Resiliency Coordination Forum Series:

2025 SEA LEVEL RISE AND FLOOD RESILIENCY PLAN UPDATE

PUBLIC WORKSHOP

Kissimmee River Basin
March 7, 2025

01

Opening Remarks

Carolina Maran, Ph.D., P.E.

Chief of District Resiliency, SFWMD

Joseph C. Kunkel, P.E.

Director, Orange County Public Works Department

02

Statewide Resilience Updates

Mark Rains, Ph.D.
Chief Science Officer, Florida Department of Environmental Protection

Statewide Updates

Resilient Florida Program
Florida DEP

Statewide Office of Resilience
Executive Office of the Governor

Florida Flood Hub
USF College of Marine Science

Resilient Florida Program Framework

PLANNING GRANTS

To assist local governments with Vulnerability Assessments, Peril of Flood Comprehensive Plan Amendments

STATEWIDE FLOODING AND SEA LEVEL RISE RESILIENCE PLAN

To assist local governments and eligible entities in implementing projects that address flooding and sea level rise

STATEWIDE DATA SET AND ASSESSMENT

Collection of local vulnerability assessments and data to assist in creating a Statewide Flooding and Sea Level Rise Assessment

REGIONAL RESILIENCE ENTITIES

Technical Support, develop project applications for members and multijurisdictional collaboration

Up-to-date, realistic, and consistent standards and projections of compound flooding

FLORIDA FloodHub FOR APPLIED RESEARCH AND INNOVATION

2024 LEGISLATIVE CHANGES

- Defines Florida Flood Hub, clarifies definition of pre-construction activities.
- Adds a new and clarifies other allowable planning grant activities.
- Updates requirements for local government VAs.
- Updates requirements for the statewide flood vulnerability and sea level rise assessment.
- Revises eligibility requirements for the State Plan:
  - Allowance for projects not identified in a completed VA for 2024.
  - Adding a project type for certain named special districts.
  - Modified entities eligible for a match waiver.
- Clarifies entities and activities allowed for RRE funding.



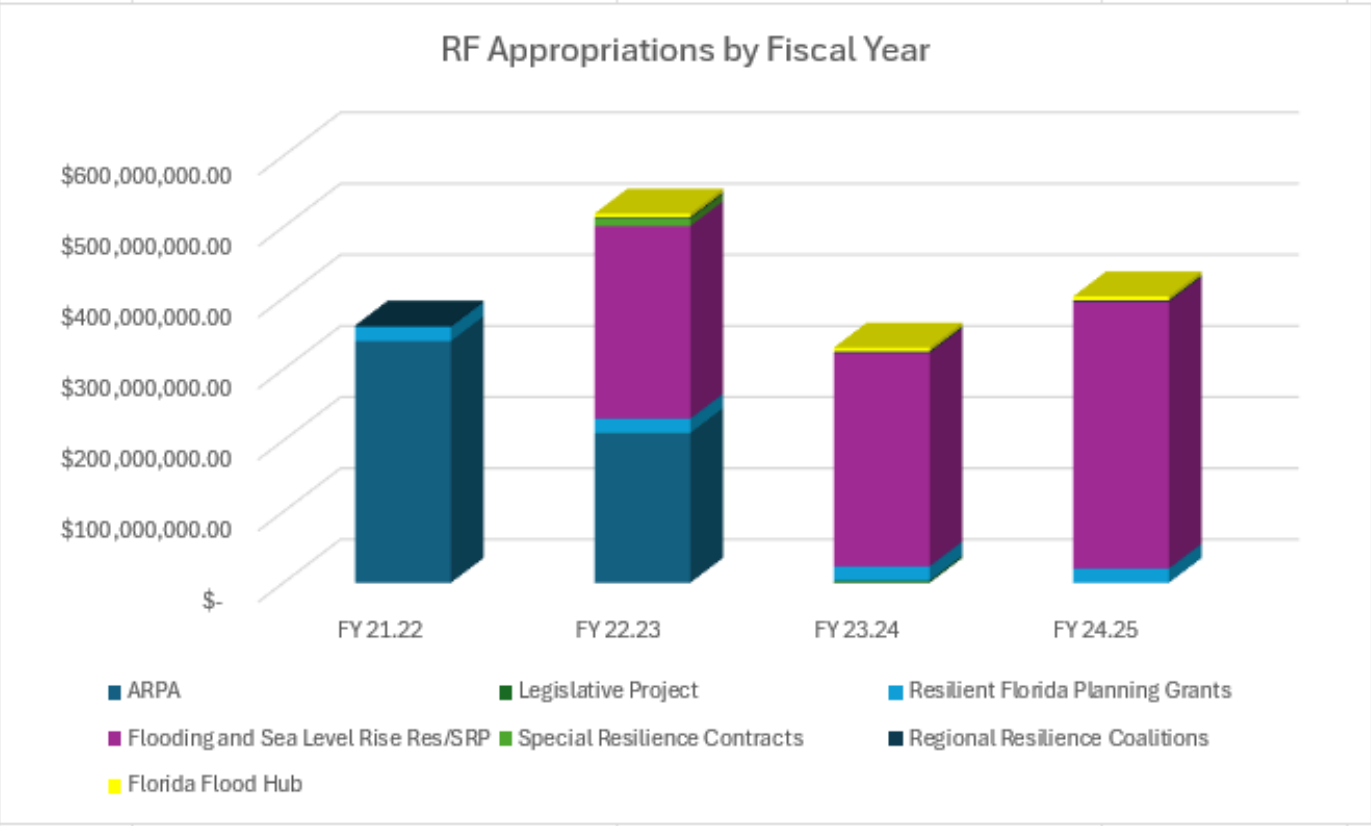


RF Program Grants Summary

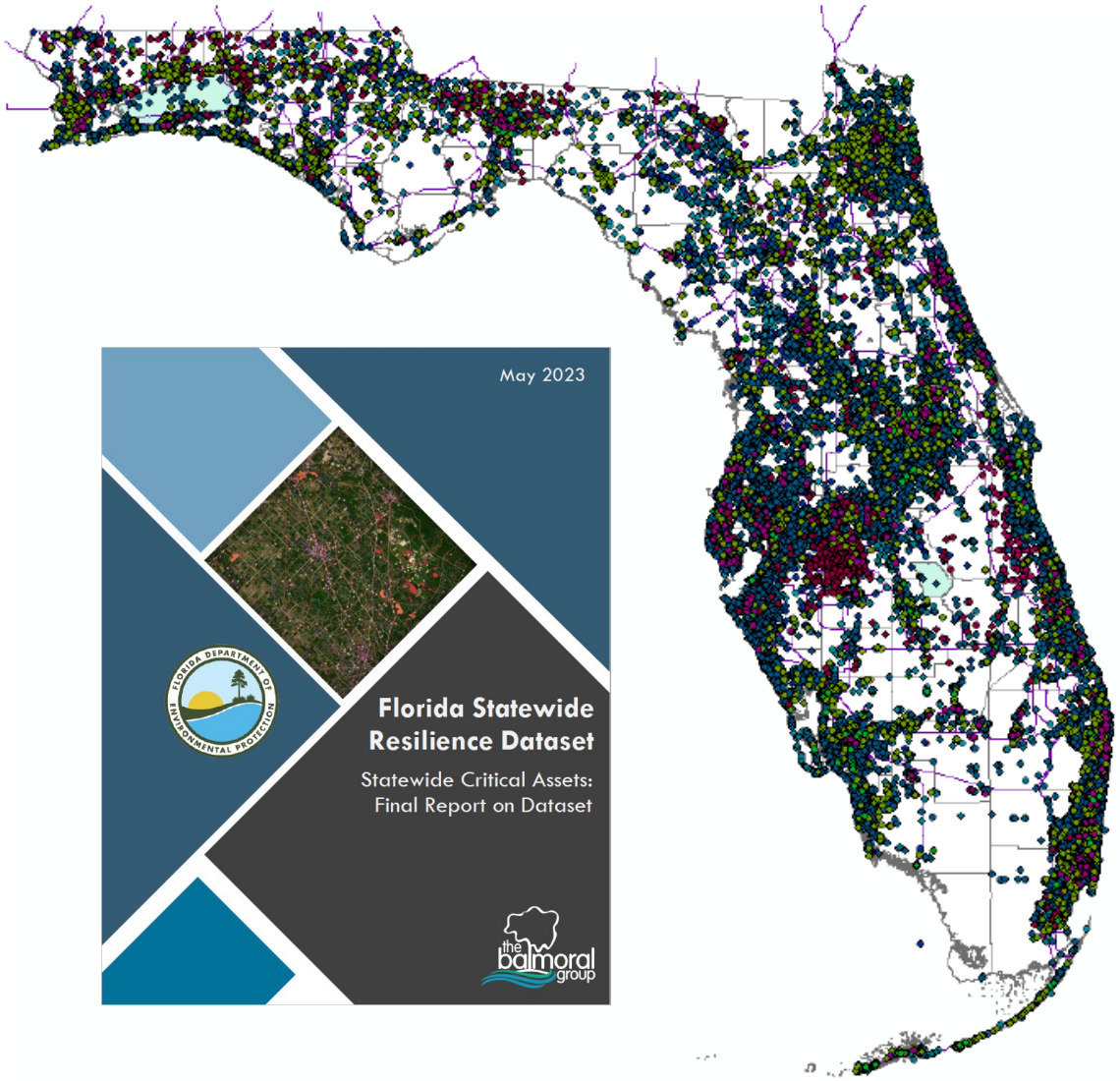
Fiscal Year Award	Planning Grants	Implementation Grants	Regional Resilience Entity Grants
2021-2022	98	113	9
2022-2023	131	147	5
2023-2024	75	71	6
2024-2025	64	31	12

RF Appropriations by Fiscal Year

Fiscal Year	Category	Amount
FY 21.22	Resilient Florida Planning Grants	$ 20,000,000.00
	ARPA	$ 339,736,121.56
	Regional Resilience Coalitions	$ 2,000,000.00
FY 22.23	Legislative Project	$ 250,000.00
	Resilient Florida Planning Grants	$ 20,000,000.00
	Flooding and Sea Level Rise Res/SRP	$ 270,874,990.00
	Special Resilience Contracts	$ 10,000,000.00
	ARPA	$ 210,263,878.44
	Regional Resilience Coalitions	$ 2,000,000.00
	Florida Flood Hub	$ 5,500,000.00
FY 23.24	Legislative Project	$ 3,000,000.00
	Resilient Florida Planning Grants	$ 20,000,000.00
	Flooding and Sea Level Rise Res/SRP	$ 300,000,000.00
	Regional Resilience Coalitions	$ 2,000,000.00
	Florida Flood Hub	$ 5,500,000.00
FY 24.25	Resilient Florida Planning Grants	$ 20,000,000.00
	Flooding and Sea Level Rise Res/SRP	$ 375,000,000.00
	Regional Resilience Coalitions	$ 2,000,000.00
	Florida Flood Hub	$ 5,500,000.00
	Total:	**$ 1,613,624,990.00**



COMPREHENSIVE STATEWIDE DATA SET AND ASSESSMENT



- 3.3 million points, polygons and lines representing critical assets.
- Coordinate with FFH for review and hosting.
- Statewide VA completed and available now

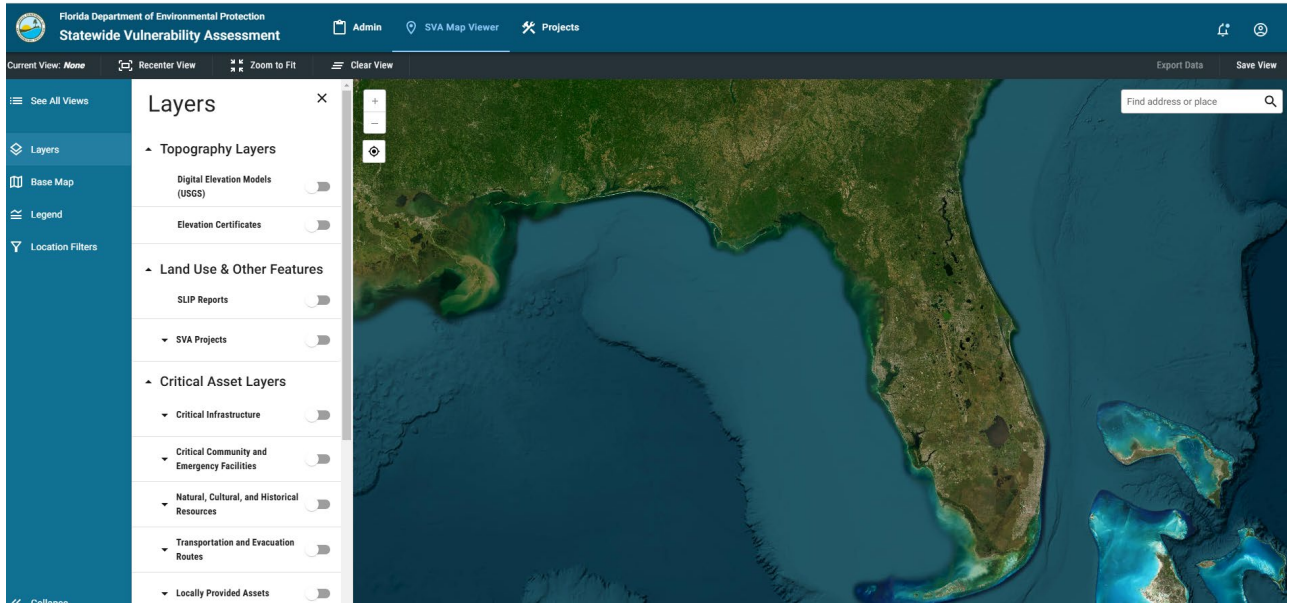
COMPREHENSIVE STATEWIDE DATA SET AND ASSESSMENT

Critical Asset Type	Critical Community & Emergency Facilities	Critical Infrastructure	Natural, Cultural, and Historic Resources		Transportation & Evacuation Routes	
			Buildings	Parcels	Bus Terminals & Marinas	Roadway Intersections
Low	< 3”	< 3”	< 3”	< 25%	< 3”	< 6" of centerline of roadway
Medium	3” – 15”	3” – 18”	3” – 15”	25% – 50%	3” – 15”	0" - 6" above centerline of roadway
High	> 15"	> 18"	> 15"	> 50%	> 15"	> 6" above centerline of roadway

Overall Risk Assessment	Land Area Inundated (% of site)	Critical Assets Affected (% of total assets or within each asset category)
None	0%	0%
Low	<25%	<25%
Medium	25-50%	25-50%
High	50-75%	50-75%
Extreme	>75%	>75%

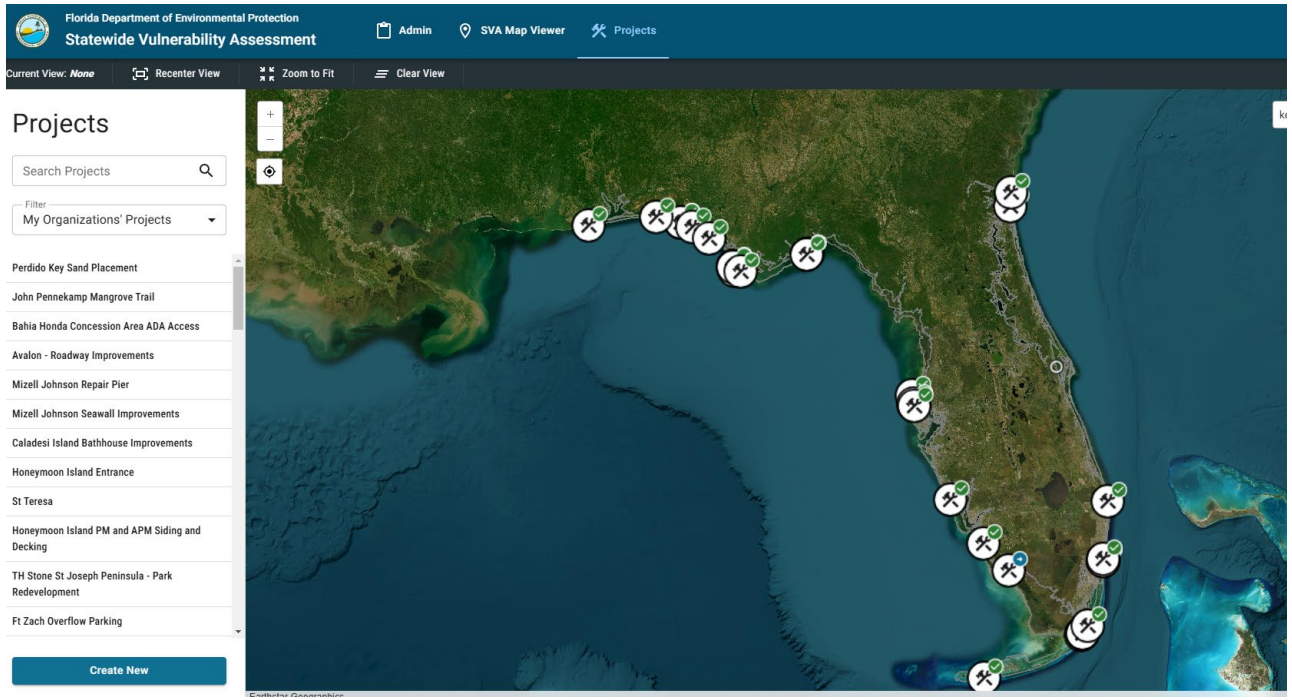
- Different Asset classes evaluated on appropriate exposure based on flood depths
- Each asset evaluated for all scenarios
- Assigned a low/medium/high vulnerability

COMPREHENSIVE STATEWIDE DATA SET AND ASSESSMENT



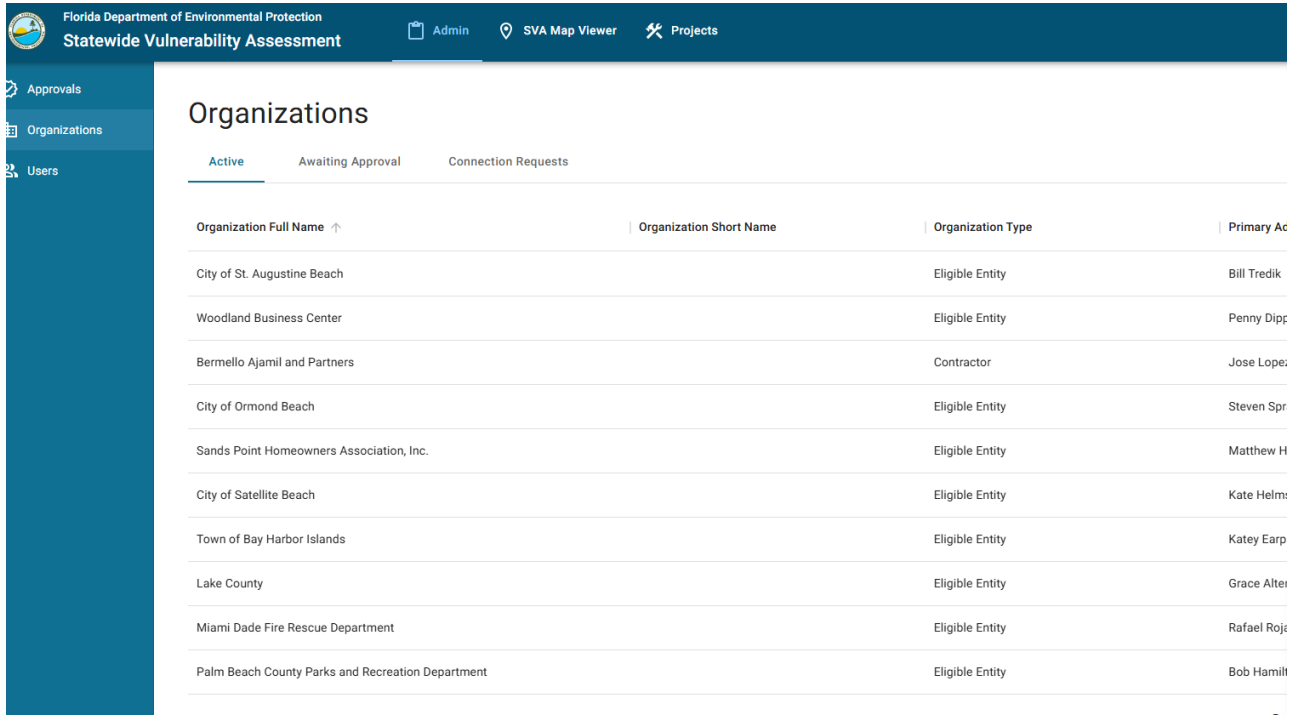
- Tool includes toggle layers for available data
- Friendly GIS-format for easy navigation
- “Smart” Search bar can find places by name instead of address in most cases (like “sea world” or “Kennedy Space Center”)

COMPREHENSIVE STATEWIDE DATA SET AND ASSESSMENT



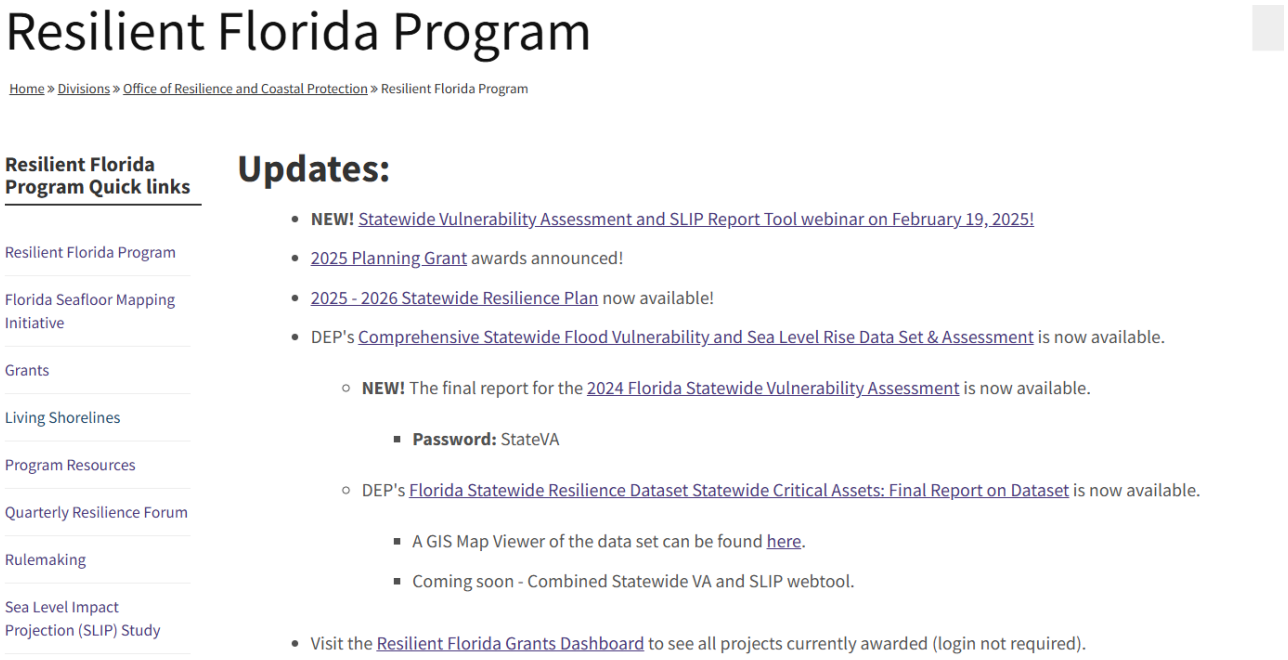
- Create organizations to track views and projects for SLIP studies
- Admin tools to manage organizations
- Ability to “invite” contractors to join your organization

COMPREHENSIVE STATEWIDE DATA SET AND ASSESSMENT



- Future goal to integrate with existing data systems
- Coordination with Florida Flood Hub Data products
- Start projects and apply for grants in a one-stop shop

Website Resources



Resilient Florida Program

Home » Divisions » Office of Resilience and Coastal Protection » Resilient Florida Program

Resilient Florida Program Quick links

- Resilient Florida Program
- Florida Seafloor Mapping Initiative
- Grants
- Living Shorelines
- Program Resources
- Quarterly Resilience Forum
- Rulemaking
- Sea Level Impact Projection (SLIP) Study

Updates:

- **NEW!** Statewide Vulnerability Assessment and SLIP Report Tool webinar on February 19, 2025!
- 2025 Planning Grant awards announced!
- 2025 - 2026 Statewide Resilience Plan now available!
- DEP's Comprehensive Statewide Flood Vulnerability and Sea Level Rise Data Set & Assessment is now available.
  - **NEW!** The final report for the 2024 Florida Statewide Vulnerability Assessment is now available.
    - **Password:** StateVA
  - DEP's Florida Statewide Resilience Dataset Statewide Critical Assets: Final Report on Dataset is now available.
    - A GIS Map Viewer of the data set can be found here.
    - Coming soon - Combined Statewide VA and SLIP webtool.
- Visit the Resilient Florida Grants Dashboard to see all projects currently awarded (login not required).

- https://floridadep.gov/rcp/resilient-florida-program
- Resources all linked on the Resilient Florida Landing Page on the department's website
- See "updates" section at top of page

WEBSITE RESOURCES

NOAA TIDE GAUGE STATION	DATUM	ELEVATIONS ON MEAN SEA LEVEL, 1983-2001 EPOCH (in feet)										<= Reference Year
		1992	2000	2020		2040		2050		2070		<= NOAA 2022 SLR Scenario
				Int-Low	Int	Int-Low	Int	Int-Low	Int	Int-Low	Int	
8720030 Fernandina Beach, FL	MHHW	3.27	3.36	3.69	3.70	4.10	4.16	4.32	4.45	4.76	5.18	
	MSL	0.00	0.09	0.42	0.43	0.83	0.89	1.05	1.18	1.49	1.91	
	MLLW	-3.29	-3.20	-2.87	-2.87	-2.46	-2.40	-2.24	-2.11	-1.80	-1.38	
	NAVD88	0.53	0.62	0.95	0.96	1.36	1.42	1.58	1.71	2.02	2.44	
8720218 Mayport (Bar Pilots Dock), FL	MHHW	2.48	2.57	2.90	2.91	3.31	3.37	3.53	3.66	3.97	4.39	
	MSL	0.00	0.09	0.42	0.43	0.83	0.89	1.05	1.18	1.49	1.91	
	MLLW	-2.47	-2.38	-2.05	-2.05	-1.64	-1.58	-1.42	-1.29	-0.98	-0.56	
	NAVD88	0.52	0.61	0.94	0.95	1.35	1.41	1.57	1.70	2.01	2.43	
8720219 Dames Point, FL	MHHW	1.80	1.89	2.22	2.23	2.63	2.69	2.85	2.98	3.29	3.71	
	MSL	0.00	0.09	0.42	0.43	0.83	0.89	1.05	1.18	1.49	1.91	
	MLLW	-1.86	-1.77	-1.44	-1.44	-1.03	-0.97	-0.81	-0.68	-0.37	0.05	
	NAVD88	0.38	0.47	0.80	0.81	1.21	1.27	1.43	1.56	1.87	2.29	
8720226 Southbank Riverwalk, St Johns River, FL	MHHW	0.89	0.98	1.31	1.32	1.72	1.78	1.94	2.07	2.38	2.80	
	MSL	0.00	0.09	0.42	0.43	0.83	0.89	1.05	1.18	1.49	1.91	
	MLLW	-1.06	-0.97	-0.64	-0.64	-0.23	-0.17	-0.01	0.12	0.43	0.85	
	NAVD88	0.24	0.33	0.66	0.67	1.07	1.13	1.29	1.42	1.73	2.15	

Florida Flood Hub 2024 RSLR Best Estimates (in inches):	-1.1	0.0	3.9	4.0	5.0	5.6	7.6	9.1	12.9	17.8
	1.1" of RSLR 1992-2000		*RSLR 2000-2020*		*RSLR 2020-2040*		*RSLR 2020-2050*		*RSLR 2020-2070*	

- SLR projection data for Florida
- Initial release for all active NOAA tide gauges in Florida waters with projected elevations derived from FFH 2024 SLR best estimates for 2040, 2050, and 2070

WEBSITE RESOURCES

https://bit.ly/RFLgrantsDashboard

GRANT CYCLE 2025

JUNE 1

Resilient Florida project portal opens to accept Planning applications.

