



NATURAL RESOURCES  
MANAGEMENT DEPARTMENT  
BUDGET WORKSHOP

AMANDA ELMORE  
DEPUTY DIRECTOR

# NATURAL RESOURCES MANAGEMENT DEPARTMENT OVERVIEW



Environmental  
Resources  
Management

Environmental  
Remediation &  
Compliance

Beaches,  
Boating &  
Waterways

Stormwater  
Management

Operations &  
Support  
Services

Save Our  
Indian River  
Lagoon

# NATURAL RESOURCES MANAGEMENT DEPARTMENT OVERVIEW\*

\*EXCLUDES SAVE OUR INDIAN RIVER LAGOON  
(SOIRL)

***Our Mission is to promote sustainable use and stewardship of Brevard County's natural resources through cost-effective and science-based management.***

- \$50.4M FY25 Adopted Budget; \$10M Grants
- \$7.85M ARPA (additional funds)
- Five Programs
  - 75 Positions
  - 35 Miles Managed Beach
  - 550 Petroleum Cleanup Sites in six counties
  - 12,000+ Annual Environmental Reviews
  - 37 Stormwater CIP Projects (Cost \$22.4M)
  - 70 Harvested Ponds
  - 2,200 Environmental Monitoring Inspections
- EOC Partner for Emergency Support Function 3



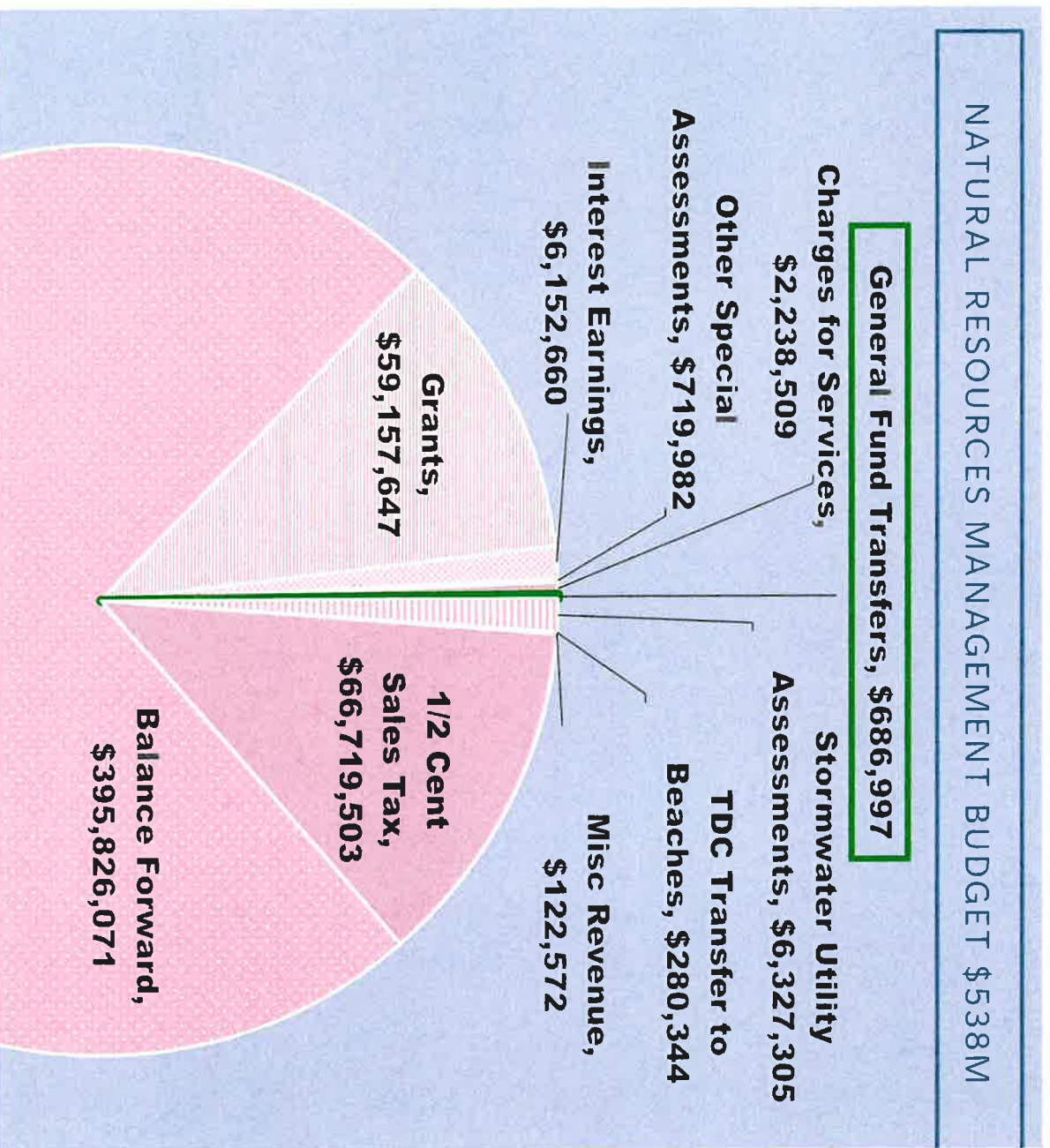
NATURAL RESOURCES MANAGEMENT BUDGET \$538M

COLORS OF MONEY

NATURAL RESOURCES  
FUNDING SOURCES

The Natural Resources Management Department's total budget is:

- 91% SOIRL (\$488M)
- 9% OTHER 5 PROGRAMS (\$50M)
- 99.9% RESTRICTED (PINK) REVENUE
- 0.13% GENERAL FUND (GREEN) REVENUE



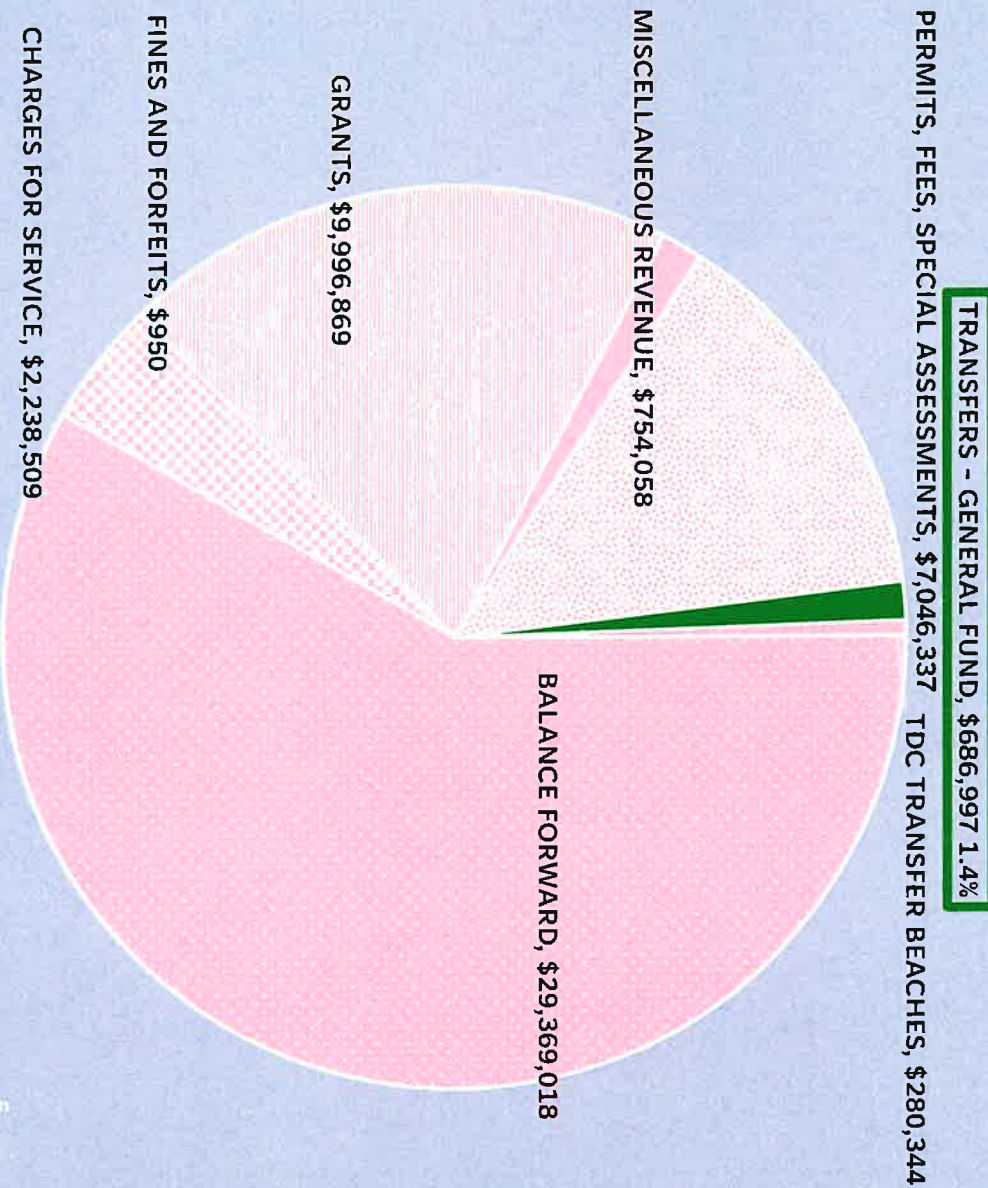
**COLORS OF MONEY -  
NATURAL RESOURCES  
NON-SOIRL FUNDING  
SOURCES \***

\* EXCLUDING SAVE OUR INDIAN RIVER LAGOON (SOIRL)

Natural Resources Management  
Department's budget, excluding  
SOIRL, is \$50M.

- 5 PROGRAMS
  - 98.6% RESTRICTED (PINK)  
REVENUE
  - 1.4% GENERAL FUND (GREEN)

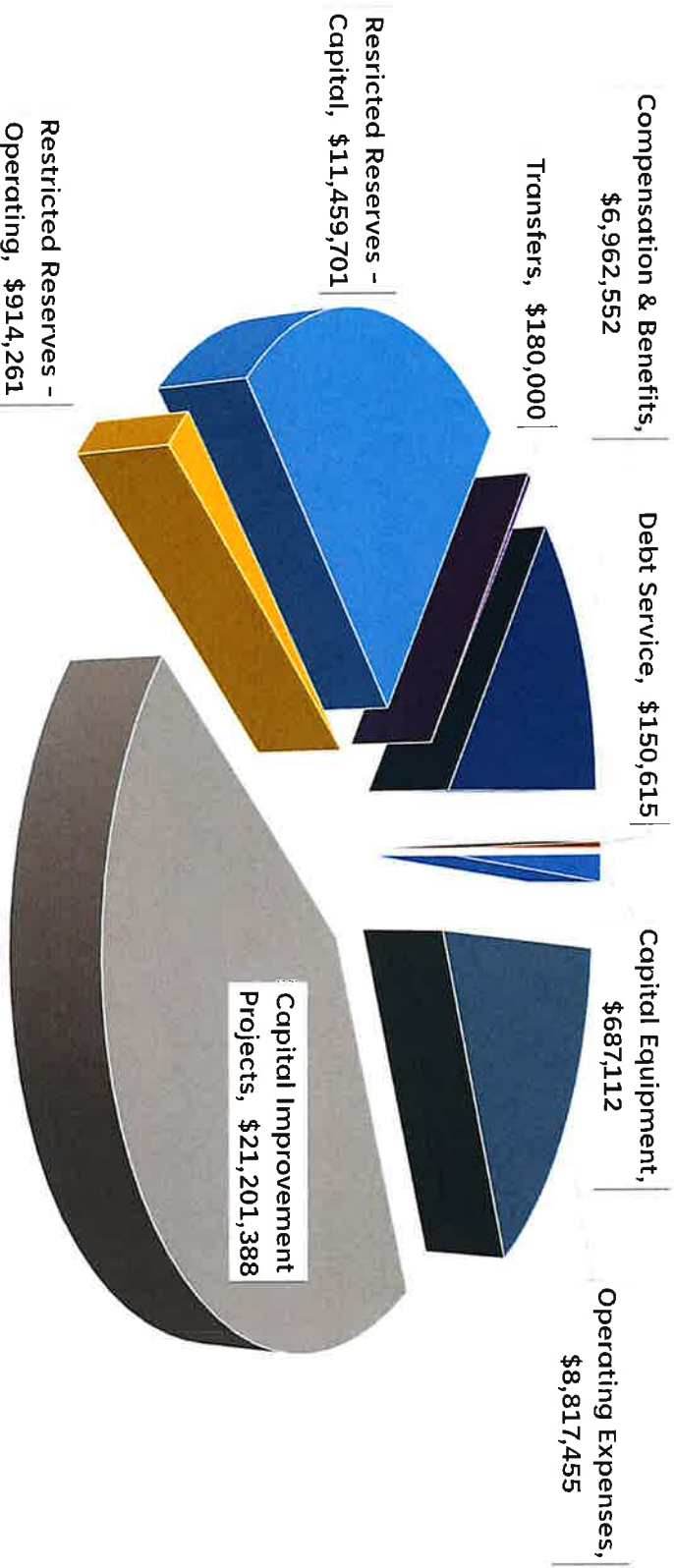
**NATURAL RESOURCES MANAGEMENT  
NON-SOIRL BUDGET \$50M**



# NATURAL RESOURCES MANAGEMENT DEPARTMENT \*

\* EXCLUDING SOIRL

## EXPENSES



# Environmental Resources Management

11 FTE, \$2M



Development Review (6 FTE)



