



Flagler County Board of County Commissioners Workshop Agenda

Monday, March 4, 2024 • 1:00 p.m.

Government Services Complex, 1769 E. Moody Blvd., Bldg 2, Board Chambers, Bunnell, FL 32110

1. Call to Order
2. Pledge to the Flag and Moment of Silence
3. Welcome: Flagler County Board Chair
4. Stormwater Master Plan Discussion
5. Public Comment
6. Adjournment

While this is a workshop only and no decisions are expected to be made by any of the governmental bodies, if a person decides to appeal any matter that may be discussed for a future proceeding, a record of the workshop may be needed and, for such purposes, the person may need to ensure that a verbatim record of the workshop is made.

In accordance with the Americans with Disabilities Act, persons needing assistance to participate in this meeting should contact the (386) 313-4001 at least 48 hours prior to the meeting.



Stormwater Master Plan

BOARD OF COUNTY
COMMISSIONERS WORKSHOP

March 4, 2024



Geosyntec Consultants:
Mark Ellard, PE, CFM, BC.WRE, ENV SP

Flagler County Engineering:
Hamid Tabassian, PE, DBIA – County Engineer
Richard Zion, PE, PG – Asst. County Engineer



Meeting Goals

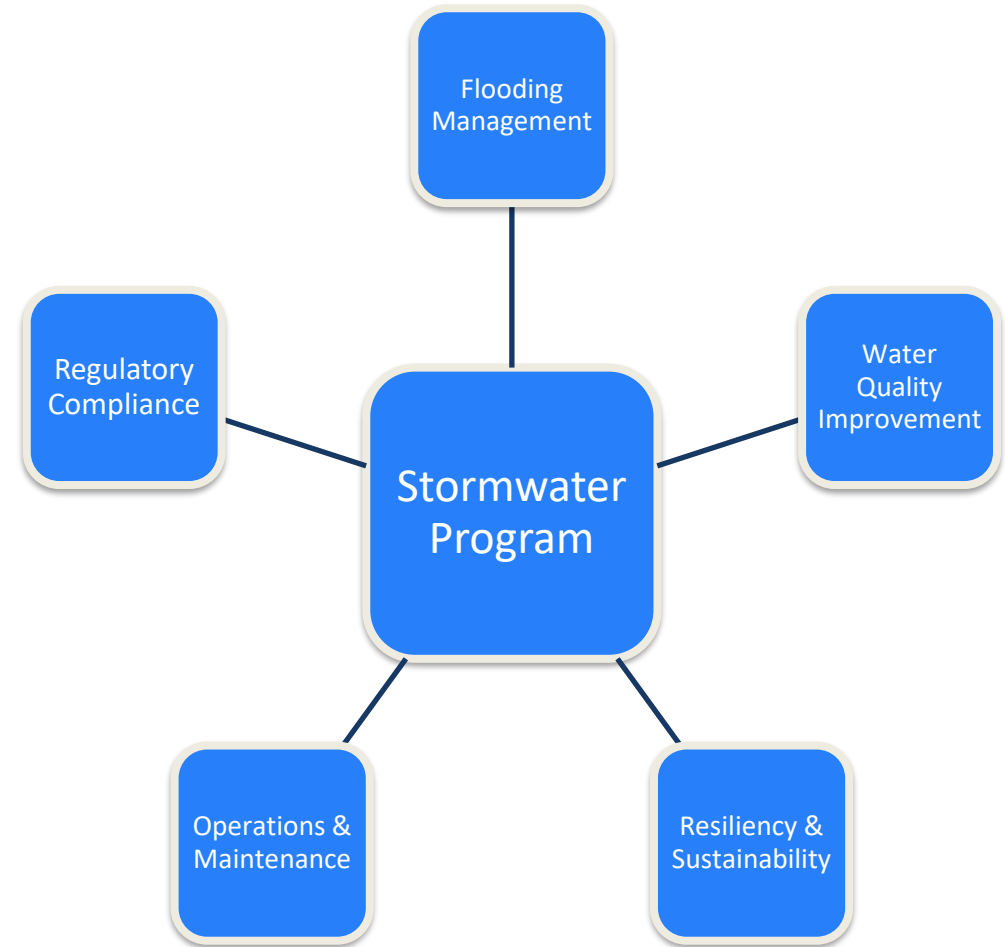
- Present Final Stormwater Master Plan
- Review Stormwater Operations & Maintenance (O&M)
- Review Prioritized Projects
- Discuss Funding Options
- Review and Discuss Recommendations/Next Steps





