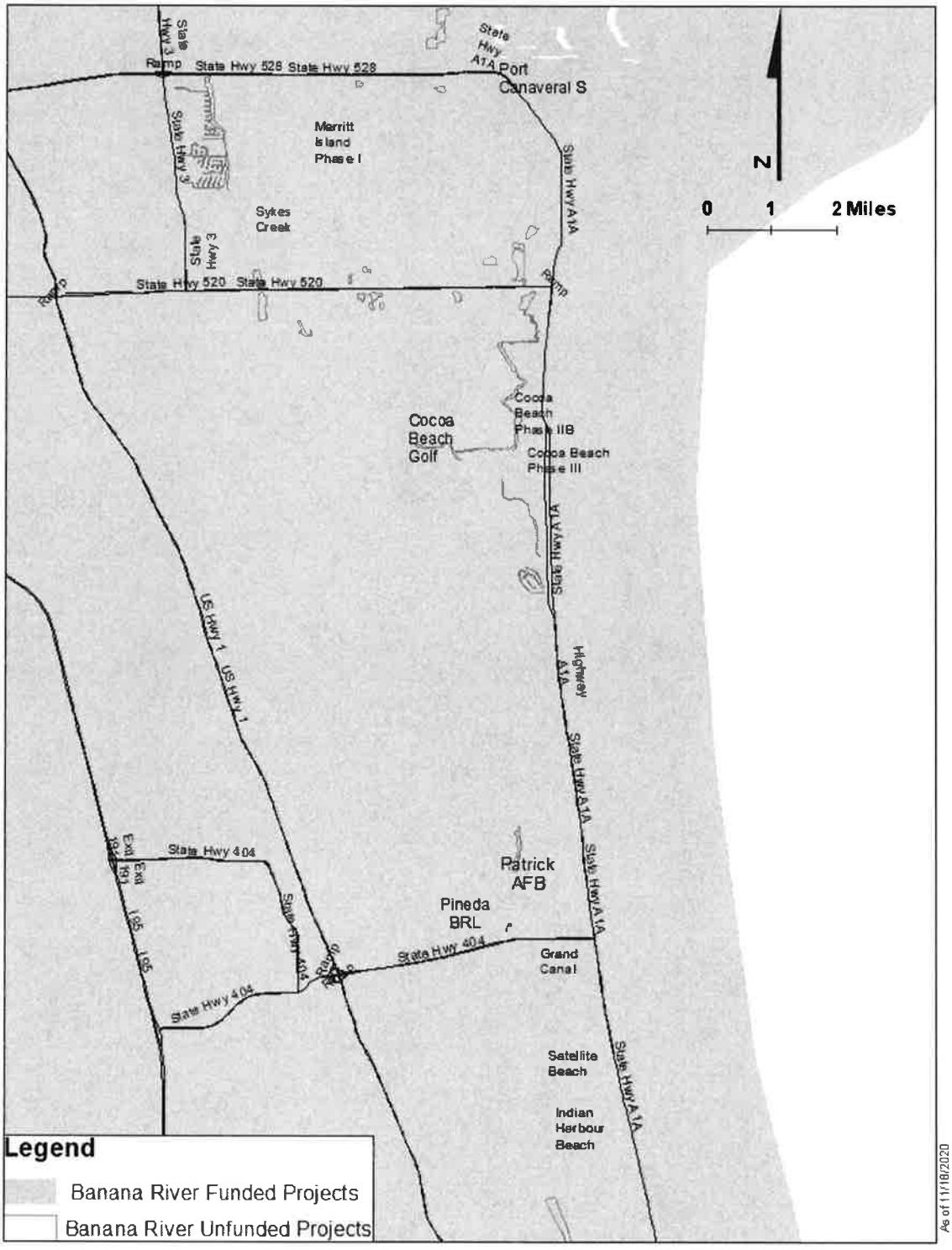


Figure 4-26: Location of Muck Removal Projects in the Southern Banana River Lagoon

Figure 4-26 Long Description

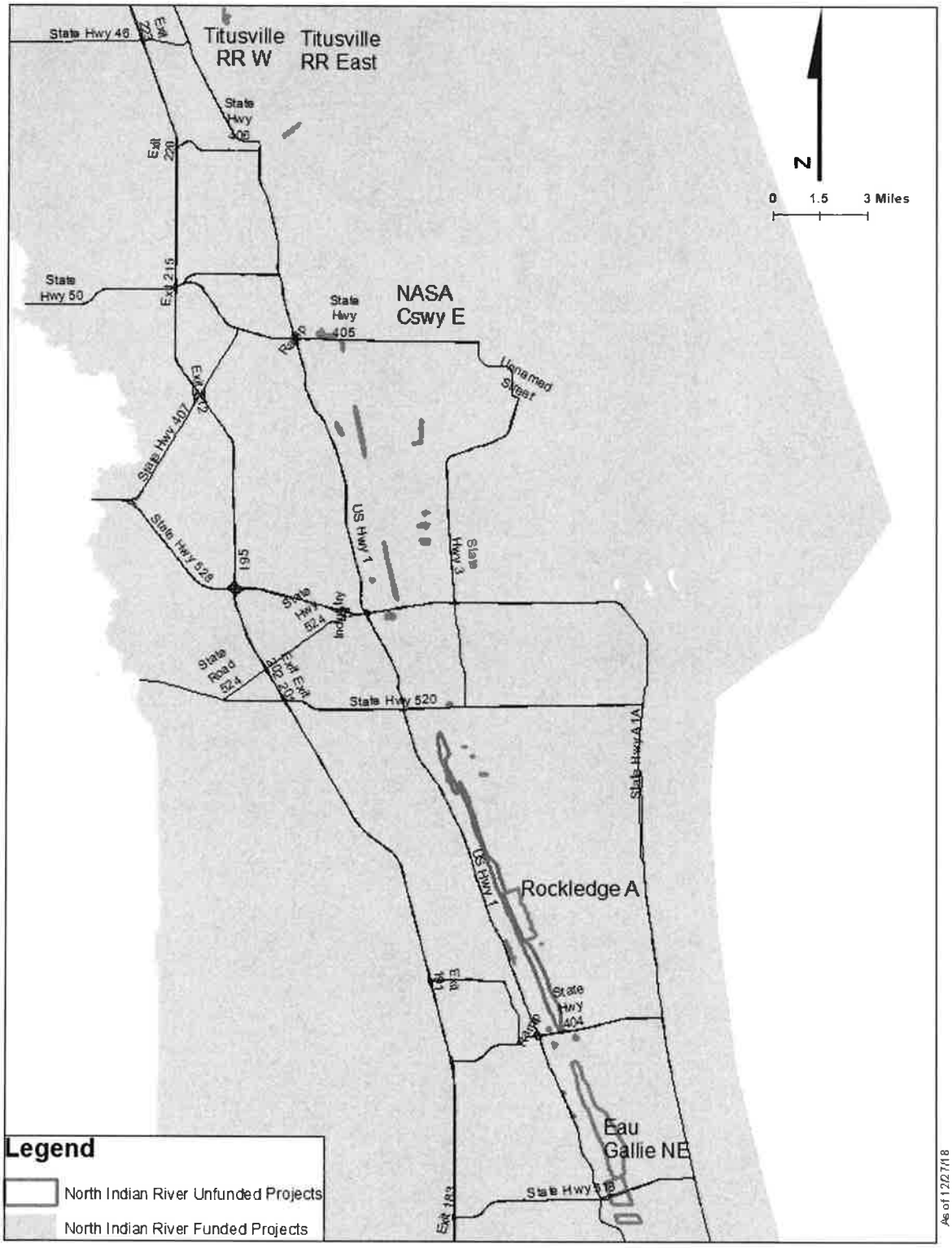


Figure 4-27: Location of Muck Removal Projects in North IRL

Figure 4-27 Long Description

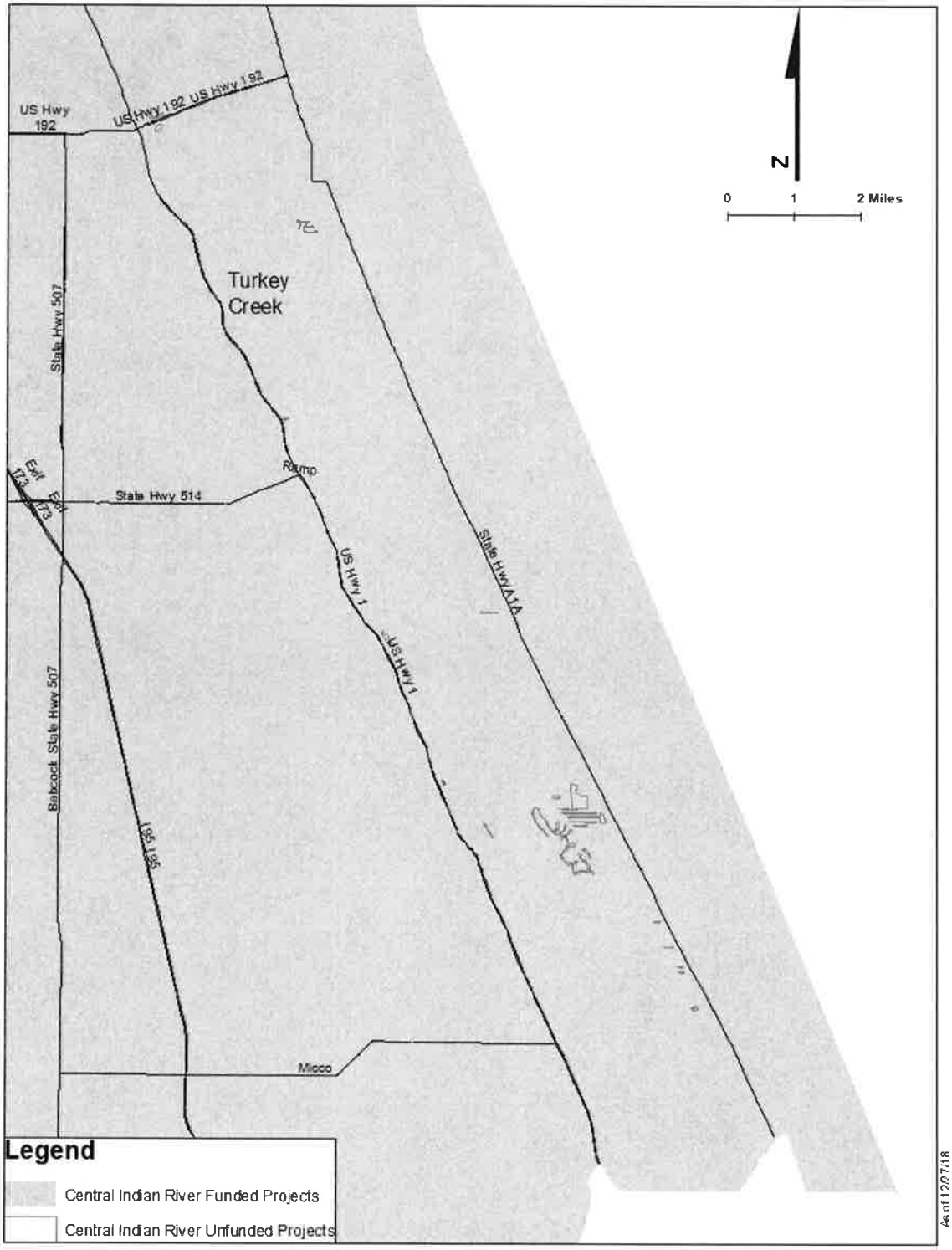


Figure 4-28: Location of Muck Removal Projects in Central IRL

Figure 4-28 Long Description

4.2.2 Treatment of Muck Interstitial Water

Interstitial water refers to the water content that is present within the muck material. Sampling and testing conducted by Florida Institute of Technology researchers has shown that the majority of nutrients are bound to solid particles in the muck; however, the interstitial water also contains a significant amount of dissolved nutrients. When the muck material is dredged, interstitial water nutrients are pumped with the muck and lagoon water in a slurry to the dredged material management area. At the dredged material management area, the muck slurry is processed in a settling pond where sediments settle out and overflow water is returned to the Indian River Lagoon (IRL). Treatment of this overflow water represents a significant opportunity to prevent return of these nutrients to the IRL.

Working with the dredging industry, sewage treatment industry, stormwater treatment entrepreneurs and industrial waste treatment engineers, feasible and reasonably cost-effective concentration targets for return water to the IRL were initially identified as 2,000–3,000 parts per billion for total nitrogen (TN) and 75–100 parts per billion for total phosphorus (TP). Treatment options for TP were demonstrated during the state-funded initial dredging of Turkey Creek, with Florida Institute of Technology researchers providing independent third-party verification of performance levels. These targets can be achieved through a variety of technologies including, but not limited to, coagulants, polymers, biosorption activated media, or a combination of these technologies. Costs associated with these technologies vary by technology, target nutrient reduction levels, and interstitial nutrient concentrations. Open market costs were initially collected through three bid solicitations: (1) Mims Boat Ramp muck removal project, (2) Sykes Creek muck removal project, and (3) Grand Canal muck removal project. More recent dredging experience indicates that concentration targets for TN may need to be adjustable and procured as bid options or alternates to allow market conditions to identify what targets are most cost-effective.

To encourage partnering entities and applicants for Save Our Indian River Lagoon Trust Fund dollars to take advantage of this opportunity to enhance the performance of muck removal projects by removing interstitial water nutrients from the dredge slurry during muck dredging operations whenever project configuration allows, a separate cost-share was developed to account for this added cost and associated nutrient reduction benefit. Using available cost information from Turkey Creek, Mims, and Sykes Creek, County staff considered how to incentivize the addition of this processing step as soon as possible into permitted muck removal projects, as well as future projects. When the substitute project request form was distributed to the public in 2018, staff estimated that a cost-share of $200 per pound of TN removed would be sufficient to entice most partners to agree to stipulate a specific condition in their bids and dredging contracts that return water not exceed 3,000 parts per billion of TN nor 100 parts per billion of TP. However, based on recent bids for nutrient mitigation alternatives for sediment dewatering for Sykes Creek (Tetra Tech, 2015), Grand Canal, and Mims, the cost-share used for County projects in the 2019 Update was reduced to $50 per pound of TN removed. This cost will remain volatile until a contractor meets the concentration targets long enough to more accurately determine cost.

The recommended locations for interstitial water treatment and load reductions in pounds per year (lbs/yr) are shown in **Table 4-29**.

Table 4-29: Projects for Treatment of Interstitial Water

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Removed	TP Reduced (lbs/yr)	Cost per Pound per Year of TP Removed	Plan Funding
2017	40	Mims Muck Removal: Outflow Water Nutrient Removal+*	Brevard County	North IRL	2,803	$143	244	$1,639	$400,000
2018	2016-10b	Port Canaveral South+	Brevard County	Banana	42,688	$50	3,887	$549	$2,134,419
2018	2016-5b	Pineda Banana River Lagoon+	Brevard County	Banana	19,820	$50	1,804	$549	$990,980
2018	2016-11b	Patrick Air Force Base+	Brevard County	Banana	20,836	$50	1,897	$549	$1,041,800
2018	168b	Cocoa Beach Golf+^	Brevard County	Banana	99,098	$30	9,022	$334	$3,013,100
2018	41b	Grand Canal+	Brevard County	Banana	89,025	$175	To be determined	To be determined	$15,579,397
2018	42b	Sykes Creek+	Brevard County	Banana	64,278	$175	To be determined	To be determined	$11,248,704
2018	2016-06b	Titusville Railroad West+	Brevard County	North IRL	9,148	$50	833	$549	$457,375
2018	2016-07b	National Aeronautics and Space Administration Causeway East+	Brevard County	North IRL	28,967	$50	2,637	$549	$1,448,355
2018	2016-04b	Rockledge A+	Brevard County	North IRL	12,705	$50	1,157	$549	$635,244
2018	2016-08b	Titusville Railroad East+	Brevard County	North IRL	11,688	$50	1,064	$549	$584,424
2018	54b	Eau Gallie Northeast+	Brevard County	North IRL	25,410	$50	2,313	$549	$1,270,487
2018	2016-3b	Muck Interstitial Water Treatment for Turkey Creek+	Brevard County	Central IRL	Not applicable	Not applicable	688	Not applicable	Part of dredging cost
2018	72b	Muck Interstitial Water Treatment for Indian Harbour Beach Canals+	City of Indian Harbour Beach	Banana	27,418	$200	To be determined	To be determined	$5,483,600
2020	113	Satellite Beach Interstitial Water Treatment+	City of Satellite Beach	Banana	29,978	$102	3,059	$1,000	$3,057,756
-	-	***Total***	-	-	***483,862***	***$98 (average)***	***28,605***	***$1,655 (average)***	***$47,345,641***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.
* Outflow Water Nutrient Removal for the Mims Muck Removal project was funded, bid, and awarded to the lowest successful bidder; however, the contractor was unsuccessful at reducing outflow water nutrient concentrations as much as required by the contract. Therefore, only partial reductions were achieved and the Save Our Indian River Lagoon 0.5 cent sales tax funding was not used.
^ The Cocoa Beach Golf project is not fully funded at this time. A total of $3,013,100 is available and Brevard County is looking for options to fund the remaining $1,941,800.

4.2.3 Spoil Management Areas

As Brevard County seeks to execute muck dredging projects, the availability of upland processing areas for the treatment of dredge spoils has become a growing concern. These working sites, referred to as temporary spoil management areas or in the industry as dredged material management areas, are upland parcels of land that can be used as needed for the temporary processing of dredge spoils until such time as the materials can be moved offsite to a permanent beneficial use or disposal location.

To move muck dredging projects forward in a timely manner, initial project locations were selected to make use of existing dredged material management areas through the County's long-standing partnership with the Florida Inland Navigation District. The Florida Inland Navigation District manages Florida's Intracoastal Waterway for which it has acquired eight dredged material management area sites distributed from north to south along the 72 miles of the Indian River Lagoon (IRL), not the Banana River, in Brevard County. Only three of these Florida Inland Navigation District dredged material management areas are presently developed; however, the County is working on partnership agreements with the Florida Inland Navigation District to construct dredged material management area facilities at their remaining sites.

The eight Florida Inland Navigation District sites are insufficient to meet the volume and timing of muck dredging projects included in this plan. As the distance between dredging sites and dredged material management areas increase, more booster pumps are required. Booster pumps can complicate project operations and increase cost, particularly as multiple boosters become necessary. Booster pumps are required as project pump distances approach one-mile and are required at one-mile intervals thereafter. Each booster pump adds approximately $1 per cubic yard of material dredged. Pump distances for the Eau Gallie and Sykes Creek projects have five- to seven-mile pump distances to the Florida Inland Navigation District sites and project amounts in excess of 400,000 cubic yards each.

As a supplement to the Florida Inland Navigation District sites, Brevard County staff investigated lease and purchase options for the development of additional multi-use spoil management areas. Lease options for parcels of interest resulted in unfavorable cost-benefit ratios on these short-term investments due to the up-front costs of site development including design, permitting, mitigation, and construction. Similar cost effectiveness issues arise from depending on private sector contractors to provide a temporary dredged material management area as part of construction costs. The contractor passes along most or all the costs of providing a dredged material management area, but the County does not have the benefit of using the site multiple times over the 10-year timespan of this plan or thereafter.

Fee simple purchase and development of spoil management areas, designed with multi-use options for the implementation of regional surface water or stormwater treatment projects, emerges as the most cost-effective long-term option. Through fee simple site acquisition and a prescribed site use and management plan, investments in acquisition and development costs, including required mitigation, can be recovered. For example, the acquisition of a spoil management site four miles closer than the nearest Florida Inland Navigation District site could reduce booster pump costs by $1.6 million on a single 400,000 cubic yard muck removal project. This savings can offset site acquisition and development costs associated with the parcel.

Publicly owned dredged material management area sites could be used for stormwater or surface water treatment, when not being used for dredging. These additional uses can be

factored into site selection and design to provide supplementary lagoon benefits. Therefore, land acquisition shall be considered an eligible muck management project cost, particularly when the site can be designed to provide multi-use regional surface water or stormwater treatment alongside or intermittently between usages for muck management. A preliminary project design and construction layout with cost evaluation (comparison to an existing, more distant dredged material management area) shall be part of the site selection and land acquisition decision process.

Another factor to consider when evaluating long-term operations and the feasibility of muck dredging projects is the strategy for final disposal and the development of permanent beneficial use or disposal locations. Often left to the contractor as part of their construction and implementation plan, a final disposition strategy is in many cases not part of the dredging project plan. The dependency on private sector contractors to provide a final disposition strategy and permanent material disposal site can have consequences that a managed permanent disposal site can avoid. These consequences can increase the contractor's risk and drive up project costs.

A managed disposal site would consider the fiscal, environmental, and social implications of the site. A final disposition strategy evaluates the appropriateness of the disposal site in terms of the local community and future development, the environmental proximity to surface waters and runoff potential, groundwater protection, hauling costs, and minimizing risk by providing a defined disposal site. A defined material disposal site, laid-out in the project design, provides a level of security at the time of project bidding that reduces risk to the contractor and potentially lowers the project cost. Staff investigation into the purchase, use and reclamation of existing borrow pits are an example of final disposal areas that are being considered. Similar to what is seen with the development of temporary spoil management areas, the most cost-effective long-term option for the disposal of muck material should include the evaluation of fee simple purchase options and the development of spoil disposal areas.

4.2.4 Vegetation Harvesting

Mechanical removal or harvest of aquatic vegetation rather than treatment with herbicides or other control mechanisms may be one method of reducing nutrient loads to the Indian River Lagoon (IRL) and its tributaries. The use of aquatic plants for nutrient management has been considered since at least the 1960s (Boyd, 1969). The harvest of aquatic vegetation removes nutrients from the waterbody rather than recycling them through decomposition and settlement of the plant material into the sediment. Most freshwater plants do not tolerate the salinity of the IRL and, upon release (such as floating plants washed out of canals) to the lagoon, will die and decompose adding a nutrient load directly to the IRL.

Aquatic vegetation can occur either in mixed stands or as large monocultures. It is not uncommon for invasive plants to form largely monotypic stands. The plant material can form dense floating mats that prevent light diffusion into the water column, thus shading the bottom and limiting benthic habitat. The dense layer of vegetation also limits exchange of gases across the water surface and can cause depletion of dissolved oxygen under the mat. At greater densities, vegetation may also form floating islands or tussocks and incorporate woody plants.

Common invasive plants present in waterways that connect to the IRL are hydrilla, water lettuce, duck weed, and water hyacinth, and these plants present the greatest opportunity for harvest and removal of nutrients through plant biomass. However, native vegetation can be

intermixed with exotics. Examples of common native aquatic vegetation that may also be removed includes cattails, fanwort, coontail, bladderwort, and water lilies.

The removal of aquatic vegetation may be accomplished in several ways. For canals or waterbodies with small surface area, booms laid across the water surface can divert flow to screening and sorting facilities for removal of floating vegetation. Also, in canals, drag lines or back hoes can be used for removal of submerged vegetation or modified front end loaders with baskets can collect floating plant material. There are also specifically designed harvesters and shredders that move through the water and cut and remove vegetation (Florida Department of Environmental Protection, 2012).

The cost-share for vegetation harvesting was based on actual annualized costs and laboratory analyses of the total nitrogen (TN) and total phosphorus (TP) content of plant material removed from floating vegetative islands in eight Brevard County stormwater ponds (see **Table 4-30**). Cost-share reimbursement of approved projects will be based on laboratory analysis of plant material to determine true nitrogen removal. Eligible cost-share will be adjusted as additional cost and nutrient removal benefit data are collected.

Table 4-30: Estimated Costs and Nutrient Reductions for Vegetation Harvesting

Project	Annualized Cost	Annualized TN Reductions (lbs/yr)	Cost per Pound per Year of TN Reduction	Annualized TP Reductions (lbs/yr)	Cost per Pound per Year of TP Reduction
Vegetation Harvesting	$198,868	1,812	$110	191	$1,041

Table 4-31 summarizes the approved projects for vegetation harvesting.

Table 4-31: Projects for Vegetation Harvesting

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	TP Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	Plan Funding
2020	111	Draa Field Vegetation Harvesting+	City of Titusville	North IRL	574	$87	-	-	$50,000
2020	112	County Wide Stormwater Pond Harvesting+	Brevard County Stormwater	North IRL	140	$100	28	$500	$14,000
2021	171	Mechanical Aquatic Vegetation Harvesting+	Melbourne-Tillman Water Control District	Central IRL	16,636	$61	1,664	$608	$1,011,976
2021	172	Horseshoe Pond Vegetative Harvesting+	Brevard County Stormwater	North IRL	74	$110	7	$1,163	$8,140
2021	173	North and South Lakemont Ponds Vegetation Harvesting+	City of Cocoa	North IRL	18	$110	4	$495	$1,980
-	-	***Total***	-	-	***17,442***	***$62 (average)***	***1,703***	***$638 (average)***	***$1,086,096***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.2.5 Surface Water Remediation System

In 2016, AquaFiber Technologies Corporation had a technology that could treat up to 25 cubic feet per second (16 million gallons per day) of water from Turkey Creek, which is a major tributary to the Central Indian River Lagoon (IRL). This project would reduce total suspended solids by more than 90%, remove algal blooms and cyanobacteria to improve the lagoon's color and clarity, improve the dissolved oxygen concentration by returning water with near 100% oxygen saturation, and produce a biomass that can be processed into fertilizer pellets or used as a feedstock for waste-to-energy utilities to produce electricity.

This project would remove an estimated 35,633 pounds per year (lbs/yr) of total nitrogen (TN) and 2,132 lbs/yr of total phosphorus (TP) from the watershed. The facility would cost $19,720,760 for design, permitting, construction, and use of a technology to destroy the biomass onsite. The cost to operate and maintain the remediation facility is estimated to be $6,271,200 per year. **Table 4-32** summarizes the benefits and costs of nutrient removal for this project for a 10-year period. On an annual basis, the yearly costs would be $8,243,276, which would result in an annual cost per pound per year of TN removed of $231 and cost per pound per year of TP removed of $3,867.

Brevard County also received information from Phosphorus Free Water Solutions, which has a pay for performance treatment technology to reduce phosphorus, nitrogen, color, and turbidity in surface waters. Phosphorus Free evaluated a project to treat 50 cubic feet per second of water from Turkey Creek. Based on the measured concentrations in Turkey Creek, Phosphorus Free Water Solutions provided two options for treating nitrogen. The measured phosphorus concentration in Turkey Creek is very low and it would not be cost-effective to remove additional phosphorus from the system through this technology. The first option would use the basic nitrogen removal process, which would remove a portion of the dissolved organic nitrogen. This option would reduce TN by 53% or 50,353 lbs/yr at a cost of $6,797,000 or $135 per pound of TN removed. The second option would include an additional treatment step to increase the removal of dissolved organic nitrogen. This option would reduce TN by 86% or 81,469 lbs/yr at a cost of $13,035,000 or $160 per pound of TN removed (**Table 4-32**). The costs for each scenario do not include the capital costs to construct the treatment facility, only the annual pay for performance cost estimates for a ten-year contract for treatment.

Table 4-32: Summary of Annual Benefits and Ten-Year Costs of a Surface Water Remediation System

Project	Ten-Year Project Cost	TN Reduction (lbs/yr)	Cost per pound per Year of TN Removed	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Removed
AquaFiber	$82,432,760	35,633	$2,313	2,132	$38,665
Phosphorus Free Option 1	$67,970,000	50,353	$1,350	To be determined	To be determined
Phosphorus Free Option 2	$130,350,000	81,469	$1,600	To be determined	To be determined

These technologies have not yet been tested in estuarine systems; therefore, these remediation systems are not recommended at this time. However, these types of treatment technologies offer additional benefits that should be more thoroughly explored to better assess the total value to restoring and maintaining lagoon health. In 2020, Brevard County received a grant to collaborate with AquaFiber Technologies Corporation to pilot test their surface water remediation technologies. Unfortunately, AquaFiber had to cancel the project due to COVID-19 related economic hardships. Brevard County continues to investigate potential surface water

remediation technologies and a portion of the Respond funding may be used to incentivize pilot testing. As feasible technologies are proven, projects may be added to future plan updates.

4.2.6 Enhanced Circulation

The 2011 superbloom occurred in the Banana River Lagoon, North Indian River Lagoon (IRL), and southern Mosquito Lagoon. These areas have long residence times, which means that water in these areas stagnates and nutrients can build up leading to additional algal blooms. Options to address this condition are to increase circulation by replacing causeways with bridges, installing culverts under causeways, or increasing ocean exchange by adding culverts, pump stations, or inlets to provide new connections to the ocean. Addressing manmade causeways that interfere with natural circulation should be beneficial without unintended consequences and modeling can help prioritize actions, but implementation is costly and requires participation by the Florida Department of Transportation.

New artificial ocean exchange projects introduce a lot of unknowns. While the residence time of water in the IRL system would decrease, the input ocean water with its complement of marine life has the potential to alter the lagoon ecosystem. Whether the amount of ocean exchange needed to have a beneficial impact on the system can be achieved without causing unintended harm to the lagoon is unknown. Artificial ocean exchange projects are costly with significant social implications and permitting hurdles to overcome. For these reasons, causeway replacements are encouraged while ocean exchange projects are not a recommended component of this plan. Other entities are taking the lead on evaluating options. The results of evaluations by the St. Johns River Water Management District and the IRL National Estuary Program are summarized below.

The St. Johns River Water Management District contracted with CDM Smith and Taylor Engineering to identify potential locations where enhanced circulation projects would be beneficial. The first phase of the project (CDM Smith et al., 2014) involved a literature review and geographic information system desktop analysis. All the locations considered in Phase I, including the top ranked locations, are shown in **Figure 4-29**. From this first phase, ten locations were identified for future evaluation as shown in **Table 4-33**. The external projects are those that could potentially connect the IRL system with the Atlantic Ocean whereas internal projects are connections within the IRL (CDM Smith et al., 2015).

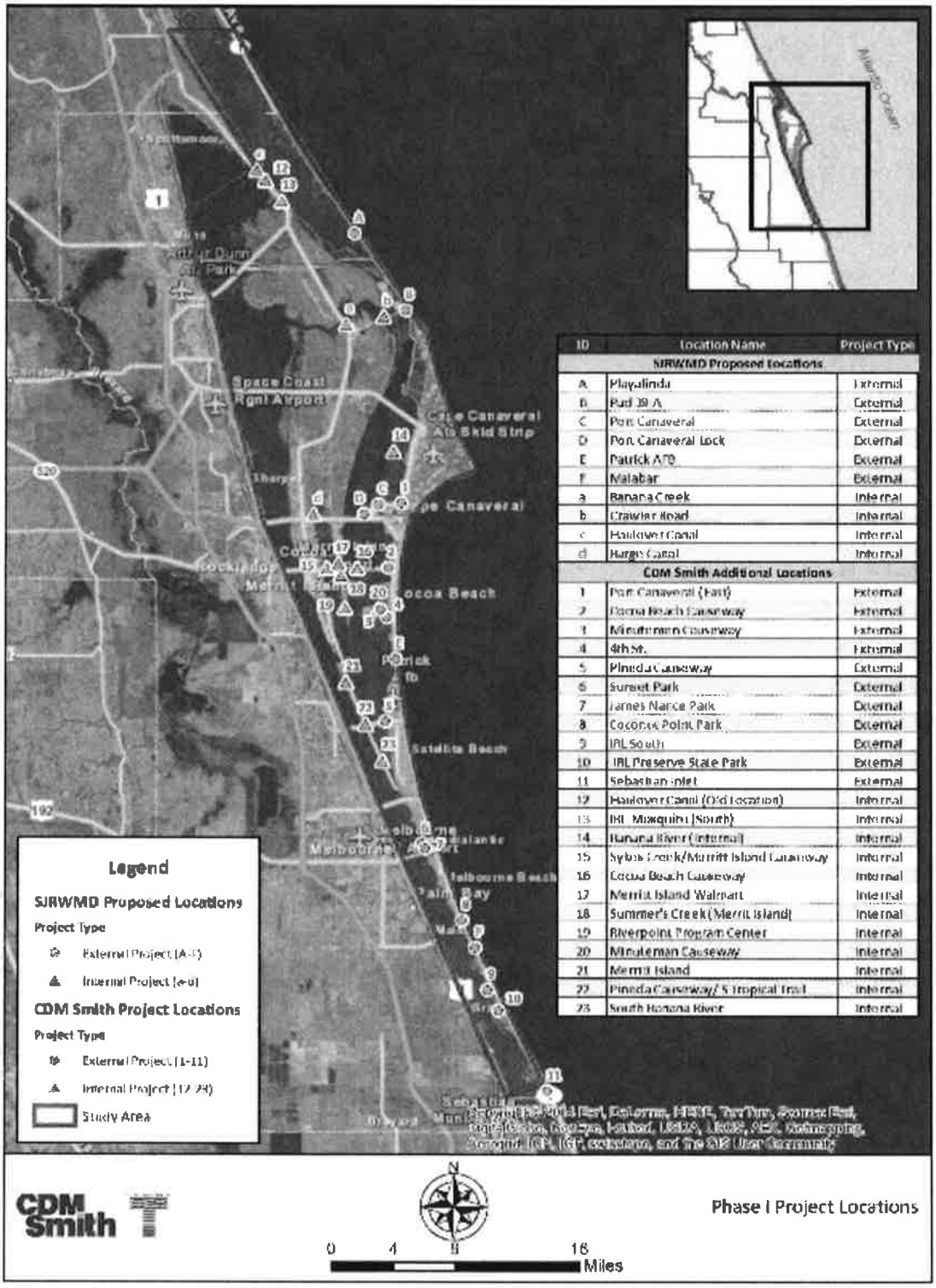
Table 4-33: Phase I Top Ranked Potential Enhanced Circulation Project Locations

Project Site	Project Description	Zone	Project Type	Rank
D	Canaveral Lock*	Banana River Lagoon	External	1
C	Port Canaveral*	Banana River Lagoon	External	2
15	Sykes Creek/Merritt Island Causeway*	Banana River Lagoon	Internal	3
B	Pad 39-A*	Banana River Lagoon	External	4
16	Cocoa Beach Causeway	Banana River Lagoon	Internal	5
23	South Banana River	Banana River Lagoon	Internal	6
E	Patrick Air Force Base *	Banana River Lagoon	External	7
20	Minuteman Causeway	Banana River Lagoon	Internal	8
1	Port Canaveral (East)	Banana River Lagoon	External	9
8	Coconut Point Park*	Central and Southern Portion of IRL Study Area	External	10

Source: CDM Smith et al. 2015.
* Sites evaluated in Phase 2 of the CDM Smith and Taylor Engineering project for the St. Johns River Water Management District.

As part of the second phase of the project, six of the top ranked sites were further evaluated to assess the water volumes. These sites are noted in **Table 4-33**. Based on the initial evaluation of the sites, CDM Smith and Taylor Engineering determined that a project at the Sykes Creek/Merritt Island Causeway was not feasible. This location had a relatively new bridge crossing with built-up abutment protection that precludes construction of culverts and the increase of bridge openings. In addition, this connection would only provide an internal connection in the IRL and would not increase the tidal exchange. The five remaining sites were evaluated for the following types of connections (additional information in **Table 4-34**):

- Port Canaveral (Project Site C) – Culvert connection
- Pad 39-A (Project Site B) – Culvert connection
- Patrick Air Force Base (Project Site E) – Culvert connection
- Canaveral Lock (Project Site D) – Open channel flow by keeping the Canaveral Lock open over extended periods. Additional maintenance dredging may be needed to remove sediment deposition near the gates.
- Coconut Point Park (Project Site 8) – Culvert connection
- Coconut Point Park (Project Site 8) – Inlet connection with an inlet that is at least 1,350-feet long, with an average depth of about 25 feet below mean sea level.



ID	Location Name	Project Type
SJRWMD Proposed Locations		
A	Playalinda	External
B	Pad 39 A	External
C	Port Canaveral	External
D	Port Canaveral Lock	External
E	Patrick AFB	External
F	Malabar	External
a	Banana Creek	Internal
b	Crawler Road	Internal
c	Haulover Canal	Internal
d	Barge Canal	Internal
CDM Smith Additional Locations		
1	Port Canaveral (East)	External
2	Cocoa Beach Causeway	External
3	Minuteman Causeway	External
4	4th St.	External
5	Pineda Causeway	External
6	Sunset Park	External
7	James Narce Park	External
8	Coconut Point Park	External
9	IRL South	External
10	IRL Preserve State Park	External
11	Sebastian Inlet	External
12	Haulover Canal (Old Location)	Internal
13	IRL Mosquito (South)	Internal
14	Banana River (Internal)	Internal
15	Sykes Creek/Merritt Island Causeway	Internal
16	Cocoa Beach Causeway	Internal
17	Merritt Island Walmart	Internal
18	Summer's Creek (Merrit Island)	Internal
19	Riverpoint Program Center	Internal
20	Minuteman Causeway	Internal
21	Merrit Island	Internal
22	Pineda Causeway/S Tropical Trail	Internal
23	South Banana River	Internal

Source: CDM Smith et al. 2015.

Figure 4-29: Phase I Potential Enhanced Circulation Project Locations

Figure 4-29 Long Description

Table 4-34: Computed Hydraulics for Connections at Select Locations

Site/Potential Project	Flood Prism (million cubic feet)	Ebb Prism (million cubic feet)	Maximum Flow (cubic feet per second)	Estimated Impacted Area for 0.27 Foot Tide Range (acres)
Port Canaveral Culvert (Project Site C)	1.51	-1.08	89	92 to 128
Pad 39-A Culvert (Project Site B) (estimated)	1.38 to 1.51	-1.08 to -1.59	Not applicable	92 to 135
Patrick Air Force Base Culvert (Project Site E) (estimated)	1.38 to 1.51	-1.08 to -1.59	Not applicable	92 to 135
Canaveral Lock Open Channel Flow (Project Site D)	68.67	-83.03	-4,670	5,839 to 7,060
Coconut Point Park Culvert (Project Site 8)	1.38	-1.59	-94	117 to 135
Coconut Point Park Inlet (Project Site 8)	1,890	Not applicable	111,000	160,698

Source: CDM Smith et al. 2015.
Note: Positive flow is towards the IRL.

A screening matrix was used to evaluate the costs and benefits of the project based on the criteria for the tidal prism, area affected, land acquisition, relative costs, ease of construction, seagrass loss, and benefit to cost ratio. The top ranked project from this evaluation is the Port Canaveral culvert (CDM et al., 2015). It is important to note that a culvert will likely not provide the amount of exchange needed to provide a significant benefit to the lagoon. The size of the lagoon in Brevard County is more than 150,000 acres. The second ranked project is the Canaveral Lock open channel. This option may have challenges moving forward based on past experience with sediment blocking submarines from using the port after the lock was held open for an extended period of time. In addition, there are limited data for estimating the water quality benefits and unintended ecological consequences that could result from keeping the lock open.

In 2019, the Florida Institute of Technology received $800,000 in funding from the Florida Legislature, which is administered by the Florida Department of Education, to plan and perform studies at sites within the lagoon and along the coast to restore lagoon inflow. The first phase of the study gathered baseline data and performed modeling on existing water quality, biological parameters, and hydrologic conditions at potential locations for future temporary permitted inflow test structures. The Phase 1 modeling and engineering project research was conducted in parallel with the biological and water quality monitoring to gather data for an enhanced circulation pilot project. The first phase of the project was completed in September 2020. Phase 1 provided baseline biological and geochemical data near the three proposed inflow locations: Port Canaveral and south Cocoa Beach in Brevard County and Bethel Creek in Indian River County. Modeling results were provided for different flow rates in each location based on preliminary engineering concepts for three structure options: pipe with no pump, pump and pipe, and weir. In 2020, the Florida Institute of Technology received another $800,000 in funding from the Florida Legislature, which is also administered by the Florida Department of Education, for Phase 2 of the study, which will identify the location for a temporary inflow pilot system, begin the engineering design for this location, and start the permitting process (Florida Institute of Technology, 2020).

Temporary Inlet: Another potential option for ocean exchange is when a large storm creates an opening. Instead of immediately filling in the new opening, an evaluation should be completed using available models to determine the potential benefits of temporarily stabilizing the opening

long enough to provide significant ocean exchange for short-term water quality benefits, but not long enough to excessively alter beach erosion and sand transport into the lagoon.

Causeway Modification: In 2018, the IRL National Estuary Program, in partnership with the Canaveral Port Authority, worked with the Florida Institute of Technology to assess the potential for modifications of the State Road 528 and State Road 520 causeways and bridge structures to enhance circulation in the northern portion of the Banana River Lagoon and adjacent North IRL. The Florida Institute of Technology used the United States Army Corps of Engineers Coastal Modeling System for this evaluation (Zarillo, 2018).

The model was set up to reproduce the physical conditions of 2015 to ensure the model was well calibrated. Measured data, including water levels, freshwater inflows, wind velocity, and topography, were used to drive the model. Nine model tests were performed to represent current conditions and scenarios with hypothetical bridge spans over the Banana River Lagoon and North IRL. Three of the model tests included flow relief structures embedded in the State Road 528 and State Road 520 causeways. The tests were run using numerical tracer dye concentration throughout the model domain to track the dye concentration reduction throughout the model simulation. Circulation in the model occurred through ocean exchanges though the Sebastian Inlet, freshwater inflows, and wind (Zarillo 2018).

The model results indicated that modifying the bridge and causeway structures would have a detectible influence on exchange rates within the Banana River Lagoon and North IRL. Longer bridge spans over the Banana River Lagoon along State Road 528 combined with longer bridge spans over State Road 520 resulted in a 10% net reduction in the dye concentration in the Banana River Lagoon between State Road 528 and State Road 520 at the end of the 340-day model run. The net improvement in exchange in the Banana River Lagoon immediately to the north of State Road 528 was predicted to be 5%, if bridge spans are present on both state roads. The study concluded that a significant improvement in exchange in the Banana River Lagoon study area and adjacent North IRL would require bridge spans on both State Road 520 and State Road 528 (Zarillo, 2018).

In 2019, Dr. Zarillo expanded his circulation model to include Mosquito Lagoon and the ocean inlet at New Smyrna instead of a closed boundary at Haulover Canal. This expanded model was run again to estimate the impact of causeways on residence time in various compartments of the IRL. In this study, longer bridge spans over the Banana River Lagoon along State Road 528 and State Road 520 resulted in a 17% net reduction in the dye concentration in the Banana River Lagoon between State Road 528 and State Road 520 at the end of the 340-day model run. The net improvement in exchange in the Banana River Lagoon immediately to the north of State Road 528 was predicted to be 8% and exchange within Sykes Creek improved by 20% (Zarillo, 2019).

In response to the 2019 model results, the St. Johns River Water Management District offered to use their state-of-the-art ecological modeling tools to quantify water quality improvements and algal bloom reductions anticipated from the proposed causeway modifications. At the request of Brevard County, Port Canaveral, and IRL National Estuary Program, the Florida Department of Transportation agreed to pause their causeway widening project for six months until the ecological impacts could be estimated and evaluated. The modeling results confirmed the improvement in residence time identified in Dr. Zarillo's modeling but found little corresponding change in chlorophyll *a* concentrations (St. Johns River Water Management District, 2020).

4.3. Projects to Restore the Lagoon

Another component of this plan is to implement projects that will restore important, filtering ecosystem services within and adjacent to the lagoon to improve water quality and resilience. Oyster reefs provide ecosystem services including improved water quality, shoreline stabilization, carbon burial, and habitat (Grabowski et al., 2012). Creating oyster bars and planting shorelines with natural vegetation will help to filter excess nutrients and suspended solids from the lagoon (Grizzle et al., 2008; Reidenbach et al., 2013), which will improve water quality, allowing for seagrass growth (Newell and Koch, 2004) and may reduce the number and severity of algal blooms in the lagoon system. Oyster bars and planted shorelines also create habitat for more than 300 different lagoon species. These types of projects take years before the full benefits are seen in the lagoon as it takes some time for the oysters and vegetation to grow and become established.

The sections below summarize the oyster restoration and planted shoreline projects that are proposed, as well as considerations for seagrass planting.

4.3.1 Oyster Restoration

The primary mechanism by which oyster bars remove nitrogen is by increasing local denitrification rates.

In addition to the fisheries value of oysters, they provide a variety of nonmarket ecosystem services, with a combined estimated economic value between $5,500 and $99,000 per hectare per year (Grabowski et al., 2012). Restored oyster bars have been shown to result in a positive net effect on the removal and sequestration of nitrogen compared to unrestored sites. As nitrogen is a major contributor to algal blooms and resulting increased turbidity, removal of nitrogen from the system often yields water quality benefits. The nitrogen is removed through three pathways: (1) assimilation of the nitrogen in the shell and tissues of the oysters, (2) enhanced burial of nitrogen into the sediments surrounding oyster bars, and (3) conversion to gaseous form with return to the atmosphere through microbe-related denitrification (zu Ermgassen, 2016).

The primary mechanism by which oysters remove nitrogen from the system is by increasing local denitrification rates (Grabowski et al., 2012). While the impacts of oyster bars may be localized, they also influence the larger ecosystem. For example, a study by Sharma et al. (2016) found that even with limited bio-filtration and nonsignificant reef effects on water velocity, there was a "shadow" effect on seagrass beds between the reef and shoreline, which resulted in higher localized seagrass area five years after deployment relative to other nearby areas. Further, in a study by Kroeger (2012), it was noted that the eastern section of Mobile Bay had experienced harmful algal blooms that caused fish kills. These conditions occur in the summer months when denitrification by restored oysters would be highest. Therefore, the nitrogen removal associated with the oyster bar project in the bay may make a noticeable contribution to the local water quality by avoiding peak nitrogen concentrations that may trigger algal blooms. In a study by Kellogg et al. (2013), the denitrification rates associated with oyster bars from various studies were documented. Based on these studies, the average effect of denitrification rate is 291 micromoles of total nitrogen (TN) per square meter per hour, which equates to 0.04 pounds of TN per square meter per year (161.9 pounds of TN per acre per year). A 2017 study was also conducted in the Mosquito Lagoon to determine the local benefits from oyster bed restoration. This study found that the average denitrification rate is 450 kilograms of TN per

hectare per year (401.5 pounds of TN per acre per year) and measured nitrogen sequestration in oyster tissues and shells is 0.04 pounds of TN per square foot, which equates to 4,741.1 pounds of TN per acre per year (Schmidt and Gallagher, 2017).

The focus for oyster restoration in the Indian River Lagoon (IRL) system is to provide filtration, sequestration, denitrification, and scour protection along the shoreline (see **Section 4.3.2** for details on scour protection). The goal is not to restore historical oysters in the system because information is not available on where oysters were historically located. In addition, seagrass are a more critical component of the system, so restoration efforts aim to use the beneficial aspects of oysters in protecting seagrass from waves and increasing light availability (Newell and Koch, 2004) while minimizing the competition for space. Therefore, sites are evaluated for relative seagrass and oyster habitat requirements such as salinity, depth, and bottom type. Further detailed metrics for site selection and success criteria are currently under development. Oyster bars may be constructed in submerged areas deeper than seagrass or as narrow bars along the shoreline to act as a living wave break to reduce erosion.

The oysters from the Oyster Gardening Program have been used to develop several pilot bars and demonstration sites in the IRL. In fiscal year 2014–2015, the County received a $410,000 appropriation from the Florida Legislature for the Indian River Lagoon Oyster Restoration Project. This pilot study was completed in fall 2016. The design of oyster wave breaks funded by the Save Our Indian River Lagoon tax is based on monitoring results from the pilot bars and wave tank studies at Florida Institute of Technology that tested the oyster bar stability and wave attenuation of different designs. From these studies the importance of reef location and seasonal water depth (Anderson, 2016) as well as the ability of the reef to act as a wave break (Weaver et al., 2017) were highlighted.

To create enough oyster bar area to filter the volume of lagoon water annually, approximately 20 miles (105,600 feet) of oyster bars is needed with a width of six feet. These bars will be placed throughout the IRL system along mosquito impoundments, parks, and private properties where owners want to participate. Based on the pilot project costs and knowing that larger bars will be constructed more efficiently (using information from the pilot projects), it is estimated that the 20 miles of oyster bars could be constructed at a cost of $10 million.

With the recent study on oyster bars in the IRL system (Schmidt and Gallagher, 2017), the benefits associated with oyster bars versus planted shorelines could be delineated. For the proposed oyster bar along 20 miles (105,600 feet) of shoreline with a width of six feet (total of 633,600 square feet), the estimated reductions are 25,344 pounds per year (lbs/yr) of TN and 906 lbs/yr of total phosphorus (TP). These estimates are based on the estimated TN reduction rate of 0.04 pounds of TN per square foot of oyster bar from Schmidt and Gallagher 2017 and the estimated TP reduction rate of 0.001 pounds of TP per square foot of oyster bar from Kellogg et al. (2013). The projects for oyster bar restoration are summarized in **Table 4-35**.

Table 4-35: Projects for Oyster Restoration

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Reduction	Plan Funding
Original	2016-55	Banana River Lagoon Oyster Bars*	Brevard County	Banana	7,986	$395	200	$15,755	$3,151,051
Original	2016-56	North IRL Oyster Bars*	Brevard County	North IRL	7,439	$395	186	$15,780	$2,935,159
Original	2016-57	Central IRL Oyster Bars*	Brevard County	Central IRL	1,194	$395	30	$15,705	$471,137
2018	75	Marina Isles Oyster Bar+	Brevard Zoo	Banana	60	$445	20	$1,335	$26,700
2018	76	Bettinger Oyster Bar+	Brevard Zoo	Banana	24	$445	8	$1,335	$10,680
2018	78a	McNabb Park Oyster Bar+	City of Cocoa Beach	Banana	72	$473	24	$1,419	$34,056
2018	79	Gitlin Oyster Bar+	Brevard Zoo	Banana	36	$445	12	$1,335	$16,020
2018	80	Coconut Point/Environmentally Endangered Lands Oyster Bar+	Brevard Zoo	Central IRL	96	$470	2	$22,560	$45,120
2018	81	Wexford Oyster Bar+	Brevard Zoo	Central IRL	70	$445	24	$1,298	$31,150
2018	82a	Riverview Park Oyster Bar+	City of Melbourne	Central IRL	230	$473	78	$1,395	$108,790
2018	83	Bomalaski Oyster Bar+	Brevard Zoo	North IRL	20	$445	7	$1,271	$8,900
2018	73	Riverview Senior Resort Oyster Bar+	Brevard County	Central IRL	77	$394	2	$15,152	$30,304
2019	104	Brevard Zoo Banana River Oyster Project+	Brevard Zoo	Banana	1,476	$395	37	$15,757	$583,020
2019	105	Brevard Zoo Central IRL Oyster Project+	Brevard Zoo	Central IRL	408	$395	10	$16,116	$161,160
2019	106	Brevard Zoo North IRL Oyster Project+	Brevard Zoo	North IRL	864	$395	22	$15,513	$341,280
2020	139	Brevard Zoo North IRL Oyster Project 2+	Brevard Zoo	North IRL	841	$400	21	$16,019	$336,400
2020	140	Brevard Zoo Central IRL Oyster Project 2+	Brevard Zoo	Central IRL	677	$400	17	$15,929	$270,800
2020	141	Brevard Zoo Banana River Oyster Project 2+	Brevard Zoo	Banana	662	$400	17	$15,576	$264,800
2020	142	Brevard Zoo Oyster Reef Adjustments North IRL+	Brevard Zoo	North IRL	68	$400	2	$13,600	$27,200
2020	143	Brevard Zoo Oyster Reef Adjustments Banana River+	Brevard Zoo	Banana	32	$400	1	$12,800	$12,800
2021	184	Brevard Zoo North Indian River Lagoon Oyster Project 3+	Brevard Zoo	North IRL	1,056	$397	26	$16,124	$419,232
2021	185	Brevard Zoo Central Indian River Lagoon Tributary Pilot Oyster Project+	Brevard Zoo	Central IRL	581	$397	15	$15,377	$230,657

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Reduction	Plan Funding
2021	186	Brevard Zoo North Indian River Lagoon Individual Oyster Project+	Brevard Zoo	North IRL	436	$397	11	$15,736	$173,092
2021	187	Brevard Zoo Central Indian River Lagoon Oyster Project 3+	Brevard Zoo	Central IRL	218	$397	5	$17,309	$86,546
2021	188	Brevard Zoo Banana River Oyster Project 3+	Brevard Zoo	Banana	143	$397	4	$14,193	$56,771
-	-	***Total***	-	-	***24,766***	***$397 (average)***	***781***	***$12,590 (average)***	***$9,832,825***

Note: The projects highlighted in green and marked with an asterisk were identified in the original plan. The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update. As specific project locations are added each year, the amount of funding for the original projects is reduced accordingly to keep the total funding allocation constant for projects that restore natural filtration processes (including oyster, clam, and planted shoreline projects).

4.3.2 Planted Shorelines

Typically, efforts to protect shorelines have involved hardened structures, such as seawalls, rock revetments, or bulkheads, to dampen or reflect wave energy. Although these types of structures may mitigate shoreline retreat, they accelerate scour and the ecological damages that result can be great (Scyphers et al., 2011). The planted shoreline approach incorporates natural habitats into a shoreline stabilization design; maintains the connectivity between aquatic, intertidal, and terrestrial habitats; and minimizes the adverse impacts of shoreline stabilization on the estuarine system. These efforts range from maintaining or transplanting natural shoreline vegetation without additional structural components to incorporating shoreline vegetation with hardened features, such as rock sills or oyster bars, in settings with higher wave energy (Currin et al., 2010). Selection of the most appropriate management system begins with a site analysis to evaluate the type of shoreline, amount of energy that a shoreline experiences, sediment transport forces, type and location of ecological resources, and adjacent land uses (Restore America's Estuaries, 2015).

Oyster bars can function as natural breakwaters, in addition to providing nutrient removal benefits through denitrification, as noted in **Section 4.3.1**. The rate of vertical oyster bar growth on unharvested bars (2–6.7 centimeters per year) is greater than predicted sea-level rise rate (2–6 millimeters per year); therefore, bars could serve as natural protection against shoreline erosion, shoreline habitat loss, and property damage and loss along many estuarine shorelines (Ridge et al., 2017). Oyster bars reduce erosion of other estuarine habitats such as salt marshes and submerged aquatic vegetation by serving as a living breakwater that attenuates wave energy and stabilizes sediments (Grabowski et al., 2012).