Governor's Budget: $20M

JULY 1

Resilient Florida project portal opens to accept Implementation applications

Governor's Budget: $200M

SEPT 1

Applications portal closes and evaluations begin

Projects due to Leg. Governor, Dec 1

THANK YOU

Resilient Florida Program
Office of Resilience and Coastal Protection
Florida Department of Environmental Protection

Contact Information:
Resilience@FloridaDEP.gov
850-245-7600

03

2025 Sea Level Rise and Flood Resiliency Plan Update

Carolina Maran, Ph.D., P.E.
Chief of District Resiliency, SFWMD

Acknowledgments - Project Team

- Engineering and Construction
- Flood Protection Level of Service/H&H Modeling
- Ecosystem Restoration, Nature-Based Solutions
- Water Supply
- External Affairs/Communications
- Field Operations
- Land Resources/Real Estate
- Operations (Flood Control Systems)
- Emergency Operations Center

Acknowledgment - Project Partners

Comments and Contributions Received

Local Governments / Districts:

- Broward County
- Collier County
- Lee County
- Martin County / Martin MPO
- Miami-Dade County
- Monroe County
- Orange County
- Palm Beach County
- St. Lucie County
- City of Apopka
- City of Fort Lauderdale
- City of Hallandale Beach
- Town of Cutler Bay
- Town of Jupiter
- Village of El Portal
- Florida Keys Aqueduct Authority
- Lake Worth Drainage District
- South Broward Drainage District

NGOs:

- Audubon of Florida
- Center for Biological Diversity
- Everglades Foundation
- Everglades Law Center
- Florida Bay Forever
- Florida Veterans for Common Sense
- Friends of Biscayne Bay
- Growing Climate Solutions
- Miami Waterkeepers
- National Parks Conservation Association
- Sanibel-Captiva Conservation Foundation
- South Florida Water Coalition
- South Florida Wildlands Association
- Tropical Audubon Society
- Urban Paradise Guild

Tribes:

- Seminole Tribe of Florida

State Agencies:

- Statewide Office of Resilience
- Florida Flood Hub for Applied Research and Innovation
- Florida Department of Transportation
- Florida Department of Emergency Management

Federal Agencies:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Coastal and Heartland National Estuary Partnership

Planning Councils:

- Central Florida Regional Planning Council
- South Florida Regional Planning Council

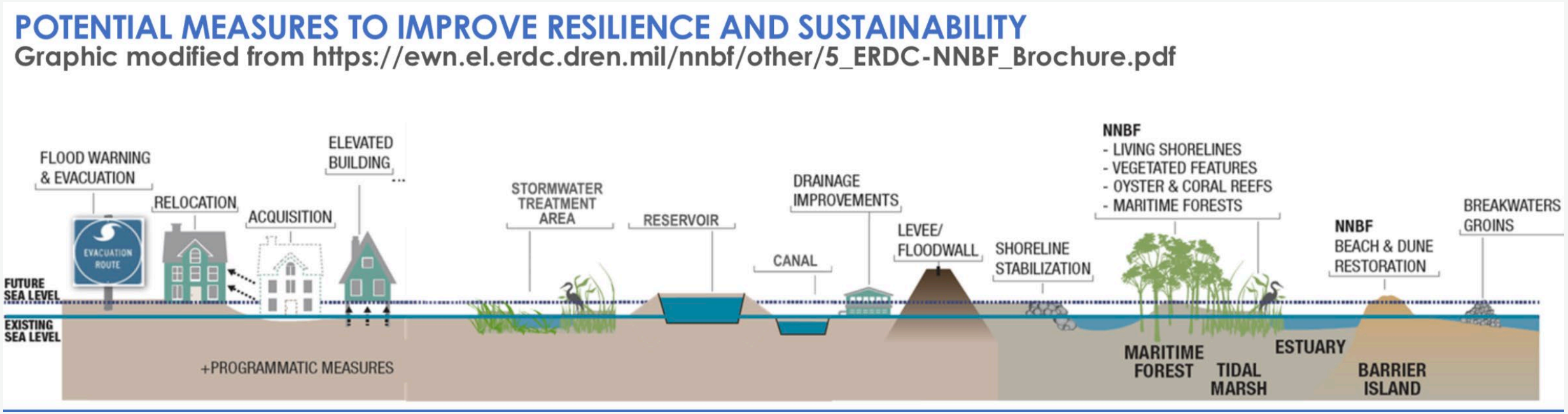
Universities:

- University of Miami (2)
- Florida International University

Private Companies (9)

Other individuals (10)

Integrating Local, Regional, Natural, Inland Drainage and Coastal Flood Resiliency Strategies



Need BOTH Structural Measures & Non-Structural Measures

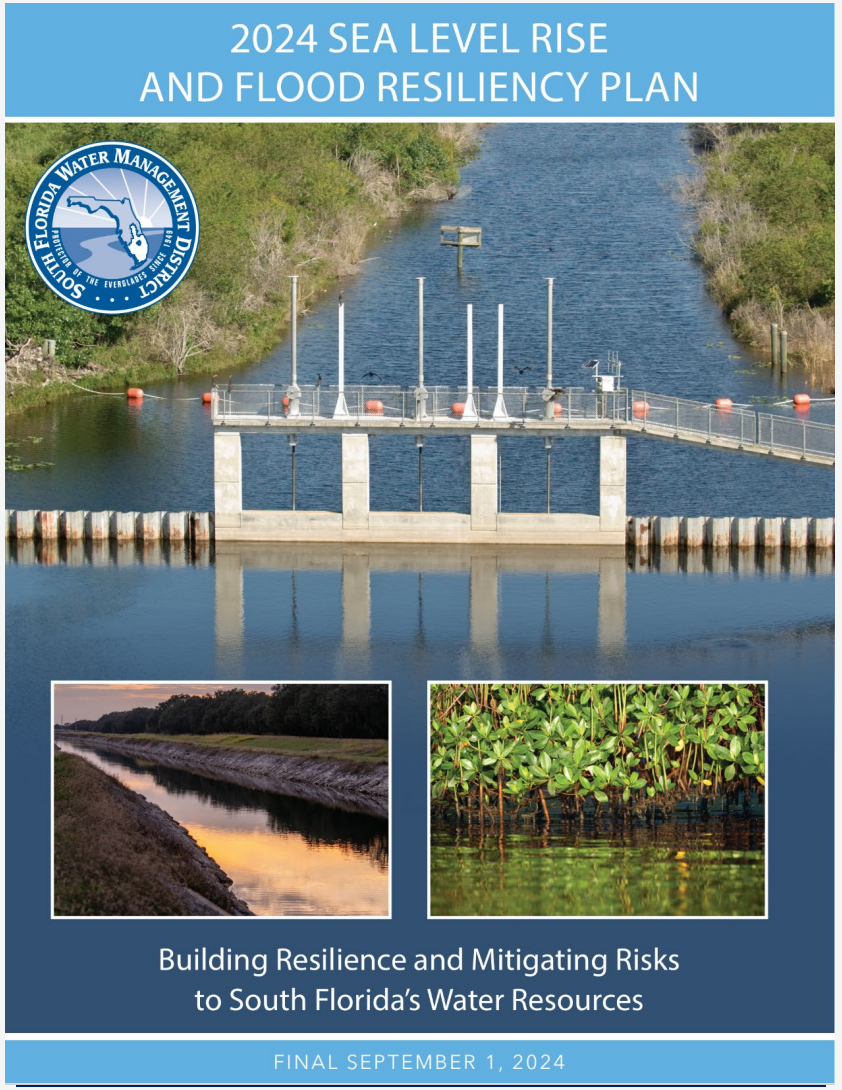
(Moving Flood Risk Away from Communities & Living with the Water)

Along with Nature Based Features

Reducing the risks of flooding, sea level rise and other climate impacts on water resources and increasing community and ecosystem resiliency in South Florida

2025: 5th Year

New Update Interval



DISTRICT RESILIENCY FIVE YEARS AT A GLANCE

5 MILLION PEOPLE **5.7 MILLION ACRES**

and Over 40,000 Critical Assets

Directly and indirectly benefited by the projects under implementation

OVER 90

PRIORITY PROJECTS

Identified and described in the 2024 Sea Level Rise and Flood Resiliency Plan

$630 MILLION

In grant funding recommendation, including a District match

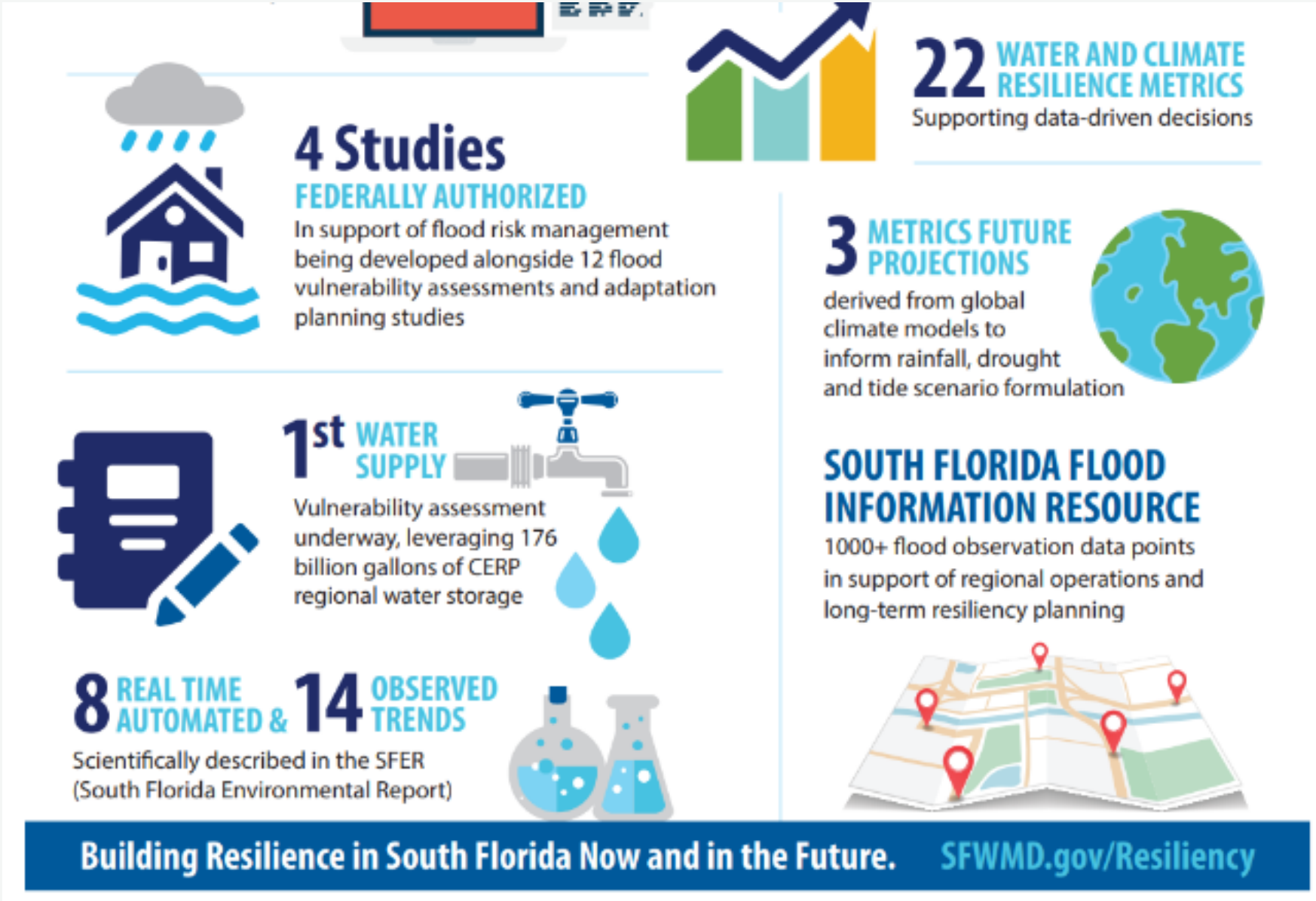
77 CONTRACTS

Under execution including vendors, grants and interagency agreements

25 PARTNER AGENCIES

3,700 STAKEHOLDERS

22 WATER AND CLIMATE


22 WATER AND CLIMATE RESILIENCE METRICS
Supporting data-driven decisions
4 Studies
FEDERALLY AUTHORIZED
In support of flood risk management being developed alongside 12 flood vulnerability assessments and adaptation planning studies
3 METRICS FUTURE PROJECTIONS
derived from global climate models to inform rainfall, drought and tide scenario formulation
1st WATER SUPPLY
Vulnerability assessment underway, leveraging 176 billion gallons of CERP regional water storage
SOUTH FLORIDA FLOOD INFORMATION RESOURCE
1000+ flood observation data points in support of regional operations and long-term resiliency planning
8 REAL TIME AUTOMATED & 14 OBSERVED TRENDS
Scientifically described in the SFER (South Florida Environmental Report)
Building Resilience in South Florida Now and in the Future. SFWMD.gov/Resiliency

3a

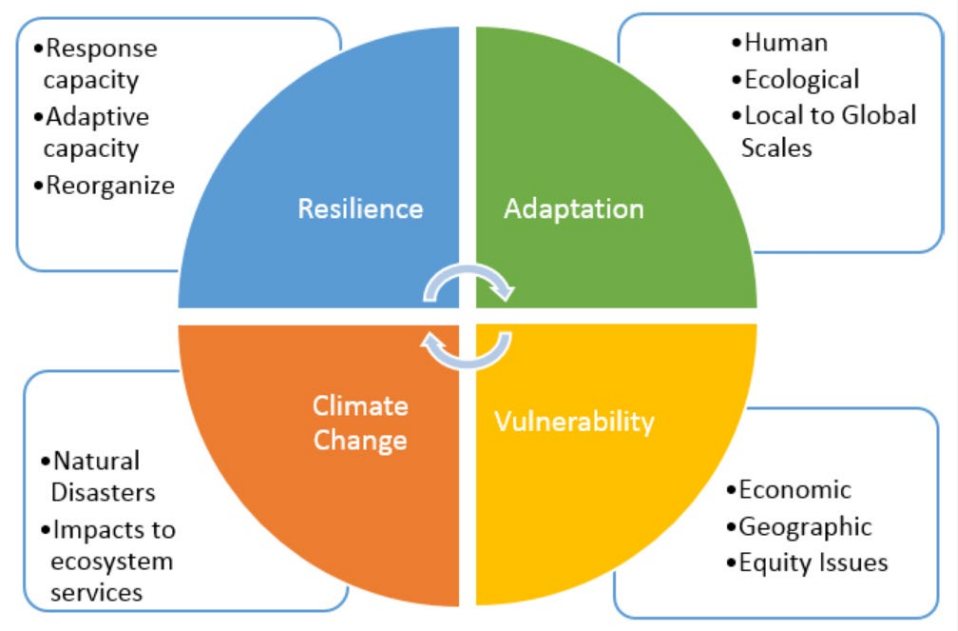
Overview of Resiliency Plan Vision, Goals, and Content

Nicole Cortez

Resiliency Coordinator, SFWMD

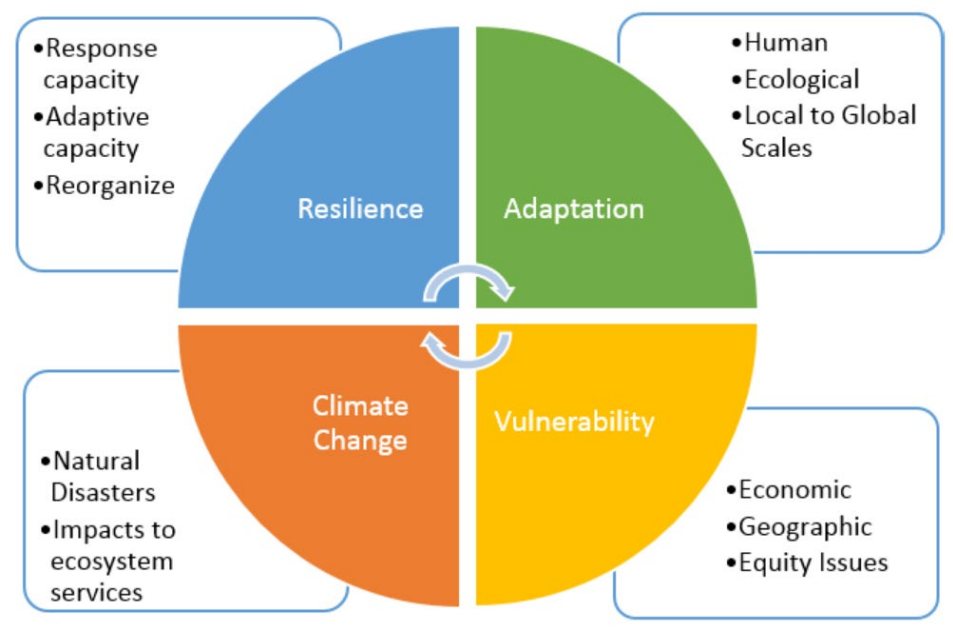
Resiliency Plan Vision and Goals

- Risk Reduction
  - Reduce risk while maximizing effectiveness
- Implementation Resources
  - Project planning and management
  - Consideration of technical, and financial challenges
- Future Conditions
  - Population and land development
  - Climate and sea level rise considerations



Resiliency Plan Vision and Goals

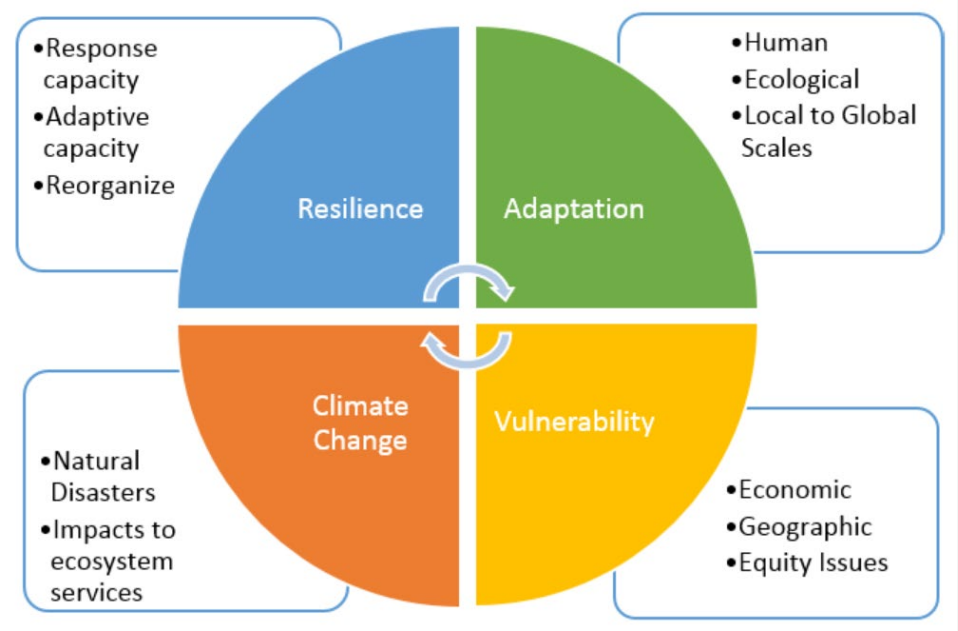
- Impacted Population and Critical Infrastructure
  - Ensure community-wide benefits
  - Protection of critical infrastructure
- Partnerships and Public Engagement
  - Resiliency Forum
  - Outreach activities
- Leveraging Ecosystem Restoration
  - Ongoing efforts to restore and preserve ecosystems



Resiliency Plan Vision and Goals

- Nature-Based Solutions
  - Incorporate NBS into Projects Concepts

- Energy Efficiency/Renewable Energy
  - Follow latest building codes
  - Energy efficient designs
  - Offset new energy demands with available renewable energy solutions



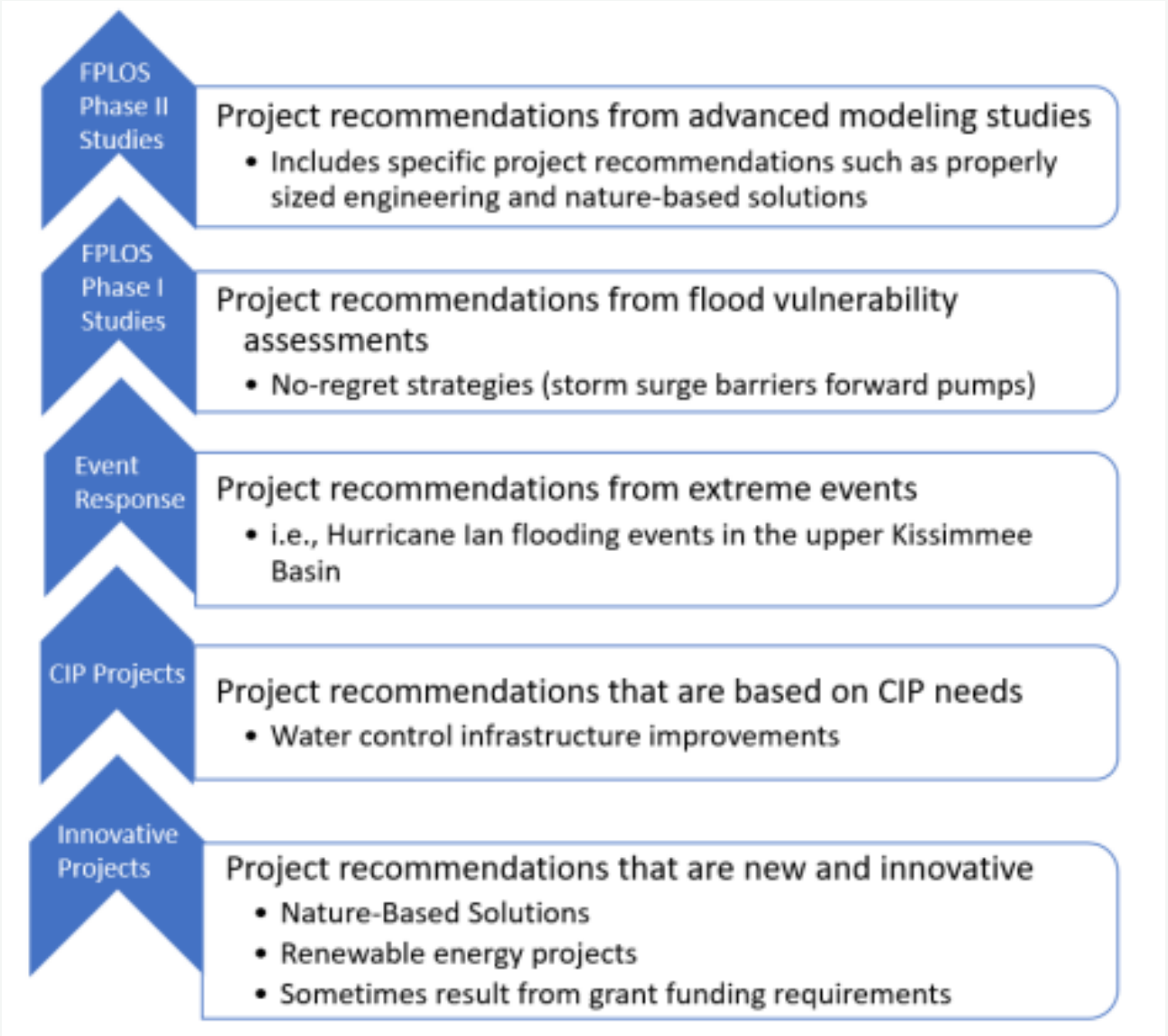
2024 Resiliency Plan Content

- Overview of Central and South Florida and Big Cypress Basin Systems
  - Current Challenges and Limitations
  - Capital Improvement Plan
- Overview of Flood Protection Level of Service and Other Flood Risk Management Studies
- Nature-Based Solutions
  - Types of NBS and How They Integrate with Gray Infrastructure
  - Process for Assessing and Implementing and Evaluating NBS
- Ecosystem Restoration & Resiliency

Resiliency Plan Content

- Water Supply Resiliency
  - Understand Vulnerabilities to Future Conditions
  - Protect Existing Sources, Develop Alternatives and Storage of Excess Water
- Energy Efficiency and Renewable Energy
- Characterizing and Ranking Resiliency Projects
- Priority Project Descriptions and Cost Estimates
- Priority Planning Project Descriptions and Cost Estimates

Projects Development



Important Dates – Submit your Comment

- February/March – Public Workshops & Early Input
- May 28, 2025 - Draft Plan Presented at Resiliency Forum and Open for Comments
- June 25, 2025 - Public Comment Period Closes
- September 1, 2025 - Final Plan Submission

3b

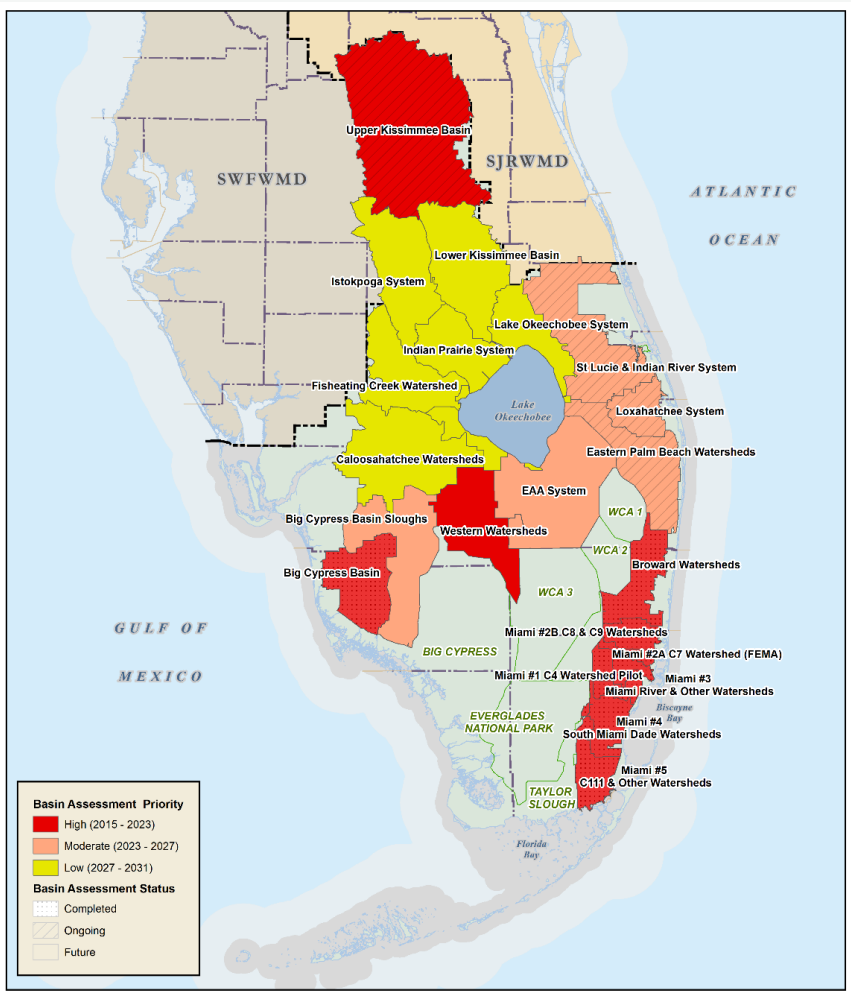
Project Development & Tools for Flood Risk Management Studies