Recap - Scope of Work

- A. Review Existing Program Data
- B. Code & Development Review
- C. O&M Program Review
- D. Drainage Infrastructure Inventory
- E. Flooding Assessment
- F. Water Quality Assessment
- G. Resiliency Evaluation
- H. Improvement Project Conceptualization
- I. Project Funding Evaluation
- J. Capital Improvement Projects (CIP)
- K. NPDES Permit Program Development





Stormwater O&M Considerations

- Current O&M Activities
 - Right-of-Way Maintenance of County-Maintained Facilities
 - Roads, Channels, Canals, Bridges, Pipes, Swales/Ditches, and other Stormwater Infrastructure (inlets, manholes, etc.)
- Current Staff, Equipment, and Annual Stormwater O&M Budget (via Road and Bridge Division)
 - Local Gas Tax is the Primary Funding Source for Road and Bridge Division Operations Budget
 - 24 Staff; 7 Dedicated to Stormwater
 - 20 Pieces of Equipment (specifically used for stormwater O&M)
 - Approximately \$1.1 Million of the Road and Bridge Division Budget is Dedicated to Stormwater O&M from Local Gas Tax Funding Needed For Roadway Maintenance



Stormwater O&M Considerations

- Current Maintenance Frequencies
 - Reactive Maintenance
 - Address Safety Needs
 - Threats to Property
 - Concern/Complaint-Driven Requests
 - Limited due to Funding and Resources (Staff and Equipment)
- GAP Analysis
 - Assessed Total Hours Required to Proactively Maintain Canals, Pipes, Structures, Bridges and Retention Ponds. Determined the Need for:
 - 3 Additional Staff Dedicated to Stormwater for 10 Total Staff
 - Additional Equipment for Enhanced Maintenance and Increased Workload (TBD; Final Type and Quantity)
 - Additional \$1.2 Million in Annual Funding



Stormwater O&M Recommendations

- Establish an Annual Budget for Staff and Equipment Solely for O&M
- Hire Additional Maintenance Staff Dedicated to Stormwater
- Enhance O&M Tracking/Reporting Consistent with the New NPDES MS4 Permit
- Identify Separate Source of Recurring Funding
 - Current Annual Shortfall of \$1.2 million; \$2.3 Million/Year allows for a 5-year Recurring Maintenance Schedule on a Zone-by-Zone Basis
 - A Stormwater Utility Fee is an Option for Recurring Funding and Reduced Dependence on Local Gas Tax
 - Proactive Repair and Maintenance of Stormwater Facilities
 - Improve Inspection Frequencies Consistent with the new NDPEs MS4 Permit



Stormwater O&M Next Steps

- Implement Proactive O&M Program
 - County to Identify Funding for O&M
 - Stormwater Utility or Assessment
 - Grants and Other External Funding Sources
 - Develop and Implement a Comprehensive O&M Plan
 - Prepare Written Standard Operating Procedures
 - Inspection and O&M of each Component of the Stormwater Management System
 - Tracking of Data Needed for the NPDES MS4 Permit Annual Report
 - Adopt the Inspection Schedule Identified in the SMP
 - Adopt a GIS-Based Work Order and Tracking System
 - Conduct an Easement Needs Study

CIP Considerations

- Resilience Strategies
 - Reflect SLIP / Climate Review
 - Flooding Projects
 - Water Quality Projects
- Plan for Vulnerable Infrastructure
 - Development Areas
 - County Roadway Corridors
 - Outfalls
 - FEMA Buyout Program
- Future Development Design Standards
 - Revised Development Codes
 - Development Zones
 - Development Restrictions in Hazardous Environments
 - Retreat Strategy for Low Areas Frequently Flooded and Susceptible to Sea Level Rise