Code Compliance (3 FTE)



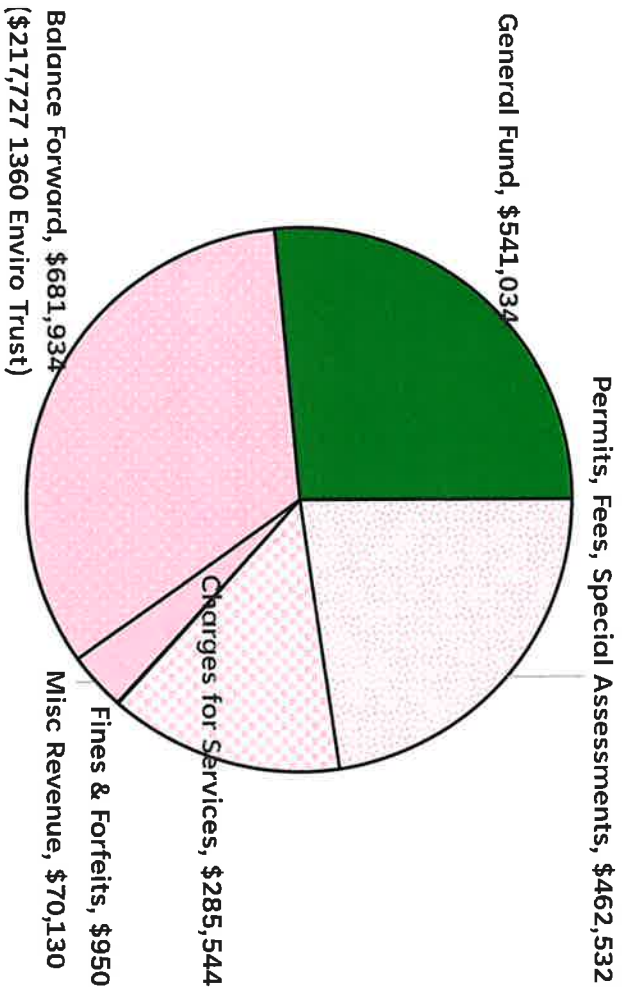
Planning & Resilience (2 FTE)



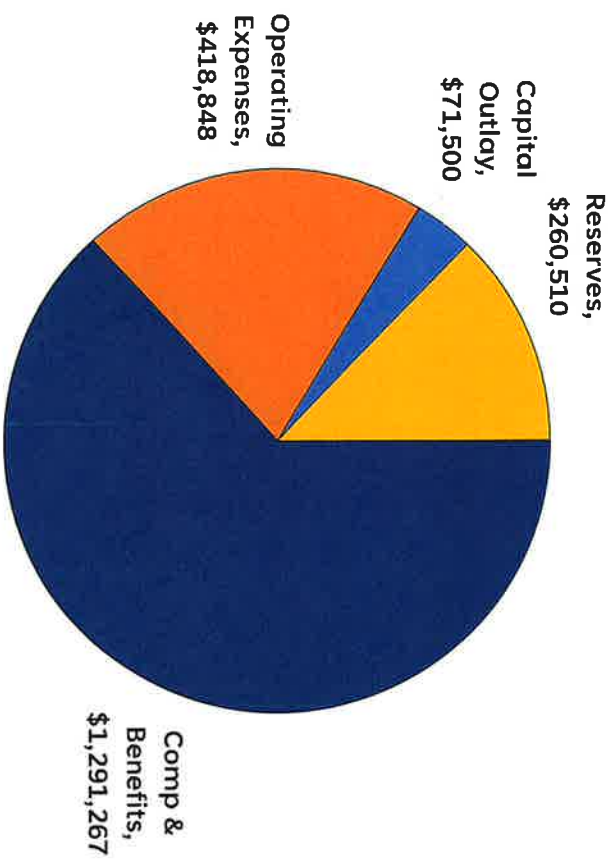
Interdepartmental Environmental  
Collaboration

# ENVIRONMENTAL RESOURCES MANAGEMENT PROGRAM

**Revenue - \$2,042,125**



**Expense - \$2,042,125**





# ENVIRONMENTAL RESOURCES MANAGEMENT PROGRAM:

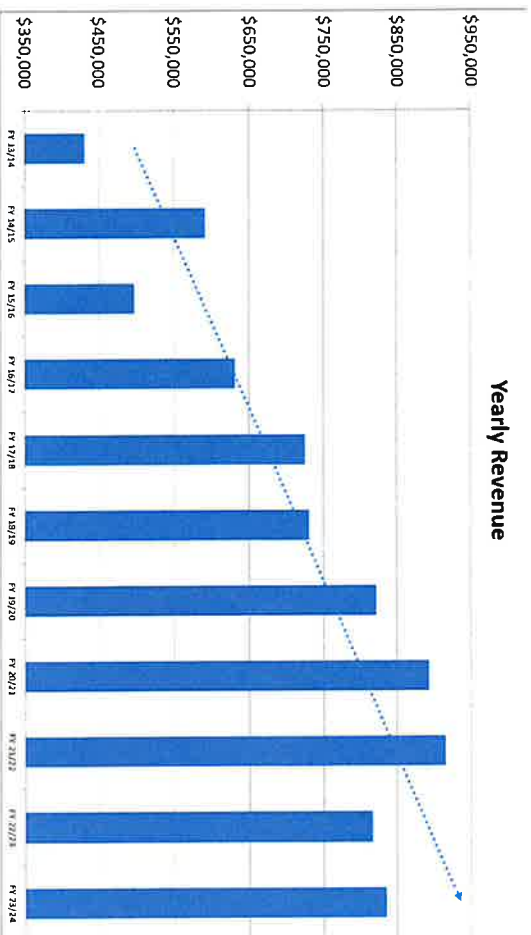
## ENVIRONMENTAL REVIEW



### Environmental Comprehensive Plan Policies & Land Development Regulations

- Landscaping, Land Clearing & Tree Protection
- Surface Water Protection
- Coastal Setback
- Aquifer Protection
- Floodplain Protection
- Land Alteration
- Wetlands Protection
- Private Lakes
- Lake Washington Area
- Nitrogen Reduction Overlay
- Manatee Protection Plan

# ENVIRONMENTAL RESOURCES MANAGEMENT PROGRAM: ENVIRONMENTAL REVIEW

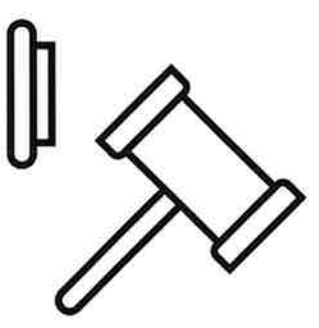
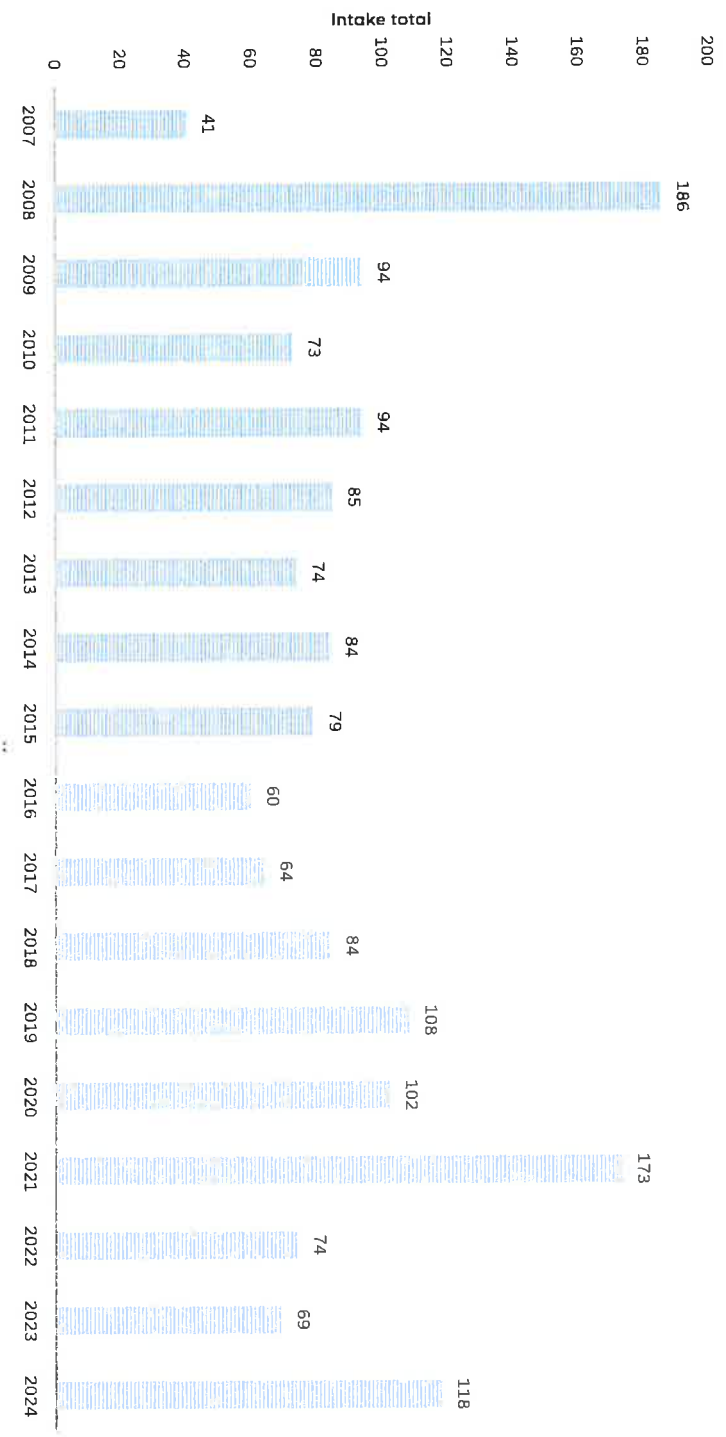


Staff reviews development orders for compliance with environmental regulations required under Brevard County's Comprehensive Plan.