Ann Springston, P.E., Principal Engineer
Sashi Nair, Systems Data Modeler
Flood Protection Level of Service Team, Water Resources Systems Modeling Bureau

Flood Protection Level of Service (FPLOS) Program

SFWMD's strategy for assessing system wide flood protection for current and future conditions, the impacts of land development, sea level rise and changing climate on flood control infrastructure

- Pre-defined performance metrics: canal stages, discharge capacity, overland flood inundation and duration.
- Support decision making on prioritizing and sequencing infrastructure investments through various funding opportunities:
  - C&SF Flood Resilience
  - FEMA BRIC
  - FDEM
  - Resilience Florida
  - HMGP – Post-storm program



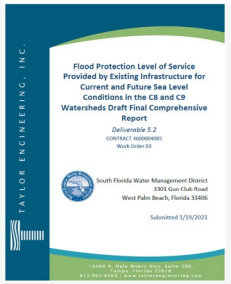
US Army Corps of Engineers Jacksonville District

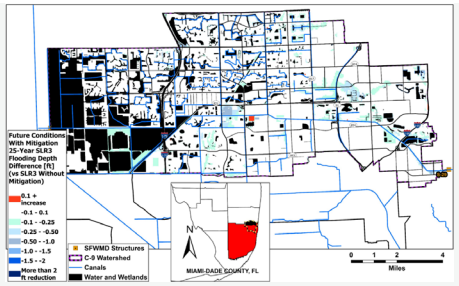
FEMA

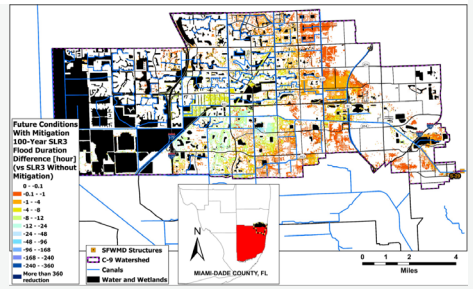
FPLOS Phase I Study

- Model tool development & and calibration/validation
- Events Simulated:
  - 5-yr, 10-yr, 25-yr and 100-yr design storms
  - current conditions
  - future conditions (SLR +1ft, +2ft and +3ft) and rainfall increase
- Performance Metrics
  - PM1 and PM2: peak stage profile and the capacity of a primary canal
  - PM3 and PM4: conveyance at discharge structures
  - PM5 and PM6: flooding inundation and duration
- Flood Vulnerability Assessment
- Update and publish a multi-volume Water Control Operations Atlas

Reports, Models & Results







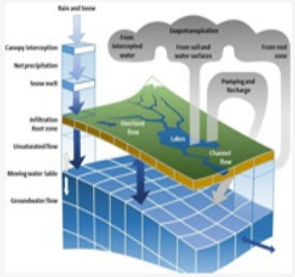
Tools

MIKE Powered by DHI

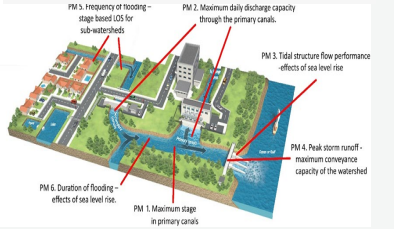
FLO-2D

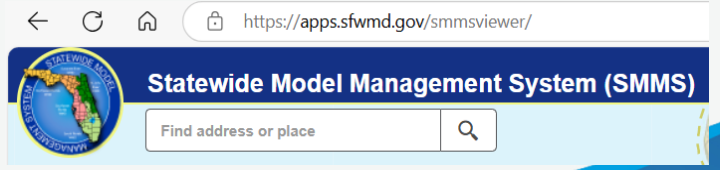
RAS

Data/Operations



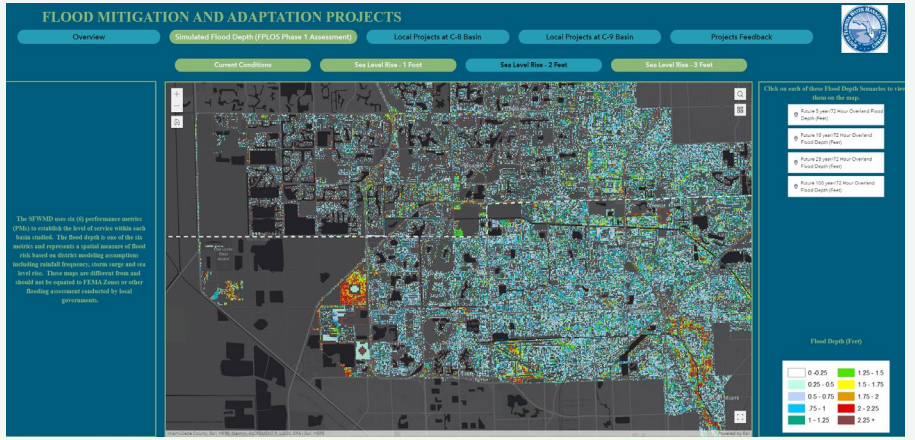
Performance Metrics

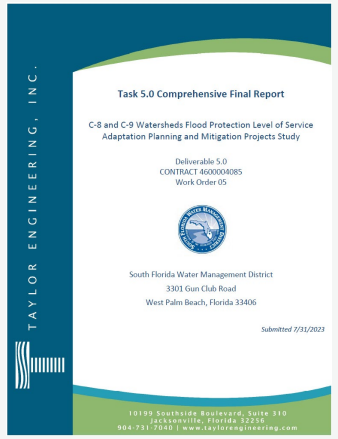


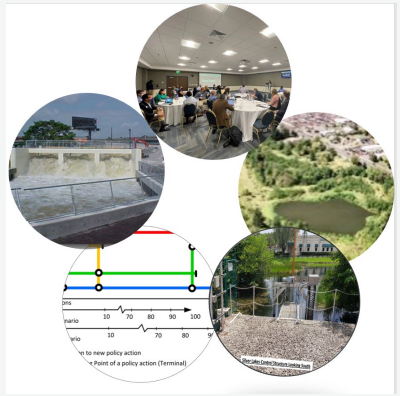


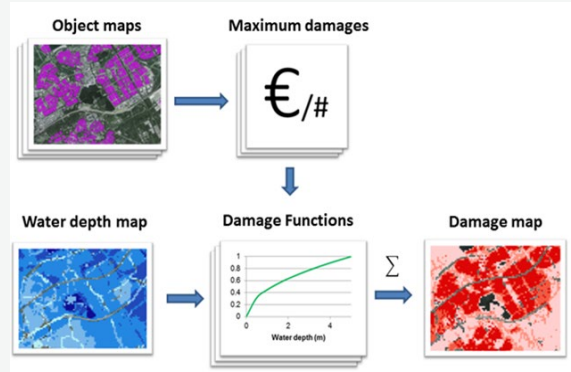
FPLOS Phase II Study

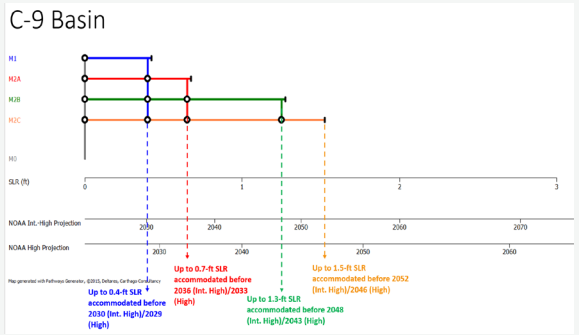
- Adaptation planning and mitigation projects study
- Understand local & regional Priority needs
- Basinwide comprehensive assessment strategy
- Identify regional strategies and local level adaptation projects
- Comprehensive economic assessment
- Optimized implementation plan
- Collaboration with stakeholders

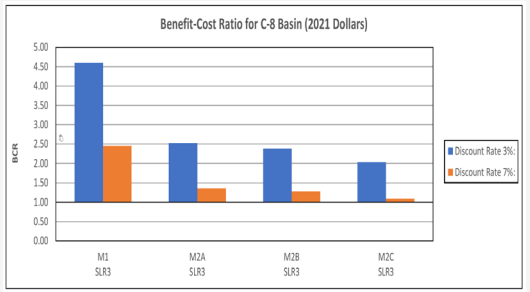




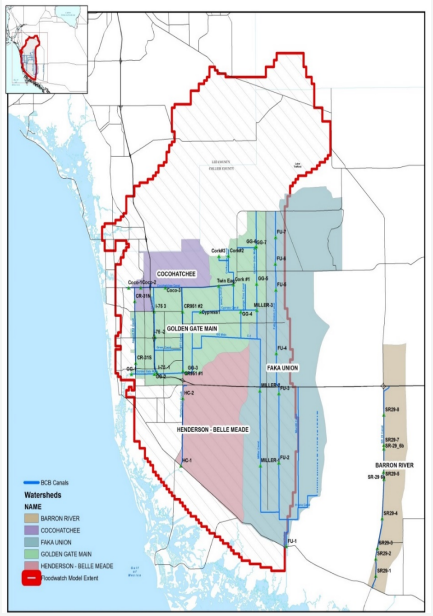








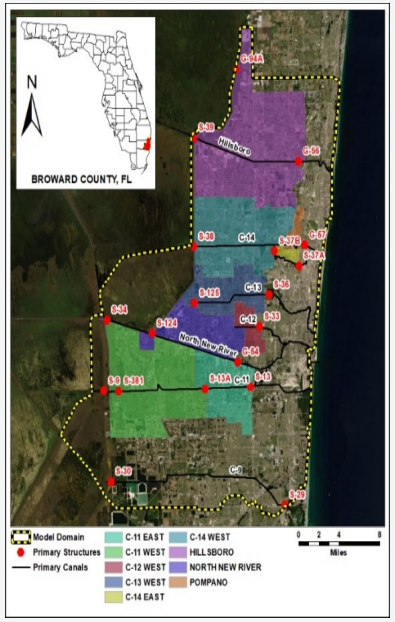
Completed FPLOS Studies



Lead PM: K. Konyha & Ken Feng

BCB FPLOS Project

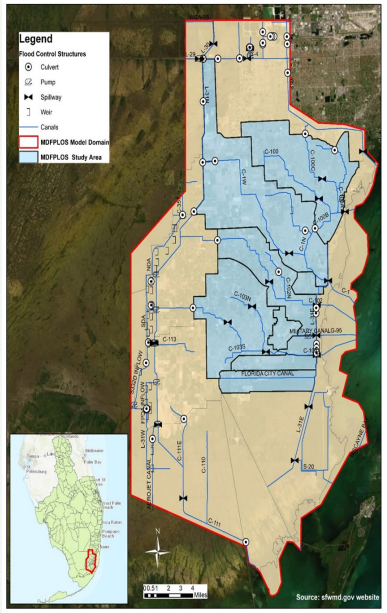
Completed: September 2018



Lead PM: H. Zhao

FPLOS for Nine Basins in Broward County

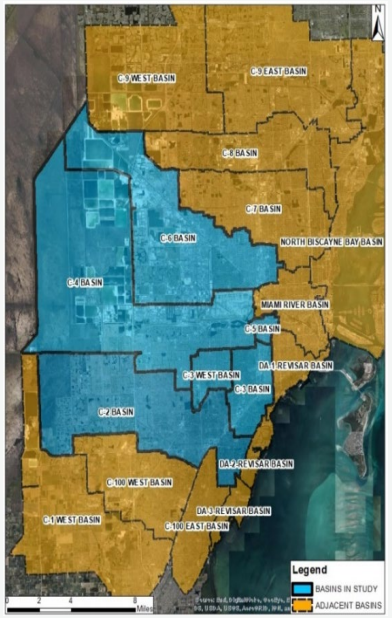
Completed: September 2021



Lead PM : L. Brion

FPLOS for C-1, C-100, C102, and C-103 Basins

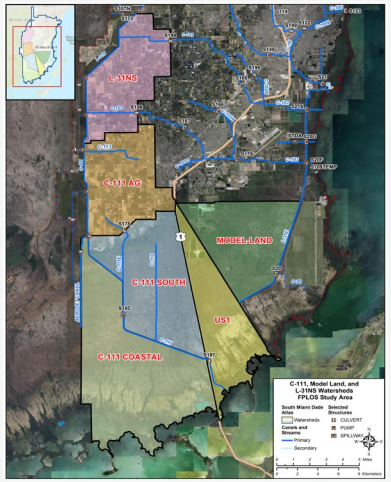
Completed: September 2021



Lead PM : R. Arteaga

C2, C3W, C4, C5 and C6 Watersheds

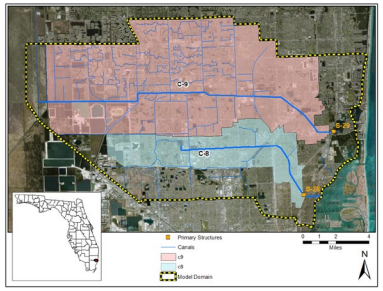
Completed: September 2022



Lead PM : C. Ballard

C-111, Model Land, and L-31NS Watersheds

Completed: December 2023



Lead PM: H. Zhao

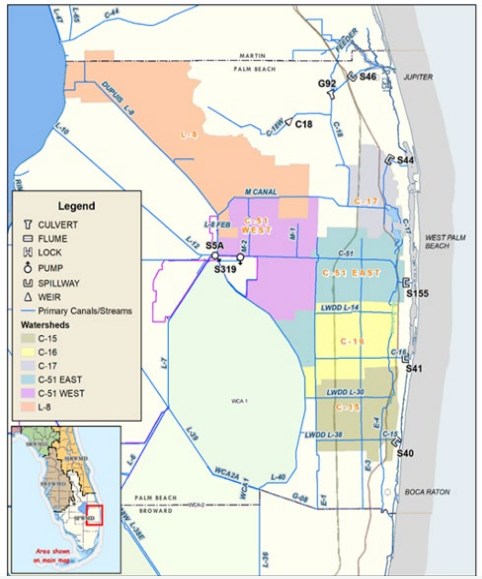
C8/C9 Basins FPLOS Phase I

Completed: January 2021

C8/C9 Adaptation & Mitigation (Phase II)

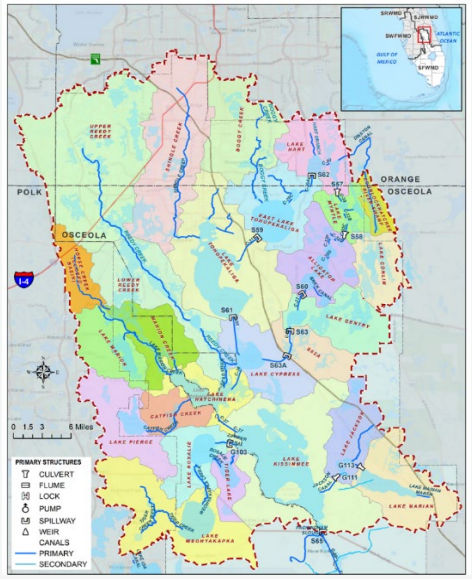
Completed: July 2023

Ongoing FPLOS Studies



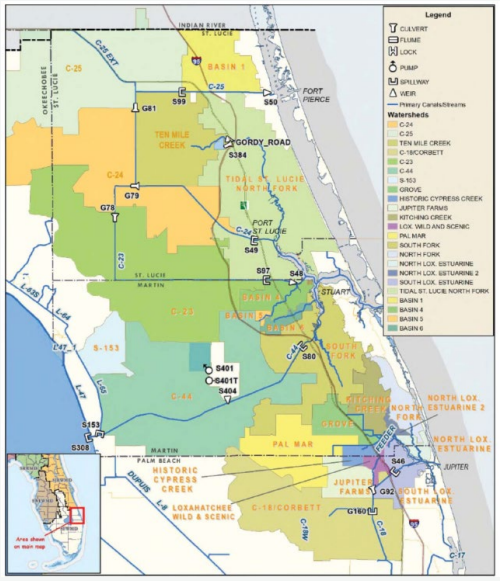
Leading PM: S. Haji Mirzaie
Eastern Palm Beach County

Completion date: March 2025



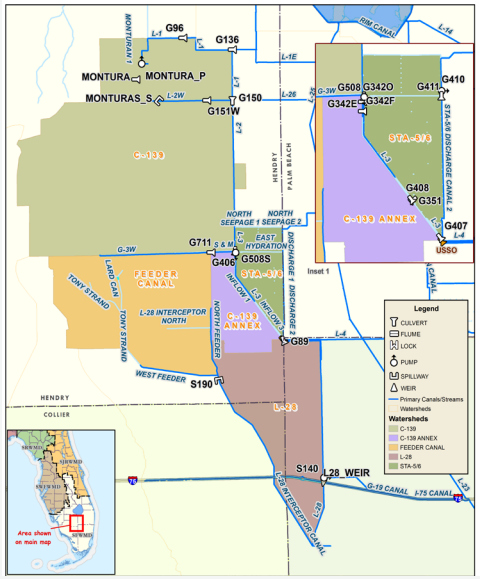
Leading PM: S. Nair
Upper Kissimmee Basins

Completion date: April 2025



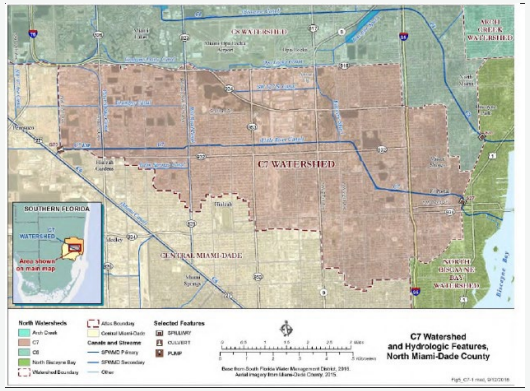
Leading PM: S. Haji Mirzaie
St Lucie/Indian River and Loxahatchee System

Completion date: Sep. 2025



Leading PM: H. Zhao
Western Basins

Completion date: April 2025



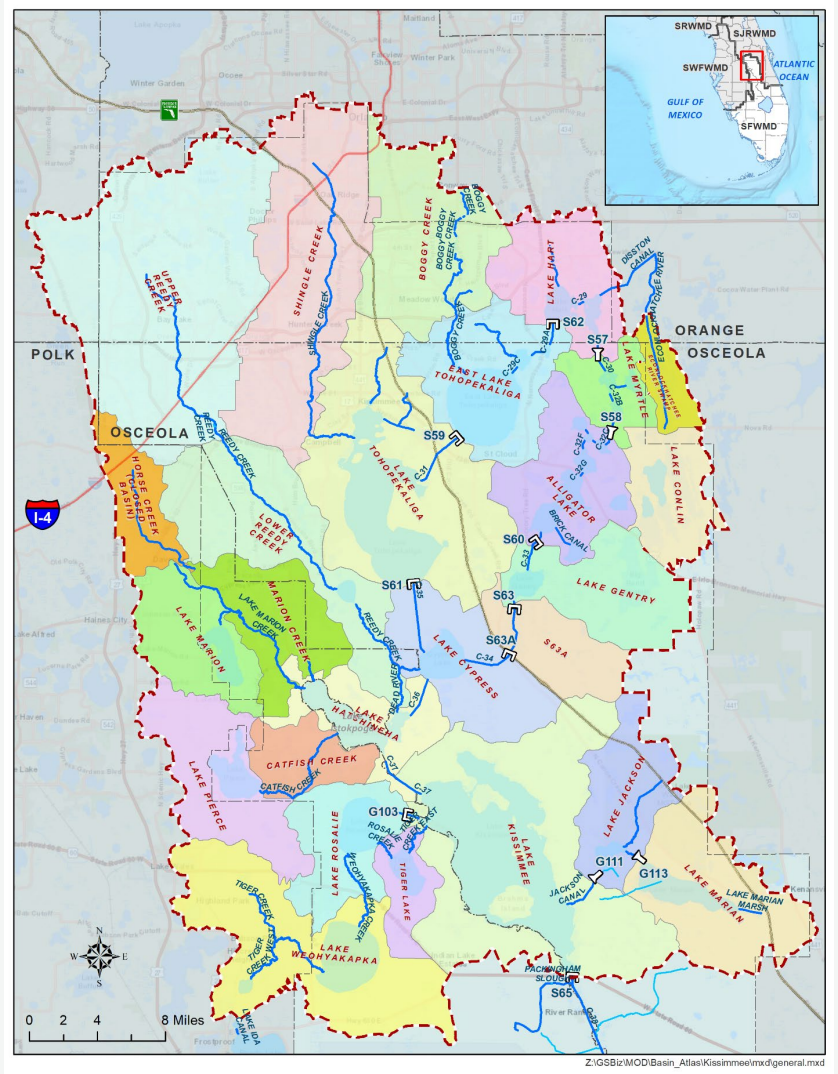
Leading PM: A. Springston
C7 Adaptation and Mitigation Study

Completion date: Sep. 2025

➢ **Upcoming: Two new projects in the pipeline…..**

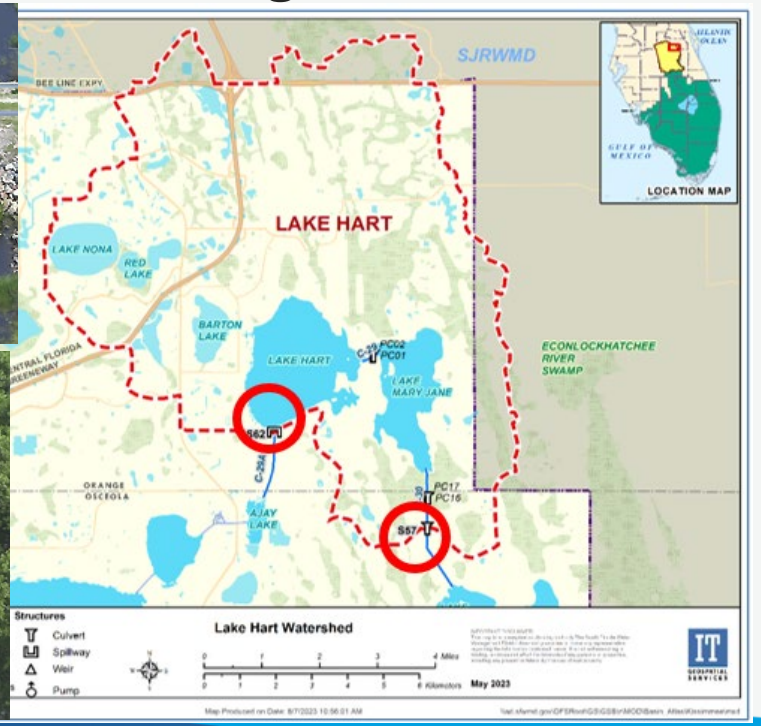
Upper Kissimmee Basins FPLOS Study

- FPLOS Study initiated in 2022
  - Twenty-six watersheds are included in the study
  - LOS assessments for current and future conditions
- Model Performance assessed 3 ways:
  - Regional Level – System-wide evaluation
  - Sub-regional Level – Lake Management Area (LMA)
  - Watershed Level – Individual Stations (Surface water and Groundwater)



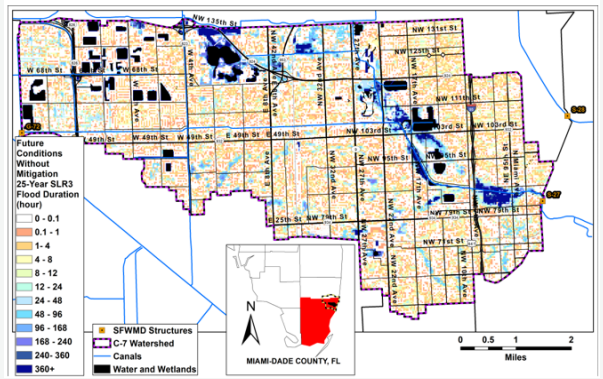
Upper Kissimmee Basins FPLOS Study Recap

- Understanding the LOS assessment and the major concerns
- Improve conveyance in canals
- Add additional structures to improve conveyance capacity
- Provide additional storage

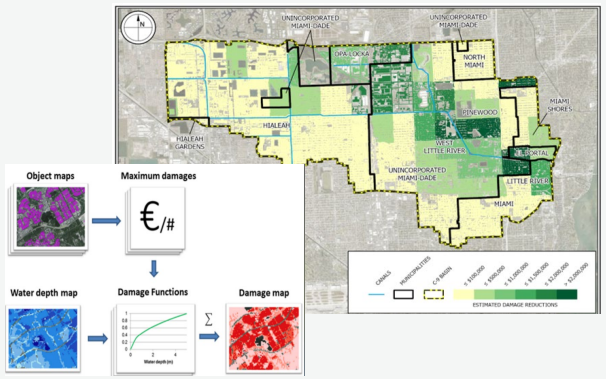


Assessing Project Feasibility – Funding Path

Technical Feasibility Memo



Damage Assessment Memo



- Incentivize public infrastructure projects (flood risk reduction)
- Incentivize projects that mitigate risk to critical infrastructure
- Innovative Solutions & Future Conditions
- Incentivize projects that incorporate nature-based solutions
- Shared responsibilities, community capability and partnership