**Example Storm Surge Maps Impacted
by Projected Sea Level Rise**



CIP Recommendations

- Long List of Recommended Project Opportunities
 - ~60 Projects Identified (Some with Multiple Conceptual Alternatives)
- Categories
 - Flood Storage and Attenuation (Addressing Reported and Modeled Deficiencies)
 - Water Quality Treatment (Addressing TMDL and Impaired Receiving Waters)
 - Flood and Water Quality (Combination of Above)
 - Conveyance Infrastructure (Addressing Substandard, Inconsistent Ditches/Piping)
 - Resilience Aspects Considered, as Appropriate
 - Augmenting Existing County CIP Work Program Considered, as Appropriate



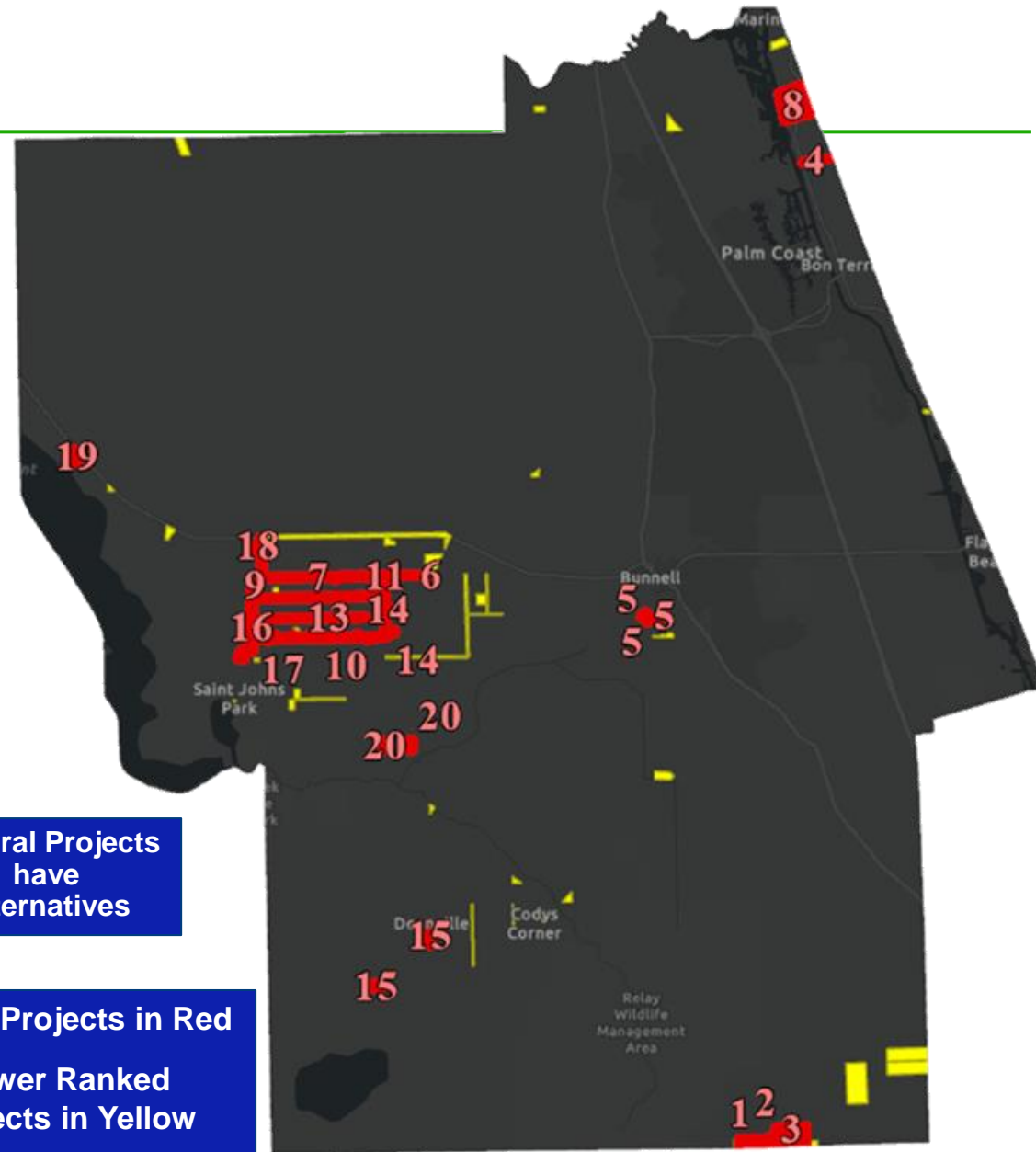
CIP Recommendations

- **Prioritized List of ~20 Projects for Detailed Conceptualization**
 - Focused in Unincorporated Areas
 - Considered Geographical Distribution
 - Constructability (Utilities, Special Access, Maintenance of Traffic, etc.)
 - Land Acquisition (Property Acquisition, Easements)
 - Permitability (Coordination with SJRWMD)
 - Coordination with and Input from Local Municipalities and FDOT
 - Costs (Preliminary Estimate ~\$69.7M)
 - Contingency
 - Property Acquisition, Right-of-Way, Easements
 - Allocation for Design, Permitting, Construction