As part of a study for the Chesapeake Bay, Forand et al. (2014) evaluated the pollutant load reductions from planted shoreline projects in the area. The results of this evaluation are shown in **Table 4-36**, and were used to update the United States Environmental Protection Agency Chesapeake Bay Program Office estimate of the total nitrogen (TN) and total phosphorus (TP) reductions per foot of planted shoreline. It is important to note that the information in this table is from states up north where temperatures become much cooler for longer periods of time than what occurs in Brevard County. Therefore, the benefits associated with planted shorelines in the Indian River Lagoon (IRL) system will likely be greater than those estimated here.

Table 4-36: Pollutant Load Reductions for Shoreline Management Practices

Source	TN (pounds per foot per year)	TP (pounds per foot per year)	Study Location
Ibison 1990	1.65	1.27	Virginia
Ibison 1992	0.81	0.66	Virginia
Proctor 2012	Not applicable	0.38 or 0.29	Virginia
Maryland Department of the Environment 2011	0.16	0.11	Maryland
Baltimore County mean (Forand 2013)	0.27	0.18	Maryland
Chesapeake Bay Program Office Scenario Builder 2012	0.02	0.0025	Chesapeake Bay Program policy threshold that comes from one stream restoration site in Maryland
New Interim Chesapeake Bay Program Office Rate (Expert Panel, 2013)	***0.20***	***0.068***	***Chesapeake Bay Program Office policy thresholds that comes from six stream restoration sites***

Note: Table is from Forand et al., 2014.

The estimated nutrient reductions from planted shorelines can be calculated using Chesapeake Bay Program Office recommended rates of 0.2 pounds of TN per linear foot and 0.068 pounds of TP per linear foot (Forand et al., 2014.), which is for an average planting width of 24 feet. These values were adjusted for the proposed average planting width of eight feet, which results in a reduction of 0.067 pounds of TN per linear foot and 0.023 pounds of TP per linear foot. Shoreline planting projects can be combined with oyster bar breakwater projects or they may be conducted along separate stretches of shoreline. At this time, the plan does not recommend a total length of planted shoreline. Planted shoreline projects will be considered for funding annually as partners submit projects for the plan. A cost-share of $16 per linear foot of shoreline, planted in eight-foot wide swaths, was established by using typical nursery installation costs and standard canopy dimensions for native shoreline species found in Brevard County. This equates to $240 per pound of nitrogen reduced by shoreline plantings.

The County conducted a survey of the shorelines, in conjunction with the University of Central Florida, to determine if the shoreline included a bulkhead/seawall, hardened slope/riprap, or no structure to help identify potential locations for future oyster bars and planted shorelines (Donnelly et al., 2018) (**Figure 4-30**).

Table 4-37 summarizes the approved projects for planted shorelines and the estimated load reductions in pounds per year (lbs/yr).

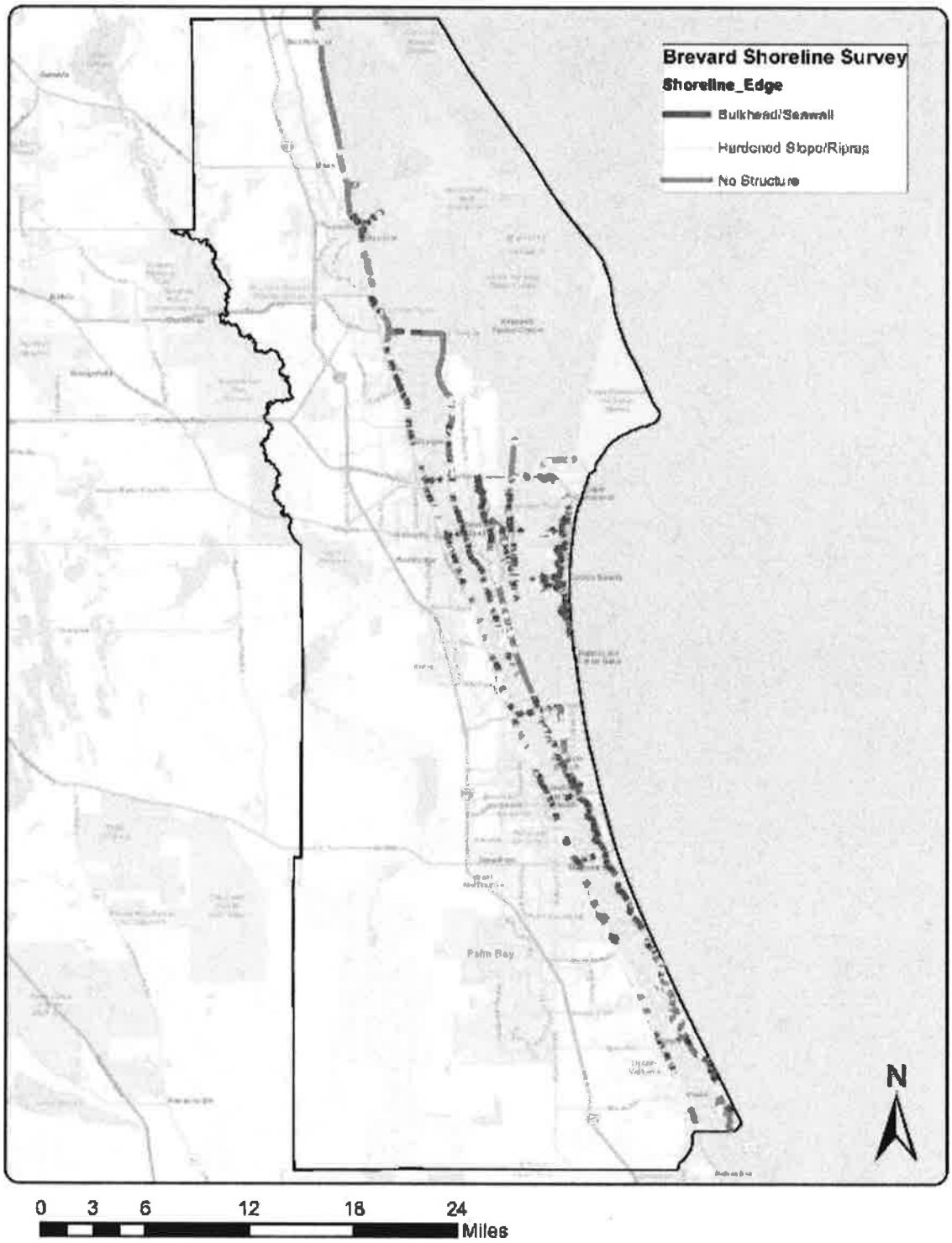


Figure 4-30: Shoreline Survey to Identify Locations Appropriate for Oyster Bars and Planted Shorelines

Figure 4-30 Long Description

Table 4-37: Projects for Planted Shorelines

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Reduction	Plan Funding
2018	77a	Cocoa Beach Country Club Planted Shoreline+	Marine Resources Council	Banana	67	$239	23	$696	$16,014
2018	77b	Lagoon House Shoreline Restoration Planting+	Marine Resources Council	Central IRL	100	$240	34	$705	$23,961
2018	78b	McNabb Park Planted Shoreline+	City of Cocoa Beach	Banana	24	$240	8	$720	$5,760
2018	82b	Riverview Park Planted Shoreline+	City of Melbourne	Central IRL	77	$240	26	$711	$18,480
2019	102	Brevard Zoo Banana River Plant Project+	Brevard Zoo	Banana	13	$240	4	$780	$3,120
2019	103	Brevard Zoo North IRL Plant Project+	Brevard Zoo	North IRL	3	$240	1	$720	$720
2020	130	Brevard Zoo North IRL Plant Project 2+	Brevard Zoo	North IRL	41	$240	14	$703	$9,840
2020	131	Brevard Zoo Central IRL Plant Project+	Brevard Zoo	Central IRL	8	$240	3	$640	$1,920
2020	132	Brevard Zoo Banana River Plant Project 2+	Brevard Zoo	Banana	2	$240	1	$480	$480
2020	133	Fisherman's Landing+	Marine Resources Council	Central IRL	20	$240	7	$686	$4,800
2020	135	Rotary Park+	Marine Resources Council	Central IRL	20	$240	7	$686	$4,800
2021	180	Scottsmoor Impoundment+	Marine Resources Council	North IRL	44	$240	15	$704	$10,560
2021	181	Riveredge+	Marine Resources Council	North IRL	17	$240	6	$680	$4,080
2021	182	Newfound Harbor Drive+	Marine Resources Council	Banana	7	$240	2	$840	$1,680
2021	183	Brevard Zoo North Indian River Lagoon Plant Project 3+	Brevard Zoo	North IRL	4	$240	1	$960	$960
-	-	***Total***	-	-	***447***	***$240 (average)***	***152***	***$705 (average)***	***$107,175***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.3.3 Clam Restoration and Aquaculture

Another potential tool for nutrient extraction, scour prevention, and water filtration in the Indian River Lagoon (IRL) is through clam aquaculture and restoration. Like oysters, clams can remove nitrogen from a system by burying it in sediments and enhancing the denitrification process through increased microbial activity in biodeposits (Clements and Comeau, 2019). The harvesting of clam shells and tissues can also extract nitrogen, as bivalves directly incorporate nitrogen (i.e., from consumption of phytoplankton and detritus; not dissolved nitrogen in the water) into their tissues and shells (Clements and Comeau, 2019).

Studies suggest that bivalve aquaculture has the potential to stimulate rates of denitrification equal to that of wild oyster beds and that the impacts of biodeposition from aquaculture are minimal (Clements and Comeau, 2019). The culture gear (bags, cover netting) used by growers creates a favorable environment for a myriad of plants and animals, such as juvenile fish and crabs, by providing habitat, substrate, and protection. This is especially significant since shellfish aquaculture leases can only be located in areas of the lagoon that undergo a resource survey to ensure the site is devoid of seagrasses and other marine life.

The exploration of clam aquaculture in Brevard County as a mitigation tool to extract excess nutrients from the IRL is warranted. According to the University of Florida Clam Farm Benefits Calculator, a single littleneck clam can filter 4.5 gallons of seawater per day and remove 0.09 grams of nitrogen when harvested. Therefore, in 2020, the Citizen Oversight Committee approved allocating $60,000 in funds to stimulate bivalve aquaculture in Brevard County. This funding would be used to sponsor 10 farms with up to $6,000 per farmer to plant up to 500,000 clams each. The funding would help to offset licensure, lease, and/or material costs. It is estimated that the clams from this stimulus project would remove 1,000 lbs/yr of TN at a cost of $60 per pound of TN (**Table 4-38**). This program will also help promote education directed toward awareness of local aquaculture industries and their dependence on water quality to create mindfulness of the effects of eutrophication in a visceral, practical way. IRL clam restoration may lead to opportunities for successful partnerships with local clam farmers. Public sentiment toward clam restoration has been positive and the nutrient-removal aspects of shellfish aquaculture align with the Plan's goals.

In addition, a statewide partnership aims to restore clams in the IRL using genetic stock able to withstand the unfavorable condition of an algae bloom-ridden lagoon. The IRL Clam Restoration project is a cooperative venture between the Coastal Conservation Association, Florida Fish and Wildlife Conservation Commission, University of Florida Whitney Lab, Brevard Zoo, and Florida Oceanographic Society. They collected brood stock living in the IRL, spawned them, and have begun outplanting these "super clams" in bags or under cover netting to strategic locations in the IRL (based upon historical sites and current water quality trends) including existing partner habitat restoration and commercial lease areas. Next steps include tracking survivorship and growth. One final goal is to establish brood stock that will serve as the optimized variety (phenotype) lines for further stock enhancement.

In 2020, grant funding was requested (but has not yet been secured) to outplant super clam progeny at 100 sites throughout the lagoon. The sites would be a combination of private properties and public locations so that volunteers can assist with restoration. This project would help to obtain information on survival rates in different locations to improve restoration efforts.

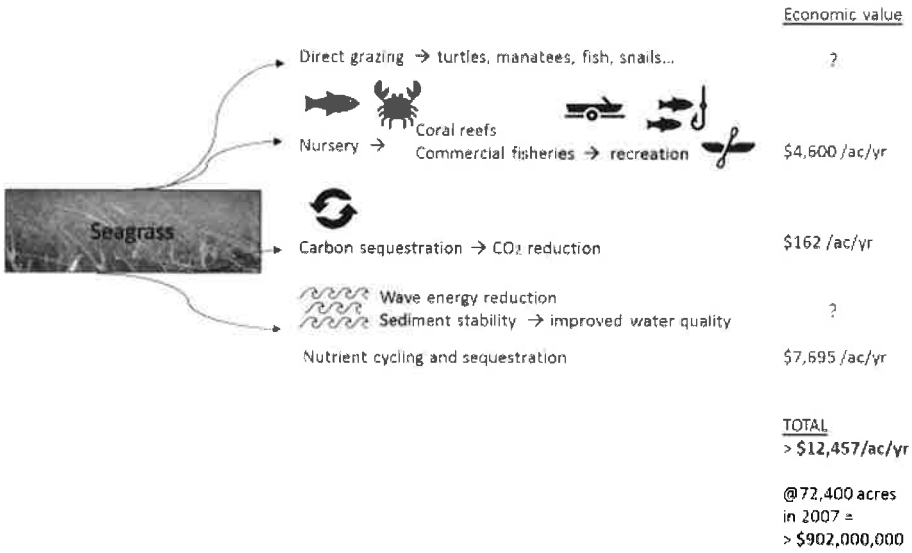
Table 4-38: Projects for Clam Restoration

Year Added	Project Number	Project Name	Responsible Entity	Sub-lagoon	TN Reduction (lbs/yr)	Cost per Pound per Year of TN Reduction	TP Reduction (lbs/yr)	Cost per Pound per Year of TP Reduction	Plan Funding
2021	194	Aquaculture Stimulus Project+	Brevard County	All	1,000	$60	Not applicable	Not applicable	$60,000
-	-	***Total***	-	-	***1,000***	***$60***	***Not applicable***	***Not applicable***	***$60,000***

Note: The projects highlighted in tan and marked with a plus sign were added to the plan as part of an annual update.

4.3.4 Seagrass Planting

The original Indian River Lagoon (IRL) Surface Water Improvement and Management Plan of 1989, as well as subsequent management plans up to and including the current basin management action plans, target a healthy, estuarine ecosystem populated by seagrasses. Seagrasses provide crucial benefits to Florida's estuaries by providing food and shelter to a variety of animals, improving water quality, and preventing erosion of sediment (Orth et al., 2006). In total, the lagoon's 72,000 acres of seagrass could provide an economic benefit of more than $900 million per year (**Figure 4-31**; Dewsbury et al., 2016).



Note: Adapted from Dewsbury et al., 2016

Figure 4-31: Estimated Economic Value of Some Seagrass Services

Figure 4-31 Long Description

One key ecological role for seagrasses is to absorb and cycle nitrogen and phosphorus (Romero et al., 2006). Seagrasses do not remove these nutrients permanently, but they compete for them against phytoplankton and macroalgae and hold them longer. By stabilizing the cycling of nutrients, seagrasses can increase a system's ability to absorb nutrient loads without the initiation of detrimental blooms of phytoplankton or macroalgae (Schmidt et al., 2012). The contribution of seagrasses can be evaluated by examining the quantity of nutrients bound in its aboveground and belowground structures (its mass of biological material or biomass), with this approach treating uptake and release of nutrients as offsetting components of the nutrient cycle (**Table 4-39**).

Table 4-39: Average Nutrients in Seagrass from 1996-2009

Sub-lagoon	Acres	Seagrass (pounds per 100 acres)	Nitrogen (pounds per 100 acres)	Phosphorus (pounds per 100 acres)
Southern Mosquito Lagoon	14,000	45,000	1,000	100
Banana River Lagoon	21,000	45,000	1,000	100
North IRL	19,000	37,000	900	90
Central IRL	7,000	36,000	900	90

Seagrass restoration may be necessary because more than 30,000 acres of seagrasses were shaded to the point of loss during the superbloom in 2011, recovery has been limited, and the brown tide in 2016 exacerbated the situation. In fact, the Banana River Lagoon in Brevard County experienced the largest initial losses of seagrass (**Appendix C**). The absence of seagrasses has made the sediments less stable, which will hamper future colonization and spread. After the loss of seagrass, nitrogen and phosphorus became available to phytoplankton, drift algae, and other primary producers (**Table 4-40**). Seagrasses may need some help to recover in the short-term, with more rapid recovery helping to stabilize nutrient cycling and reducing the amount of nutrients available to phytoplankton. Measures that could help seagrasses recover include protecting existing seagrass to promote expansion or protecting areas from waves to reduce the movement of sediment and allow seagrasses to colonize. Planting *Halodule wrightii* would be the initial focus because planting may accelerate recovery, as *Halodule wrightii* is the most common species in the lagoon (Dawes et al., 1995), and this species is a successful pioneer due to its relatively rapid growth and tolerance of varying conditions.

Table 4-40: Average Seagrass Lost and Nutrients Made Available to Other Primary Producers in 2015

Sub-lagoon	Reduction in Acres	Seagrass Reduction* (pounds per 100 acres)	Nitrogen Reduction (pounds per 100 acres)	Phosphorus Reduction (pounds per 100 acres)
Southern Mosquito Lagoon	0	15,000	300	30
Banana River Lagoon	12,000	37,000	900	90
North IRL	1,000	8,000	200	20
Central IRL	4,000	20,000	500	50

* Changes in seagrass cover yield changes in biomass of seagrass within the same number of acres.

Planting seagrass is not a trivial undertaking; it requires considerable planning, resources, and time. For example, having suitable conditions is critical as shown in Tampa Bay where stakeholders invested more than $500 million in projects to reduce nutrient pollution before they saw any return from planting seagrass (Lewis et al., 1999). Costs documented during a workshop on seagrass restoration ranged upward of $1.4 million per acre for larger scale projects (Treat and Lewis, 2006). Some of the lessons learned from past projects are selecting sites that will support seagrass growth, employing optimal methods for planting (e.g., type of planting units, use of chemicals to enhance growth, and density of initial planting), and protecting newly planted seagrass from disturbance (e.g., grazing, waves, exposure, and low salinity) until it is established. These factors must be tailored to a specific location; therefore, one or more pilot studies are needed prior to attempting full-scale seagrass restoration.

A proposed two-year pilot study would evaluate 10 acres of seagrass using three planting techniques with the goal of sequestering 80 pounds per year (lbs/yr) of total nitrogen (TN) and 8 lbs/yr of total phosphorus (TP). The costs for this study are summarized in **Table 4-41**, and the three planting techniques that would be evaluated are shown in **Figure 4-32**. The first technique is the Jeb unit in which approximately three to five shoots with their rhizomes in a biodegradable pellet filled with a growth medium would be installed by hand or planted mechanically. The encapsulated rhizomes resist uprooting, and they can be produced in large quantities relatively quickly and transported easily. The second technique is the peat pot in which approximately 25 shoots will be rooted in a four-inch pot. The relatively large pot and well-rooted shoots yield protection from uprooting due to grazing or loss due to moving sediment. However, the units take more time to grow and plant. The third technique is the safe pot in which approximately 25

shoots will be wrapped in a three-inch coconut coir pot. The unit provides protection from grazing pressure and sediment transport.

Similar or more complex pilot studies could be designed to investigate other key components of successful restoration. Overall, successful seagrass planting at the scale of tens of thousands of acres will benefit from strategic investment in optimizing techniques. **Appendix C** includes additional details about seagrass. The seagrass planting pilot project is not recommended at this time due to inadequate water quality conditions throughout much of the lagoon. As conditions improve, opportunities to test seagrass planting techniques will be evaluated.

Table 4-41: Costs for Pilot Study to Evaluate Seagrass Planting Techniques

Task	Quantity	Unit Cost	Total Cost
Design and permit	1	$50,000	$50,000
Install linear feet of breakwater	100	$550	$55,000
Deploy planting units	-	-	-
Technique 1: Jeb units	30,000	$4	$120,000
Technique 2: Peat pots	1,940	$5	$9,700
Technique 3: Safe pots	2,420	$9	$21,780
Herbivore excluders	220	$369	$81,180
Install herbivore excluders	1	$37,000	$37,000
Remove herbivore excluders	220	$44	$9,680
Maintain sites and enhance sediment monthly	24	$14,080	$337,920
Monitor quarterly	8	$1,000	$8,000
Final report	1	$3,000	$3,000
Total	***Not applicable***	***Not applicable***	***$733,260***



Figure 4-32: Types of Seagrass Planting Units for Pilot Study, Jeb Unit (left), Peat Pot (middle), and Safe Pot (right)

4.4. Projects to Respond to New Information

The funding raised from the Save Our Indian River Lagoon sales tax will go towards the projects listed in the sections above that will reduce or remove pollutants and restore the lagoon. In addition, $10 million of the funding, over a period of 10 years, will go towards monitoring efforts to measure the success, nutrient removal efficiency, and cost effectiveness of projects included in this plan and in future updates of this plan. Measuring effectiveness is important for reporting progress toward total load reduction targets and for refining project designs to be more effective with each iteration. The monitoring data will be used to determine which projects are providing the most benefit in the most cost-effective manner so that the plan can be updated, as needed. The data will also be used to ensure the lagoon is responding as anticipated to the reductions made so that changes to the plan can be implemented if the lagoon is not responding as expected.

4.4.1 Adaptive Management to Report, Reassess, and Respond

The Indian River Lagoon (IRL) is located along the Space Coast, which is also known as a global center for exploration, innovation, and development of cutting edge technology. With a dedicated funding source and a brilliant community dedicated to meeting the challenges of today and tomorrow, it is wise to have a process that allows this plan to be updated and revised as new opportunities and better solutions are developed. The intent of the proposed adaptive management strategy is to provide a process that not only allows but also fosters the development and implementation of better tools and techniques and allows the tax rate to be reduced accordingly or retired ahead of schedule.

Although this plan was developed with the best information available in 2016, identifying the sources of water quality pollution and pairing those problems with the most timely and cost-effective solutions is a rapidly changing field of knowledge. To respond to change and take advantage of future opportunities, monitoring is necessary. Even without change in the industry, monitoring will provide data to support and refine the application of existing technology. An adaptive management approach is used to provide a mechanism to make adjustments to the plan based on new information. As projects from this plan are implemented, the actual costs and nutrient reduction benefits will be tracked, and the plan will be modified, as needed, as project performance in the lagoon basin is better understood.

This plan will be updated approximately annually with information from implemented projects and adjustments to the remaining projects. A volunteer committee of diversely skilled citizens has been assembled to assist the County with the annual plan updates. The Citizen Oversight Committee consists of seven representatives and seven alternates that represent the following fields of expertise: science, technology, economics/finance, real estate, education/outreach, tourism, and lagoon advocacy. The League of Cities nominated representatives for three fields of expertise and nominated alternates for the remaining four fields of expertise. The Brevard County Board of County Commissioners nominated representatives for the other four fields of expertise and alternates for the remaining three fields of expertise. All Citizen Oversight Committee representatives and alternates were appointed by the Brevard County Board of County Commissioners. Appointees serve for two-year terms, after which time they may be considered for reappointment or replacement. The first term ended in February 2019 and the second term ended in February 2021. The Committee's recommendations for plan updates will be presented at least annually to the Board of County Commissioners, and changes to the plan will be approved by the Board of County Commissioners.

Brevard County staff provides project monitoring reports to the Citizen Oversight Committee and works with them to recommend adjusting the planned projects, as needed. The adaptive management process allows for alternative projects to be submitted by the county, municipalities, and other community partners to be reviewed by the Citizen Oversight Committee for inclusion in the next annual update to this plan. Projects that deliver comparable nutrient removal benefits may be approved for inclusion in the plan. If a new approved project costs more than the average cost per pound of total nitrogen (TN) for that project type listed in this plan at the time of project submittal, the requesting partner must provide the balance of the costs. The requesting partner will be allowed reasonable overhead cost to manage the project from design and permitting through construction completion.

As projects are implemented, progress toward meeting the County's proposed revisions to the total maximum daily loads are being tracked. Adjustments to the types and locations of projects

implemented will be made to ensure that total maximum daily loads can be achieved in all Brevard County portions of the lagoon.

4.4.2 Cost-share for Substitute Projects

For the 2021 Update, local municipalities and partners were once again invited to submit new projects for inclusion in the Save Our Indian River Lagoon Project Plan. The projects submitted were required to deliver comparable nutrient removal benefits as those projects listed in the original plan and plan updates for each sub-lagoon.

The requesting partners each submitted a "Save Our Indian River Lagoon Project Plan Project Submittal Request" to Brevard County for review of the proposed projects. The project requests were provided to the Citizen Oversight Committee to evaluate the potential for inclusion in the plan. The projects recommended by the Citizen Oversight Committee were included in the draft plan update presented to the Brevard County Board of County Commissioners for approval.

To determine the amount of funding that a project would be eligible to receive from the Save Our Indian River Lagoon Trust Fund, the estimated total nitrogen (TN) reductions from the project were multiplied by the allowable cost per pound per year of TN shown below in **Table 4-42** for that project type. The costs shown in **Table 4-42** were included in the application instructions provided to the partners in July 2020 and were an average of the actual or engineer's estimate of cost per pound of TN removed from the projects previously listed in the Save Our Indian River Lagoon Project Plan, as amended, or comparable projects recently planned or completed elsewhere in the Indian River Lagoon (IRL) watershed.

Table 4-42: Cost-share Offered for Project Requests Submitted for the 2021 Update

Project Type	Average Cost per Pound per Year of TN
Wastewater Treatment Facility (WWTF) Upgrades for Reclaimed Water	$343
Sewer Lateral Rehabilitation	$255
Rapid Infiltration Basin/Sprayfield Upgrades	$136
Septic System Removal by Sewer Extension	$1,500
Septic System Removal by Sewer Connection	$487
Septic System Upgrades	$770
Stormwater Projects	-
Mainland	$122
Merritt Island	$163
Beaches	$150
Vegetation Harvesting	$110
Muck Removal	$520
Treatment of Muck Interstitial Water	$98
Oyster Bar	$397
Planted Shorelines	$240

4.4.3 Additional Project Benefits

Although the eligible Save Our Indian River Lagoon Trust Fund contribution to new projects is determined based on the amount of total nitrogen (TN) removed, the benefits of implementing these projects include reductions in other pollutant sources, as well. These projects will reduce a multitude of different contaminates to meet water quality targets and improve the health, productivity, aesthetic appeal, and economic value of the lagoon. These additional benefits vary according to project design and site-specific conditions but often include significant reduction of

pathogenic bacteria, viruses, human and animal wastes, chemicals, metals, plastics, and sediments (see **Table 4-43**).

Table 4-43: Pollutants Removed by Different Project Types

Stormwater	Septic System Removal	Septic System Upgrade	Muck Removal
Nitrogen	Nitrogen	Nitrogen	Nitrogen
Phosphorus	Phosphorus	Phosphorus	Phosphorus
Sediments	Escherichia coli	Escherichia coli	Clay sediments
Escherichia coli	Viruses	Viruses	Hydrogen sulfide
Viruses	Fecal coliform	Fecal coliform	Biochemical oxygen
Fecal coliform	Pharmaceuticals	Biochemical oxygen demand	demand
Pesticides	Biochemical oxygen demand		
Metals			
Oil			
Litter			

This Save Our Indian River Lagoon Project Plan is an adaptable document informed by science and under supervision of the community. As monitoring updates our understanding of Indian River Lagoon (IRL) pollutants, the plan projects will target funds to the most successful and cost-effective projects.

4.4.4 Responding to Implemented Projects

During the first years of plan implementation, dozens of projects have been completed throughout the Indian River Lagoon (IRL) system as shown in **Figure 4-33** and **Figure 4-34**. The implementation of these projects provided new cost information and actual pollution reduction measurements used to update the project cost-effectiveness for the 2021 Update. The project costs and Save Our Indian River Lagoon Tax Fund money expended on completed projects are shown in **Table 4-44**. **Table 4-45** summarizes the Save Our Indian River Lagoon Tax Fund money that has been contracted and/or expended on projects that are currently underway.

Table 4-44: Save Our Indian River Lagoon Tax Funds Expended on Completed Construction Projects (as of October 31, 2020)

Project Number	Project	Project Type	Estimated Total Cost	Final Total Cost	Change in Total Cost	Eligible Save Our Indian River Lagoon Cost	Final Save Our Indian River Lagoon Cost	Change in Save Our Indian River Lagoon Cost
6	Long Point Park Denitrification	Package Plant Rapid Infiltration Basin Upgrade	$101,854.00	$22,206.73	-$79,647.27	$101,854.00	$22,206.73	-$79,647.27
1	Breeze Swept Septic to Sewer	Septic to Sewer	$3,400,000.00	$3,400,000.00	$0.00	$880,530.00	$880,530.00	$0.00
2	Merritt Island Redevelopment Agency Phase 1 Septic to Sewer*	Septic to Sewer	$3,138,098.00	To be determined	To be determined	$128,875.00	$128,874.70	$0.00
99	Cocoa Beach Water Reclamation Facility Upgrades	Wastewater Treatment Facility Upgrades	$5,920,320.00	$6,554,233.00	$633,913.00	$945,000.00	$945,000.00	$0.00
15	Bayfront Stormwater Ponds	Stormwater	$630,955.97	$635,702.00	$4,746.03	$30,624.00	$30,624.00	$0.00
13	Central Boulevard Baffle Box	Stormwater	$41,700.00	$43,700.00	$2,000.00	$34,700.00	$34,700.00	$0.00
14	Church Street Baffle Box	Stormwater	$233,455.00	$233,455.00	$0.00	$88,045.00	$88,045.00	$0.00
16	Gleason Park Reuse Expansion	Stormwater	$11,000	$7,193.40	-$3,806.60	$4,224.00	$4,224.00	$0.00
98	Coleman Pond Managed Aquatic Plant System	Stormwater	$35,000	$11,437.50	-$23,562.50	$35,000.00	$11,437.50	-$23,562.50
19	St. Teresa	Stormwater	$375,250.00	$474,291.97	$99,041.97	$272,800.00	$272,800.00	$0.00
20	South Street	Stormwater	$475,125.00	$683,969.16	$208,844.16	$86,856.00	$86,856.00	$0.00
21	La Paloma	Stormwater	$375,250.00	$462,346.97	$87,096.97	$208,296.00	$208,296.00	$0.00
34	Cliff Creek Baffle Box	Stormwater	$350,000.00	$737,611.90	$387,611.90	$347,781.00	$347,781.00	$0.00
87	Basin 2134 Fleming Grant Biosorption Activated Media	Stormwater	$172,300.00	$169,300.00	-$3,000.00	$56,588.00	$56,588.00	$0.00

Project Number	Project	Project Type	Estimated Total Cost	Final Total Cost	Change in Total Cost	Eligible Save Our Indian River Lagoon Cost	Final Save Our Indian River Lagoon Cost	Change in Save Our Indian River Lagoon Cost
92	Basin 115 Carter Road Biosorption Activated Media	Stormwater	$156,078.50	$146,949.78	-$9,128.72	$62,510.00	$62,510.00	$0.00
94	Basin 832 Broadway Pond Biosorption Activated Media	Stormwater	$269,751.16	$269,750.16	-$1.00	$42,864.00	$42,864.00	$0.00
117	Basin 10 County Line Road Woodchip Bioreactor	Stormwater	$180,116.00	$166,174.16	-$13,941.84	$72,773.00	$72,773.00	$0.00
85	Basin 1304 Bioreactor	Stormwater	$125,000.00	$141,988.14	$16,988.14	$90,000.00	$90,000.00	$0.00
89	Basin 1298 Bioreactor	Stormwater	$125,000.00	$136,100.03	$11,100.03	$86,198.00	$86,198.00	$0.00
90	Basin 51 Johns Road Biosorption Activated Media	Stormwater	$116,905.00	$154,000.00	$37,095.00	$23,030.00	$23,030.00	$0.00
91	Basin 100 Burkholm Road Biosorption Activated Media	Stormwater	$117,735.00	$141,457.00	$23,722.00	$64,390.00	$64,390.00	$0.00
127	Indialantic Basin 5 Dry Retention Pond	Stormwater	$74,700.00	$62,718.35	-$11,981.65	$16,680.00	$16,680.00	$0.00
124	Floating Wetlands to Existing Stormwater Ponds	Stormwater	$50,000.00	$14,336.00	-$35,664.00	$1,497.00	$1,497.00	$0.00
2016-03	Turkey Creek Hurricane Dredge and Interstitial Treatment	Muck Removal & Interstitial Treatment	$1,545,522.00	$1,098,630.71	-$446,891.29	$215,000.00	$137,328.81	-$77,671.19
70	Cocoa Beach Muck Dredging Phase III	Muck Removal	$3,109,817.57	$2,903,356.00	-$206,461.57	$1,376,305.00	$1,376,305.00	$0.00
40	Mims Muck Dredging Interstitial Treatment**	Interstitial Treatment	$2,162,286.00	$1,546,186.86	-$616,099.14	$400,000.00	$0.00	-$400,000.00
73	Riverview Senior Oyster Bar	Oyster	$30,304.00	$30,304.00	$0.00	$30,400.00	$30,304.00	-$96.00
83	Bomalaksi Oyster Bar	Oyster	$8,900.00	$8,900.00	$0.00	$8,900.00	$8,900.00	$0.00
76	Bettinger Oyster Bar	Oyster	$10,680.00	$10,680.00	$0.00	$10,680.00	$10,680.00	$0.00
79	Gitlin Oyster Bar	Oyster	$16,020.00	$16,020.00	$0.00	$16,020.00	$16,020.00	$0.00

Project Number	Project	Project Type	Estimated Total Cost	Final Total Cost	Change in Total Cost	Eligible Save Our Indian River Lagoon Cost	Final Save Our Indian River Lagoon Cost	Change in Save Our Indian River Lagoon Cost
75	Marina Isles Oyster Restoration	Oyster	$26,700.00	$26,700.00	$0.00	$26,700.00	$26,700.00	$0.00
80	Brevard Zoo Coconut Point/Environmentally Endangered Lands Oyster Restoration	Oyster	$45,120.00	$45,120.00	$0.00	$45,120.00	$45,120.00	$0.00
77a	Cocoa Beach Country Club Living Shoreline	Living Shoreline	$16,080.00	$16,080.00	$0.00	$16,080.00	$16,080.00	$0.00
77b	Lagoon House Living Shoreline	Living Shoreline	$24,000.00	$24,000.00	$0.00	$24,000.00	$24,000.00	$0.00
103	Brevard Zoo North Plant Project	Living Shoreline	$720.00	$720.00	$0.00	$720.00	$720.00	$0.00
133	Fisherman's Landing Living Shoreline	Living Shoreline	$4,800.00	$4,800.00	$0.00	$4,800.00	$4,800.00	$0.00
135	Rotary Park Living Shoreline	Living Shoreline	$4,800.00	$4,800.00	$0.00	$4,800.00	$4,800.00	$0.00
-	***Total***	-	***$23,481,343.20***	***$20,405,218.82***	***$61,973.62***	***$5,860,640.00***	***$5,279,662.74***	***-$580,976.96***

* Other phases not yet completed.
** Not paid due to not meeting contract requirements.

Table 4-45: Save Our Indian River Lagoon Tax Funds Contracted or Expended on Projects Underway (as of October 31, 2020)

Project Number	Project	Project Type	Save Our Indian River Lagoon Plan Funding	Save Our Indian River Lagoon Funds Contracted	Save Our Indian River Lagoon Expenditures for Projects Underway
58	Expanded Fertilizer Education	Public Education	$625,000	$224,966	$170,428
58	Grass Clippings Campaign	Public Education	$200,000	$35,000	$20,000
58	Septic System Maintenance Education	Public Education	$300,000	$124,961	$97,625
193	Brevard Zoo Oyster Gardening	Public Education	$300,000	$300,000	$150,000
2016-02	City of Titusville Osprey WWTF	WWTF Upgrade	$9,100,000	$9,100,000	$793,155
2016-17	City of Palm Bay Water Reclamation Facility	WWTF Upgrade	$3,636,900	$3,636,900	$339,562
59	City of Melbourne Grant Street Water Reclamation Facility	WWTF Upgrade	$6,769,500	$6,769,500	$0
63ab	Satellite Beach Pilot & County-wide Repair/Replacement	Sewer Laterals	$840,000	$840,000	$4,228
114	Barefoot Bay Lateral Smoke Testing	Sewer Laterals	$90,000	$90,000	$0
115	South Beaches Lateral Smoke Testing	Sewer Laterals	$200,000	$200,000	$0
116	Merritt Island Lateral Smoke Testing	Sewer Laterals	$250,000	$250,000	$0
2016-48	Sykes Creek - Zone M	Septic System Removal	$1,868,832	$1,868,832	$87,200
2016-47	Sykes Creek - Zone N	Septic System Removal	$2,603,016	$2,603,016	$70,850
2016-49	Sykes Creek - Zone T	Septic System Removal	$4,939,056	$4,939,056	$140,200
109	City of Titusville - Zones A-G	Septic System Removal	$1,201,392	$1,201,392	$0
2016-50	South Central - Zone C	Septic System Removal	$6,600,000	$6,600,000	$202,875
2020-34	South Central - Zone F	Septic System Removal	$1,701,972	$1,701,972	$0
2016-35	South Beaches - Zone A	Septic System Removal	$1,234,764	$18,000	$18,000
2	Merritt Island Septic Phase Out Project	Septic System Removal	$320,000	$320,000	$233,148
61	Riverside Drive Septic-to-Sewer Conversion	Septic System Removal	$265,960	$265,960	$0
62	Roxy Avenue Septic-to-Sewer Conversion	Septic System Removal	$88,944	$88,944	$0

Project Number	Project	Project Type	Save Our Indian River Lagoon Plan Funding	Save Our Indian River Lagoon Funds Contracted	Save Our Indian River Lagoon Expenditures for Projects Underway
3	Micco Sewer Line Extension	Septic System Removal	$2,038,500	$2,038,500	$201,681
4	Hoag Sewer Conversion	Septic System Removal	$86,031	$86,031	$13,520
5	Pennwood Sewer Conversion	Septic System Removal	$40,632	$40,632	$17,074
60	Sylvan Estates Septic-to-Sewer Conversion	Septic System Removal	$1,561,215	$1,561,215	$764,558
2016-16	Banana Septic System 144 Quick Connections	Septic System Removal	$1,908,000	$0	$0
2016-18	North IRL Septic System 463 Quick Connections	Septic System Removal	$6,018,000	$504,000	$0
2016-19	Central IRL Septic System 269 Quick Connections	Septic System Removal	$3,354,000	$0	$0
51	Banana River Lagoon 100 Septic System Upgrades	Septic System Upgrades	$1,800,000	$18,000	$0
52	North IRL 586 Septic System Upgrades	Septic System Upgrades	$10,548,000	$446,100	$176,100
53	Central IRL 939 Septic System Upgrades	Septic System Upgrades	$16,902,000	$700,187	$106,187
66	Big Muddy at Cynthia Baffle Box	Stormwater	$67,532	$67,532	$9,388
18	Denitrification Retrofit of Johns Road Pond	Stormwater	$105,512	$105,512	$27,230
22	Kingsmill-Aurora Phase Two	Stormwater	$367,488	$367,488	$0
23	Denitrification Retrofit of Huntington Pond	Stormwater	$104,720	$104,720	$9,074
24	Denitrification Retrofit of Flounder Creek Pond	Stormwater	$75,328	$75,328	$19,923
35	Thrush Drive Baffle Box	Stormwater	$322,200	$322,200	$0
93	Wiley Avenue Biosorption Activated Media Basin 193	Stormwater	$82,735	$82,735	$0
97	Titusville High School Baffle Box	Stormwater	$111,813	$111,813	$0
111	Draa Field Vegetation Harvesting	Stormwater	$50,000	$50,000	$0
110	Osprey Plant Pond Managed Aquatic Plant Systems	Stormwater	$60,000	$60,000	$0
112	County Wide Stormwater Pond Harvesting	Stormwater	$14,000	$14,000	$0
118	Basin 26 Sunset Road Serenity Park Woodchip Bioreactor	Stormwater	$73,810	$73,810	$0

Project Number	Project	Project Type	Save Our Indian River Lagoon Plan Funding	Save Our Indian River Lagoon Funds Contracted	Save Our Indian River Lagoon Expenditures for Projects Underway
119	Basin 141 Irwin Avenue Woodchip Bioreactor	Stormwater	$69,174	$69,174	$0
120	Draa Field Pond Managed Aquatic Plant Systems	Stormwater	$31,281	$31,281	$0
122	Basin 22 Huntington Road Serenity Park Woodchip Bioreactor	Stormwater	$40,077	$40,077	$0
68	Crane Creek/M-1 Canal Flow Restoration	Stormwater	$2,033,944	$2,033,944	$100,000
121	Basin 2258 Babcock Street Woodchip Bioreactor	Stormwater	$50,203	$50,203	$0
169	Sherwood Park Stormwater Quality Project	Stormwater	$392,108	$392,108	$0
2016-10	Port Canaveral South & Interstitial Treatment	Muck & Interstitial	$16,834,419	$0	$0
2016-05	Pineda Banana River Lagoon & Interstitial Treatment	Muck & Interstitial	$7,815,980	$0	$0
2016-11	Patrick Air Force Base & Interstitial Treatment	Muck & Interstitial	$8,216,800	$0	$0
168	Cocoa Beach Golf Muck & Interstitial Treatment	Muck & Interstitial	$24,363,100	$24,363,100	$0
41	Grand Canal Muck & Interstitial Treatment	Muck & Interstitial	$18,020,368	$18,020,368	$1,853,883
42	Sykes Creek Muck & Interstitial Treatment	Muck & Interstitial	$15,954,132	$1,078,266	$821,371
71	Merritt Island Muck Removal – Phase 1	Muck & Interstitial	$7,733,517	$0	$0
72	Muck Removal of Indian Harbour Beach Canals & Interstitial Treatment	Muck & Interstitial	$9,115,415	$9,115,415	$0
101	Cocoa Beach Muck Dredging Phase II-B	Muck & Interstitial	$5,917,650	$5,917,650	$2,660,313
2016-06	Titusville Railroad West & Interstitial Treatment	Muck & Interstitial	$3,607,375	$146,361	$115,355
2016-07	National Aeronautics and Space Administration Causeway East & Interstitial Treatment	Muck & Interstitial	$11,423,355	$209,255	$178,944
2016-04	Rockledge A Muck & Interstitial Treatment	Muck & Interstitial	$5,010,244	$175,340	$126,366
2016-08	Titusville Railroad East & Interstitial Treatment	Muck & Interstitial	$4,609,424	$204,017	$145,080
54	Eau Gallie Northeast Muck & Interstitial Treatment	Muck & Interstitial	$10,020,487	$98,323	$62,449
106	Brevard Zoo North IRL Oyster Project	Oyster Bars	$341,280	$341,280	$164,994
139	Brevard Zoo North IRL Oyster Project 2	Oyster Bars	$336,400	$336,400	$0
105	Brevard Zoo Central IRL Oyster Project	Oyster Bars	$161,160	$161,160	$0

Project Number	Project	Project Type	Save Our Indian River Lagoon Plan Funding	Save Our Indian River Lagoon Funds Contracted	Save Our Indian River Lagoon Expenditures for Projects Underway
140	Brevard Zoo Central IRL Oyster Project 2	Oyster Bars	$270,800	$270,800	$34,969
102	Brevard Zoo Banana River Plant Project	Planted Shorelines	$3,120	$3,120	$0
130	Brevard Zoo North IRL Plant Project 2	Planted Shorelines	$9,840	$9,840	$4,507
-	Respond and Monitoring	Respond	$10,000,000	-	$1,280,281
-	***Total***	-	***$251,208,505***	***$111,075,784***	***$11,220,518***

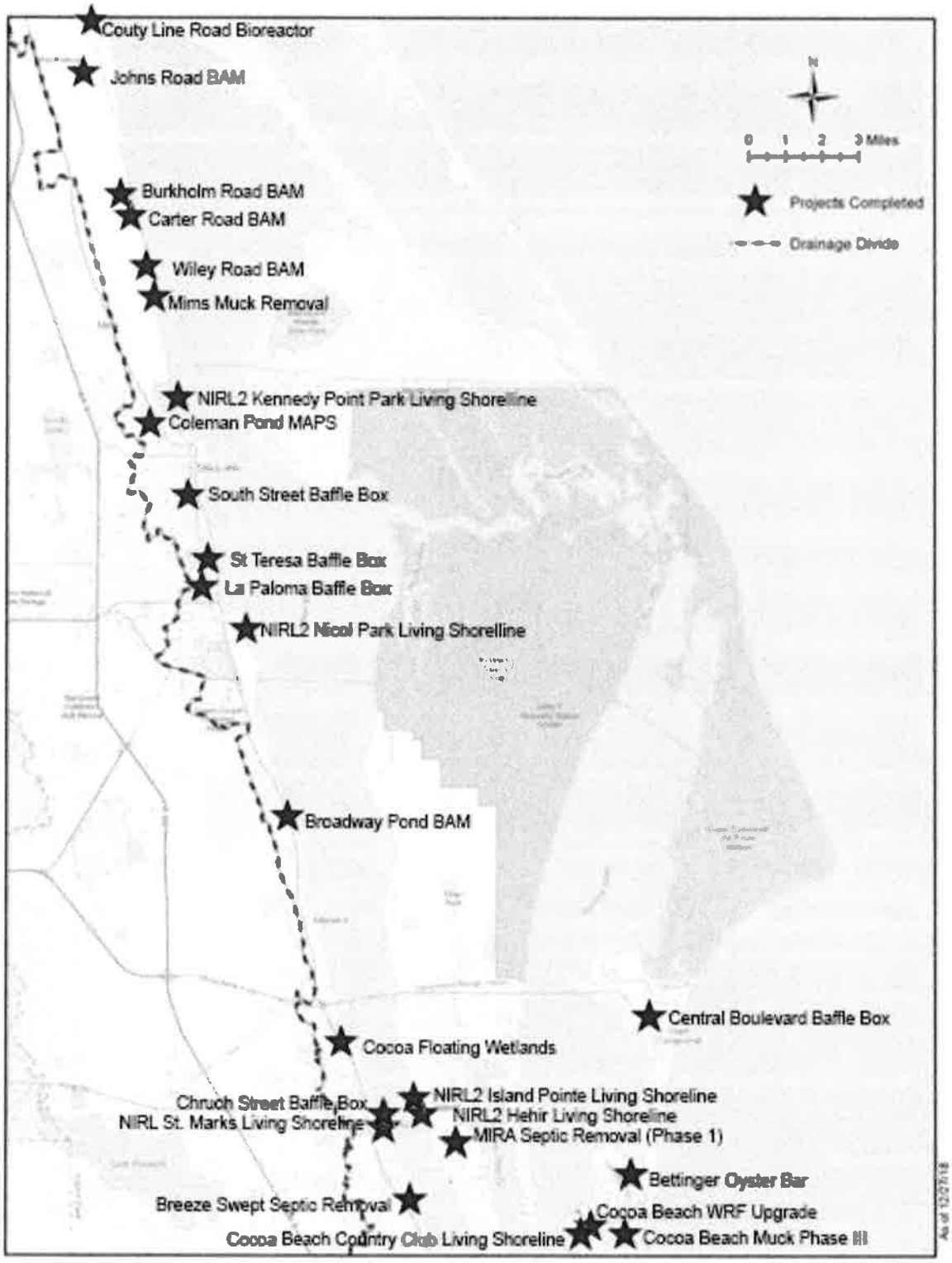


Figure 4-33: Completed Projects in North Brevard County

Figure 4-33 Long Description

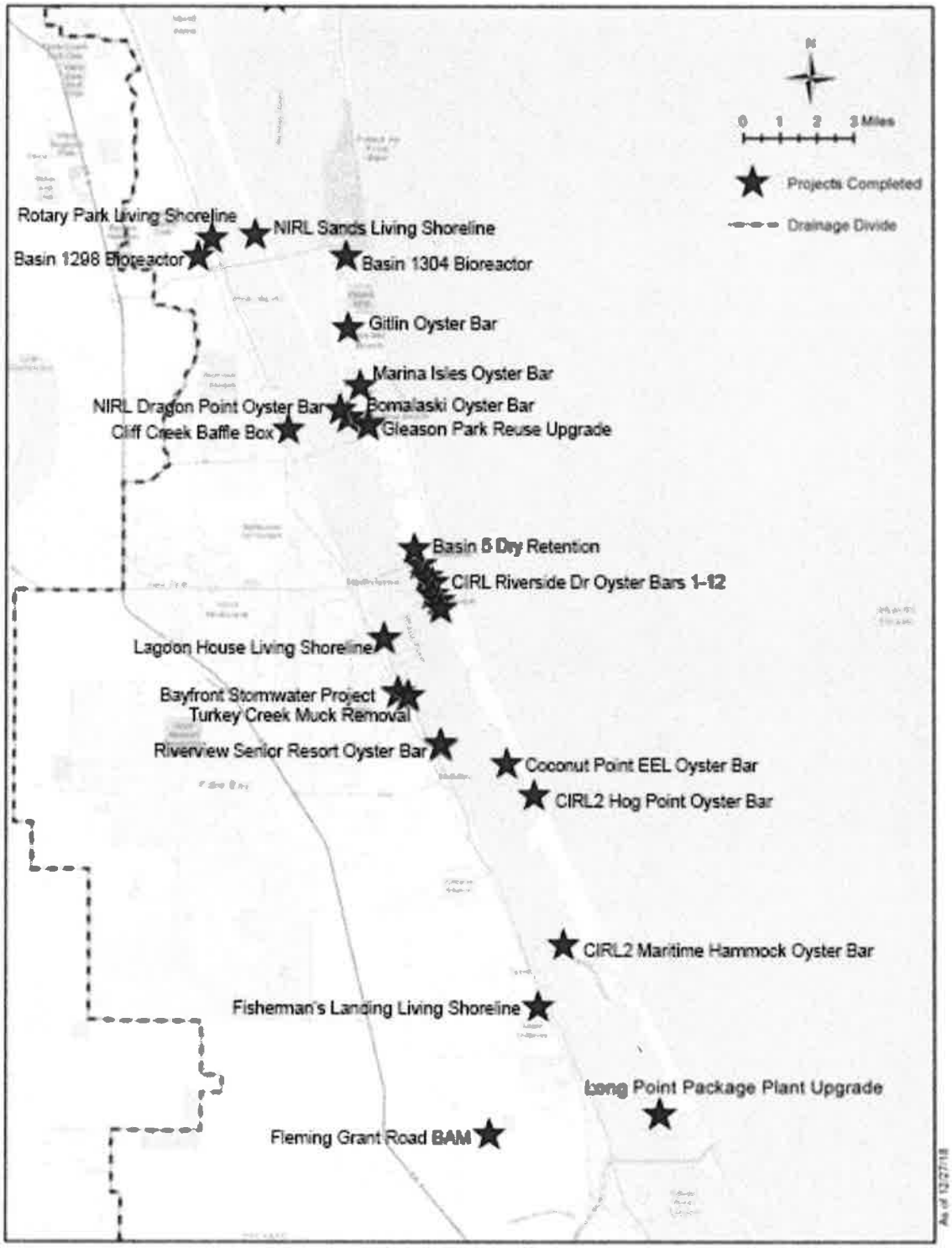


Figure 4-34: Completed Projects in South Brevard County

Figure 4-34 Long Description

Fertilizer Management Outreach

As noted in Section 4.1.1, in 2019, the University of Florida Institute of Food and Agricultural Sciences and MTN Marketing conducted a survey that was concentrated on fertilizer awareness questions. The results from the 2019 survey were compared to similar questions from the 2015 Blue Life survey to evaluate changes in fertilizer use. Based on the survey results, 33.33% of respondents in 2019 stated that they use slow release nitrogen fertilizer compared to only 6.30% in 2015, which is a 27% increase in the usage of slow release fertilizer. This resulted in better than anticipated cost effectiveness. The cost per pound of total nitrogen (TN) removed improved from an initial estimate of $102 to a revised estimate of $95. The total phosphorus (TP) reductions were kept at the original plan estimate of an additional 25% compliance because, the way the survey was setup, participants were only able to select one option for the type of fertilizer used. Therefore, an update on the use of zero phosphorus formulas could not be obtained.

Also in 2019, Brevard County amended the fertilizer ordinance to require all fertilizer retail stores to display signage at the point of sale informing the public on the ordinance and best practices for fertilizer management. Focus groups were conducted to enhance the design of the sign. A total of 132 signs were distributed to 53 retails stores across Brevard County. In summer 2020, the stores were surveyed for compliance with the ordinance. Only eight stores were out of compliance with no signage posted. Request for compliance letters were issued to the eight stores and additional signs were delivered to stores that could not locate the original signs. The stores were receptive of the letters and willing to come into compliance.

Grass Clipping Outreach

Uppercase, Inc. conducted a survey between September 9, 2018 and November 11, 2018 reaching out to citizens of Brevard, Martin, and Volusia counties through advertisements on social media sites, in popular mobile apps, on Google advertisements, in instant messenger, and other online and app platforms, as well as on the counties' social media pages. The survey received 733 responses from the three counties. When asked which items in the list provided are pollutants, 61% of respondents said grass clippings were a pollutant and 50% said leaves were a pollutant. Landscape professionals were more likely to say grass clippings were a pollutant (65%). About 48% of respondents maintained their own yards and 36% used a lawn care company. When asking those respondents who maintain their own yards what they do with grass clippings, 68% say they "seldom" or "never" leave the clippings where they land. 70% of respondents say they "always" or "usually" blow clippings back into their yard, 94% said they "never" or "seldom" blow clippings into the middle of the road, 97% said they "seldom" or "never" blow clippings toward a storm drain, and 97% say they "never" or "seldom" blow grass clippings toward a waterbody. The survey also tested taglines and images to encourage keeping grass clippings out of the street and waterbodies, and the best communication channels to provide this information (Uppercase, 2018). The results from this survey will be used to guide the grass clipping campaign.