FEMA BCA V6.0 Add-Ins

BCA ≥1 ☑

US Army Corps of Engineers® Jacksonville District

FEMA

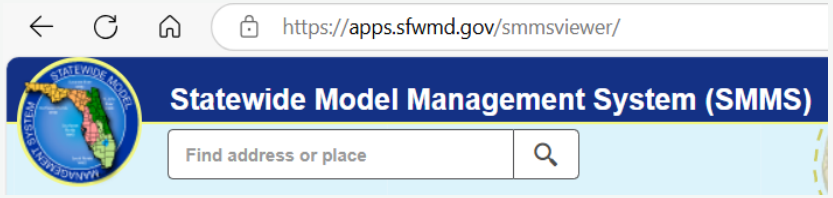
Technical Products

Tools

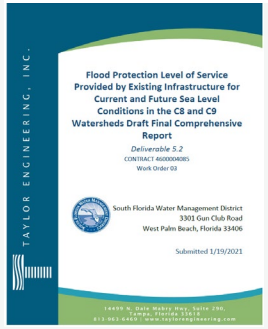
MIKE Powered by DHI

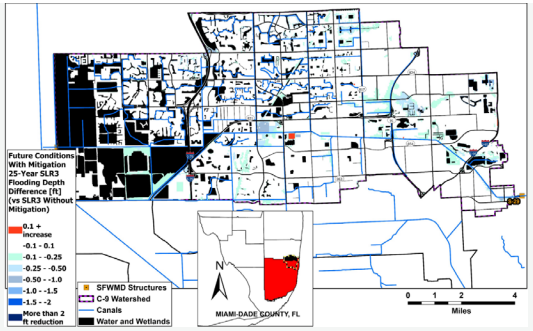
FLO-2D

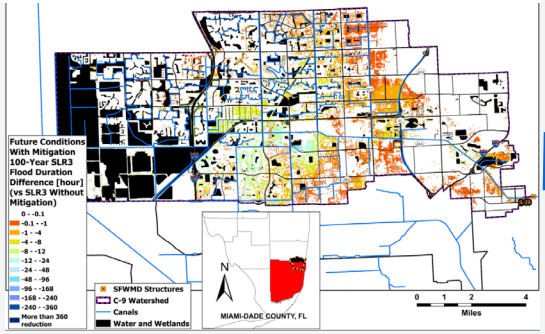
RAS



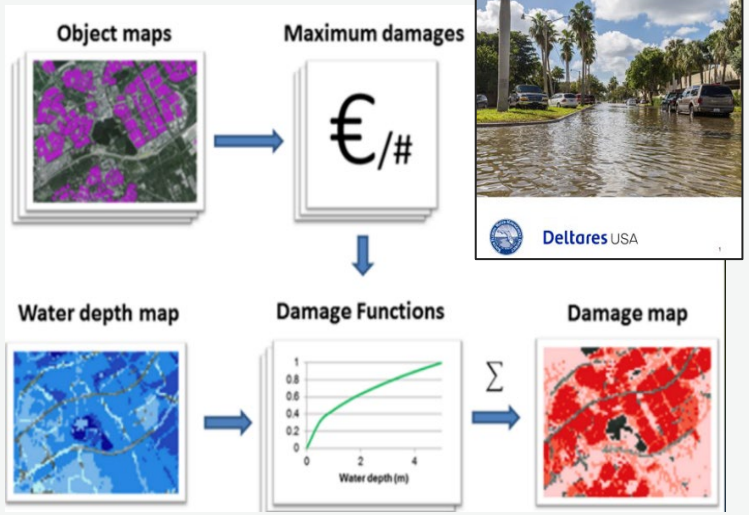
Reports, Models & Results



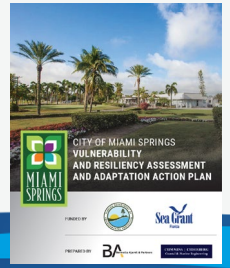


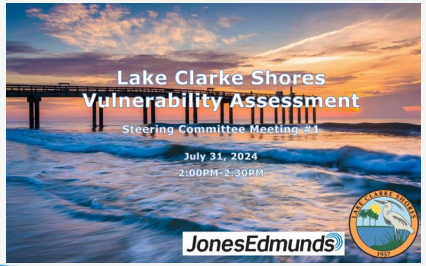


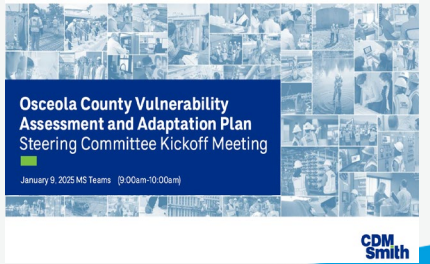
Flood Damage & Exposure Database

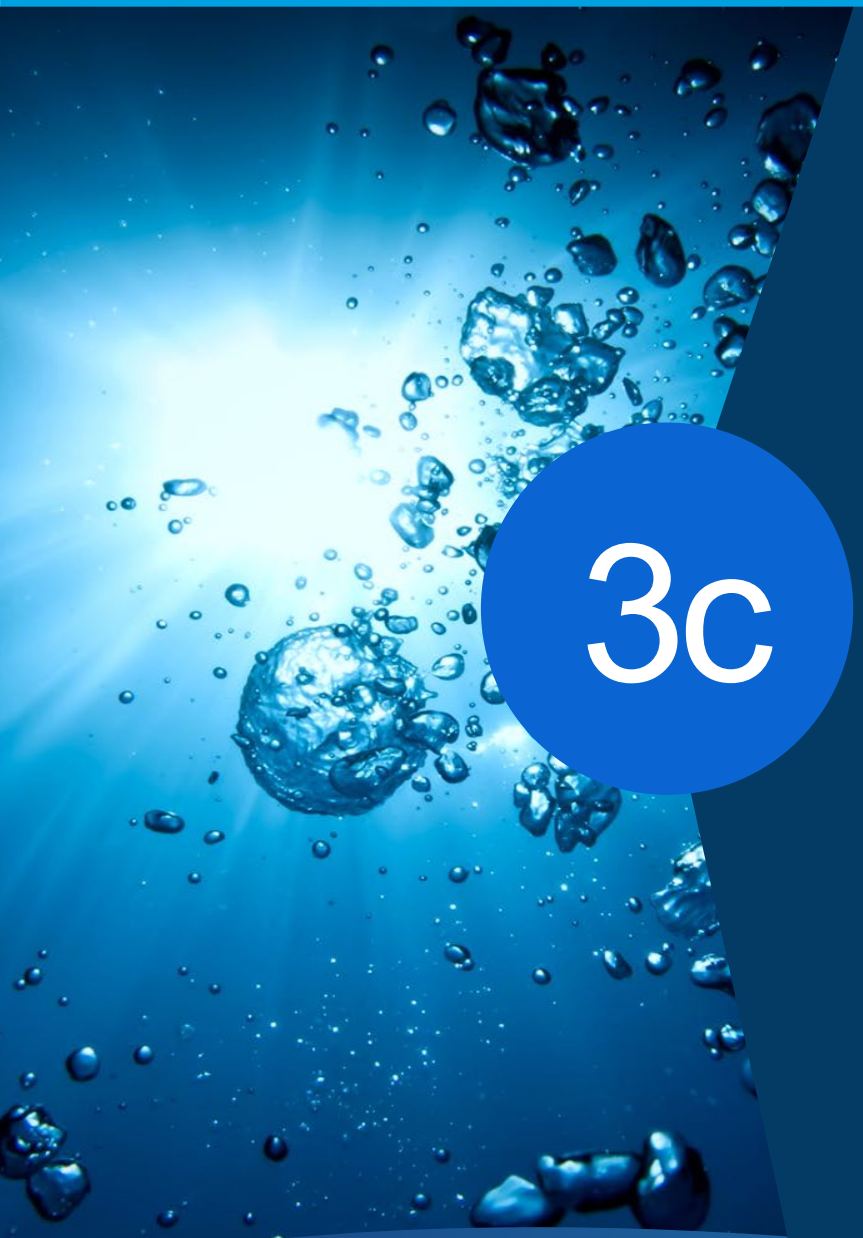


To Support Local Vulnerability Assessments









3c

Stakeholder Coordination

Nicole Cortez

Resiliency Coordinator, SFWMD

Building Stronger Connections for Effective Results

Focus of Engagement Efforts

- Enhancing information flow
  - Learning from one another
- Aligning local and regional agendas
  - Fostering coordination between local and regional projects and initiatives

Approach

- Building strong partnerships
  - Incorporating local input and knowledge
  - Close collaboration and agreements with local governments/organizations

Goal

- ***Maximizing our collective impact***

South Florida Resiliency Coordination Forum

A fact-finding forum for collaboration between the SFWMD and local, state, federal, and tribal partners on water management resiliency.

- **Regional Coordination:** Strengthening partnerships across the region.
- **Leveraging Technical Knowledge:** Sharing expertise on resiliency and water management.
- **Information Exchange:** Promoting the flow of data and insights for decision-making.
- **Supporting Actionable Solutions:** Identifying tangible, asset-level solutions to enhance water resource management.

Resiliency Coordination Forum (continued)

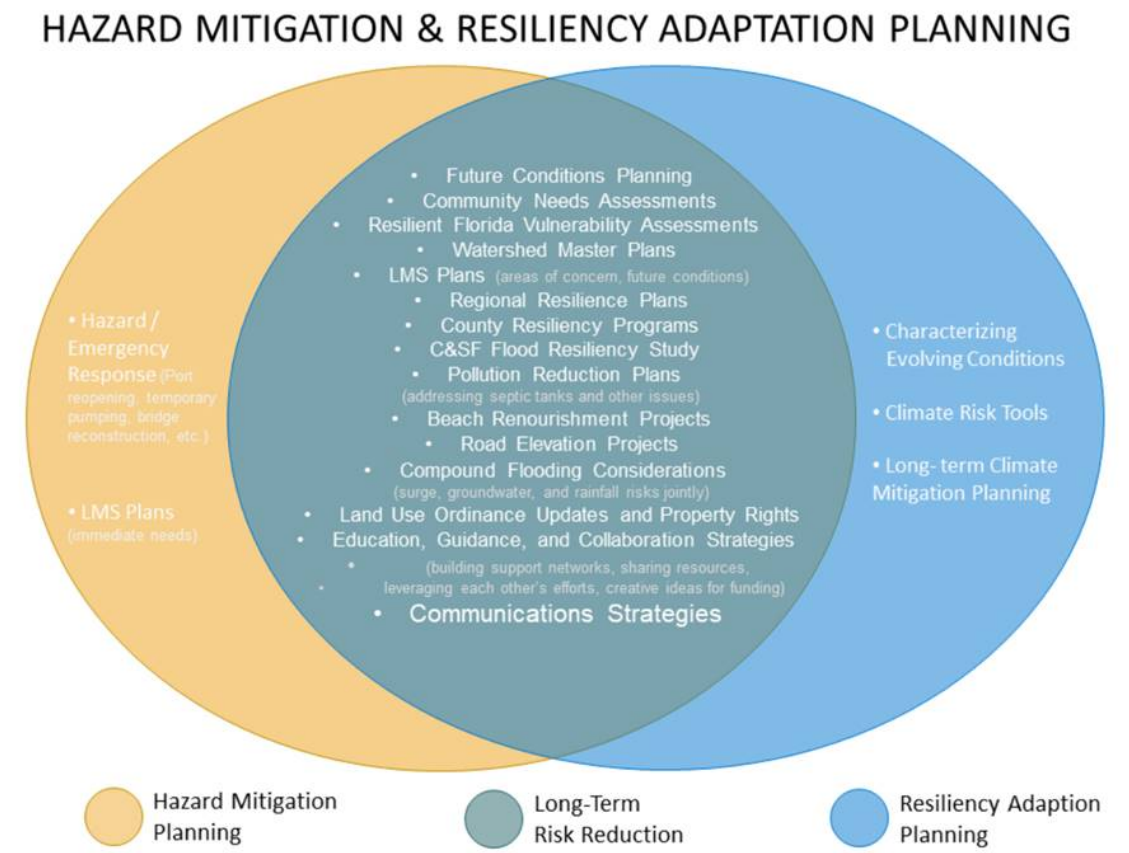
2025 Sea Level Rise and Flood Resiliency Plan Update Workshops:

- Workshop #1 – Lower East Coast – February 21, 2025
- Workshop #2 – Upper East Coast – February 25, 2025
- Workshop #3 – Southwest Coast – February 27, 2025
- Workshop #4 – Kissimmee River Basin – March 7, 2025

Upcoming Quarterly Meetings:

- Wednesday, May 28, 2025
- Wednesday, September 3, 2025
- Wednesday, December 3, 2025

Local Mitigation Strategies Committees Coordination



Long-Term Risk Reduction

- Committee Membership & Attendance
  - Active participation in LMS Committees
- Adoption of County LMS Plans
  - Aligning with local mitigation strategies
- Incorporating Regional Resilience Projects
  - Ensure priority resiliency and post-disaster projects are integrate into local plans

Flood Resiliency Studies Engagements

C&SF Flood Resiliency Studies
Sections 216 and 203

FPLOS Phase II
Adaptation & Mitigation Planning Studies

Other Flood Risk Management (FRM) Studies

Engaging Local Governments:

- Share data, tools, resources, knowledge
- Contribute valuable insights on risks and vulnerabilities

Community-Driven Planning:

- Provide input on goals and actions to mitigate risks
- Align local projects and priorities for regional adaptation

Developing Actionable Projects:

- Refine adaptation and mitigation projects based on local input
- Maximize benefits, locally integrated strategies

Tools & Resources for Wet & King Tide Season

Resilience Metrics Hub
sfwmd.gov/ResilienceMetricsHub

- Access Water and Climate Resilience Metrics – long term trends and projections

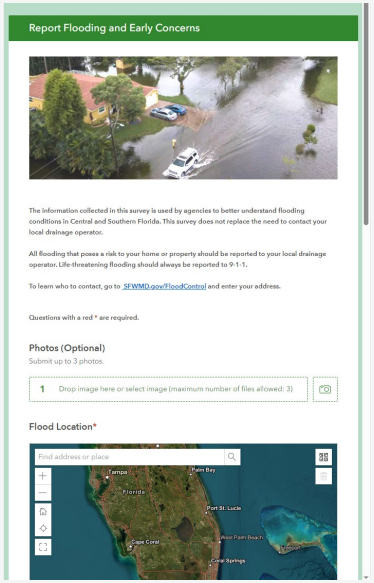
Flood Specific Tools & Resources

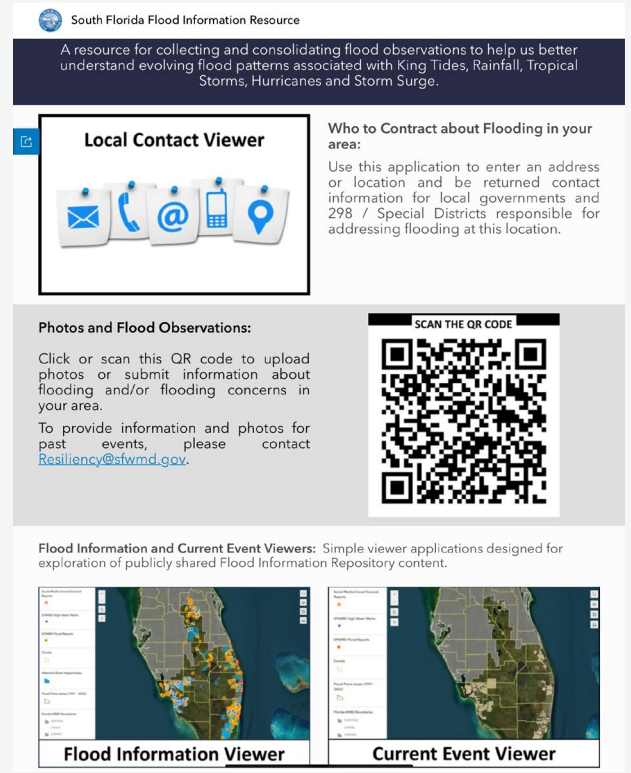
- Access Flood Observations: sfwmd.gov/FloodResources

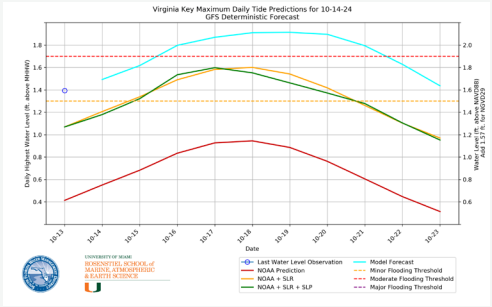
- Submit real-time flood data: sfwmd.gov/FloodingApp

Tidal Predictions

- Stay informed on high tide events: sfwmd.gov/HighTidePredictions







Tools & Resources for Wet & King Tide Season

Flood Observations and High-Water Mark Collection Training

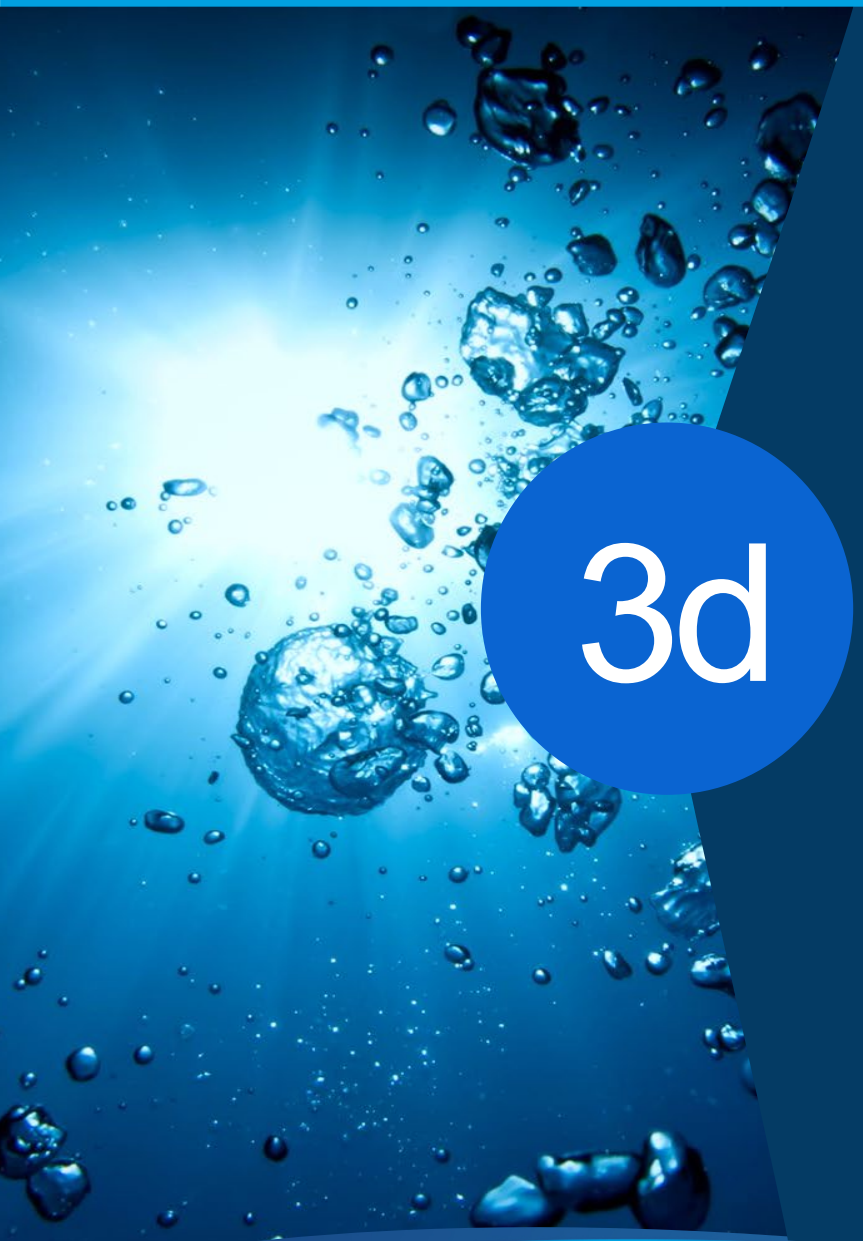
- Located at SFWMD facilities across the region for field staff, and local governments and water control districts.
- 9 sessions held across the region in April 2024, 121 participants

Encouraging Participation in 2025

- 2025 Wet Season And King Tide Preparedness Training Sessions

  Coming up this Spring

- Supporting SFWMD operation and local governments stay ready for flooding and high tide events.



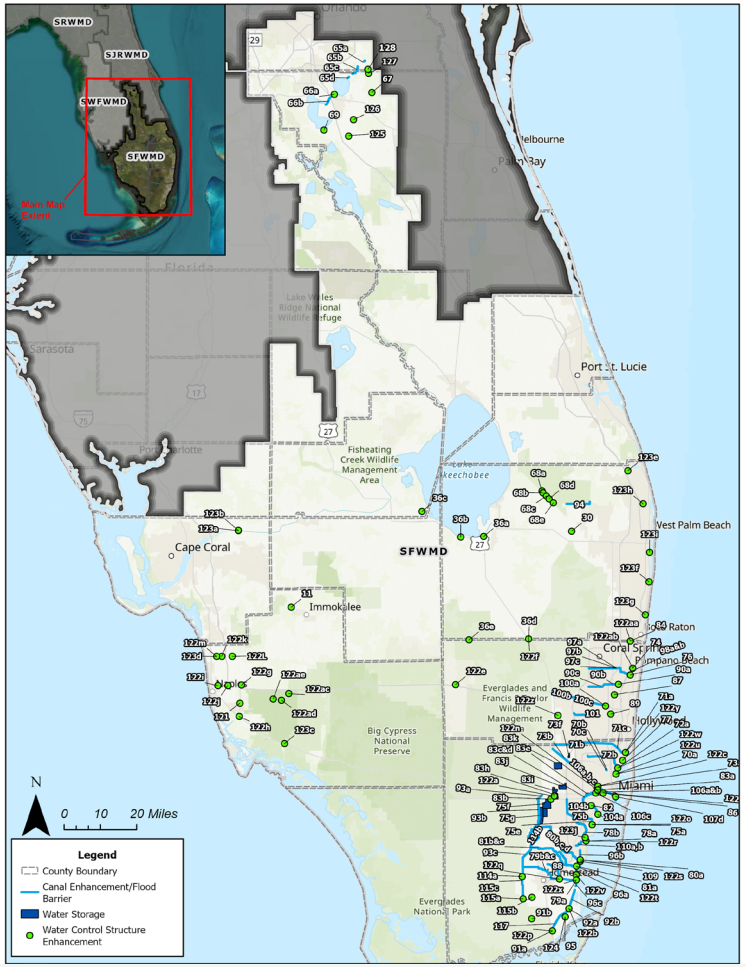
3d

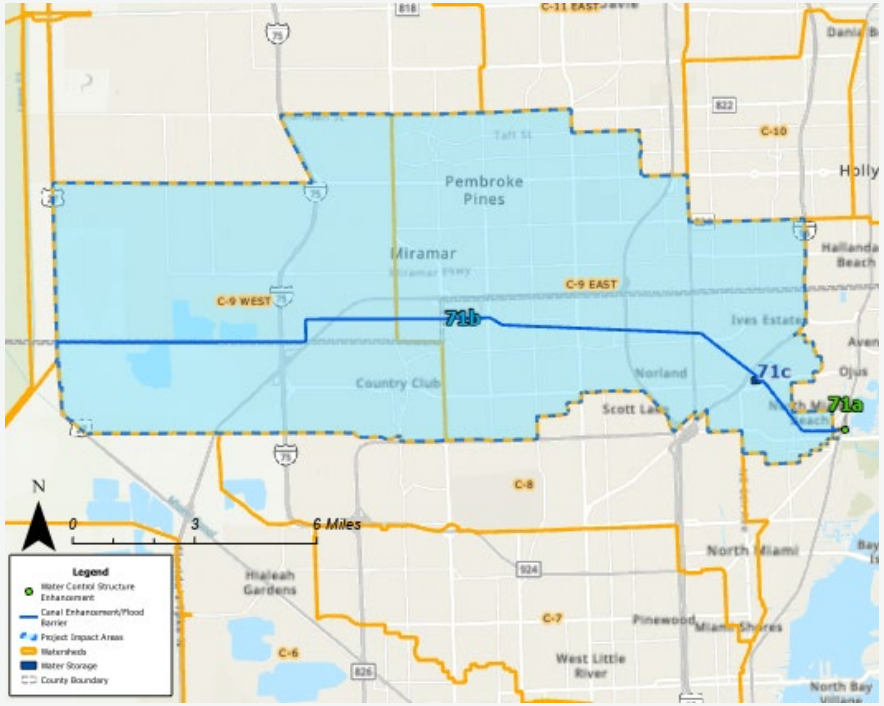
Project Ranking Evaluation Matrix and GIS Resources

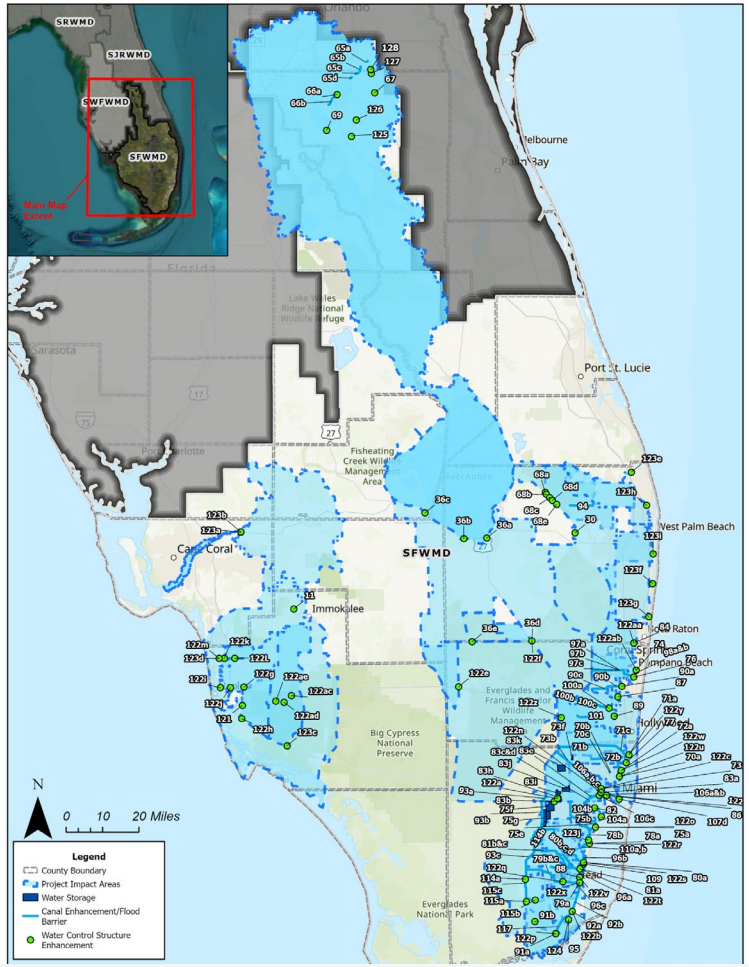
Aaron Duecaster

Resiliency GIS Specialist, SFWMD

Project Locations – Impact Areas and Components







Project Ranking - Alignment with Resilient Florida

Florida Comprehensive Statewide Flood Vulnerability

- Tier 1 – 40 Points
  - 10 Points – Degree to which the project addresses flood risks
  - 10 Points – Reduces risk to regional significant assets
  - 10 Points – Reduces risk located in areas with higher vulnerable assets
  - 10 Points – Awarded if projects contributes to existing flooding mitigation projects
- Tier 2 – 30 Points
  - 7.5 Points – Awarded based on the degree to which flooding and erosion impact the project impact area.
  - 7.5 Points – Project Readiness
  - 7.5 Points – Environmental Habitat enhancement or nature-based solution
  - 7.5 Points – Project is demonstrated to be cost effective
- Tier 3 – 20 Points
  - 6.5 Points – Available Local, State, and/or Federal cost share
  - 6.5 Points – Verification of state funding previously awarded
  - 7 Points – Awarded if project demonstrates exceedance of flood resistant requirements in the Florida Building Codes Act
- Tier 4 – 10 Points
  - 5 Points – Awarded if project includes innovative technologies designed to reduce project costs and provide regional collaboration
  - 5 Points – will be awarded if the proposal demonstrates that the project impact area includes a financially disadvantaged community

- 40% - Likelihood of System Deficiency
  - FPLOS Phase 1 Results – 15%
  - Known or Chronic Nuisance Flooding Report – 13%
  - FEMA Flood Zone Exposure – 3%
  - Storm Surge Inundation Results
  - No Alternatives or Backups in Worst Case Scenario } 6%
  - Return Period of Overbank Flooding
  - Sea Level Resulting in Overbank Flooding
  - Exceedance of Canal Normal Operating Range (OR) } 3%
  - Finished Floor Elevation < Base Flood Elevation
- 30% - Consequence of System Deficiency
  - Critical Assets & Regional Assets - 12%
  - Impact Areas Across Administration Boundaries – 2.5%
  - At Risk Population – 5%
  - Environmental Protected Areas – 3.5%
  - Total Population – 1%
  - Public Water Supply Wellfields – 5%
  - Adaptation Action Areas – 1%
- 20% - Benefits From System Enhancements
  - Nature Based Solutions } 5%
  - Ecosystem Restoration
  - Cost Benefit Analysis – 2.5%
  - Previous State Funding – 2.5%
  - Available Match – 2.5%
  - Florida Building Code Design Criteria – 2.5%
  - Innovative Technologies – 5%
- 10% - Project Status
  - SIP Overall Rating – 5% / CIP Status – 5%