- Residential and commercial building permits
- Site plans for residential, commercial, and industrial land development
- Rezoning and land use changes
- Private lake, land alteration (filling & excavation), and rock revetment permits

# ENVIRONMENTAL RESOURCES MANAGEMENT PROGRAM: CODE COMPLIANCE

## NATURAL RESOURCES CASES REPORTED ANNUALLY



**AVERAGE  
ENVIRONMENTAL CASE  
TAKES 6 MONTHS  
TO CLOSE**

## ENVIRONMENTAL RESOURCES MANAGEMENT: PLANNING & RESILIENCE

### Comprehensive Plan & Ordinance Updates

- Continuing Comprehensive Plan updates related to Evaluation and Appraisal Review (EAR) cycles, and Brevard Barrier Island Area of State Critical Concern (BBIA)
- Codification of Peril of Flood policies, EAR, & BBIA
- Update Brevard County Manatee Protection Plan (MPP)

### Resilient Brevard: Develop actionable strategies to become more resilient to natural hazards

- Coordination with FDEP Office of Resilience and Coastal Protection
- Partnering with ECFRPC, Stetson, and Embry-Riddle on Community and Economic Resilience
- MIRR Collaboration with DOD, NSA, NASA, Space Florida, PSFB, NOTU, & Coast Guard
- Brevard Resilience Interagency Collaborative (BRIC)



# Environmental Remediation & Compliance Program

21 FTE, \$3.6M



Petroleum Cleanup & Restoration (17 FTE)



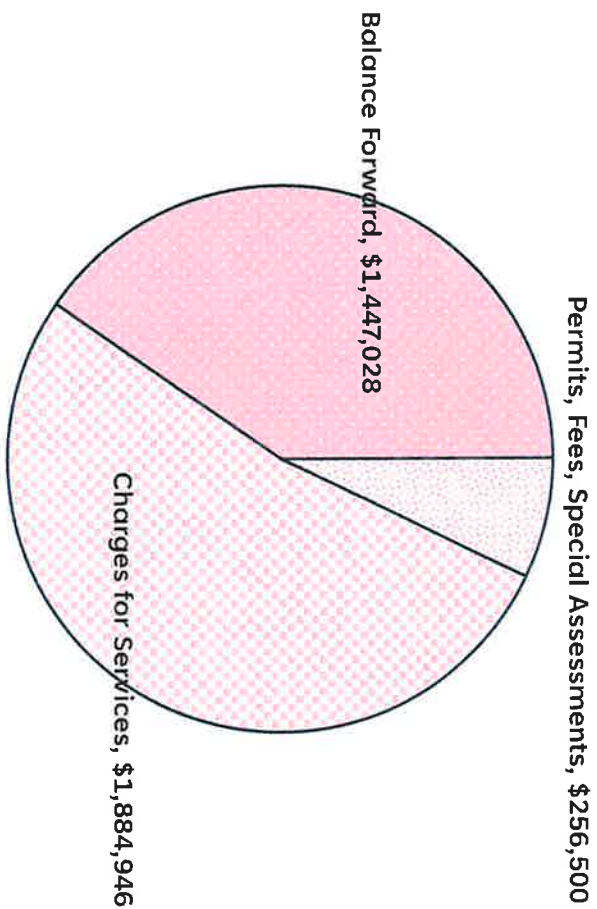
Pollutant Storage Tank Compliance (2 FTE)



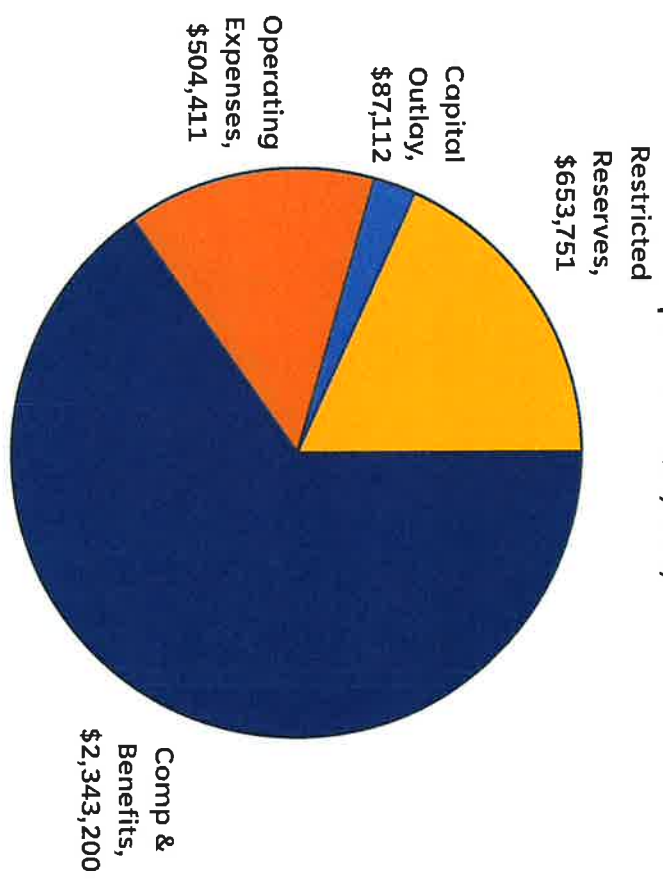
Small Quantity Generator (SQG) Hazardous  
Waste Compliance (2 FTE)

# ENVIRONMENTAL REMEDIATION & COMPLIANCE PROGRAM

Revenue - \$3,588,474

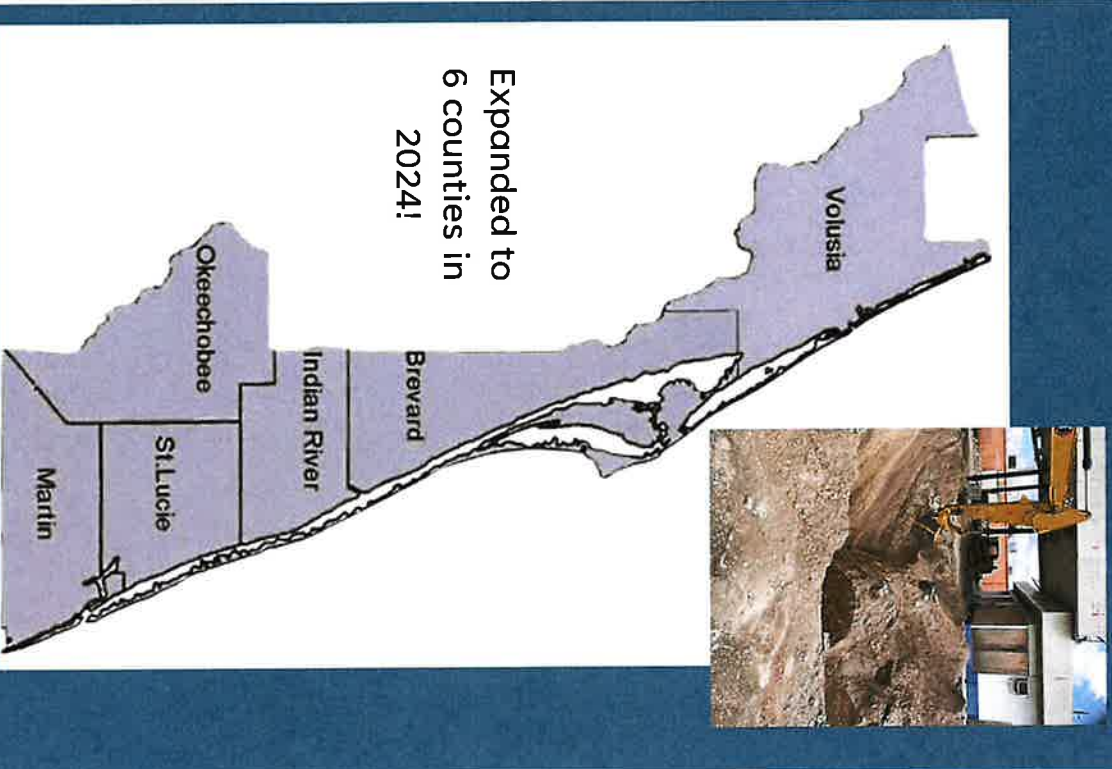


Expense - \$3,588,474



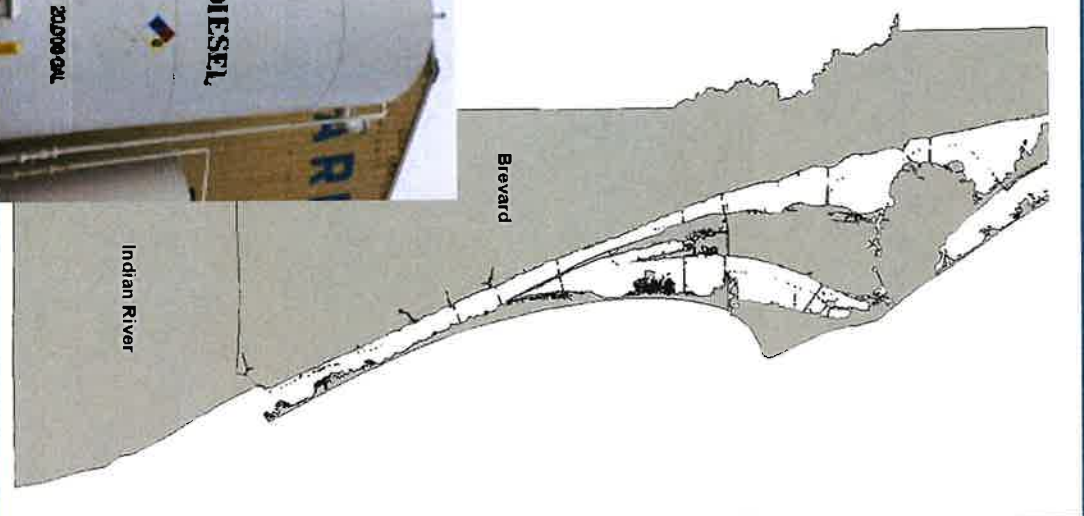
## ENVIRONMENTAL REMEDIATION & COMPLIANCE PROGRAM: PETROLEUM REMEDIATION

- FDEP contract to manage the site assessment and remediation of 550 petroleum-contaminated facilities (some blighted, underutilized sites)
  - Review and approve site assessment reports
  - Authorize monitoring and remedial action plans (RAPs)
  - Oversee installation of multi-year remediation systems and maintenance
- SUPER Act – 1986, to protect and restore the State's groundwater, especially drinking water sources, from petroleum contamination.
- ~10-year average per site for Remediation



## ENVIRONMENTAL REMEDIATION & COMPLIANCE PROGRAM: FUEL STORAGE TANK COMPLIANCE VERIFICATION

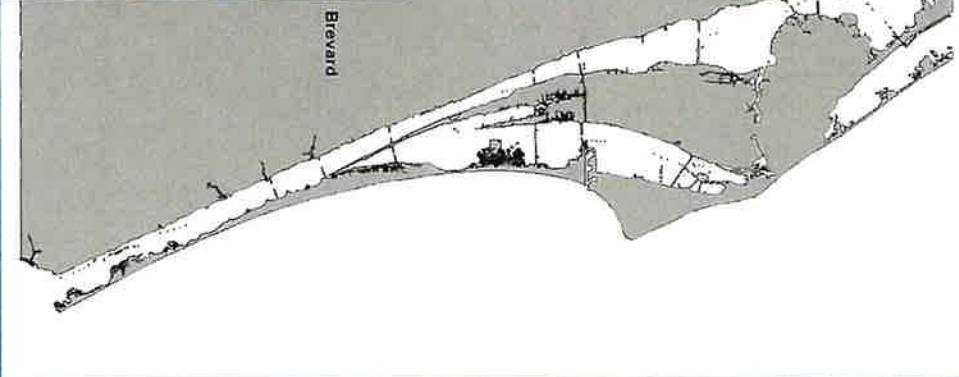
- FDEP-funded
- 280 sites in Brevard & 70 sites in Indian River
- 350 retail and non-retail storage tank facilities
  - Confirm Registered Tanks
  - Financial Responsibility for Release
  - Leak Detection Systems
  - Secondary Containment
  - Checklist 100+ Items
- Inspected Every Two Years