Septic System and Sewer Lateral Maintenance Outreach

The University of Central Florida conducted a survey of Brevard County residents to gather information on septic system-related topics. The survey was conducted between May 2018 and September 2018 through phone calls and door-to-door visits, resulting in a total of 404 completed surveys. Most respondents (70%) said that they have had their septic system pumped out, of which most (39.1%) had their system pumped out in the last 2–4 years or within the last 12 months (38%). Most respondents (51%) answered that they have had their current septic system inspected although many (42%) answered that they have not had their septic system inspected. Of those who responded that their septic systems had been inspected, most

were inspected within the past 12 months (41.8%) followed by within the past 2–4 years (37.2%). Most residents (53%) did not receive any information regarding the home's septic system when they moved into the home. Of the total respondents, 55.8% strongly agreed with the statement "I restrict what I flush in toilets to prevent damage." The participants strongly agree (44.8%) and agree (42.8%) with the statement "I avoid pouring chemicals and solvents down the sink" (Olive et al., 2018). The results from this survey will be used to help guide implementation of the septic system maintenance education program.

Lagoon Loyal Program

The full launch of the Lagoon Loyal website and incentive program was on July 1, 2020. As of October 31, 2020, the Lagoon Loyal website had 6,269 unique visitors who logged a total of 7,888 sessions on the website. The Lagoon Loyal incentive program has a total of 272 citizen members and 73 businesses participating. Members have completed 1,902 lagoon benefiting actions through the site. There have been 224 member check-ins to county and other partner educational events. Members have used the points they earned to redeem 184 coupons from Lagoon Loyal businesses.

Measuring Performance

Groundwater monitoring wells have been installed to measure the pre-project pollution levels in multiple project areas. This includes areas where upgrades are underway for the reduction of nutrients in the reclaimed water supplied by two wastewater treatment plants, in several septic areas where permitting is underway to provide sewer service, in sewer areas to estimate pollution from leaky infrastructure, and at six septic upgrade pilot projects.

This countywide groundwater monitoring effort has been ongoing for more than two years. It demonstrates that septic systems and reclaimed water communities have significantly higher TN concentrations in comparison to sewer service areas and natural areas across all regions of the county. Communities on septic systems had significantly higher TP concentrations compared to the other communities across all regions of the county (**Figure 4-35**) (Marine Resources Council and Applied Ecology, 2020).

Package Plant Rapid Infiltration Basin Upgrade

A denitrification wall was built surrounding a rapid infiltration basin approximately 120 feet from the IRL at Long Point Park in Melbourne Beach. Six monthly measurements of nitrogen and phosphorus from within the rapid infiltration basin were compared to nutrient measurements in the IRL versus in the groundwater at three locations between the basin and the lagoon. Average percent removals have been high when comparing concentrations in the rapid infiltration basin to the groundwater location closest to the lagoon. Ammonia decreased by 62%, nitrite by 99%, nitrate by 82%, TN by 60%, total Kjeldahl nitrogen by 59%, orthophosphate by 72%, and TP by 66%. When comparing the basin concentrations to the groundwater inside the denitrification wall, the ammonia was reduced by 59%, nitrite by 98%, TN by 53%, total Kjeldahl nitrogen by 57%, orthophosphate by 78%, and TP by 61%; however, nitrate increased by 834%. Once the water passes through the denitrification wall, nitrate levels drop substantially (97% immediately). Overall, this project has been successful and further monitoring is planned for another six months. Based on actual costs and current data on nitrogen removal, the cost effectiveness is $136 instead of $802 per pound of TN reduced.

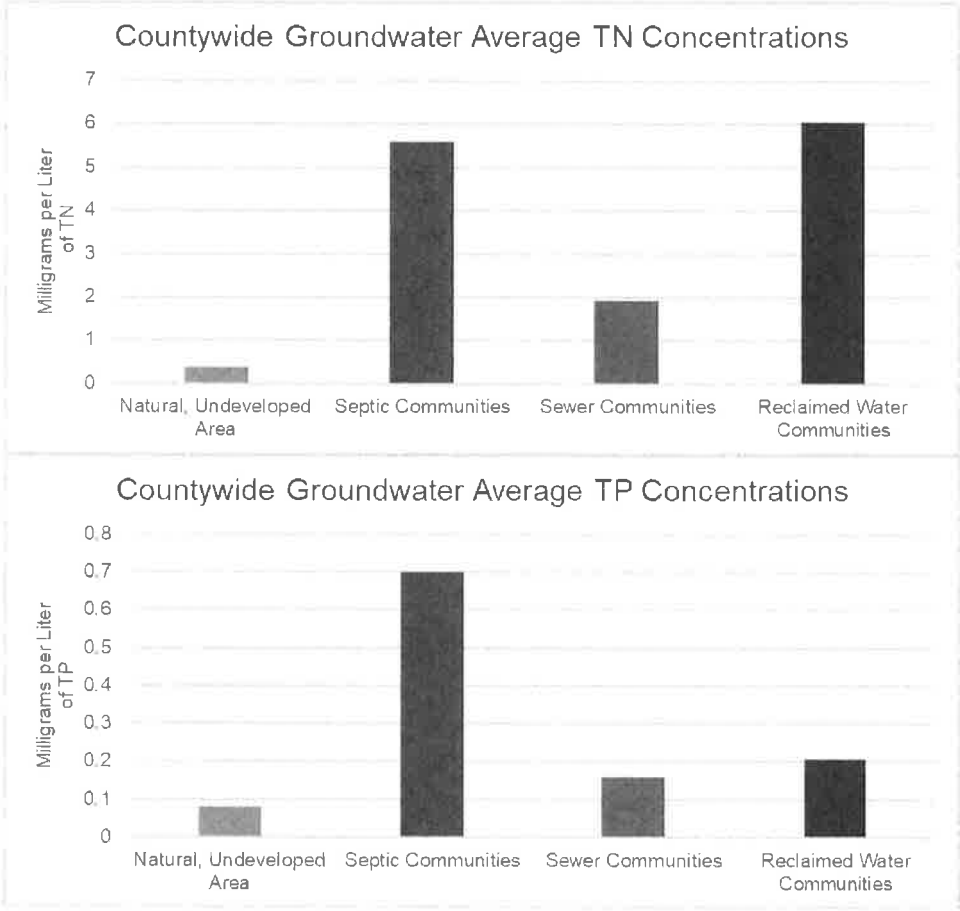


Figure 4-35. Countywide Groundwater Nutrient Concentrations for TN (top) and TP (bottom)

Figure 4-35 Long Description

Sewer Lateral Rehabilitation

Brevard County Utilities hired Kimley-Horn to conduct a sanitary sewer system smoke testing pilot study within the South Beaches service area in the City of Satellite Beach. The intent of the study was to use smoke testing to identify major contributors of stormwater into the sanitary sewer system and identify the necessary repairs. A smoke blowing machine that produces a non-toxic artificial "smoke" is used to pump smoke into the sewer system through an open manhole. As the smoke travels through the sanitary sewer system, it rises to the surface through any deficiencies in the lateral lines, such as cracks, leaks, and breaks. The South Beaches service area was selected because it had been experiencing elevated sanitary flow rates during storm events due to stormwater flow into the sanitary sewer through broken or missing infrastructure. Smoke testing was performed for the Phase 1 area in April and May 2018 for 5,165 properties. The testing identified 99 deficiencies of which there were 87 broken/missing cleanout caps, 9 broken lateral pipes, 2 damaged gravity sewer pipes, and 1 damaged manhole. Smoke testing was performed for the Phase 2 area in May and July 2018 for 7,592 properties. The testing identified 190 deficiencies of which there were 163 broken or missing cleanout caps, 21 broken lateral pipes, 1 storm connection, and 5 damaged manholes/gravity mains. The County purchased cleanout caps and replaced the damaged or

missing caps that were identified, accessible, and had no damage to the cleanout port (Kimley Horn, 2018a and 2018b).

Based on the data collected during the pilot study, the Save Our Indian River Lagoon Trust Fund will cover the costs to repair up to 250 broken cleanout ports or missing caps and 30 broken private lateral lines. The estimated cost for these repairs is $646,200, which is well below the $840,000 budgeted for this project. The lessons learned from this pilot study will be applied to future sewer lateral evaluation and repair projects. Because the broken sewer pipes are buried, the potential repair costs are unknown. This unknown cost has dis-incentivized cash-limited homeowners from starting repairs in a timely manner. In response, Brevard County now has qualified plumbers that can be paid directly by the county to fix these repairs.

The preliminary results from performance data for this area noted that the groundwater sampled at seven of the eight lateral sites had evidence of sewage leaking out of the lateral when the groundwater table was low. Multiple sites had high nitrogen concentration values at or near the break locations, likely directly caused by a sewer leak. Most of the elevated phosphorus was in the readily bioavailable form of ortho-phosphorus (Applied Ecology, 2019). Additional sampling will be conducted after repairs are complete to verify improvements.

Septic System Removal

The Breeze Swept septic-to-sewer project in the City of Rockledge removed 143 septic systems installed between 1958 and 1967. This was the first septic-to-sewer conversion project to be undertaken as a strategic measure to reduce the nutrient loading to the IRL. During construction, the contractor noticed that many septic systems were already failing, which posed an increased health and environmental risk. The City of Rockledge authorized Applied Ecology to install five shallow groundwater monitoring wells in June 2017, three within the Breeze Swept community and two additional reference (i.e., control) wells in an adjacent septic community. Post-construction monitoring continued through summer 2019. There were 18 sampling events with a total of 90 samples collected. All samples were sent to a certified lab and analyzed for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, and fecal coliform. The median ammonia, nitrate-nitrite, total Kjeldahl nitrogen, and mean TN concentrations from the post-construction samples taken from wells within the Breeze Swept community decreased with a statistically significant difference while the control wells showed no significant differences in median concentrations of nitrate-nitrite, total Kjeldahl nitrogen, and TN concentrations during the sampling period. These data provide a better understanding of the impact of septic systems on local water quality and help inform future septic-to-sewer conversion projects.

Construction costs for septic-to-sewer projects increased significantly since the original plan was developed in 2016. At that time, the estimated cost per lot for connection to gravity sewer was $20,000. This estimate included construction of the public and private side of the sewer, abandonment of the septic tank, connection fee, and restoration of the site. Based on actual and budgeted costs from within Brevard County and surrounding counties, the new estimated cost per lot is $33,372.

The project in the Breeze Swept community in the City of Rockledge, completed in 2017, cost $23,800 per lot. The West Melbourne Sylvan Estates project increased from an engineer's estimate of $28,800 to an actual low bid amount of $41,212 per lot. The South Central C sewer project is currently estimated at $55,232 per lot. Indian River County experienced a similar increase in costs for a sewer project in West Wabasso. Phase 1 of West Wabasso was approved in 2011 with an estimated cost of $20,348 per lot. Actual costs for construction in 2014 were $22,942 per lot. Cost estimates for phase 2 of West Wabasso are $46,269 per lot.

There are many opportunities to remove septic systems in areas with existing sewer lines. The plan currently allocates $12,000 to these connection opportunities. Costs to connect to gravity lines were found to be consistent with this estimate; however, costs to connect to force main lines were more. In the 2019 Update, connection costs to force main sewer were increased to $18,000 to more accurately cover the cost of a grinder pump, the pump's electrical connection, directional drilling of the lateral line, abandonment of the septic tank, connection fee, and restoration of the site.

Septic System Upgrades

The average cost of an upgraded septic system was increased from $16,000 to $18,000 in the 2019 Plan Update to more accurately reflect the cost to safely decommission the old tank and install the new tank and drainfield, electrical costs, and restoration of the site. Many of the oldest septic systems that are contributing the most loading to the lagoon do not comply with modern setbacks established by the Florida Department of Health. Bringing these septic systems to current standards in small lots is contributing to the higher average upgrade costs. The estimate of $16,000 is more accurate for new construction. For the eight upgrades completed so far, the average cost was $17,811.

Stormwater Treatment

Brevard County was awarded a grant to help upgrade multiple baffle boxes to second generation technology. Eight baffle boxes in Cocoa, Cape Canaveral, Melbourne, and Titusville were retrofitted with screens to collect larger items such as litter, leaves, and twigs from the stormwater entering the baffle box. Three of the baffle box projects were sampled twice each to estimate the pollutant removal effectiveness of the added screens. The baffle box projects chosen for sampling were Central Boulevard (City of Cape Canaveral), Church Street (City of Cocoa), and South Street (City of Titusville). By applying state-approved dry bulk density ratios to the volumes of material captured in the screens, nutrient removal was estimated to be 7.12 pounds of TN per year and 0.57 pounds of TP per year.

Muck Removal

Pre-project muck flux data have been collected by researchers at Florida Institute of Technology for more than 20 potential muck dredging sites. These data were considered with other available data to reprioritize muck dredging areas in the 2019 Update.

The goal of the muck removal program is to improve water quality and ecosystem health within the IRL. Muck removal benefits include reducing nitrogen, phosphorus, hydrogen sulfide, turbidity, pathogens, and contaminants; improving dissolved oxygen and pH; as well as uncovering clean, sandy sediments for recolonization by seagrass, shellfish, and a diversity of benthic marine life to support an abundant and productive food web. Improvements in water quality were documented with the Turkey Creek muck removal project with a 39% decrease in turbidity. The pre-project average turbidity based on six years of monthly measurements conducted by the St Johns River Water Management was 3.14 Nephelometric Turbidity Units. Post-project average turbidity, based on two years of monthly measurements, is 1.93 Nephelometric Turbidity Units (**Figure 4-36**) (Tetra Tech, 2020). In addition, there was no increase in turbidity during the dredging.

In 2020, Tetra Tech prepared a document with lessons learned for the muck dredging projects implemented between 2014 and 2019. One lesson learned is that the thickness and extent of muck deposits is generally difficult to determine. Therefore, a combination of sediment probes to plan an optimum density and pattern of sediment cores can improve the accuracy of muck sediment isopach mapping. Another lesson learned was related to the use of polymers and

flocculants. The contractor methods used at the Mims Boat Ramp did not work for performance-based specifications for nutrient removal. For future projects, more than just bench testing of the chemicals is needed and enhanced contract standards, developed by Brevard County, should be included in future project specifications. Muck sediments with high clay contents can be difficult to dewater. Design efforts should include bench testing of polymer additives to improve flocculation of the suspended sediments and the geotechnical testing of the dredged material slurry to help optimize the dewatering of the dredged material. Significant benefits to TP removal can be realized through the appropriate use of polymers (Tetra Tech, 2020).

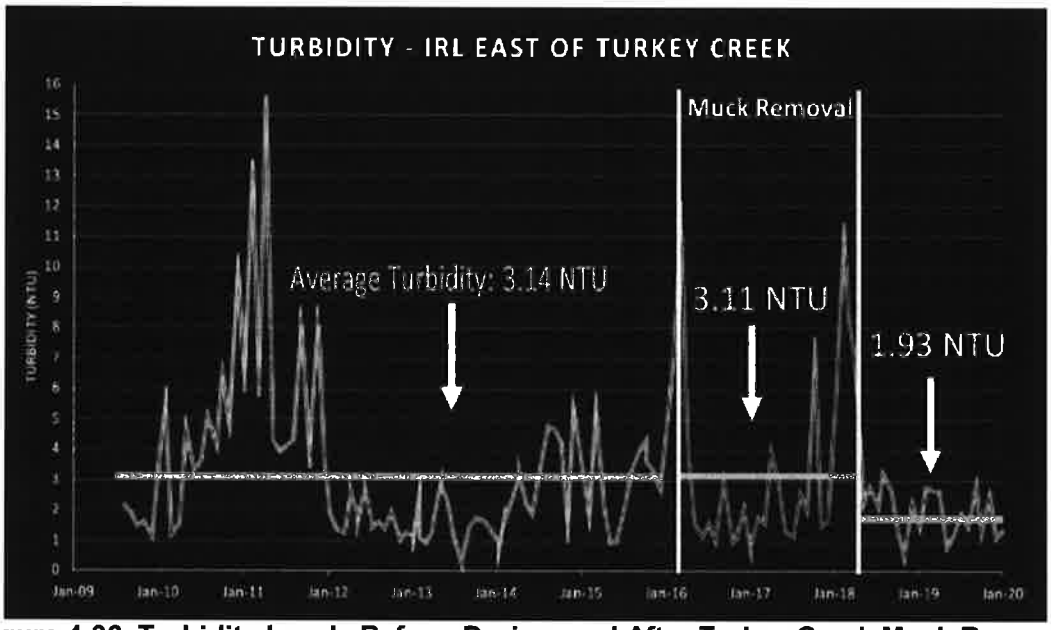


Figure 4-36. Turbidity Levels Before, During, and After Turkey Creek Muck Removal

Figure 4-36 Long Description

In-lagoon Aeration Study

In 2018, Brevard County conducted an aeration study in Sykes Creek. Before aeration, dissolved oxygen levels were measured at 10-foot increments at a depth of 2-feet, both in a southeast and northeast direction extending out 200 feet from the fixed aerator location. Dissolved oxygen levels were measured before the aerator was turned on and run continually for three days. Final dissolved oxygen measurements were collected before the aerator was unplugged and removed. The pre-aeration dissolved oxygen levels ranged from 7.91–8.96 milligrams per liter with an average of 8.59 milligrams per liter. The nearby Ocean Research & Conservation Association Kilroy station in the western portion of the Barge Canal measured dissolved oxygen at about 7.5 milligrams per liter. The final dissolved oxygen levels, post aerator deployment, ranged from 10.30–11.14 milligrams per liter with an average of 10.52 milligrams per liter. The nearby Ocean Research & Conservation Association Kilroy station measured dissolved oxygen of about 9.3 milligrams per liter. Dissolved oxygen levels close to the aerator were not higher than levels more distant from the aerator. Based on these results, it appears that the impact of aeration is minimal. Variations between pre- and post-aeration dissolved oxygen levels were likely attributed to changes in weather conditions and normal variances in dissolved oxygen. The aerator did not effectively move water to increase dissolved oxygen. There were also issues with clogging due to barnacles and algae. In addition, placement of the aerator was difficult due to the need for electricity.

Oyster Restoration and Planted Shorelines

Oyster bars are currently built using mesh bags filled with oyster shell, known as cultch. Oyster bars are typically two layers with 25 young adult oysters added to each of the top layer bags. A University of Central Florida research team conducts independent monitoring of oyster bar projects, visually inspecting for oysters growing through the bags and cementing or "bridging" of adjacent oysters, and documenting the presence of predators, algal cover, and sedimentation. Additionally, a subsample of bags is emptied to quantify oyster survival, growth, recruitment, and the abundance as well as the diversity of fish and invertebrates living within the modules.

Monitoring results inform future decisions about oyster bar site selection, design, material type, and the need for seeding. Recruitment is necessary for oyster bars to sustain themselves without additional seeding. Significant recruitment of new oysters has been observed at eight of the ten sites graphed in **Figure 4-37** (University of Central Florida, 2020b). Nine of the ten sites are reported in the University of Central Florida monitoring reports. Riverview Senior Center was funded with grants and is monitored by Brevard Zoo.

The formation of bridges between bags has been noted at Bomalaski, one of the oldest sites. Comparison of data from multiple sites indicates that oyster bars located in narrow canals are exposed to more variable salinities and less recruitment and, although surviving oysters do grow, the numbers of live oysters declines over time (University of Central Florida, 2020a). In contrast, bars constructed in open waters of the lagoon have two to nine times as many oysters as initially seeded. Finally, two projects located within 500 feet of one another are being compared to determine the influence of initial seeding. After three months, recruitment is similar at both sites (University of Central Florida, 2020c).

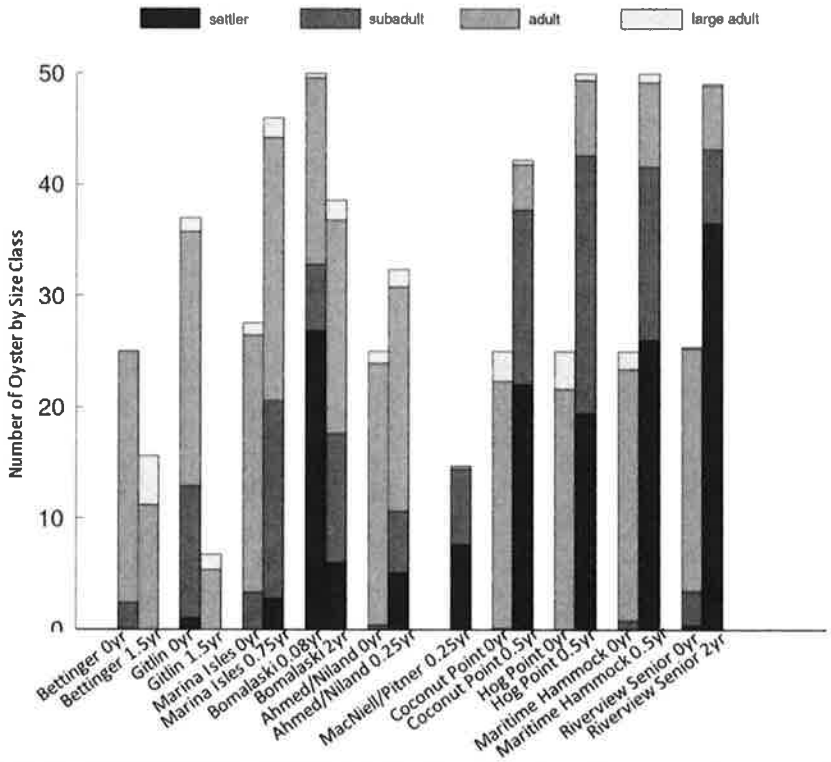


Figure 4-37. Distribution of Oyster Sizes, Age, and Average Number Per Unit

Figure 4-37 Long Description

The University of Central Florida has also monitored planted shorelines projects. Survival at locations throughout the lagoon have ranged between 46–64% for red mangroves and 36–38% for sand cordgrass after 12 months. In more recent projects, survival of red mangroves at 6 months was 86% and sand cordgrass 39%, similar to previous projects at equivalent ages. Competition with terrestrial vegetation and erosion via waves and boat wakes are common causes of loss.

In response to concerns related to the breakdown of plastics in the environment, alternative oyster restoration materials are being examined. Six alternatives to using ultraviolet stabilized plastic mesh bags for securing loose oyster shell, are being tested at three locations in the IRL. With funding from the IRL National Estuary Program and collaborators from the University of Florida, Brevard County and Brevard Zoo Restore Our Shores team built test structures that will be monitored throughout an 18-month study. Modules were hung from docks and consist of multiple configurations of cement, oyster shell, and natural materials (Community Oyster Reef Enhancement modules, jute-reinforced calcium sulfoaluminate/prisms, oyster balls), as well as two gauges of galvanized steel gabions, and controls (Naltex™ bags). Monitoring of degradation, fouling, and oyster recruitment and growth will occur quarterly. Data collected will build on material testing results from other studies, while ensuring they will meet site-specific constraints of the IRL in Brevard County.

Data on oyster reef denitrification rates are very limited in Florida; therefore, a scientist with the University of Florida's Institute of Food and Agricultural Sciences will sample sediment from three oyster bar projects, one each from the North IRL, Central IRL, and Banana River Lagoon. This work will build on a previous study conducted for Brevard County on intertidal oyster reefs of different ages within the Mosquito Lagoon (Schmidt and Gallagher, 2017). Improved analysis techniques will be employed on the subtidal oyster bars present in Brevard County to obtain sediment denitrification, percent organic matter, oxygen demand, and nitrate, ammonium, and phosphate flux rates across the sediment-water interface.

4.4.5 Research Needs

Although this project plan does not fund research, it should be recognized that many important research questions need attention. Universities, state agencies, and non-profit organizations are currently leading lagoon research efforts. This plan acknowledges the research needs identified in the Florida Department of Environmental Protection basin management action plans, St. Johns River Water Management District 2011 Superbloom Report, and Indian River Lagoon (IRL) National Estuary Program Comprehensive Conservation and Management Plan Update, which are summarized below.

- Research needs identified in the basin management action plans (Florida Department of Environmental Protection 2013a, 2013b, and 2013c):
  - Collect new bathymetry data for the IRL Basin, which would be used in the seagrass depth limit evaluations.
  - Continue and increase the frequency of the monitoring along the existing seagrass transects to track seagrass composition, density, and extent.
  - Implement phytoplankton, drift algae, macroalgae, and bacteria bloom monitoring in the basin.
  - Track watershed loads by monitoring inflow and outflow nutrient concentrations for each jurisdiction.
  - Verify the best management practice effectiveness values used in the basin management action plans, as needed.

  - Test/verify the total nitrogen (TN), total phosphorus (TP), and seagrass depth regression equations using the seagrass data collected since 1999.
  - Collect groundwater load contribution data and conduct groundwater modeling.
  - Implement storm event monitoring at the major outfalls.
  - Assess potential impacts to seagrass from sediment resuspension due to high boat traffic in parts of the lagoon.
  - Collect data on nutrient flux/internal recycling of legacy nutrient loads held within the IRL sediments and exchanged with the water column.

- Research needs identified in 2011 Superbloom Report (St. Johns River Water Management District 2016b):
  - Garner an improved understanding of the ideal biological and physiological conditions and tolerances of picocyanobacteria (small cyanobacteria) and Pedinophyceae (green microflagellate), including their ability to use organic forms of nutrients, their ability to fix nitrogen, their nutrient uptake rates, their reproductive rates, and their defenses against grazers.
  - Maintain or expand water quality sampling to ensure spatiotemporal variations are captured adequately, which could include continuous monitoring of various parameters to fill gaps between monthly samples.
  - Develop an improved understanding of the physiological tolerances of drift algae and seagrasses, especially manmade conditions that could be mitigated to improve health or natural resilience.
  - Maintain or expand surveys of drift algae and seagrasses to improve the capacity to evaluate their role in nutrient cycles.
  - Improve the ability to model bottom-up influences from external and internal nutrient loads, including atmospheric deposition, surface water runoff, groundwater inputs, diffusive flux from muck, decomposition of drift algae, and cycling and transformation of nitrogen and phosphorus.
  - Enhance surveys of bacterioplankton to improve the understanding of nutrient cycling.
  - Improve surveys of potential zooplanktonic, infaunal, epifaunal, and fish grazers to enhance the understanding of spatiotemporal variation in top-down control of phytoplankton blooms.
  - Evaluate grazing pressure exerted by common species to enhance the understanding of top-down control of phytoplankton blooms.

- Research needs identified in the Comprehensive Conservation and Management Plan revision (IRL National Estuary Program 2019):
  - Undertake further studies to quantify the impacts of septic systems on the IRL with a focus on identifying high priority "problem" and "potential problem" areas.
  - Develop, improve, and implement best management practices and education programs for stormwater management and freshwater discharges.
  - Determine the impacts of atmospheric deposition of nutrients and other pollutants on the nutrient budget, water quality, and resources of the IRL.
  - Support implementation, review, and update of IRL total maximum daily loads as needed and as best available science evolves.
  - Work to continue, expand, update, and improve the IRL species inventory.
  - Research and develop new and improved wetland best management practices with a focus on understanding wetland responses to sea level rise and climate change.
  - Continue to support and expand research initiatives and coordinated finfish and shellfish management strategies specific to the IRL.

- Prepare a Risk-Based Vulnerability Assessment and Adaptation Plan for the IRL.
- Develop a comprehensive IRL monitoring plan.
- Advance the ten research priorities in the 2018 Looking Ahead – Science 2030 Report.
- Update the IRL economic analysis produced by the Treasure Coast and East Central Florida Regional Planning Councils every five years.
- Support advancements in hydrological model development, verification, and application.
- Continue evaluation of options to enhance water flow through engineering solutions that have well defined water quality and ecological outcomes.
- Complete muck mapping of the entire IRL, prioritize muck dredging projects and site selection for seagrass and filter feeder restoration projects, and reduce source contributions of sediment and biomass that result in muck formation.
- Track emerging technologies, innovative approaches or alternatives to dredging, muck capping, upstream controls of muck transport, more efficient approaches to dewatering, enhanced pollutant removal in post-dredge water, and enhanced muck management to improve process efficiency and identify beneficial uses of muck.
- Monitor and research to better understand contaminants of emerging concern within the IRL system.
- Research spatially explicit data on the extent and condition of existing filter feeder habitat.
- Research and report on science-based siting, planning, design, and construction criteria for living shorelines.
- Support research and assessment to identify and map suitable habitats and spawning habitats for forage fishes and track population size and health.

4.5. Unfunded Projects

Throughout initial development and annual updates of this plan, there have been projects considered that are not funded due to them being less cost-effective than similar projects that were selected for funding. If some of the recommended projects in the plan receive funding from outside sources, such as grants or legislative appropriations, additional projects could be implemented using the Save Our Lagoon Trust Fund. If funding becomes available, the projects listed in **Table 4-46** through **Table 4-51** include numerous unfunded opportunities sorted by the next most cost-effective projects (based on total nitrogen [TN] and total phosphorus [TP] load reductions in pounds per year [lbs/yr]) available for each major type of pollution reduction strategy.

Table 4-46: Unfunded Public Outreach and Education Projects

Project	Cost	Estimated TN Reductions (lbs/yr)	Cost per Pound per year of TN Removed	Estimated TP Reductions (lbs/yr)	Cost per Pound per Year of TP Removed
Irrigation Education	$300,000	1,530	$196	Not applicable	Not applicable
Stormwater Pond Best Management Practice Maintenance Education	$300,000	3,300	$91	400	$750
Total	***$600,000***	***4,830***	***$124 (average)***	***400***	***$1,500 (average)***

Table 4-47: Unfunded Wastewater Treatment Facility (WWTF) Reclaimed Water Upgrade Projects

Facility	Cost to Upgrade	TN Removed after Attenuation (lbs/yr)	Cost per Pound per Year of TN Removed	TP Removed after Attenuation (lbs/yr)	Cost per Pound per Year of TP Removed
Cape Canaveral Air Force Station	$6,000,000	3,653	$1,642	To be determined	To be determined
Brevard County South Beaches WWTF	$6,000,000	2,860	$2,098	To be determined	To be determined
Brevard County South Central Regional WWTF	$6,000,000	2,053	$2,923	To be determined	To be determined
Brevard County Port St. John WWTF	$6,000,000	1,788	$3,356	To be determined	To be determined
Rockledge WWTF	$6,000,000	1,084	$3,460	To be determined	To be determined
Brevard Count Barefoot Bay Water Reclamation Facility	$6,000,000	1,597	$5,535	To be determined	To be determined
Total	***$36,000,000***	***13,035***	***$2,762 (average)***	***To be determined***	***To be determined***

Table 4-48: Unfunded Package Plant Connection Projects

Facility Name	Number of Units	Cost to Connect to Sewer	TN Load Reduction (lbs/yr)	Cost per Pound Per Year of TN Removed
Pelican Bay Mobile Home (aka Riverview) WWTF	200	$511,301	338	$1,513
Willow Lakes Recreational Vehicle Park WWTF	280	$1,270,407	740	$1,717
River Forest Mobile Home Park	130	$407,629	172	$2,370
Merritt Island Utility Company WWTF	198	$1,477,411	609	$2,426
Indian River Shores Trailer Park WWTF	54	$575,202	192	$2,996
Sterling House Condominium WWTF	45	$544,008	160	$3,400
Tropical Trail Village WWTF	74	$648,620	155	$4,185
Riverview Mobile Home and Recreational Vehicle Park	110	$763,933	180	$4,244
Palm Harbor Mobile Home Park WWTF	130	$729,905	152	$4,802
Housing Authority of Brevard County WWTF	26	$499,892	79	$6,328
Canebreaker Condo WWTF	24	$499,489	74	$6,750
Lighthouse Cove WWTF	80	$1,183,350	147	$8,050
Cove At South Beaches Condominium Association WWTF	80	$751,651	84	$8,965
Treetop Villas	28	$1,104,321	69	$16,028
Enchanted Lakes Estates	190	To be determined	No data	No data
Camelot Recreational Vehicle Park Inc.	178	To be determined	No data	No data
Southern Comfort Mobile Home Park	40	To be determined	No data	No data
Summit Cove Condominium	84	To be determined	No data	No data
Total	***1,951***	***$10,967,119***	***3,151***	***$3,481 (average)***

Table 4-49: Unfunded Sprayfield or Rapid Infiltration Basin Upgrade Projects

Facility	Type	Estimated Cost to Upgrade	TN Removed from Upgrade (lbs/yr)	Cost per Pound per Year of TN Removed	TP Removed from Upgrade (lbs/yr)	Cost per Pound per Year of TP Removed
Aquarina Beach Community WWTF	Sprayfield	$75,010	481	$156	To be determined	To be determined
Indian River Shores Trailer Park WWTF	Rapid Infiltration Basin	$38,145	160	$240	65	$591
South Shores Utility	Sprayfield	$300,564	771	$390	176	$1,708

Facility	Type	Estimated Cost to Upgrade	TN Removed from Upgrade (lbs/yr)	Cost per Pound per Year of TN Removed	TP Removed from Upgrade (lbs/yr)	Cost per Pound per Year of TP Removed
Pelican Bay Mobile Home WWTF	Rapid Infiltration Basin	$222,156	525	$423	200	$1,111
Oak Point Mobile Home Park WWTF	Rapid Infiltration Basin	$65,340	153	$427	40	$1,634
Sterling House Condominium WWTF	Sprayfield	$60,000	133	$451	54	$1,111
River Forest Mobile Home Park WWTF	Sprayfield	$78,405	143	$548	46	$1,704
Cove At South Beaches Condominium Association WWTF	Sprayfield	$51,480	70	$735	41	$1,256
Summit Cove Condominium	Rapid Infiltration Basin	$157,469	171	$921	To be determined	To be determined
Merritt Island Utility Company WWTF	Rapid Infiltration Basin	$495,277	505	$981	To be determined	To be determined
Lighthouse Cove WWTF	Sprayfield	$120,000	122	$984	58	$2,069
Tropical Trail Village WWTF	Rapid Infiltration Basin	$90,169	69	$1,307	To be determined	To be determined
Housing Authority of Brevard County WWTF	Rapid Infiltration Basin	$52,272	35	$1,493	To be determined	To be determined
Treetop Villas	Sprayfield	$105,000	48	$2,183	14	$7,500
Riverview Mobile Home and Recreational Vehicle Park	Sprayfield	$333,234	149	$2,236	94	$3,545
Palm Harbor Mobile Home Park WWTF	Sprayfield	$300,564	126	$2,385	129	$8,840
River Grove Mobile Home Village WWTF	Rapid Infiltration Basin	$182,299	42	$4,340	189	$965
Harris Malabar Facility	Rapid Infiltration Basin	$2,085,000	176	$11,847	To be determined	To be determined
Camelot Recreational Vehicle Park Inc	Sprayfield	Unknown size	To be determined	To be determined	To be determined	To be determined
Enchanted Lakes Estates	Sprayfield	$36,000	To be determined	To be determined	To be determined	To be determined
Southern Comfort Mobile Home Park WWTF	Rapid Infiltration Basin	Unknown size	To be determined	To be determined	To be determined	To be determined
Space X Launch Complex 39A	Sprayfield	Unknown size	To be determined	To be determined	To be determined	To be determined
Total	-	***$4,848,384***	***3,879***	***$1,250 (average)***	***1,106***	***$4,384 (average)***

Table 4-50: Unfunded Septic to Sewer Projects

Service Area	Number of Lots	Cost	TN Reduction (lbs/yr)	TN Cost per Pound Per Year
Grant-Valkaria – Zone G	30	$1,001,160	1,418	$706
Grant-Valkaria – Zone E	128	$4,271,616	5,862	$729
Grant-Valkaria – Zone B	34	$1,134,648	1,501	$756
Grant-Valkaria – Zone F	17	$567,324	688	$824
Grant-Valkaria – Zone D	18	$600,696	690	$871
Grant-Valkaria – Zone A	42	$1,401,624	1,296	$1,082
Malabar – Zone B	64	$2,135,808	1,929	$1,107
Grant-Valkaria – Zone C	30	$1,001,160	853	$1,173
Malabar – Zone A	430	$14,349,960	11,456	$1,253
Valkaria – Zone I	223	$7,441,956	5,380	$1,383
South Beaches – Zone F	3	$100,116	70	$1,435
Valkaria – Zone J	503	$16,786,116	11,507	$1,459
Malabar – Zone C	14	$467,208	289	$1,617
South Central – Zone B	180	$6,006,960	3,700	$1,623
Sharpes – Zone B	136	$4,538,592	2,692	$1,686
South Beaches – Zone E	387	$12,914,964	7,491	$1,724
Rockledge – Zone C	91	$3,036,852	1,736	$1,749
South Beaches – Zone K	21	$700,812	397	$1,765
North Merritt Island – Zone F	34	$1,550,000	830	$1,867
North Merritt Island – Zone D	29	$1,293,000	685	$1,888
City of West Melbourne	60	$2,002,320	1,041	$1,923
Pineda	27	$1,257,000	644	$1,952
Sykes Creek – Zone IJ	77	$1,900,000	62	$1,974
South Beaches – Zone L	178	$5,940,216	2,973	$1,998
Sykes Creek – Zone J	63	$2,102,436	1,028	$2,045
South Banana – Zone A	88	$3,025,000	1,444	$2,095
South Central – Zone BC	13	$1,222,000	582	$2,100
South Beaches – Zone G	112	$3,737,664	1,764	$2,119
City of West Melbourne – Zone B	60	$2,002,320	894	$2,240
Malabar – Zone D	24	$800,928	352	$2,278
North Merritt Island – Zone A	107	$4,245,000	1,821	$2,331
South Beaches – Zone D	89	$2,970,108	1,273	$2,333
South Central – Zone E	411	$13,715,892	5,761	$2,381
South Beaches – Zone M	334	$11,146,248	4,293	$2,596
Grant-Valkaria – Zone H	100	$3,337,200	1,272	$2,624
Malabar – Zone F	14	$467,208	174	$2,683
Melbourne Village – Zone B	224	$7,475,328	2,705	$2,763
Sykes Creek – Zone H	74	$2,469,528	887	$2,783
South Central – Zone I	72	$2,170,000	772	$2,811
Sykes Creek – Zone G	52	$1,735,344	602	$2,881
South Beaches – Zone N	103	$3,437,316	1,193	$2,882
Sykes Creek – Zone C	81	$2,703,132	929	$2,909
Melbourne Village – Zone A	85	$2,836,620	918	$3,091
South Central – Zone H	165	$5,506,380	1,779	$3,096
South Central – Zone G	196	$6,540,912	2,090	$3,129
North Merritt Island – Zone C	71	$2,369,412	737	$3,217
Merritt Island – Zone H	285	$22,500,000	5,464	$4,118
Sykes Creek – Zone S	164	$6,600,000	1,584	$4,167
North Merritt Island – Zone B	56	$4,690,000	1,066	$4,399
Merritt Island – Zone A	249	$16,700,000	3,440	$4,855
South Beaches – Zone C	118	$3,937,896	683	$5,763
Total	***6,166***	***$232,843,980***	***111,598***	***$2,086 (average)***

Table 4-51: Unfunded Muck Dredging and Interstitial Treatment Projects

Sub-Lagoon	Indian River Lagoon (IRL) Muck Sites	Dredging Cost Estimate	Interstitial Water Treatment Cost	Total Cost	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed
Banana	Cocoa Beach Golf (unfunded portion)*	$12,775,000	$1,941,800	$14,716,800	Not applicable	Not applicable	Not applicable	Not applicable
Central IRL	Goat Creek	$350,000	$50,819	$400,819	735	$545	98	$4,090
North IRL	Pineda to Eau Gallie	$30,625,000	$4,446,705	$35,071,705	34,965	$1,003	1,554	$22,569
North IRL	520 to Pineda	$31,500,000	$4,573,754	$36,073,754	35,280	$1,022	1,568	$23,006
Central IRL	Mullet Creek Islands Area	$4,550,000	$660,653	$5,210,653	4,305	$1,210	574	$9,078
North IRL	National Aeronautics and Space Administration Causeway West	$4,375,000	$635,244	$5,010,244	3,903	$1,284	193	$25,960
North IRL	Pineda	$5,250,000	$762,292	$6,012,292	4,610	$1,304	492	$12,220
Banana	Kent Dr	$1,750,000	$254,097	$2,004,097	1,365	$1,468	182	$11,012
Banana	National Aeronautics and Space Administration Area	$98,000,000	$14,229,457	$112,229,457	68,985	$1,627	9,198	$12,202
Banana	528 East	$1,225,000	$177,868	$1,402,868	840	$1,670	112	$12,526
North IRL	North IRL Venetian Canals/Channels	$13,475,000	$1,956,551	$15,431,551	9,160	$1,685	1,243	$12,415
Banana	Newfound Harbor E	$1,575,000	$228,688	$1,803,688	1,050	$1,718	140	$12,883
Banana	Banana Venetian Collector Canals/Channels	$119,000,000	$17,278,627	$136,278,627	78,960	$1,726	10,927	$12,472
Banana	Patrick AFB Borrow Pit-2	$4,725,000	$686,063	$5,411,063	3,045	$1,777	406	$13,328
Banana	Newfound Harbor S	$4,725,000	$686,063	$5,411,063	3,045	$1,777	406	$13,328
Banana	Mathers Bridge Area	$12,250,000	$1,778,682	$14,028,682	7,875	$1,781	1,050	$13,361
North IRL	Max Brewer Causeway	$2,800,000	$406,556	$3,206,556	1,785	$1,796	238	$13,473
Banana	Newfound Harbor N	$3,150,000	$457,375	$3,607,375	1,995	$1,808	266	$13,562
Banana	Cocoa Beach High School	$6,825,000	$990,980	$7,815,980	4,305	$1,816	574	$13,617
Central IRL	Central IRL Venetian Collector Canals/Channels	$6,300,000	$914,750	$7,214,750	3,904	$1,848	537	$13,435
Banana	Brightwaters	$8,225,000	$1,194,258	$9,419,258	5,040	$1,869	672	$14,017
Banana	Patrick AFB Borrow Pit-4	$525,000	$76,229	$601,229	315	$1,909	42	$14,315
Banana	Sunset Café	$3,850,000	$559,014	$4,409,014	2,310	$1,909	308	$14,315
Banana	520 Borrow Pit-1	$1,400,000	$203,278	$1,603,278	840	$1,909	112	$14,315
Banana	Cape Canaveral Hospital	$2,100,000	$304,917	$2,404,917	1,260	$1,909	168	$14,315
Banana	520 Borrow Pit-2	$700,000	$101,639	$801,639	420	$1,909	56	$14,315
Banana	520 Borrow Pit-3	$525,000	$76,229	$601,229	315	$1,909	42	$14,315
Banana	520 Borrow Pit-4	$1,400,000	$203,278	$1,603,278	840	$1,909	112	$14,315
Banana	520 Borrow Pit-5	$1,050,000	$152,458	$1,202,458	630	$1,909	84	$14,315
Banana	520 Borrow Pit-6	$525,000	$76,229	$601,229	315	$1,909	42	$14,315
Banana	520 Borrow Pit-7	$700,000	$101,639	$801,639	420	$1,909	56	$14,315
Central IRL	Trout Creek	$175,000	$25,410	$200,410	105	$1,909	14	$14,315

Sub-Lagoon	Indian River Lagoon (IRL) Muck Sites	Dredging Cost Estimate	Interstitial Water Treatment Cost	Total Cost	TN Reduction (lbs/yr)	Cost per Pound of TN Removed	TP Reduction (lbs/yr)	Cost per Pound of TP Removed
Central IRL	Melbourne Causeway North	$875,000	$127,049	$1,002,049	525	$1,909	70	$14,315
Central IRL	Front St Park	$875,000	$127,049	$1,002,049	525	$1,909	70	$14,315
North IRL	Warwick Dr	$700,000	$101,639	$801,639	420	$1,909	56	$14,315
North IRL	Crab Shack	$700,000	$101,639	$801,639	420	$1,909	56	$14,315
Banana	Port Canaveral	$9,275,000	$1,346,716	$10,621,716	4,988	$2,129	245	$43,354
North IRL	Cocoa South	$5,250,000	$762,292	$6,012,292	1,947	$3,088	182	$33,035
Central IRL	Turkey Creek	$4,900,000	$711,473	$5,611,473	1,750	$3,207	231	$24,292
North IRL	National Aeronautics and Space Administration Causeway to 528	$16,625,000	$2,413,926	$19,038,926	4,694	$4,056	313	$60,827
North IRL	Rockledge A	$29,575,000	$4,294,247	$33,869,247	8,093	$4,185	1,184	$28,606
North IRL	Eau Gallie NW	$19,145,000	$2,779,826	$21,924,826	3,207	$6,837	244	$89,856
North IRL	Cocoa 520-528	$3,850,000	$559,014	$4,409,014	599	$7,361	40	$110,225
North IRL	Eau Gallie South	$40,250,000	$5,844,241	$46,094,241	4,144	$11,123	777	$59,323
-	***Total***	***$518,420,000***	***$75,360,713***	***$593,780,713***	***314,234***	***$1,890 (average)***	***35,032***	***$16,961 (average)***

*Note: The funding for the Cocoa Beach Golf project is the balance of funding needed to fully implement this project. Brevard County is looking for sources of funding for this balance.

Section 5. Project Funding

5.1. Contingency Fund Reserve

The 2018 Update established a Contingency Fund Reserve that will be included with the development and adoption of the County's budget each fiscal year. The reserve will amount to inflation plus 5% of the total Trust Fund dollars that are budgeted for all approved projects scheduled to occur or move ahead in that fiscal year. This includes projects in the Save Our Indian River Lagoon Project Plan, including additions captured in annual updates or supplements. The purpose of the reserve is to fund emergency response to harmful algal blooms and major fish kills, to cover reasonable funding shortfalls that may occur during project implementation and would delay implementation or completion of that project unless a ready source of funds is on hand, provide funding for projects that encounter cost-effective opportunities to remove additional nutrients beyond the amount originally planned, or to move projects forward ahead of schedule if ready to proceed.

The Contingency Fund Reserve includes an additional amount of funding to account for the impact of inflation on project delivery costs. Inflation is estimated by applying the Consumer Price Index to project costs, compounded for the number of years between the year the project cost was estimated and the year that the project is expected to be constructed. Since 2016, the Consumer Price Index has varied between 3.25% and 1.3%. An inflation factor of 2.5% is used for the 2021 Plan Update.

If a cost increase for an individual project is less than 10% of the estimated cost or eligible amount of Trust Fund cost-share stated in the Save Our Indian River Lagoon Project Plan or update, then additional funding from the contingency reserve may be allocated to the project, as needed, in accordance with Brevard County policies and administrative orders. For projects that are contracted with municipalities or other partners and encounter cost overruns, the cost-share agreement may be increased up to 10% over the eligible cost-share amount stated in Attachment E of the cost-share contract. This amendment will be executed by the County Commission Chair and the appropriate municipal representative or authorized agent of a partnering organization.

For project cost increases that are more than 10% above the estimated cost or eligible amount of Trust Fund cost-share stated in the Save Our Indian River Lagoon Project Plan or update, County staff will evaluate the project circumstances and present findings and a recommendation to the Citizen Oversight Committee. The Committee will make a recommendation to the County Manager or County Commission (based on respective signature authority adopted in County contracting policy) on whether the project should proceed.

The Contingency Fund Reserve may also be used to increase funding for approved projects that encounter cost-effective opportunities for value added modifications that could occur swiftly if funding could be made available before the next plan update. If a project can be expanded or altered to provide greater nutrient reduction benefits than planned, contingency funds can be allocated at the rate for that project type established in the most recently adopted plan update in the table titled "Cost-share per Pound of Total Nitrogen (TN) Removed by Project Type." In no case shall the total cost-share from the Trust Fund exceed the total project costs, minus other grants or donations for that project. Amendment approvals would follow one of the three approval processes below:

1. If the amount of funds to be added to the cost-share contract exceeds the signature authority of the County Manager, the funding request will be brought to the Citizen Oversight Committee for a recommendation and to the County Commission for authorization to execute a contract amendment.
2. If the amount of funds to be added to the cost-share contract is within the signature authority of the County Manager but exceeds 10% of the original contract amount, the funding request will be brought to the Citizen Oversight Committee for a recommendation to the County Manager to process a contract amendment.
3. If the amount of funds to be added to the cost-share contract is within the signature authority for the County Manager and less than 10% over the original contract amount, staff will process a contract amendment in accordance with Brevard County contracting policies and administrative orders.

In addition to the Contingency Fund Reserve, if a project is ready to move forward earlier than scheduled in the plan, if such advancement is consistent with temporal sequencing goals in the plan and is recommended by the Citizen Oversight Committee, and if there are sufficient Trust Fund dollars available, the County Manager (for budget changes less than $100,000) or Brevard County Commission have the authority to adjust the project schedule at any time to ensure that approved projects funded in the plan move forward as soon as feasible. This authority allows projects to move forward as soon as they are ready and funding is available without waiting for an annual plan update to modify the schedule. If a project schedule is updated between plan updates, this schedule change will be reflected in the next annual plan update.

If a project is not able to be completed as initially approved in the plan due to extenuating circumstances, such as permitting restrictions, loss of additional funding, or other situations beyond the managing entity's control, but is able to be downsized instead of fully withdrawn and is recommended by the Citizen Oversight Committee, then the County Manager (for budget changes less than $100,000) or Brevard County Commission have the authority to reduce the project funding. The revised funding amount will be based on the pounds of nitrogen removal estimated for the reduced project multiplied by the eligible cost-share per pound of TN removed that is adopted for that project type in the most recent Save Our Indian River Lagoon Project Plan. If a project is downsized between plan updates, the revised plan costs and nutrient load reductions will be reflected in the next annual plan update.

5.2. Revenue Projection Update

Brevard County calculated a new estimate for Save Our Indian River Lagoon Sales Tax revenues. This estimate is based on the actual revenues for 2017, 2018, 2019, and the first nine months of 2020. The 2020 revenues for the first nine months were used to estimate the revenue for the remaining three months of 2020 using a rate of growth of 1.4%. The estimate then uses a rate of growth of 2% compounded over the remaining life of the tax. The new estimate for the total tax revenue is $488,855,173, or an average of $48.9 million per year. This current estimate is $14.9 million per year more than the $34 million per year estimate in the original Save Our Indian River Lagoon Plan, which was based on 2016 dollars. However, this is $0.5 million per year less than the projection in the 2020 Plan Update.

5.3. Project Funding Allocations

Figure 5-1 shows the funding allocations by project type from the original plan through the 2021 Plan Update. **Figure 5-2** summarizes the funding allocated by category (Reduce, Remove, Restore, and Respond) in this 2021 Plan Update.



Figure 5-1: Evolution of Project Funding Allocations

Figure 5-1 Long Description

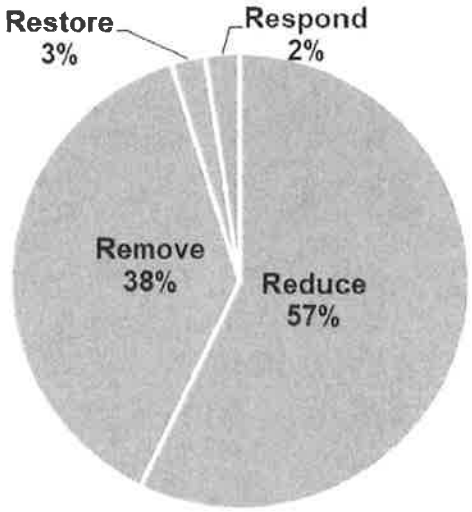


Figure 5-2: Funding for Reduce, Remove, Restore, and Respond Projects

Section 6. Summary of the Plan through the 2021 Update

6.1. Progress Toward the Local Targets for Maximum Total Loads

The County has been working with its municipalities, Florida Department of Transportation District 5, and Patrick Air Force Base to update total loading estimates to the lagoon and revise the total maximum daily loads for nitrogen and phosphorus using the best available data and more detailed modeling than previously available. Based on this process, five-month total maximum daily loads, which target the load reductions needed during the seagrass growing period (January – May), were proposed in addition to annual total maximum daily loads that protect water quality year-round. These load reductions specifically target water quality conditions needed for restoring lagoon seagrass beds to provide crucial habitat for fish and other marine life. Therefore, as this Save Our Indian River Lagoon Project Plan was developed, the total nitrogen (TN) and total phosphorus (TP) reductions from the project types that **Reduce** incoming load were compared to the proposed five-month total maximum daily loads for each sub-lagoon. After satisfying the five-month total maximum daily loads, annual load reductions for each project were compared to the 12-month total maximum daily loads. In all cases, the projects identified to meet the five-month total maximum daily loads were sufficient to meet the proposed 12-month total maximum daily loads. As projects are implemented, progress toward meeting the five-month and full-year total maximum daily loads are being tracked.

Only the projects that reduce external loading to the lagoon, not muck removal or living shorelines, were used to meet the total maximum daily loads. Even though decades of treatment projects to reduce nutrient loads have been completed to date, only the reductions associated with basin management action plan projects that were completed between January 1, 2010 (the last year of the Spatial Watershed Iterative Loading model period) and February 29, 2016 (the end of the last basin management action plan reporting period when the Save Our Indian River Lagoon Project Plan was developed) were included in the load reduction calculations as these projects also provide nutrient load reductions that have occurred after the period of record used to develop the proposed total maximum daily load updates. In Zone A of the Central Indian River Lagoon (IRL), the reductions from the St. Johns River Water Management District's C-1 re-diversion project, which was implemented with cost-share funding from the Florida Department of Environmental Protection and Brevard County, were also included as this project results in significant load reductions that were not included in the February 29, 2016 basin management action plan annual progress report. As shown in **Table 6-1**, **Table 6-3**, and **Table 6-5**, the projects proposed in this plan plus the recently completed basin management action plan projects and C-1 re-diversion project exceed the five-month reductions called for by the proposed total maximum daily load updates.

The total project reductions were also compared to the full year estimated loading to the lagoon from the Spatial Watershed Iterative Loading model. As shown in **Table 6-2**, **Table 6-4**, and **Table 6-6**, the proposed projects in this plan, as well as the recently completed basin management action plan projects and C-1 re-diversion project, achieve significant reductions of the overall loading to the lagoon and exceed the full year reductions called for by the proposed local total maximum daily loads (in pounds per year [lbs/yr]).