 - Actual Costs will Vary Depending on the Size and Complexity of the Project
- **Concepts are Presented in Fact Sheet Format**



CIP Recommendations

RANK	PROBLEM AREA	TOTAL CIP PLANNING COST PROJECTION
1	RIMA RIDGE WEST	\$1,395,593
2	RIMA RIDGE CENTRAL	\$2,182,318
3	RIMA RIDGE EAST	\$1,134,720
4	MALACOMPRA CANAL	\$8,453,146
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 1	\$2,714,197
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 2	
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 3	
6	CR302 CANAL CONVEYANCE	\$1,659,865
7	CANAL AVE CANAL CONVEYANCE	\$2,890,191
8	A1A AND WASHINGTON OAKS OUTFALL	\$1,371,736
9	WATER OAK CANAL	\$5,084,092
10	FIRECRACKER CANAL CONVEYANCE	\$3,270,195
11	QUIGLEY BAY CANAL	\$2,337,967
12	MAHOGANY BLVD CONVEYANCE AND OUTFALL ENHANCEMENTS	\$4,071,302
13	WALNUT AVE CONVEYANCE AND OUTFALL ENHANCEMENTS	\$4,016,811
14	CR305 DITCH / BULL CREEK ALT 1	\$3,262,566
14	CR305 DITCH / BULL CREEK ALT 2	
15	CR305 / LITTLE HAW CREEK ALT 1	\$4,604,353
15	CR305 / LITTLE HAW CREEK ALT 2	
16	WATER OAK & WALNUT AVE CANALS	\$3,431,572
17	WATER OAK & FIRECRACKER CANALS	\$4,541,831
18	BIG CYPRESS SWAMP OUTFALL	\$4,473,945
19	SALT CREEK	\$5,009,432
20	CR305 / HAW CREEK NORTH ALT 1	\$3,805,986
20	CR305 / HAW CREEK NORTH ALT 2	
TOTALS:		\$69,711,818