Critical Assets

Critical Community and Emergency Facilities

Affordable Public Housing	Critical Assets
Colleges and Universities	Critical Assets
Community Centers	Critical Assets
Correctional Facilities	Critical Assets
Disaster Recovery Centers	Critical Assets
Emergency Medical Service Facilities	Regionally Significant
Emergency Operation Centers	Regionally Significant
Fire Stations	Critical Assets
Health Care Facilities	Critical Assets
Hospitals	Critical Assets
Law Enforcement Facilities	Critical Assets
Local Government Facilities	Critical Assets
Logistical Staging Areas	Critical Assets
Risk Shelter Inventory	Regionally Significant
Schools	Critical Assets
State Government Facilities	Critical Assets

Natural, Cultural, and Historical Resources

Historical and Cultural Assets - PT	Critical Assets
Historical and Cultural Assets - PL	Critical Assets
Shorelines	Critical Assets
Surface Waters - PL	Critical Assets
Conservation Lands	Critical Assets
Historical and Cultural Assets - PG	Critical Assets
Parks	Critical Assets
Surface Waters - PG	Critical Assets
Wetlands	Critical Assets

Transportation and Evacuation Routes

Airports	Critical Assets
Bus Terminals	Regionally Significant
Marinas	Critical Assets
Ports - PT	Regionally Significant
Rail Facilities - PT	Regionally Significant
Railroad Bridges	Regionally Significant
Bridges	Critical Assets
Major Roadways - FDOT	Regionally Significant
Major Roadways - NTD	Critical Assets
Ports - PL	Regionally Significant
Rail Facilities - PL	Regionally Significant

Critical Infrastructure

Communications Facilities	Critical Assets
Disaster Debris Management Sites	Critical Assets
Drinking Water Facilities	Regionally Significant
Electric Production and Supply Facilities - PT	Regionally Significant
Solid and Hazardous Waste Facilities	Critical Assets
Solid and Hazardous Waste Facilities - SQG	Critical Assets
Solid and Hazardous Waste Facilities - TSD	Critical Assets
Solid and Hazardous Waste Facilities - SB	Critical Assets
Stormwater Treatment Facilities and Pump Stations - PT	Regionally Significant
Wastewater Treatment Facilities and Lift Stations	Regionally Significant
Water Utility Conveyance Systems	Regionally Significant
Electric Production and Supply Facilities - PL	Regionally Significant
Stormwater Treatment Facilities and Pump Stations - PL	Regionally Significant
Stormwater Treatment Facilities and Pump Stations - PG	Regionally Significant
Military Installations	Regionally Significant

Locally Provided Assets From Vulnerability Assessments

Locally Provided Assets - PT	Critical Assets
Locally Provided Assets - PL	Critical Assets
Locally Provided Assets - PG	Critical Assets

Spatial Considerations

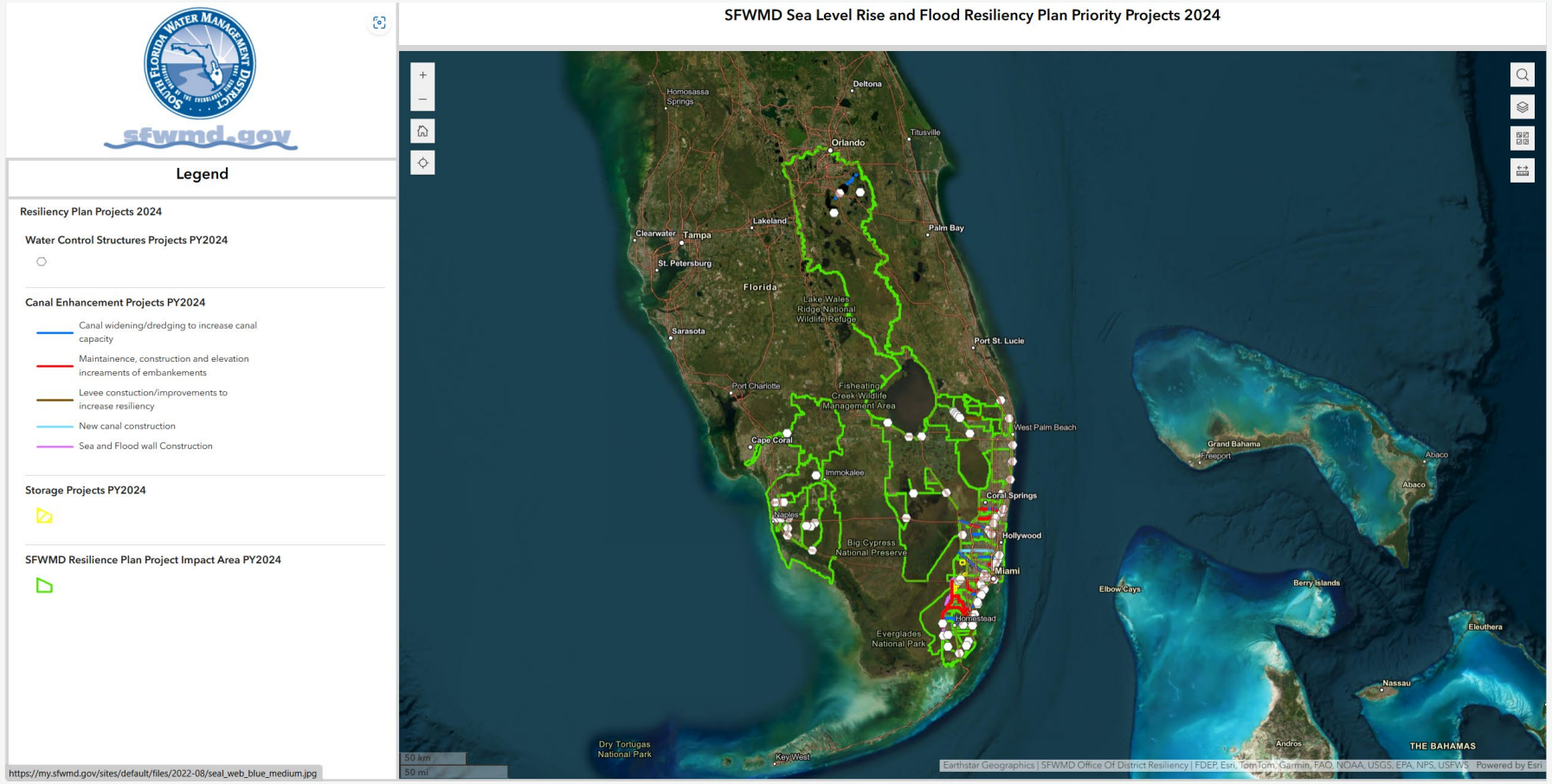
Category		Weighting
FPLOS Phase I Assessment Results (Current and /or Future Conditions)	vulnerability of the drainage system within the project impact area to manage flood risks to adjacent developed or partially developed land under current and future conditions represented by the FPLOS overall flood protection level of service	**15%**
Known Chronic and Nuisance Flooding Report (OR)	Flood Prone Area layer documented using the observed historical flooding events with evidence collected by agencies/universities/media/citizens	**13%**
Finished Floor Elevation < Base Flood Elevation	Infrastructure Finish Floor Elevation Exposure: Comparison between Infrastructure Finish Floor Elevation (FFE) and FEMA Base Flood Elevation (BFE)	
FEMA Flood Zone Exposure	The project impact area is within FEMA Flood Zone A, AH, AE, and V and will lower flood risks	**3%**
Storm Surge Inundation Exposure	Project Impact Area (or Finished Floor Elevation, for infrastructure enhancement projects) is within specific Hurricane Categories - Storm Surge event inundated area	
Critical Assets / Lifelines	The total number of At-Risk Critical Assets & Regionally Significant from the recently released FDEP Statewide Critical Assets Dataset	**6%** **6%**
Impact Area Across Administrative Boundaries	The number of administrative and County boundaries across the area of influence characterizes different levels of regional significance for the respective projects.	**2.5%**
At Risk Population National Risk Index (NRI)	The National Risk Index (NRI) is a dataset that represents the vulnerabilities to US communities most at risk for 18 natural hazards.	**5.0%**
Environmental Protected Areas	Vulnerable environmental protected areas - state or federal critical habitat for threatened or endangered species- within the project impact area of the proposed project, and that can be impacted by flooding events.	**3.5%**
Total Population	Total number of people residing within the project impact area of the proposed project based on 2023 estimates.	**1%**
Public Water Supply Wellfields		**5%**
Adaptation Action Areas	The project impact area is within an established “Adaptation Action Area” or “Adaptation Area.”	**1%**

Structural Considerations

Category	Definition	Weighting
No Alternatives/Backup to Mitigate Worst Case Scenario	The respective structure does not have an alternative operational routing or no system backup to mitigate potential limitations in operation or the worst-case scenario of structure failure under extreme event conditions.	3%
Return Period of Overbank Flooding	Infrastructure Performance Under Sea Level Scenarios or Extreme Rainfall Events	6%
Sea Level Resulting in Overbank Flooding	Increase of sea levels that result in canal overbank flooding and/or other infrastructure bypass resulting in an increase in flood risks to developed or partially developed adjacent land and water supplies	
Exceedance of Canal Normal Operating Range (OR)	Maximum peak stage profile levels along the primary canal system exceeding normal operational range stages (canal performance), which reduces discharges from secondary systems, increasing flood risks further inland.	
Nature-based Solutions	The project includes nature-based solutions or green infrastructure in addition to “gray” infrastructure improvements to increase resiliency	5%
Ecosystem Restoration	The project included natural enhancements of the environment by restoring the lands and waters that benefit wildlife.	
Cost Benefit Analysis	The cost-effectiveness of the project is estimated as larger than one, estimated based on avoided economic loss.	2.5%
Previous State Funding	The project received previous state funding for its previous phases, including pre-construction activities, design, permitting, or Phase I Construction.	2.5%
Available Match	The project includes documentation that 50% cost share is available, or funds will be available but have not been appropriated or released.	2.5%
Florida Building Code Design Criteria	Exceedance of the flood-resistant requirements in the Florida Building Codes Act, as adopted by the State of Florida pursuant to Part IV, Chapter 553, F.S. or local floodplain management ordinances.	2.5%
Innovative Technologies	The project proposal includes innovative technologies to optimize project benefits, protect communities and the environment, reduce project costs, and provide regional collaboration.	5%
SIP Overall Rating	The performance level is used to define the ability of the structure to perform its intended function under current conditions, as reported as part of the SFWMD Structure Inspection Program Report (Final Category).	5%
Capital Improvement Program (CIP) Status	Project Status as part of the District's fiscally constrained expenditure plan that lays out anticipated infrastructure investments over the next five years. Project indication about Design or Pre-Design is stated in the CIP.	5%

Web Application

- [SFWMD Sea Level Rise and Flood Resiliency Plan Priority Projects Open GIS 2024 ExB Web App]



Adaptation Action Areas (Request)

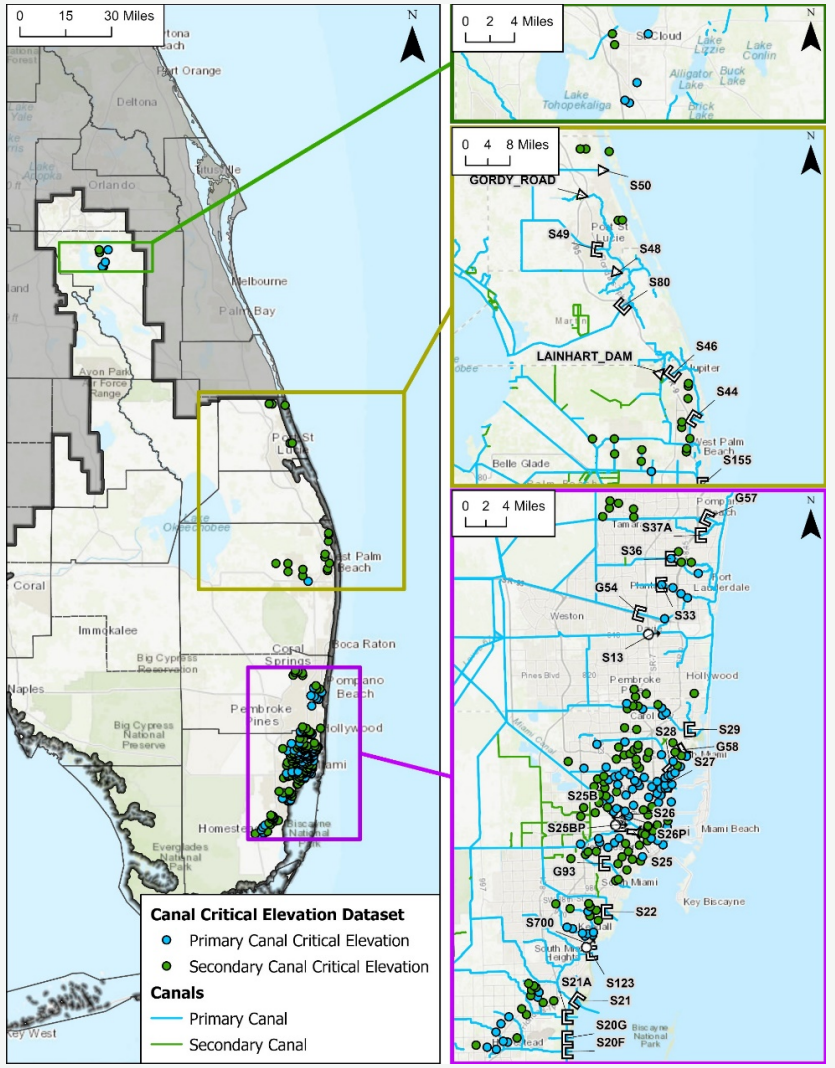
To ensure comprehensive coverage of local adaptation efforts, we kindly request your assistance in providing the GIS layer or shapefile for your County's adaptation action areas. As our primary county resilience contacts, we also seek your help in confirming the availability of this data from your respective municipalities. Please submit your comments and the GIS layer or shapefile via email to resiliency@sfmwd.gov at your earliest convenience. Feel free to reach out if you have any questions or need further clarification.

"Adaptation Action Area" or "Adaptation Area" means a designation in the coastal management element of a local government's comprehensive plan which identifies one or more areas that experience coastal flooding due to extreme high tides and storm surge, and that are vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning.

-Section 163.3164(1), Florida Statutes

Flood Thresholds (Continued Collaboration)

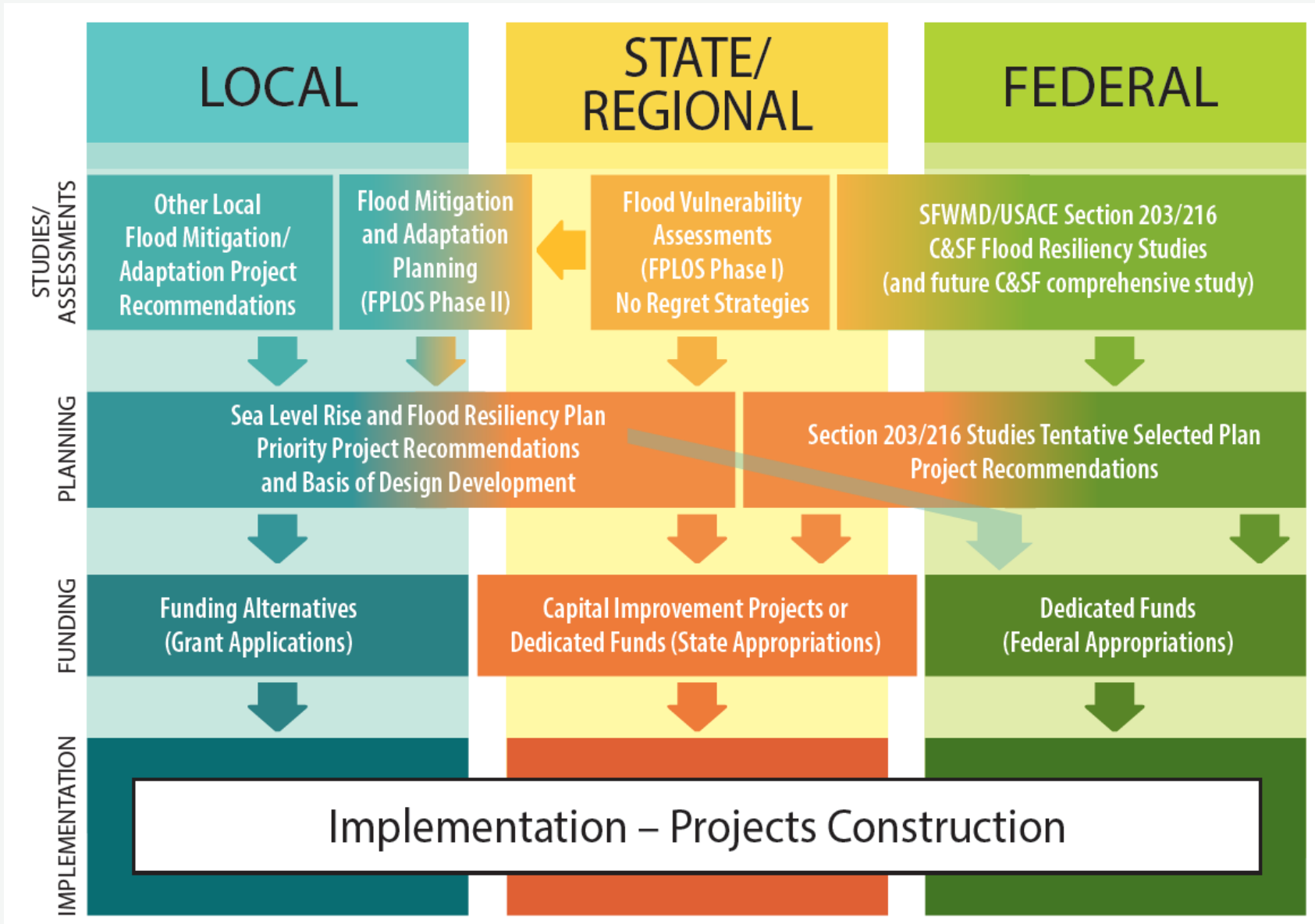
- Mapping of critical water levels/elevations: early concerns to inform operations
- Previous request to specific Counties, Municipalities, and other Local and Regional Agencies (Critical Elevations)
- To develop a database that describes the various levels of flooding thresholds for each watershed
  - Drainage Capacity or Efficiency Reduced
  - Residential properties and evacuation routes impacted
- Flood thresholds developed with combination of elevation of drainage features, in-situ observations, Level of Service studies.



3e

Projects Prioritized for Funding

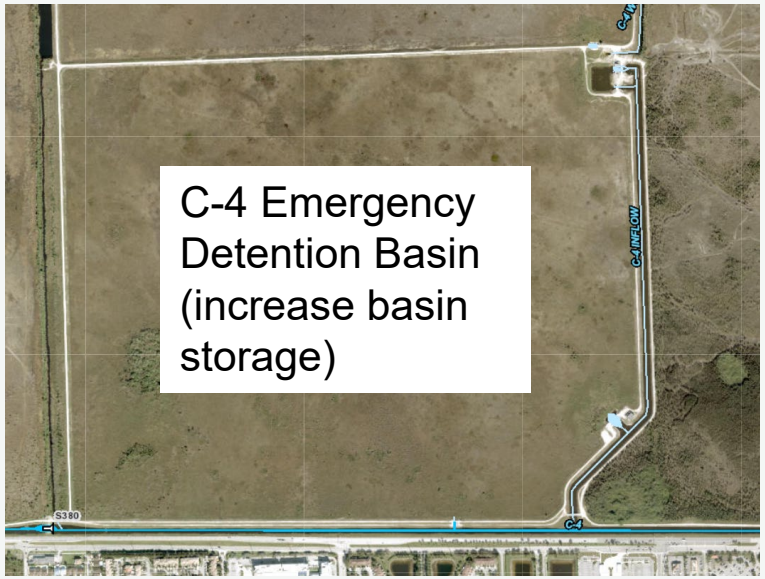
Robert Caraccio
Project Manager, SFWMD
Nicolle Masters
External Affairs Specialist, SFWMD


LOCAL
STATE/ REGIONAL
FEDERAL
STUDIES/ ASSESSMENTS
PLANNING
FUNDING
IMPLEMENTATION
Other Local Flood Mitigation/ Adaptation Project Recommendations
Flood Mitigation and Adaptation Planning (FPLOS Phase II)
Flood Vulnerability Assessments (FPLOS Phase I) No Regret Strategies
SFWMD/USACE Section 203/216 C&SF Flood Resiliency Studies (and future C&SF comprehensive study)
Sea Level Rise and Flood Resiliency Plan Priority Project Recommendations and Basis of Design Development
Section 203/216 Studies Tentative Selected Plan Project Recommendations
Funding Alternatives (Grant Applications)
Capital Improvement Projects or Dedicated Funds (State Appropriations)
Dedicated Funds (Federal Appropriations)
Implementation – Projects Construction

Examples of Flood Mitigation Solutions

Seawall (protect against surge)

S-26 Forward pump (maintain basin discharge)

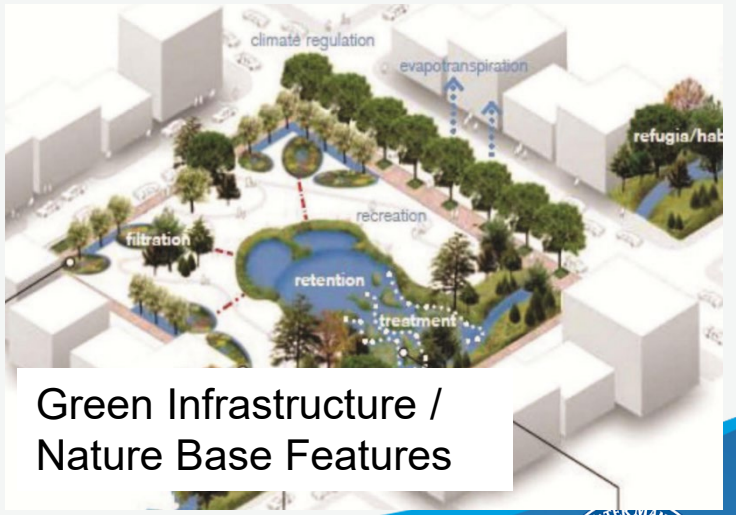


C-4 Emergency Detention Basin (increase basin storage)

Raised Canal Banks C-4 Floodwall (conveyance)

Convertible Flood Barrier (harden infrastructure)

Flap Gate (enhance basin connectivity & backflow prevention)



Green Infrastructure / Nature Base Features

Implementation Grants At a Glance

FDEP Resilient Florida Grant	FEMA/FDEM BRIC Grant	FEMA/FDEM HMGP Grant	FDEP Innov. Tech. Grant	Additional Projects
7 Awarded Projects • $71.6M Grant • $59.9M Match **5 Projects Recommended for Award** • $135.4M Grant • $135.4M Match	**3 Awarded Projects** • $150M Grant • $62.4M Required Match	(Hurricane Ian Post Disaster Funds) **1 Project Award** Recommendation • $5.55M Grant • $1.85M Match **5 Projects Waiting on Tier 2** Allocation • $102M Grant • $34M Match	**1 Awarded Project** • $3M Grant	**Broward County Sec. 203 Eng. Study** (Class III Design) **Additional Basis of Design** Development including Milton Post Disaster Funds

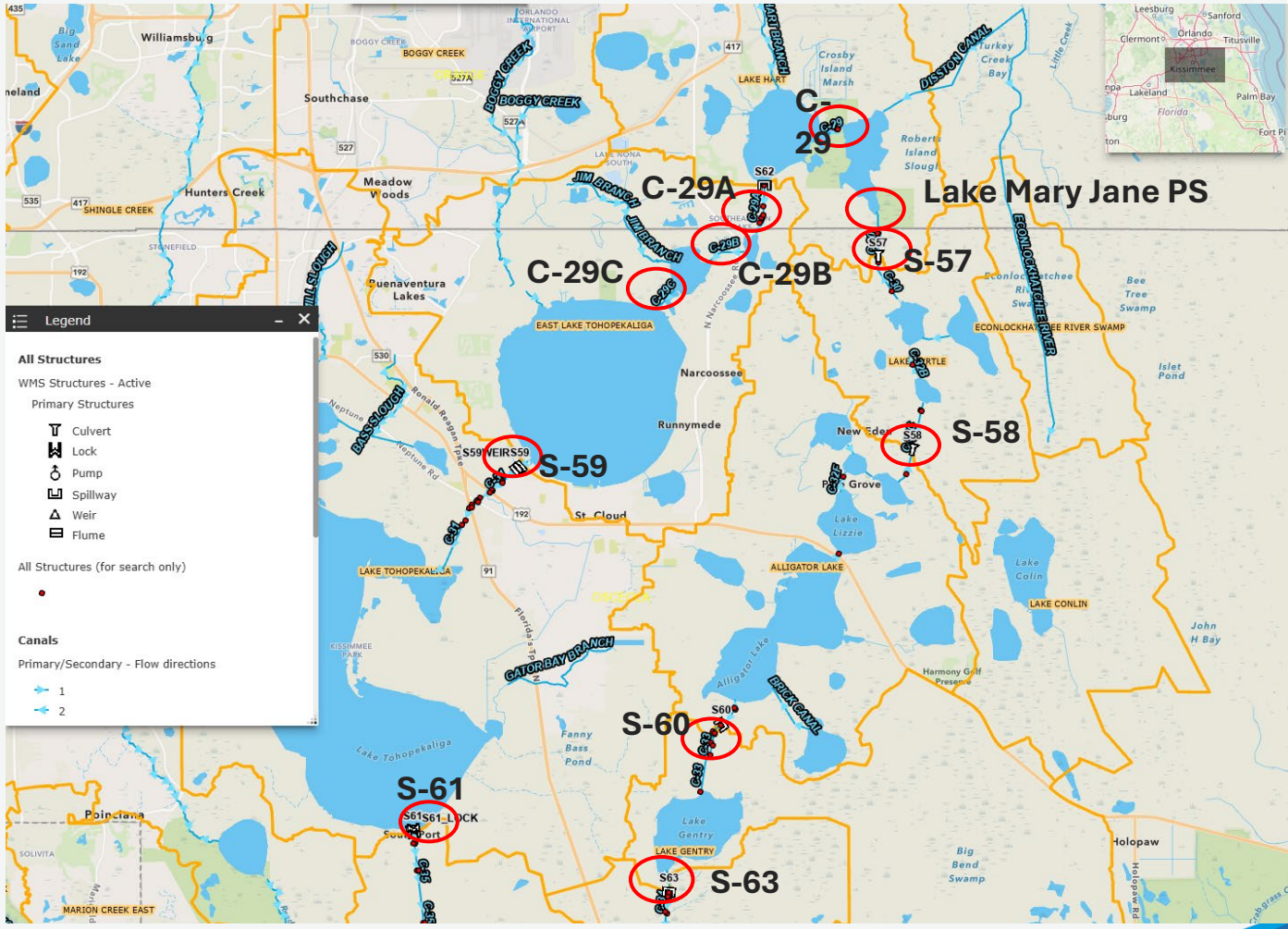
- 11 Design/Construction Projects
- Total Awarded: $358M (including match)
- Total Recommended for Award: $408M