Table 6-1: Banana River Lagoon Project Reductions to Meet Five-Month Total Maximum Daily Load

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	2,945	603
Future Education	1,853	129
Wastewater Treatment Facility (WWTF) Upgrade for Reclaimed Water	1,050	285
Sewer Laterals	412	78
Rapid Infiltration Basin/Sprayfield	1,927	511
Septic System Removal	13,057	0
Septic System Upgrade	806	0
Stormwater Projects	14,185	2,261
Basin Management Action Plan Projects (2010-February 2016)	5,303	1,440
Total	***41,538***	***5,307***
Proposed Total Maximum Daily Load Reductions (five-month)	***30,337***	***2,737***
Percent of Proposed Total Maximum Daily Load Reductions Achieved	***136.9%***	***193.9%***

Table 6-2: Banana River Lagoon Project Reductions Compared to Full Year Loading

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	7,068	1,446
Future Education	4,447	310
WWTF Upgrade for Reclaimed Water	2,520	685
Sewer Laterals	988	188
Rapid Infiltration Basin/Sprayfield	4,625	1,226
Septic System Removal	31,336	0
Septic System Upgrade	1,934	0
Stormwater Projects	65,944	8,664
Basin Management Action Plan Projects (2010-February 2016)	12,726	3,456
Total	***131,588***	***15,975***
Starting Load (full year)	***477,020***	***44,269***
Percent of Starting Load Reduced	***27.6%***	***36.1%***
Proposed Full-Year Total Maximum Daily Load Percent Reductions	***9.0%***	***9.6%***

Table 6-3: North IRL Project Reductions to Meet Five-Month Total Maximum Daily Load

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	8,070	1,651
Future Education	5,078	354
WWTF Upgrade for Reclaimed Water	5,119	To be determined
Sewer Laterals	1,118	To be determined
Rapid Infiltration Basin/Sprayfield	1,740	381
Package Plant Connection	590	To be determined
Septic System Removal	23,898	0
Septic System Upgrade	5,774	0
Stormwater Projects	39,596	6,673
Vegetation Harvesting	336	16
Basin Management Action Plan Projects (2010-February 2016)	16,983	3,180
Total	***108,302***	***12,255***
Proposed Total Maximum Daily Load Reductions (five-month)	***61,447***	***7,410***
Percent of Proposed Total Maximum Daily Load Reductions Achieved	***176.3%***	***165.4%***

Table 6-4: North IRL Project Reductions Compared to Full Year Loading

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	19,368	3,962
Future Education	12,187	849
WWTF Upgrade for Reclaimed Water	12,286	To be determined
Sewer Laterals	2,682	To be determined
Rapid Infiltration Basin/Sprayfield	4,177	915
Package Plant Connection	1,415	To be determined
Septic System Removal	57,356	0
Septic System Upgrade	13,857	0
Stormwater Projects	161,735	23,234
Vegetation Harvesting	806	39
Basin Management Action Plan Projects (2010-February 2016)	40,758	7,632
Total	***326,627***	***36,631***
Starting Load (full year)	***988,847***	***99,340***
Percent of Starting Load Reduced	***33.0%***	***36.9%***
Proposed Full-Year Total Maximum Daily Load Percent Reductions	***11.4%***	***11.4%***

Table 6-5: Central IRL Project Reductions to Meet Five-Month Total Maximum Daily Load

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	8,108	1,659
Future Education	5,102	356
WWTF Upgrade for Reclaimed Water	20,688	5,448
Sewer Laterals	1,053	To be determined
Rapid Infiltration Basin/Sprayfield	68	To be determined
Package Plant Connection	856	To be determined
Septic System Removal	11,375	0
Septic System Upgrade	9,246	0
Stormwater Projects	15,073	2,104
Vegetation Harvesting	6,932	693
C-1 Re-Diversion	53,892	6,295
Basin Management Action Plan Projects (2010-February 2016)	378	243
Total	***132,771***	***16,798***
Proposed Total Maximum Daily Load Reductions (five-month) *	***67,547***	***8,151***
Percent of Proposed Total Maximum Daily Load Reductions Achieved	***196.6%***	***206.1%***

* The total maximum daily load reductions are for Zone A only; however, some of the septic system projects are in Zone SEB. There are sufficient projects to achieve the Zone A reductions without the Zone SEB projects (refer to **Section 2.1**).

Table 6-6: Central IRL Project Reductions Compared to Full Year Loading

Project	TN Reductions (lbs/yr)	TP Reductions (lbs/yr)
Fertilizer Ordinance Implementation	19,460	3,981
Future Education	12,245	854
WWTF Upgrade for Reclaimed Water	49,652	13,075
Sewer Laterals	2,526	To be determined
Rapid Infiltration Basin/Sprayfield	163	To be determined
Package Plant Connection	2,054	To be determined
Septic System Removal	27,301	0
Septic System Upgrade	22,190	0
Stormwater Projects	47,680	6,313
Vegetation Harvesting	16,636	1,664
C-1 Re-Diversion	129,341	15,108
Basin Management Action Plan Projects (2010-February 2016)	908	582
Total	***330,156***	***41,577***
Starting Load (full year) *	***698,937***	***95,051***
Percent of Starting Load Reduced	***47.2%***	***43.7%***
Proposed Full-Year Total Maximum Daily Load Percent Reductions	***17.8%***	***16.3%***

* The total maximum daily load reductions are for Zone A only; however, some of the septic system are in Zone SEB. There are sufficient projects to achieve the Zone A reductions without the Zone SEB projects (refer to **Section 2.1**).

In addition to the projects that address the external nutrient loading summarized above, the plan includes muck flux, interstitial water treatment, oyster bars, and planted shoreline projects that will significantly reduce internal nutrient loading within the lagoon itself. The annual reductions from these projects are summarized in **Table 6-7**, along with the percentage of nutrients from 2018 estimates of muck flux that would be reduced by these projects.

Table 6-7: Annual Muck Flux, Muck Interstitial Water, Oyster Bar, and Planted Shoreline Project Benefits Compared to Annual Nutrient Loadings from Muck Flux

Project Type	Banana River Lagoon TN (lbs/yr)	Banana River Lagoon TP (lbs/yr)	North IRL TN (lbs/yr)	North IRL TP (lbs/yr)	Central A TN (lbs/yr)	Central A TP (lbs/yr)
Muck Flux Reduction	142,571	13,425	59,728	4,169	5,691	221
Average Annual Removal of Nutrients from Interstitial Water	39,314	1,967	8,792	800	0	69
Oyster Bars	10,491	323	10,724	275	3,551	183
Clams	423	0	432	0	145	0
Planted Shorelines	113	38	118	40	225	77
Total Project Reductions	***192,912***	***15,753***	***79,785***	***5,281***	***9,612***	***550***
Estimated Muck Flux Loading	***393,948***	***43,216***	***247,078***	***17,583***	***16,927***	***2,277***
Percent of Muck Flux Reduced	***49.0%***	***36.5%***	***32.3%***	***30.0%***	***56.8%***	***24.2%***

6.2. Plan Summary

Table 6-8 summarizes all the project types, as well as their estimated costs, total nitrogen (TN) and total phosphorus (TP) reductions in pounds per year (lbs/yr), and costs per pound of TN and TP removed. The information from this table on the project reductions and cost effectiveness was used to determine the schedule for implementing the projects (see **Table 6-9**). Projects that could achieve large reductions quickly, such as fertilizer reductions and wastewater treatment facility (WWTF) upgrades, as well as the most cost-effective septic to sewer, and stormwater projects were prioritized for earliest implementation. This prioritization allows for the reductions to occur as quickly as possible while best using available funding sources. Project scheduling also considered the timing of upstream reductions with downstream removals, where feasible.

The timeline in **Table 6-9** is shown in years after funding from the Save Our Indian River Lagoon sales tax became available. Each year corresponds to the County's fiscal year, which is October 1st through September 30th. Year 1 started on October 1, 2017, which was just before revenues would have begun to accrue if the funding source had been a property tax, as initially considered. When the referendum approved by the voters was a sales tax, collections began in January 2017 and the first revenue check was received by the County in March 2017. Therefore, a plan update was adopted in March 2017 to begin plan implementation in Year 0. **Table 6-9** includes the cost estimates developed as part of the original plan or provided in the year new or substitute projects were added to the plan.

As noted in **Section 4.4.1**, an adaptive management approach is being used in the implementation of this plan. As projects are completed and information on the actual construction costs, timeline, and reductions are obtained, the plan will continue to be adjusted, as needed, to ensure that the most cost-effective projects are being used to meet the Indian River Lagoon (IRL) restoration goals.

Table 6-8: Summary of Projects, Estimated TN and TP Reductions, and Costs

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
-	**Public Education**	-	-	-	-	-
58a	Expanded Fertilizer Education	$625,000	6,613	$95	813	$769
58b	Grass Clippings Campaign	$200,000	17,800	$11	1,200	$167
58c	Septic System Maintenance Education	$300,000	4,466	$67	To be determined	To be determined
193	Oyster Gardening Program	$300,000	Not applicable	Not applicable	Not applicable	Not applicable
-	**WWTF Upgrades for Reclaimed Water**	-	-	-	-	-
99	Cocoa Beach Water Reclamation Facility Upgrade	$945,000	2,520	$375	685	$1,380
2016-02a	City of Titusville Osprey WWTF	$8,800,000	8,660	$1,016	Not applicable	Not applicable
2016-17	City of Palm Bay Water Reclamation Facility	$3,636,900	20,240	$180	102	$35,656
59	City of Melbourne Grant Street Water Reclamation Facility	$6,769,500	18,052	$375	9,671	$700
2016-2b	City of Titusville Osprey Nutrient Removal Upgrade Phase 2	$300,000	3,626	$83	Not applicable	Not applicable
138	Ray Bullard Water Reclamation Facility Biological Nutrient Removal Upgrades	$4,260,000	11,360	$375	3,302	$1,290
-	**Rapid Infiltration Basin/Sprayfield Upgrades**	-	-	-	-	-
6	Long Point Park Upgrade	$22,207	163	$136	To be determined	To be determined
2016-51	Port St John Wastewater Treatment Plant	$980,100	4,116	$238	915	$1,071
204	Cape Canaveral Air Force Station Regional WWTF	$5,227,200	4,625	$1,130	1,226	$4,264
2016-20	Canebreaker Condo	$36,000	61	$590	To be determined	To be determined
-	**Package Plant Connection**	-	-	-	-	-
197	South Shores Utility Connection	$1,301,154	929	$1,401	To be determined	To be determined
199	River Grove I & II Mobile Home Park Connection	$1,004,640	697	$1,441	To be determined	To be determined
192	Oak Point Wastewater Treatment Facility Improvements	$279,000	186	$1,500	0	Not applicable
-	**Sewer Laterals**	-	-	-	-	-
63ab	Satellite Beach Lateral Smoke Testing and Countywide Repair/Replacement	$840,000	988	$850	188	$4,468
100	Osprey Basin Lateral Smoke Testing	$200,000	640	Not applicable	Not applicable	Not applicable
114	Barefoot Bay Lateral Smoke Testing	$90,000	864	Not applicable	Not applicable	Not applicable
115	South Beaches Lateral Smoke Testing	$200,000	1,662	Not applicable	Not applicable	Not applicable
116	Merritt Island Lateral Smoke Testing	$250,000	2,042	Not applicable	Not applicable	Not applicable
-	**Septic System Removal by Sewer Extension**	-	-	-	-	-
47	Sykes Creek - Zone N	$2,603,016	2,784	$935	To be determined	To be determined
48	Sykes Creek - Zone M	$1,868,832	1,798	$1,039	To be determined	To be determined
146	Merritt Island - Zone C	$1,580,000	1,419	$1,113	To be determined	To be determined

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
49	Sykes Creek - Zone T	$4,939,056	3,360	$1,470	To be determined	To be determined
2016-29	South Banana - Zone B	$1,368,252	915	$1,495	To be determined	To be determined
145	Merritt Island - Zone F	$1,100,000	1,292	$851	To be determined	To be determined
147	Sykes Creek - Zone R	$3,500,000	2,925	$1,197	To be determined	To be determined
148	North Merritt Island - Zone E	$3,635,000	2,541	$1,431	To be determined	To be determined
151	Merritt Island - Zone G	$16,617,000	11,078	$1,500	To be determined	To be determined
2016-30	City of Rockledge	$500,580	712	$703	To be determined	To be determined
2016-31	City of Cocoa - Zone K	$1,201,392	1,663	$722	To be determined	To be determined
109	City of Titusville - Zones A-G	$1,201,392	1,563	$769	To be determined	To be determined
150	South Central - Zone D (Brevard County)	$4,774,500	3,387	$1,410	To be determined	To be determined
2016-28	South Central - Zone D (Melbourne)	$265,500	177	$1,500	To be determined	To be determined
50b	South Central - Zone C	$6,600,000	5,146	$1,283	To be determined	To be determined
203	South Central - Zone A	$3,370,572	3,655	$922	To be determined	To be determined
2016-32	City of Cocoa - Zone J	$3,136,968	3,259	$963	To be determined	To be determined
2016-33	City of Melbourne	$867,672	878	$988	To be determined	To be determined
2020-34	South Central - Zone F	$1,701,972	1,688	$1,008	To be determined	To be determined
2016-27	Sharpes - Zone A	$6,207,192	5,248	$1,183	To be determined	To be determined
2016-35	South Beaches - Zone A	$1,234,764	1,306	$945	To be determined	To be determined
2016-36	South Beaches - Zone O	$133,488	136	$982	To be determined	To be determined
2016-37	South Beaches - Zone P	$500,580	489	$1,024	To be determined	To be determined
2016-38	City of Titusville - Zone H	$1,168,020	910	$1,284	To be determined	To be determined
2016-40	Rockledge - Zone B	$5,339,520	4,037	$1,323	To be determined	To be determined
1	Breeze Swept Septic to Sewer Connection	$880,530	2,002	$440	To be determined	To be determined
2	Merritt Island Septic Phase Out Project	$320,000	2,501	$128	To be determined	To be determined
61	Riverside Drive Septic-to-Sewer Conversion	$265,960	305	$872	To be determined	To be determined
62	Roxy Avenue Septic-to-Sewer Conversion	$88,944	102	$872	To be determined	To be determined
152	Sharpes - Zone B	$4,038,000	2,692	$1,500	To be determined	To be determined
153	Cocoa - Zone C	$5,248,500	3,499	$1,500	To be determined	To be determined
190	Bowers Septic to Sewer	$147,000	120	$1,225	To be determined	To be determined
191	Kent and Villa Espana Septic to Sewer Conversion	$710,000	542	$1,310	To be determined	To be determined
2016-39	City of Palm Bay – Zone A	$2,569,644	2,136	$1,203	To be determined	To be determined
2016-46	City of Palm Bay – Zone B	$8,309,628	6,809	$1,220	To be determined	To be determined
4	Hoag Sewer Conversion	$86,031	101	$852	To be determined	To be determined
5	Pennwood Sewer Conversion	$40,632	48	$847	To be determined	To be determined
60	Sylvan Estates Septic-to-Sewer Conversion	$1,561,215	1,073	$1,455	To be determined	To be determined

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
136	Micco - Zone B	$9,000,000	8,687	$1,036	To be determined	To be determined
3	Micco Sewer Line Extension (Phase I and II)	$2,239,500	1,493	$1,500	To be determined	To be determined
189	Avendia del Rio Septic to Sewer	$70,000	71	$986	To be determined	To be determined
-	**Septic System Removal by Sewer Connection**	-	-	-	-	-
2016-16	Banana Septic System 144 Quick Connections	$1,908,000	3,224	$592	To be determined	To be determined
2016-18	North IRL Septic System 463 Quick Connections	$6,018,000	11,339	$531	To be determined	To be determined
2016-19	Central IRL Septic System 269 Quick Connections	$3,354,000	6,883	$487	To be determined	To be determined
-	**Septic System Upgrades**	-	-	-	-	-
51	Banana River Lagoon 100 Septic System Upgrades	$1,800,000	1,934	$931	To be determined	To be determined
52	North IRL 586 Septic System Upgrades	$10,548,000	13,857	$761	To be determined	To be determined
53	Central IRL 939 Septic System Upgrades	$16,900,485	22,190	$762	To be determined	To be determined
-	**Stormwater Projects**	-	-	-	-	-
-	Banana River Lagoon 68 Basin Projects	$14,407,164	63,789	$226	8,421	$1,711
13	Central Boulevard Baffle Box	$34,700	481	$72	14	$2,479
16	Gleason Park Reuse	$4,224	48	$88	9	$469
64	Stormwater Low Impact Development Convair Cove 1 – Blakey Boulevard	$4,650	30	$155	3	$1,550
65	Stormwater Low Impact Development Convair Cove 2- Dempsey Drive	$4,495	29	$155	3	$1,498
66	Big Muddy at Cynthia Baffle Box	$41,695	269	$155	48	$869
66b	Big Muddy at Cynthia Baffle Box Expansion	$25,837	167	$155	10	$2,584
85	Basin 1304 Bioreactor	$90,000	958	$94	127	$709
128	Jackson Court Stormwater Treatment Facility	$8,266	56	$148	8	$1,033
179	Lori Laine Basin Pipe Improvement Project	$17,525	117	$150	21	$835
-	North IRL 96 Basin Projects	$22,936,200	118,696	$193	15,673	$1,463
18	Denitrification Retrofit of Johns Road Pond	$105,512	1,199	$88	To be determined	To be determined
14	Church Street Type II Baffle Box	$88,045	937	$94	135	$652
19	St. Teresa Basin Treatment	$272,800	3,100	$88	459	$594
20	South Street Basin Treatment	$86,856	987	$88	156	$557
21	La Paloma Basin Treatment	$208,296	2,367	$88	346	$602
22	Kingsmill-Aurora Phase Two	$367,488	4,176	$88	814	$451
23	Denitrification Retrofit of Huntington Pond	$104,720	1,190	$88	To be determined	To be determined
24	Denitrification Retrofit of Flounder Creek Pond	$75,328	856	$88	To be determined	To be determined
34	Cliff Creek Baffle Box	$347,781	3,952	$88	797	$436
35	Thrush Drive Baffle Box	$322,200	3,661	$88	773	$417

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
69	Apollo/GA Baffle Box	$297,522	3,381	$88	479	$621
89	Basin 1298 Bioreactor	$86,198	917	$94	116	$743
90	Johns Road Pond Biosorption Activated Media	$23,030	245	$94	37	$622
91	Burkholm Road Biosorption Activated Media	$64,390	685	$94	104	$619
92	Carter Road Biosorption Activated Media	$62,510	665	$94	101	$619
93	Wiley Avenue Biosorption Activated Media	$82,735	954	$87	144	$575
94	Broadway Pond Biosorption Activated Media	$42,864	456	$94	69	$621
95	Cherry Street Baffle Box	$92,120	980	$94	174	$529
96	Spring Creek Baffle Box	$99,358	1,057	$94	232	$428
97	Titusville High School Baffle Box	$111,813	1,190	$94	166	$674
98	Coleman Pond Managed Aquatic Plant System	$11,438	1,240	$9	198	$58
110	Osprey Plant Pond Managed Aquatic Plant Systems	$60,000	606	$99	88	$682
117	Basin 10 County Line Road Woodchip Bioreactor	$72,773	597	$122	90	$809
118	Basin 26 Sunset Road Serenity Park Woodchip Bioreactor	$73,810	605	$122	92	$802
119	Basin 141 Irwin Avenue Woodchip Bioreactor	$69,174	567	$122	86	$804
120	Draa Field Pond Managed Aquatic Plant Systems	$31,281	256	$122	38	$823
122	Basin 22 Hunting Road Serenity Park Woodchip Bioreactor	$40,077	329	$122	50	$802
124	Floating Wetlands to Existing Stormwater Ponds	$1,497	12	$125	3	$499
125	Diamond Square Stormwater Pond	$10,383	85	$122	23	$451
127	Basin 5 Dry Retention	$16,680	113	$148	18	$927
129	Forrest Avenue 72-inch Outfall Baseflow Capture/Treatment	$13,956	94	$148	12	$1,163
169	Sherwood Park Stormwater Quality Project	$99,708	1,762	$57	670	$149
174	St. Johns 2 Baffle Box	$243,070	1,992	$122	611	$398
175	High School Baffle Box	$144,326	1,183	$122	319	$452
176	Funeral Home Baffle Box	$58,682	481	$122	129	$455
177	North and South Lakemont Ponds Floating Wetlands	$13,054	107	$122	25	$522
178	Marina B Managed Aquatic Plant Systems	$6,670	55	$121	7	$953
-	Central IRL 8 Basin Projects	$3,258,500	19,832	$164	2,617	$1,245
15	Bayfront Stormwater Project	$30,624	348	$88	83	$369
67	Grant Place Baffle Box	$82,481	937	$88	193	$427
68	Crane Creek/M-1 Canal Flow Restoration	$2,033,944	23,113	$88	2,719	$748
87	Fleming Grant Biosorption Activated Media	$56,588	602	$94	91	$622
88	Espanola Baffle Box	$105,186	1,119	$94	148	$711
121	Basin 2258 Babcock Road Woodchip Bioreactor	$50,203	412	$122	62	$810

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
123	Ray Bullard Water Reclamation Facility Stormwater Management Area	$160,674	1,317	$122	400	$402
-	**Muck Removal**	-	-	-	-	-
2016-10a	Port Canaveral South	$14,700,000	35,382	$415	1,925	$7,636
2016-5a	Pineda Banana River Lagoon	$6,825,000	15,033	$454	686	$9,949
2016-11a	Patrick Air Force Base	$7,175,000	6,497	$1,104	382	$18,783
168a	Cocoa Beach Golf	$21,350,000	29,694	$719	2,058	$10,374
41a	Grand Canal Muck	$2,440,971	10,185	$240	1,358	$1,797
42a	Sykes Creek Muck	$4,705,428	19,635	$240	2,618	$1,797
70a	Cocoa Beach Muck Dredging – Phase III	$1,376,305	4,095	$336	780	$1,764
71	Merritt Island Muck Removal – Phase 1	$7,733,517	8,085	$957	1,540	$5,022
72a	Muck Removal of Indian Harbour Beach Canals	$3,631,815	3,780	$961	720	$5,044
101	Cocoa Beach Muck Dredging Phase II-B	$5,917,650	6,300	$939	840	$7,045
144	Satellite Beach Muck Dredging	$1,884,225	3,885	$485	518	$3,638
2016-06a	Titusville Railroad West	$3,150,000	14,406	$219	588	$5,357
2016-07a	National Aeronautics and Space Administration Causeway East	$9,975,000	21,872	$456	1,047	$9,527
2016-04a	Rockledge A	$4,375,000	7,581	$577	825	$5,303
2016-08a	Titusville Railroad East	$4,025,000	5,393	$746	227	$17,731
54a	Eau Gallie Northeast	$8,750,000	10,476	$835	1,482	$5,904
2016-3a	Muck Re-dredging in Turkey Creek	$137,329	5,691	$24	221	$621
-	**Treatment of Interstitial Water**	-	-	-	-	-
2016-10b	Port Canaveral South	$2,134,419	42,688	$50	3,887	$549
2016-5b	Pineda Banana River Lagoon	$990,980	19,820	$50	1,804	$549
2016-11b	Patrick Air Force Base	$1,041,800	20,836	$50	1,897	$549
168b	Cocoa Beach Golf	$3,013,100	99,098	$30	9,022	$334
41b	Grand Canal Interstitial	$15,579,397	89,025	$175	To be determined	To be determined
42b	Sykes Creek Interstitial	$11,248,704	64,278	$175	To be determined	To be determined
72b	Muck Interstitial Water Treatment for Indian Harbour Beach Canals	$5,483,600	27,418	$200	To be determined	To be determined
113	Satellite Beach Interstitial Water Treatment	$3,057,756	29,978	$102	3,059	$1,000
2016-06b	Titusville Railroad West	$457,375	9,148	$50	833	$549
2016-07c	National Aeronautics and Space Administration Causeway East	$1,448,355	28,967	$50	2,637	$549
2016-04b	Rockledge A	$635,244	12,705	$50	1,157	$549
2016-08b	Titusville Railroad East	$584,424	11,688	$50	1,064	$549

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
54b	Eau Gallie Northeast	$1,270,487	25,410	$50	2,313	$549
2016-3b	Muck Interstitial Water Treatment for Turkey Creek	Included in muck project	Not applicable	Not applicable	688	Not applicable
-	**Vegetation Harvesting**	-	-	-	-	-
111	Draa Field Vegetation Harvesting	$50,000	574	$87	To be determined	To be determined
112	County Wide Stormwater Pond Harvesting	$14,000	140	$100	28	$500
171	Mechanical Aquatic Vegetation Harvesting	$1,011,976	16,636	$61	1,664	$608
172	Horseshoe Pond Vegetative Harvesting	$8,140	74	$110	7	$1,163
173	North and South Lakemont Ponds Vegetation Harvesting	$1,980	18	$110	4	$495
-	**Oyster Bars**	-	-	-	-	-
2016-55	Banana River Lagoon County Oyster Bars	$3,151,051	7,986	$395	200	$15,755
75	Marina Isles Oyster Bar	$26,700	60	$445	20	$1,335
76	Bettinger Oyster Bar	$10,680	24	$445	8	$1,335
78a	McNabb Park Oyster Bar	$34,056	72	$473	24	$1,419
79	Gitlin Oyster Bar	$16,020	36	$445	12	$1,335
104	Brevard Zoo Banana River Oyster Project	$583,020	1,476	$395	37	$15,757
141	Brevard Zoo Banana River Oyster Project 2	$264,800	662	$400	17	$15,576
143	Brevard Zoo Oyster Reef Adjustments Banana River	$12,800	32	$400	1	$12,800
188	Brevard Zoo Banana River Oyster Project 3	$56,771	143	$397	4	$14,193
2016-56	North IRL County Oyster Bars	$2,935,159	7,439	$395	186	$15,780
83	Bomalaski Oyster Bar	$8,900	20	$445	7	$1,271
106	Brevard Zoo North IRL Oyster Project	$341,280	864	$395	22	$15,513
139	Brevard Zoo North IRL Oyster Project 2	$336,400	841	$400	21	$16,019
142	Brevard Zoo Oyster Reef Adjustments North IRL	$27,200	68	$400	2	$13,600
184	Brevard Zoo North Indian River Lagoon Oyster Project 3	$419,232	1,056	$397	26	$16,124
186	Brevard Zoo North Indian River Lagoon Individual Oyster Project	$173,092	436	$397	11	$15,736
2016-57	Central IRL County Oyster Bars	$471,137	1,194	$395	30	$15,705
80	Coconut Point/Environmentally Endangered Lands Oyster Bar	$45,120	96	$470	2	$22,560
81	Wexford Oyster Bar	$31,150	70	$445	24	$1,298
82a	Riverview Park Oyster Bar	$108,790	230	$473	78	$1,395
73	Riverview Senior Resort Oyster Bar	$30,304	77	$394	2	$15,152
105	Brevard Zoo Central IRL Oyster Project	$161,160	408	$395	10	$16,116
140	Brevard Zoo Central IRL Oyster Project 2	$270,800	677	$400	17	$15,929

Project Number	Project	Save Our Lagoon Project Cost	TN Reductions (lbs/yr)	Cost per Pound per Year of TN	TP Reductions (lbs/yr)	Cost per Pound per Year of TP
185	Brevard Zoo Central Indian River Lagoon Tributary Pilot Oyster Project	$230,657	581	$397	15	$15,377
187	Brevard Zoo Central Indian River Lagoon Oyster Project 3	$86,546	218	$397	5	$17,309
-	**Planted Shorelines**	-	-	-	-	-
77a	Cocoa Beach Country Club Planted Shoreline	$16,080	67	$240	23	$699
78b	McNabb Park Planted Shoreline	$5,760	24	$240	8	$720
102	Brevard Zoo Banana River Plant Project	$3,120	13	$240	4	$780
132	Brevard Zoo Banana River Plant Project 2	$480	2	$240	1	$480
182	Newfound Harbor Drive	$1,680	7	$240	2	$840
103	Brevard Zoo North IRL Plant Project	$720	3	$240	1	$720
129	Brevard Zoo North IRL Plant Project 2	$9,840	41	$240	14	$703
180	Scottsmoor Impoundment	$10,560	44	$240	15	$704
181	Riveredge	$4,080	17	$240	6	$680
183	Brevard Zoo North Indian River Lagoon Plant Project 3	$960	4	$240	1	$960
77b	Lagoon House Shoreline Restoration Planting	$24,000	100	$240	34	$706
82b	Riverview Park Planted Shoreline	$18,480	77	$240	26	$711
131	Brevard Zoo Central IRL Plant Project	$1,920	8	$240	3	$640
133	Fisherman's Landing	$4,800	20	$240	7	$686
135	Rotary Park	$4,800	20	$240	7	$686
-	**Clam Restoration**	-	-	-	-	-
194	Aquaculture Stimulus Program	$60,000	1,000	$60	To be determined	To be determined
-	**Projects Monitoring**	**$10,000,000**	-	-	-	-
-	**Contingency**	**$20,258,580**	-	-	-	-
-	**Inflation**	**$57,065,372**	-	-	-	-
	Total	***$488,855,173***	***1,272,347***	***$384 (average)***	***105,125***	***$4,650 (average)***

Table 6-9: Timeline for Funding Needs (Table 46 in the Original Save Our Indian River Lagoon Project Plan)

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
Public Education	-	-	-	-	-	-	-	-	-	-	-
Fertilizer Management	-	Year 1 of Program*	Year 2 of Program*	Year 3 of Program*	Year 4 of Program	Year 5 of Program	Year 6 of Program	Year 7 of Program	Year 8 of Program	Year 9 of Program	Year 10 of Program
$625,000	-	$0	$120,951	$49,477	$59,096	$59,096	$100,000	$59,095	$59,095	$59,095	$59,095
Grass Clippings	-	Year 1 of Program*	Year 2 of Program*	Year 3 of Program*	Year 4 of Program	Year 5 of Program	Year 6 of Program	Year 7 of Program	Year 8 of Program	Year 9 of Program	Year 10 of Program
$200,000	-	$0	$20,000	$0	$28,000	$28,000	$28,000	$28,000	$28,000	$20,000	$20,000
Septic System Maintenance	-	Year 1 of Program*	Year 2 of Program*	Year 3 of Program*	Year 4 of Program	Year 5 of Program	Year 6 of Program	Year 7 of Program	Year 8 of Program	Year 9 of Program	Year 10 of Program
$300,000	-	$0	$48,380	$49,245	$28,911	$28,911	$28,911	$28,911	$28,911	$28,910	$28,910
Oyster Gardening	-	-	-	Year 1 of Program*	Year 2 of Program	-	-	-	-	-	-
$300,000	-	-	-	$150,000	$150,000	-	-	-	-	-	-
WWTF Upgrades	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	-	Cocoa Beach*	-	-	-	-	-	-	-	-
$945,000	-	-	$945,000	-	-	-	-	-	-	-	-
North IRL	-	-	-	Titusville Osprey Design and Permitting	Titusville Osprey Design and Start Construction	Titusville Osprey Construction	-	-	-	-	-
$8,000,000	-	-	-	$1,000,000	$3,000,000	$4,000,000	-	-	-	-	-
North IRL	-	-	-	-	Osprey Nutrient Upgrade Phase 2	-	-	-	-	-	-
$300,000	-	-	-	-	$300,000	-	-	-	-	-	-
Central IRL	-	Palm Bay Permit and Engineering	Palm Bay Construction	Palm Bay Construction	-	-	-	-	-	-	-
$3,636,900	-	$200,000	$1,200,000	$2,236,900	-	-	-	-	-	-	-
Central IRL	-	-	-	Melbourne Grant Street	-	-	-	-	-	-	-
$6,769,500	-	-	-	$6,769,500	-	-	-	-	-	-	-
Central IRL	-	-	-	Ray Bullard Biological Nutrient Removal	-	-	-	-	-	-	-
$4,260,000	-	-	-	$4,260,000	-	-	-	-	-	-	-
Rapid Infiltration Basin/ Sprayfield Upgrades	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	-	-	-	-	-	-	Cape Canaveral Air Force Station	-	-	-
$5,227,200	-	-	-	-	-	-	-	$5,227,200	-	-	-
North IRL	-	-	-	-	Port St John	-	-	-	-	-	-
$980,100	-	-	-	-	$980,100	-	-	-	-	-	-
North IRL	-	-	-	-	Canebreaker Condo	-	-	-	-	-	-
$36,000	-	-	-	-	$36,000	-	-	-	-	-	-
Central IRL	Long Point*	-	-	-	-	-	-	-	-	-	-
$22,207	$22,207	-	-	-	-	-	-	-	-	-	-
Package Plant Connections	-	-	-	-	-	-	-	-	-	-	-
North IRL	-	-	-	-	Oak Point	-	-	-	-	-	-
$279,000	-	-	-	-	$279,000	-	-	-	-	-	-
Central IRL	-	-	-	-	-	South Shores	-	-	-	-	-
$1,301,154	-	-	-	-	-	$1,301,154	-	-	-	-	-
Central IRL	-	-	-	-	-	-	River Grove	-	-	-	-
$1,004,640	-	-	-	-	-	-	$1,004,640	-	-	-	-
Sewer Laterals	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	-	-	-	Satellite Beach Smoke Testing and Countywide Repairs	-	-	-	-	-	-
$840,000	-	-	-	-	$840,000	-	-	-	-	-	-
North IRL	-	-	Titusville Osprey Basin	-	-	-	-	-	-	-	-
$200,000	-	-	$200,000	-	-	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
North IRL	-	-	-	Merritt Island Lateral Smoke Testing	-	-	-	-	-	-	-
$250,000	-	-	-	$250,000	-	-	-	-	-	-	-
Central IRL	-	-	-	Barefoot Bay Lateral Smoke Testing	-	-	-	-	-	-	-
$90,000	-	-	-	$90,000	-	-	-	-	-	-	-
Central IRL	-	-	-	South Beaches Lateral Smoke Testing	-	-	-	-	-	-	-
$200,000	-	-	-	$200,000	-	-	-	-	-	-	-
Septic Removal	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	Sykes M Engineering	-	Sykes Creek M	-	-	-	-	-	-	-	-
$1,868,832	$250,000	-	$1,618,832	-	-	-	-	-	-	-	-
Banana River Lagoon	-	Sykes Creek N	-	-	-	-	-	-	-	-	-
$2,603,016	-	$2,603,016	-	-	-	-	-	-	-	-	-
Banana River Lagoon	Sykes T Engineering	-	-	Sykes Creek T	-	-	-	-	-	-	-
$4,939,056	$250,000	-	-	$4,689,056	-	-	-	-	-	-	-
Banana River Lagoon	-	-	-	-	South Banana B Engineering	South Banana B	-	-	-	-	-
$1,368,252	-	-	-	-	$275,000	$1,093,252	-	-	-	-	-
Banana River Lagoon	-	-	-	Quick Connects	Quick Connects	Quick Connects	Quick Connects	-	-	-	-
$1,908,000	-	-	-	$190,800	$572,400	$572,400	$572,400	-	-	-	-
Banana River Lagoon	-	-	-	-	Merritt Island C Engineering	Merritt Island C	Merritt Island C	-	-	-	-
$1,580,000	-	-	-	-	$145,000	$717,500	$717,500	-	-	-	-
Banana River Lagoon	-	-	-	-	Merritt Island F Engineering	-	Merritt Island F	-	-	-	-
$1,100,000	-	-	-	-	$100,000	-	$1,000,000	-	-	-	-
Banana River Lagoon	-	-	-	-	Sykes Creek R Engineering	-	-	Sykes Creek R	-	-	-
$3,500,000	-	-	-	-	$320,000	-	-	$3,180,000	-	-	-
Banana River Lagoon	-	-	-	-	Merritt Island G Engineering	-	-	-	-	Merritt Island G	-
$16,617,000	-	-	-	-	$1,650,000	-	-	-	-	$14,967,000	-
Banana River Lagoon	-	-	-	-	North Merritt Island E Engineering	-	North Merritt Island E	-	-	-	-
$3,635,000	-	-	-	-	$727,000	-	$2,908,000	-	-	-	-
North IRL	South Central C Engineering	South Central C	-	-	South Central C	-	-	-	-	-	-
$6,600,000	$450,000	$4,222,080	-	-	$1,927,920	-	-	-	-	-	-
North IRL	Breeze Swept*	-	-	-	-	-	-	-	-	-	-
$880,530	$880,530	-	-	-	-	-	-	-	-	-	-
North IRL	Merritt Island Redevelopment Agency	-	-	-	-	-	-	-	-	-	-
$320,000	$320,000	-	-	-	-	-	-	-	-	-	-
North IRL	-	-	Riverside Drive	-	-	-	-	-	-	-	-
$265,960	-	-	$265,960	-	-	-	-	-	-	-	-
North IRL	-	-	Cocoa K	-	-	-	-	-	-	-	-
$1,201,392	-	-	$1,201,392	-	-	-	-	-	-	-	-
North IRL	-	-	Roxy Avenue	-	-	-	-	-	-	-	-
$88,944	-	-	$88,944	-	-	-	-	-	-	-	-
North IRL	-	-	-	Cocoa J	-	-	-	-	-	-	-
$3,136,968	-	-	-	$3,136,968	-	-	-	-	-	-	-
North IRL	-	-	-	Rockledge	-	-	-	-	-	-	-
$500,580	-	-	-	$500,580	-	-	-	-	-	-	-
North IRL	-	-	-	Titusville A-G	-	-	-	-	-	-	-
$1,201,392	-	-	-	$1,201,392	-	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
North IRL	-	-	-	-	-	-	-	Titusville H	-	-	-
$1,168,020	-	-	-	-	-	-	-	$1,168,020	-	-	-
North IRL	-	-	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	-
$6,018,000	-	-	$300,900	$300,900	$902,700	$902,700	$902,700	$902,700	$902,700	$902,700	-
North IRL	-	-	-	-	South Central D (Brevard) Engineering	South Central D (Brevard)	-	-	-	-	-
$4,774,500	-	-	-	-	$955,000	$3,819,500	-	-	-	-	-
North IRL	-	-	-	-	-	-	South Central D (Melbourne)	-	-	-	-
$265,500	-	-	-	-	-	-	$265,500	-	-	-	-
North IRL	-	-	-	-	South Central A Engineering	South Central A	-	-	-	-	-
$3,370,572	-	-	-	-	$675,000	$2,695,572	-	-	-	-	-
North IRL	-	-	-	-	-	-	South Beaches A	-	-	-	-
$1,234,764	-	-	-	-	-	-	$1,234,764	-	-	-	-
North IRL	-	-	-	-	-	-	South Central F	-	-	-	-
$1,701,972	-	-	-	-	-	-	$1,701,972	-	-	-	-
North IRL	-	-	-	South Beaches O	-	-	-	-	-	-	-
$133,488	-	-	-	$133,488	-	-	-	-	-	-	-
North IRL	-	-	-	South Beaches P	-	-	-	-	-	-	-
$500,580	-	-	-	$500,580	-	-	-	-	-	-	-
North IRL	-	-	-	-	-	-	-	Melbourne	-	-	-
$867,672	-	-	-	-	-	-	-	$867,672	-	-	-
North IRL	-	-	-	-	Sharpes A Engineering	-	-	-	Sharpes A	-	-
$6,207,192	-	-	-	-	$1,245,000	-	-	-	$4,962,192	-	-
North IRL	-	-	-	-	-	-	-	-	-	Rockledge Zone B	-
$5,339,520	-	-	-	-	-	-	-	-	-	$5,339,520	-
North IRL	-	-	-	-	Sharpes B Engineering	-	-	-	Sharpes B	-	-
$4,038,000	-	-	-	-	$810,000	-	-	-	$3,228,000	-	-
North IRL	-	-	-	-	Cocoa C Engineering	-	-	-	-	Cocoa C	-
$5,248,500	-	-	-	-	$1,050,000	-	-	-	-	$4,198,500	-
North IRL	-	-	-	-	Bowers	-	-	-	-	-	-
$147,000	-	-	-	-	$147,000	-	-	-	-	-	-
North IRL	-	-	-	-	Kent and Villa Espana	-	-	-	-	-	-
$710,000	-	-	-	-	$710,000	-	-	-	-	-	-
Central IRL	-	-	-	-	Micco Phases I & II	-	-	-	-	-	-
$2,239,500	-	-	-	-	$2,239,500	-	-	-	-	-	-
Central IRL	Hoag	-	-	-	-	-	-	-	-	-	-
$86,031	$86,031	-	-	-	-	-	-	-	-	-	-
Central IRL	Pennwood	-	-	-	-	-	-	-	-	-	-
$40,632	$40,632	-	-	-	-	-	-	-	-	-	-
Central IRL	-	-	-	-	Palm Bay B	-	-	-	-	-	-
$8,309,628	-	-	-	-	$8,309,628	-	-	-	-	-	-
Central IRL	-	-	-	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	Quick Connects	-
$3,354,000	-	-	-	$254,400	$516,600	$516,600	$516,600	$516,600	$516,600	$516,600	-
Central IRL	-	Sylvan Estates	-	-	-	-	-	-	-	-	-
$1,561,215	-	$1,561,215	-	-	-	-	-	-	-	-	-
Central IRL	-	-	-	-	Palm Bay A	-	-	-	-	-	-
$2,569,644	-	-	-	-	$2,569,644	-	-	-	-	-	-
Central IRL	-	-	-	-	Micco B Engineering	-	Micco B	Micco B	-	-	-
$9,000,000	-	-	-	-	$815,000	-	$5,000,000	$3,185,000	-	-	-
Central IRL	-	-	-	-	Avendia del Rio	-	-	-	-	-	-
$70,000	-	-	-	-	$70,000	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
Septic Upgrades	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	-	-	-	20 Upgrades	20 Upgrades	20 Upgrades	20 Upgrades	20 Upgrades	-	-
$1,800,000	-	-	-	-	$360,000	$360,000	$360,000	$360,000	$360,000	-	-
North IRL	-	-	-	-	80 Upgrades	90 Upgrades	90 Upgrades	90 Upgrades	80 Upgrades	80 Upgrades	76 Upgrades
$10,548,000	-	-	-	-	$1,440,000	$1,620,000	$1,620,000	$1,620,000	$1,440,000	$1,440,000	$1,368,000
Central IRL	-	-	-	2 Upgrades*	75 Upgrades	110 Upgrades	155 Upgrades	155 Upgrades	153 Upgrades	145 Upgrades	144 Upgrades
$16,900,485	-	-	-	$34,485	$1,350,000	$1,980,000	$2,790,000	$2,790,000	$2,754,000	$2,610,000	$2,592,000
Stormwater Projects	-	-	-	-	-	-	-	-	-	-	-
Banana - Cape Canaveral	Central Boulevard Baffle Box*	-	-	-	-	-	-	-	-	-	-
$34,700	$34,700	-	-	-	-	-	-	-	-	-	-
Banana - Indian Harbour Beach	Gleason Park Reuse*	Big Muddy at Cynthia Baffle Box	Big Muddy Expansion	-	-	-	-	-	-	-	-
$71,756	$4,224	$41,695	$25,837	-	-	-	-	-	-	-	-
Banana - Cocoa Beach	-	-	-	-	Convair Cove 1 – Blakey Blvd	-	-	-	-	-	-
$4,650	-	-	-	-	$4,650	-	-	-	-	-	-
Banana - Cocoa Beach	-	-	-	-	Convair Cove 2- Dempsey Drive	-	-	-	-	-	-
$4,495	-	-	-	-	$4,495	-	-	-	-	-	-
Banana - Satellite Beach	-	-	-	Jackson Court	Lori Laine	-	-	-	-	-	-
$25,791	-	-	-	$8,266	$17,525	-	-	-	-	-	-
Banana - Brevard	-	-	Basin 1304 Bioreactor*	-	-	-	-	-	-	-	-
$90,000	-	-	$90,000	-	-	-	-	-	-	-	-
Banana - Brevard	-	-	-	5 Projects	9 Projects	9 Projects	9 Projects	9 Projects	9 Projects	9 Projects	9 Projects
$14,407,164	-	-	-	$955,564	$1,858,400	$3,053,600	$2,529,700	$1,961,300	$1,438,400	$1,300,600	$1,309,600
North IRL - Cocoa	Church Street Type II Baffle Box*	-	-	Floating Wetlands*	North and South Lakemont	-	-	-	-	-	-
$102,596	$88,045	-	-	$1,497	$13,054	-	-	-	-	-	-
North IRL - Cocoa	-	-	-	Diamond Square Pond	-	-	-	-	-	-	-
$10,383	-	-	-	$10,383	-	-	-	-	-	-	-
North IRL - Cocoa	-	-	-	Forrest Avenue Outfall	-	-	-	-	-	-	-
$13,956	-	-	-	$13,956	-	-	-	-	-	-	-
North IRL - Titusville	-	St. Teresa Basin Treatment*	Titusville High School Baffle Box	-	St. Johns 2 Baffle Box	-	-	-	-	-	-
$627,683	-	$272,800	$111,813	-	$243,070	-	-	-	-	-	-
North IRL - Titusville	-	South Street Basin Treatment*	Coleman Pond Managed Aquatic Plant System*	Osprey Plant Managed Aquatic Plant Systems	Marina B Managed Aquatic Plants	-	-	-	-	-	-
$164,964	-	$86,856	$11,438	$60,000	$6,670	-	-	-	-	-	-
North IRL - Titusville	-	La Paloma Basin Treatment*	-	Draa Pond Managed Aquatic Plant Systems	-	-	-	-	-	-	-
$239,577	-	$208,296	-	$31,281	-	-	-	-	-	-	-
North IRL - Melbourne	-	Cliff Creek Baffle Box*	Apollo/GA Baffle Box	-	High School Baffle Box	-	-	-	-	-	-
$789,629	-	$347,781	$297,522	-	$144,326	-	-	-	-	-	-
North IRL - Melbourne	-	Thrush Drive Baffle Box	Cherry Street Baffle Box	-	Funeral Home Baffle Box	-	-	-	-	-	-
$473,002	-	$322,200	$92,120	-	$58,682	-	-	-	-	-	-
North IRL - Melbourne	-	-	Spring Creek Baffle Box	-	-	-	-	-	-	-	-
$99,358	-	-	$99,358	-	-	-	-	-	-	-	-
North IRL - Indialantic	-	-	-	Basin 5 Dry Retention*	-	-	-	-	-	-	-
$16,680	-	-	-	$16,680	-	-	-	-	-	-	-
North IRL - Brevard	-	Kingsmill-Aurora Phase Two	Basin 1298 Bioreactor*	-	-	-	-	-	-	-	-
$453,686	-	$367,488	$86,198	-	-	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
North IRL - Brevard	-	Denitrification Retrofit of Huntington Pond	Johns Road Pond*	Basin 10 County Line Road Bioreactor*	-	-	-	-	-	-	-
$200,523	-	$104,720	$23,030	$72,773	-	-	-	-	-	-	-
North IRL - Brevard	-	Denitrification Retrofit of Flounder Creek Pond	Burkholm Road*	Basin 26 Sunset Road Serenity Park Bioreactor	-	-	-	-	-	-	-
$213,528	-	$75,328	$64,390	$73,810	-	-	-	-	-	-	-
North IRL - Brevard	-	Denitrification Retrofit of Johns Road Pond	Carter Road*	Basin 141 Irwin Avenue Woodchip Bioreactor	-	-	-	-	-	-	-
$237,196	-	$105,512	$62,510	$69,174	-	-	-	-	-	-	-
North IRL - Brevard	-	-	Wiley Avenue	Basin 22 Hunting Road Serenity Park Bioreactor	-	-	-	-	-	-	-
$122,812	-	-	$82,735	$40,077	-	-	-	-	-	-	-
North IRL - Brevard	-	-	Broadway Pond*	-	-	-	-	-	-	-	-
$42,864	-	-	$42,864	-	-	-	-	-	-	-	-
North IRL - Brevard	-	-	-	7 Projects	13 Projects	13 Projects	13 Projects	13 Projects	13 Projects	12 Projects	12 Projects
$22,936,200	-	-	-	$1,026,000	$5,184,600	$3,285,200	$3,070,000	$2,990,800	$2,343,300	$2,505,100	$2,531,200
Central IRL - Palm Bay	Bayfront Stormwater Project*	-	-	-	-	-	-	-	-	-	-
$30,624	$30,624	-	-	-	-	-	-	-	-	-	-
Central IRL - Melbourne	-	-	Grant Place Baffle Box	Ray Bullard Stormwater Management Area	-	-	-	-	-	-	-
$243,155	-	-	$82,481	$160,674	-	-	-	-	-	-	-
Central IRL - Melbourne	-	-	Espanola Baffle Box	-	-	-	-	-	-	-	-
$105,186	-	-	$105,186	-	-	-	-	-	-	-	-
Central - St. Johns River Water Management District	-	-	Crane Creek/M-1 Canal Flow Restoration	-	-	-	-	-	-	-	-
$2,033,944	-	-	$2,033,944	-	-	-	-	-	-	-	-
Central IRL - Brevard	-	-	Fleming Grant*	Basin 2258 Babcock Road Bioreactor	-	-	-	-	-	-	-
$106,791	-	-	$56,588	$50,203	-	-	-	-	-	-	-
Central IRL - Brevard	-	-	-	-	-	2 Projects	2 Projects	2 Projects	1 Project	1 Project	-
$3,258,500	-	-	-	-	-	$603,700	$916,100	$763,300	$716,700	$258,700	-
Vegetation Harvesting	-	-	-	-	-	-	-	-	-	-	-
North IRL - Brevard	-	-	-	County Wide Pond Harvesting	Horseshoe Pond	-	-	-	-	-	-
$22,140	-	-	-	$14,000	$8,140	-	-	-	-	-	-
North IRL - Titusville	-	-	-	Draa Field Vegetation Harvesting	-	-	-	-	-	-	-
$50,000	-	-	-	$50,000	-	-	-	-	-	-	-
North IRL - Cocoa	-	-	-	-	North and South Lakemont Harvesting	-	-	-	-	-	-
$1,980	-	-	-	-	$1,980	-	-	-	-	-	-
Central IRL - Melbourne-Tillman	-	-	-	-	Mechanical Harvesting	-	-	-	-	-	-
$1,011,976	-	-	-	-	$1,011,976	-	-	-	-	-	-
Muck Removal & Interstitial Treatment	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	-	Cocoa Beach Phase III*	Cocoa Beach Ph II-B	-	-	-	-	-	-	-
$7,293,955	-	-	$1,376,305	$5,917,650	-	-	-	-	-	-	-
Banana River Lagoon	-	-	Merritt Island	-	-	-	-	-	-	-	-
$7,733,517	-	-	$7,733,517	-	-	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
Banana River Lagoon	-	-	-	Indian Harbour Beach	Indian Harbour Beach	-	-	-	-	-	-
$9,115,415	-	-	-	$500,000	$8,615,415	-	-	-	-	-	-
Banana River Lagoon	-	-	29% Sykes Creek	-	71% Sykes Creek	-	-	-	-	-	-
$15,954,132	-	-	$5,954,132	-	$10,000,000	-	-	-	-	-	-
Banana River Lagoon	-	-	20% Grand Canal	25% Grand Canal	55% Grand Canal	-	-	-	-	-	-
$18,020,368	-	-	$3,020,368	$5,000,000	$10,000,000	-	-	-	-	-	-
Banana River Lagoon	-	-	-	1% Cocoa Beach Golf	1% Cocoa Beach Golf	8% Cocoa Beach Golf	16% Cocoa Beach Golf	30% Cocoa Beach Golf	-	-	-
$24,363,100	-	-	-	$500,000	$500,000	$3,500,000	$6,863,100	$13,000,000	-	-	-
Banana River Lagoon	-	-	-	-	-	2% Port Canaveral South	25% Port Canaveral South	48% Port Canaveral South	25% Port Canaveral South	-	-
$16,834,419	-	-	-	-	-	$400,000	$4,208,605	$8,017,209	$4,208,605	-	-
Banana River Lagoon	-	-	-	-	-	3% Pineda	47% Pineda	50% Pineda	-	-	-
$7,815,980	-	-	-	-	-	$200,000	$3,707,990	$3,907,990	-	-	-
Banana River Lagoon	-	-	-	-	-	Patrick Air Force Base	-	-	-	-	-
$8,216,800	-	-	-	-	-	$8,216,800	-	-	-	-	-
Banana River Lagoon	-	-	-	Satellite Beach	Satellite Beach	-	-	-	-	-	-
$4,941,981	-	-	-	$500,000	$4,441,981	-	-	-	-	-	-
North IRL	-	-	2% Eau Gallie Northeast	49% Eau Gallie Northeast	49% Eau Gallie Northeast	-	-	-	-	-	-
$10,020,487	-	-	$200,409	$4,910,039	$4,910,039	-	-	-	-	-	-
North IRL	-	1% Titusville East	4% Titusville East	4% Titusville East	21% Titusville East	30% Titusville East	40% Titusville East	-	-	-	-
$4,609,424	-	$46,094	$184,377	$184,377	$967,979	$1,382,827	$1,843,770	-	-	-	-
North IRL	-	1% Titusville West	4% Titusville West	4% Titusville West	21% Titusville West	30% Titusville West	40% Titusville West	-	-	-	-
$3,607,375	-	$36,074	$144,295	$144,295	$757,549	$1,082,212	$1,442,950	-	-	-	-
North IRL	-	1% National Aeronautics and Space Administration East	4% National Aeronautics and Space Administration East	-	25% National Aeronautics and Space Administration East	30% National Aeronautics and Space Administration East	40% National Aeronautics and Space Administration East	-	-	-	-
$11,423,355	-	$114,234	$456,934	-	$2,855,839	$3,427,006	$4,569,342	-	-	-	-
North IRL	-	-	-	4% Rockledge A	48% Rockledge A	48% Rockledge A	-	-	-	-	-
$5,010,244	-	-	-	$200,000	$2,405,122	$2,405,122	-	-	-	-	-
Central IRL	-	Turkey Creek*	-	-	-	-	-	-	-	-	-
$137,329	-	$137,329	-	-	-	-	-	-	-	-	-
Oyster Bars	-	-	-	-	-	-	-	-	-	-	-
Banana - Brevard Zoo	-	Marina Isles*	Brevard Zoo Banana River	Brevard Zoo Banana River Oyster Project 2	Brevard Zoo Banana River Oyster Project 3	-	-	-	-	-	-
$931,291	-	$26,700	$583,020	$264,800	$56,771	-	-	-	-	-	-
Banana - Brevard Zoo	-	Bettinger*	-	Brevard Zoo Oyster Reef Adjustments	-	-	-	-	-	-	-
$23,480	-	$10,680	-	$12,800	-	-	-	-	-	-	-
Banana - Cocoa Beach	-	-	-	-	McNabb	-	-	-	-	-	-
$34,056	-	-	-	-	$34,056	-	-	-	-	-	-
Banana - Brevard Zoo	-	Gitlin*	-	-	-	-	-	-	-	-	-
$16,020	-	$16,020	-	-	-	-	-	-	-	-	-
Banana - Brevard	-	-	-	-	20,923 square feet Oysters	29788.1 square feet Oysters	29788.1 square feet Oysters	29788.1 square feet Oysters	29788.1 square feet Oysters	29788.1 square feet Oysters	29788.1 square feet Oysters
$3,151,051	-	-	-	-	$330,227	$470,138	$470,138	$470,137	$470,137	$470,137	$470,137
North IRL - Brevard Zoo	-	Bomalaski*	Brevard Zoo North IRL	Brevard Zoo North IRL Oyster Project 2	Brevard Zoo North Indian River Lagoon Oyster Project 3	-	-	-	-	-	-
$1,105,812	-	$8,900	$341,280	$336,400	$419,232	-	-	-	-	-	-