Several Projects have Alternatives

Top 20 Projects in Red
Lower Ranked Projects in Yellow



Conceptual CIP Implementation Schedule and Estimated Project Cost Outlays

RANK	PROBLEM AREA	STUDY / DESIGN / CEI COST PROJECTION	PROPERTY ACQUISITION / EASEMENTS	CONSTRUCTION COST PROJECTION	TOTAL PROJECT COST PROJECTION	TOTAL CIP PLANNING COST PROJECTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10				
1	RIMA RIDGE WEST	\$150,000	\$8,000	\$1,237,593	\$1,395,593	\$1,395,593	\$158,000	\$1,237,593												
2	RIMA RIDGE CENTRAL	\$150,000	\$8,000	\$2,024,318	\$2,182,318	\$2,182,318	\$158,000	\$2,024,318												
3	RIMA RIDGE EAST	\$150,000	\$70,000	\$914,720	\$1,134,720	\$1,134,720	\$220,000	\$914,720												
4	MALACOMPRA CANAL	\$150,000	\$50,000	\$8,253,146	\$8,453,146	\$8,453,146	\$150,000	\$50,000	\$4,126,573	\$4,126,573										
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 1	\$250,000	\$440,000	\$2,094,651	\$2,784,651	\$2,714,197	\$250,000	\$231,933	\$1,116,132	\$1,116,132										
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 2	\$250,000	\$24,000	\$1,981,062	\$2,255,062															
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 3	\$250,000	\$231,800	\$2,621,078	\$3,102,878															
6	CR302 CANAL CONVEYANCE AND RESTORATION	\$150,000	\$8,000	\$1,501,865	\$1,659,865	\$1,659,865	\$158,000	\$1,501,865												
7	CANAL AVE CANAL CONVEYANCE AND RESTORATION	\$150,000	\$12,000	\$2,728,191	\$2,890,191	\$2,890,191			\$150,000	\$12,000	\$2,728,191									
8	A1A AND WASHINGTON OAKS OUTFALL	\$150,000	\$20,000	\$1,201,736	\$1,371,736	\$1,371,736	\$170,000	\$1,201,736												
9	WATER OAK CANAL	\$150,000	\$403,200	\$4,530,892	\$5,084,092	\$5,084,092	\$150,000	\$403,200	\$2,265,446	\$2,265,446										
10	FIRECRACKER CANAL CONVEYANCE	\$150,000	\$12,000	\$3,108,195	\$3,270,195	\$3,270,195			\$150,000	\$12,000	\$1,554,098	\$1,554,098								
11	QUIGLEY BAY CANAL	\$150,000	\$62,000	\$2,125,967	\$2,337,967	\$2,337,967				\$212,000	\$2,125,967									
12	MAHOGANY BLVD CONVEYANCE AND OUTFALL ENHANCEMENTS	\$150,000	\$37,000	\$3,884,302	\$4,071,302	\$4,071,302					\$187,000	\$1,942,151	\$1,942,151							
13	WALNUT AVE CONVEYANCE AND OUTFALL ENHANCEMENTS	\$150,000	\$37,000	\$3,829,811	\$4,016,811	\$4,016,811					\$187,000	\$1,914,906	\$1,914,906							
14	CR305 DITCH / BULL CREEK ALT 1	\$250,000	\$26,000	\$3,562,987	\$3,838,987	\$3,262,566					\$250,000	\$122,000	\$1,445,283	\$1,445,283						
14	CR305 DITCH / BULL CREEK ALT 2	\$250,000	\$218,000	\$2,218,145	\$2,686,145															
15	CR305 / LITTLE HAW CREEK ALT 1	\$250,000	\$66,000	\$3,286,622	\$3,602,622		\$4,604,353					\$250,000	\$442,500	\$1,955,927	\$1,955,927					
15	CR305 / LITTLE HAW CREEK ALT 2	\$250,000	\$819,000	\$4,537,084	\$5,606,084						\$250,000	\$106,000		\$3,075,572						
16	WATER OAK & WALNUT AVE CANALS	\$250,000	\$106,000	\$3,075,572	\$3,431,572	\$3,431,572					\$250,000	\$106,000		\$3,075,572						
17	WATER OAK & FIRECRACKER CANALS	\$250,000	\$162,000	\$4,129,831	\$4,541,831	\$4,541,831					\$250,000	\$162,000		\$2,064,916	\$2,064,916					
18	BIG CYPRESS SWAMP OUTFALL	\$250,000	\$192,000	\$4,031,945	\$4,473,945	\$4,473,945					\$250,000	\$192,000		\$2,015,973	\$2,015,973					
19	SALT CREEK	\$250,000	\$453,000	\$4,306,432	\$5,009,432	\$5,009,432					\$250,000		\$453,000	\$2,153,216	\$2,153,216					
20	CR305 / HAW CREEK NORTH ALT 1	\$250,000	\$262,000	\$3,205,255	\$3,717,255	\$3,805,986						\$250,000		\$273,000	\$1,641,493	\$1,641,493				
20	CR305 / HAW CREEK NORTH ALT 2	\$250,000	\$284,000	\$3,360,717	\$3,894,717															
TOTALS:						\$69,711,818	\$1,414,000	\$7,565,365	\$7,808,151	\$7,744,151	\$7,532,256	\$7,081,654	\$7,612,266	\$7,202,782	\$7,875,597	\$7,875,597				