## ENVIRONMENTAL REMEDIATION & COMPLIANCE PROGRAM: HAZARDOUS WASTE

- Inspect ~700/yr potential/known hazardous waste facilities
- Paint/Body Shops, Dentist, Auto Repair & Dealers, Tanning Salons
- 3,500 sites, each site is inspected every five years
- Unfunded state mandate: 403.7225 FS authorized funding by a local “hazardous waste assessment fee”, included with the Business Tax Receipt for all potential SQG facilities
- 50-75 DEP Assists per year, drums on the beach, unknown sheens on water bodies, grease traps



# Beaches, Boating & Waterways

3 FTE, \$7771k



Beach Management (2 FTE)



Derelict Vessel Removal (0.25 FTE)



Habitat Creation (0.25 FTE)



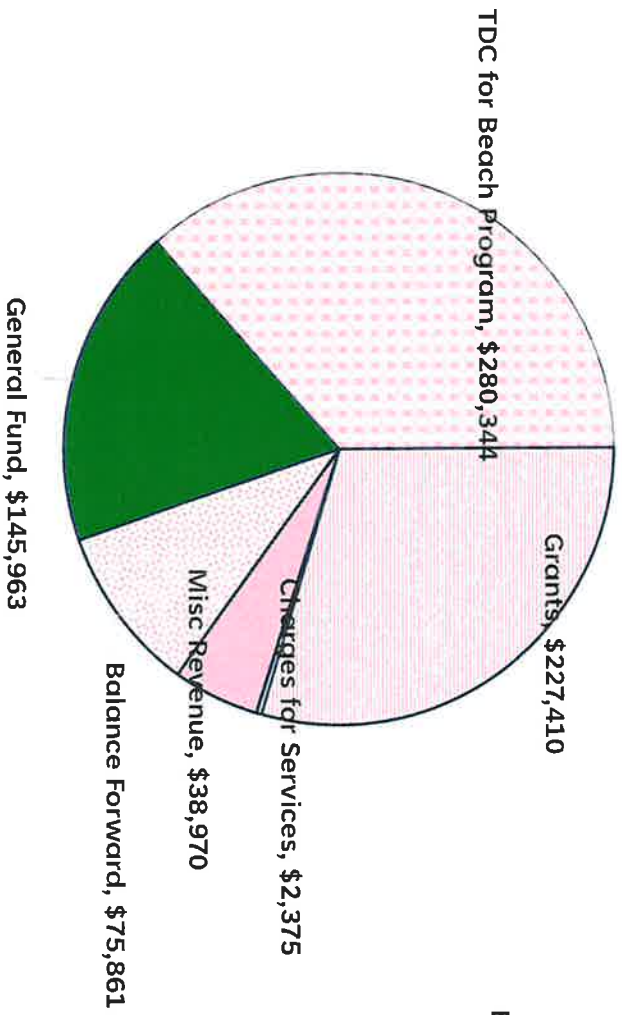
Working Waterfront (0.25 FTE)



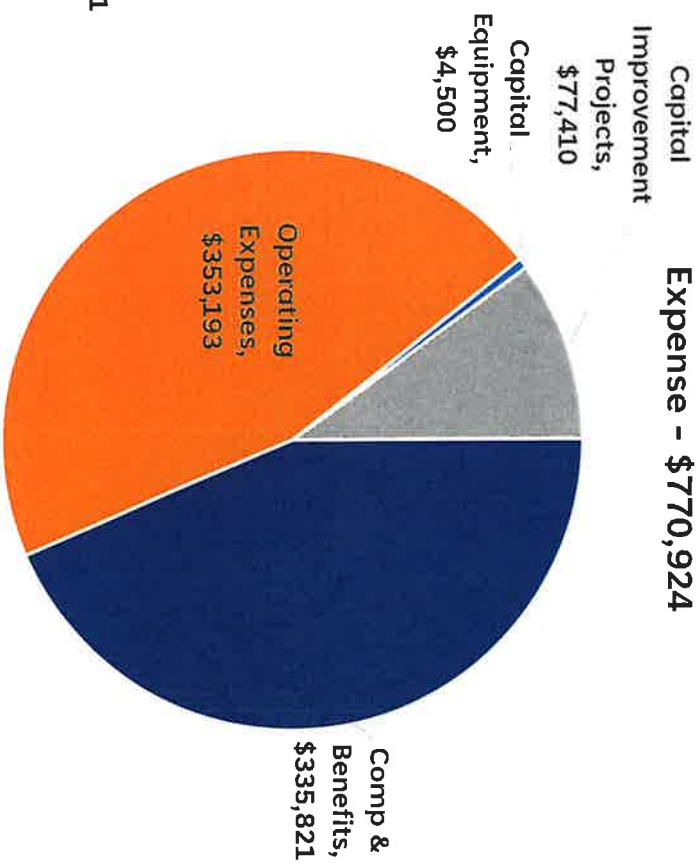
Channel Marking & Maintenance (0.25 FTE)

# BEACHES, BOATING & WATERWAYS PROGRAM

Revenue - \$770,924



Expense - \$770,924



## BOATING & WATERWAYS SECTION

### DERELICT VESSELS (DV)

- The County has removed ~327 DVs over the past 17 years
- A large County-wide DV Removal Project is underway, with an estimated budget of \$150,000 (TDC Grant) and FWC direct-removal
- DV are a misdemeanor offense, the courts have jurisdiction over repayments and the county receives some repayments
- Prior to county removal, State and Local Law Enforcement must notice the DV owner who may contest derelict determination

### WATERWAY MANAGEMENT

- Maintain ~160 waterway markers in IRL & SJR
- Works with D2 Canal Dredging Committee to prioritize projects
- Anchoring Limitation Areas (ALAs) – Melbourne

### HABITAT CREATION

- Reefs - Habitat & Supports Boating Economy
- Funded through Public/Private Grants & Donations

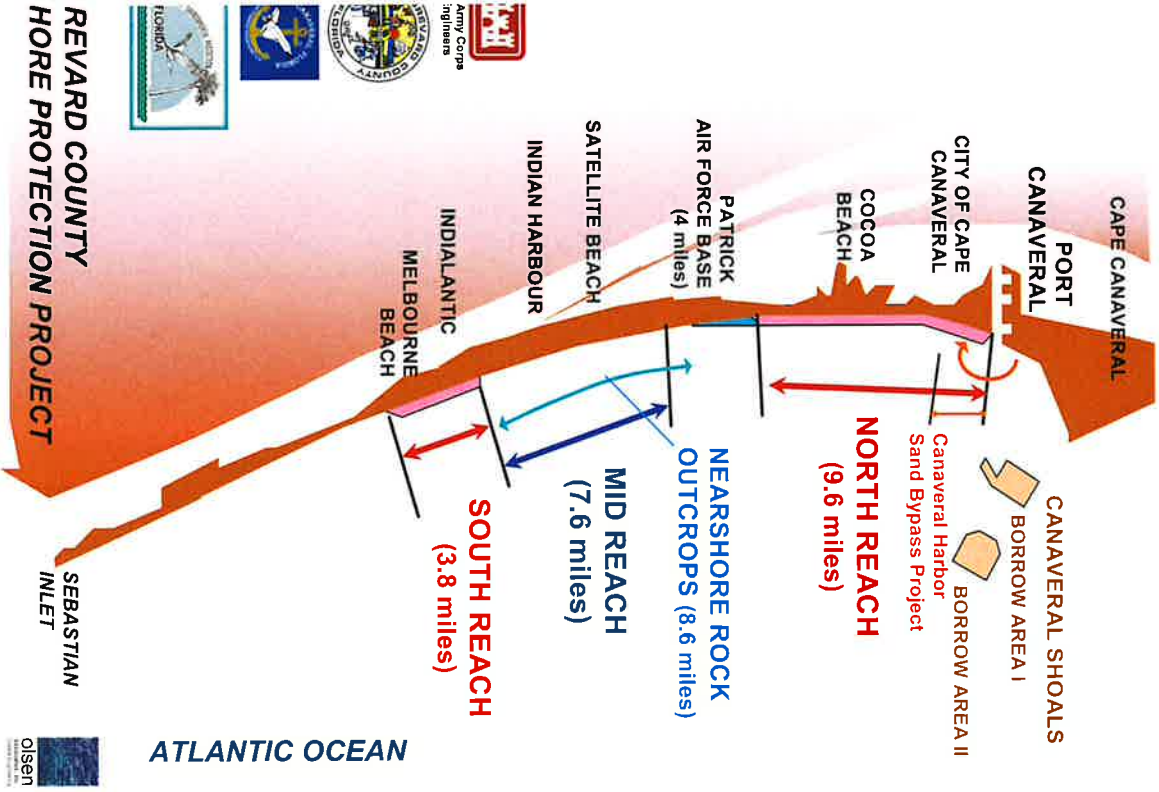




**BOATING & WATERWAYS SECTION:  
GRIFFIS LANDING/BLUE CRAB COVE**

- Acquired in 2009 - Stan Mayfield Working Waterfront Grant Program
- \$890,000 Grant for reconstructing the site's wholesale seafood market, Ms. Apple's Crab Shack, MIRA matching funds \$300k
- Design underway, construction expected FY25
- On-site fuel sales generate additional site maintenance funding





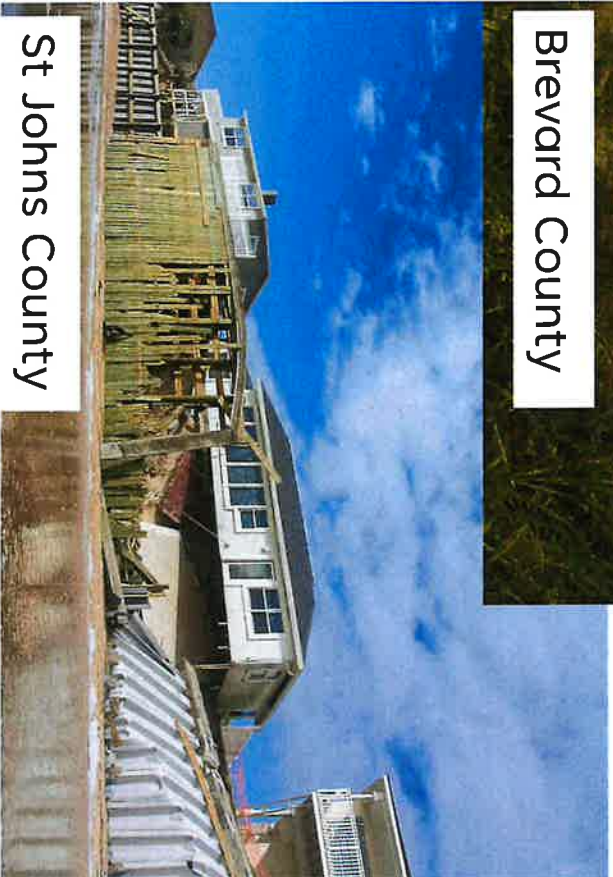
**BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT**

- 1996 – Congress authorized a federal shore protection project for Brevard County
- 2000 – 50-yr Project Cooperation Agreement with ACOE
- 5:1 Return on State Investment
- \$1.6B Annual Beach Tourism Benefit to Brevard
- 2014 National Best Re-nourished Beaches Award
- Natural beaches and habitat = infrastructure protection while avoiding armoring