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
North IRL - Brevard	-	-	-	-	26,567.4 square feet Oysters	26,567.4 square feet Oysters	26,567.4 square feet Oysters	26,567.4 square feet Oysters	26,567.4 square feet Oysters	26,567.4 square feet Oysters	26,567.4 square feet Oysters
$2,935,159	-	-	-	-	$419,309	$419,309	$419,309	$419,308	$419,308	$419,308	$419,308
North IRL - Brevard Zoo	-	-	-	Brevard Zoo Oyster Reef Adjustments	Brevard Zoo North Indian River Lagoon Individual Oyster Project	-	-	-	-	-	-
$200,292	-	-	-	$27,200	$173,092	-	-	-	-	-	-
Central IRL - Brevard Zoo	-	Coconut Point*	Brevard Zoo Central IRL	Brevard Zoo Central IRL Oyster Project 2	Brevard Zoo Central Indian River Lagoon Oyster Project 3	-	-	-	-	-	-
$563,626	-	$45,120	$161,160	$270,800	$86,546	-	-	-	-	-	-
Central IRL - Melbourne	-	Riverview Park	-	-	-	-	-	-	-	-	-
$108,790	-	$108,790	-	-	-	-	-	-	-	-	-
Central IRL - Brevard Zoo	-	Wexford	-	-	Brevard Zoo Central Indian River Lagoon Tributary Pilot Oyster Project	-	-	-	-	-	-
$261,807	-	$31,150	-	-	$230,657	-	-	-	-	-	-
Central IRL - Brevard	-	Riverview Senior Resort*	-	-	4,264.8 square feet Oysters	4,264.8 square feet Oysters	4,264.8 square feet Oysters	4,264.2 square feet Oysters	4,264.2 square feet Oysters	4,264.2 square feet Oysters	4,264.2 square feet Oysters
$501,441	-	$30,304	-	-	$67,306	$67,306	$67,305	$67,305	$67,305	$67,305	$67,305
Planted Shorelines	-	-	-	-	-	-	-	-	-	-	-
Banana - Marine Resources Council	-	Cocoa Beach*	-	-	Newfound Harbor	-	-	-	-	-	-
$17,694	-	$16,014	-	-	$1,680	-	-	-	-	-	-
Banana - Cocoa Beach	-	-	-	-	McNabb	-	-	-	-	-	-
$5,760	-	-	-	-	$5,760	-	-	-	-	-	-
Banana - Brevard Zoo	-	-	Brevard Zoo Banana River	Brevard Zoo Banana River Plant Project 2	-	-	-	-	-	-	-
$3,600	-	-	$3,120	$480	-	-	-	-	-	-	-
North IRL - Brevard Zoo	-	-	Brevard Zoo North IRL*	Brevard Zoo North IRL Plant Project 2	Brevard Zoo North Indian River Lagoon Plant Project 3	-	-	-	-	-	-
$11,520	-	-	$720	$9,840	$960	-	-	-	-	-	-
North IRL - Marine Resources Council	-	-	-	-	Scottsmoor	-	-	-	-	-	-
$10,560	-	-	-	-	$10,560	-	-	-	-	-	-
North IRL - Marine Resources Council	-	-	-	-	Riveredge	-	-	-	-	-	-
$4,080	-	-	-	-	$4,080	-	-	-	-	-	-
Central IRL - Marine Resources Council	-	Lagoon House*	-	Fisherman's Landing*	-	-	-	-	-	-	-
$28,761	-	$23,961	-	$4,800	-	-	-	-	-	-	-
Central IRL - Melbourne	-	Riverview Park	-	-	-	-	-	-	-	-	-
$18,480	-	$18,480	-	-	-	-	-	-	-	-	-
Central IRL - Brevard Zoo	-	-	-	Brevard Zoo Central IRL Plant Project	-	-	-	-	-	-	-
$1,920	-	-	-	$1,920	-	-	-	-	-	-	-
Central IRL - Marine Resources Council	-	-	-	Rotary Park*	-	-	-	-	-	-	-
$4,800	-	-	-	$4,800	-	-	-	-	-	-	-
Clam Restoration	-	-	-	-	-	-	-	-	-	-	-
All	-	-	-	-	Aquaculture Stimulus	-	-	-	-	-	-
$60,000	-	-	-	-	$60,000	-	-	-	-	-	-
Project Monitoring	Year 0 Monitoring*	Year 1 Monitoring*	Year 2 Monitoring*	Year 3 Monitoring*	Year 4 Monitoring	Year 5 Monitoring	Year 6 Monitoring	Year 7 Monitoring	Year 8 Monitoring	Year 9 Monitoring	Year 10 Monitoring
$10,000,000	$17,105	$165,036	$363,802	$734,338	$1,245,675	$1,245,674	$1,245,674	$1,245,674	$1,245,67	$1,245,674	$1,245,674

Project Name/Total Project Cost	Year 0 (Fiscal Year 2016-2017)	Year 1 (Fiscal Year 2017-2018)	Year 2 (Fiscal Year 2018-2019)	Year 3 (Fiscal Year 2019-2020)	Year 4 (Fiscal Year 2020-2021)	Year 5 (Fiscal Year 2021-2022)	Year 6 (Fiscal Year 2022-2023)	Year 7 (Fiscal Year 2023-2024)	Year 8 (Fiscal Year 2024-2025)	Year 9 (Fiscal Year 2025-2026)	Year 10 (Fiscal Year 2026-2027)
Contingency	-	-	-	-	-	-	-	-	-	-	-
Banana River Lagoon	-	Cocoa Beach Planted*	-	-	-	-	-	-	-	-	-
$66	-	$66	-	-	-	-	-	-	-	-	-
Central IRL	-	Lagoon House Planted*	-	-	-	-	-	-	-	-	-
$39	-	$39	-	-	-	-	-	-	-	-	-
North IRL	-	-	-	Titusville Osprey WWTF*	-	-	-	-	-	-	-
$800,000	-	-	-	$800,000	-	-	-	-	-	-	-
North IRL - Melbourne	-	-	-	-	Sherwood Park	-	-	-	-	-	-
$99,708	-	-	-	-	$99,708	-	-	-	-	-	-
All	Year 0 Contingency	Year 1 Contingency	Year 2 Contingency	Year 3 Contingency	Year 4 Contingency	Year 5 Contingency	Year 6 Contingency	Year 7 Contingency	Year 8 Contingency	Year 9 Contingency	Year 10 Contingency
$20,258,580	$69,833	$539,904	$1,329,482	$2,383,113	$4,637,045	$2,472,679	$2,605,249	$2,638,811	$1,259,446	$1,817,457	$505,561
Inflation	-	Year 1 Inflation	Year 2 Inflation	Year 3 Inflation	Year 4 Inflation	Year 5 Inflation	Year 6 Inflation	Year 7 Inflation	Year 8 Inflation	Year 9 Inflation	Year 10 Inflation
$57,065,372	-	$269,952	$1,346,100	$3,664,780	$9,627,701	$6,498,606	$8,320,821	$9,958,121	$5,501,335	$9,045,957	$2,831,999
$488,855,173	***$2,543,931***	***$12,163,834***	***$32,577,394***	***$55,024,541***	***$107,105,356***	***$58,424,864***	***$63,031,040***	***$65,373,153***	***$31,949,708***	***$47,212,563***	***$13,448,789***

* Completed project with actual Save Our Indian River Lagoon Tax Fund cost.

Appendix A: Funding Needs and Leveraging Opportunities

Brevard County explored a variety of possible mechanisms to fund the Indian River Lagoon (IRL) projects in this plan, including:

- Special Taxing District approved by referendum to allow an ad valorem tax levy and bonds
- Special Act by the legislature allowing ad valorem tax levy by referendum to issue bonds
- Local government surtax (0.5 cent sales tax)
- Altering legislation to allow for Tourist Development Council funding to be used for lagoon restoration
- Municipal Service Taxing Unit/Special District
- Increased stormwater utility assessment

The County placed a referendum on the November 8, 2016 ballot for the 0.5 cent sales tax, and this referendum passed by more than 60% of the vote. The Save Our Indian River Lagoon 0.5 cent sales tax will generate approximately $48.9 million per year. The proposed 1 mill increase would have generated approximately $32 million per year, whereas the proposed increase in 0.5 mill would have only generated $16 million per year. To implement the projects in a timely manner according to the schedule in **Table 6-9**, and to accelerate the projects where possible, the County will seek to use funds generated from the sales tax to leverage matching funding from grants and appropriations and/or pay debt service on bonds. If additional funding is provided through matching funds from other sources, additional projects may be implemented, which would increase the overall plan cost, and/or project timelines may be moved up to allow the benefits of those projects to occur earlier than planned.

Examples of other funding programs (many from Florida Department of Environmental Protection, 2019) are:

- Section 319 grant program – The Florida Department of Environmental Protection administers funds received from United States Environmental Protection Agency to implement projects or programs that reduce nonpoint sources of pollution. Projects or programs must benefit Florida's impaired waters, and local sponsors must provide at least a 40% match or in-kind contribution. Eligible activities include demonstration and evaluation of urban and agricultural stormwater best management practices, stormwater retrofits, and public education.
- State water quality assistance grants – Funding may be available through periodic legislative appropriations to the Florida Department of Environmental Protection. When funds are available, the program prioritizes stormwater construction projects to benefit impaired waters, similar to the Section 319 grant program.
- Water management district funding – Florida's five regional water management districts offer financial assistance for a variety of water-related projects, for water supply development, water resource development, and surface water restoration. Assistance may be provided from ad valorem tax revenues or from periodic legislative appropriations for alternative water supply development, springs restoration, and Surface Water Improvement and Management projects. The amount of funding available, matching requirements, and types of assistance may vary from year to year.
- IRL National Estuary Program – The IRL Council funds projects each year through their work plan process.

- Tourism + Lagoon Grant Program – The Brevard County Tourism Development Council has approved funding for the development of projects that demonstrate a benefit to the health of the IRL and a positive impact to Brevard County for litter control along shorelines and causeways/entryways, restoration and protection of living shorelines, habitat restoration to support fish and wildlife viewing, and waterway destinations and access for improved and sustainable recreational waterway access. Due to revenue shortfalls in 2020, this program has been placed on an indefinite hold.
- Budget Appropriation – The Florida Legislature may solicit applications directly for projects, including water projects, in anticipation of upcoming legislative sessions. This process is an opportunity to secure legislative sponsorship of project funding through the state budget.
- Clean Water State Revolving Fund loan program – This program provides low-interest loans to local governments to plan, design, and build or upgrade wastewater, stormwater, and nonpoint source pollution prevention projects. Discounted assistance for small communities is available. Interest rates on loans are below market rates and vary based on the economic wherewithal of the community. The Clean Water State Revolving Fund is Florida's largest financial assistance program for water infrastructure.
- Florida Resilient Coastlines Program – The Florida Department of Environmental Protection offers technical assistance and funding to coastal communities dealing with increasingly complex flooding, erosion, and habitat shifts.
- Florida Rural Water Association Loan Program – This program provides low-interest bond or bank financing for community utility projects in coordination with the Florida Department of Environmental Protection's State Revolving Fund program. Other financial assistance may also be available.
- Rural Development Rural Utilities Service Guaranteed and Direct Loans and Grants – The United States Department of Agriculture's program provides a combination of loans and grants for water, wastewater, and solid waste projects to rural communities and small incorporated municipalities.
- Small Cities Community Development Block Grant Program – The Florida Department of Economic Opportunity makes funds available annually for water and sewer projects that benefit low- and moderate-income persons.
- State Housing Initiatives Partnership Program – Florida Housing administers the program, which provides funds to local governments as an incentive to create partnerships that produce and preserve affordable homeownership and multifamily housing. The program is designed to provide very low, low, and moderate income families with assistance. Funding may be used for emergency repairs, new construction, rehabilitation, down payment and closing cost assistance, impact fees, construction and gap financing, mortgage buy-downs, acquisition of property for affordable housing, matching dollars for federal housing grants and programs, and homeownership counseling.
- Rural Development Funding – The United States Department of Agriculture provides funds that will cover the repair and maintenance of private septic systems. The amount of funds available, as well as the specific purposes for which grants are intended, changes from year to year.

Appendix B: References

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Appendix C: Seagrasses

Loss of Seagrass

In partnership, the St. Johns River Water Management District, South Florida Water Management District, and Florida Department of Environmental Protection mapped seagrass from aerial imagery taken in 1943 and every two to three years since 1986 (**Figure C-1**). Through 2009, the areal footprint of seagrass generally expanded, with some areas nearing their targets, which are benchmarks to evaluate the success of reducing nutrient loads to the Indian River Lagoon (IRL) system. Unfortunately, the areal extent of seagrass in the IRL began to decline in 2011 where mapping documented a loss of almost 43% of the acreage present in 2009. Most of this loss occurred in the reaches adjacent to Brevard County, with extensive losses in Banana River Lagoon (24,000 to 3,000 acres or an 88% reduction) and the IRL down to Sebastian Inlet (50,000 to 20,000 acres or a 60% reduction). The losses occurred during a bloom of phytoplankton (single-celled algae) that reached unprecedented concentrations for a record duration as indicated by concentrations of chlorophyll-*a* (**Figure C-2**). Beyond the shallowest water, the bloom effectively reduced the amount of light reaching seagrasses below what they required for survival. Additional intense blooms exacerbated the situation.

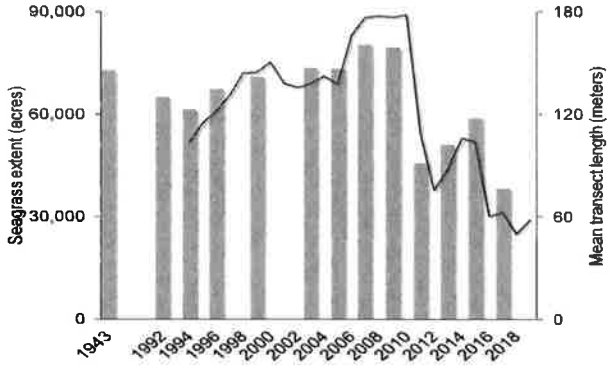


Figure C-1: Mean Areal Extent of Seagrass and Mean Length of Transects

Figure C-1 Long Description

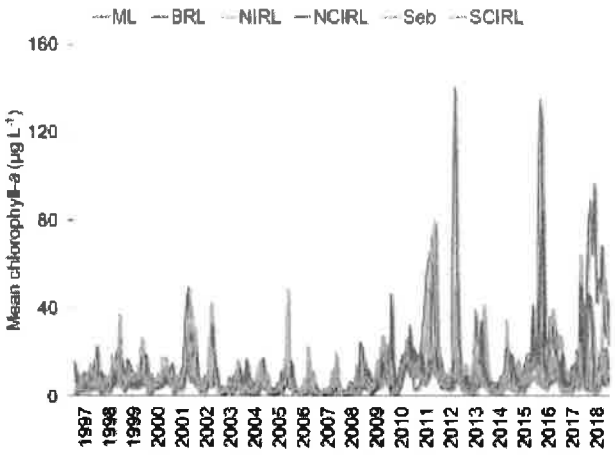
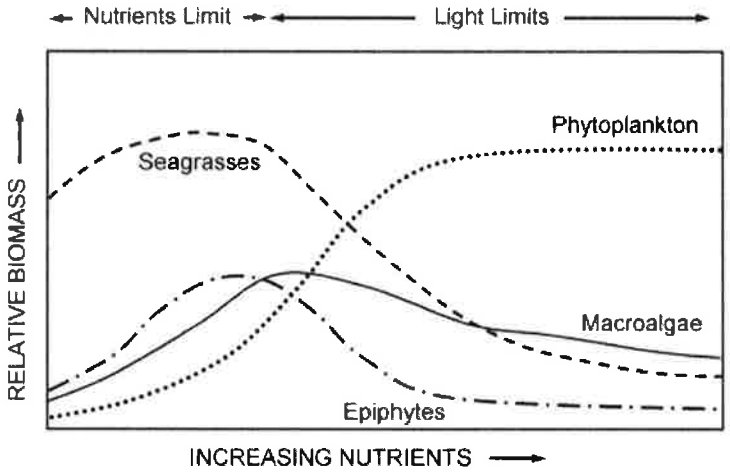


Figure C-2: Mean Chlorophyll-*a* Concentrations

Figure C-2 Long Description

Since 2011, some seagrass have returned. In the IRL along Brevard County, about 9,000 acres have returned or about 30% of the 30,000 acres that were lost. In addition, there has been a similar amount of recovery in Banana River Lagoon (6,000 acres returned out of 21,000 lost or about 30% recovery). Recovery has been hampered by further blooms that include a brown tide (*Aureoumbra lagunensis*) bloom in 2016, whose effects will be apparent in maps produced from digital photography acquired in 2017. The prognosis is not good because the percentage cover of seagrass reached 5%, which is a record drop from 30–50% (**Figure C-1**).

Unfortunately, the IRL appears to be following a pattern described for systems that receive increased loads of nutrients (Duarte, 1995; Burkholder et al., 2007). The pattern involves a shift in the composition of the primary producer assemblage, with higher nutrient loads differentially promoting faster growing macroalgae and ultimately phytoplankton (**Figure C-3**). The macroalgae and phytoplankton can exacerbate loss of seagrasses, especially by shading them. Loss of seagrass and macroalgae makes more nutrients available to phytoplankton through decreased competition (Schmidt et al. 2012), and loss of seagrass means that the sediments can be resuspended, which also reduces light penetration. Overall, the change in the system becomes self-perpetuating. Reducing nutrient loads represents a critical first step in efforts to reverse the shift in primary producers. However, a return to the previous areal coverage of seagrass may take some time, especially if too few recruits are available and sediments are too destabilized for colonization.



Note: Adapted from Burkholder et al. 2007

Figure C-3: Conceptual Model Illustrating a Shift in Biomass Among Major Primary Producers with Increasing Nutrient Enrichment

Nutrient Content of Seagrass

Halodule wrightii stores nutrients in its aboveground and belowground biological material or biomass. The biomass of this and other seagrasses changes seasonally, with peak growth of aboveground shoots occurring in April and May and the greatest aboveground biomass recorded during summer. These seasonal changes introduce uncertainty into estimates of nutrient storage, but mean values will suffice for estimating return on investment in the long-term (**Table C-1**). For example, a single shoot of *Halodule wrightii* may contain up to five or more leaves in the summer, whereas in the winter this same shoot may contain only one leaf (Dunton 1996). For this estimate of nutrient content, we will assume that spring-summer growth and fall-winter senescence are equal. Thus, we will focus on our recent estimates of an average

amount of aboveground and belowground biomass or standing stock of *Halodule wrightii* (**Table C-1** and **Table C-2**).

Table C-1: Estimates of Biomass for *Halodule* Species

Location	Total Biomass (grams dry weight per square meter)	Reference
Texas (Laguna Madre)	10–400	Zieman and Zieman, 1989
North Carolina (multiple locations)	22–208	Zieman and Zieman, 1989
South Florida and Tampa Bay	10–300	Zieman and Zieman, 1989
IRL (Fort Pierce Inlet)	124–198	Hefferman and Gibson, 1983
IRL (Grand Harbor/Vero)	45	Hefferman and Gibson, 1983
IRL (Link Port)	20–140	Virnstein unpublished
IRL (Brevard County)	53*	Morris, Chamberlain, and Jacoby unpublished
Texas (Laguna Madre)	10–400	Zieman and Zieman, 1989

* Mean aboveground biomass = 23 grams dry weight meters^{-2} = [(mean percent cover × 30.533) × 0.019]; mean belowground biomass = 30 grams dry weight meters^{-2} = 1.3 × aboveground biomass

Table C-2: Total Biomass in Seagrasses Along Brevard County

Sub-lagoon	Description	Total Biomass (grams dry weight per square meter)
Mosquito Lagoon	Brevard County line to southern end of sub-lagoon	74
Banana River Lagoon	National Aeronautics and Space Administration restricted area	64
Banana River Lagoon	Remainder of Banana River Lagoon	44
IRL	North of State Road 405	51
IRL	State Road 405 to Pineda Causeway	35
IRL	Pineda Causeway to Hog Point	28
IRL	Hog Point to Brevard County line	51
Mean	***Not applicable***	***50***

Duarte (1990) compared nutrient contents of 27 species of seagrass, including *Halodule wrightii*. He determined that nitrogen and phosphorus represent about 2.2% and 0.2% of the dry weight of aboveground and belowground tissue of *Halodule wrightii*, respectively. These values are similar to those calculated during a recent study in the IRL (**Table C-3**). The values can be combined with estimates of biomass to calculate how much nitrogen and phosphorus are sequestered by 100 acres of *Halodule wrightii* on average (**Table C-4**).

Table C-3: Estimates of Nutrient Content for *Halodule wrightii* (percentage of dry weight)

Location	Carbon Above Ground	Nitrogen Above Ground	Phosphorus Above Ground	Carbon Below Ground	Nitrogen Below Ground	Phosphorus Below Ground
BRL-1	29.60	2.02	0.17	30.60	1.24	0.14
BRL-2	30.60	2.36	0.24	29.08	1.47	0.27
BRL-3	29.60	2.66	0.26	28.09	1.48	0.25
IRL-1	31.74	2.39	0.18	31.69	1.42	0.15
IRL-2	30.08	2.56	0.26	30.48	1.74	0.27
IRL-3	28.26	2.08	0.25	23.86	1.36	0.20
Mean	***29.98***	***2.35***	***0.23***	***28.97***	***1.45***	***0.21***

BRL = Banana River Lagoon, IRL = Indian River Lagoon

Table C-4: Average Amount of Nutrients Contained in Seagrass from 1996–2009

Sub-lagoon	Acres	Seagrass (pounds per 100 acres)	Nitrogen (pounds per 100 acres)	Phosphorus (pounds per 100 acres)
Southern Mosquito Lagoon	14,000	45,000	1,000	100
Banana River Lagoon	21,000	45,000	1,000	100
North IRL	19,000	37,000	900	90
Central IRL	7,000	36,000	900	90

Draft Evaluation Criteria for Planting Seagrass

Part of the wisdom accumulated from past seagrass restoration projects is the importance of selecting sites that will support seagrass growth. Key information has been synthesized into an initial guide, with higher scores and more certainty indicating better sites for planting seagrass (**Table C-5**). Please note that the presence of seagrass leads to a lower score based on the premise that natural recruitment represents the most cost-effective option for restoring seagrass. In addition, a high level of uncertainty can suggest targets for further study. This guide can be refined following pilot studies to determine optimal methods for planting seagrass (e.g., type of planting units, use of chemicals to enhance growth, and density of initial planting) and protecting it from disturbance (e.g., grazing, waves, exposure, and low salinity) until it is established.

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Table C-5: Guide for Ranking Potential Seagrass Restoration Sites

Category	Metric	Timeframe	Attributes for Score = 0	Attributes for Score = 2	Attributes for Score = 4	Attributes for Score = 6	Score	Uncertainty (1 = low, 3 = high)
Critical Depth Zone 0.5-0.8 meters below mean sea level	**Width of Critical Depth Zone** (distance perpendicular to shore)	**Recent**	**Very narrow:** < 25 meters wide (< 82 feet)	**Narrow:** 25-50 meters (82-164 feet)	**Moderately wide:** 50-100 meters (164-328 feet)	**Broad:** > 100 meters (> 328 feet)		
Critical Depth Zone 0.5-0.8 meters below mean sea level	**Distance to seagrass** (identified via the most recent map or targeted reconnaissance)	**Recent**	**Continuous seagrass at site and within 1 kilometer (land use code = 9116):** seagrass is a dominant feature (restoration not needed)	**Isolated:** no seagrass within 1 kilometers (0.6 miles) so conditions may be unfavorable	**Discontinuous seagrass at site and within 1 kilometers (land use code = 9113):** seagrass is patchy, so restoration may connect patches	**Seagrass nearby:** seagrass within 0.5-1.0 kilometers (0.3-0.6 miles)		
Critical Depth Zone 0.5-0.8 meters below mean sea level	**Percent cover in Critical Depth Zone** (derived from the closest transect, paired considerations)	**Past** (2000-2009)	**High:** > 30%	**Low:** 10-20%	**Moderate:** 20-30%	**High:** > 30%		
Critical Depth Zone 0.5-0.8 meters below mean sea level	**Percent cover in Critical Depth Zone** (derived from the closest transect, paired considerations)	**Last 3 Years**	**High:** > 10% (restoration not needed)	**Low:** < 10% (restoration may not help)	**Low:** < 10% (restoration may help but ultimate gain is likely limited)	**Low:** < 10% (potentially optimum site for restoration)		
Potential stressors	**Water quality** (salinity and light availability derived from the closest station)	**Last 3 Years**	**Bad:** salinity < 10 anytime and < 18 for ³ 3 consecutive months or annual mean salinity - 1 standard deviation < 17 Secchi depth £ 0.50 meters (1.6 feet) anytime and £ 0.65 meters (2.1 feet) for ³ 3 consecutive months or annual mean Secchi depth - 1 standard deviation £ 0.65 meters	**Poor:** salinity < 18 for 3 consecutive months but never < 12 or annual mean salinity - 1 standard deviation² 17 Secchi depth £ 0.65 meters for < 3 consecutive months but never £ 0.50 meters or annual mean Secchi depth - 1 standard deviation ³ 0.65 meters	**Supportive:** salinity always ³ 18 Secchi depth always > 0.65 meters and may be 0.65-1.0 meters (2.1-3.3 feet) for 3 consecutive months	**Good:** salinity consistently ³ 23 Secchi depth consistently > 1.0 meters		
Potential stressors	**Sediment** (assessed via visits to the site or other current information)	**Present**	**Not supportive:** anoxic and sulfidic near the surface or easily resuspended or moved	**Minimally supportive:** hard bottom (e.g., compact sand or shells), not conducive for growth of rhizomes and roots, porewater may lack nutrients	**Generally supportive:** unconsolidated sediment that holds plants with relatively little resuspension and movement observed, porewater nutrients not limiting	**Fully supportive:** loosely consolidated sediment with firmly anchored plants if present, anoxic and sulfidic layers located below the zone occupied by roots and rhizomes, porewater rich in nutrients		
Potential stressors	**Water movement** (assessed via visits to the site or other current information)	**Present**	**High currents - possible scouring:** frequent and strong currents or waves that may cause ripples in the sediment and uproot new plants	**Moderate to high currents:** currents and waves bend plants, sweep fragments of seagrass away before they can gain a foothold, and cause some resuspension of sediment	**Moderate currents:** plants often stand upright, fragments of seagrass may be trapped, sediment typically not resuspended	**Low currents:** mild currents or waves, sediment not disturbed, no apparent negative effects on any seagrass that is present		
Potential stressors	**Shoreline characteristics** (assessed via visits the site or other current information)	**Present**	**Unnatural shoreline:** Critical Depth Zone in close proximity to urban development, including canals, and a hardened shoreline (e.g., riprap or bulkhead)	**Semi-natural shoreline:** Critical Depth Zone near moderate development and some shoreline is vegetated	**Mostly natural shoreline:** Critical Depth Zone near low to moderate development, most of the shoreline is vegetated shoreline or the site is associated with living shoreline project	**All natural shoreline:** vegetated shoreline with very limited development		
Potential stressors	**Public use** (assessed via visits to the site visits or other current information, including recent aerial photographs)	**Present**	**High use:** Critical Depth Zone adjacent to or within an area with frequent boating, swimming or fishing (e.g., aerial photographs show prop scars)	**Near high use:** Critical Depth Zone within 0.5 kilometers (0.3 miles) of a highly used area	**Not near high use:** Critical Depth Zone more than 0.5 kilometers from a highly used area	**Low use:** no public facilities nearby and limited signs of use		
Potential stressors	**Biota** (assessed via visits to the site or other current information on grazing or physical disturbance)	**Present**	**Heavy use:** site adjacent to deep water or manatee zone, power plant within 10 kilometers (6.2 miles), freshwater nearby, manatees and rays observed frequently, disturbance or grazing evident in > 50% of the area on a weekly-monthly basis	**Moderate use:** power plant > 10 kilometers away, deep water and manatee zones > 0.5 kilometers away, no freshwater nearby, disturbance or grazing evident in < 50% of the area on a monthly basis	**Intermittent use:** disturbance or grazing evident in < 25% of the area on a quarterly basis	**Rare use:** disturbance or grazing hardly evident		
Logistics	**Enhancement or protection** (assessed via visits to the site)	**Present**	**Extensive need:** dense planting required due to absence of seagrass, fencing or caging required due to grazing, other enhancement or protection required, including living shorelines, sediment barriers, wave baffles	**Substantial need:** moderately dense planting required because only 1-2% cover present, fencing or caging required, few additional enhancements or protections required	**Moderate need:** low density planting sufficient because at least 2% cover present, fencing or caging required for a limited time, other enhancements or protections beneficial but not critical	**Limited need:** minimal density planting or no planting required because > 2% cover present and protection from grazing may result in spread of seagrass, no other enhancements or protections required		
Logistics	**Maintenance** (assessed via visits to the site)	**Anticipated**	**High maintenance:** weekly cleaning	**Moderate maintenance:** monthly cleaning	**Low maintenance:** quarterly cleaning	**Minimum maintenance:** maintain as needed		
Logistics	**Staging and accessibility** (assessed via visits to the site)	**Present**	**Very difficult:** substantial impediments that may include boat ramps > 10 kilometer away, soft sediment that is easily disturbed, permitting and access issues	**Moderately difficult:** boat ramp within 10 kilometers, somewhat firm sediment, tractable permitting and access issues	**Relatively simple:** boat ramp nearby and few other issues	**No issues**		
Logistics	**Monitoring** (relevant past, current and future information on water quality and seagrasses available)	**Present**	**No external support:** no sampling of seagrass within 5 kilometers (3.1 miles), nearest water quality station not representative of conditions at the site	**Minimal external support:** seagrass surveyed within 3-5 kilometers (1.9-3.1 miles), water quality station is representative of conditions at the site	**Moderate external support:** seagrass and water quality sampled within 3 kilometers, so both are representative of conditions at the site	**Considerable external support:** seagrasses and water quality sampled at or adjacent to the site		
Total								

Notes:
Optimize potential for success by planting: a) within the Critical Depth Zone (e.g., at 0.6-0.8 meters below mean sea level) with due recognition of tides and annual changes in water levels; or b) during the spring (e.g., late March to May) when water clarity is best, water temperatures are warming, and grazing by fish is relatively low
Scoring: if conditions do not match the attributes provided, then assign a score between the two that are most applicable

Appendix D: Withdrawn Projects

Some of the projects submitted and approved as part of a plan update were determined to be less cost-effective and/or infeasible to implement after further investigation. Stormwater basin delineations were updated in 2019 with some basins merged or renamed in the 2020 Plan Update. Therefore, these projects were removed from the Save Our Indian River Lagoon Project Plan so that the funding could be used for other projects. **Table D-1** lists the projects that have been removed from the plan at the request of the responsible entity.

Table D-1: Summary of Project Withdrawals from the Plan

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2017	Stormwater project in Basin 754	Brevard County	Banana	734	95	$100,000
2017	Stormwater project in Basin 602	Brevard County	Banana	1,068	109	$100,000
2017	Stormwater project in Basin 1434	Brevard County	North IRL	932	112	$125,000
2017	Stormwater project in Basin 1151	Brevard County	North IRL	1,057	141	$125,000
2017	Stormwater project in Basin 1078	Brevard County	North IRL	1,250	187	$125,000
2017	Stormwater project in Basin 1399	Brevard County	North IRL	1,570	256	$125,000
2017	Stormwater project in Basin 1301	Brevard County	North IRL	1,025	154	$125,000
2017	Stormwater project in Basin 1368	Brevard County	North IRL	1,311	200	$125,000
2017	Stormwater project in Basin 408	Brevard County	North IRL	1,179	170	$125,000
2017	Stormwater project in Basin 338	Brevard County	North IRL	1,902	188	$125,000
2017	Stormwater project in Basin 1367	Brevard County	North IRL	1,042	146	$100,000
2017	Stormwater project in Basin 1384	Brevard County	North IRL	923	142	$100,000
2017	Stormwater project in Basin 1318	Brevard County	North IRL	1,124	148	$100,000
2017	Stormwater project in Basin 155	Brevard County	North IRL	1,149	122	$100,000
2017	Stormwater project in Basin 289	Brevard County	North IRL	1,112	223	$100,000
2017	Stormwater project in Basin 193	Brevard County	North IRL	1,316	198	$100,000
2017	Stormwater project in Basin 1441	Brevard County	North IRL	1,034	149	$100,000
2017	Stormwater project in Basin 660	Brevard County	North IRL	844	212	$100,000
2017	Stormwater project in Basin 952	Brevard County	North IRL	1,251	212	$100,000
2018	Holman Road Baffle Box	City of Cape Canaveral	Banana	71	2	$6,248
2018	Center Street Baffle Box	City of Cape Canaveral	Banana	297	9	$26,136
2018	International Drive Baffle Box	City of Cape Canaveral	Banana	443	4	$34,700

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2018	Angel Isles Baffle Box	City of Cape Canaveral	Banana	131	3	$11,528
2018	Cherie Down Park Swale	City of Cape Canaveral	Banana	27	9	$2,376
2018	Norwood Baffle Box Retrofit	City of Palm Bay	Central IRL	1,631	254	$143,528
2018	Victoria Pond	City of Palm Bay	Central IRL	267	42	$23,486
2018	Goode Park	City of Palm Bay	Central IRL	794	121	$69,872
2018	Florin Pond	City of Palm Bay	Central IRL	75	11	$6,600
2018	Airport Boulevard Dry Retrofit	City of Melbourne	North IRL	99	23	$8,718
2018	Nasa Boulevard Pond Retrofit	City of Melbourne	Central IRL	1,097	157	$96,532
2018	General Aviation Drive Retrofit	City of Melbourne	Central IRL	158	10	$13,937
2018	L-1 Canal Bank Stabilization	Brevard County	North IRL	995	383	$87,560
2018	Stormwater project in Basin 979	Brevard County	Banana	3,275	448	$225,000
2018	Stormwater project in Basin 1280	Brevard County	Banana	1,735	236	$175,000
2018	Stormwater project in Basin 1063	Brevard County	Banana	1,235	192	$100,000
2018	Stormwater project in Basin 970	Brevard County	Banana	1,092	185	$100,000
2018	Stormwater project in Basin 995	Brevard County	Banana	1,048	169	$100,000
2018	Stormwater project in Basin 1309	Brevard County	Banana	1,016	152	$100,000
2018	Stormwater project in Basin 754	Brevard County	Banana	734	95	$100,000
2018	Stormwater project in Basin 602	Brevard County	Banana	1,068	109	$100,000
2018	Stormwater project in Basin 1430	Brevard County	North IRL	2,255	335	$175,000
2018	Stormwater project in Basin 327	Brevard County	North IRL	1,999	283	$125,000
2018	Stormwater project in Basin 1582	Brevard County	Central IRL	2,402	443	$200,000
2019	Cocoa Beach Muck Dredging – Phase III Interstitial	City of Cocoa Beach	Banana	2,942	To be determined	$514,809
2019	Indian River Drive Oyster Bar (reduction from 1,900 to 140 feet)	Brevard County	North IRL	422	10	$166,672
2019	Indian River Drive Planted Shoreline (reduction from 1,900 to 140 feet)	Brevard County	North IRL	118	41	$20,620
2019	Stormwater project in Basin 905	Brevard County	Banana	1,143	178	$150,000
2019	Stormwater project in Basin 492	Brevard County	Banana	1,020	117	$100,000
2019	Stormwater project in Basin 522	Brevard County	Banana	795	110	$125,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2019	Stormwater project in Basin 705	Brevard County	Banana	650	95	$100,000
2019	Stormwater project in Basin 821	Brevard County	Banana	627	123	$100,000
2019	Stormwater project in Basin 820	Brevard County	Banana	597	112	$100,000
2019	Stormwater project in Basin 338	Brevard County	North IRL	4,226	188	$125,000
2019	Stormwater project in Basin 155	Brevard County	North IRL	2,553	122	$100,000
2019	Stormwater project in Basin 47	Brevard County	North IRL	1,348	139	$125,000
2019	Stormwater project in Basin 219	Brevard County	North IRL	956	113	$125,000
2020	Cape Canaveral Air Force Station WWTF Upgrade	Cape Canaveral Air Force Station	Banana	25,627	To be determined	$6,000,000
2020	Malabar - Zone B	Brevard County	Central IRL	1,929	Not applicable	$2,135,808
2020	Malabar - Zone A	Brevard County	Central IRL	11,456	Not applicable	$14,349,960
2020	South Beaches - Zone F	Brevard County	Central IRL	70	Not applicable	$100,116
2020	Carver Cove Swale	City of Cape Canaveral	Banana	32	9	$2,816
2020	Cocoa Palms Low Impact Development	City of Cape Canaveral	Banana	13	10	$1,144
2020	M1 Canal Biosorption Activated Media	Brevard County	Central IRL	1,433	191	$66,300
2020	Oliver Oyster Bar	Brevard Zoo	North IRL	116	39	$51,620
2020	Coconut Point/Environmentally Endangered Lands Oyster Bar (reduction from 27,125 square feet to 2,400 square feet)	Brevard Zoo	Central IRL	989	367	$464,830
2020	Turkey Creek Shoreline Restoration – Oysters	City of Palm Bay	Central IRL	309	8	$122,055
2020	Eden Isles Lane Oyster Bar	Brevard Zoo	Banana	49	17	$21,805
2020	Turkey Creek Shoreline Restoration – Planted	City of Palm Bay	Central IRL	104	36	$24,960
2020	Stormwater project in Basin 388	Brevard County	Banana	1,390	138	$100,000
2020	Stormwater project in Basin 451	Brevard County	Banana	1,168	121	$100,000
2020	Stormwater project in Basin 815	Brevard County	Banana	698	113	$100,000
2020	Stormwater project in Basin 829	Brevard County	Banana	630	145	$100,000
2020	Stormwater project in Basin 865	Brevard County	Banana	454	151	$100,000
2020	Stormwater project in Basin 889	Brevard County	Banana	539	85	$100,000
2020	Stormwater project in Basin 901	Brevard County	Banana	1,658	196	$150,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 912	Brevard County	Banana	1,025	34	$100,000
2020	Stormwater project in Basin 929	Brevard County	Banana	304	41	$100,000
2020	Stormwater project in Basin 933	Brevard County	Banana	302	38	$100,000
2020	Stormwater project in Basin 934	Brevard County	Banana	365	42	$100,000
2020	Stormwater project in Basin 938	Brevard County	Banana	424	160	$100,000
2020	Stormwater project in Basin 940	Brevard County	Banana	816	106	$100,000
2020	Stormwater project in Basin 943	Brevard County	Banana	708	90	$100,000
2020	Stormwater project in Basin 944	Brevard County	Banana	614	83	$100,000
2020	Stormwater project in Basin 955	Brevard County	Banana	522	60	$100,000
2020	Stormwater project in Basin 957	Brevard County	Banana	586	53	$100,000
2020	Stormwater project in Basin 958	Brevard County	Banana	164	26	$100,000
2020	Stormwater project in Basin 960	Brevard County	Banana	537	80	$100,000
2020	Stormwater project in Basin 961	Brevard County	Banana	431	57	$100,000
2020	Stormwater project in Basin 963	Brevard County	Banana	2,092	396	$150,000
2020	Stormwater project in Basin 969	Brevard County	Banana	528	78	$100,000
2020	Stormwater project in Basin 973	Brevard County	Banana	2,048	311	$175,000
2020	Stormwater project in Basin 975	Brevard County	Banana	521	75	$100,000
2020	Stormwater project in Basin 977	Brevard County	Banana	558	59	$100,000
2020	Stormwater project in Basin 980	Brevard County	Banana	836	127	$100,000
2020	Stormwater project in Basin 981	Brevard County	Banana	993	179	$100,000
2020	Stormwater project in Basin 982	Brevard County	Banana	642	68	$100,000
2020	Stormwater project in Basin 988	Brevard County	Banana	621	108	$100,000
2020	Stormwater project in Basin 989	Brevard County	Banana	1,030	110	$100,000
2020	Stormwater project in Basin 990	Brevard County	Banana	634	102	$100,000
2020	Stormwater project in Basin 992	Brevard County	Banana	1,244	195	$100,000
2020	Stormwater project in Basin 1000	Brevard County	Banana	277	40	$100,000
2020	Stormwater project in Basin 1001	Brevard County	Banana	401	54	$100,000
2020	Stormwater project in Basin 1010	Brevard County	Banana	374	55	$100,000
2020	Stormwater project in Basin 1014	Brevard County	Banana	333	50	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1016	Brevard County	Banana	920	136	$100,000
2020	Stormwater project in Basin 1018	Brevard County	Banana	389	54	$100,000
2020	Stormwater project in Basin 1026	Brevard County	Banana	1,073	180	$100,000
2020	Stormwater project in Basin 1033	Brevard County	Banana	1,113	152	$100,000
2020	Stormwater project in Basin 1038	Brevard County	Banana	157	25	$100,000
2020	Stormwater project in Basin 1039	Brevard County	Banana	708	104	$100,000
2020	Stormwater project in Basin 1041	Brevard County	Banana	273	47	$100,000
2020	Stormwater project in Basin 1048	Brevard County	Banana	107	20	$100,000
2020	Stormwater project in Basin 1070	Brevard County	Banana	113	12	$100,000
2020	Stormwater project in Basin 1071	Brevard County	Banana	1,082	144	$100,000
2020	Stormwater project in Basin 1082	Brevard County	Banana	264	39	$100,000
2020	Stormwater project in Basin 1098	Brevard County	Banana	341	53	$100,000
2020	Stormwater project in Basin 1104	Brevard County	Banana	701	106	$100,000
2020	Stormwater project in Basin 1117	Brevard County	Banana	282	43	$100,000
2020	Stormwater project in Basin 1120	Brevard County	Banana	313	50	$100,000
2020	Stormwater project in Basin 1121	Brevard County	Banana	186	27	$100,000
2020	Stormwater project in Basin 1125	Brevard County	Banana	307	51	$100,000
2020	Stormwater project in Basin 1133	Brevard County	Banana	562	90	$100,000
2020	Stormwater project in Basin 1142	Brevard County	Banana	534	73	$100,000
2020	Stormwater project in Basin 1152	Brevard County	Banana	245	30	$100,000
2020	Stormwater project in Basin 1159	Brevard County	Banana	134	20	$100,000
2020	Stormwater project in Basin 1167	Brevard County	Banana	180	28	$100,000
2020	Stormwater project in Basin 1175	Brevard County	Banana	394	42	$100,000
2020	Stormwater project in Basin 1183	Brevard County	Banana	272	39	$100,000
2020	Stormwater project in Basin 1188	Brevard County	Banana	166	29	$100,000
2020	Stormwater project in Basin 1198	Brevard County	Banana	365	62	$100,000
2020	Stormwater project in Basin 1220	Brevard County	Banana	396	61	$100,000
2020	Stormwater project in Basin 1223	Brevard County	Banana	561	86	$100,000
2020	Stormwater project in Basin 1225	Brevard County	Banana	122	19	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1231	Brevard County	Banana	300	58	$100,000
2020	Stormwater project in Basin 1248	Brevard County	Banana	306	46	$100,000
2020	Stormwater project in Basin 1250	Brevard County	Banana	188	26	$100,000
2020	Stormwater project in Basin 1251	Brevard County	Banana	448	66	$100,000
2020	Stormwater project in Basin 1262	Brevard County	Banana	443	80	$100,000
2020	Stormwater project in Basin 1265	Brevard County	Banana	743	98	$100,000
2020	Stormwater project in Basin 1270	Brevard County	Banana	187	28	$100,000
2020	Stormwater project in Basin 1296	Brevard County	Banana	241	48	$100,000
2020	Stormwater project in Basin 1302	Brevard County	Banana	172	25	$100,000
2020	Stormwater project in Basin 1303	Brevard County	Banana	166	24	$100,000
2020	Stormwater project in Basin 1305	Brevard County	Banana	119	25	$100,000
2020	Stormwater project in Basin 1310	Brevard County	Banana	583	106	$100,000
2020	Stormwater project in Basin 1311	Brevard County	Banana	104	15	$100,000
2020	Stormwater project in Basin 1314	Brevard County	Banana	170	26	$100,000
2020	Stormwater project in Basin 1317	Brevard County	Banana	1,679	143	$125,000
2020	Stormwater project in Basin 1319	Brevard County	Banana	117	16	$100,000
2020	Stormwater project in Basin 1327	Brevard County	Banana	352	52	$100,000
2020	Stormwater project in Basin 1328	Brevard County	Banana	617	89	$100,000
2020	Stormwater project in Basin 1332	Brevard County	Banana	303	47	$100,000
2020	Stormwater project in Basin 1334	Brevard County	Banana	795	130	$100,000
2020	Stormwater project in Basin 1336	Brevard County	Banana	470	68	$100,000
2020	Stormwater project in Basin 1337	Brevard County	Banana	1,121	186	$100,000
2020	Stormwater project in Basin 1338	Brevard County	Banana	256	37	$100,000
2020	Stormwater project in Basin 1343	Brevard County	Banana	1,388	142	$100,000
2020	Stormwater project in Basin 1346	Brevard County	Banana	189	28	$100,000
2020	Stormwater project in Basin 1350	Brevard County	Banana	1,049	165	$100,000
2020	Stormwater project in Basin 1351	Brevard County	Banana	129	19	$100,000
2020	Stormwater project in Basin 1357	Brevard County	Banana	338	56	$100,000
2020	Stormwater project in Basin 1362	Brevard County	Banana	476	71	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1366	Brevard County	Banana	1,483	242	$100,000
2020	Stormwater project in Basin 1371	Brevard County	Banana	273	39	$100,000
2020	Stormwater project in Basin 1372	Brevard County	Banana	720	113	$100,000
2020	Stormwater project in Basin 1378	Brevard County	Banana	744	104	$100,000
2020	Stormwater project in Basin 2421	Brevard County	Banana	343	49	$100,000
2020	Stormwater project in Basin 83	Brevard County	North IRL	452	61	$100,000
2020	Stormwater project in Basin 100	Brevard County	North IRL	888	115	$100,000
2020	Stormwater project in Basin 105	Brevard County	North IRL	549	72	$100,000
2020	Stormwater project in Basin 212	Brevard County	North IRL	693	89	$100,000
2020	Stormwater project in Basin 228	Brevard County	North IRL	684	131	$100,000
2020	Stormwater project in Basin 262	Brevard County	North IRL	794	126	$100,000
2020	Stormwater project in Basin 263	Brevard County	North IRL	469	65	$100,000
2020	Stormwater project in Basin 288	Brevard County	North IRL	732	78	$100,000
2020	Stormwater project in Basin 289	Brevard County	North IRL	1,112	223	$100,000
2020	Stormwater project in Basin 290	Brevard County	North IRL	1,116	193	$100,000
2020	Stormwater project in Basin 291	Brevard County	North IRL	485	82	$100,000
2020	Stormwater project in Basin 294	Brevard County	North IRL	551	84	$100,000
2020	Stormwater project in Basin 335	Brevard County	North IRL	1,187	206	$100,000
2020	Stormwater project in Basin 353	Brevard County	North IRL	497	86	$100,000
2020	Stormwater project in Basin 354	Brevard County	North IRL	555	115	$100,000
2020	Stormwater project in Basin 392	Brevard County	North IRL	840	155	$100,000
2020	Stormwater project in Basin 408	Brevard County	North IRL	1,179	170	$125,000
2020	Stormwater project in Basin 454	Brevard County	North IRL	1,996	302	$150,000
2020	Stormwater project in Basin 510	Brevard County	North IRL	586	92	$100,000
2020	Stormwater project in Basin 512	Brevard County	North IRL	364	53	$100,000
2020	Stormwater project in Basin 513	Brevard County	North IRL	1,137	183	$100,000
2020	Stormwater project in Basin 544	Brevard County	North IRL	624	98	$100,000
2020	Stormwater project in Basin 568	Brevard County	North IRL	534	85	$100,000
2020	Stormwater project in Basin 578	Brevard County	North IRL	430	68	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 594	Brevard County	North IRL	833	135	$100,000
2020	Stormwater project in Basin 597	Brevard County	North IRL	800	142	$100,000
2020	Stormwater project in Basin 624	Brevard County	North IRL	860	134	$100,000
2020	Stormwater project in Basin 626	Brevard County	North IRL	1,602	193	$150,000
2020	Stormwater project in Basin 644	Brevard County	North IRL	686	94	$100,000
2020	Stormwater project in Basin 660	Brevard County	North IRL	844	212	$100,000
2020	Stormwater project in Basin 677	Brevard County	North IRL	709	136	$100,000
2020	Stormwater project in Basin 751	Brevard County	North IRL	532	121	$100,000
2020	Stormwater project in Basin 759	Brevard County	North IRL	614	98	$100,000
2020	Stormwater project in Basin 796	Brevard County	North IRL	639	98	$100,000
2020	Stormwater project in Basin 805	Brevard County	North IRL	645	94	$100,000
2020	Stormwater project in Basin 806	Brevard County	North IRL	622	100	$100,000
2020	Stormwater project in Basin 827	Brevard County	North IRL	639	96	$100,000
2020	Stormwater project in Basin 838	Brevard County	North IRL	658	135	$100,000
2020	Stormwater project in Basin 840	Brevard County	North IRL	619	84	$100,000
2020	Stormwater project in Basin 862	Brevard County	North IRL	416	72	$100,000
2020	Stormwater project in Basin 871	Brevard County	North IRL	366	53	$100,000
2020	Stormwater project in Basin 884	Brevard County	North IRL	437	68	$100,000
2020	Stormwater project in Basin 889	Brevard County	North IRL	539	85	$100,000
2020	Stormwater project in Basin 890	Brevard County	North IRL	533	110	$100,000
2020	Stormwater project in Basin 894	Brevard County	North IRL	794	116	$100,000
2020	Stormwater project in Basin 896	Brevard County	North IRL	581	123	$100,000
2020	Stormwater project in Basin 902	Brevard County	North IRL	276	35	$100,000
2020	Stormwater project in Basin 903	Brevard County	North IRL	631	88	$100,000
2020	Stormwater project in Basin 920	Brevard County	North IRL	511	87	$100,000
2020	Stormwater project in Basin 921	Brevard County	North IRL	743	96	$100,000
2020	Stormwater project in Basin 922	Brevard County	North IRL	601	107	$100,000
2020	Stormwater project in Basin 938	Brevard County	North IRL	424	160	$100,000
2020	Stormwater project in Basin 939	Brevard County	North IRL	502	71	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 940	Brevard County	North IRL	816	106	$100,000
2020	Stormwater project in Basin 952	Brevard County	North IRL	1,251	212	$100,000
2020	Stormwater project in Basin 960	Brevard County	North IRL	537	80	$100,000
2020	Stormwater project in Basin 962	Brevard County	North IRL	527	75	$100,000
2020	Stormwater project in Basin 980	Brevard County	North IRL	836	127	$100,000
2020	Stormwater project in Basin 985	Brevard County	North IRL	687	99	$100,000
2020	Stormwater project in Basin 987	Brevard County	North IRL	1,099	172	$100,000
2020	Stormwater project in Basin 993	Brevard County	North IRL	611	93	$100,000
2020	Stormwater project in Basin 1002	Brevard County	North IRL	1,181	159	$100,000
2020	Stormwater project in Basin 1016	Brevard County	North IRL	920	136	$100,000
2020	Stormwater project in Basin 1027	Brevard County	North IRL	560	84	$100,000
2020	Stormwater project in Basin 1029	Brevard County	North IRL	685	93	$100,000
2020	Stormwater project in Basin 1032	Brevard County	North IRL	719	115	$100,000
2020	Stormwater project in Basin 1033	Brevard County	North IRL	1,113	152	$100,000
2020	Stormwater project in Basin 1034	Brevard County	North IRL	902	132	$100,000
2020	Stormwater project in Basin 1037	Brevard County	North IRL	533	105	$100,000
2020	Stormwater project in Basin 1039	Brevard County	North IRL	708	104	$100,000
2020	Stormwater project in Basin 1067	Brevard County	North IRL	463	67	$100,000
2020	Stormwater project in Basin 1071	Brevard County	North IRL	1,082	144	$100,000
2020	Stormwater project in Basin 1073	Brevard County	North IRL	428	61	$100,000
2020	Stormwater project in Basin 1076	Brevard County	North IRL	595	91	$100,000
2020	Stormwater project in Basin 1077	Brevard County	North IRL	1,687	289	$150,000
2020	Stormwater project in Basin 1080	Brevard County	North IRL	861	134	$100,000
2020	Stormwater project in Basin 1081	Brevard County	North IRL	1,281	210	$100,000
2020	Stormwater project in Basin 1112	Brevard County	North IRL	1,032	166	$100,000
2020	Stormwater project in Basin 1113	Brevard County	North IRL	416	93	$100,000
2020	Stormwater project in Basin 1124	Brevard County	North IRL	681	99	$100,000
2020	Stormwater project in Basin 1128	Brevard County	North IRL	279	77	$100,000
2020	Stormwater project in Basin 1150	Brevard County	North IRL	476	57	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1151	Brevard County	North IRL	1,057	141	$125,000
2020	Stormwater project in Basin 1172	Brevard County	North IRL	852	123	$100,000
2020	Stormwater project in Basin 1197	Brevard County	North IRL	609	82	$100,000
2020	Stormwater project in Basin 1213	Brevard County	North IRL	904	131	$100,000
2020	Stormwater project in Basin 1214	Brevard County	North IRL	727	84	$100,000
2020	Stormwater project in Basin 1215	Brevard County	North IRL	382	52	$100,000
2020	Stormwater project in Basin 1219	Brevard County	North IRL	512	60	$100,000
2020	Stormwater project in Basin 1220	Brevard County	North IRL	396	61	$100,000
2020	Stormwater project in Basin 1221	Brevard County	North IRL	545	85	$100,000
2020	Stormwater project in Basin 1222	Brevard County	North IRL	888	171	$100,000
2020	Stormwater project in Basin 1224	Brevard County	North IRL	401	111	$100,000
2020	Stormwater project in Basin 1228	Brevard County	North IRL	501	83	$100,000
2020	Stormwater project in Basin 1231	Brevard County	North IRL	300	58	$100,000
2020	Stormwater project in Basin 1233	Brevard County	North IRL	605	101	$100,000
2020	Stormwater project in Basin 1240	Brevard County	North IRL	638	100	$100,000
2020	Stormwater project in Basin 1241	Brevard County	North IRL	584	83	$100,000
2020	Stormwater project in Basin 1244	Brevard County	North IRL	576	78	$100,000
2020	Stormwater project in Basin 1245	Brevard County	North IRL	356	49	$100,000
2020	Stormwater project in Basin 1251	Brevard County	North IRL	448	66	$100,000
2020	Stormwater project in Basin 1253	Brevard County	North IRL	379	54	$100,000
2020	Stormwater project in Basin 1259	Brevard County	North IRL	450	106	$100,000
2020	Stormwater project in Basin 1262	Brevard County	North IRL	443	80	$100,000
2020	Stormwater project in Basin 1273	Brevard County	North IRL	1,964	288	$175,000
2020	Stormwater project in Basin 1291	Brevard County	North IRL	518	79	$100,000
2020	Stormwater project in Basin 1292	Brevard County	North IRL	386	60	$100,000
2020	Stormwater project in Basin 1293	Brevard County	North IRL	461	67	$100,000
2020	Stormwater project in Basin 1294	Brevard County	North IRL	628	94	$100,000
2020	Stormwater project in Basin 1295	Brevard County	North IRL	800	121	$100,000
2020	Stormwater project in Basin 1301	Brevard County	North IRL	1,025	154	$125,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1307	Brevard County	North IRL	431	47	$100,000
2020	Stormwater project in Basin 1312	Brevard County	North IRL	549	120	$100,000
2020	Stormwater project in Basin 1313	Brevard County	North IRL	619	92	$100,000
2020	Stormwater project in Basin 1316	Brevard County	North IRL	557	68	$100,000
2020	Stormwater project in Basin 1318	Brevard County	North IRL	1,124	148	$100,000
2020	Stormwater project in Basin 1324	Brevard County	North IRL	1,422	176	$150,000
2020	Stormwater project in Basin 1330	Brevard County	North IRL	639	89	$100,000
2020	Stormwater project in Basin 1331	Brevard County	North IRL	1,000	159	$100,000
2020	Stormwater project in Basin 1339	Brevard County	North IRL	857	103	$100,000
2020	Stormwater project in Basin 1344	Brevard County	North IRL	459	61	$100,000
2020	Stormwater project in Basin 1348	Brevard County	North IRL	723	102	$100,000
2020	Stormwater project in Basin 1354	Brevard County	North IRL	597	86	$100,000
2020	Stormwater project in Basin 1359	Brevard County	North IRL	887	142	$100,000
2020	Stormwater project in Basin 1361	Brevard County	North IRL	524	79	$100,000
2020	Stormwater project in Basin 1363	Brevard County	North IRL	715	123	$100,000
2020	Stormwater project in Basin 1367	Brevard County	North IRL	1,042	146	$100,000
2020	Stormwater project in Basin 1372	Brevard County	North IRL	720	113	$100,000
2020	Stormwater project in Basin 1378	Brevard County	North IRL	744	104	$100,000
2020	Stormwater project in Basin 1380	Brevard County	North IRL	929	134	$100,000
2020	Stormwater project in Basin 1382	Brevard County	North IRL	622	88	$100,000
2020	Stormwater project in Basin 1384	Brevard County	North IRL	923	142	$100,000
2020	Stormwater project in Basin 1389	Brevard County	North IRL	822	134	$100,000
2020	Stormwater project in Basin 1390	Brevard County	North IRL	612	92	$100,000
2020	Stormwater project in Basin 1391	Brevard County	North IRL	887	142	$100,000
2020	Stormwater project in Basin 1395	Brevard County	North IRL	768	114	$100,000
2020	Stormwater project in Basin 1398	Brevard County	North IRL	449	74	$100,000
2020	Stormwater project in Basin 1401	Brevard County	North IRL	953	147	$100,000
2020	Stormwater project in Basin 1403	Brevard County	North IRL	558	88	$100,000
2020	Stormwater project in Basin 1413	Brevard County	North IRL	528	78	$100,000