- 22 Agreements with Funding Agencies & Local Partners
- 28 Executed Vendor Contracts
- 5 Additional Agreements in preparation

Presenter:

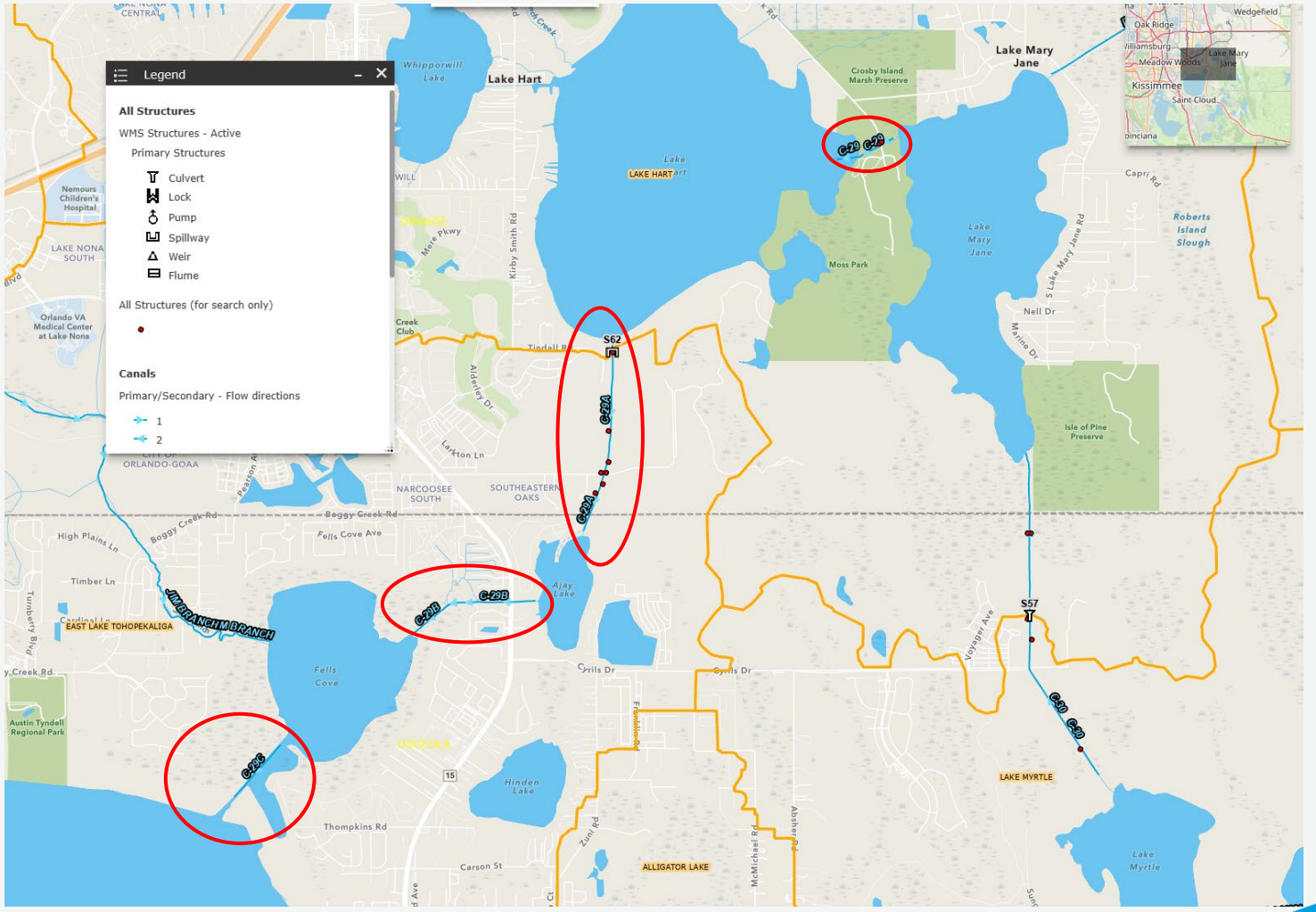
Resiliency Projects Coordination – Kissimmee River Basin

- Post Disaster Hurricane Ian FDEM HMGP LMS
  - S-58 Structure Enhancement & Temp Pump (Hurricane Ian)
  - S-59 Structure Enhancement & C-31 Canal
  - S-61 Spillway Enhancement & Erosion Control
  - C-29, C-29A, C-29B, and C-29C Canal Conveyance Improvements
- Post Disaster Hurricane Milton FDEM HMGP– ongoing coordination with LMS Working Groups
  - Resubmit: C-29, C-29A, C-29B, & C-29C Canal Conveyance Improvements
  - Lake Mary Jane Pump Station Installation on C-30 Canal
  - S-63 Conveyance Enhancement on C-34 Canal
  - S-57 Conveyance Enhancement on C-30 Canal
  - S-60 Conveyance Enhancement on C-33 Canal



Project Overview: C-29, C-29A, C-29B, C-29C Canal Conveyance Improvements

- Project Overview
  - Improve canal conveyance along the series of canals C-29, C-29A, C-29B, C-29C by:
    - widening,
    - deepening,
    - dredging,
    - and/or elevating the canal banks
- Current Status:
  - Feasibility Review,
  - Moving into BODR next



Stakeholder Coordination

- Presented to Orange County Local Mitigation Strategy Working Group twice (Ian and Milton)
  - Ranked #11 on their project list
- Submitted to FDEM for review for HMGP funds for Hurricane Ian
  - Listed for Tier Two funding but not yet awarded; planning to resubmit for Hurricane Milton Post Disaster Funds
- Also, coordination with Osceola LMS for the additional projects

04 Q&A

05

Orlo Vista Stormwater Improvements Update

Daniel Negron, M.Eng., P.E., CFM
Chief Engineer, Stormwater Management Division,
Orange County Public Works Department

Stormwater Management Division

Project Updates
SFWMD – Resiliency Coordination Forum Series

March 7, 2025

Stormwater Management Div. Project Updates

- **Project Updates**
  - Orlo Vista Improvements
  - Daetwyler Control Structure
  - O.C. Rainfall Study

Project Update: Orlo Vista Flood Mitigation

- **Flood Mitigation Project**
  - Scope: Excavation & slope armoring of existing stormwater ponds, installation of new pump station with force main to Shingle Creek, lowering/installation of piped pond connections to help convey water to the new pump station, and decommission existing pump station
  - Construction Cost: **$23.2 Million**
  - Funding sources: Hazard Mitigation Grant Program ($17.4 Million), Community Development Block Grant ($2.5 Million), Orange County ($3.3 Million)

Project Update: Orlo Vista Flood Mitigation

Project Update: Orlo Vista Flood Mitigation

- Excavation: 525,978 CY
- Geoweb: 785,999 SF
- 48” RCP: 713 ft
- 48” HDPE: 120 ft
- 48” Steel : 35 ft

Project Update: Orlo Vista Flood Mitigation

Project Update: Orlo Vista Flood Mitigation

12” Mobile Pumps

Manifold for 12” Mobile Pumps

Project Update: Orlo Vista Flood Mitigation

- **Hurricane Milton**
  - 9.3 in/24 hours
  - Comparable to Hurricane Irma
  - No homes flooded

Project Update: Daetwyler Control Structure

- **Daetwyler Control Structure**
  - CDM Smith/Pegasus Engineering
  - Develop Rating Curve (based on updated Boggy Creek ICPR Model)
  - Evaluate security of control structure and weir boards (e.g. additional fence, camera)
  - Held initial meetings with SJRWMD, SFWMD, GOAA, and Osceola County
  - Proposed Operating Schedule – underway

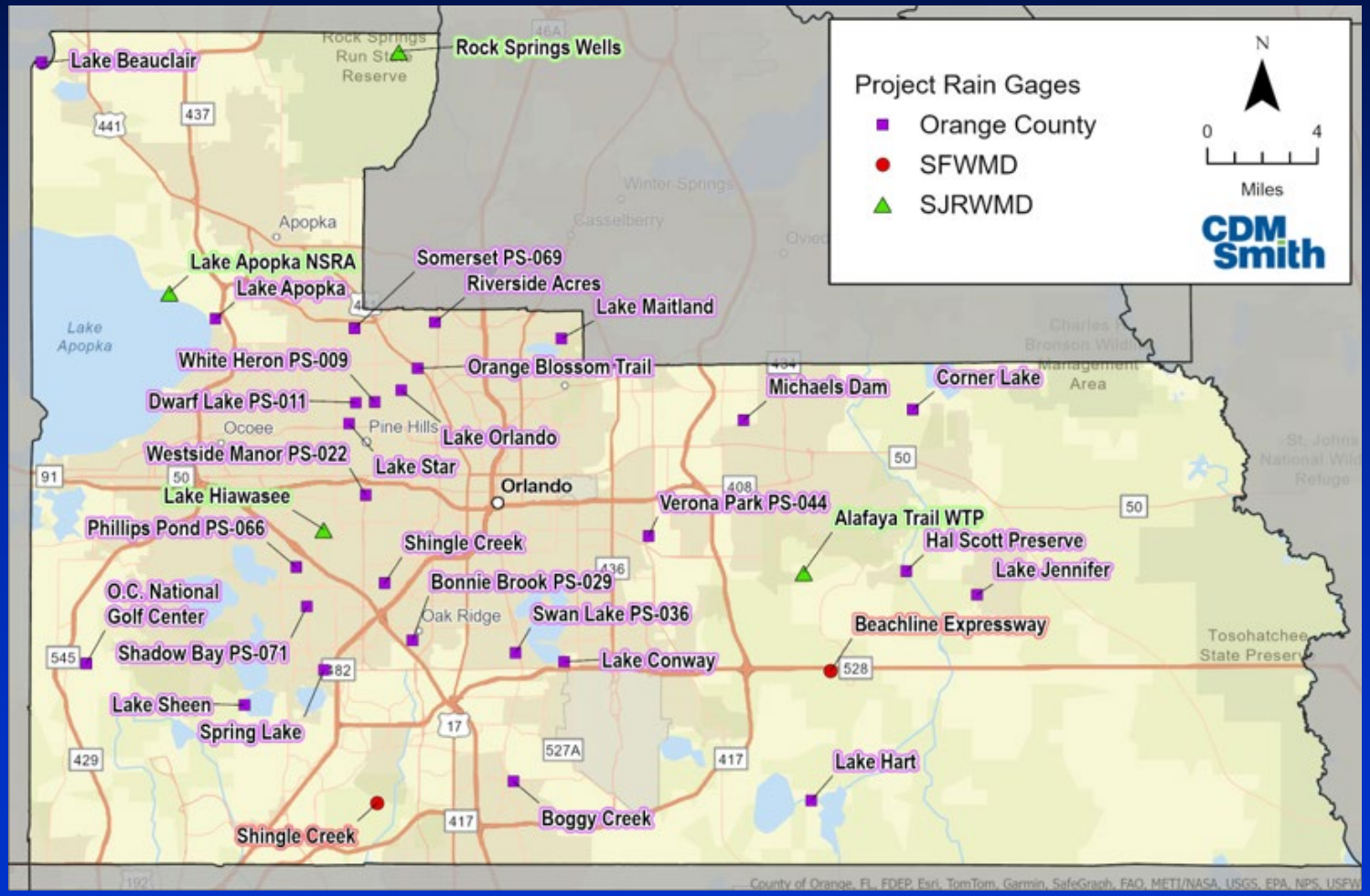
Project Update: Daetwyler Control Structure

Daetwyler Control Structure

Lake Mare Prairie Control Structure

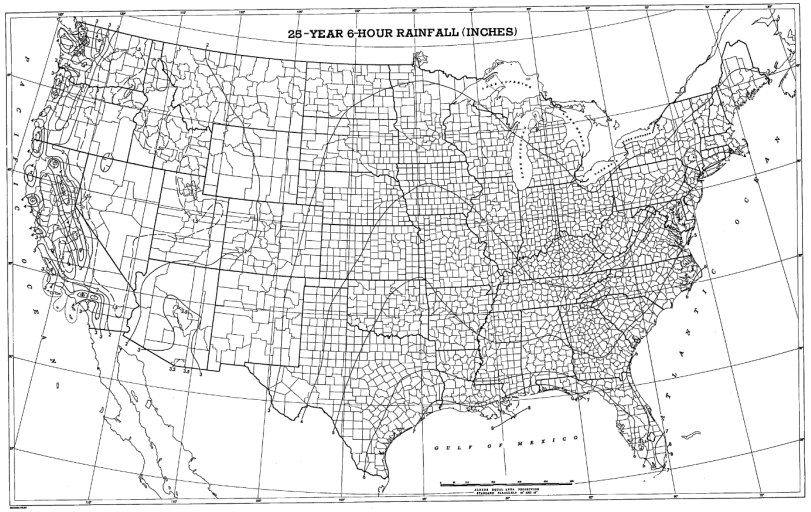
Project Update: O.C. Rainfall Study

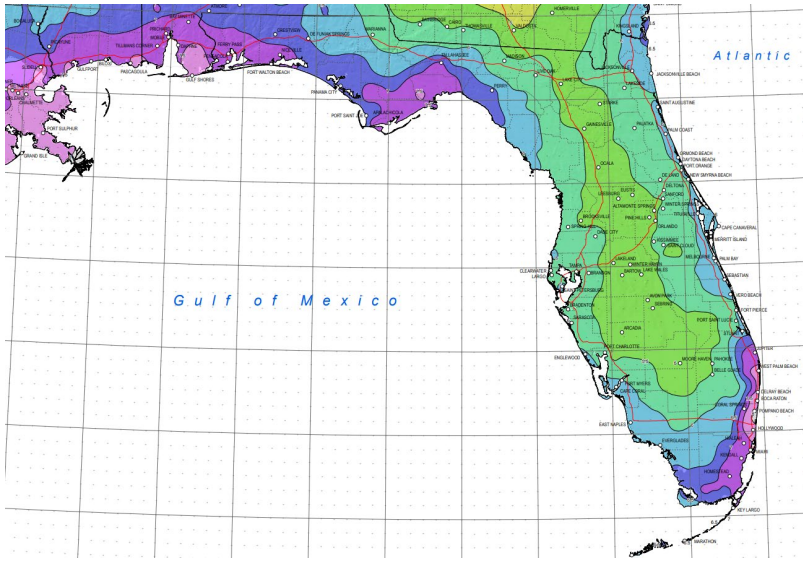
- **O.C. Rainfall Study**
  - CDM Smith
  - Evaluate rainfall records to determine spatial variability in both depth and frequency and compare to the County's current design criteria
  - Reviewed available County rainfall data
    - Orange County – 27
    - NOAA – 12
    - St. Johns River Water Management District's (SJRWMD) – 4
    - SFWMD – 2



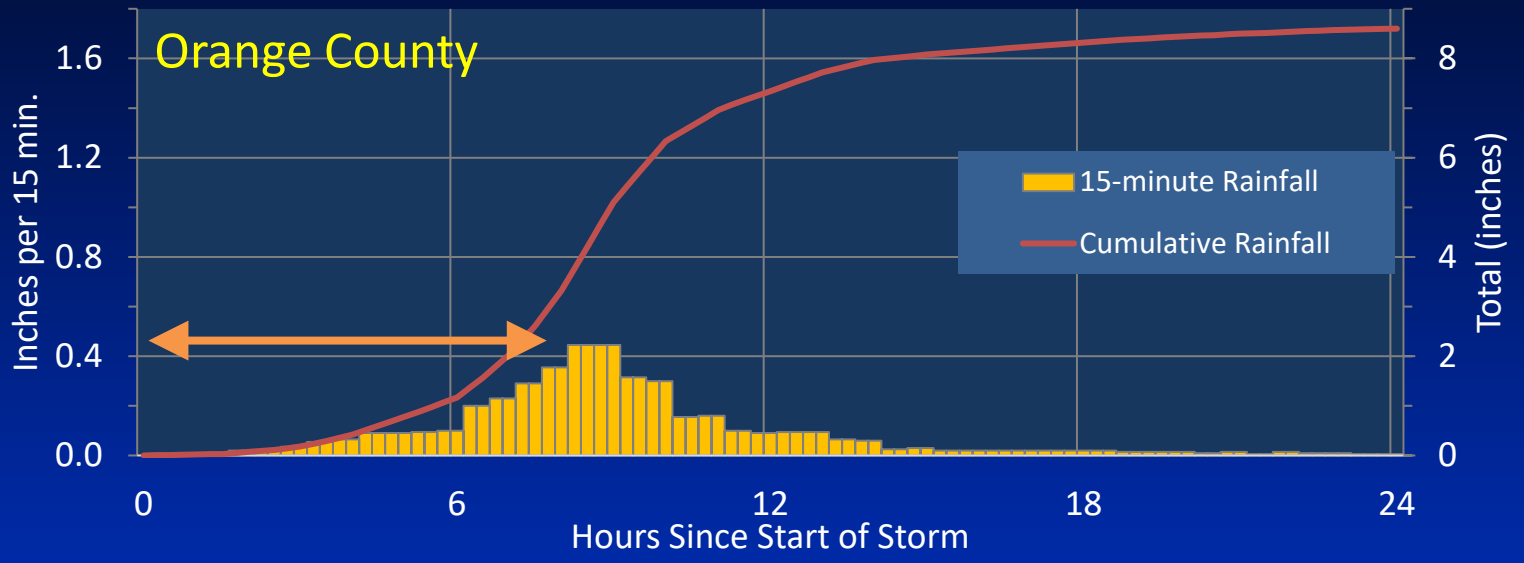
Project Update: Orlo Vista Flood Mitigation

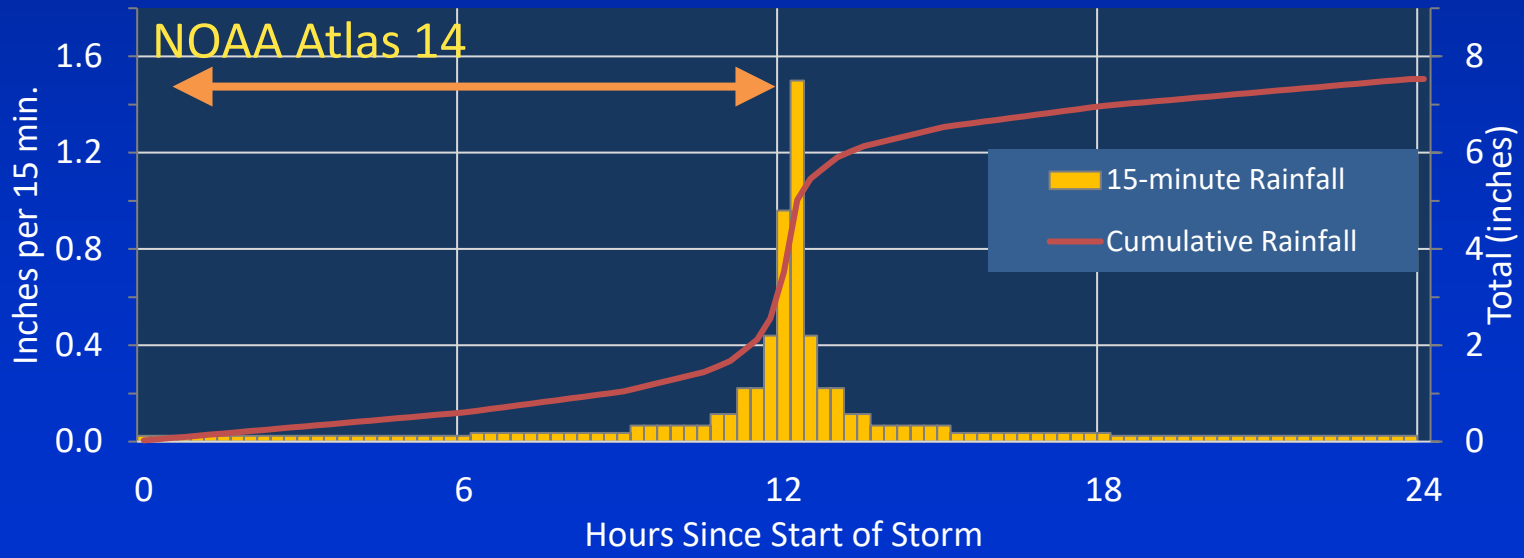
- 1961 National Weather Bureau TP-40
  - 1-year through 100-year, 30-minute through 24-hour *average* rainfall depths
  - Widely used until 1990s
- 1994 Orange County Ordinance 94-4
  - 10-year, 25-year, and 100-year 24-hour design storm event requirements
- 2013 NOAA Atlas 14 Volume 9 for Southeast
  - 1-year through 1,000-year, 5-minute through 60-day rainfall depths
  - Currently followed by both the SJRWMD and the SFWMD
- 2026 NOAA Atlas 15 for contiguous US
  - Draft 3rd quarter 2025
  - *NOAA will provide future design storm selection guidance*





Project Update: Orlo Vista Flood Mitigation





25-Year/24-Hour Event

Duration	Rainfall maxima (inches)	
	Orange County 94-4	Atlas 14
15 minutes	0.45	1.50
30 minutes	0.89	2.46
1 hour	1.78	3.34
2 hours	3.12	4.23
3 hours	4.30	4.69
6 hours	6.19	5.49
12 hours	7.01	6.37
24 hours	8.60	7.53

Stormwater Management Division

Thank You!

06

Polk County Regional Water Infrastructure Projects in the Kissimmee Watershed

Tabitha Biehl
Land & Water Natural Areas Manager, Polk County Parks & Natural Resources Division

POLK COUNTY REGIONAL SURFACE WATER INFRASTRUCTURE PROJECTS IN THE KISSIMMEE WATERSHED

POLK
COUNTY

SURFACE WATER OVERVIEW

- Stormwater Technical Advisory Committee (STAC)
- NPDES / MS4 Permits
- Over 550 lakes
- Green Swamp, Peace River Watershed, Alafia River, Tampa Bay River, Withlacoochee, Ocklawaha Watershed and Kissimmee River
- Surface water supports economy, fishing, housing, recreation, agriculture and tourism
- Water management for resiliency, supply and the environment

MANAGING SURFACE WATER

- STAC established and appointed by Polk County BoCC in 2013 to provide guidance and assistance to the BoCC in matters dealing with the National Pollutant Discharge Elimination System (NPDES) stormwater permit requirements and oversight for implementation of the Stormwater Municipal Service Taxing Unit (MSTU)
- 2022 Referendum for Acquisition of Lands for Water, Wildlife, Wilderness and Working landscapes
- FWC aquatic weed program cooperator program. Conducting vegetation management on over 100 publicly accessible lakes
- Certified surface water quality lab, conducts ambient water quality sampling of over 100 lakes and several streams.
- Management team that manages the water and natural resources for the health of the system and when appropriate provides recreation.

Water Quality Timeline: satisfy FDEP/NPDES permit requirements.

2013

Outfall Inventory, Education, TMDL prioritization, Water Atlas, 40 Unfunded CIP Projects

2015 Start of MSTU Funded CIP

Continue Outfall Inventory, Education, TMDL prioritization, Water Atlas, and start Water Quality Management Plans

2016

2019

Design and Construct Lake Gwyn, Saddle Creek Study, Crystal Lake, Continue NPDES requirements

Continue NPDES requirements, Conduct Feasibility Studies and to seek funding for Design and Construction

2021

2022

Voters Pass Referendum to fund land acquisition of water and natural resource protection

Successfully meet all NPDES requirements, Complete Design and Permitting and move projects to construction. Address new FL Statues for Septic and BMAP, Build Resiliency and Complete Vulnerability Assessment

2024

How are We Doing?

There are more lakes in Polk County Improving then there are declining.

Approximately 100 lakes with 10-year historical data.