Conceptual Schedule to Align with SMP Scope; However, Implementation will Likely Occur over Many Decades

These are Current Targets that will be Adjusted Each Time the CIP is Evaluated

Starting Point for Adaptive Management



American Rescue Plan Act (ARPA)

- Flagler County has identified approximately \$2.2 million available for stormwater-related activities
- Funds must be obligated by the end of calendar year 2024 and expended by the end of calendar year 2026
- Funds can be used for:
 - Design and construction of stormwater capital improvements (CIP recommendations that were just discussed)
 - Undertaking a thorough analysis of funding mechanisms



Capital Improvement Projects Next Steps

- Implementing Capital Projects
 - County to Identify Funding for Capital Projects
 - Grants and Other External Funding Sources
 - SWU Fee Assessment Consideration
 - Capital Projects Completed in Priority Order as Funding Allows
 - Explore Opportunities to Partner and Collaborate on Regional Solutions with Local Governments (i.e., Cities of Bunnell, Flagler Beach, and Palm Coast), SJRWMD, FDEP, FDOT, etc.
 - Capital Projects Will Involve the Following Steps:
 - Adoption into the County's CIP Work Program
 - Preliminary Design (Feasibility) Analysis
 - Final Design and Permitting (Varies, 12-to-24-Month Process per Project Depending on Complexity)
 - Construction
 - Capital Projects Implementation Timeline:
 - Ideally Ten Years or Sooner; More Likely Completed Over Several Decades



Potential Funding Opportunities

Local	State		Federal
<p>Sales Tax If designate an additional 1% for stormwater, will yield ~\$750K annually</p>	<p>FDEP</p> <ul style="list-style-type: none"> • WQ Improvement Grant • State WQ Assistance Grant • Nonpoint Source Grant • Resilient Florida (3 grants) • Florida Resilient Coastline 	<ul style="list-style-type: none"> • Clean Water Act Section 319 Grant • Clean Water State Revolving Fund Loan 	<p>FEMA</p> <ul style="list-style-type: none"> • Building Resilient Infrastructure and Communities • Flood Mitigation Assistance • Pre-Disaster Mitigation • Hazard Mitigation
<p>Stormwater Utility Fee If established at \$6/residential lot, will yield \$792K annually (11,000 lots)</p>	<p>FDEO Community Development Block Grants</p>		<p>USGS Grants via State Water Resources Research Act Program (Water Quality)</p>
<p>General Fund (Millage Allocation) If allocate 0.04 mils for stormwater, will yield ~\$6.9M annually</p>			<p>USFWS Various Grants (Coastal Restoration; Waterfront Improvements)</p>
<p>Assessments MSTU/MSBU/Special</p>			<p>USEPA Numerous grants that educate the community, restore habitat, and improve water quality</p>



Potential Funding Sources for the Top Ranked Projects

NO.	NAME	DESCRIPTION	BENEFITS				Potential Funding Strategy					
			Erosion Control	Improved O&M	Reduced Flood Risk	Avoided WQ Cost	FEMA BRIC	FEMA HMGP	FDEP Resilient FL	FDEP WQ Imp.	FDEP Nonpoint Source	Stormwater Utility
1	RIMA RIDGE WEST	Reduce Flooding, Improve Infrastructure	NO	YES	YES (Direct)	NO	X	X	X			X
2	RIMA RIDGE CENTRAL	Reduce Flooding, Improve Infrastructure	NO	YES	YES (Direct)	NO	X	X	X			X
3	RIMA RIDGE EAST	Reduce Flooding, Improve Infrastructure	NO	YES	YES ((Direct)	NO	X	X	X			X
4	MALACOMPRA CANAL RESTORATION	Channel Upgrades, Easements	YES	YES	YES (Direct)	YES	X		X			X
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 1	Haw Creek Impairment, Crescent Lake TMDL	YES	NO	YES (Direct)	YES		X		X	X	X
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 2	Haw Creek Impairment, Crescent Lake TMDL	YES	NO	YES (Indirect)	YES		X		X	X	X
5	OLD HAW CREEK RD / BLACK BRANCH NORTH ALT 3	Haw Creek Impairment, Crescent Lake TMDL	YES	NO	YES (Indirect)	YES		X		X	X	X
6	CR302 CANAL CONVEYANCE AND RESTORATION	Channel and Piping Upgrades	YES	YES	YES (Direct)	YES	X					X
7	CANAL AVE CANAL CONVEYANCE AND RESTORATION	Channel and Piping Upgrades	YES	YES	YES (Direct)	YES	X					X
8	A1A AND WASHINGTON OAKS OUTFALL	Reduce Flooding, Improve Infrastructure	NO	YES	YES (Direct)	NO	X	X	X			X