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2020	Stormwater project in Basin 1416	Brevard County	North IRL	1,799	229	$150,000
2020	Stormwater project in Basin 1417	Brevard County	North IRL	771	117	$100,000
2020	Stormwater project in Basin 1418	Brevard County	North IRL	832	111	$100,000
2020	Stormwater project in Basin 1423	Brevard County	North IRL	487	73	$100,000
2020	Stormwater project in Basin 1425	Brevard County	North IRL	690	113	$100,000
2020	Stormwater project in Basin 1426	Brevard County	North IRL	720	116	$100,000
2020	Stormwater project in Basin 1428	Brevard County	North IRL	440	65	$100,000
2020	Stormwater project in Basin 1429	Brevard County	North IRL	477	55	$100,000
2020	Stormwater project in Basin 1434	Brevard County	North IRL	932	112	$125,000
2020	Stormwater project in Basin 1435	Brevard County	North IRL	328	43	$100,000
2020	Stormwater project in Basin 1439	Brevard County	North IRL	1,413	183	$175,000
2020	Stormwater project in Basin 1441	Brevard County	North IRL	1,034	149	$100,000
2020	Stormwater project in Basin 1445	Brevard County	North IRL	1,493	198	$175,000
2020	Stormwater project in Basin 1459	Brevard County	North IRL	895	132	$100,000
2020	Stormwater project in Basin 1463	Brevard County	North IRL	1,321	195	$100,000
2020	Stormwater project in Basin 1491	Brevard County	North IRL	641	93	$100,000
2020	Stormwater project in Basin 1498	Brevard County	North IRL	483	74	$100,000
2020	Stormwater project in Basin 2419	Brevard County	North IRL	381	43	$100,000
2020	Stormwater project in Basin 2420	Brevard County	North IRL	450	121	$100,000
2020	Stormwater project in Basin 2421	Brevard County	North IRL	343	49	$100,000
2020	Stormwater project in Basin 1439	Brevard County	Central IRL	1,413	183	$200,000
2020	Stormwater project in Basin 1445	Brevard County	Central IRL	1,493	198	$200,000
2020	Stormwater project in Basin 1470	Brevard County	Central IRL	2,813	452	$200,000
2020	Stormwater project in Basin 1508	Brevard County	Central IRL	2,459	356	$200,000
2020	Stormwater project in Basin 1562	Brevard County	Central IRL	3,314	449	$275,000
2020	Stormwater project in Basin 1615	Brevard County	Central IRL	2,815	390	$200,000
2020	Stormwater project in Basin 1803	Brevard County	Central IRL	2,227	318	$200,000
2020	Stormwater project in Basin 1825	Brevard County	Central IRL	1,896	394	$200,000
2021	Cape Shores Swales	City of Cape Canaveral	Banana	31	15	$2,746

Year Removed	Project Name	Responsible Entity	Sub-Lagoon	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Plan Funding
2021	Justamere Road Swale	City of Cape Canaveral	Banana	6	3	$528
2021	Hitching Post Berms	City of Cape Canaveral	Banana	29	22	$2,552
2021	Oyster Bar	Brevard County	Banana	120	3	$47,350
2021	Stewart Road Dry Retrofit	City of Melbourne	North IRL	208	47	$18,344
2021	Basin 1349	Brevard County	North IRL	1,747	268	$354,400
2021	Basin 1409	Brevard County	North IRL	1,375	209	$293,800
2021	Indian River Drive Oyster Bar	Brevard County	North IRL	34	1	$13,258
2021	Indian River Drive Planted Shoreline	Brevard County	North IRL	9	3	$2,240
2021	Basin 2191	Brevard County	Central IRL	1,925	185	$326,500
2021	Basin 1511	Brevard County	Central IRL	2,409	378	$410,300

Appendix E: Long Descriptions of Figures

Figure 1-1: Decline of Commercial Fishing in Brevard County

The graph shows the declining value of the commercial fishery in Brevard County using Florida Fish and Wildlife Conservation Commission data from 1995 through 2019. The commercial fishery values drop over time while fish kill counts increase with the largest peaks in 2007 and 2016. The following table is an estimate of the values represented in the graph and are not the exact values.

Reporting Year	Value of Commercial Fishery
1995	$21,808,095
1996	$24,052,219
1997	$15,027,821
1998	$11,264,215
1999	$14,765,165
2000	$15,879,487
2001	$13,096,088
2002	$6,253,406
2003	$7,155,669
2004	$8,219,153
2005	$6,314,361
2006	$6,216,198
2007	$5,127,527
2008	$8,207,268
2009	$6,166,197
2010	$6,499,390
2011	$8,354,718
2012	$7,932,126
2013	$7,278,107
2014	$6,588,523
2015	$7,960,368
2016	$6,647,791
2017	$8,444,720
2018	$6,747,679
2019	$7,925,947

Return to **Figure 1-1**.

Figure 2-2. Summary of the Save Our Indian River Lagoon Outputs and Outcomes

Graphic showing output of Public Education will result in years 0–5 early adopters lead, years 6–10 supporters join, and years 10+ lagoon friendly lifestyles are normal. Output of Reclaimed Water Upgrades, Sewer Later Rehabilitation, Septic System Removal and Upgrades, Stormwater Treatment will result in years 0–5 cleaner ground and surface water, years 6–10 cleaner lagoon water, and years 10+ lush seagrass beds. Outputs of Muck Removal and Treatment of Muck Interstitial Water will result in years 0–5 exposed sandy sediments and tons of pollution removed, years 5–10 plentiful bottom dwelling marine life, and years 10+ abundant fishes. Output of Oyster Reefs and Living Shorelines will result in years 0–5 increased filtration, years 5–10 faster storm recovery, years 10+ healthy stability. Outputs of Project Performance

Monitoring and Plan Updates will result in years 0–5 increased efficiency and cost effectiveness, years 5–10 lagoon report card shows improvement, and years 10+ IRL economy grows.

Return to **Figure 2-2**.

Figure 4-1: Grass Clippings Example for a Typical Lot

Example graphic showing the potential for grass clippings to get onto and be left on a road. For a 100 foot by 100 foot lot with a 2,500 square foot home and driveway produces, it will produce an estimated 3,000 pounds of grass clippings per year containing 75 pounds of total nitrogen and 10.4 pounds of total phosphorus. Grass clippings can be blown into the road from an approximately 2-foot-wide strip of lawn.

Return to **Figure 4-1**.

Figure 4-2: Septic System Removal Projects in Banana River Lagoon

Map showing the locations of the 11 highest priority and high priority sewer locations within the northern portion of the Banana River Lagoon. These include North Merritt – Zone B, North Merritt Zone A, North Merritt Zone D, Sykes Creek Zone C, North Merritt Zone E, North Merritt Zone F, Sykes Creek Zone IJ, Sykes Creek Zone N, Merritt Island Zone C, Merritt Island Zone F, and Sykes Creek Zone M. The 4 areas with the highest loading, which include Sykes Creek Zone N, Merritt Island Zone C, Merritt Island Zone F, and skies Creek Zone M, are funded for septic removal. The map also shows the locations of all individual septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. Most of them are concentrated along the water in the west and south east portions of Merritt Island with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds. There are some of those scattered across the north center portion of Merritt Island as well. There is a line running north to south in the west that shows the drainage divide. The Bennett Causeway runs east to west through the middle of the map and North Courtenay Parkway runs north to south.

Return to **Figure 4-2**.

Figure 4-3: Septic System Removal Projects in Banana River Lagoon, continued

Map showing the locations of the 9 highest priority and high priority sewer locations within the southern portion of the Banana River Lagoon. These locations include Merritt Island Redevelopment Agency Phase 1, Merritt Island Redevelopment Agency Phase 2 Cone Road, Sykes Creek Zone R, Sykes Creek Zone S, Sykes Creek Zone G, Sykes Creek Zone T, South Banana Zone B, South Banana Zone A, and Merritt Island Zone H. The 7 areas with the highest loading, which include Merritt Island Redevelopment Agency Phase 2 Cone Road, Sykes Creek Zone R, Sykes Creek Zone S, Sykes Creek Zone G, Sykes Creek Zone T, and South Banana Zone B, are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water including the center of Merritt Island are 0–10 pounds. There is a line running north to south in the west that shows the drainage divide. South Tropical Trail runs north to south through most of the septic areas on this map.

Return to **Figure 4-3**.

Figure 4-4: Septic System Removal Projects in Banana River Lagoon, continued

Map showing the locations of the highest priority and high priority sewer locations within the central portion of the Banana River Lagoon. These locations include Merritt Island Zone H and Merritt Island Zone A. Neither of those areas are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. Most of Merritt Island is 10–30 pounds with a scattering of 30–50 pounds in the north portion. There are also a few spots of 0–10 pounds in the center north part of the island. There is a line running north to south in the west that shows the drainage divide. Pineda Causeway runs east to west and Rockledge Boulevard runs north to south in this area.

Return to **Figure 4-4**.

Figure 4-5: Septic System Removal Projects in North IRL

Map showing the locations of the 4 highest priority and high priority sewer locations within the northern portion of the North Indian River Lagoon. These areas include Titusville Zone A, Titusville Zone B, Titusville Zone C, and Titusville Zone H. All are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. The zones previously mentioned have loading in the 10–30 and 30–50 range. There is a sparse scatter of 0–10 zones over the rest of the map with two dense concentrations in the northern half of the map. There is a line running north to south in the west that shows the drainage divide. Garden Street runs east to west in the northern portion of the map and Cheney Highway/Orlando Road runs east to west in the southern part of the map. South Street loops through the map area.

Return to **Figure 4-5**.

Figure 4-6: Septic System Removal Projects in North IRL, continued

Map showing the locations of the 7 highest priority and high priority sewer locations within the north-central portion of the North Indian River Lagoon. These areas include Titusville Zone D, Titusville Zone E, Titusville Zone F, Titusville Zone G, Sharpes Zone A, Sharpes Zone B and Cocoa Zone C. All areas are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds. There is a line running north to south in the west that shows the drainage divide. National Aeronautics and Space Administration Causeway is at the top of the map and Indian River Drive/North Cocoa Boulevard runs north to south.

Return to **Figure 4-6**.

Figure 4-7: Septic System Removal Projects in North IRL, continued

Map showing the locations of the 6 highest priority and high priority sewer locations within the central portion of the central North Indian River Lagoon. These areas include Cocoa Zone C, Cocoa Zone J, Cocoa Zone K, City of Rockledge Breeze Swept, City of Rockledge, and Rockledge Zone B. All are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or

30–50 pounds. The areas further away from the water are 0–10 pounds. There is a line running north to south in the west that shows the drainage divide. Bennett Causeway runs east to west in the northern portion of the map and King Street/Hubert Humphrey Causeway/Merritt Island Causeway runs east to west in the southern portion of the map. Cocoa Boulevard runs north to south in the western portion of the map and North Courtenay Parkway runs north to south in the eastern portion of the map.

Return to **Figure 4-7**.

Figure 4-8: Septic System Removal Projects in North IRL, continued

Map showing the locations of the 7 highest priority and high priority sewer locations within the south-central portion of the North Indian River Lagoon. These areas include City of Rockledge Breeze Swept, City of Rockledge, Rockledge Zone B, Rockledge Zone C, South Central Zone A, South Central Zone B, and South Central Zone BC. The areas of City of Rockledge Breeze Swept, City of Rockledge, Rockledge Zone B, and South Central Zone A were funded. The map also shows the locations of all septic systems with loading estimates of 0-10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds. Rockledge Zone C is not along the water and has areas near the center that are 10–30 or 30–50 pounds and the areas near the east and west sides are 0–10 pounds. There is a line running north to south in the west that shows the drainage divide. The Merritt Island Causeway runs east to west at the top of the map. Cocoa Boulevard/Rockledge Boulevard runs north to south in the western portion of the map and South Tropical Trail runs north to south in the eastern portion of the map.

Return to **Figure 4-8**.

Figure 4-9: Septic System Removal Projects in North IRL, continued

Map showing the locations of the 10 highest priority and high priority sewer locations within the southern portion of the North Indian River Lagoon. These include South Central Zone BC, South Central Zone C, South Central Zone Pineda, South Central Zone I, South Central Zone D (Brevard), South Central Zone D (Melbourne), City of Melbourne Riverside, City of Melbourne Zone A, City of Melbourne Villa Espana, and City of Melbourne Kent. All but South Central Zone BC, South Central Zone Pineda, and South Central Zone I are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds. There is a line running north to south in the west that shows the drainage divide. Pineda Causeway runs east to west in the middle of the map. Rockledge Drive runs north to south in the western portion of the map and South Tropical Trail runs north to south in the eastern portion.

Return to **Figure 4-9**.

Figure 4-10: Septic System Removal Projects in North IRL, continued

Map showing the locations of the 11 highest priority and high priority sewer locations within the southern portion of the North Indian River Lagoon. These areas include City of Melbourne Riverside, City of Melbourne Zone A, City of Melbourne Villa Espana, City of Melbourne Kent, South Central Zone E, South Central Zone G, City of Melbourne Bowers, South Central Zone F,

South Beaches Zone A, South Beaches Zone P, and South Beaches Zone O. All but South Central Zone E and South Central Zone G are funded. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds. There are clusters of all three types of loading away from the water in the west-central and southwest part of the map. There is a line running north to south in the west that shows the drainage divide. Eau Gallie Boulevard runs east to west in the middle of the map. Dixie Highway runs north to south in the western portion of the map and Patrick Drive runs north to south in the eastern portion.

Return to **Figure 4-10**.

Figure 4-11: Septic System Removal Projects in Central IRL

Map showing the locations of the 9 highest priority and high priority sewer locations within the northern portion of the Central Indian River Lagoon. The funded areas include City of Melbourne Roxy, City of Melbourne Pennwood, City of Melbourne Hoag, and City of Melbourne Avenida del Rio. The unfunded areas include City of West Melbourne Zone A, Melbourne Village Zone B, City of West Melbourne Sylvan Estates, South Central Zone H, and Melbourne Village Zone A. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering some of the areas near the water with the areas closest to the water being 30–50 pounds. The areas further away from the water are 0–10 pounds and 10–30 pounds mostly clustered in the center of the map just west of the Melbourne Causeway along U.S. 192 and approximately 4 miles west of U.S. 192 in West Melbourne. New Haven Avenue/Melbourne Causeway runs east to west through the middle of the map. Babcock Street runs north to south in the middle of the map and Dixie Highway runs north to south closer to the eastern portion of the map.

Return to **Figure 4-11**.

Figure 4-12: Septic System Removal Projects in Central IRL, continued

Map showing the locations of the 10 highest priority and high priority sewer locations within the southern portion of the Central Indian River Lagoon. The funded areas include City of Palm Bay Zone A and B. The unfunded areas include Malabar Zones F, D, C, A, B, as well as South Zone A, South Zone B, and Grant Valkaria Zone H. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering about 30% of the map with a few areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water are 0–10 pounds and tightly clustered in the western part of the map west of Babcock Street in the Malabar area. There are clusters of all three types of loading away from the water in the central and south central part of the map. Babcock Street runs north to south in the western portion of the map and Dixie Highway runs north to south in the western portion.

Return to **Figure 4-12**.

Figure 4-13: Septic System Removal Projects in Central IRL, continued

Map showing the locations of the 15 highest priority and high priority sewer locations within the south central portion of the Central Indian River Lagoon. The unfunded areas on this map include South Beaches Zones C, D, F, N, L, K, and M. Other unfunded areas are Malabar Zones F, D, C, A, B; South Zone B; and Grant Valkaria Zones H and G. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering half of the areas near the water on the barrier island on the eastern portion of the map. There are isolated clusters of high loading areas along the waterfront on the mainland or western side of the map. There are clusters of all three types of loading away from the water in the west-central and south west part of the map. Highway A1A runs north to south in the middle of the map.

Return to **Figure 4-13**.

Figure 4-14: Septic System Removal Projects in Central IRL, continued

Map showing the locations of the 11 highest priority and high priority sewer locations within the southern portion of the Central Indian River Lagoon. The unfunded areas include Grant Valkaria Zones G, D, F, C, B, E, A, as well as South Beaches Zones E and G. The funded areas include Micco Zones A and B. The map also shows the locations of all septic systems with loading estimates of 0–10 pounds, 10–30 pounds, and 30–50 pounds. They are covering most of the areas near the water and along the Saint Sebastian River with the areas closest to the water being either 10–30 pounds or 30–50 pounds. The areas further away from the water in the northwestern portion of the map are 30–50 pounds. There are clusters of all three types of loading away from the water in the north western and southern part of the map. Dixie Highway runs north to south in the middle of the map and Highway A1A runs north to south in the western portion of the map.

Return to **Figure 4-14**.

Figure 4-15: Quick Connection Septic System Removal Locations in North Brevard County

Map showing the locations of properties eligible to receive reimbursement to connect to a sewer system in the northern portion of the north Indian River Lagoon. Dots scattered along the map indicate whether the owner can connect to a force main or gravity type sewer and whether the parcel is a high priority. On this map the dots are mostly near the water. Approximately half are for force main connections and half are for gravity sewer connections. There is a line running north to south in the west that shows the drainage divide. These sites are located north and south of Nasa Causeway on the western side of the lagoon.

Return to **Figure 4-15**.

Figure 4-16: Quick Connection Septic System Removal Locations in Central Brevard County

Map showing the locations of properties eligible to receive reimbursement to connect to a sewer system in the central Indian River Lagoon. Dots scattered along the map indicate whether the

owner can connect to a force main or gravity type sewer and whether the parcel is a high priority. On this map the dots are mostly near the water and tightly clustered in the northern portion of the map on Merritt Island. There are a few scattered near the water in the southern portion of the map south of the Pineda Causeway. Approximately half are for force main connections and half are for gravity sewer connections. There is a line running north to south in the west that shows the drainage divide. The sites are located near the Merritt Island Causeway to the northern portion of the map and Pineda Causeway to the southern portion of the map.

Return to **Figure 4-16**.

Figure 4-17: Quick Connection Septic System Removal Locations in South Brevard County

Map showing the locations of properties eligible to receive reimbursement to connect to a sewer system in the southern portion of the Indian River Lagoon in Brevard County. Dots scattered along the map indicate whether the owner can connect to a force main or gravity type sewer and whether the parcel is a high priority. On this map the dots are mostly near the water and tightly clustered in the northern portion of the map near Melbourne and Eau Gallie. There are a few scattered near the water in the central portion of the map near Malabar. Approximately 20% are for force main connections and approximately 80 percent are for gravity sewer connections. There is a line running north to south in the west that shows the drainage divide.

Return to **Figure 4-17**.

Figure 4-18: Example In-Ground Nitrogen-Reducing Biofilter Septic System

This a diagram showing how an in-ground nitrogen reducing biofilter is constructed. It shows a septic tank to the left with a pipe leading out of it with an arrow showing the direction of water flow to the drainfield. The drainfield area is depicted as an eighteen inch layer of soil above a twelve inch layer of woodchips or other denitrification media. There is a layer below these that shows an empty space which indicates native soil that should be at least six inches above the seasonal high water table.

Return to **Figure 4-18**.

Figure 4-19: Septic System Upgrades in North Brevard County

Map showing the locations of properties eligible to receive reimbursement to install an upgraded septic system in the northern portion of Brevard County along the Indian River Lagoon. Dots scattered along the map indicate whether the owner is eligible to receive reimbursement. On this map the dots are mostly near the water and scattered from north to south. There is a line running north to south in the west that shows the drainage divide. The National Aeronautics and Space Administration Causeway runs east to west near the southern part of the map.

Return to **Figure 4-19**.

Figure 4-20: Septic System Upgrades in Central Brevard County

Map showing the locations of properties eligible to receive reimbursement to install an upgraded septic system in the central portion of Brevard County along the Indian River Lagoon. Dots scattered along the map indicate whether the owner is eligible to receive reimbursement. On

this map the dots are mostly near the water and scattered from north to south on Merritt Island. There is a line running north to south in the west that shows the drainage divide. The Bennett Causeway and Merritt Island Causeway run east to west in the northern portion of the map. Rockledge Parkway runs north to south on the western side and Courtenay Parkway runs north to south on the eastern side of the lagoon.

Return to **Figure 4-20**.

Figure 4-21: Septic System Upgrades in South Brevard County

Map showing the locations of properties eligible to receive reimbursement to install an upgraded septic system in the southern portion of Brevard County along the Indian River Lagoon. Dots scattered along the map indicate whether the owner is eligible to receive reimbursement. On this map the dots are mostly near the water and scattered from north to south on along U.S. 1 and about one to three miles inland. There is a line running north to south in the west that shows the drainage divide. The Eau Gallie Causeway and 5th Avenue run east to west near the top of the map Babcock Street runs north to south in the middle of the map.

Return to **Figure 4-21**.

Figure 4-22: Stormwater Projects in North Brevard County

Map showing the selected basins for stormwater treatment in the northern portion of the Banana River Lagoon and North Indian River Lagoon in Brevard County. Project areas cover roughly 60% of the shoreline on the mainland and are all part of the North Indian River Lagoon. Project areas cover roughly 75% of North Merritt Island and half are part of the North Indian River Lagoon while the other half are part of the Banana River Lagoon. Project areas cover roughly 85% of the Barrier Island and all are part of the Banana River Lagoon.

Return to **Figure 4-22**.

Figure 4-23: Stormwater Projects in Central Brevard County

Map showing the selected basins for stormwater treatment in the southern portion of the Banana River Lagoon and North Indian River Lagoon in Brevard County. Project areas cover roughly 50% of the shoreline on the mainland and are all part of the North Indian River Lagoon. Project areas cover roughly 70% of South Merritt Island and half are part of the North Indian River Lagoon while the other half are part of the Banana River Lagoon. Project areas cover roughly 80% of the Barrier Island and all are part of the Banana River Lagoon.

Return to **Figure 4-23**.

Figure 4-24: Stormwater Projects in South Brevard County

Map showing the selected basins for stormwater treatment in the Central Indian River Lagoon for Brevard County. There is one project area on the Barrier Island on the north end of the map that is part of the Banana River Lagoon. Project areas for the Central Indian River Lagoon cover roughly 30% of the shoreline and are concentrated in the north half of the mainland with two sections also on the Barrier Island. Ten project areas are scattered inland from the shoreline in the southern half of the map.

Return to **Figure 4-24**.

Figure 4-25: Location of Muck Removal Projects in the Northern Banana River Lagoon

Map of the northern Banana River Lagoon in Brevard County showing the locations of the funded and unfunded muck removal projects. There are four unfunded projects in the very northern part of the Banana River Lagoon near the top of the map. Towards the bottom of the map, just south of State Highway 528, there are two funded projects: Port Canaveral South is along the Barrier Island shoreline and Merritt Island Phase I is along the Merritt Island shoreline. Additional unfunded projects are located at the bottom of the map, as well as the canals on Merritt Island.

Return to **Figure 4-25**.

Figure 4-26: Location of Muck Removal Projects in the Southern Banana River Lagoon

Map of the southern Banana River Lagoon in Brevard County showing the locations of the funded and unfunded muck removal projects. Towards the top of the map, just south of State Highway 528, are three funded projects. Port Canaveral South is along the Barrier Island shoreline. Merritt Island Phase I is just to the south and west along the Merritt Island shoreline. The Sykes Creek project is a little further south and west from that project. Further south, below State Highway 520, is the Cocoa Beach IIB project along the Barrier Island shoreline. South of that is the Cocoa Beach Phase III project. To the west of that is the Cocoa Beach Golf project. About six miles south along the Barrier Island is the Patrick Air Force Base project. To the west of that is the Pineda Banana River Lagoon project near the Merritt Island shoreline. South of that project, and south of State Highway 404 is the Grand Canal project on the Barrier Island. South of that project is the Satellite Beach project followed by the Indian Harbour Beach project.

Return of **Figure 4-26**.

Figure 4-27: Location of Muck Removal Projects in North IRL

Map of the North River Lagoon in Brevard County showing the locations of the funded and unfunded muck removal projects. There are five funded projects. Titusville Railroad West is at the top of the map along the mainland shoreline. Just east of that on the Merritt Island shoreline is the Titusville Railroad East project. The National Aeronautics and Space Administration Causeway East project is about 10 miles south along the Merritt Island shoreline and just north of State Highway 405. The Rockledge A project is about 15 miles south along the Merritt Island shoreline. The Eau Gallie Northeast project is about 9 miles south and near the bottom of the map near the Merritt Island shoreline.

Return to **Figure 4-27**.

Figure 4-28: Location of Muck Removal Projects in Central IRL

Map of the Central Indian River Lagoon in Brevard County showing the locations of the funded and unfunded muck removal projects. The only funded project is the Turkey Creek project, which is about 3 miles south of U.S. Highway 192 along the mainland shoreline.

Return to **Figure 4-28**.

Figure 4-29: Phase I Potential Enhanced Circulation Project Locations

Map of Brevard County showing a 40 square mile area where potential enhanced circulation projects could be located. The St. Johns River Water Management District identified potential projects the following areas: one in the south part of the Mosquito Lagoon, one in the north part of the Banana River, two in Cape Canaveral, one at Patrick Airforce Base, and one at Malabar. They identified four internal projects with one at the north end of Merritt Island, two around Haulover Canal, and one in central Merritt Island. CDM Smith identified 23 additional potential project locations both internal and external spread throughout Brevard County with a heavy concentration around central Merritt Island.

Return to **Figure 4-29**.

Figure 4-30: Shoreline Survey to Identify Locations Appropriate for Oyster Bars and Planted Shorelines

Map of Brevard County showing the shoreline survey edge types including bulkhead and seawall, hardened slope and riprap, and no structures. No structures were found mainly in the north portion of the county on the mainland and also around the central part of Merritt Island near the Space Center. There were also small concentrations on the south part of Merritt Island in the Banana River Lagoon and on the southern portion of the Barrier Islands. The rest of the shoreline was interspersed with both bulkhead and seawall types and hardened slope and riprap types. A large concentration of bulkhead and seawall was found on the west shore of Merritt Island, along Sykes Creek, in Cocoa Beach, and much of the west coast of the central Barrier Island.

Return to **Figure 4-30**.

Figure 4-31: Estimated Economic Value of Some Seagrass Services

Graphic showing the economic value provided by seagrass adapted from Dewsbury et. al. 2016. Seagrass provide direct grazing by turtles, manatees, fish, and snails has an unknown economic value. It is also nursery grounds for fish and crabs benefit coral reefs commercial fisheries and recreation for a $4,600 per acre per year economic value. Additionally, it sequesters carbon which reduces carbon dioxide for a $162 per acre per year economic value. It also reduces wave energy which leads to sediment stability and improved water quality for an unknown economic benefit. Finally, it cycles and sequesters nutrients for an economic value of $7,695 per acre per year. Seagrass provides a total economic benefit of $12,457 per acre per year. In 2007 there were 72,400 acres providing a total benefit of more than $902,000,000.

Return to **Figure 4-31**.

Figure 4-33: Completed Projects in North Brevard County

Map of North Brevard County showing locations of 24 completed projects. County Line Road Bioreactor is located at the north end on the west shore of the Indian River Lagoon. One mile south of that is Johns Road biosorption activated media. Three miles south is Burkholm Road biosorption activated media. A half mile south of that is Carter Road biosorption activated media. One mile south of that is Wiley Avenue biosorption activated media. A half mile south of that is Mims muck removal. About three miles south of that is Kennedy Point Park living shoreline. A half mile south and west of that is Coleman Pond managed aquatic plant system. Two miles south of that is South Street baffle box. One mile south of that is St. Theresa baffle

box. A half mile south of that is the La Paloma baffle box. One mile south of that is the Nicol Park living shoreline. About five miles south of that is the Broadway Pond biosorption activated media. Six miles south of that is the Cocoa floating wetlands. Two miles south of that is the Church Street baffle box. About a quarter mile south of that is the St. Marks living shoreline. Two miles south of that is the Breeze Swept septic removal. In the southern part of Merritt Island is the Island Pointe and Hehir living shorelines with the Merritt Island Redevelopment Agency Septic Removal Phase 1 project about a half mile further south. In the southern part of the barrier island is the Central Boulevard baffle box. About four miles south of that is the Bettinger oyster reef. About a mile south of that is the Cocoa Beach Water Reclamation Facility Upgrade, Cocoa Beach Country Club living shoreline, and Cocoa Beach muck dredging Phase III.

Return to **Figure 4-33**.

Figure 4-34: Completed Projects in South Brevard County

Map of south Brevard County showing locations of 23 completed projects. Near the top of the map is the Rotary Park living shoreline and Basin 1298 bioreactor on the western shore of the lagoon. Four miles south is the Cliff Creek baffle box. Five miles south of that is the Lagoon House living shoreline. One mile south of that is the Bayfront stormwater project and Turkey Creek muck removal. One mile south of that is the Riverview Senior Resort oyster bar. Six miles south of that is the Fisherman's Landing living shoreline. Three miles south and west of that is the Fleming Grant biosorption activated media. Near the top of the map, at the southern end of Merritt Island, is the Sands living shoreline. Near the top of the map on the barrier island is the Basin 1304 bioreactor. About one mile south of that is the Gitlin oyster bar. About mile south of that is the Marina Isles oyster bar. About a half mile south of that is the Bomalaski and Dragon Point oyster bars and the Gleason Park reuse upgrade. About three miles south of that is the Basin 5 dry retention followed by the Riverside Drive oyster bars 1–12 along about 1.5 miles. About 4 miles south of that is the Coconut Point oyster bar. A half mile south of that is the Hog Point oyster bar. Three miles south of that is the Maritime Hammock oyster bar. Four miles south of that is the Long Point package plant upgrade.

Return to **Figure 4-34**.

Figure 4-36. Turbidity Levels Before, During, and After Turkey Creek Muck Removal

A line graph showing the turbidity improvements in Turkey Creek after dredging. The pre-project period from July 2009 through January 2016 had an average turbidity of 3.14 Nephelometric Turbidity Units. Muck removal occurred from January 2016 through March 2019 and had an average turbidity of 3.11 Nephelometric Turbidity Units. In the post-project period of March 2019 through January 2020, the average turbidity was 1.93 Nephelometric Turbidity Units.

Return to **Figure 4-36**.

Figure 4-37. Distribution of Oyster Sizes, Age, and Average Number Per Unit

A bar chart showing the distribution of oyster sizes, as of most recent monitoring, for oyster sites located in the Banana River Lagoon, North Indian River Lagoon, and Central Indian River lagoon. At each site, there are two bars for the number of oysters at the start of the bar creation

and the number at the time of sampling. The number of settlers, subadults, adults, and large adults are shown. The following table summarizes the values shown in the bar graph.

Location	Oyster Age (Years)	Settler	Subadult	Adult	Large Adult
Bettinger	0.00	0.0000	2.4000	22.6000	0.0000
Bettinger	1.50	0.0000	0.0000	11.2000	4.4000
Gitlin	0.00	1.0000	11.8750	22.8750	1.2500
Gitlin	1.50	0.0000	0.0000	5.3750	1.3750
Marina Isles	0.00	0.0000	3.3333	23.1110	1.1111
Marina Isles	0.75	2.7778	17.7780	23.6670	1.7778
Bomalaski	0.08	26.8000	6.0000	16.8000	0.4000
Bomalaski	2.00	6.0000	11.6000	19.2000	1.8000
Ahmed/Niland	0.00	0.0000	0.4286	23.5000	1.0714
Ahmed/Niland	0.25	5.0714	5.5714	20.1430	1.5714
MacNiell/Pitner	0.00	0.0000	0.0000	0.0000	0.0000
MacNiell/Pitner	0.25	7.6154	6.7692	0.3077	0.0000
Coconut Point	0.00	0.0000	0.1000	22.2000	2.7000
Coconut Point	0.50	22.0000	15.7000	4.1000	0.4000
Hog Point	0.00	0.0000	0.0000	21.6000	3.4000
Hog Point	0.50	19.4000	23.2000	6.8000	0.6000
Maritime Hammock	0.00	0.0000	0.8000	22.6000	1.6000
Maritime Hammock	0.50	26.0000	15.6000	7.6000	0.8000
Riverview Senior	0.00	0.4000	3.0667	21.8000	0.1333
Riverview Senior	2.00	36.5000	6.6667	5.7500	0.1667

Return to **Figure 4-37**.

Figure 4-35. Countywide Groundwater Nutrient Concentrations for TN (top) and TP (bottom)

Bar graphs showing the total nitrogen (TN) and total phosphorus (TP) concentrations in groundwater for four areas: natural or undeveloped, septic system communities, sewer communities, and reclaimed water communities. The following table summarizes the values shown in the bar graphs.

Area	TN Concentration (mg/L)	TP Concentration (mg/L)
Natural, Undeveloped Area	0.379	0.081
Septic Communities	5.6	0.701
Sewer Communities	1.918	0.159
Reclaimed Water Communities	6.046	0.206

Return to **Figure 4-35**.

Figure 5-1: Evolution of Project Funding Allocations

Series of pie charts showing the percent distribution of funding from the original plan to each of the plan updates in 2017, 2018, 2019, 2020, and 2021. Public education makes up about 0% of the total funding in all years. Wastewater facility upgrades for reclaimed water were 3% of the costs in the original plan and 2017 Supplement, 4% in the 2018 Update, 7% in the 2019 Update, and 6% in the 2020 2021 Updates. Rapid infiltration basins/sprayfield upgrades were added in the 2019 Update as 1% of the cost and 2% in the 2020 and 2021 Updates. Package plant connections were added in the 2021 Update and represent 1% of the costs. Sewer laterals were added in the 2019 Update and represent about 0% of the cost. Septic system removal was 14%

of the cost in the original plan and 2017 Supplement, 13% in the 2018 Update, 26% in the 2019 Update, and 30% in the 2020 and 2021 Updates. Septic system upgrades were 7% of the cost in the original plan and 2017 Supplement, 6% in the 2018 and 2019 Updates, and 7% in the 2020 and 2021 Updates. Stormwater projects were 4% of the costs in the original plan and 2017 and 2018 Updates, 11% in the 2019 Update, and 12% in the 2020 and 2021 Updates. Muck removal was 66% of the cost in the original plan and 2017 Supplement, 58% in the 2018 Update, 30% in the 2019 Update, 27% in the 2020 Update, and 26% in the 2021 Update. Treatment of interstitial water was added in the 2019 Update at 13% of the costs, 12% in the 2020 Update, and 11% in the 2021 Update. Oyster bars and living shorelines were 3% of the costs in the original plan through the 2019 Update, 2% in the 2020 Update, and 3% in the 2021 Update. Project monitoring was 3% of the costs in the original plan through the 2019 Update, and 2% in the 2020 and 2021 Updates.

Return to **Figure 5-1**.

Figure C-1: Mean Areal Extent of Seagrass and Mean Length of Transects

A line and bar graph comparing seagrass extent in acres versus the mean transect length in meters. The date range is 1943 and then every other year from 1992 to 2018. In 1942 the seagrass extent was about 75,000 acres. In 1992 the extent was about 65,000 acres. The acreage gradually climbed to a peak of around 80,000 and 79,000 in 2008 and 2010, respectively. The acreage then drastically dropped in 2012 to about 42,000. It slowly increased to about 58,000 in 2016 and then dropped to about 34,000 acres in 2018. The mean transect length followed a similar trend in years starting at about 100 meters in 194 with a peak around 180 meters in 2016 and 2018. It dropped to around 70 meters in 2012 and increased to 100 in 2016. It then dropped to about 60 in 2018. The following table is an estimate of the numbers shown in the graph and does not represent the actual data.

Year	Seagrass extent (acres)	Mean transect length (meters)
1943	75,000	No data
1992	65,000	No data
1994	60,000	100
1996	67,000	120
2000	70,000	140
2004	75,000	130
2006	75,000	130
2008	80,000	180
2010	79,000	180
2012	42,000	70
2014	52,000	80
2016	58,000	100
2018	34,000	60

Return to **Figure C-1**.

Figure C-2: Mean Chlorophyll-a Concentrations

Line graph of mean chlorophyll *a* in micrograms per liter showing lines for the Mosquito Lagoon (ML), Banana River Lagoon (BRL), North Indian River Lagoon (NIRL), North Central Indian River Lagoon (NCIRL), Sebastian (Seb), and South Central Indian River Lagoon (SCIRL). The time span is yearly from 1997 to 2018. The values for each area overlap greatly making it

difficult to discern individual values, only a range of values. 1997 had values ranging from 0 to 10 with no discernable peak. 1998 ranged from 0 to 20 with the highest being NCIRL. 1999 ranged mainly from 0 to 15 with one peak in Seb around 40. 2000 ranged from 0 to 30 with the highest in SCIRL. 2001 ranged from 0 to 55 with the highest in NCIRL. 2002 ranged from 0 to 50 with the highest in NIRL. 2003 and 2004 ranged from 0 to 25 with no discernable peak areas. 2005 ranged from 0 to 50 with the highest in NIRL. 2006 ranged from 0 to 20 with the highest in NIRL. 2007 ranged from 0 to 20 with the highest in Seb. 2008 ranged from 0 to 25 with the highest in NCIRL. 2009 ranged from 0 to 30 with no discernable peak. 2010 ranged from 0 to 50 with the highest in NCIRL. 2011 ranged from 0 to 80 with the highest in NIRL. 2012 ranged from 0 to 140 with the highest in ML. 2013 ranged from 0 to 45 with the highest in NIRL and ML. 2014 ranged from 0 to 40 with the highest in NIRL 2015 ranged from 0 to 30 with no discernable peak. 2016 ranged from 0 to 130 with the highest in BRL. 2017 ranged from 0 to 40 with no discernable peak. 2018 ranged from 0 to 100 with the highest in BRL.

Return to **Figure C-2**.

Natural Resources Management Department
2725 Judge Fran Jamieson Way
Building A, Room 219
Viera, Florida 32940

BOARD OF COUNTY COMMISSIONERS

Inter-Office Memo

TO: The Honorable Rita Pritchett, Chair
Board of County Commissioners

THROUGH: Frank Abbate, County Manager
John Denninghoff, Assistant County Manager
Darcie McGee, Assistant Director, Natural Resources Management (NRM)
Tom Belflower, NRM Support Services Manager

Mcgee, Darcie Digitally signed by Mcgee, Darcie DN: cn=Mcgee, Darcie, email=Darcie.Mcgee@brevardfl.gov Date: 2021.06.15 14:44:34 -04'00'

Belflower, Tom Digitally signed by Belflower, Tom Date: 2021.06.15 09:39:00 -04'00'

FROM: Terri Breeden, Associate Environmental Specialist, NRM

DATE: June 15, 2021

Breeden, Terri Digitally signed by Breeden, Terri Date: 2021.06.15 08:44:46 -04'00'

SUBJECT: Save Our Indian River Lagoon Project Cost-Share Fu
Between Brevard County and the City of Melbourn

J. 1.
Feb 9 '21

We respectfully request your signature on the attached Save Our In -Share Funding Interlocal Agreement between Brevard County and the City od Septic to Sewer Project. This project was approved by the County Cc l is included in the 2021 Update to the Save Our Indian River Lagoon Prc continuation of CM 3789.

Within this project, the City of Melbourne will provide sanitary sewer along Pennwood Drive, allowing four existing homes and a few other future homes to eliminate their current septic systems. The force main has been constructed and one home has been connected. The elimination of these septic systems will prevent excess nutrients from draining into the groundwater table, and eventually flowing into the Indian River Lagoon. New models estimate the nutrient reduction benefit of this project is to be 102.6 pounds of total nitrogen per year. The updated cost-share for this project is $81,000.

Please contact Terri Breeden at terri.breeden@brevardfl.gov or 321-223-0398 with questions or to arrange for pick-up.

Thank you.

Attachment A – AO-29

Attachment B - Clerk's Memo

Attachment C – Pennwood Contract

BREVARD COUNTY
BOARD OF COUNTY COMMISSIONERS

CONTRACT REVIEW AND APPROVAL FORM

SECTION I - GENERAL INFORMATION

1. Contractor: City of Melbourne	**2. Amount:** $81,000
3. Fund/Account #: 1260/271070	**4. Department Name:**
5. Contract Description: Pennwood Contract 2 SOIRL 21-05-2	
6. Contract Monitor: Terri Breeden	**8. Contract Type:** INTERGOVT/LOCAL
7. Dept/Office Director: Virginia Barker	
9. Type of Procurement: Exempt from Competition	

SECTION II - REVIEW AND APPROVAL TO ADVERTISE

COUNTY OFFICE	APPROVAL YES	APPROVAL NO	SIGNATURE
User Agency	☑	☐	
Purchasing	☐	☐	
Risk Management	☐	☐	
County Attorney	☐	☐	

SECTION III - CONTRACTS MANAGEMENT DATABASE CHECKLIST

COUNTY OFFICE	APPROVAL YES	APPROVAL NO	SIGNATURE
User Agency	☑	☐	Breeden, Terri — Digitally signed by Breeden, Terri Date: 2021.05.12 15:45:02 -04'00'
Purchasing	☑	☐	Darling, Steven — Digitally signed by Darling, Steven Date: 2021.05.12 16:09:58 -04'00'
Risk Management	☑	☐	Lairsey, Matt — Digitally signed by Lairsey, Matt Date: 2021.05.13 07:50:30 -04'00'
County Attorney	☑	☐	Esseesse, Alexander — Digitally signed by Esseesse, Alexander Date: 2021.05.18 12:49:15 -04'00'

SECTION IV - CONTRACTS MANAGEMENT DATABASE CHECKLIST

CM DATABASE REQUIRED FIELDS	Complete ✓
Department Information	☐
Department	☐
Program	☐
Contact Name	☐
Cost Center, Fund, and G/L Account	☐
Vendor Information (SAP Vendor #)	☐
Contract Status, Title, Type, and Amount	☐
Storage Location (SAP)	☐
Contract Approval Date, Effective Date, and Expiration Date	☐
Contract Absolute End Date (No Additional Renewals/Extensions)	☐
Material Group	☐
Contract Documents Uploaded in CM database (Contract Form with County Attorney/ Risk Management/ Purchasing Approval; Signed/Executed Contract)	☐
"Right To Audit" Clause Included in Contract	☐
Monitored items: Uploaded to database (Insurance, Bonds, etc.)	☐

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

February 10, 2021

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item J.1., Adoption of the Save Our Indian River Lagoon (SOIRL) Project Plan 2021 Update, Unanimously Recommended by the SOIRL Citizens Oversight Committee (COC)

The Board of County Commissioners, in regular session on February 9, 2021, adopted the SOIRL Project Plan 2021 Update, as recommended by the SOIRL COC on January 15, 2021; authorized associated Budget Change Requests; approved continued signature authority to the Chair, or designee, in accordance with the threshold limits provided in Brevard County Code 25 and 27, and Administrative Order 29, to execute interlocal, non-governmental organization, University and private agreements, task orders, change orders, and contract renewals, using contract terms and templates previously approved by the Board, subject to review and approval by the County Attorney, Risk Management, and Purchasing, as appropriate, to provide cost-share from the SOIRL Trust Fund for projects and programs approved in the SOIRL Project Plan; approved continuing authority for the County Manager to execute contract amendments; approved continued authority for you to execute up to two no-cost time extensions up to six-months each; granted permission to advertise formal solicitation of bids and proposals, and to award to the qualified bidder having the lowest, responsible and best response for tangible items, capital improvement projects, and/or equipment when funding is available; and authorized the County Manager, or his designee, to submit grant applications for leveraging cost-share for projects approved in the SOIRL Project Plan.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK

Kimberly Powell, Clerk to the Board

/ds

cc: County Attorney
County Manager
Contracts Administration
Finance
Budget

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE CITY OF MELBOURNE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-05-2

THIS AGREEMENT ("Agreement") is made and entered into the date of last signature below by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of Melbourne, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund; and

WHEREAS, the Parties previously entered into interlocal agreement No. 17-05, providing cost-share of up to $40,632 for this Project. The Citizen Oversight Committee approved the additional cost-share funding of up to $81,000. This agreement supersedes and replaces the prior agreement.

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until December 31, 2025 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may

only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Rebecca Thibert
Assistant to the City Manager
City of Melbourne
900 E Strawbridge Avenue
Melbourne, FL 32901
321-608-7206
E-mail: Rebecca.Thibert@mlbfl.org

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the

Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This

amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a quarterly basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project

Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form, Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.
The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.
a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A**, includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.
Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that respective party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the State of Florida, nor as a waiver of sovereign immunity of the COUNTY or CITY beyond the waiver provided for in section 768.28, Fla. Stat., as may be amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.
a. This Agreement is at all times contingent upon funding availability, which may include a

single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt

and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to

the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with

a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program; and

d. compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach; and

e. shall require any contractor to provide the City with an affidavit stating that it does not employ, contract with, or subcontract with any unauthorized aliens; and

f. nothing in this Section may be construed to allow intentional discrimination of any class protected by law.

Section 29. Severability.
If any portion of this Contract is found to be invalid or unenforceable or if applicable law mandates a different interpretation or result, the remaining provisions will remain in effect and the parties will negotiate in good faith to substitute for such invalid, illegal, or unenforceable provision a mutually acceptable provision consistent with the original intention of the parties.

Section 30. Sovereign Immunity and Liability
The COUNTY'S indemnity and liability obligations under this Contract shall be limited to the extent of the protections of and limitations on damages as set forth in Section 768.28, Florida Statutes. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Nothing herein shall constitute a waiver of the parties' respective sovereign immunity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. SIGNATURES TO FOLLOW.]

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County, Florida

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

Attest

Rachel Sadoff, Clerk

Date: 4/23/2021

Melbourne, Florida

By: _____

Name: Shannon Lewis

Title: City Manager

Date: _____

Attest

By: _____

Name: _____

Title: _____

Date: _____

Reviewed for legal form and content for Brevard County

5/26/21

Alex Esseesse, Assistant County Attorney

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: Pennwood Sewer Conversion

PROJECT LOCATION: The Project will be located on Pennwood Drive between Devonshire Drive and Bignonia Street in the City of Melbourne, FL.

1. City of Melbourne Manhole #4515
   28.07495569, -80.62028208 degrees

PROJECT BACKGROUND: The City of Melbourne was contacted in early 2016 about the possibility of providing sanitary sewer to a neighborhood that currently does not have municipal sewer. The homes on this section of Pennwood Drive are all served by septic tanks. There are four existing homes that are within 55 yards of a tributary of Crane Creek. Additionally, Staff has been in contact with one property owner who is in the planning stages of building a home directly on Crane Creek. There are three other vacant lots that this project would allow connection to the force main to prevent new septic tanks from being installed.

The elevation change within this neighborhood does not allow for conventional gravity sewer installation. The homes current septic tanks would sit below the tie in elevation.

PROJECT DESCRIPTION: The City is currently designing a low-pressure force main to be installed within the Pennwood Drive right of way to serve these homes. This system would allow the existing homes to convert their existing septic tanks into holding tanks and install small grinder pumps to connect to the municipal sewers system.

TASKS and DELIVERABLES:

Task #1 Construction of Project

Task Description: The City will install the low-pressure force main and any other incidental work necessary to complete the project in accordance with the final design and required permits. The City will be providing the engineering oversight during construction.

Task Deliverable: Construction

Task #2 Homeowner Connections

Task Description: The City will be working with homeowners to connect to the low-pressure force main and the abandonment of their septic tanks.

Task Deliverable: Homeowner Connections

Task	Task Title	Task Start Date	Task End Date
1	Construction	10/1/2018	12/31/2025
2	Homeowner Connections	10/1/2018	12/31/2025

Estimated Reimbursement Schedule:
Project reimbursements will be requested after project completion.

Task #	4/2019	1/2026	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year
1	$17,074.40	$3,243.89							
2		$60,681.71							

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds (Adjust the highlighted section and delete the other options that do not apply):
This project was not included in the City's FY 2017-2018 budget, therefore without the Save Our Indian River Lagoon Funding the project would not have been executed in the near future.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ **Report Number:** _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
OM:		**To:**	
PAYMENT REQUEST NO.:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
			TOTALS:					$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____ , on behalf of _____ , do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____	_____
Recipient's Grant Manager's Signature	Recipient's Fiscal Agent
_____	_____
Print Name	Print Name
_____	_____
Telephone Number	Telephone Number

ATTACHMENT E

Recipient Name:	City of Melbourne
Project Name:	Pennwood Sewer Conversion
Agreement Number:	21-05-2

Estimated Project Cost-Share Table							
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP/Legislature)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Construction	$ 30,515.89				$ 20,150.29	$ 8,035.01
2	Homeowner Connections	$ 101,416.18	$ 40,566.47			$ 60,849.71	$ 11,164.99
3							
4		$ -					
	Total	$ 131,932.07				$ 81,000.00	$ 19,200.00

Funding Eligibility Calculation	
Project Type	Septic to Sewer
BMP Type (If stormwater)	
Pounds of Nitrogen Reduction	102.6
Eligible Cost Share per Pound	$ 1,500.00
Eligible Tax Funding Cost Share	$ 153,900.00
Reduction so Sum of Grants does not exceed Project Cost	$ -
Eligible Lagoon Tax Cost Share, Adjusted	$ 81,000.00
Percent Cost Share to be contributed by the Lagoon Tax	61%

IN WITNESS WHEREOF, the COUNTY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representative, and CITY has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

Brevard County, Florida

By: _____

Date: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

Attest

_____

Rachel Sadoff, Clerk

Date: 2/25/2021

Reviewed for legal form and content for Brevard County

5/26/21

Alex Esseesse, Assistant County Attorney

Melbourne, Florida

By: _____

Name: Shannon Lewis

Title: City Manager

Date: _____

Attest

By: _____

Name: _____

Title: _____

Date: _____

SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND THE CITY OF MELBOURNE, FLORIDA.