Parameters Summary

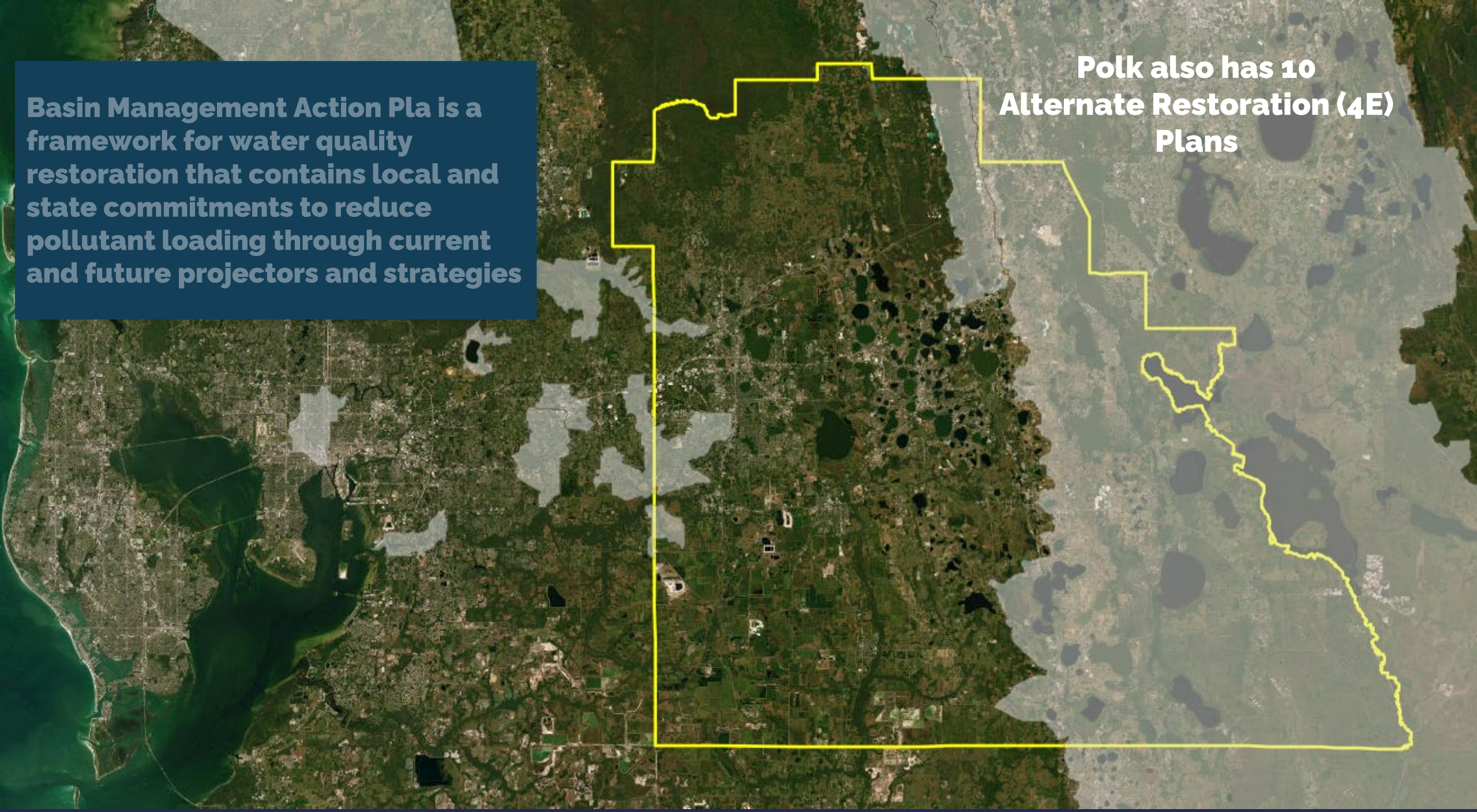
- **159 Improving**
- **300 No significant trend**
- **79 Declining**

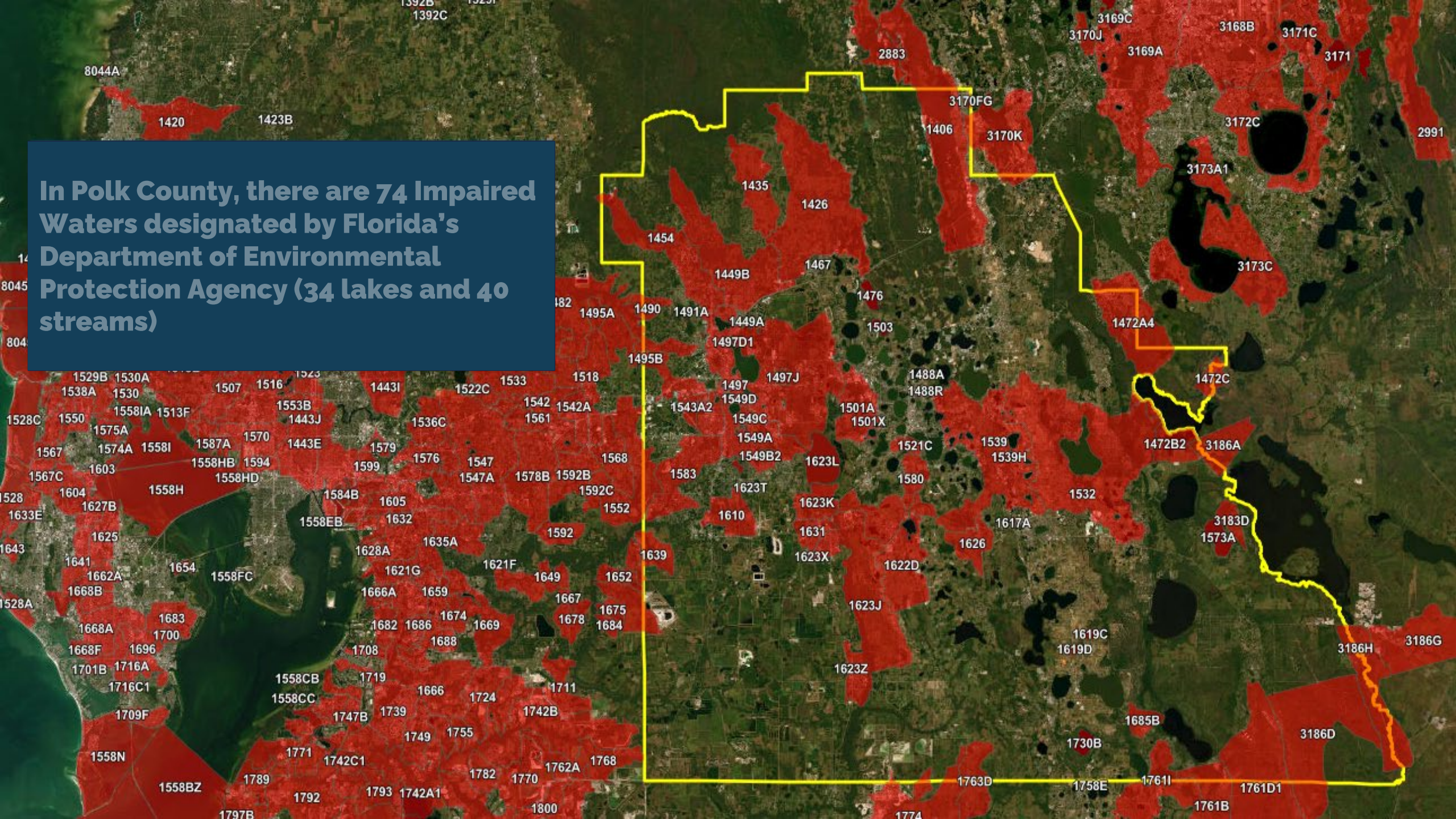
BUT.....

Polk Impairments

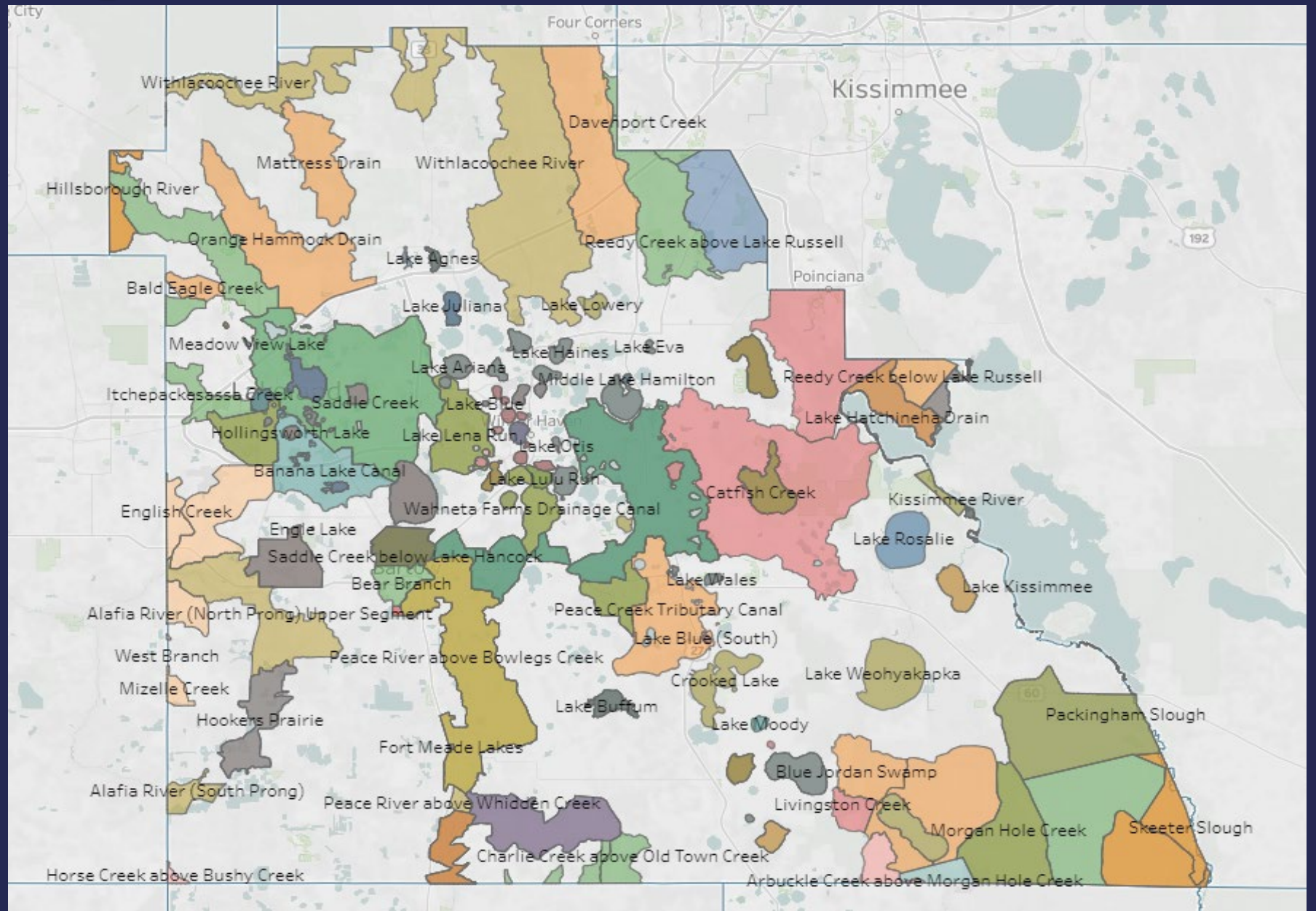
Table: Total Impairments and TMDL Documents for Watersheds in Polk County.

	DEP Impaired Waterbodies	EPA Impaired Waterbodies	Total Impaired Waterbodies	TMDL Documents
Alafia River	9	-	9	3
Hillsborough River	15	5	17	5
Kissimmee River	21	5	24	11
Palatlakaha River	2	1	3	-
Peace River	38	19	47	27
Withlacoochee River	8	2	9	2
Total	74	26	87	46


Basin Management Action Pla is a framework for water quality restoration that contains local and state commitments to reduce pollutant loading through current and future projectors and strategies
Polk also has 10 Alternate Restoration (4E) Plans

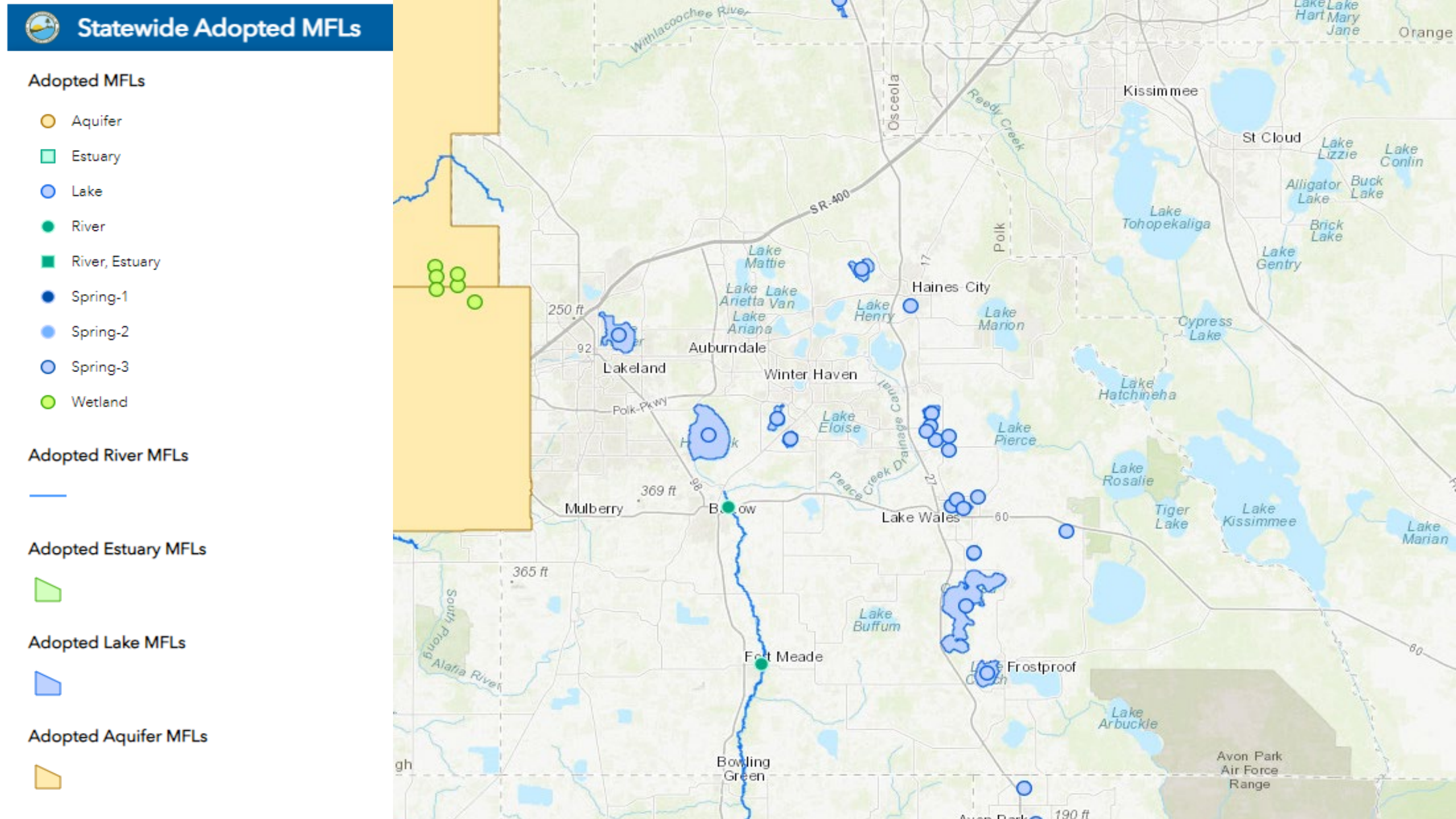

In Polk County, there are 74 Impaired Waters designated by Florida's Department of Environmental Protection Agency (34 lakes and 40 streams)

Impaired Waters (IWR-Run 60)



Parameter

- Biology
- Dissolved Oxygen
- Dissolved Oxygen (Percent Saturation)
- Escherichia coli
- Fecal Coliform
- Lead
- Mercury (in fish tissue)
- Nutrients (Algal Mats)
- Nutrients (Chlorophyll-a)
- Nutrients (Macrophytes)
- Nutrients (Total Nitrogen)
- Nutrients (Total Phosphorus)
- Un-ionized Ammonia


Statewide Adopted MFLs
Adopted MFLs
Aquifer
Estuary
Lake
River
River, Estuary
Spring-1
Spring-2
Spring-3
Wetland
Adopted River MFLs
Adopted Estuary MFLs
Adopted Lake MFLs
Adopted Aquifer MFLs
Withlacoochee River
Osceola
Reedy Creek
Kissimmee
St Cloud
Lake Lizzie
Lake Conlin
Alligator Lake
Buck Lake
Brick Lake
Lake Tohopekaliga
Lake Gentry
SR-400
Polk
Lake Mattie
Lake Arietta
Lake Van
Lake Ariana
Lake Henry
Haines City
Lake Marion
Cypress Lake
250 ft
92
Lakeland
Auburndale
Winter Haven
Lake Hatchineha
Polk Pkwy
Lake Eloise
Lake Pierce
Peace Creek Drainage Canal
369 ft
98
Mulberry
Lake Wales
60
Lake Rosalie
Tiger Lake
Lake Kissimmee
Lake Marian
365 ft
South Prong Alafia River
Lake Buffum
Fort Meade
Frostproof
Lake Arbuckle
Bowling Green
Avon Park Air Force Range
190 ft

AND.....

VEGETATION MANAGEMENT OF OUR LAKES

FLOODING

STORMWATER DRAINS AND OUTFALLS

SEPTIC TANKS

What's Happening on my Lake

Aquatic Plants

Filter Options

Workplan

Filter Waterbodies Reset Map

Waterbody

Aquatic Plant Survey

Historical Treatment

Plant Control Trends

Long Term Monitoring

FWC APM Permits

App Status
- Expired
- Pending
- Permit Issued

Four Corners
Kissimmee
Lakeland
Bartow

Biological Controls:

Grass Carp & Alligator Weed Flea Beetle

Existing and USF Outfalls

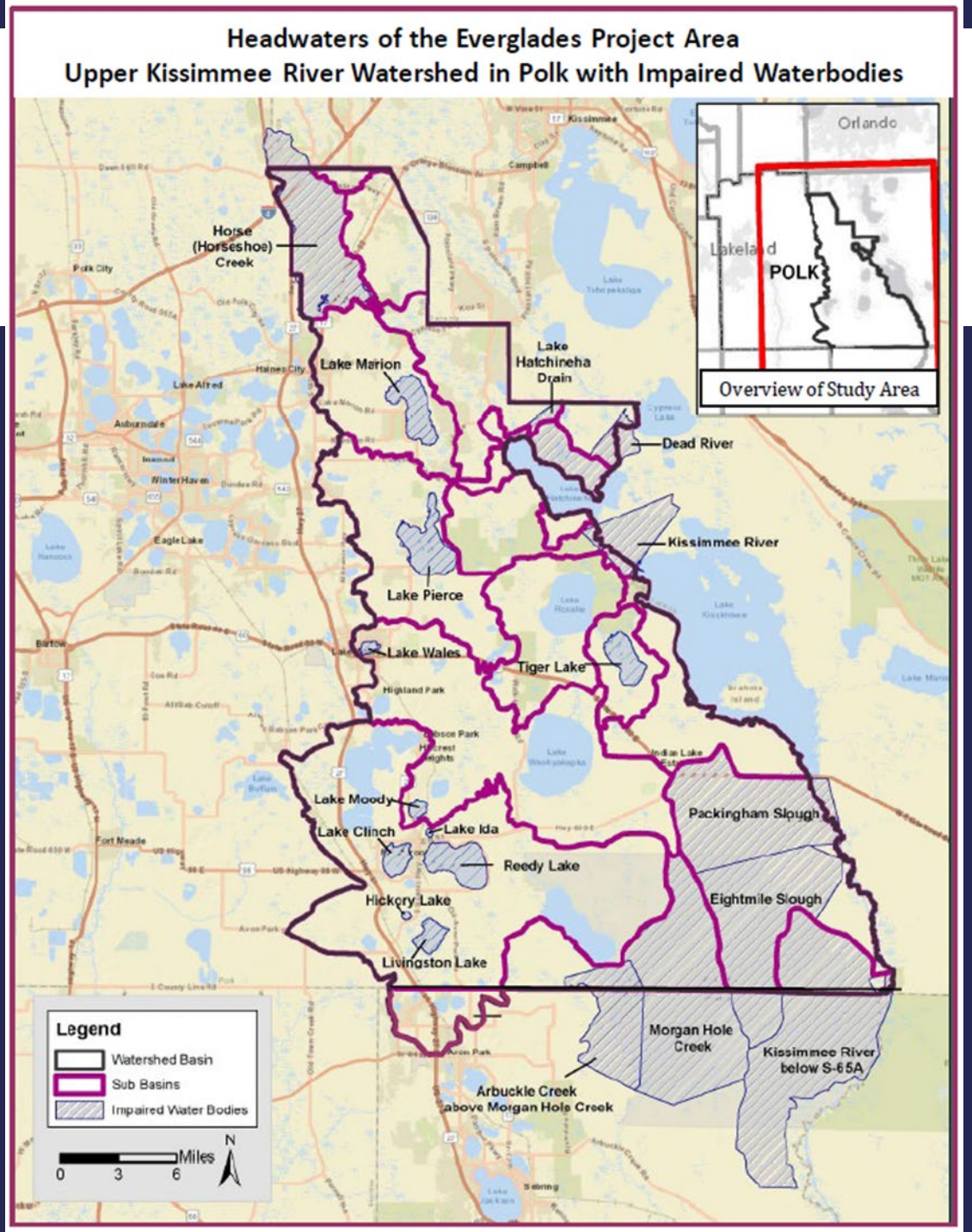
Locationty
- Major
- Minor
- USF

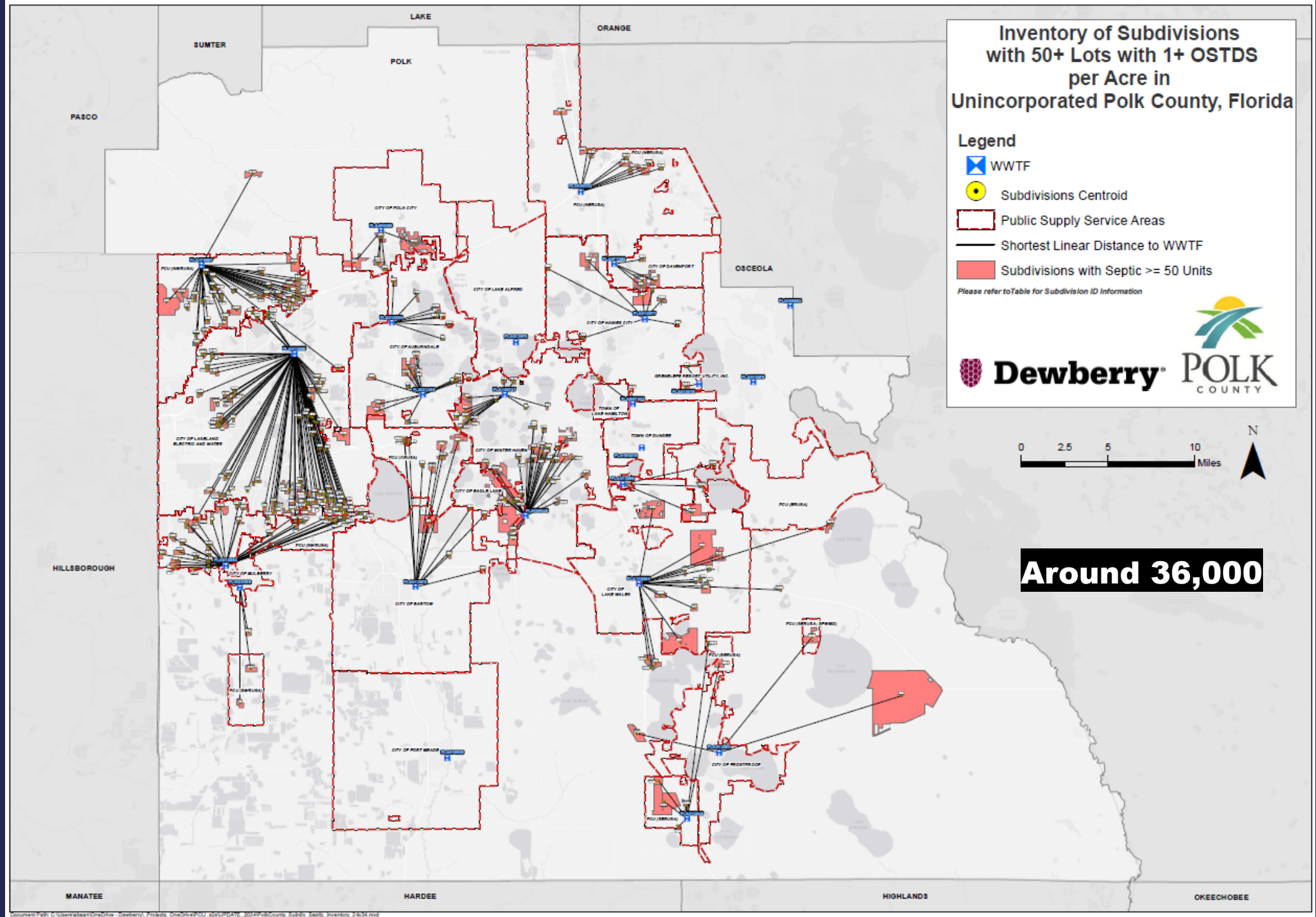
DUMP NO WASTE
DRAINS TO LAKE

FY24/25 PROJECTS

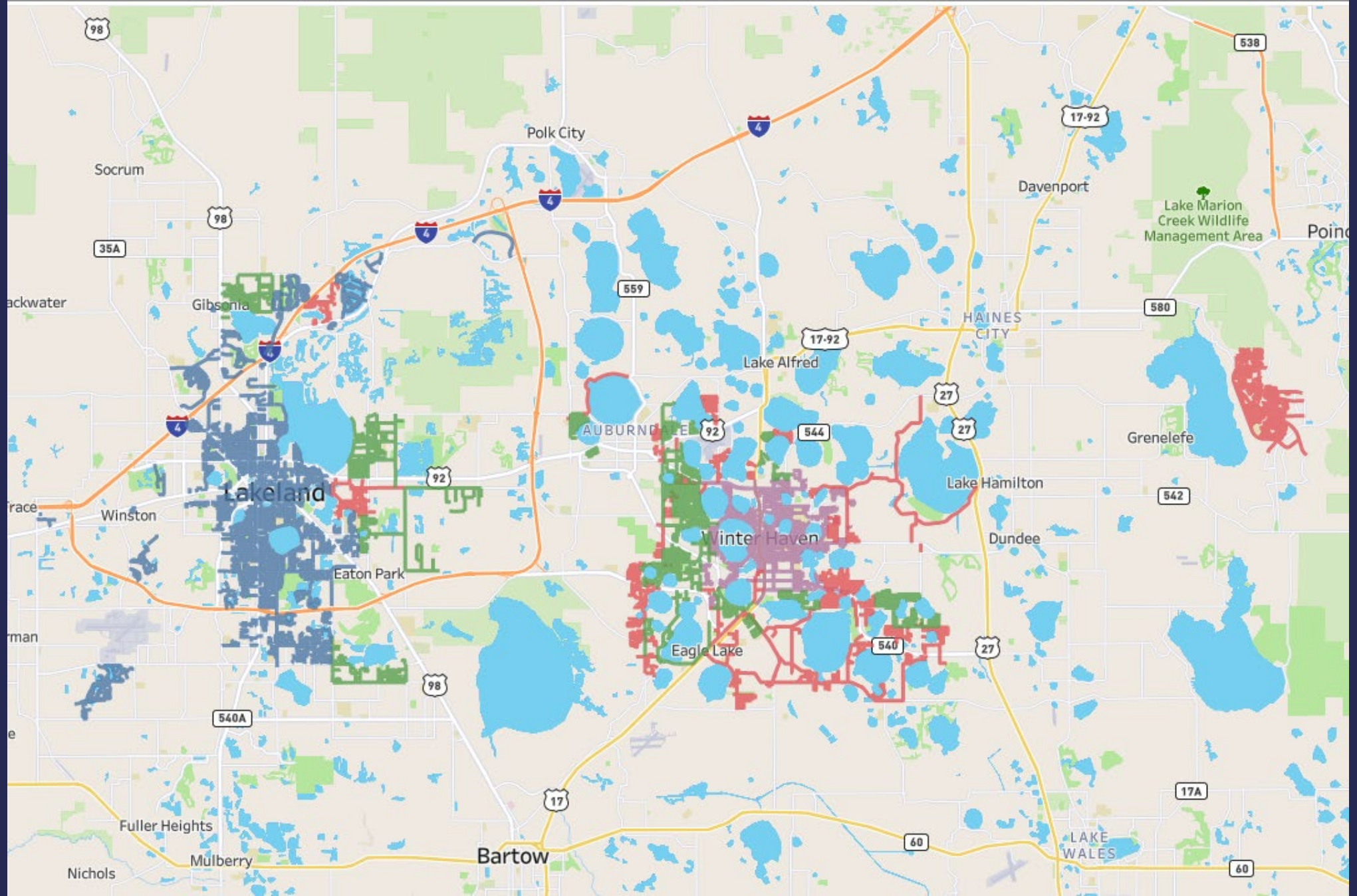
Kissimmee Watershed Project

- Falls within the Lake Okeechobee Basin Management Action Plan (BMAP)
- Septic to Sewer Conversions and Management to Reduce Nutrient Load into Kissimmee River and Ridge Lakes
- Prevention of Septic tank installation, on entitled parcels, purchased for conservation
- Protection of Living Shorelines to build Resiliency with increase in extreme weather events.