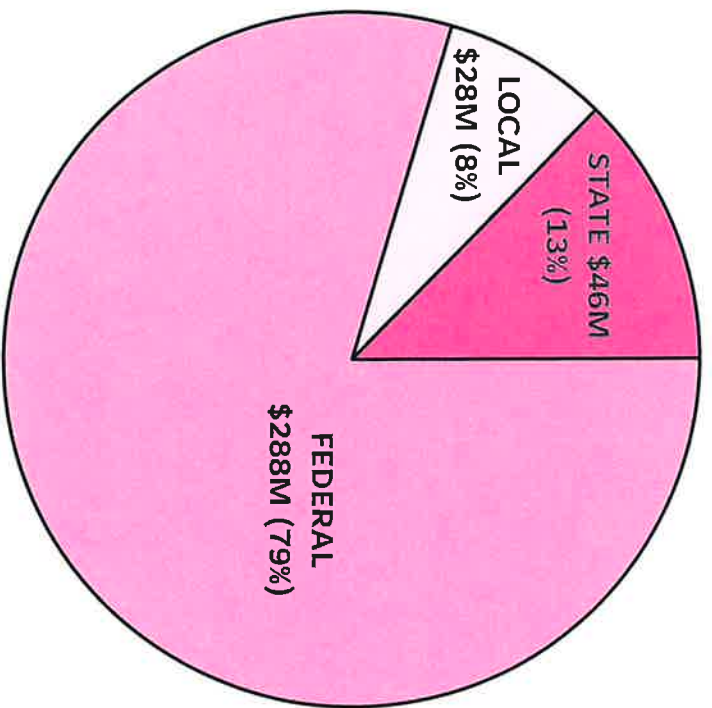
Brevard County

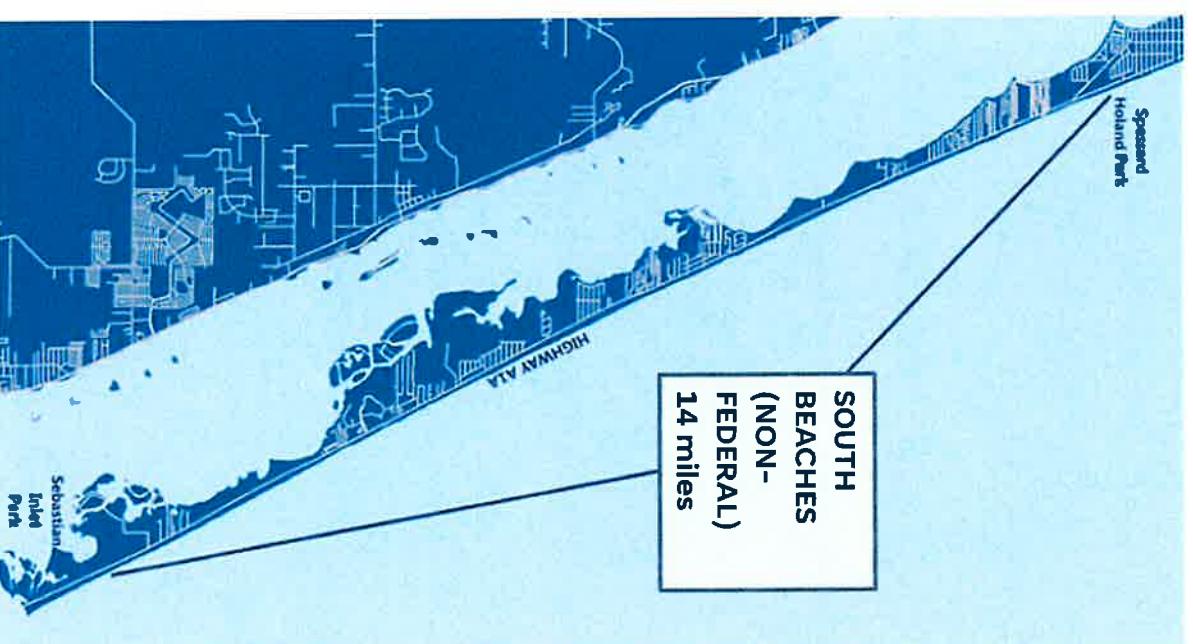


St Johns County

BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT

2000-2025 TOTAL = \$362M





**BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT**



**SOUTH BEACHES - Non-federal shoreline (14 miles) –**  
Local management cost supplemented by state grant & FEMA

- Archie Carr National Wildlife Refuge
- World-class turtle nesting habitat
- Dune only projects to date to meet fiscal constraints

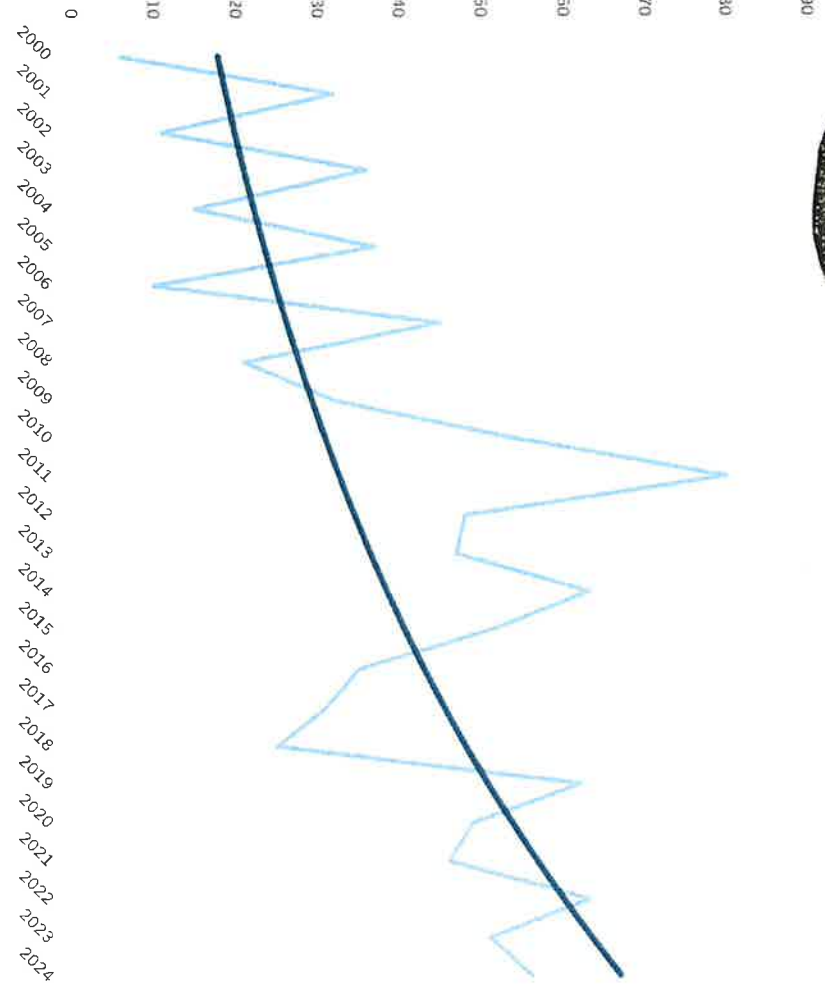


# BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT MARINE TURTLE NESTING TRENDS\*

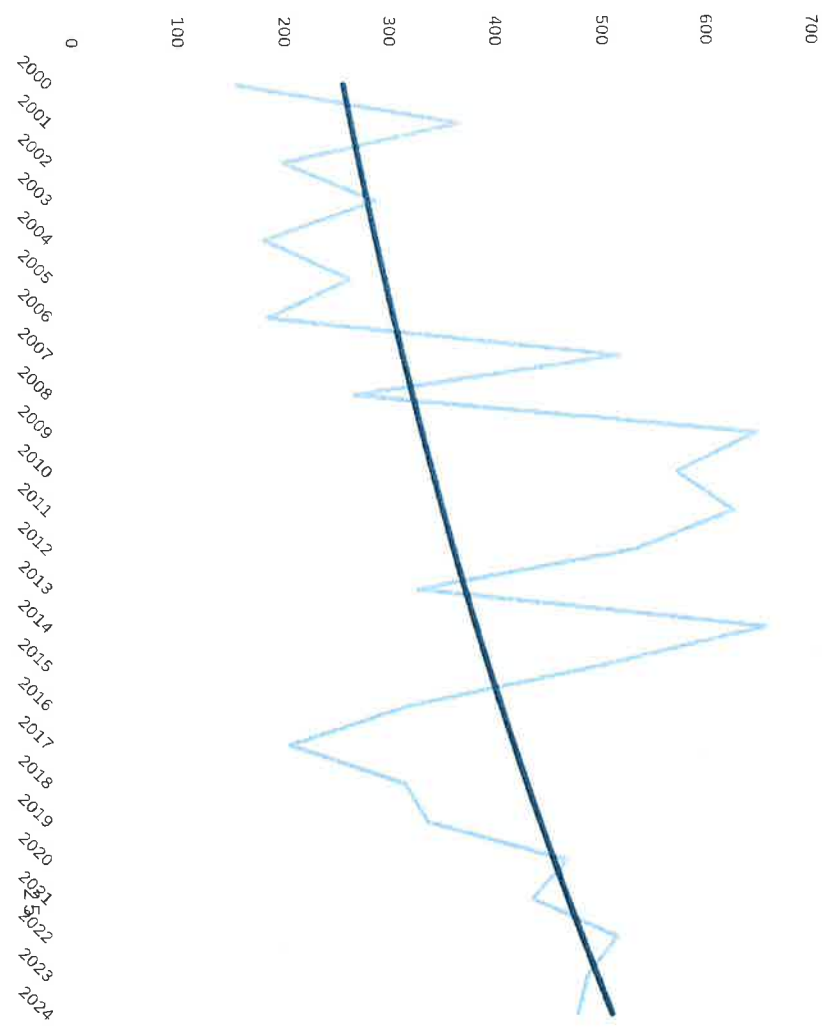


\* SOURCE: FWC/FWRI INDEX NESTING BEACH SURVEY PROGRAM DATABASE

Leatherback Nests – Brevard



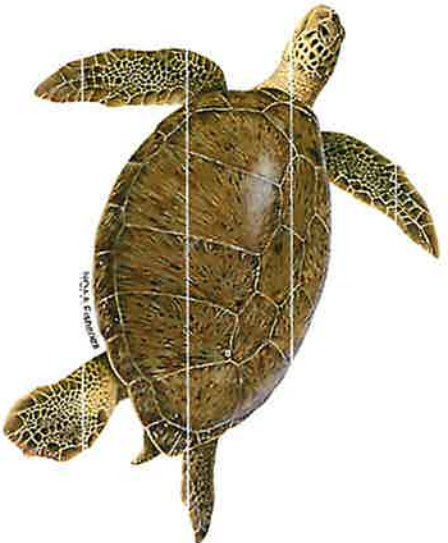
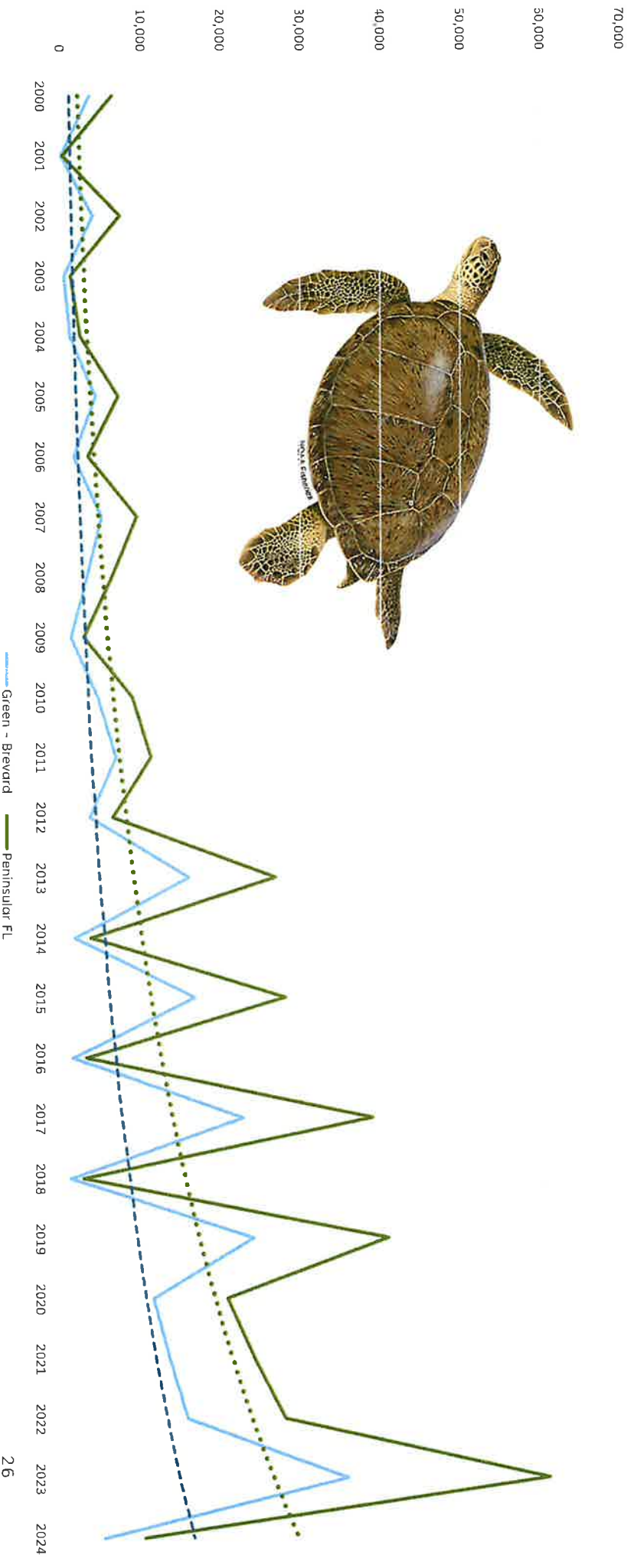
Leatherback Nests Peninsular FL – Core Beaches



# BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT MARINE TURTLE NESTING TRENDS – BREVARD V. PENINSULAR FLORIDA

\* SOURCE: FWC/FWRI INDEX NESTING BEACH SURVEY PROGRAM DATABASE

Green Turtle Nesting Brevard v. Peninsular FL

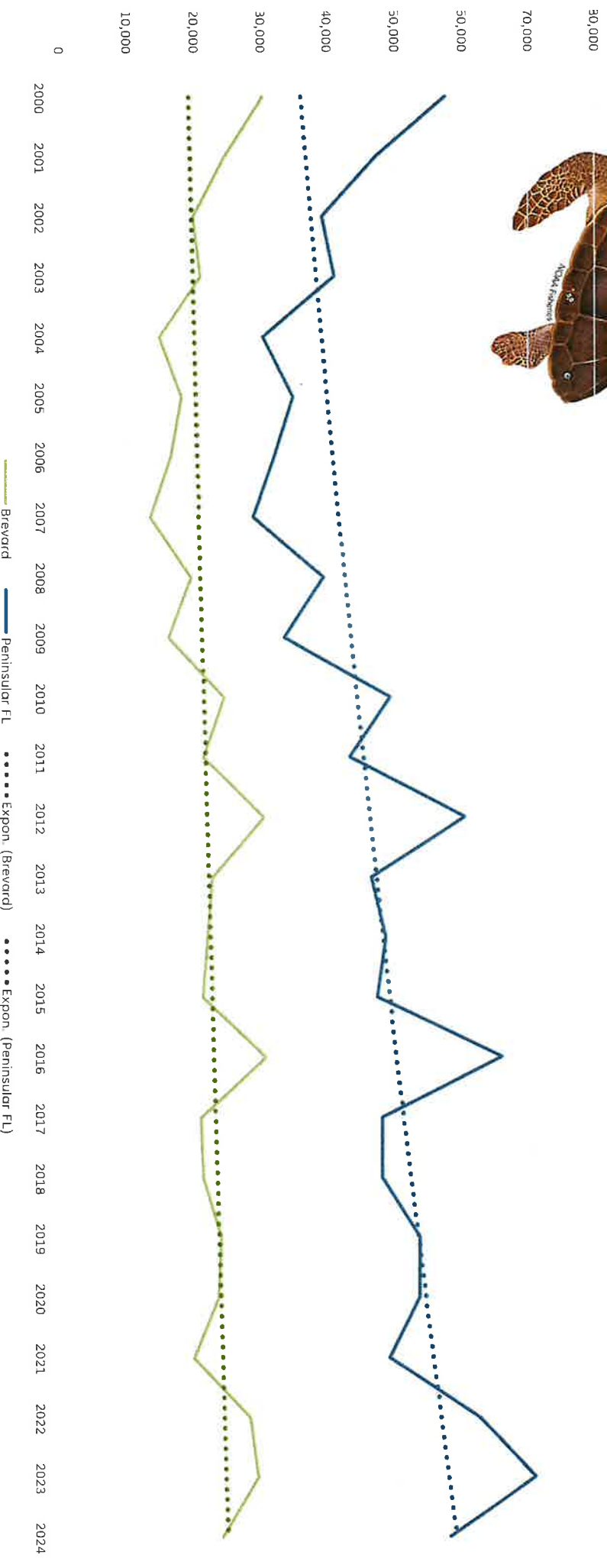


# BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT MARINE TURTLE NESTING TRENDS – BREVARD V. FLORIDA PENINSULA CORE BEACHES\*



\* SOURCE: FWC/FWRI INDEX NESTING BEACH SURVEY PROGRAM DATABASE

Loggerhead Nesting Data



BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT  
COCOA BEACH PIER – NORTH REACH



2000



2001 Post-Construction

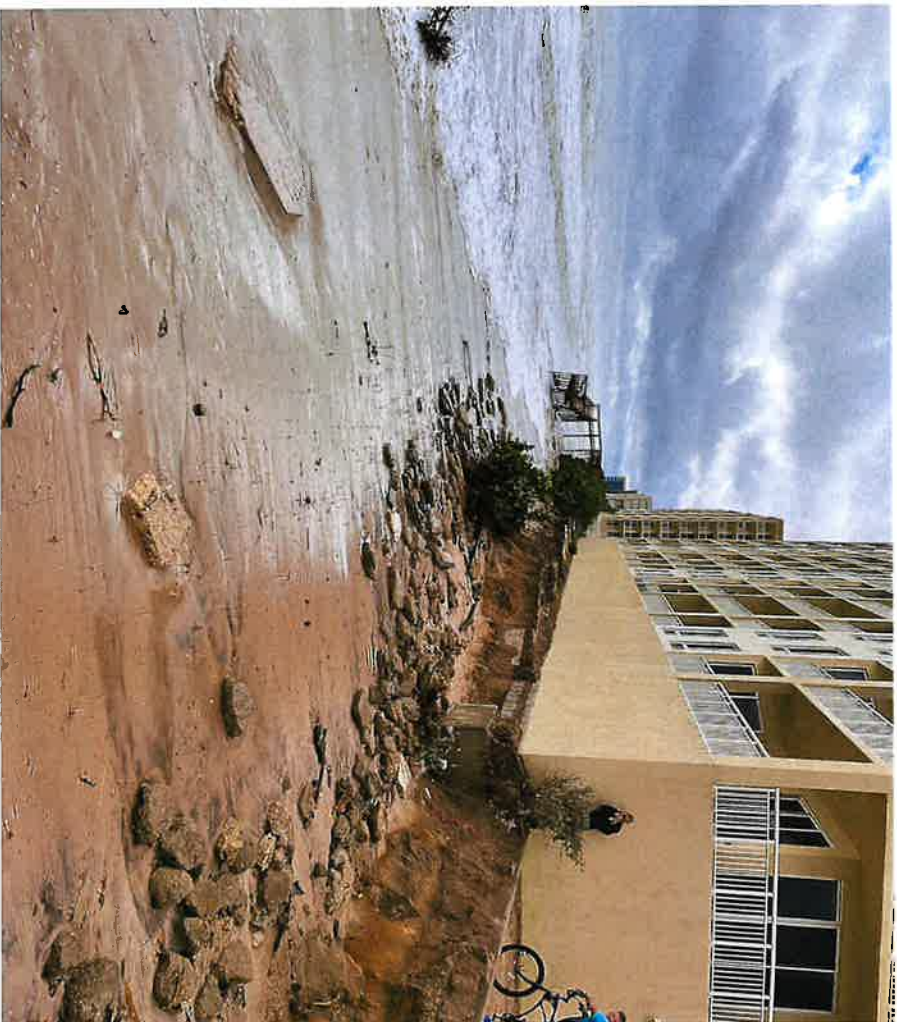


2022 Post-Nicole

BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT  
COCOA BEACH S. 10<sup>TH</sup> STREET – NORTH REACH



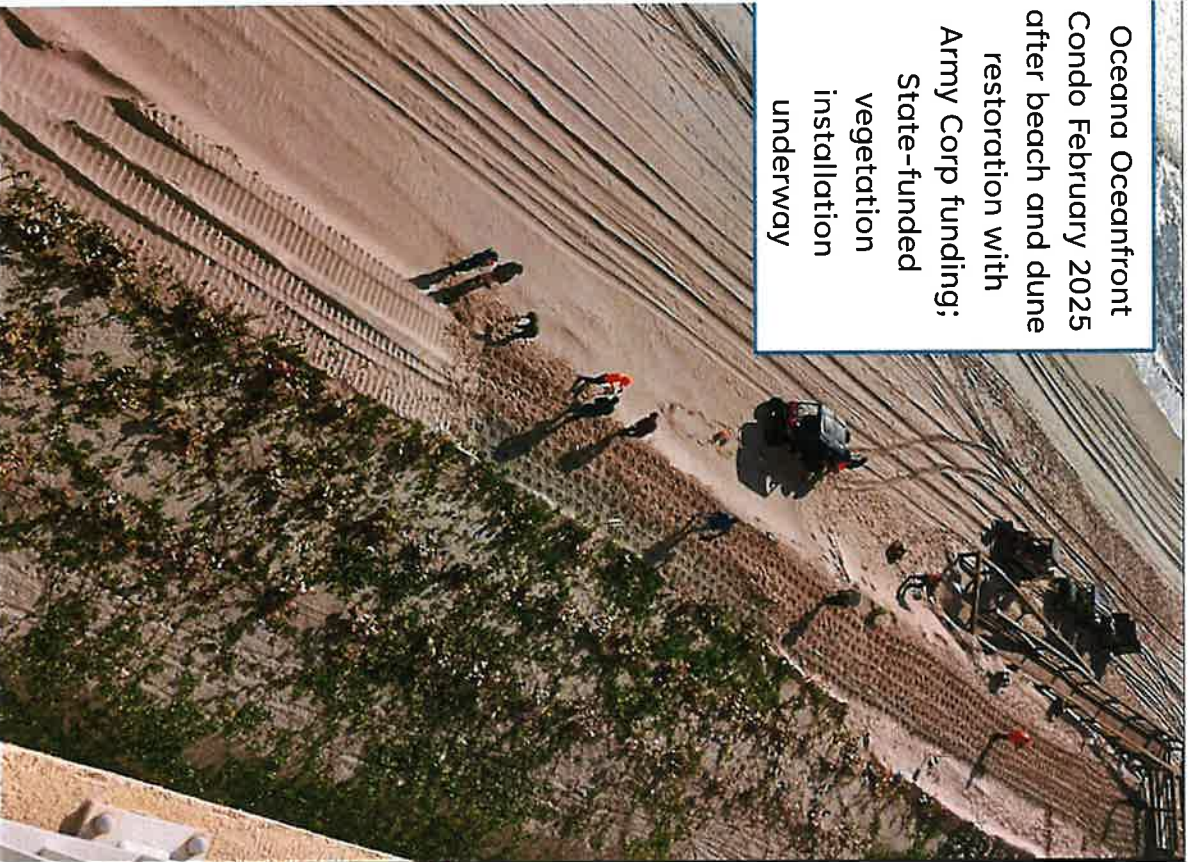
BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT  
MID-REACH POST-NICOLE



- Last construction season nourished beach from Pineda Causeway to south side of Indian Harbour Beach Club, excluding Hightower Park.
- This construction season will nourish remainder, including south of IHB Club and also Hightower Park, by April 30, 2025.