AGREEMENT NUMBER: SOIRL 21-05-2

THIS AGREEMENT ("Agreement") is made and entered into the date of last signature below by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and the City of Melbourne, Florida, a Florida municipal corporation organized and existing under the laws of the State of Florida (hereinafter "CITY").

RECITALS

WHEREAS, the COUNTY saw the urgent need to implement the "Save Our Indian River Lagoon Project Plan," with the aim to restore the Indian River Lagoon through financing, planning, constructing, maintaining, and operating capital improvements and capital maintenance projects and programs designed to improve water quality, fish, wildlife and marine habitat, remove muck and reduce pollution, as permitted under Section 212.055(2)(d)1., Florida Statutes; and

WHEREAS, pursuant to Section 212.055, Florida Statutes, the COUNTY is authorized to levy a discretionary infrastructure sales tax of one-half cent by ordinance enacted by a majority of the members of the Board of County Commissioners and approved by a majority of the electors of Brevard County voting in a referendum on the surtax; and

WHEREAS, the COUNTY promulgated and passed Brevard County Ordinance No. 2016-15, ("the Ordinance") imposing a one-half cent discretionary infrastructure sales tax for a period of ten (10) years from the date of levy, for the purposes expressed above, subject to approval of said surtax by a majority vote of those qualified electors of Brevard County voting in a referendum that was held on November 8, 2016; and

WHEREAS, it was contemplated that, if approved, said one-half cent discretionary infrastructure sales tax shall be imposed and collected County-wide, commencing on January 1, 2017, and continuing thereafter for a period of ten (10) years until December 31, 2027; and

WHEREAS, on November 8, 2016, a majority of those qualified electors of Brevard County voted in favor of the referendum, thereby authorizing the levy of the one-half cent surtax; and

WHEREAS, the COUNTY deems it in the best interest of all of the citizens and residents of Brevard County, Florida, that the proceeds of the one-half cent discretionary infrastructure sales tax be used to fund projects and programs designed to restore the Indian River Lagoon in the manner set forth in the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, including operations, maintenance and reasonable administrative costs of those projects and programs; and

WHEREAS, the project identified in the Statement of Work ("the Project") has been

included and approved by the Board of County Commissioners as part of the Save Our Indian River Lagoon Project Plan; and

WHEREAS, the COUNTY has determined that providing cost-share funding to the CITY for the purposes provided for herein will assist the COUNTY in effectively and efficiently implementing the Ordinance and its incorporated Save Our Indian River Lagoon Project Plan, as amended from time to time, and would be a proper expenditure of the monies reserved in the Save Our Indian River Lagoon Trust Fund; and

WHEREAS, the Parties previously entered into interlocal agreement No. 17-05, providing cost-share of up to $40,632 for this Project. The Citizen Oversight Committee approved the additional cost-share funding of up to $81,000. This agreement supersedes and replaces the prior agreement.

NOW, THEREFORE, for value received, and in consideration of the following covenants, promises and provisions; the Parties agree as follows:

Section 1. Documents.
This Agreement incorporates all of the following:
a. The Recitals set forth above;
b. The terms of the Agreement set forth herein;
c. Attachment A – Statement of Work;
d. Attachment B – Project Progress Report Form;
e. Attachment C – Reimbursement/Invoice Form;
f. Attachment D – Recipient's Certification of Payment Form; and
g. Attachment E – Eligible Tax Funding Cost Share Form.

Section 2. Statement of Work.
In consideration of the above recitals, and the funding assistance described below, the CITY agrees to perform and complete the activities provided for in the **Statement of Work, Attachment A**. CITY shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein.

Section 3. Term and Extensions.
a. The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until December 31, 2025 ("Completion Date"). CITY shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions.

b. Any request for an extension of time beyond the Completion Date must be made in writing no less than forty-five (45) days prior to the contracted Completion Date. Timely requests to extend for up to six (6) months each may only be approved by the County Manager, or designee, or Board of County Commissioners, as appropriate. Up to two (2) requests to extend for less than six months each may be approved by the County Manager or his/her designee. Timely requests to extend for longer than the County Manager's authorization to approve, may

only be approved by the Board of County Commissioners.

c. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date, including by way of example without limitation, delivery of a final progress report, will remain in full force and effect after the Completion Date as necessary to affect performance.

Section 4. Offer Limitations.

a. This Agreement constitutes an offer until authorized, signed and returned to the COUNTY by the CITY. This offer terminates sixty (60) days after receipt by the CITY; provided, however, that the CITY may submit a written request for extension of this time limit which may be approved by the County Manager or his/her designee.

b. If the Project, which is eligible for reimbursement under this Agreement, does not begin within one hundred eighty (180) days of the Effective Date, or if the invoice for non-construction projects is not submitted within two hundred seventy (270) days of the Effective Date, this Agreement will be subject to termination and the funds subject to reallocation.

Section 5. Project Management.

The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three (3) business days' prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) e-mail. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date received.

COUNTY
Terri Breeden
Project Manager
Department of Natural Resource Management
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940
321-633-2016
Email: terri.breeden@brevardfl.gov

CITY
Rebecca Thibert
Assistant to the City Manager
City of Melbourne
900 E Strawbridge Avenue
Melbourne, FL 32901
321-608-7206
E-mail: Rebecca.Thibert@mlbfl.org

a. The COUNTY'S Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating the COUNTY'S policies and decisions regarding all matters pertinent to performance of the Project. The COUNTY'S Project Manager may authorize minor changes in the Project that the parties agree are not inconsistent with the purpose of the Project, and do not affect the COUNTY'S cost-share funding amount, the Project's nutrient reduction benefits, Completion Date, or otherwise significantly modify the terms of the

Agreement.

b. Should additional funding be acquired from sources other than the Indian River Lagoon one-half cent surtax, the County Manager and City Manager are authorized to sign amendments to this Agreement only if such additional funding: (1) reduces the Indian River Lagoon tax funding amount; and/or (2) reduces the CITY's cost-share amount.

Section 6. Deliverables.

a. The CITY shall fully implement the Project, as described in the **Statement of Work, Attachment A**. The CITY is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, the CITY shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project.

b. The COUNTY'S Project Manager shall make a final acceptance inspection of the project when completed and finished in all respects. Upon satisfactory completion of the Project, the CITY will provide the COUNTY a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by the CITY shall constitute a release in full of all claims against the COUNTY arising from or by reason of this Agreement.

c. Unless otherwise provided herein, the COUNTY does not assert an ownership interest in any of the deliverables under this Agreement.

Section 7. Progress Reports and Performance Monitoring

a. The CITY shall provide to the COUNTY Project update/status reports as provided in the **Statement of Work, Attachment A**. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule.

b. The CITY shall use the COUNTY'S **Project Progress Report Form, Attachment B.** CITY shall submit the Project Progress Reports to the COUNTY'S Project Manager within thirty (30) days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

c. Commencement of Construction. The CITY shall notify the COUNTY once construction has started at the site.

d. For as long as the Project is operational, the COUNTY shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. The CITY shall make available to the COUNTY any available data that is requested pertaining to the performance of the Project.

Section 8. Amount of Funding.

a. For satisfactory completion of the Project, the COUNTY shall pay the CITY its "Eligible Tax Funding Cost Share" as stated in **Eligible Tax Funding Cost Share Form, Attachment E.** This

amount is not to exceed the maximum amount of cost-share that was recommended by the Citizen Oversight Committee and approved by the County Commission unless additional matching funds for the Project are secured by the COUNTY from external revenue sources and approved for allocation to this Project by the Board of County Commissioners or its duly authorized representative.

b. The COUNTY cost-share amount is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. The CITY shall be responsible for payment of all additional costs necessary to ensure completion of the Project.

c. During contract negotiations, the CITY must submit the adopted budget for the project, the amount of all secured grants for the Project, and an estimate of Project costs as defined below in Section 8.e. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project costs minus external matching funds for the Project.

d. The CITY shall notify the COUNTY'S Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement. The Eligible Tax Funding Cost Share shall be reduced as necessary to not exceed the balance of Project Costs minus external matching funds for the Project.

e. "Project cost" is defined to include actual costs of constructing project facilities, including construction, construction management, construction QA/QC testing, land acquisition, engineering, design, permitting, permit fees, impact fees, and any other Project-specific costs authorized under the **Statement of Work, Attachment A**. Project cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work, nor any costs not included in the contracted Statement of Work.

f. Funding shall not be provided for expenses incurred after the Completion Date.

g. The CITY is responsible for owning, operating and maintaining the Project for the typical operating life of the Project.

Section 9. Payment of Invoices.

a. The CITY shall submit itemized invoices as per the **Statement of Work, Attachment A** on a quarterly basis for reimbursable expenses by one of the following four methods by: (1) mail; (2) hand delivery; or (3) national overnight courier to the Brevard County Natural Resources Management Department, Terri Breeden, Project Manager, 2725 Judge Fran Jamieson Way, Building A, Viera, Florida 32940; or (4) e-mail to terri.breeden@brevardfl.gov. If a delivery method is not selected in this paragraph, the default invoicing basis will be quarterly increments and sent by mail to the Project Manager.

b. All invoices shall be submitted using **Reimbursement/Invoice Form, Attachment C**, and include the following information: (1) the COUNTY'S contract number; (2) the CITY'S name, address, and authorization to directly deposit payment into the CITY'S account; (3) the CITY'S invoice number and date of invoice; (4) the COUNTY'S Project Manager; (5) the CITY'S Project

Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the **Statement of Work, Attachment A**); and (7) **Project Progress Report Form, Attachment B**. Invoices that do not include the above-listed information shall be returned without action within ten (10) business days of receipt, stating the basis for rejection.

c. Incremental payments shall be calculated as the fraction of Eligible Tax Funding Cost Share listed in the **Eligible Tax Funding Cost Share Form**, **Attachment E** (after adjustments per Section 8c. and/or d.) divided by Project Cost multiplied by the amount of the City's Project Cost incurred during the respective incremental billing period. Payments shall be made within forty-five (45) days of receipt of an approved invoice.

d. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to the CITY and proof of payment. If necessary for audit purposes, the CITY shall provide additional supporting information as required to document invoices.

e. CITY shall be reimbursed for the actual cost of the Project, or the contracted amount, whichever is less. The COUNTY shall not withhold any retainage from this reimbursement. COUNTY reimbursement is subject to annual budgetary limitations and allocations, if applicable.

f. The COUNTY'S fiscal year ends on September 30th. The COUNTY is required to account for all encumbered funds at that time. Submittal of an invoice as of September 30th satisfies this requirement. Regardless of whether the CITY chooses monthly, quarterly, or annual invoices, if any expenses occur between a previous invoice and September 30th, the CITY shall submit a description of the work completed on the Project through September 30th and a corresponding invoice for that cost-share eligible amount achieved during that time interval.

Section 10. Final Invoice.

a. The final invoice must be submitted no later than forty-five (45) days after the City's final payment to its vendors for the Project or October 30th if the City's final payment is made between September 15th and September 30th.

b. Final Invoices that are submitted after the requisite date shall be subject to a penalty of ten percent (10%) of the invoice. This penalty may be waived by the COUNTY, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. The CITY must request approval for delayed submittal of the final invoice not later than ten (10) days prior to the due date and state the basis for the delay.

Section 11. Travel Expenses.

If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the Project budget. Travel expenses are otherwise not compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by the CITY.

Section 12. Payments Withheld.
The COUNTY may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the COUNTY from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; or (3) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

Section 13. Multi-Year Agreements.
a. For multi-fiscal year agreements, the COUNTY must budget the amount of funds that will be expended during each fiscal year as accurately as possible. Funds contracted for reimbursement beyond the COUNTY'S current fiscal year will be budgeted in subsequent fiscal years per the schedule specified in the Project Agreement, as amended. The **Statement of Work, Attachment A,** includes the parties' current schedule for completion of the work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Estimated Reimbursement Schedule").

b. If the CITY anticipates that expenditures will exceed the budgeted amount during any fiscal year, the CITY shall promptly notify the COUNTY'S Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the work without increasing the Total Compensation. The last date for the COUNTY to receive this request is August 1 of the then-current fiscal year. Funds allocated in the current fiscal year that are not reimbursed in the current fiscal year due to slippage in the Project delivery schedule will be requested by COUNTY staff to roll forward to the next fiscal year as a Budget Amendment – (Regular), per BCC-21.

c. The COUNTY may in its sole discretion prepare a Budget Change Request incorporating the revised work schedule and Estimated Reimbursement Schedule as appropriate for changes in the Project schedule.

Section 14. Liability and Insurance.
Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that respective party, its officers, employees and agents. The CITY accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the State of Florida, nor as a waiver of sovereign immunity of the COUNTY or CITY beyond the waiver provided for in section 768.28, Fla. Stat., as may be amended. Nothing in this Contract is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

Section 15. Funding Contingency.
a. This Agreement is at all times contingent upon funding availability, which may include a

single source or multiple sources, including, but not limited to: (1) the Save Our Indian River Lagoon one-half cent surtax; (2) annual appropriations by the Florida Legislature; or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the COUNTY for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the COUNTY shall so notify the CITY and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the COUNTY may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

b. The CITY agrees that any and all City funds budgeted (in the adopted or amended budget) for this Project that are saved by the CITY by virtue of reimbursement or allocation received pursuant to this cost-share agreement, shall be reallocated and expended by the CITY solely to other City, County or third party project(s) benefiting the restoration of the Indian River Lagoon within five (5) years of the Effective Date of this Agreement. Should the CITY choose to not expend such funds in the manner described above, the CITY shall transfer those funds to the COUNTY for deposit to the Save Our Indian River Lagoon Trust Fund. The CITY'S obligation under this paragraph shall survive the termination of this agreement.

Section 16. Failure to Complete Project.

a. Should the CITY fail to complete the Project, the CITY shall refund to the COUNTY all of the funds provided to the CITY pursuant to this Agreement.

b. With a recommendation from its Citizen Oversight Committee, the COUNTY, in its sole judgment and discretion, may determine that the CITY has failed to complete the Project due to circumstances that are beyond the CITY'S control, due to termination of this agreement for reasons of funding availability, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the COUNTY may excuse the CITY from the obligation to return funds provided hereunder.

c. If the Project has not been completed within thirty (30) days after the Completion Date, the CITY shall provide the COUNTY with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within ninety (90) days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

d. In the event the Project constitutes a portion of the total functional Project, this paragraph shall apply in the event the total functional Project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional Project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 17(a) and 17(b) shall survive the termination or expiration of this Agreement.

e. Force Majeure. The failure to carry out any terms of this Agreement due to any one of the following circumstances beyond the control of the CITY: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, or governmental agency of the state of Florida or the United States; (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction; (c) war; (d) flood; (e) earthquake; (f) fire; (g) severe wind storm or hurricane; (h) acts of public disturbance; (i) quarantine restrictions; (j) epidemic; (k) strikes; or (l) sabotage. The CITY shall not be subject to any liability for failure to carry out any of the terms of this Agreement to the extent that such failure shall be due to a Force Majeure event as defined herein. In such event, the CITY shall be excused from the obligation to return funds provided herein if the parties can agree, in writing, to a revised completion date for the Project based on the circumstances.

Section 17. Termination.

a. If the CITY materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the COUNTY may provide the CITY written notice of the deficiency by forwarding a "Notice to Cure," citing the specific nature of the breach. The CITY shall have thirty (30) days following receipt of the notice to cure the breach. If the CITY fails to cure the breach within the thirty (30) day period, the COUNTY may issue a "Termination for Default Notice" terminating this Agreement without further notice. In such event, the CITY shall refund to the COUNTY all funds provided to the CITY pursuant to this Agreement within thirty (30) days of such termination. The COUNTY may also terminate this Agreement upon ten (10) days written notice in the event of any material misrepresentations in the Project Proposal.

b. Delay or failure by the COUNTY to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the COUNTY'S rights or remedies for any subsequent breach or continued breach of this Agreement.

c. This Agreement may be terminated by either party for convenience upon ninety (90) days prior written notice to the other party. In the event the COUNTY terminates for convenience, the CITY shall be paid for work completed and costs incurred in good faith through the date of termination. In the event the CITY terminates for convenience, COUNTY shall receive a full refund of the funds provided herein within thirty (30) days of the date of termination.

ADDITIONAL PROVISIONS

Section 18. Assignment.

The CITY shall not assign this Agreement, or any monies due hereunder, without the COUNTY'S prior written consent. The CITY is solely responsible for fulfilling all work elements in any contracts awarded by the CITY and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the COUNTY and any of the CITY'S contractors or subcontractors.

Section 19. Audit; Access to Records; Repayment of Funds.

a. Maintenance of Records. The CITY shall maintain its books and records such that receipt

and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. The CITY shall keep the records of receipts and expenditures, copies of all reports submitted to the COUNTY, and copies of all invoices and supporting documentation for at least five (5) years after expiration of this Agreement. In addition, the CITY shall maintain records to demonstrate satisfaction of its obligation under subparagraph 15b. above.

b. Review and Auditing. In accordance with generally accepted governmental auditing standards, the COUNTY shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, the CITY shall maintain all required records until the audit is completed and all questions are resolved. The CITY will provide proper facilities for access to and inspection of all required records.

c. Repayment of Funds. COUNTY funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the COUNTY finds any of the following: (1) the CITY has spent funds for purposes other than as provided for herein; (2) the CITY has failed to perform a continuing obligation of this Agreement; (3) the CITY has received duplicate funds from the COUNTY or other external funding entity for the same purpose; (4) the CITY has been advanced or paid unobligated funds; (5) the CITY has been paid funds in excess of the amount the CITY is entitled to receive under the Agreement; and/or (6) the CITY has received contributions amounting to more than one hundred percent (100%) of the Project cost through cumulative public agency cost-share funding.

Section 20. Dispute Resolution.
The CITY is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the COUNTY's Project Manager no later than ten (10) business days after the precipitating event. If not resolved by the COUNTY Project Manager within ten (10) business days, the COUNTY Project Manager shall forward the request to the County Manager's Office, which shall issue a written decision within ten (10) business days of receipt. This determination shall constitute final action of the COUNTY and may then be subject to judicial review upon completion of the Project.

Section 21. Governing Law, Venue, Attorney's Fees, Waiver of Right to Jury Trial.
This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) Venue for any state or federal legal proceedings shall be in a court of competent jurisdiction in and for Brevard County; (2) Each party shall bear its own attorney's fees, including appeals; (3) For civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

Section 22. Permits.
The CITY shall comply with all applicable federal, state, and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to

the Project. The CITY shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

Section 23. Independent Contractors.
The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. The CITY is not a contractor of the COUNTY. The COUNTY is providing cost-share funding as a cooperating governmental entity to assist the CITY in accomplishing the Project. The CITY is solely responsible for accomplishing the Project and directing the means and methods by which the Project is accomplished. The CITY is solely responsible for compliance with all labor, health care, and tax laws pertaining to the CITY, its officers, agents, and employees.

Section 24. Scrutinized Companies.
a. The CITY certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY or its subcontractors are found to have submitted a false certification; or if the CITY or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

b. If this Agreement is for more than one million dollars, the CITY certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, Florida Statutes, the COUNTY may immediately terminate this Agreement at its sole option if the CITY, its affiliates, or its subcontractors are found to have submitted a false certification; or if the CITY, its affiliates, or its subcontractors are placed on the Scrutinized Companies that Boycott the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

c. The CITY agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. As provided in Section 287.135(8), Florida Statutes, if federal law ceases to authorize these contracting prohibitions then they shall become inoperative.

Section 25. Public Entity Crime.
A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with

a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

Section 26. Public Records.
Records of the CITY that are made or received in the course of performance of the Project may be public records that are subject to the requirements of Chapter 119, Florida Statutes. If the CITY receives a public records request, the CITY shall promptly notify the COUNTY'S Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of Chapter 119, Florida Statutes, as amended.

Section 27. Royalties and Patents.
The CITY certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. The CITY shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the COUNTY harmless from loss to the extent allowed by Florida law.

Section 28. Employment Eligibility Verification (E-Verify):
The CITY:

a. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the CITY during the term of the contract; and

b. shall expressly require any subcontractors performing work or providing services pursuant to this contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and

c. agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the County consistent with the terms of the CITY'S enrollment in the program. This includes maintaining a copy of proof of the CITY'S and subcontractors' enrollment in the E-Verify Program; and

d. compliance with the terms of this section is made an express condition of this Contract and the COUNTY may treat a failure to comply as a material breach; and

e. shall require any contractor to provide the City with an affidavit stating that it does not employ, contract with, or subcontract with any unauthorized aliens; and

ATTACHMENT A
STATEMENT OF WORK

PROJECT TITLE: Pennwood Sewer Conversion

PROJECT LOCATION: The Project will be located on Pennwood Drive between Devonshire Drive and Bignonia Street in the City of Melbourne, FL.

1. City of Melbourne Manhole #4515
   28.07495569, -80.62028208 degrees

PROJECT BACKGROUND: The City of Melbourne was contacted in early 2016 about the possibility of providing sanitary sewer to a neighborhood that currently does not have municipal sewer. The homes on this section of Pennwood Drive are all served by septic tanks. There are four existing homes that are within 55 yards of a tributary of Crane Creek. Additionally, Staff has been in contact with one property owner who is in the planning stages of building a home directly on Crane Creek. There are three other vacant lots that this project would allow connection to the force main to prevent new septic tanks from being installed.

The elevation change within this neighborhood does not allow for conventional gravity sewer installation. The homes current septic tanks would sit below the tie in elevation.

PROJECT DESCRIPTION: The City is currently designing a low-pressure force main to be installed within the Pennwood Drive right of way to serve these homes. This system would allow the existing homes to convert their existing septic tanks into holding tanks and install small grinder pumps to connect to the municipal sewers system.

TASKS and DELIVERABLES:

Task #1 Construction of Project

Task Description: The City will install the low-pressure force main and any other incidental work necessary to complete the project in accordance with the final design and required permits. The City will be providing the engineering oversight during construction.

Task Deliverable: Construction

Task #2 Homeowner Connections

Task Description: The City will be working with homeowners to connect to the low-pressure force main and the abandonment of their septic tanks.

Task Deliverable: Homeowner Connections

Task	Task Title	Task Start Date	Task End Date
1	Construction	10/1/2018	12/31/2025
2	Homeowner Connections	10/1/2018	12/31/2025

Estimated Reimbursement Schedule:
Project reimbursements will be requested after project completion.

Task #	4/2019	1/2026	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year	Quarter #/Year
1	$17,074.40	$3,243.89							
2		$60,681.71							

Deliverables:
Quarterly and final reports including pictures of progress made, or plans if pictures are not yet available.

Project's Status without Trust Funds (Adjust the highlighted section and delete the other options that do not apply):
This project was not included in the City's FY 2017-2018 budget, therefore without the Save Our Indian River Lagoon Funding the project would not have been executed in the near future.

ATTACHMENT B

SAVE OUR INDIAN RIVER LAGOON
PROJECT PROGRESS REPORT FORM

Date: _____ **Report Number:** _____

Project Information

Project Name:	
Recipient Name:	

Contract Number:		County Project Manager Email:	
Nitrogen Reduction Benefit (lbs/yr)		County Project Manager Phone:	
Phosphorus Reduction Benefit (lbs/yr)		Recipient's Email:	
TSS Reduction Benefit (lbs/yr)		Recipient's Phone:	

Construction Schedule

Start Date (mm/dd/yy):	
Completion (mm/dd/yy):	

Reporting Period

Beginning Date (mm/dd/yy):	
Ending Date (mm/dd/yy):	

Budget

Total Budget:		Expended This Period:	
Expended To-date:		Percent Budget Expended:	
Contract Amount:		Percent Cost Share:	

Estimated Reimbursement Schedule

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Status

Tasks/Milestones/Deliverables Scheduled for this Reporting Period or Within the Next 90 days:

Task Number	Tasks/Milestones/Deliverables	Start Date	Finish	Complet	Date
1	Permitting				
2	Engineering				
3	Construction				

Problems, Issues, Solutions, Anticipated deviations from schedule:

Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

Attachment C - Detail Sheet

Save Our Indian River Lagoon Cost-Share Program
Invoice for Reimbursement

RECIPIENT'S NAME:			
RECIPIENT'S EMAIL:			
PROJECT NAME:			
AGREEMENT NO.:			
PERFORMANCE PERIOD:			
ROM:		**To:**	
PAYMENT REQUEST NO.:			
DATE OF REQUEST:			
COUNTY'S PROJECT MANAGER:			
PROJECT COST:			
LAGOON TAX COST SHARE PERCENTAGE:			
CONTRACTED LAGOON TAX COST SHARE AMOUNT:			
CURRENT REIMBUREMENT AMOUNT REQUESTED:			

ITEM NO.	VENDOR	DESCRIPTION OF SERVICES/ CATEGORY OF EXPENDITURE	CHECK DATE	CHECK NUMBER	INVOICE NUMBER	INVOICES PREVIOUSLY PAID	INVOICES INCLUDED IN THIS REQUEST	PREVIOUS REIMBURSEMENT AMOUNT	CURRENT REIMBURSEMENT AMOUNT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
			TOTALS:					$ -	$ -

Attachment D

Recipient's Certification of Payment Request

I, _____ , on behalf of _____ , do hereby certify for SOIRL Agreement No. _____ and Payment Request No. _____ that:

☐The disbursement amount requested is for allowable costs for the project described in Attachment A of the Agreement.

☐All costs included in the amount requested have been satisfactorily purchased, performed, received, and applied toward completing the project; such costs are documented by invoices or other appropriate documentation as required in the Agreement.

☐All procurement for the amount requested was completed in a manner consistent with applicable law and contract requirements.

☐If notified by the County of any restrictions on the use of local preference for this Agreement, the Recipient confirms that no local preference was used.

☐The Recipient has paid such costs under the terms and provisions of contracts relating directly to the project; and the Recipient is not in default of any terms or provisions of the contracts.

Check all that apply:

☐All permits and approvals required for the construction, which is underway, have been obtained.

☐Construction up to the point of this disbursement is in compliance with the construction plans and permits.

☐The Recipient's Grant Manager relied on certifications from the following professionals that provided services for this project during the time period covered by this Certification of Payment Request, and such certifications are included:

Professional Service Provider (Name / License No.)	Period of Service (mm/dd/yy – mm/dd/yy)

_____
Recipient's Grant Manager's Signature

_____
Print Name

_____
Telephone Number

_____
Recipient's Fiscal Agent

_____
Print Name

_____
Telephone Number

ATTACHMENT E

Recipient Name:	City of Melbourne
Project Name:	Pennwood Sewer Conversion
Agreement Number:	21-05-2

Estimated Project Cost-Share Table

Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP/Legislature)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Construction	$ 30,515.89				$ 20,150.29	$ 8,035.01
2	Homeowner Connections	$ 101,416.18	$ 40,566.47			$ 60,849.71	$ 11,164.99
3							
4		$ -					
	Total	$ 131,932.07				$ 81,000.00	$ 19,200.00

Funding Eligibility Calculation

Project Type		Septic to Sewer
BMP Type (If stormwater)		
Pounds of Nitrogen Reduction		102.6
Eligible Cost Share per Pound	$	1,500.00
Eligible Tax Funding Cost Share	$	153,900.00
Reduction so Sum of Grants does not exceed Project Cost	$	-
Eligible Lagoon Tax Cost Share, Adjusted	$	81,000.00
Percent Cost Share to be contributed by the Lagoon Tax		61%

Natural Resources Management Department
2725 Judge Fran Jamieson Way
Building A, Room 219
Viera, Florida 32940

BOARD OF COUNTY COMMISSIONERS

Inter-Office Memo

TO: The Honorable Rita Pritchett, Chair
Board of County Commissioners

THROUGH: Frank Abbate, County Manager
John Denninghoff, Assistant County Manager
Virginia Barker, Director, Natural Resources Management
Tom Belflower, NRMD Support Services Manager

Digitally signed by Mcgee, Darcie
DN: cn=Mcgee, Darcie, email=Darcie.Mcgee@brevardfl.gov
Date: 2021.06.16 10:40:34 -04'00'

Digitally signed by Belflower, Tom
Date: 2021.06.16 08:42:08 -04'00'

FROM: Terri Breeden, Associate Environmental Specialist, NRMD

DATE: June 16, 2021

Digitally signed by Breeden, Terri
Date: 2021.06.16 08:14:03 -04'00'

SUBJECT: Save Our Indian River Lagoon Project Cost-Share Funding - Interlocal Agreement Amendment Between Brevard County and Matthew Circle, LLC

We respectfully request your signature on the attached Save Our Indian River Lagoon Project Cost-Share Funding Interlocal Agreement between Brevard County and Matthew Circle, LLC for the Oak Point Mobile Home Park Project. This project was approved by the County Commission on February 9, 2021 as a substitute project included in the 2021 Update to the Save Our Indian River Lagoon Project Plan.

This project will reduce the amount of excess nutrients flowing to the Indian River Lagoon through the connection of an aged package plant at a mobile home park consisting of 108 residences to central sewer. This amendment adjusts the Save Our Indian River Lagoon cost share as this project was approved for an additional $350,000 for construction from the St. Johns River Water Management District Indian River Lagoon Water Quality Improvement Grant Program. The nutrient reduction benefit of this project is estimated to be 186 pounds per year of total nitrogen and total phosphorus will be determined. The original Save Our Indian River Lagoon Trust Fund cost-share for this project was $279,000 and with the additional secured funds is now $629,000.

Please contact Terri Breeden at terri.breeden@brevardfl.gov or 321-223-0398 with questions or to arrange for pick-up.

Thank you.

Attachment A – A0-29

Attachment B – Clerk's Memo February 9, 2021

Attachment C – Clerk's Memo August 4, 2020

Attachment D – Amendment

J 1

Feb. 9 '21

BREVARD COUNTY
BOARD OF COUNTY COMMISSIONERS

CONTRACT REVIEW AND APPROVAL FORM

SECTION I - GENERAL INFORMATION

1. Contractor: Oak Point Mobile Home Park	**2. Amount:** $350,000
3. Fund/Account #: 1260/517226	**4. Department Name:** Natural Resources Management
5. Contract Description: Oak Point Mobile Home Park - SJRMWD Grant	
6. Contract Monitor: Terri Breeden	**8. Contract Type:** INTERGOVT/LOCAL
7. Dept/Office Director: Virginia Barker	
9. Type of Procurement: Exempt from Competition	

SECTION II - REVIEW AND APPROVAL TO ADVERTISE

COUNTY OFFICE	APPROVAL YES	APPROVAL NO	SIGNATURE
User Agency	☑	☐	
Purchasing	☐	☐	
Risk Management	☐	☐	
County Attorney	☐	☐	

SECTION III - CONTRACTS MANAGEMENT DATABASE CHECKLIST

COUNTY OFFICE	APPROVAL YES	APPROVAL NO	SIGNATURE
User Agency	☑	☐	Breeden, Terri — Digitally signed by Breeden, Terri Date: 2021.06.07 08:18:21 -04'00'
Purchasing	☑	☐	Summer A Wyllie — Digitally signed by Wyllie, Summer Date: 2021.06.09 14:45:17 -04'00'
Risk Management	☑	☐	Lairsey, Matt — Digitally signed by Lairsey, Matt Date: 2021.06.09 15:19:50 -04'00'
County Attorney	☑	☐	Esseesse, Alexander — Digitally signed by Esseesse, Alexander Date: 2021.06.09 16:57:46 -04'00'

SECTION IV - CONTRACTS MANAGEMENT DATABASE CHECKLIST

CM DATABASE REQUIRED FIELDS	Complete ✓
Department Information	☐
Department	☐
Program	☐
Contact Name	☐
Cost Center, Fund, and G/L Account	☐
Vendor Information (SAP Vendor #)	☐
Contract Status, Title, Type, and Amount	☐
Storage Location (SAP)	☐
Contract Approval Date, Effective Date, and Expiration Date	☐
Contract Absolute End Date (No Additional Renewals/Extensions)	☐
Material Group	☐
Contract Documents Uploaded in CM database (Contract Form with County Attorney/ Risk Management/ Purchasing Approval; Signed/Executed Contract)	☐
"Right To Audit" Clause Included in Contract	☐
Monitored items: Uploaded to database (Insurance, Bonds, etc.)	☐

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

February 10, 2021

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item J.1., Adoption of the Save Our Indian River Lagoon (SOIRL) Project Plan 2021 Update, Unanimously Recommended by the SOIRL Citizens Oversight Committee (COC)

The Board of County Commissioners, in regular session on February 9, 2021, adopted the SOIRL Project Plan 2021 Update, as recommended by the SOIRL COC on January 15, 2021; authorized associated Budget Change Requests; approved continued signature authority to the Chair, or designee, in accordance with the threshold limits provided in Brevard County Code 25 and 27, and Administrative Order 29, to execute interlocal, non-governmental organization, University and private agreements, task orders, change orders, and contract renewals, using contract terms and templates previously approved by the Board, subject to review and approval by the County Attorney, Risk Management, and Purchasing, as appropriate, to provide cost-share from the SOIRL Trust Fund for projects and programs approved in the SOIRL Project Plan; approved continuing authority for the County Manager to execute contract amendments; approved continued authority for you to execute up to two no-cost time extensions up to six-months each; granted permission to advertise formal solicitation of bids and proposals, and to award to the qualified bidder having the lowest, responsible and best response for tangible items, capital improvement projects, and/or equipment when funding is available; and authorized the County Manager, or his designee, to submit grant applications for leveraging cost-share for projects approved in the SOIRL Project Plan.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK

Kimberly Powell, Clerk to the Board

/ds

cc: County Attorney
County Manager
Contracts Administration
Finance
Budget

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

RECEIVED
AUG 1 2020
BREVARD COUNTY
NATURAL RESOURCES MGT DPT

August 5, 2020

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item J.3., 2020-2021 Indian River Lagoon Water Quality Improvement Projects Grant Program

The Board of County Commissioners, in regular session on August 4, 2020, authorized the County Manager, or his designee, to sign grant funding requests submitted by Brevard County to the St. Johns River Water Management District for Indian River Lagoon Water Quality Improvements Projects; authorized the County Manager, or his designee, to execute resultant grant contracts subject to the approval of the County Attorney's Office and Risk Management, waiving the local venue preference for disputes; authorized the County Manager, or his designee, to execute future contract amendments subject to the approval of the County Attorney's Office and Risk Management; and approved associated budget change requests.

Sincerely yours,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Kimberly Powell, Clerk to the Board

/ds

cc: County Manager
County Attorney
Risk Management
Finance
Budget

AMENDMENT 1 TO THE SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND MATTHEW CIRCLE, LLC

AGREEMENT NUMBER: SOIRL 21-192

THIS FIRST AMENDMENT is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and Matthew Circle, LLC, a Florida corporation organized and existing under the laws of the State of Florida (hereinafter "GRANTEE").

WHEREAS, the parties have previously entered into that certain Save Our Indian River Lagoon Project Cost-Share Funding Interlocal Agreement No. SOIRL 21-192 on March 29, 2021 ("Agreement"), which is incorporated herein by this reference, for the mutual benefit of Matthew Circle, LLC, a Florida limited liability company, and Brevard County; and

WHEREAS, the COUNTY has obtained additional funds to support the Oak Point Mobile Home Park Project from St. Johns River Water Management District in the amount of $350,000.00 through the Indian River Lagoon Water Quality Improvement Projects Grants.

NOW, THEREFORE, in consideration of the promises and mutual covenants herein contained, the parties hereby agree as follows:

1. Section 17. Funding Contingency; Clawback. is hereby amended to include two new subsections, Subsections 17.d. and 17.e., to read as follows:

d. The level of Save Our Indian River Lagoon funding is independent of the Cost-Share Agreement for the Oak Point Mobile Home Park Project, identified as Contract #36535. No impact to said funding will occur if St. Johns River Water Management District terminates or otherwise modifies Contract #36535 for budgetary reasons.

e. Notwithstanding anything herein to the contrary, should GRANTEE fail to complete the Project due to the early termination of Contract #36535 for lack of funding or changes in budgets, COUNTY shall make a good faith determination that such unforeseen changes make the Project economically unfeasible, and GRANTEE will not be required to refund any funds already expended under this Contract. GRANTEE shall attempt in good faith to secure alternative funding sources to complete the Project in the case that Contract #36535 is terminated. If the Project is not to be completed for reasons outside the GRANTEE's control within thirty (30) days of the Completion Date, COUNTY and GRANTEE shall in good faith discuss and execute a mutually-accepted revision to the Project timeline or scope for completion of the Project.

2. As a result of the additional funds made available through the Cost-Share Agreement between St. Johns River Water Management District and Brevard County, "Attachment A – Statement of Work" of the Agreement is hereby amended as follows:

Task #	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	$15,500	$13,000	$0	$3,000	$3,000	$3,000	$3,000
2							$102,500
Task #	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022
1	$3,000	$3,000	$3,250	$19,250			
2	$152,500	~~$37,500~~ $132,500	$112,750	$59,750			

3. As a result of the additional funds made available through the Cost-Share Agreement between St. Johns River Water Management District and Brevard County, "Attachment E – Eligible Funding Cost Share Form" of the Agreement is hereby amended as follows:

Attachment E

ATTACHMENT E

Recipient Name:		Matthew Circle, LLC for Oak Point Mobile Home Park
Project Name:		Oak Point Mobile Home Park Package Plant Connections
Agreement Number:		21-192

Estimated Project Cost-Share Table							
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering	$37,500.00				$37,500.00	~~$ 37,500.00~~
3	Construction	~~$587,500.00~~ $591,500.00			$350,000.00	$241,500.00	~~$581,500.00~~
4	Monitoring						$ -
	Total	~~$625,000.00~~ $629,000.00	$ -	$-	$350,000.00	~~$279,000.00~~ $629,000.00	~~$625,000.00~~

Funding Eligibility Calculation		
Project Type		
BMP Type (If stormwater)		SW Trad BMP
Pounds of Nitrogen Reduction		186
Eligible Cost Share per Pound		$1,500
Eligible Tax Funding Cost Share		$279,000.00
Reduction so Sum of Grants does not exceed Project Cost		
Eligible Lagoon Tax Cost Share, Adjusted		~~$279,000.00~~ $629,000.00
Percent Cost Share to be contributed by the Lagoon Tax		~~45%~~ 100%

4. The Cost-Share Agreement for the Oak Point Mobile Home Park Project between the St. Johns River Water Management District and Brevard County, as may be amended, is incorporated herein by this reference and attached hereto as "Attachment F – Cost-Share Agreement Between the St. Johns River Water Management District and Brevard County Contract #36535."

5. All terms and conditions of the Agreement, incorporated herein by this reference, not inconsistent with the provisions of this First Amendment, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the date last written below.

BREVARD COUNTY, FLORIDA

By: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

GRANTEE

By: Matija Bilic

Name: Matija Bilic

Title: _____

Date: 6-11-2021

Reviewed for legal form and content for Brevard County

6/9/21

Alexander Esseesse, Assistant County Attorney

ATTEST

By: _____

Rachel M. Sadoff, Clerk

Date: 6/23/2021

Attachment F

COST-SHARE AGREEMENT
BETWEEN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
AND BREVARD COUNTY

THIS AGREEMENT ("Agreement") is entered into by and between the GOVERNING BOARD of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (the "District"), whose address is 4049 Reid Street, Palatka, Florida 32177, and BREVARD COUNTY, FLORIDA, a political subdivision of the State of Florida ("Recipient"), 2725 Judge Fran Jamieson Way, Building A, Room 219, Viera, Florida 32940. All references to the parties hereto include the parties, their officers, employees, agents, successors, and assigns.

RECITALS

The waters of the state of Florida are among its basic resources, and it has been declared to be the policy of the Legislature to promote the conservation, development, and proper utilization of surface and ground water. Pursuant to chapter 373, Fla. Stat., the District is responsible for the management of the water resources within its geographical area.

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

The District has determined that providing cost-share funding to Recipient for the purposes provided for herein will benefit the water resources and one or more of the District's missions and initiatives.

At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding. The parties have agreed to jointly fund the following project in accordance with the funding formula further described in the Statement of Work, Attachment A (hereafter the "Project"):

Oak Point Park Project

In consideration of the above recitals, and the funding assistance described below, Recipient agrees to perform and complete the activities provided for in the Statement of Work, Attachment A. Recipient shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein. This Agreement consists of all of the following documents: (1) Agreement, (2) Attachment A — Statement of Work; and (3) all other attachments, if any. The parties hereby agree to the following terms and conditions.

1. **TERM; WITHDRAWAL OF OFFER**

(a) The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until December 31, 2021 ("Completion Date"). Recipient shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions. Any request for an extension of time beyond the Completion Date must be made before October 1, 2021. Timely requests to extend, for longer than six months, the Completion Date of the Agreement for projects whose District contribution exceeds $100,000 may only be approved by the District's Governing

Board. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date survive termination or expiration hereof (e.g., delivery of a final report, will remain in full force and effect after the Completion Date as necessary to effect performance).

(b) This Agreement constitutes an offer until authorized, signed and returned to the District by Recipient. This offer terminates 45 days after receipt by Recipient; provided, however, that Recipient may submit a written request for extension of this time limit to the District's Project Manager, stating the reason(s) therefor. Request for extension of time after the 45 days will be denied. The Project Manager shall notify Recipient in writing if an extension is granted or denied. If granted, this Agreement shall be deemed modified accordingly without any further action by the parties.

2. **DELIVERABLES**. Recipient shall fully implement the Project, as described in the Statement of Work, Attachment A. Recipient is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, Recipient shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project. The District's Project Manager shall make a final acceptance inspection of the Project when completed and finished in all respects. Upon satisfactory completion of the Project, the District will provide Recipient a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by Recipient shall constitute a release in full of all claims against the District arising from or by reason of this Agreement.

3. **OWNERSHIP OF DELIVERABLES.** Unless otherwise provided herein, the District does not assert an ownership interest in any of the deliverables under this Agreement.

4. **AMOUNT OF FUNDING**

(a) For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total Project cost, but in no event shall the District cost-share exceed $350,000. The District cost-share is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. Recipient shall be responsible for payment of all costs necessary to ensure completion of the Project. Recipient shall notify the District's Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement.

(b) "Construction cost" is defined to include actual costs of constructing Project facilities, including construction management. Land acquisition, engineering design, permitting, and solicitation costs are excluded. Construction cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work. Costs that are excluded will not be credited toward Recipient's cost-share.

(c) Work performed or expenses incurred after the Completion Date are not eligible for Cost-Share reimbursement.

5. **PAYMENT OF INVOICES**

(a) Recipient shall submit itemized invoices as per the Statement of Work, Attachment A for reimbursable expenses by one of the following two methods: (1) by email to acctpay@sjrwmd.com (preferred) or (2) by mail to the St. Johns River Water Management District, Finance Director, 4049 Reid Street, Palatka, Florida 32177-2571. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to Recipient and proof of payment. Recipient shall be

reimbursed for 100% of approved cost or the not-to-exceed sum of $350,000, whichever is less. The District shall not withhold any retainage from this reimbursement. District reimbursement is subject to annual budgetary limitation, if applicable, as provided in subsection (g). If necessary for audit purposes, Recipient shall provide additional supporting information as required to document invoices.

(b) **End of District Fiscal Year Reporting**. The District's fiscal year ends on September 30. Irrespective of the invoicing frequency, the District is required to account for all encumbered funds at that time. When authorized under the Agreement, submittal of an invoice as of September 30 satisfies this requirement. The invoice shall be submitted no later than October 30. If the Agreement does not authorize submittal of an invoice as of September 30, Recipient shall submit, prior to October 30, a description of the additional work on the Project completed between the last invoice and September 30, and an estimate of the additional amount due as of September 30 for such Work. If there have been no prior invoices, Recipient shall submit a description of the work completed on the Project through September 30 and a statement estimating the dollar value of that work as of September 30.

(c) **Final Invoice**. The final invoice must be submitted no later than 45 days after the Completion Date; provided, however, that when the Completion Date corresponds with the end of the District's fiscal year (September 30), the final invoice must be submitted no later than 30 days after the Completion Date. **Final invoices that are submitted after the requisite date shall be subject to a penalty of ten percent of the invoice. This penalty may be waived by the District, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. Recipient must request approval for delayed submittal of the final invoice not later than ten days prior to the due date and state the basis for the delay.**

(d) All invoices shall include the following information: (1) District contract number; (2) Recipient's name, address, and authorization to directly deposit payment into Recipient's account (if Recipient has not yet provided the District with a completed Direct Deposit Authorization form); (3) Recipient's invoice number and date of invoice; (4) District Project Manager; (5) Recipient's Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the Statement of Work), in addition, see Attachment D, "CONTRACT PAYMENT REQUIREMENTS FOR STATE FUNDED COST REIMBURSEMENT CONTRACTS," (7) Progress Report (if required); (8) Diversity Report (if otherwise required herein). Invoices that do not correspond with this paragraph shall be returned without action within 20 business days of receipt, stating the basis for rejection. Payments shall be made within 45 days of receipt of an approved invoice.

(e) **Travel expenses.** If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the project budget and are not otherwise compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by Recipient and are only compensable when specifically approved by the District as an authorized District traveler. In such instance, travel expenses must be submitted on District or State of Florida travel forms and shall be paid pursuant to District Administrative Directive 2000-02.

(f) **Payments withheld.** The District may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the District from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; (3) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

(g) **Annual budgetary limitation.** For multi-fiscal year agreements, the District must budget the amount of funds that will be expended during each fiscal year as accurately as possible. The Statement of Work, Attachment A, includes the parties' current schedule for completion of the Work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Annual Spending Plan"). If Recipient anticipates that expenditures will exceed the budgeted amount during any fiscal year, Recipient shall promptly notify the District's Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the Work without increasing the Total Compensation. The last date for the District to receive this request is August 1 of the then-current fiscal year. The District may in its sole discretion prepare a District Supplemental Instruction Form incorporating the revised work schedule and Annual Spending Plan during the then-current fiscal year or subsequent fiscal year(s).

6. **LIABILITY AND INSURANCE.** Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party, its officers, employees and agents. Recipient accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the state of Florida beyond the waiver provided for in §768.28, Fla. Stat., as amended. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

7. **FUNDING CONTINGENCY.** This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the District's Governing Board; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the District's Governing Board for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the District shall so notify Recipient and this Agreement shall be deemed terminated for convenience five days after receipt of such notice, or within such additional time as the District may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

8. **PROJECT MANAGEMENT**

(a) The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three business days' prior written notice to the other party. Written notice of change of address shall be provided within five business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) email. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date transmitted and received.

DISTRICT
Derek Busby, Project Manager
St. Johns River Water Management District
4049 Reid Street
Palatka, Florida 32177-2571
Phone: 386-329-4459
Email: dbusby@sjrwmd.com

RECIPIENT
Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A-219
Viera, Florida 32940-6605
Phone: 321-350-8407
Email: terri.breeden@brevardfl.gov

(b) The District's Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating District policies and decisions regarding all matters pertinent to performance of the Project. The District's Project Manager may issue a District Supplemental Instruction (DSI) form, Attachment C, to authorize minor adjustments to the Project that are consistent with the purpose of the Project. Both parties must sign the DSI. A DSI may not be used to change the District cost-share or percentage, quantity, quality or the Completion Date of the Project, or to change or modify the Agreement.

9. **PROGRESS REPORTS AND PERFORMANCE MONITORING.**

(a) **Progress Reports.** Recipient shall provide to the District quarterly Project update/status reports as provided in the Statement of Work. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule. Recipient shall use the District's Project Progress Report form, Attachment B. Recipient shall submit the Project Progress Reports to the District's Project Manager and District's Budget Manager within 30 days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

(b) **Performance Monitoring.** For as long as the Project is operational, the District shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. Recipient shall make available to the District any data that is requested pertaining to performance of the Project.

10. **WAIVER.** The delay or failure by the District to exercise or enforce any of its rights under this Contract shall not constitute or be deemed a waiver of the District's right thereafter to enforce those rights, nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or the exercise of any other right.

11. **FAILURE TO COMPLETE PROJECT**

(a) Should Recipient fail to complete the Project, Recipient shall refund to the District all of the funds provided to Recipient pursuant to this Agreement. However, the District, in its sole judgment and discretion, may determine that Recipient has failed to complete the Project due to circumstances that are beyond Recipient's control, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the District may excuse Recipient from the obligation to return funds provided hereunder. If the Project has not been completed within 30 days after the Completion Date, Recipient shall provide the District with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within 90 days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

(b) In the event the Project constitutes a portion of the total functional project, this paragraph shall apply in the event the total functional project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 11(a) and 11(b) shall survive the termination or expiration of this Agreement.

12. **TERMINATION.** If Recipient materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the District may provide Recipient written notice of the deficiency by forwarding a Notice to Cure, citing the specific nature of the breach. Recipient shall have 30 days following receipt of the notice to cure the breach. If Recipient fails to cure the

breach within the 30-day period, the District shall issue a Termination for Default Notice terminating this Agreement without further notice. In such event, Recipient shall refund to the District all funds provided to Recipient pursuant to this Agreement within 30 days of such termination. The District may also terminate this Agreement upon ten days' written notice in the event of any material misrepresentations in the Project Proposal.

Delay or failure by the District to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the District's rights or remedies for any subsequent breach or continued breach of this Agreement.

ADDITIONAL PROVISIONS (Alphabetical)

13. **ASSIGNMENT.** Recipient shall not assign this Agreement, or any monies due hereunder, without the District's prior written consent. Recipient is solely responsible for fulfilling all work elements in any contracts awarded by Recipient and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the District and any of Recipient's contractors or subcontractors.

14. **AUDIT; ACCESS TO RECORDS; REPAYMENT OF FUNDS**

    (a) **Maintenance of Records**. Recipient shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. Recipient shall keep the records of receipts and expenditures, copies of all reports submitted to the District, and copies of all invoices and supporting documentation for at least five years after expiration of this Agreement. In accordance with generally accepted governmental auditing standards, the District shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, Recipient shall maintain all required records until the audit is completed and all questions are resolved. Recipient will provide proper facilities for access to and inspection of all required records.

    (b) **Repayment of Funds.** District funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the District finds any of the following: (1) Recipient has spent funds for purposes other than as provided for herein, including but not limited to construction materials not used in the Project; (2) Recipient has failed to perform a continuing obligation of this Agreement; (3) Recipient has received duplicate funds from the District for the same purpose; (4) Recipient has been advanced or paid unobligated funds; (5) Recipient has been paid funds in excess of the amount Recipient is entitled to receive under the Agreement; and/or (6) Recipient has received more than 100% contributions through cumulative public agency cost-share funding.

15. **CIVIL RIGHTS.** Pursuant to chapter 760, Fla. Stat., Recipient shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, age, handicap, or marital status.

16. **COOPERATION WITH THE INSPECTOR GENERAL, PURSUANT TO §20.055(5) FLA. STAT.** Recipient and any subcontractors understand and will comply with their duty, pursuant to §20.055(5), Fla. Stat., to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

17. **DISPUTE RESOLUTION.** Recipient is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the District's Project Manager no later than ten business days after the precipitating

event. If not resolved by the Project Manager, the Project Manager shall forward the request to the District's Office of General Counsel, which shall issue a written decision within ten business days of receipt. This determination shall constitute final action of the District and shall then be subject to judicial review upon completion of the Project.

18. **DIVERSITY REPORTING.** The District is committed to the opportunity for diversity in the performance of all cost-sharing agreements, and encourages Recipient to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as contractors. The District will assist Recipient by sharing information on W/MBEs. Recipient shall provide with each invoice a report describing: (1) the company names for all W/MBEs; (2) the type of minority, and (3) the amounts spent with each during the invoicing period. The report will also denote if there were no W/MBE expenditures.

19. **FLORIDA SINGLE AUDIT ACT**

(a) **Applicability.** The Florida Single Audit Act (FSAA), §215.97, Fla. Stat., applies to all sub-recipients of state financial assistance, as defined in §215.97(1)(q), Fla. Stat., awarded by the District through a project or program that is funded, in whole or in part, through state financial assistance to the District. In the event Recipient expends a total amount of state financial assistance equal to or in excess of $750,000 in any fiscal year of such Recipient, Recipient must have a state single or project-specific audit for such fiscal year in accordance with §215.97, Fla. Stat.; applicable rules of the Department of Financial Services; and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. In determining the state financial assistance expended in its fiscal year, Recipient shall consider all sources of state financial assistance, including state financial assistance received from the District, other state agencies, and other non-state entities. State financial assistance does not include Federal direct or pass-through awards and resources received by a non-state entity for Federal program matching requirements. Recipient is solely responsible for complying with the FSAA.

If Recipient expends less than $750,000 in state financial assistance in its fiscal year, an audit conducted in accordance with the provisions of §215.97, Fla. Stat., is not required. In such event, should Recipient elect to have an audit conducted in accordance with §215.97, Fla. Stat., the cost of the audit must be paid from the non-state entity's resources (i.e., Recipient's resources obtained from other than State entities).

(b) **Program Information.** This Agreement involves the disbursement of state funding by the Florida Department of Environmental Protection (FDEP). Funding is provided under the State of Florida, Statewide Water Quality Restoration Projects, in the amount of $350,000. The Florida Catalog of State Financial Assistance (CSFA) number for this program is CSFA No. 39.039.