Inventory of Subdivisions
with 50+ Lots with 1+ OSTDS
per Acre in
Unincorporated Polk County, Florida
Legend
WWTF
Subdivisions Centroid
Public Supply Service Areas
Shortest Linear Distance to WWTF
Subdivisions with Septic >= 50 Units
Please refer toTable for Subdivision ID Information
Dewberry
POLK COUNTY
0 2.5 5 10
Miles
N
Around 36,000
LAKE
ORANGE
SUMTER
POLK
PASCO
OSCEOLA
HILLSBOROUGH
MANATEE
HARDEE
HIGHLANDS
OKEECHOBEE

Street Sweeping Programs



Category

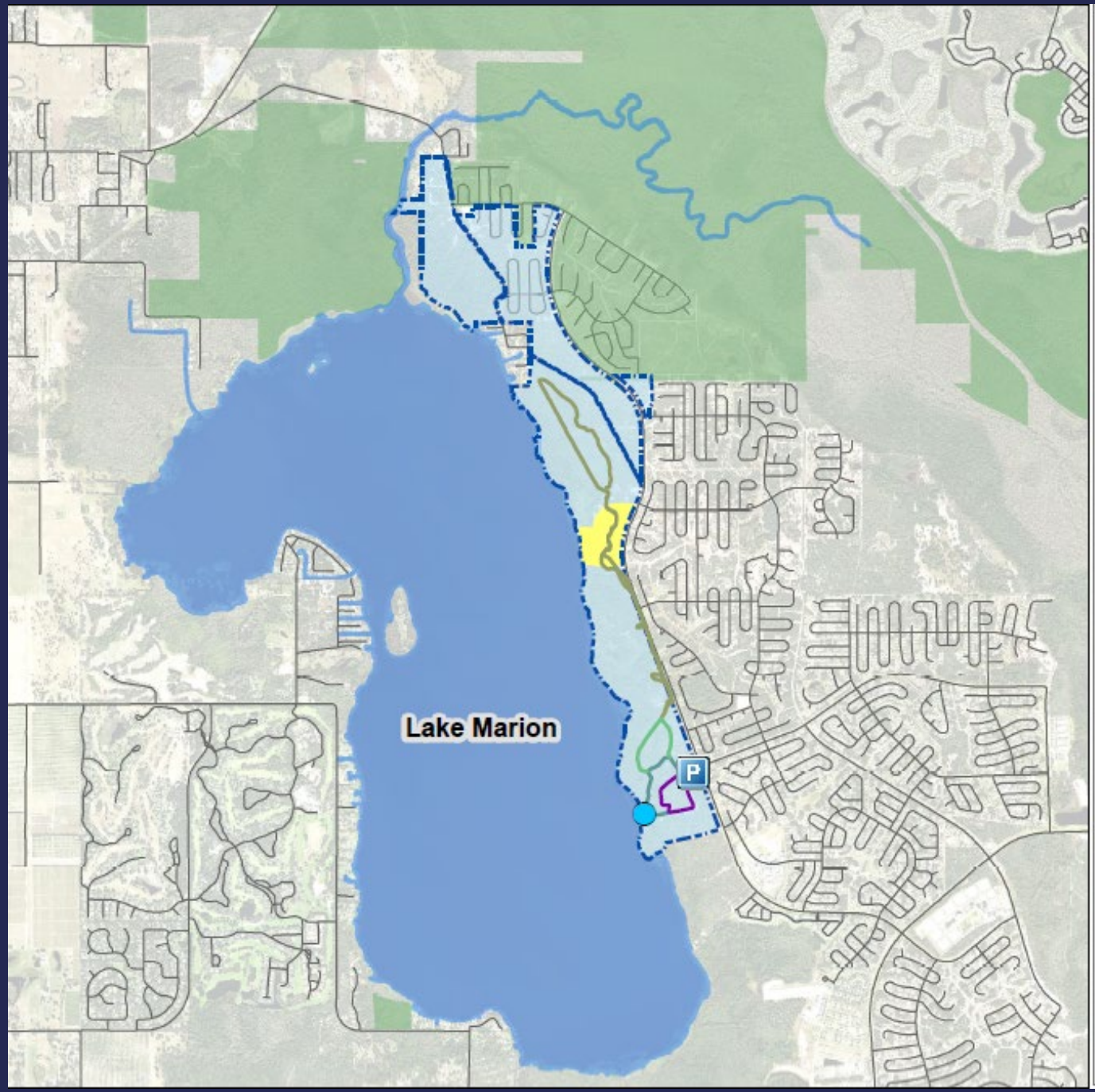
- Lakeland
- Polk Current
- Polk Expansion
- Winter Haven

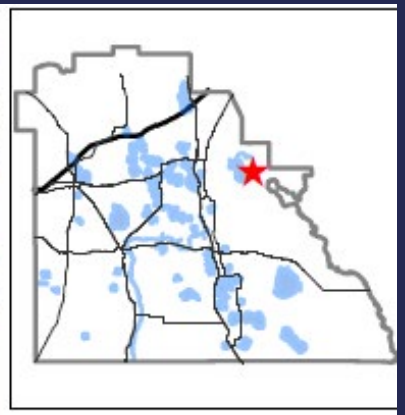
County-Wide Vulnerability Assessment Map and Watershed Management Plans

TIGER LAKE – PLANTING PROJECT

- Water quality is trending negatively over the past several years
- Vegetation and Water Level changes are the two main differences
- County working with partners to plant eelgrass to bring back submerged aquatic vegetation to improve water quality

Bellini Preserve





Legend

- Lake View Bench Area
- Prickly Pear Loop (1 Mile)
- Lake View Loop (1 Mile)
- Hidden Eagle Loop (1 Mile)
- Buck Rub Run (4 Miles)
- Bellini Preserve
- Conservation Lands
- Roads
- Possible Future Nature Center and Additional Trailhead Parking (Details to be developed in Master Plan)
- Parking & Trailhead (located at intersection of Pine Street and Lake Marion Creek Dr)

Miles
0 0.3 0.6 1.2

Map Created 05/07/2024
Aerial 2020

- Over 3 miles of Living Shoreline protected
- Protection of over 630 acres
- Opportunity to install stormwater treatment for runoff from Lake Marion Creek Road and Poinciana neighborhood

QUESTIONS

07

Shingle Creek Flood Risk Study Updates

Linette Matheny, P.E.
Executive Director of Environment and Public Lands, Osceola County

Shingle Creek and Kissimmee River Water Resources Development Act

Linette Matheny, P.E. Executive Director
Susan Gosselin, Natural Resources Manager
Environmental and Public Lands

OSCEOLA COUNTY

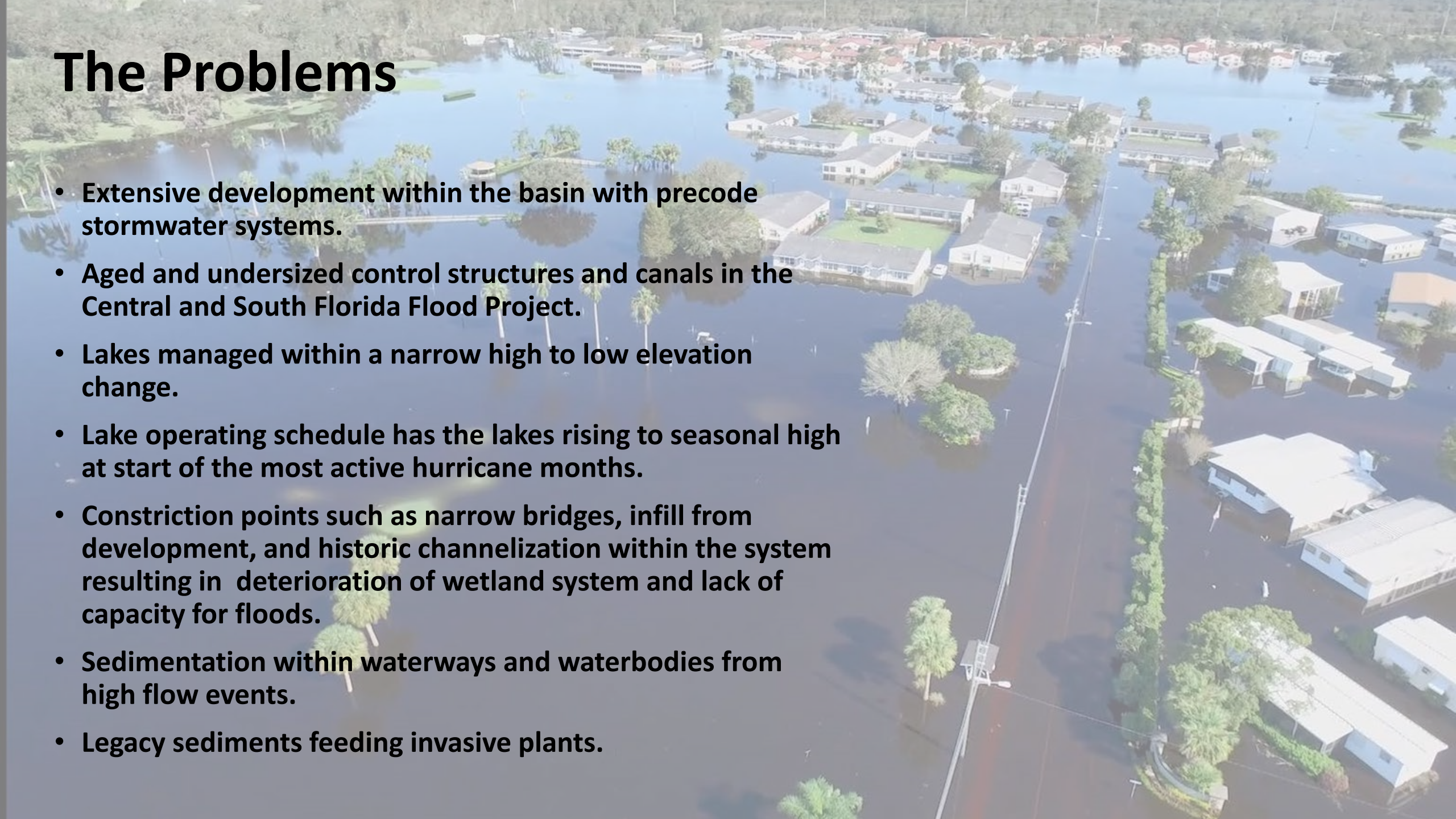
Shingle Creek and Kissimmee River Water Resources Development Act

- In 2016, Osceola County began lobbying for the creation of a Federal Project in response to the lack of projects in the basin under the Comprehensive Everglades Restoration Project (CERP).
- The Shingle Creek and Kissimmee River Feasibility Study was originally authorized in 2020 Water Resources and Development Act as Project for ecosystem restoration and water storage, Shingle Creek and Kissimmee River, Osceola County, Florida.
- The Study was modified in 2022 to include flood risk management.

Shingle Creek and Kissimmee River Water Resources Development Act

- Osceola County agreed to be local sponsor.
- The Shingle Creek and Kissimmee River Feasibility Study will take three years at a cost of $3,000,000.
- Funding is split between Osceola County and USACE.

The Problems



- Extensive development within the basin with precode stormwater systems.
- Aged and undersized control structures and canals in the Central and South Florida Flood Project.
- Lakes managed within a narrow high to low elevation change.
- Lake operating schedule has the lakes rising to seasonal high at start of the most active hurricane months.
- Constriction points such as narrow bridges, infill from development, and historic channelization within the system resulting in deterioration of wetland system and lack of capacity for floods.
- Sedimentation within waterways and waterbodies from high flow events.
- Legacy sediments feeding invasive plants.

Possible Solutions

- Modification of the Operating Schedule to gain capacity in peak hurricane months.
- Creation of a Recovery phase.
- Acquisition of land for storage and wetland restoration.
- Improvement of structures and canals to manage current and future flood events.
- Removal of sediments from the lakes.
- Restoration of historic creek crossings.

08

Stakeholder Input and Breakout Groups

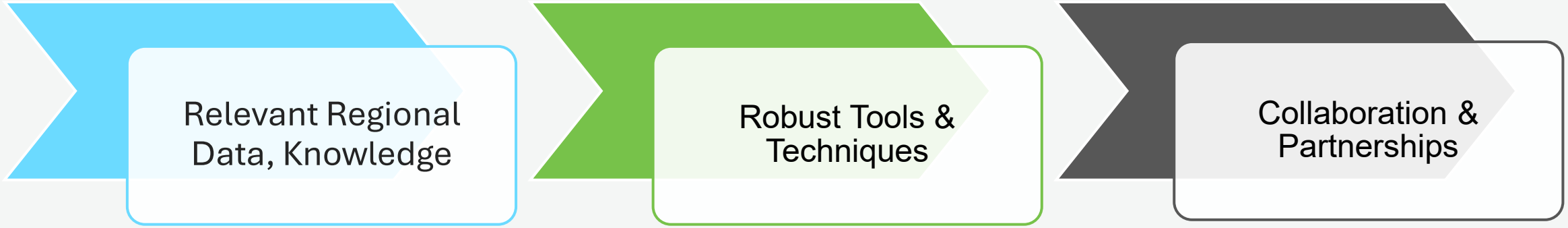
09

Closing Remarks and Call to Action

Carolina Maran, Ph.D., P.E.
Chief of District Resiliency, SFWMD

What We are Bringing to the Table

Flood Resiliency: Flood Risk Management, Flood Vulnerability Assessment, Flood Adaptation Strategies



Facilitate the integration of Resilient Florida Statewide Resources and Federal Resources to prioritize locally relevant and effective structural, non-structural, and nature-based solutions

State Resources

Florida Statewide Office of Resiliency

- FY2024–25 Resilient Recovery Resources For Florida's Local Governments

Resilient Florida Program, Florida Department of Environmental Protection

- 2024 Statewide Vulnerability Assessment (Password: StateVA)
- 2025–2026 Statewide Flooding and Sea Level Rise Resilience Plan
- Statewide Assessment (Sea Level Rise Projections)
- Resilient Florida Grants Dashboard

Florida Flood Hub for Applied Research and Innovation

- Flood Hub One-Pager

Wet & King Tide Season Preparation

Flood Specific Tools & Resources

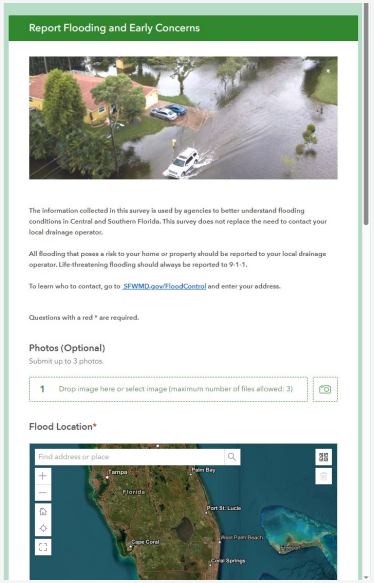
- Access Flood Observations: sfwmd.gov/FloodResources

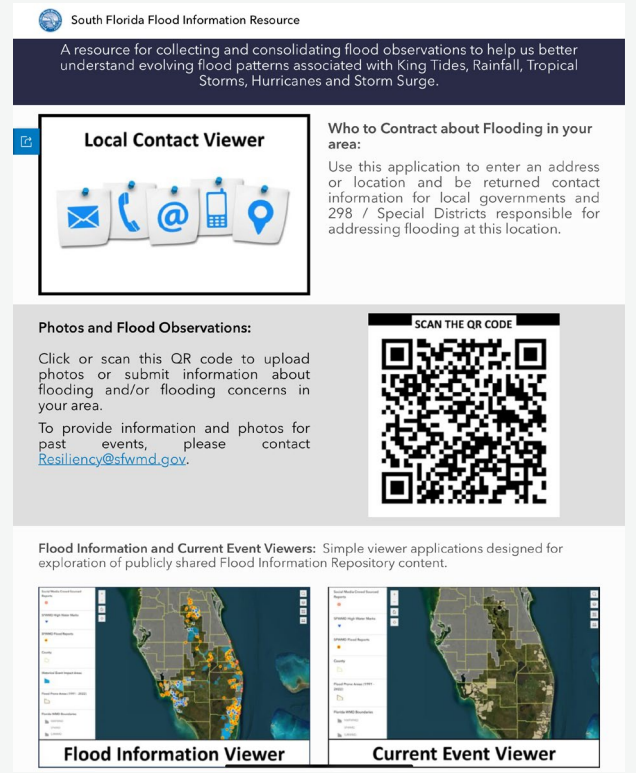
- Submit real-time flood data: sfwmd.gov/FloodingApp

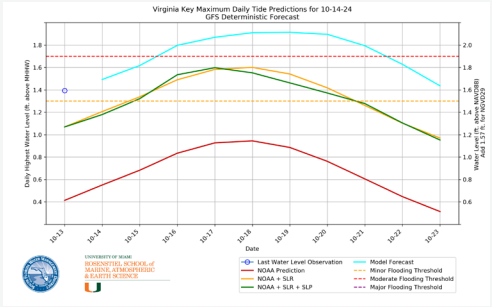
Tidal Predictions

- Stay informed on high tide events: sfwmd.gov/HighTidePredictions

Flood Observations and High-Water Mark Collection Training coming up in April







Important Dates – Submit your Comment

- February/March – Public Workshops & Early Input
  (considering new interval update)
- May 28, 2025 - Draft Plan Presented at Resiliency Forum and Open for Comments
- June 25, 2025 - Public Comment Period Closes
- September 1, 2025 - Final Plan Submission

Adaptation Action Areas
(and other equivalent priority areas)

Dear Resiliency Partners,

Beginning this year, the District's Sea Level Rise and Flood Resiliency Plan has been enhanced to include a supplemental map featuring relevant resiliency projects data. The draft 2024 plan and map are linked below for your reference. **To ensure comprehensive coverage of local adaptation efforts, we kindly request your assistance in providing the GIS layer or shapefile for your County's adaptation action areas. As our primary county resilience contacts, we also seek your help in confirming the availability of this data from your respective municipalities.**

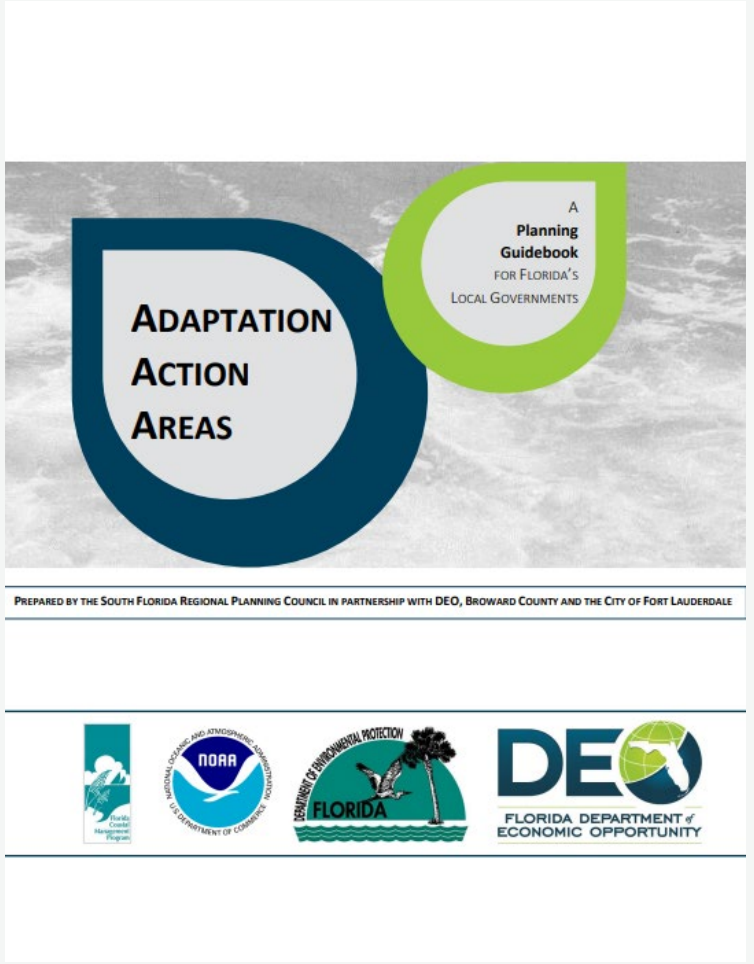
DRAFT 2024 SFWMD Sea Level Rise and Flood Resiliency Plan

DRAFT 2024 SFWMD Sea Level Rise and Flood Resiliency Plan Map (arcgis.com)

Including your data will not only enrich our map but also strengthen collaborative efforts towards enhancing community resilience. We invite you to submit this data along with any comments on the draft plan and/or map during the extended public comment period, which will now run through Friday, June 28. A formal announcement regarding this new deadline will follow shortly. Please submit your comments and the GIS layer or shapefile via email to resiliency@sfmwd.gov at your earliest convenience.

Feel free to reach out if you have any questions or need further clarification.

Thank you for your ongoing partnership in our shared goal of fostering resilience in our region.



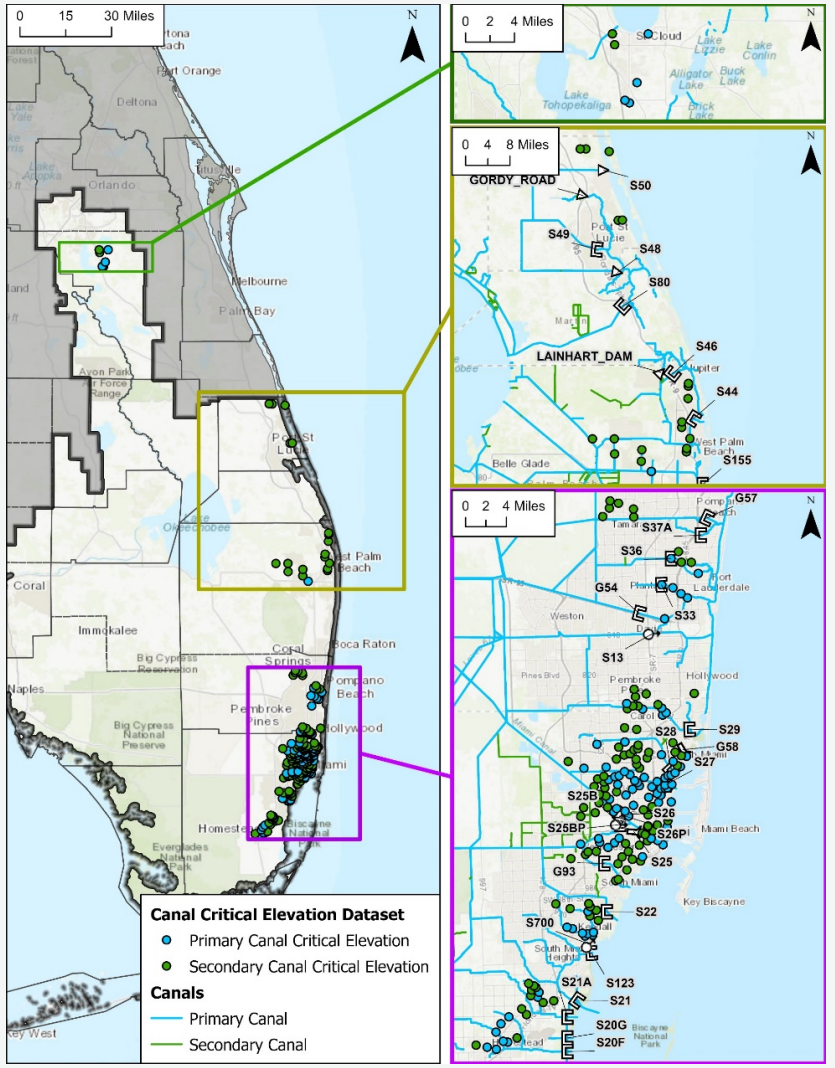
Flood Threshold

- Mapping of critical water levels/elevations: early concerns to inform operations

Table 2. Comparison of Flood Thresholds for High Tides in South Florida.

Results	NOAA NWPC			NOAA NOS			NOAA NOS (Latest Report)			Southeast Florida Regional Climate Compact		
	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Initial	Minor	More significant
Virginia Key	0.40 m (MHHW)	0.52 m (MHHW)	0.76 m (MHHW)	0.53 m (MHHW)	0.82 m (MHHW)	1.20 m (MHHW)	0.52 m (MHHW)	0.81 m (MHHW)	1.19 m (MHHW)	0.73 ft (NAVD88) - 0.22 m (MHHW)	1.02 ft (NAVD88) - 0.27 m (MHHW)	1.79 ft (NAVD88) - 0.48 m (MHHW)
Vaca Key	0.33 m (MHHW)	0.49 m (MHHW)	0.64 m (MHHW)	0.51 m (MHHW)	0.81 m (MHHW)	1.18 m (MHHW)	0.51 m (MHHW)	0.81 m (MHHW)	1.19 m (MHHW)	N/A		
Key West	0.33 m (MHHW)	0.49 m (MHHW)	0.64 m (MHHW)	0.52 m (MHHW)	0.82 m (MHHW)	1.19 m (MHHW)	0.52 m (MHHW)	0.82 m (MHHW)	1.19 m (MHHW)			
South Port Everglades	0.40 m (MHHW)	0.52 m (MHHW)	0.76 m (MHHW)	N/A	N/A	N/A	N/A	N/A	N/A			
Lake Worth	0.40 m (MHHW)	0.52 m (MHHW)	0.76 m (MHHW)	N/A	N/A	N/A	N/A	N/A	N/A			
Naples	0.46 m (MHHW)	0.76 m (MHHW)	1.07 m (MHHW)	0.53 m (MHHW)	0.83 m (MHHW)	1.20 m (MHHW)	0.54 m (MHHW)	0.83 m (MHHW)	1.21 m (MHHW)			
Fort Myers	0.70 m (MHHW)	1.07 m (MHHW)	1.52 m (MHHW)	0.52 m (MHHW)	0.81 m (MHHW)	1.19 m (MHHW)	0.52 m (MHHW)	0.81 m (MHHW)	1.19 m (MHHW)			

N/A: Not Available.



Resiliency Coordination Forum

2025 Sea Level Rise and Flood Resiliency Plan Update Workshops:

- Workshop #1 – Lower East Coast – February 21, 2025
- Workshop #2 – Upper East Coast – February 25, 2025
- Workshop #3 – Southwest Coast – February 27, 2025
- Workshop #4 – Kissimmee River Basin – March 7, 2025

Upcoming Quarterly Meetings:

- Wednesday, May 28, 2025: **Wet Season / Resiliency Plan**
- Wednesday, September 3, 2025
- Wednesday, December 3, 2025

Post-Workshop Survey

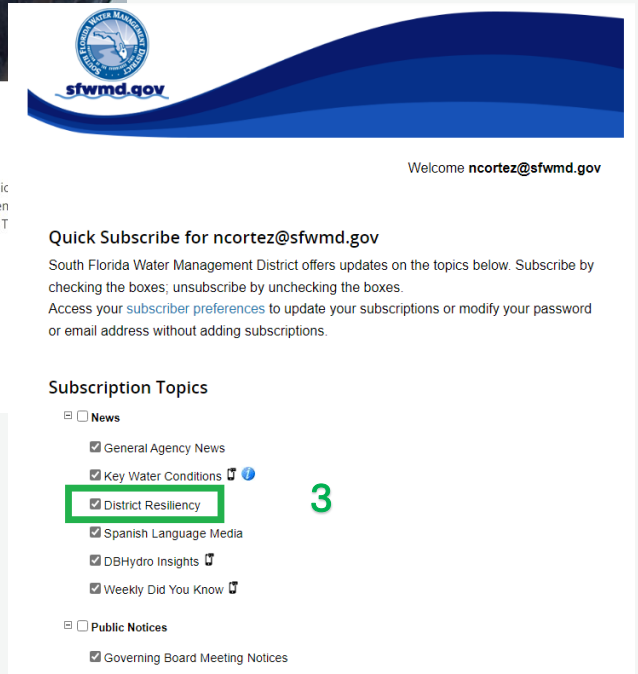
SFWMD 2025 Sea Level Rise and Flood Resiliency Plan Update

Start now

Subscribe for District Resiliency Updates

Sign-up for our updates by visiting https://www.sfwmd.gov/news-events and following these steps:

1. Click on the “Subscribe for Email” icon
2. Enter your email address
3. Select “District Resiliency” under Subscription Topics



Stay Connected: visit our webpage

www.sfwmd.gov/resiliency for updates and resources

10 Adjourn

Thank you for your participation!