Excerpt from Final Master Plan

Potential Funding Sources Identified for Top 20 Projects

A Stormwater Utility Fee is Identified as a Potential Funding Source for All Projects



Potential Funding Sources – Stormwater Utilities in Florida

Example Data from the 2022 Florida Stormwater Association Stormwater Utility (SWU) Report

Local Government	Monthly SWU Fee	# of Residential Accounts	# of Non-Residential Accounts	2022 Total Annual Revenue from SWU Fee
Palm Coast	\$11.65	31,003	376	\$12,995,325
Ormond Beach	\$7.00	16,893	909	\$2,539,966
St. Augustine	\$9.00	13,855	1,922	\$1,128,808
Volusia Co.	\$6.00	47,162	3,318	\$4,499,656
Brevard Co.	\$5.33	117,025	10,176	\$6,560,026
Alachua Co.	\$3.33	33,130	4,416	\$1,951,246

170 of 479 Florida Local Governments have Established SWUs.

128 Responded to a Survey Conducted by the Florida Stormwater Association

The Average Monthly SWU fee throughout Florida is \$8.05.

Hypothetical Scenario

If Flagler Co. charged a \$6 monthly SWU fee to each of its ~11,000 residential parcels that would generate approximately \$792,000 annually

(this does not include non-residential parcels that could be charged)



Potential Funding Sources – Resilient Florida Funding

Example Projects that have Received Resilient Florida Funding

Local Government	Project	Grant Award	Local Match	Total Project Cost
Broward County	C-4 Canal Conveyance Improvements	\$466,200	\$466,200	\$932,400
Gulf County	Roads and Stormwater	\$9,386,145	\$47,167	\$9,433,312
Brevard County	West Cocoa Stormwater Flood Protection and Infrastructure Upgrades	\$3,510,000	\$3,510,000	\$7,020,000
Lauderdale Lakes	Canal Rehabilitation	\$1,500,000	\$1,500,000	\$3,000,000
St. Augustine	Drainage Improvements for Court Theophelia Neighborhood	\$2,581,600	No Match Required	\$2,581,600

FDEP awarded \$400M in 2022 for infrastructure-related projects (design, permitting and construction).



Stormwater Master Plan Recommendations

1. Adopt the Final Stormwater Master Plan Report Recommendations Presented Today
2. Adopt and Implement a **Stormwater Master Plan** (Flagler County Stormwater Program)
 - Stormwater CIP Program Implementation
 - Stormwater Inventory Completion & GIS Integration
 - Stormwater Program O&M Enhancements
 - Flood Management
 - Water Quality Improvement
 - Climate Change and Resiliency Considerations
 - Best Management Practices Implementation
 - County Stormwater Regulatory Code Enhancements Including Drainage Level of Service Standards
 - NPDES MS4 Permit - Stormwater Management Program
3. Perform a Dedicated Stormwater CIP and O&M Funding & Revenue Sources Study:
 - Determine Most Appropriate Funding Mechanism(s) or Combinations of (SW Utility, Assessment, MSTU, etc.)
 - Determine Optimal Revenue Without Undue Burden on Taxpayers
4. Revisit Master Plan Every Five Years to Review County Development Patterns, Regulatory Requirements, and Re-Assess Priorities



Thank You !

Flagler County Stormwater Master Plan