Oceana Oceanfront  
Condo February 2025  
after beach and dune  
restoration with  
Army Corp funding;  
State-funded  
vegetation  
installation  
underway



## BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT REVEGETATION

### 4.2 Million Plants in 22 years!

#### *Grant-funded Plantings & Giveaways*

- 6,000 Sabal Palms, Sea Grapes, Palmetto, Inkberry & Beach Elder

#### *Annual Bargain Sea Oats Sale*

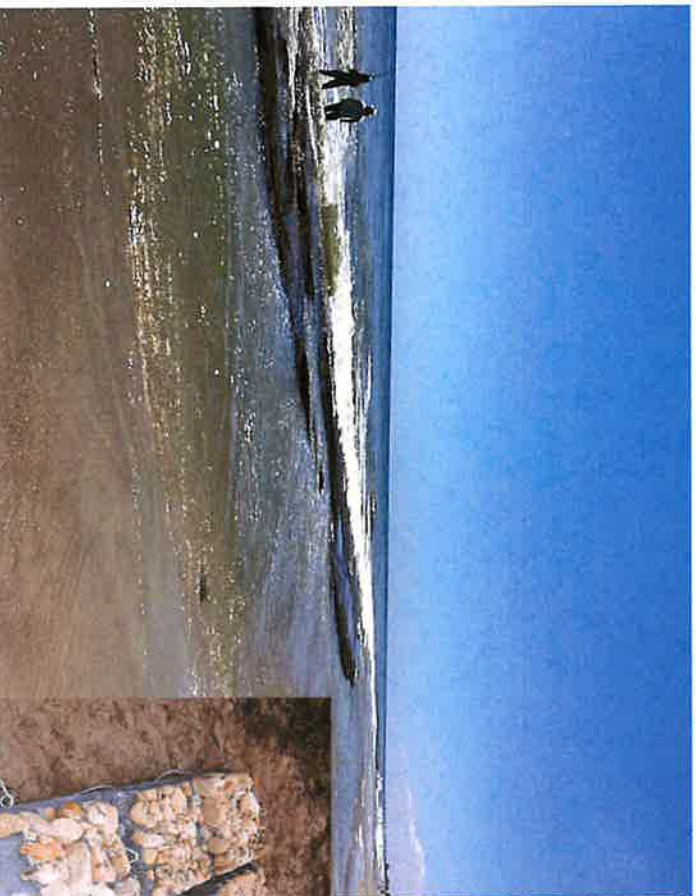
- 591,000 total sea oats sold since 2004; 27,456 this year
- *Post-Beach Renourishment*
- 3.6 Million Sea Oats



## BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT MID-REACH POST-NICOLE

Rock reef habitat in surfzone was avoided to greatest extent possible through low volume truckhaul beach and dune project. Up to 3 acres of rock impact was permitted and mitigated by 4.7 acres of mitigation reef. The project meets permit requirements, and the mitigation reef is fully successful. (FDEP Permit No. 0254479-001-JC, as amended).

May 2021 Rock Reefs Exposed After Sand Placement

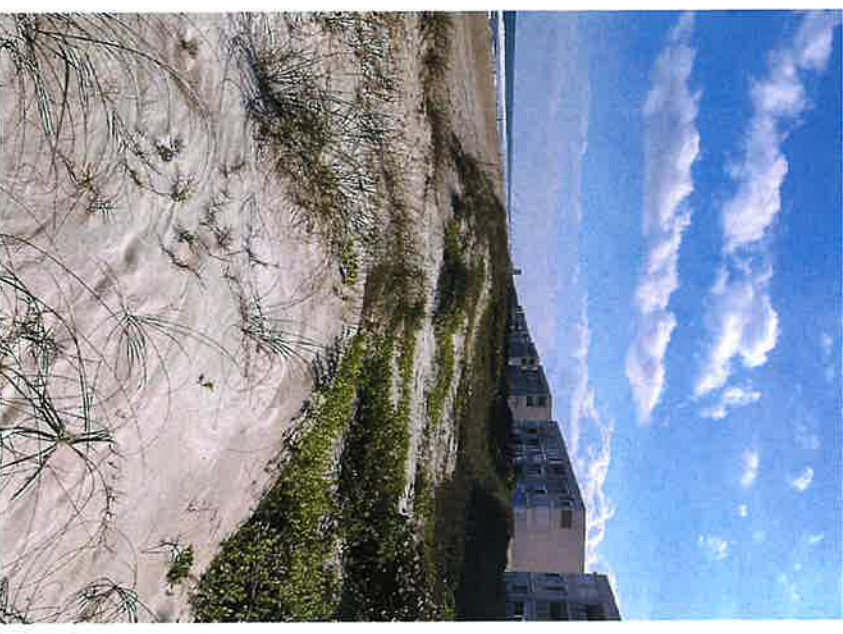


Sub-Adult Green Turtle Utilizing Mitigation Reef





**BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT  
THE BREAKERS - SOUTH REACH**



BEACHES, BOATING & WATERWAYS:  
BEACH MANAGEMENT & NOURISHMENT  
SOUTH BEACHES: 23-24 353,000 CY \$23M



## BEACHES, BOATING & WATERWAYS: BEACH MANAGEMENT & NOURISHMENT FY25 & FY26

### *Hurricanes Ian and Nicole Response*

#### *South Beaches Dune*

- Sand placement complete
- Dune vegetation complete

#### *Mid Reach*

- Sand placement complete
- Dune vegetation April 2025

#### *North Reach*

- Will be fully nourished by May 2025 in combination with Canaveral Sand Bypass.

#### *South Reach*

- Completion pending in 2026

#### Total construction cost

- \$23M Ian + Nicole FEMA/State
- \$104M (Ian + Nicole + ACOE)
- \$500k TDC share (<1%)

### For FY26 (after May 1- Oct 31 Turtle Nesting Season):

Season):

#### *South Reach*

- Ian + Nicole damage to be 100% restored
- Federal funding

#### *South Beaches Dune*

- Sand and vegetation to repair *Hurricane Milton* damage and mitigate future erosion
- Federal and state funding



# Stormwater Management

24 FTE, \$44M



Engineering, Design & Construction (9 FTE)



BMAP & NPDES Compliance (1 FTE)



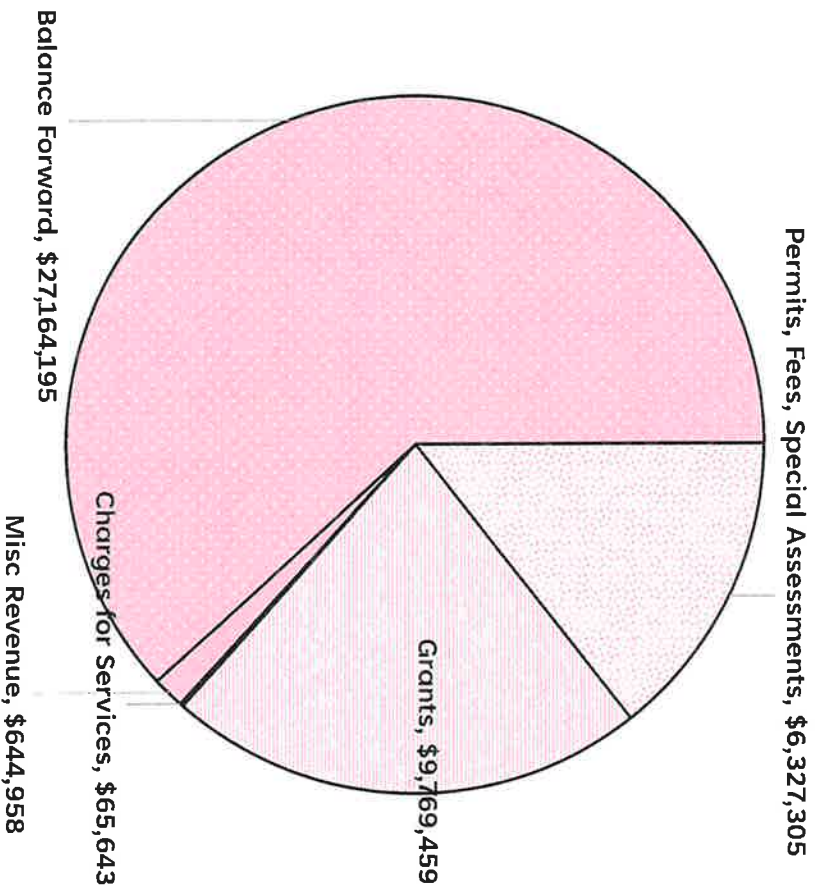
Environmental Monitoring (6 FTE)



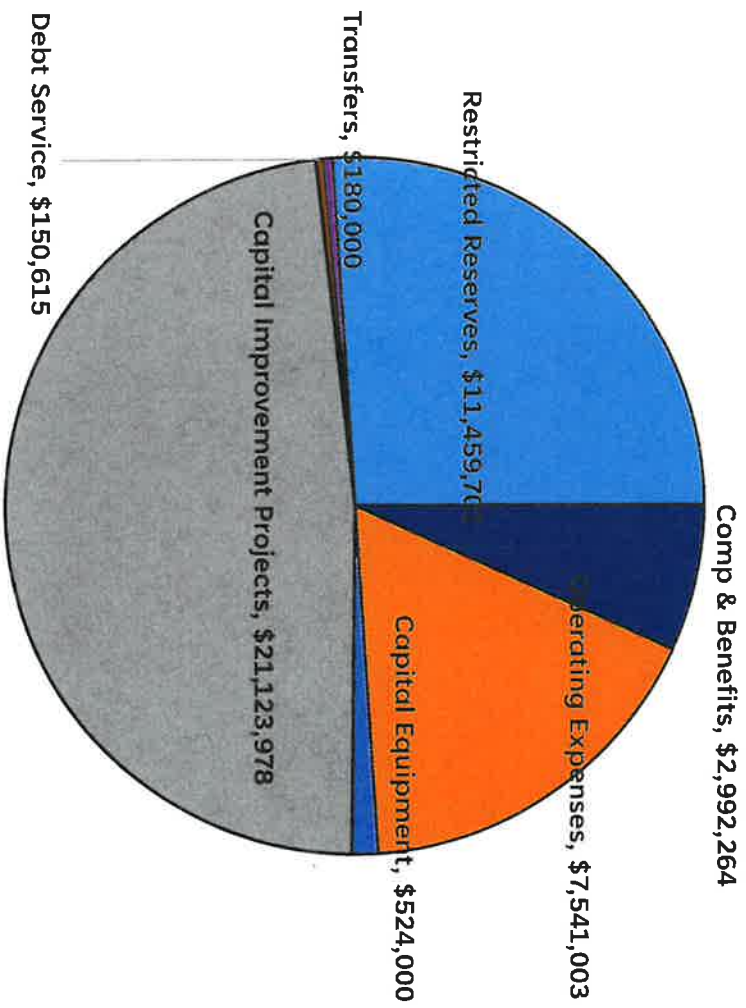
Ecosystem Management (8 FTE)

# STORMWATER MANAGEMENT PROGRAM

**Revenue - \$43,971,561**



**Expense - \$43,971,561**





## COMPLETED PROJECT - CRANE CREEK/LAMPLIGHTER FLOOD MITIGATION



- 800 homes flooded after TS Fay
- Multiple culverts under I-95 and Eau Gallie & new channels provided flood mitigation and nutrient reduction
- No significant flooding has been reported in the area since completion of the project.