(c) **Additional Information.** For information regarding the state program under the above CSFA number, Recipient should access the Florida Single Audit Act website located at https://apps.fldfs.com/fsaa/catalog.aspx for assistance. The following websites may be accessed for additional information: Legislature's Website at http://www.leg.state.fl.us/, State of Florida's website at http://myflorida.com, District of Financial Services' website at http://www.fldfs.com/ and the Auditor General's Website at http://www.myflorida.com/audgen/.

(d) **Allowable Costs.** Recipient may only charge allowable costs to this Agreement, as otherwise provided herein. Any balance of unobligated cash that have been advanced or paid that is not authorized to be retained for direct program costs in a subsequent period must be returned to the District.

(e) **Audit Requirements.** Recipient shall ensure that the audit complies with the requirements of §215.97(7), Fla. Stat. This includes submission of a financial reporting package as defined by §215.97(2), Fla. Stat., and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. Recipient shall comply with the program requirements described in the Florida Catalog of State Financial Assistance (CSFA) [https://apps.fldfs.com/fsaa/catalog.aspx]. The services/purposes for which the funds are to be used are included in the Statement of Work.

(f) **Financial Reporting.** Recipient shall provide the District with a copy of any reports, management letters, or other information required to be submitted in accordance with chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, as applicable, no more than 20 days after its preparation. Recipient shall indicate the date the reporting package was delivered to Recipient in correspondence accompanying the reporting package. This information shall be directed to: St. Johns River Water Management District, Finance Director, Office of Financial Services, 4049 Reid Street, Palatka, FL 32177. A copy of the report shall also be provided to the Auditor General's Office at the following address: State of Florida Auditor General, Room 401, Claude Pepper Building, 111 West Madison Street, Tallahassee, Florida 32399-1450.

(g) **Monitoring.** In addition to reviews of audits conducted in accordance with §215.97, Fla. Stat., as revised, monitoring procedures may include, but not be limited to, on-site visits by District staff, limited scope audits, and/or other procedures. Recipient agrees to comply and cooperate with any monitoring procedures/processes deemed appropriate by the District. In the event the District determines that a limited scope audit of Recipient is appropriate, Recipient agrees to comply with any additional instructions provided by the District to Recipient regarding such audit. Recipient agrees to comply and cooperate with any inspections, reviews, investigations, or audits deemed necessary by the District's Inspector General or the state Chief Financial Officer or Auditor General.

(h) **Examination of Records.** In addition to the District's audit rights otherwise provided for herein, Recipient shall permit the District or its designated agent, the state awarding agency, the Department of Financial Services, the state's Chief Financial Officer and the state's Auditor General to examine Recipient's financial and non-financial records to the extent necessary to monitor Recipient's use of state financial assistance and to determine whether timely and appropriate corrective actions have been taken with respect to audit findings and recommendations, which may include onsite visits and limited scope audits.

(i) **Records Retention.** Notwithstanding any other provision of this Agreement to the contrary, Recipient shall retain sufficient records demonstrating its compliance with the terms of this Agreement for a period of five years from the date the audit report is issued, and shall allow the District, or its designee, state Chief Financial Officer, or Auditor General access to such records upon request. Recipient shall ensure that audit working papers are made available for such access for a period of three years from the date the audit report is issued, unless extended in writing by the District.

20. **GOVERNING LAW, VENUE, ATTORNEY'S FEES, WAIVER OF RIGHT TO JURY TRIAL.** This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) venue for any state or federal legal proceedings shall be in Orange County; (2) each party shall bear its own attorney's fees, including appeals; (3) for civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

21. **INDEPENDENT CONTRACTORS.** The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. Recipient is not a contractor of the District. The District is providing cost-share funding as a cooperating governmental entity to assist Recipient in accomplishing the Project. Recipient is solely responsible for accomplishing the Project and directs the means and methods by which the Project is accomplished. Recipient is solely responsible for compliance with all labor, health care, and tax laws pertaining to Recipient, its officers, agents, and employees.

22. **CONFLICTING INTEREST IN RECIPIENT.** Recipient certifies that no officer, agent, or employee of the District has any material interest, as defined in §112.312, Fla. Stat., either directly or indirectly, in the business of Recipient to be conducted hereby, and that no such person shall have any such interest at any time during the term of this Agreement.

23. **NON-LOBBYING.** Pursuant to §216.347, Fla. Stat., as amended, Recipient agrees that funds received from the District under this Agreement shall not be used for the purpose of lobbying the Legislature or any other state agency.

24. **PERMITS.** Recipient shall comply with all applicable federal, state and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. Recipient shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

25. **PUBLIC ENTITY CRIME.** A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in §287.017, Fla. Stat., for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

26. **PUBLIC RECORDS.** Records of Recipient that are made or received in the course of performance of the Project may be public records that are subject to the requirements of chapter 119, Fla. Stat. If Recipient receives a public records request, Recipient shall promptly notify the District's Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of chapter 119, Fla. Stat., as amended.

27. **ROYALTIES AND PATENTS.** Recipient certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. Recipient shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the District harmless from loss to the extent allowed by Florida law.

IN WITNESS WHEREOF, the St. Johns River Water Management District has caused this Agreement to be executed on the day and year written below in its name by its Executive Director, or duly authorized designee, and Recipient has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives, and, if appropriate, has caused the seal of the corporation to be attached. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

By: Wendy L. Cox
Ann B. Shortelle, Ph.D., Executive Director, or designee

Date: 4/1/21

BREVARD COUNTY, FLORIDA
As Approved by the Board on August 4, 2020

By: Frank Abbate
Frank Abbate, County Manager
Typed Name and Title

Date: 3/31/21

Attest: Joy Roth
Joy Roth, Administrative Assistant to the County Manager
Typed Name and Title

Attachments:
Attachment A — Statement of Work
Attachment B — Project Progress Report Form
Attachment C — District Supplemental Instructions Form
Attachment D — Contract Payment Requirements for State-Funded Cost Reimbursement Contracts

Approved for legal form and content
for Brevard County, Florida
3/19/21
Assistant County Attorney

ATTACHMENT A - STATEMENT OF WORK
OAK POINT PARK PROJECT

I. INTRODUCTION/BACKGROUND

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

On November 18, 2020, the Florida Department of Environmental Protection (FDEP) endorsed projects on the District's scored and ranked project list. At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding.

Brevard County (Recipient) requested funding for their Oak Point Park project (Project) for the not-to-exceed amount of $350,000 towards the estimated construction cost of $587,500. The Recipient is located in Brevard County.

II. OBJECTIVES

The objective of this contract is to provide cost share dollars that will enable the Recipient to connect 108 residential properties that are located directly on the IRL, that are currently utilizing an out-of-date package plant, and connect them to centralized sewer.

III. SCOPE OF WORK

The package plant currently discharges into a rapid infiltration basin (RIB) located on the shoreline of the IRL with a 10-foot berm separating the RIB from the IRL. The proposed Project will replace this system with a sewerage lift station, standby power generator and force main to pump into the City of Titusville central sewer system.

IV. PROJECT ADMINISTRATION AND DELIVERABLES

The Recipient shall be responsible for the following:

- Complete and obtain final project design, construction plans, and specifications;
- Obtain all required permits, including right of access to the project sites, related to project construction and subsequent operation and maintenance of the completed work;
- Assure compliance with all permits and permit conditions;
- Provide procurement for project construction;
- Perform supervision and inspection of construction;
- Perform construction contract administration;
- Assure compliance with cost accounting practices and procedures required for reimbursement of cost share funds expended.

The Recipient shall provide the following to the District's Project Manager:

- Timely invoices for actual construction costs in accordance with this cost share agreement (i.e. quarterly, with appropriate substantiation that demonstrates that the applicant has paid for the total work cost and is seeking reimbursement up to the match amount) to enable proper review by

the District's Project Manager prior to payment authorization. Deliverables to be submitted with invoices include (as applicable):

- Interim progress status summaries including inspections, meeting minutes and field notes and dated color photographs of the construction completed to include on-going work that represents the time-period being invoiced;
- Final invoice submittals for completed construction including inspections and dated color photographs of the construction site prior to, during and immediately following completion of the construction task;
- Construction plans, specifications, and contract documents for the site work must be made available upon request;
- Written verification that the record drawings and any required final inspection reports for the project are received;

- Quarterly progress reports identifying project progress to date, key milestones reached, overall project schedule versus time for project completion, an updated spend-down plan, key issues to be resolved, project construction photos including preconstruction, construction and postconstruction with dates. Quarterly reports shall also be emailed to the District's Budget Analyst at hnbarber@sjrwmd.com.
- Certification of construction completion by a Professional Engineer registered in the state of Florida.

The Recipient shall ensure the task in the Task Identification section below is completed.

V. TASK IDENTIFICATION AND TIME FRAMES

The expiration date of this cost share agreement is December 31, 2021. The projected schedule is as follows:

Task Description	Anticipated Start Date	Anticipated Completion Date
Construction	5/30/21	12/31/21

VI. BUDGET/COST SCHEDULE

For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total construction cost of the Project, but in no event shall the District's cost-share exceed $350,000.

Recipient shall invoice the District quarterly with appropriate documentation. The District's Project Manager shall provide an invoice template that will be used. Invoices shall include a copy of the contractor's invoices submitted to the Recipient, proof of payment by Recipient, and other required supporting documentation for reimbursement up to match amount. For in-house expenses, Recipient shall provide copies of all receipts for materials and a system report showing documentation of staff time or other proof of staff time expenses for the Project. The final invoice shall be submitted with the final project report. If the total actual cost of this project is less than originally estimated, the District's cost-share amount shall be reduced accordingly. Recipient may invoice more frequently submitting all required documentation and include general status information. Recipient may invoice the District for Project work beginning January 12, 2021. The District will not reimburse for any expenditures that occur prior to January 12, 2021.

Recipient shall submit quarterly progress reports to the District's Project Manager and the District's Budget Analyst within 15 days of the end of quarter for work accomplished during each quarter. The email address for the District's Budget Analyst is hnbarber@sjrwmd.com. The Recipient shall submit a final project report within 15 days of Final Completion and acceptance by Brevard County detailing the Project's accomplishments and any issues resolved during the course of the work.

Estimated Cost Schedule for Reimbursement

Description	Estimated Task Amount	Estimated Reimbursement Amount
Construction	$587,500	$350,000

ATTACHMENT B
PROJECT PROGRESS REPORT

St. Johns River Water Management District
Project Progress Report

Date: _____

Report Number: _____

Contract/Project Identification

Project Name:	Oak Point Park Project		
Recipient:	Brevard County		
SJRWMD Contract Number:	36535	SJRWMD Project Manager:	Derek Busby
		Recipient's Project Manager:	Terri Breeden

Construction Schedule

Construction Start Date:	
Construction Completion Date:	
Contract Expiration Date:	

Reporting Period

Beginning Date:	
Ending Date:	

Cost-Share Budget

Total Cost-Share Budget:		Cost-Share Amount Expended This Period:	
Cost-Share Amount Expended To-date:		Percent Cost-Share Budget Expended:	

Spend-Down Plan

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Readiness and Schedule Tracking

Project Phase	% Complete Shown in Application	% Complete Currently	Start Date Shown in Application	Completion Date Shown in Application	Current Start Date	Current Completion Date	Notes: Explain anticipated deviations from schedule
Planning							
Design							
Permitting							
Bidding & Award							

SOW Construction Tasks/Milestones/Deliverables

Task Number	Tasks/Milestones/Deliverables	Total Construction % Complete	Start Date Shown in SOW	Completion Date Shown in SOW	Current Start Date	Current Completion Date
1						

Project update including problems, issues and solutions. Explain in detail.

Include digital photographs of work accomplished during reporting peroid. Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

ATTACHMENT C — DISTRICT'S SUPPLEMENTAL INSTRUCTIONS (sample)

DISTRICT SUPPLEMENTAL INSTRUCTIONS #

DATE:

TO: Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A
Viera, FL 32940-6605

FROM: Derek Busby, Project Manager

CONTRACT NUMBER: 36535

CONTRACT TITLE: Oak Point Park Project

The Work shall be carried out in accordance with the following supplemental instruction issued in accordance with the Contract Documents without change in the Contract Sum or Contract Time. Prior to proceeding in accordance with these instructions, indicate your acceptance of these instructions for minor adjustments to the work as consistent with the Contract Documents and return to the District's Project Manager.

Sample

1. RECIPIENT'S SUPPLEMENTAL INSTRUCTIONS:

2. DESCRIPTION OF WORK TO BE CHANGED:

3. DESCRIPTION OF SUPPLEMENTAL INSTRUCTION REQUIREMENTS:

RECIPIENT's approval: (choose one of the items below):

Approved: _____ Date: _____

(It is agreed that these instructions shall not result in a change in the Total Compensation or the Completion Date.)

Approved: _____ Date: _____

(N/A agrees to implement the Supplemental Instructions as requested but reserves the right to seek a Change Order in accordance with the requirements of the Agreement.)

Approved: _____ Date: _____
Derek Busby, District Project Manager

Acknowledged: _____ Date: _____
Carol Miller, District Senior Procurement Specialist

c: Contract file
Financial Services

ATTACHMENT D – CONTRACT PAYMENT REQUIREMENTS FOR STATE-FUNDED COST REIMBURSEMENT CONTRACTS

Invoices for state-funded cost reimbursement contracts must be supported by an itemized listing of expenditures by category (salary, travel, expenses, etc.). Supporting documentation must be provided for each amount for which reimbursement is being claimed, indicating that the item has been paid. Check numbers may be provided in lieu of copies of actual checks. Each piece of documentation shall clearly reflect the dates of service. Only expenditures for categories in the approved contract budget will be reimbursed.

Listed below are examples of the types of documentation representing the minimum requirements by cost category:

Salaries: Submit a payroll register or similar documentation showing gross salary charges, fringe benefits, other deductions, and net pay. If an individual is paid by the hour, a document reflecting the hours worked times the rate of pay is acceptable.

Fringe Benefits: Fringe benefits should be supported by invoices showing the amount paid on behalf of the employee (e.g., insurance premiums paid). If the contract specifically states that fringe benefits will be based on a specified percentage, rather than the actual cost of fringe benefits, then the calculation for the fringe benefits amount must be shown.

Exception: Governmental entities are not required to provide check numbers or copies of checks for fringe benefits.

Travel: Reimbursement for travel must be in accordance with §112.061, Fla. Stat., which includes submission of the claim on the approved State of Florida (State) or District travel voucher.

Other direct costs: Reimbursement is based upon paid invoices/receipts. If nonexpendable property is purchased using State funds, the contract should include a provision for the transfer of the property to the State when services are terminated. Documentation must be provided to show compliance with Department of Management Services Rule 60A-1.017, F.A.C., regarding the requirements for contracts which include services and that provide for the contractor to purchase tangible personal property as defined in §273.02, Fla. Stat., for subsequent transfer to the State.

In-house charges: Charges which may be of an internal nature (e.g., postage, copies, etc.) may be reimbursed on a usage log which shows the units, times the rate being charged. The rates must be reasonable.

Indirect costs: If the contract specifies that indirect costs will be paid based on a specified rate, then the calculation should be shown.

The "Reference Guide for State Expenditures" prepared by the Florida Department of Financial Services can be found at this web address: http:/www.fldfs.com/aadir/reference_guide.htm

AMENDMENT 1 TO THE SAVE OUR INDIAN RIVER LAGOON PROJECT COST-SHARE FUNDING INTERLOCAL AGREEMENT BETWEEN BREVARD COUNTY, FLORIDA AND MATTHEW CIRCLE, LLC

AGREEMENT NUMBER: SOIRL 21-192

THIS FIRST AMENDMENT is made and entered into by and between Brevard County, Florida, a political subdivision of the State of Florida (hereinafter "COUNTY"), and Matthew Circle, LLC, a Florida corporation organized and existing under the laws of the State of Florida (hereinafter "GRANTEE").

WHEREAS, the parties have previously entered into that certain Save Our Indian River Lagoon Project Cost-Share Funding Interlocal Agreement No. SOIRL 21-192 on March 29, 2021 ("Agreement"), which is incorporated herein by this reference, for the mutual benefit of Matthew Circle, LLC, a Florida limited liability company, and Brevard County; and

WHEREAS, the COUNTY has obtained additional funds to support the Oak Point Mobile Home Park Project from St. Johns River Water Management District in the amount of $350,000.00 through the Indian River Lagoon Water Quality Improvement Projects Grants.

NOW, THEREFORE, in consideration of the promises and mutual covenants herein contained, the parties hereby agree as follows:

1. Section 17. Funding Contingency; Clawback. is hereby amended to include two new subsections, Subsections 17.d. and 17.e., to read as follows:

d. The level of Save Our Indian River Lagoon funding is independent of the Cost-Share Agreement for the Oak Point Mobile Home Park Project, identified as Contract #36535. No impact to said funding will occur if St. Johns River Water Management District terminates or otherwise modifies Contract #36535 for budgetary reasons.

e. Notwithstanding anything herein to the contrary, should GRANTEE fail to complete the Project due to the early termination of Contract #36535 for lack of funding or changes in budgets, COUNTY shall make a good faith determination that such unforeseen changes make the Project economically unfeasible, and GRANTEE will not be required to refund any funds already expended under this Contract. GRANTEE shall attempt in good faith to secure alternative funding sources to complete the Project in the case that Contract #36535 is terminated. If the Project is not to be completed for reasons outside the GRANTEE's control within thirty (30) days of the Completion Date, COUNTY and GRANTEE shall in good faith discuss and execute a mutually-accepted revision to the Project timeline or scope for completion of the Project.

2. As a result of the additional funds made available through the Cost-Share Agreement between St. Johns River Water Management District and Brevard County, "Attachment A – Statement of Work" of the Agreement is hereby amended as follows:

Task #	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	$15,500	$13,000	$0	$3,000	$3,000	$3,000	$3,000
2							$102,500
Task #	November 2021	December 2021	January 2022	February 2022	March 2022	April 2022	May 2022
1	$3,000	$3,000	$3,250	$19,250			
2	$152,500	~~$37,500~~ $132,500	$112,750	$59,750			

3. As a result of the additional funds made available through the Cost-Share Agreement between St. Johns River Water Management District and Brevard County, "Attachment E – Eligible Funding Cost Share Form" of the Agreement is hereby amended as follows:

Attachment E

ATTACHMENT E

Recipient Name:		Matthew Circle, LLC for Oak Point Mobile Home Park
Project Name:		Oak Point Mobile Home Park Package Plant Connections
Agreement Number:		21-192

Estimated Project Cost-Share Table							
Task Number	Task Description	Task Cost	Grant 1 (319)	Grant 2 (FDEP)	Grant 3 (SJRWMD)	Eligible Lagoon Tax Cost Share, Adjusted	Local Match
1	Permitting						$ -
2	Engineering	$37,500.00				$37,500.00	~~$ 37,500.00~~
3	Construction	~~$587,500.00~~ $591,500.00			$350,000.00	$241,500.00	~~$581,500.00~~
4	Monitoring						$ -
	Total	~~$625,000.00~~ $629,000.00	$ -	$-	$350,000.00	~~$279,000.00~~ $629,000.00	~~$625,000.00~~

Funding Eligibility Calculation		
Project Type		
BMP Type (If stormwater)		SW Trad BMP
Pounds of Nitrogen Reduction		186
Eligible Cost Share per Pound		$1,500
Eligible Tax Funding Cost Share		$279,000.00
Reduction so Sum of Grants does not exceed Project Cost		
Eligible Lagoon Tax Cost Share, Adjusted		~~$279,000.00~~ $629,000.00
Percent Cost Share to be contributed by the Lagoon Tax		~~45%~~ 100%

4. The Cost-Share Agreement for the Oak Point Mobile Home Park Project between the St. Johns River Water Management District and Brevard County, as may be amended, is incorporated herein by this reference and attached hereto as "Attachment F – Cost-Share Agreement Between the St. Johns River Water Management District and Brevard County Contract #36535."

5. All terms and conditions of the Agreement, incorporated herein by this reference, not inconsistent with the provisions of this First Amendment, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the date last written below.

BREVARD COUNTY, FLORIDA

By: _____

Rita Pritchett, Chair

As Approved by the Board on February 9, 2021

GRANTEE

By: Matija Bilic

Name: Matija Bilic

Title: _____

Date: 6-11-2021

Reviewed for legal form and content for Brevard County

6/9/21

Alexander Esseesse, Assistant County Attorney

ATTEST

By: _____

Rachel M. Sadoff, Clerk

Date: 6/23/2021

Attachment F

COST-SHARE AGREEMENT
BETWEEN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
AND BREVARD COUNTY

THIS AGREEMENT ("Agreement") is entered into by and between the GOVERNING BOARD of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (the "District"), whose address is 4049 Reid Street, Palatka, Florida 32177, and BREVARD COUNTY, FLORIDA, a political subdivision of the State of Florida ("Recipient"), 2725 Judge Fran Jamieson Way, Building A, Room 219, Viera, Florida 32940. All references to the parties hereto include the parties, their officers, employees, agents, successors, and assigns.

RECITALS

The waters of the state of Florida are among its basic resources, and it has been declared to be the policy of the Legislature to promote the conservation, development, and proper utilization of surface and ground water. Pursuant to chapter 373, Fla. Stat., the District is responsible for the management of the water resources within its geographical area.

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

The District has determined that providing cost-share funding to Recipient for the purposes provided for herein will benefit the water resources and one or more of the District's missions and initiatives.

At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding. The parties have agreed to jointly fund the following project in accordance with the funding formula further described in the Statement of Work, Attachment A (hereafter the "Project"):

Oak Point Park Project

In consideration of the above recitals, and the funding assistance described below, Recipient agrees to perform and complete the activities provided for in the Statement of Work, Attachment A. Recipient shall complete the Project in conformity with the contract documents and all attachments and other items incorporated by reference herein. This Agreement consists of all of the following documents: (1) Agreement, (2) Attachment A — Statement of Work; and (3) all other attachments, if any. The parties hereby agree to the following terms and conditions.

1. **TERM; WITHDRAWAL OF OFFER**

(a) The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until December 31, 2021 ("Completion Date"). Recipient shall not commence the Project until any required submittals are received and approved. Time is of the essence for every aspect of this Agreement, including any time extensions. Any request for an extension of time beyond the Completion Date must be made before October 1, 2021. Timely requests to extend, for longer than six months, the Completion Date of the Agreement for projects whose District contribution exceeds $100,000 may only be approved by the District's Governing

Board. Notwithstanding specific mention that certain provisions survive termination or expiration of this Agreement, all provisions of this Agreement that by their nature extend beyond the Completion Date survive termination or expiration hereof (e.g., delivery of a final report, will remain in full force and effect after the Completion Date as necessary to effect performance).

(b) This Agreement constitutes an offer until authorized, signed and returned to the District by Recipient. This offer terminates 45 days after receipt by Recipient; provided, however, that Recipient may submit a written request for extension of this time limit to the District's Project Manager, stating the reason(s) therefor. Request for extension of time after the 45 days will be denied. The Project Manager shall notify Recipient in writing if an extension is granted or denied. If granted, this Agreement shall be deemed modified accordingly without any further action by the parties.

2. **DELIVERABLES**. Recipient shall fully implement the Project, as described in the Statement of Work, Attachment A. Recipient is responsible for the professional quality, technical accuracy, and timely completion of the Project. Both workmanship and materials shall be of good quality. Unless otherwise specifically provided for herein, Recipient shall provide and pay for all materials, labor, and other facilities and equipment necessary to complete the Project. The District's Project Manager shall make a final acceptance inspection of the Project when completed and finished in all respects. Upon satisfactory completion of the Project, the District will provide Recipient a written statement indicating that the Project has been completed in accordance with this Agreement. Acceptance of the final payment by Recipient shall constitute a release in full of all claims against the District arising from or by reason of this Agreement.

3. **OWNERSHIP OF DELIVERABLES.** Unless otherwise provided herein, the District does not assert an ownership interest in any of the deliverables under this Agreement.

4. **AMOUNT OF FUNDING**

(a) For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total Project cost, but in no event shall the District cost-share exceed $350,000. The District cost-share is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. Recipient shall be responsible for payment of all costs necessary to ensure completion of the Project. Recipient shall notify the District's Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement.

(b) "Construction cost" is defined to include actual costs of constructing Project facilities, including construction management. Land acquisition, engineering design, permitting, and solicitation costs are excluded. Construction cost does not include any costs incurred prior to the Effective Date, unless expressly authorized by the Statement of Work. Costs that are excluded will not be credited toward Recipient's cost-share.

(c) Work performed or expenses incurred after the Completion Date are not eligible for Cost-Share reimbursement.

5. **PAYMENT OF INVOICES**

(a) Recipient shall submit itemized invoices as per the Statement of Work, Attachment A for reimbursable expenses by one of the following two methods: (1) by email to acctpay@sjrwmd.com (preferred) or (2) by mail to the St. Johns River Water Management District, Finance Director, 4049 Reid Street, Palatka, Florida 32177-2571. The invoices shall be submitted in detail sufficient for proper pre-audit and post-audit review. Invoices shall include a copy of contractor and supplier invoices to Recipient and proof of payment. Recipient shall be

reimbursed for 100% of approved cost or the not-to-exceed sum of $350,000, whichever is less. The District shall not withhold any retainage from this reimbursement. District reimbursement is subject to annual budgetary limitation, if applicable, as provided in subsection (g). If necessary for audit purposes, Recipient shall provide additional supporting information as required to document invoices.

(b) **End of District Fiscal Year Reporting**. The District's fiscal year ends on September 30. Irrespective of the invoicing frequency, the District is required to account for all encumbered funds at that time. When authorized under the Agreement, submittal of an invoice as of September 30 satisfies this requirement. The invoice shall be submitted no later than October 30. If the Agreement does not authorize submittal of an invoice as of September 30, Recipient shall submit, prior to October 30, a description of the additional work on the Project completed between the last invoice and September 30, and an estimate of the additional amount due as of September 30 for such Work. If there have been no prior invoices, Recipient shall submit a description of the work completed on the Project through September 30 and a statement estimating the dollar value of that work as of September 30.

(c) **Final Invoice**. The final invoice must be submitted no later than 45 days after the Completion Date; provided, however, that when the Completion Date corresponds with the end of the District's fiscal year (September 30), the final invoice must be submitted no later than 30 days after the Completion Date. **Final invoices that are submitted after the requisite date shall be subject to a penalty of ten percent of the invoice. This penalty may be waived by the District, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. Recipient must request approval for delayed submittal of the final invoice not later than ten days prior to the due date and state the basis for the delay.**

(d) All invoices shall include the following information: (1) District contract number; (2) Recipient's name, address, and authorization to directly deposit payment into Recipient's account (if Recipient has not yet provided the District with a completed Direct Deposit Authorization form); (3) Recipient's invoice number and date of invoice; (4) District Project Manager; (5) Recipient's Project Manager; (6) supporting documentation as to cost and/or Project completion (as per the cost schedule and other requirements of the Statement of Work), in addition, see Attachment D, "CONTRACT PAYMENT REQUIREMENTS FOR STATE FUNDED COST REIMBURSEMENT CONTRACTS," (7) Progress Report (if required); (8) Diversity Report (if otherwise required herein). Invoices that do not correspond with this paragraph shall be returned without action within 20 business days of receipt, stating the basis for rejection. Payments shall be made within 45 days of receipt of an approved invoice.

(e) **Travel expenses.** If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the project budget and are not otherwise compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by Recipient and are only compensable when specifically approved by the District as an authorized District traveler. In such instance, travel expenses must be submitted on District or State of Florida travel forms and shall be paid pursuant to District Administrative Directive 2000-02.

(f) **Payments withheld.** The District may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the District from loss as a result of: (1) defective work not remedied; (2) failure to maintain adequate progress in the Project; (3) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

(g) **Annual budgetary limitation.** For multi-fiscal year agreements, the District must budget the amount of funds that will be expended during each fiscal year as accurately as possible. The Statement of Work, Attachment A, includes the parties' current schedule for completion of the Work and projection of expenditures on a fiscal year basis (October 1 – September 30) ("Annual Spending Plan"). If Recipient anticipates that expenditures will exceed the budgeted amount during any fiscal year, Recipient shall promptly notify the District's Project Manager and provide a proposed revised work schedule and Annual Spending Plan that provides for completion of the Work without increasing the Total Compensation. The last date for the District to receive this request is August 1 of the then-current fiscal year. The District may in its sole discretion prepare a District Supplemental Instruction Form incorporating the revised work schedule and Annual Spending Plan during the then-current fiscal year or subsequent fiscal year(s).

6. **LIABILITY AND INSURANCE.** Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party, its officers, employees and agents. Recipient accepts all risks arising from construction or operation of the Project. Nothing contained herein shall be construed or interpreted as denying to any party any remedy or defense available under the laws of the state of Florida, nor as a waiver of sovereign immunity of the state of Florida beyond the waiver provided for in §768.28, Fla. Stat., as amended. Each party shall acquire and maintain throughout the term of this Agreement such liability, workers' compensation, and automobile insurance as required by their current rules and regulations.

7. **FUNDING CONTINGENCY.** This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the District's Governing Board; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the District's Governing Board for each succeeding Fiscal Year. Should the Project not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the District shall so notify Recipient and this Agreement shall be deemed terminated for convenience five days after receipt of such notice, or within such additional time as the District may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

8. **PROJECT MANAGEMENT**

(a) The Project Managers listed below shall be responsible for overall coordination and management of the Project. Either party may change its Project Manager upon three business days' prior written notice to the other party. Written notice of change of address shall be provided within five business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) email. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one business day after having been deposited with the courier. Notices via e-mail are deemed delivered on the date transmitted and received.

DISTRICT
Derek Busby, Project Manager
St. Johns River Water Management District
4049 Reid Street
Palatka, Florida 32177-2571
Phone: 386-329-4459
Email: dbusby@sjrwmd.com

RECIPIENT
Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A-219
Viera, Florida 32940-6605
Phone: 321-350-8407
Email: terri.breeden@brevardfl.gov

(b) The District's Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating District policies and decisions regarding all matters pertinent to performance of the Project. The District's Project Manager may issue a District Supplemental Instruction (DSI) form, Attachment C, to authorize minor adjustments to the Project that are consistent with the purpose of the Project. Both parties must sign the DSI. A DSI may not be used to change the District cost-share or percentage, quantity, quality or the Completion Date of the Project, or to change or modify the Agreement.

9. **PROGRESS REPORTS AND PERFORMANCE MONITORING.**

(a) **Progress Reports.** Recipient shall provide to the District quarterly Project update/status reports as provided in the Statement of Work. Reports will provide detail on progress of the Project and outline any potential issues affecting completion or the overall schedule. Recipient shall use the District's Project Progress Report form, Attachment B. Recipient shall submit the Project Progress Reports to the District's Project Manager and District's Budget Manager within 30 days after the closing date of each calendar quarter (March 31, June 30, September 30 and December 31).

(b) **Performance Monitoring.** For as long as the Project is operational, the District shall have the right to inspect the operation of the Project during normal business hours upon reasonable prior notice. Recipient shall make available to the District any data that is requested pertaining to performance of the Project.

10. **WAIVER.** The delay or failure by the District to exercise or enforce any of its rights under this Contract shall not constitute or be deemed a waiver of the District's right thereafter to enforce those rights, nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or the exercise of any other right.

11. **FAILURE TO COMPLETE PROJECT**

(a) Should Recipient fail to complete the Project, Recipient shall refund to the District all of the funds provided to Recipient pursuant to this Agreement. However, the District, in its sole judgment and discretion, may determine that Recipient has failed to complete the Project due to circumstances that are beyond Recipient's control, or due to a good faith determination that the Project is no longer environmentally or economically feasible. In such event, the District may excuse Recipient from the obligation to return funds provided hereunder. If the Project has not been completed within 30 days after the Completion Date, Recipient shall provide the District with notice regarding its intention as to completion of the Project. The parties shall discuss the status of the Project and may mutually agree to revise the time for Project completion or the scope of the Project. Failure to complete the Project within 90 days after the Completion Date shall be deemed to constitute failure to complete the Project for the purposes of this provision.

(b) In the event the Project constitutes a portion of the total functional project, this paragraph shall apply in the event the total functional project is not completed. In such event, the 90-day timeframe provided herein shall commence upon the date scheduled for completion of the total functional project at the time of execution of this Agreement, unless extended by mutual agreement of the parties. Paragraphs 11(a) and 11(b) shall survive the termination or expiration of this Agreement.

12. **TERMINATION.** If Recipient materially fails to fulfill its obligations under this Agreement, including any specific milestones established herein, the District may provide Recipient written notice of the deficiency by forwarding a Notice to Cure, citing the specific nature of the breach. Recipient shall have 30 days following receipt of the notice to cure the breach. If Recipient fails to cure the

breach within the 30-day period, the District shall issue a Termination for Default Notice terminating this Agreement without further notice. In such event, Recipient shall refund to the District all funds provided to Recipient pursuant to this Agreement within 30 days of such termination. The District may also terminate this Agreement upon ten days' written notice in the event of any material misrepresentations in the Project Proposal.

Delay or failure by the District to enforce any right, remedy or deadline hereunder shall not impair, or be deemed a waiver of, any such right, remedy or deadline, or impair the District's rights or remedies for any subsequent breach or continued breach of this Agreement.

ADDITIONAL PROVISIONS (Alphabetical)

13. **ASSIGNMENT.** Recipient shall not assign this Agreement, or any monies due hereunder, without the District's prior written consent. Recipient is solely responsible for fulfilling all work elements in any contracts awarded by Recipient and payment of all monies due. No provision of this Agreement shall create a contractual relationship between the District and any of Recipient's contractors or subcontractors.

14. **AUDIT; ACCESS TO RECORDS; REPAYMENT OF FUNDS**

    (a) **Maintenance of Records**. Recipient shall maintain its books and records such that receipt and expenditure of the funds provided hereunder are shown separately from other expenditures in a format that can be easily reviewed. Recipient shall keep the records of receipts and expenditures, copies of all reports submitted to the District, and copies of all invoices and supporting documentation for at least five years after expiration of this Agreement. In accordance with generally accepted governmental auditing standards, the District shall have access to and the right to examine any directly pertinent books and other records involving transactions related to this Agreement. In the event of an audit, Recipient shall maintain all required records until the audit is completed and all questions are resolved. Recipient will provide proper facilities for access to and inspection of all required records.

    (b) **Repayment of Funds.** District funding shall be subject to repayment after expiration of this Agreement if, upon audit examination, the District finds any of the following: (1) Recipient has spent funds for purposes other than as provided for herein, including but not limited to construction materials not used in the Project; (2) Recipient has failed to perform a continuing obligation of this Agreement; (3) Recipient has received duplicate funds from the District for the same purpose; (4) Recipient has been advanced or paid unobligated funds; (5) Recipient has been paid funds in excess of the amount Recipient is entitled to receive under the Agreement; and/or (6) Recipient has received more than 100% contributions through cumulative public agency cost-share funding.

15. **CIVIL RIGHTS.** Pursuant to chapter 760, Fla. Stat., Recipient shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, age, handicap, or marital status.

16. **COOPERATION WITH THE INSPECTOR GENERAL, PURSUANT TO §20.055(5) FLA. STAT.** Recipient and any subcontractors understand and will comply with their duty, pursuant to §20.055(5), Fla. Stat., to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

17. **DISPUTE RESOLUTION.** Recipient is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute involving performance of this Agreement by submitting a written statement to the District's Project Manager no later than ten business days after the precipitating

event. If not resolved by the Project Manager, the Project Manager shall forward the request to the District's Office of General Counsel, which shall issue a written decision within ten business days of receipt. This determination shall constitute final action of the District and shall then be subject to judicial review upon completion of the Project.

18. **DIVERSITY REPORTING.** The District is committed to the opportunity for diversity in the performance of all cost-sharing agreements, and encourages Recipient to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as contractors. The District will assist Recipient by sharing information on W/MBEs. Recipient shall provide with each invoice a report describing: (1) the company names for all W/MBEs; (2) the type of minority, and (3) the amounts spent with each during the invoicing period. The report will also denote if there were no W/MBE expenditures.

19. **FLORIDA SINGLE AUDIT ACT**

(a) **Applicability.** The Florida Single Audit Act (FSAA), §215.97, Fla. Stat., applies to all sub-recipients of state financial assistance, as defined in §215.97(1)(q), Fla. Stat., awarded by the District through a project or program that is funded, in whole or in part, through state financial assistance to the District. In the event Recipient expends a total amount of state financial assistance equal to or in excess of $750,000 in any fiscal year of such Recipient, Recipient must have a state single or project-specific audit for such fiscal year in accordance with §215.97, Fla. Stat.; applicable rules of the Department of Financial Services; and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. In determining the state financial assistance expended in its fiscal year, Recipient shall consider all sources of state financial assistance, including state financial assistance received from the District, other state agencies, and other non-state entities. State financial assistance does not include Federal direct or pass-through awards and resources received by a non-state entity for Federal program matching requirements. Recipient is solely responsible for complying with the FSAA.

If Recipient expends less than $750,000 in state financial assistance in its fiscal year, an audit conducted in accordance with the provisions of §215.97, Fla. Stat., is not required. In such event, should Recipient elect to have an audit conducted in accordance with §215.97, Fla. Stat., the cost of the audit must be paid from the non-state entity's resources (i.e., Recipient's resources obtained from other than State entities).

(b) **Program Information.** This Agreement involves the disbursement of state funding by the Florida Department of Environmental Protection (FDEP). Funding is provided under the State of Florida, Statewide Water Quality Restoration Projects, in the amount of $350,000. The Florida Catalog of State Financial Assistance (CSFA) number for this program is CSFA No. 39.039.

(c) **Additional Information.** For information regarding the state program under the above CSFA number, Recipient should access the Florida Single Audit Act website located at https://apps.fldfs.com/fsaa/catalog.aspx for assistance. The following websites may be accessed for additional information: Legislature's Website at http://www.leg.state.fl.us/, State of Florida's website at http://myflorida.com, District of Financial Services' website at http://www.fldfs.com/ and the Auditor General's Website at http://www.myflorida.com/audgen/.

(d) **Allowable Costs.** Recipient may only charge allowable costs to this Agreement, as otherwise provided herein. Any balance of unobligated cash that have been advanced or paid that is not authorized to be retained for direct program costs in a subsequent period must be returned to the District.

(e) **Audit Requirements.** Recipient shall ensure that the audit complies with the requirements of §215.97(7), Fla. Stat. This includes submission of a financial reporting package as defined by §215.97(2), Fla. Stat., and chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. Recipient shall comply with the program requirements described in the Florida Catalog of State Financial Assistance (CSFA) [https://apps.fldfs.com/fsaa/catalog.aspx]. The services/purposes for which the funds are to be used are included in the Statement of Work.

(f) **Financial Reporting.** Recipient shall provide the District with a copy of any reports, management letters, or other information required to be submitted in accordance with chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, as applicable, no more than 20 days after its preparation. Recipient shall indicate the date the reporting package was delivered to Recipient in correspondence accompanying the reporting package. This information shall be directed to: St. Johns River Water Management District, Finance Director, Office of Financial Services, 4049 Reid Street, Palatka, FL 32177. A copy of the report shall also be provided to the Auditor General's Office at the following address: State of Florida Auditor General, Room 401, Claude Pepper Building, 111 West Madison Street, Tallahassee, Florida 32399-1450.

(g) **Monitoring.** In addition to reviews of audits conducted in accordance with §215.97, Fla. Stat., as revised, monitoring procedures may include, but not be limited to, on-site visits by District staff, limited scope audits, and/or other procedures. Recipient agrees to comply and cooperate with any monitoring procedures/processes deemed appropriate by the District. In the event the District determines that a limited scope audit of Recipient is appropriate, Recipient agrees to comply with any additional instructions provided by the District to Recipient regarding such audit. Recipient agrees to comply and cooperate with any inspections, reviews, investigations, or audits deemed necessary by the District's Inspector General or the state Chief Financial Officer or Auditor General.

(h) **Examination of Records.** In addition to the District's audit rights otherwise provided for herein, Recipient shall permit the District or its designated agent, the state awarding agency, the Department of Financial Services, the state's Chief Financial Officer and the state's Auditor General to examine Recipient's financial and non-financial records to the extent necessary to monitor Recipient's use of state financial assistance and to determine whether timely and appropriate corrective actions have been taken with respect to audit findings and recommendations, which may include onsite visits and limited scope audits.

(i) **Records Retention.** Notwithstanding any other provision of this Agreement to the contrary, Recipient shall retain sufficient records demonstrating its compliance with the terms of this Agreement for a period of five years from the date the audit report is issued, and shall allow the District, or its designee, state Chief Financial Officer, or Auditor General access to such records upon request. Recipient shall ensure that audit working papers are made available for such access for a period of three years from the date the audit report is issued, unless extended in writing by the District.

20. **GOVERNING LAW, VENUE, ATTORNEY'S FEES, WAIVER OF RIGHT TO JURY TRIAL.** This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) venue for any state or federal legal proceedings shall be in Orange County; (2) each party shall bear its own attorney's fees, including appeals; (3) for civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

21. **INDEPENDENT CONTRACTORS.** The parties to this Agreement, their employees and agents, are independent contractors and not employees or agents of each other. Nothing in this Agreement shall be interpreted to establish any relationship other than that of independent contractors during and after the term of this Agreement. Recipient is not a contractor of the District. The District is providing cost-share funding as a cooperating governmental entity to assist Recipient in accomplishing the Project. Recipient is solely responsible for accomplishing the Project and directs the means and methods by which the Project is accomplished. Recipient is solely responsible for compliance with all labor, health care, and tax laws pertaining to Recipient, its officers, agents, and employees.

22. **CONFLICTING INTEREST IN RECIPIENT.** Recipient certifies that no officer, agent, or employee of the District has any material interest, as defined in §112.312, Fla. Stat., either directly or indirectly, in the business of Recipient to be conducted hereby, and that no such person shall have any such interest at any time during the term of this Agreement.

23. **NON-LOBBYING.** Pursuant to §216.347, Fla. Stat., as amended, Recipient agrees that funds received from the District under this Agreement shall not be used for the purpose of lobbying the Legislature or any other state agency.

24. **PERMITS.** Recipient shall comply with all applicable federal, state and local laws and regulations in implementing the Project and shall include this requirement in all subcontracts pertaining to the Project. Recipient shall obtain any and all governmental permits necessary to implement the Project. Any activity not properly permitted prior to implementation or completed without proper permits does not comply with this Agreement and shall not be approved for cost-share funding.

25. **PUBLIC ENTITY CRIME.** A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in §287.017, Fla. Stat., for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

26. **PUBLIC RECORDS.** Records of Recipient that are made or received in the course of performance of the Project may be public records that are subject to the requirements of chapter 119, Fla. Stat. If Recipient receives a public records request, Recipient shall promptly notify the District's Project Manager. Each party reserves the right to cancel this Agreement for refusal by the other party to allow public access to all documents, papers, letters, or other materials related hereto and subject to the provisions of chapter 119, Fla. Stat., as amended.

27. **ROYALTIES AND PATENTS.** Recipient certifies that the Project does not, to the best of its information and belief, infringe on any patent rights. Recipient shall pay all royalties and patent and license fees necessary for performance of the Project and shall defend all suits or claims for infringement of any patent rights and save and hold the District harmless from loss to the extent allowed by Florida law.

IN WITNESS WHEREOF, the St. Johns River Water Management District has caused this Agreement to be executed on the day and year written below in its name by its Executive Director, or duly authorized designee, and Recipient has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives, and, if appropriate, has caused the seal of the corporation to be attached. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

By: Wendy L. Cox

Ann B. Shortelle, Ph.D., Executive Director, or designee

Date: 4/1/21

BREVARD COUNTY, FLORIDA

As Approved by the Board on August 4, 2020

By: Frank Abbate

Frank Abbate, County Manager

Typed Name and Title

Date: 3/31/21

Attest: Joy Roth

Joy Roth, Administrative Assistant to the County Manager

Typed Name and Title

Attachments:
Attachment A — Statement of Work
Attachment B — Project Progress Report Form
Attachment C — District Supplemental Instructions Form
Attachment D — Contract Payment Requirements for State-Funded Cost Reimbursement Contracts

Approved for legal form and content
for Brevard County, Florida

3/19/21

Assistant County Attorney

ATTACHMENT A - STATEMENT OF WORK
OAK POINT PARK PROJECT

I. INTRODUCTION/BACKGROUND

The State of Florida General Appropriations Act FY 2021 provides funding under line item 1641A to the District for water quality projects that reduce nutrients, total phosphorus (TP) and total nitrogen (TN) and restore flow to the Indian River Lagoon (IRL).

On November 18, 2020, the Florida Department of Environmental Protection (FDEP) endorsed projects on the District's scored and ranked project list. At its January 12, 2021 meeting, the Governing Board approved Recipient's proposal for cost-share funding.

Brevard County (Recipient) requested funding for their Oak Point Park project (Project) for the not-to-exceed amount of $350,000 towards the estimated construction cost of $587,500. The Recipient is located in Brevard County.

II. OBJECTIVES

The objective of this contract is to provide cost share dollars that will enable the Recipient to connect 108 residential properties that are located directly on the IRL, that are currently utilizing an out-of-date package plant, and connect them to centralized sewer.

III. SCOPE OF WORK

The package plant currently discharges into a rapid infiltration basin (RIB) located on the shoreline of the IRL with a 10-foot berm separating the RIB from the IRL. The proposed Project will replace this system with a sewerage lift station, standby power generator and force main to pump into the City of Titusville central sewer system.

IV. PROJECT ADMINISTRATION AND DELIVERABLES

The Recipient shall be responsible for the following:

- Complete and obtain final project design, construction plans, and specifications;
- Obtain all required permits, including right of access to the project sites, related to project construction and subsequent operation and maintenance of the completed work;
- Assure compliance with all permits and permit conditions;
- Provide procurement for project construction;
- Perform supervision and inspection of construction;
- Perform construction contract administration;
- Assure compliance with cost accounting practices and procedures required for reimbursement of cost share funds expended.

The Recipient shall provide the following to the District's Project Manager:

- Timely invoices for actual construction costs in accordance with this cost share agreement (i.e. quarterly, with appropriate substantiation that demonstrates that the applicant has paid for the total work cost and is seeking reimbursement up to the match amount) to enable proper review by

the District's Project Manager prior to payment authorization. Deliverables to be submitted with invoices include (as applicable):

- Interim progress status summaries including inspections, meeting minutes and field notes and dated color photographs of the construction completed to include on-going work that represents the time-period being invoiced;
- Final invoice submittals for completed construction including inspections and dated color photographs of the construction site prior to, during and immediately following completion of the construction task;
- Construction plans, specifications, and contract documents for the site work must be made available upon request;
- Written verification that the record drawings and any required final inspection reports for the project are received;

- Quarterly progress reports identifying project progress to date, key milestones reached, overall project schedule versus time for project completion, an updated spend-down plan, key issues to be resolved, project construction photos including preconstruction, construction and postconstruction with dates. Quarterly reports shall also be emailed to the District's Budget Analyst at hnbarber@sjrwmd.com.
- Certification of construction completion by a Professional Engineer registered in the state of Florida.

The Recipient shall ensure the task in the Task Identification section below is completed.

V. TASK IDENTIFICATION AND TIME FRAMES

The expiration date of this cost share agreement is December 31, 2021. The projected schedule is as follows:

Task Description	Anticipated Start Date	Anticipated Completion Date
Construction	5/30/21	12/31/21

VI. BUDGET/COST SCHEDULE

For satisfactory completion of the Project, the District shall pay Recipient approximately 60% of the total construction cost of the Project, but in no event shall the District's cost-share exceed $350,000.

Recipient shall invoice the District quarterly with appropriate documentation. The District's Project Manager shall provide an invoice template that will be used. Invoices shall include a copy of the contractor's invoices submitted to the Recipient, proof of payment by Recipient, and other required supporting documentation for reimbursement up to match amount. For in-house expenses, Recipient shall provide copies of all receipts for materials and a system report showing documentation of staff time or other proof of staff time expenses for the Project. The final invoice shall be submitted with the final project report. If the total actual cost of this project is less than originally estimated, the District's cost-share amount shall be reduced accordingly. Recipient may invoice more frequently submitting all required documentation and include general status information. Recipient may invoice the District for Project work beginning January 12, 2021. The District will not reimburse for any expenditures that occur prior to January 12, 2021.

Recipient shall submit quarterly progress reports to the District's Project Manager and the District's Budget Analyst within 15 days of the end of quarter for work accomplished during each quarter. The email address for the District's Budget Analyst is hnbarber@sjrwmd.com. The Recipient shall submit a final project report within 15 days of Final Completion and acceptance by Brevard County detailing the Project's accomplishments and any issues resolved during the course of the work.

Estimated Cost Schedule for Reimbursement

Description	Estimated Task Amount	Estimated Reimbursement Amount
Construction	$587,500	$350,000

ATTACHMENT B
PROJECT PROGRESS REPORT

St. Johns River Water Management District
Project Progress Report

Date: _____

Report Number: _____

Contract/Project Identification

Project Name:	Oak Point Park Project		
Recipient:	Brevard County		
SJRWMD Contract Number:	36535	SJRWMD Project Manager:	Derek Busby
		Recipient's Project Manager:	Terri Breeden

Construction Schedule

Construction Start Date:	
Construction Completion Date:	
Contract Expiration Date:	

Reporting Period

Beginning Date:	
Ending Date:	

Cost-Share Budget

Total Cost-Share Budget:		Cost-Share Amount Expended This Period:	
Cost-Share Amount Expended To-date:		Percent Cost-Share Budget Expended:	

Spend-Down Plan

Fiscal Year 1

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Fiscal Year 2

Reimbursement #	Anticipated Amount	Anticipated Date
1		
2		
3		
4		

Project Readiness and Schedule Tracking

Project Phase	% Complete Shown in Application	% Complete Currently	Start Date Shown in Application	Completion Date Shown in Application	Current Start Date	Current Completion Date	Notes: Explain anticipated deviations from schedule
Planning							
Design							
Permitting							
Bidding & Award							

SOW Construction Tasks/Milestones/Deliverables

Task Number	Tasks/Milestones/Deliverables	Total Construction % Complete	Start Date Shown in SOW	Completion Date Shown in SOW	Current Start Date	Current Completion Date
1						

Project update including problems, issues and solutions. Explain in detail.

Include digital photographs of work accomplished during reporting peroid. Attach an additional page of notes if necessary to explain reasons for lateness or unusual events or circumstances.

ATTACHMENT C — DISTRICT'S SUPPLEMENTAL INSTRUCTIONS (sample)

DISTRICT SUPPLEMENTAL INSTRUCTIONS #

DATE:

TO: Terri Breeden, Project Manager
Brevard County
2725 Judge Fran Jamieson Way, Bldg. A
Viera, FL 32940-6605

FROM: Derek Busby, Project Manager

CONTRACT NUMBER: 36535

CONTRACT TITLE: Oak Point Park Project

The Work shall be carried out in accordance with the following supplemental instruction issued in accordance with the Contract Documents without change in the Contract Sum or Contract Time. Prior to proceeding in accordance with these instructions, indicate your acceptance of these instructions for minor adjustments to the work as consistent with the Contract Documents and return to the District's Project Manager.

Sample

1. RECIPIENT'S SUPPLEMENTAL INSTRUCTIONS:

2. DESCRIPTION OF WORK TO BE CHANGED:

3. DESCRIPTION OF SUPPLEMENTAL INSTRUCTION REQUIREMENTS:

RECIPIENT's approval: (choose one of the items below):

Approved: _____ Date: _____

(It is agreed that these instructions shall not result in a change in the Total Compensation or the Completion Date.)

Approved: _____ Date: _____

(N/A agrees to implement the Supplemental Instructions as requested but reserves the right to seek a Change Order in accordance with the requirements of the Agreement.)

Approved: _____ Date: _____
Derek Busby, District Project Manager

Acknowledged: _____ Date: _____
Carol Miller, District Senior Procurement Specialist

c: Contract file
Financial Services

ATTACHMENT D – CONTRACT PAYMENT REQUIREMENTS FOR STATE-FUNDED COST REIMBURSEMENT CONTRACTS

Invoices for state-funded cost reimbursement contracts must be supported by an itemized listing of expenditures by category (salary, travel, expenses, etc.). Supporting documentation must be provided for each amount for which reimbursement is being claimed, indicating that the item has been paid. Check numbers may be provided in lieu of copies of actual checks. Each piece of documentation shall clearly reflect the dates of service. Only expenditures for categories in the approved contract budget will be reimbursed.

Listed below are examples of the types of documentation representing the minimum requirements by cost category:

Salaries: Submit a payroll register or similar documentation showing gross salary charges, fringe benefits, other deductions, and net pay. If an individual is paid by the hour, a document reflecting the hours worked times the rate of pay is acceptable.

Fringe Benefits: Fringe benefits should be supported by invoices showing the amount paid on behalf of the employee (e.g., insurance premiums paid). If the contract specifically states that fringe benefits will be based on a specified percentage, rather than the actual cost of fringe benefits, then the calculation for the fringe benefits amount must be shown.

Exception: Governmental entities are not required to provide check numbers or copies of checks for fringe benefits.

Travel: Reimbursement for travel must be in accordance with §112.061, Fla. Stat., which includes submission of the claim on the approved State of Florida (State) or District travel voucher.

Other direct costs: Reimbursement is based upon paid invoices/receipts. If nonexpendable property is purchased using State funds, the contract should include a provision for the transfer of the property to the State when services are terminated. Documentation must be provided to show compliance with Department of Management Services Rule 60A-1.017, F.A.C., regarding the requirements for contracts which include services and that provide for the contractor to purchase tangible personal property as defined in §273.02, Fla. Stat., for subsequent transfer to the State.

In-house charges: Charges which may be of an internal nature (e.g., postage, copies, etc.) may be reimbursed on a usage log which shows the units, times the rate being charged. The rates must be reasonable.

Indirect costs: If the contract specifies that indirect costs will be paid based on a specified rate, then the calculation should be shown.

The "Reference Guide for State Expenditures" prepared by the Florida Department of Financial Services can be found at this web address: http:/www.fldfs.com/aadir/reference_guide.htm