## COMPLETED PROJECT - PINE ISLAND STORMWATER TREATMENT AND PUMP STATION



  
773.520.8881  
www.aerialphoto.com

Pine Island

Image # 140410\_0379  
Date 04.10.14

- Multipurpose Project
- Water Quality
- Flood Mitigation for North Merritt Island
- Recreational
- EELS Conservation

**2014 FL Stormwater Association Outstanding Achievement Award  
Funded by Grants and  
Stormwater Assessments**

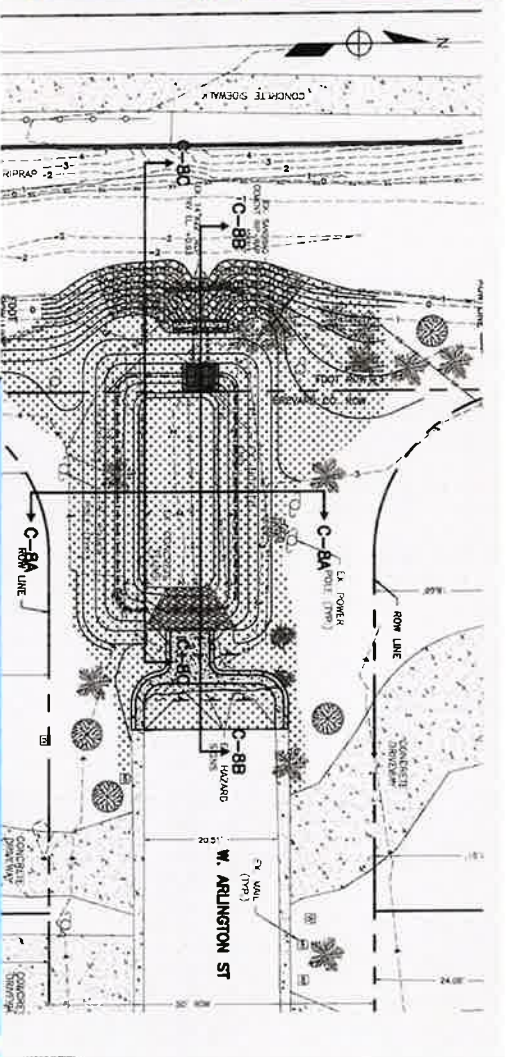
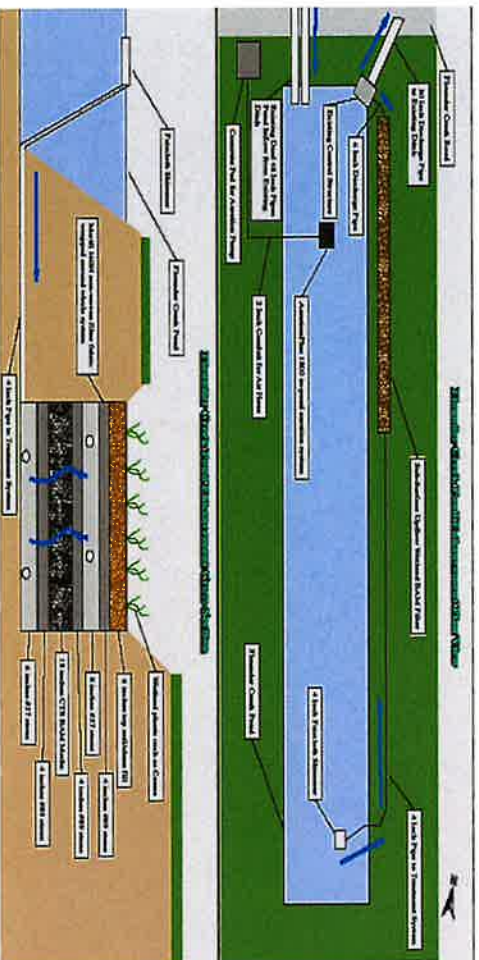


## COMPLETED PROJECT - SOUTHERN CHAIN OF LAKES EXPANSION PROJECT

- Expansion of Chain of Lakes system that removes nutrients from a previously untreated outfall which discharged directly into the IRL
- Part of the Chain of Lakes Park system and provides habitat for a variety of native flora and fauna.



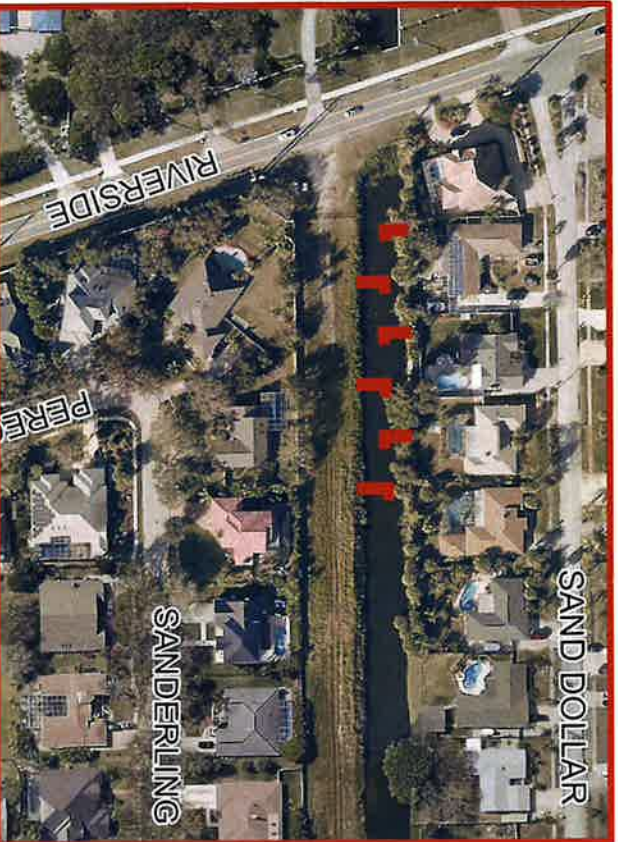
## CURRENT PROJECTS - FLOUNDER CREEK RD, PIONEER RD, AND W ARLINGTON DENITRIFICATION



The **Flounder Creek Rd** stormwater pond retrofit adds a denitrification and wetland system to remove additional nutrients before discharge into the IRL. The **Pioneer Rd** two-part system removes nutrients from a previously untreated outfall through 1) In-channel denitrification, and 2) a vegetative skimmer that prevents mats from discharging to the BRL. The **W Arlington Rd** dry pond sedimentation basin and denitrification system will remove nutrients from an untreated outfall discharging into the IRL, with post-construction native vegetation installation.

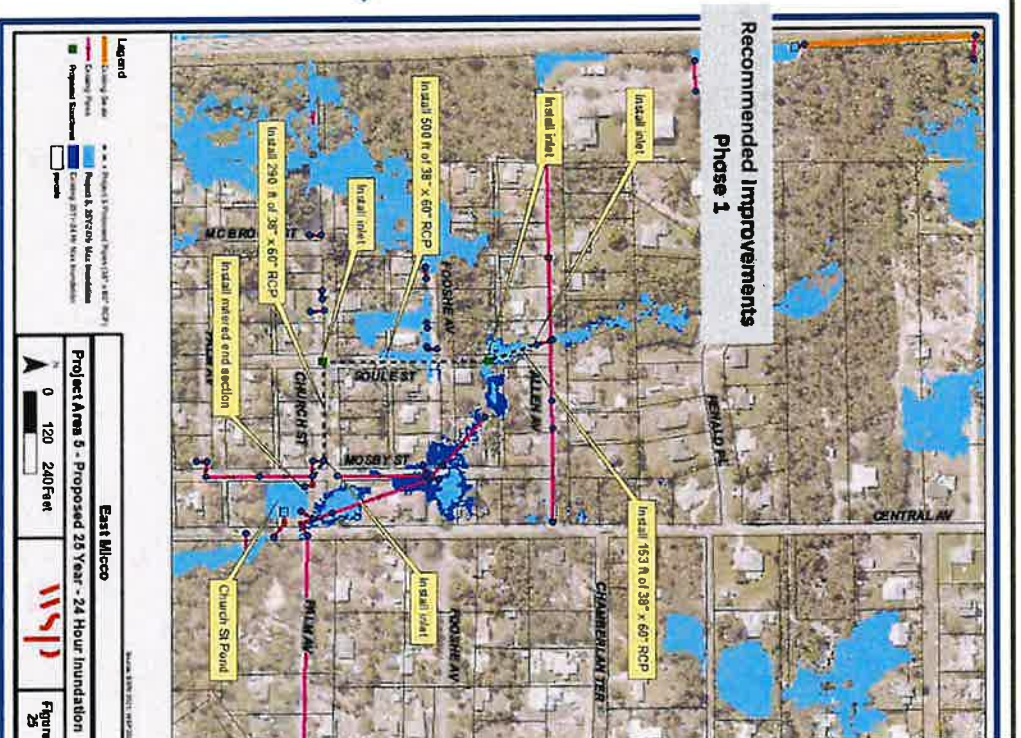


## CURRENT PROJECTS – CULVERT & CANAL UPGRADES



The *Micco Central* project consists of channel and culvert upgrades to mitigate area flooding west of Central Ave. Future Phases will involve improvements further north.

The *Sand Dollar Canal* project (Ph 1A) is being completed in tandem with drainage improvements by Public Works. A gabion key system increases nutrient removal from the canal before discharging to the IRL. NRM has received a grant covering most of the construction costs.



---

## CURRENT PROJECT – TITUSVILLE MULTITROPHIC WAVE ATTENUATION DEVICES (WADS) PROJECT

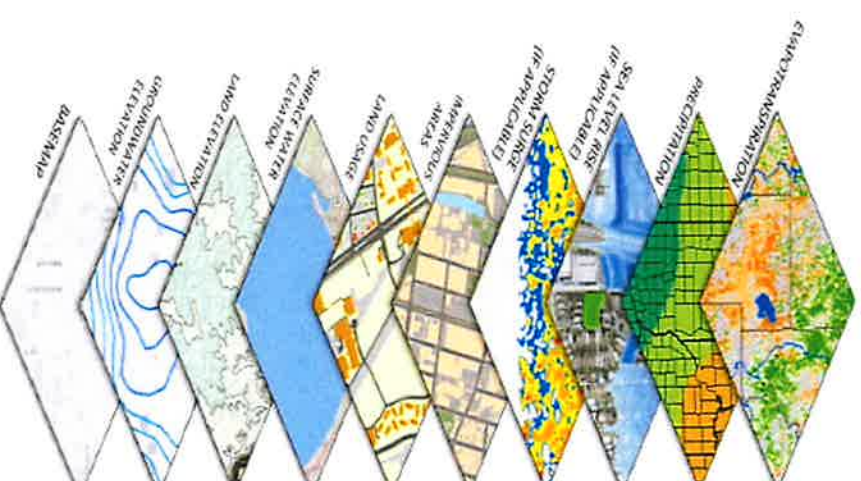
---

- \$4.3M Project, multiple funding sources
- Critical infrastructure protection against storm surge and wave-driven wind energy
- Recreational use of the sandy beach and shallow water environment along the Causeway
- Remove armored shoreline, Living Shoreline restoration for coastal resiliency
- Seagrass restoration in shallow water habitat
- 612 of 662 concrete WADs placed to date



## VULNERABILITY ANALYSIS

- Vulnerability Analysis - all County Critical Assets, as required and defined by FS 380.093
- Brevard EOC provided the primary list
- Analysis will include rainfall and storm surge flooding for a variety of storms as required by FS.
- FDEP approached Brevard County to assist in the preparation of Vulnerability Analysis for eight local communities (Grant-Valkaria, Indialantic, Malabar, Melbourne Beach, Melbourne Village, Palm Shores, Rockledge, & West Melbourne).
- FDEP funding to cover the additional efforts.



## STORMWATER MANAGEMENT – ENVIRONMENTAL MONITORING

- Actively sampling six stormwater projects for nitrogen, phosphorus and dissolved iron, three additional projects will be added this FY
- Basin Management Action Plan – Pollutant reduction plans based on recovery of natural water bodies.
- National Pollution Discharge Elimination System
  - Requires tracking, reporting, inspections, and control of pollutants and sources.
  - ILA with West Melbourne, Malabar & Grant-Valkaria for inspections and IT support
  - ILA with Melbourne Beach, Satellite Beach and Indian Harbor Beach for administrative parcel support only



## STORMWATER MANAGEMENT – ECOSYSTEM MANAGEMENT

<b>Year</b>	<b># Harvested Vegetation</b>	<b># Nitrogen</b>	<b># Phosphorus</b>
2019	179,539	336	45
2020	276,388	517	56
2021	629,890	1,178	128
2022	2,006,220	3,857	409
2023	4,305,879	4,905	916
2024	7,455,952	11,856	2,238
<b>Total</b>	<b>14,853,868</b>	<b>22,649</b>	<b>3,792</b>
<b>Equivalent Value</b>	<b>\$2,491,367</b>		



A tropical sunset scene with palm trees and a wooden pier over the ocean. The sky is a mix of deep blue and vibrant orange, with silhouettes of palm trees in the foreground and a wooden pier extending into the water in the background.

Questions?

*Rothman C. Smith*  
PHOTOGRAPHY