



South Florida Water Management District

RESILIENCY COORDINATION FORUM AGENDA

September 4, 2024

9:00 AM

District Headquarters - B-1 Auditorium

3301 Gun Club Road

West Palm Beach, FL 33406

FINAL

1. Opening Remarks - Drew Bartlett, Executive Director, SFWMD
2. Statewide Office of Resilience - Wes Brooks, Ph.D., Chief Resilience Officer, State of Florida
3. District Resiliency Updates - Carolina Maran, Ph.D., P.E., Chief of District Resiliency, SFWMD
4. Hurricane Ian: After Action Summary - Laura Dhuwe, Chief of Mitigation, Florida Division of Emergency Management
5. King Tide and Wet Season Readiness - Todd Kimberlain, Lead Meteorologist, SFWMD; Diana Alvarez, Geographer, SFWMD; Nicole Cortez, Resiliency Coordinator, SFWMD; and Christine Carlson, GIS Architect, SFWMD
6. Break
7. City of Hollywood Stormwater and Coastal Master Plan and its Tie to Flood Vulnerability Assessments and Implementation - Michael F. Schmidt, P.E., Senior Vice President, CDM Smith; Jon Goldman, P.E., Associate, CDM Smith; and Thomas Nye, Ph.D., P.E., Engineer, CDM Smith
8. Central and Southern Florida Flood Resiliency Study Updates - Tim Gysan, P.E., Resilience Senior Project Manager, USACE; Eva Velez, P.E., Chief, Ecosystem Branch, USACE; and Carolina Maran, Ph.D., P.E., Chief of District Resiliency, SFWMD

9. Around the Table Updates from Local, State, and Tribal Partners
10. Public Comment
11. Closing Remarks - Carolina Maran, Ph.D., P.E., Chief of District Resiliency, SFWMD
12. Adjourn

Final Presentation for Agenda Items 3, 4, 5, 7 and 8. (Staff contact, Yvette Bonilla)

Agenda Item Background:

- 03. District Resiliency Updates
- 04. Hurricane Ian FDEM
- 05. King Tide and Wet Season
- 07. City of Hollywood - CDM
- 08. Central & Southern Florida Flood Resiliency Study Updates



District Resiliency Updates

Resiliency Coordination Forum – September 4, 2024

Carolina Maran, Ph.D., P.E.
Chief of District Resiliency
South Florida Water Management District

Office of District Resiliency - Team Updates

We welcomed three new team members since our last Forum meeting in May!

**David Griffin,
Resiliency Project Manager**



**Aaron Duecaster,
Resiliency GIS Specialist**



**Stephanya Salazar,
Resiliency Project Manager**



Office of District Resiliency - Team Updates



District Resiliency
sfwmd.gov/resiliency

Carolina Maran

Chief of District Resiliency

- Lead the SFWMD’s resiliency planning and infrastructure adaptation investments to continue to protect communities from flooding, meet the region's water needs, and advance ecosystem restoration, now and into the future, in collaboration with local, state, and federal agencies. Develop and coordinate the implementation of comprehensive District wide resiliency goals and projects to mitigate and adapt District’s infrastructure and core functions.
- Consistently assess the regional risks and associated impacts of sea level rise, extreme rainfall, changing temperatures, land development and other evolving conditions.
- Advance scientific data and research needs to ensure the District's resilience planning is founded on the best available science and robust technical analyses.

Nicole Cortez

Resiliency Coordinator / Resiliency Planning Projects Supervisor

- Oversee execution of planning projects and provide guidance and support to planning project managers.
- Engage with internal teams and external stakeholders to ensure overall projects coordination and regional consistency (Metrics, FPLOS Phase II, SLR&FRP, C&SF, and others).
- Coordinate with External Affairs and FEMA/LMS teams to incorporate and support ranking of priority projects into LMS Plans (including pre and post disaster).
- Engage with Communications for facilitating public message delivery and ensuring resiliency webpages are up-to-date.

Tarana Solaiman

Principal Project Manager / Resiliency Implementation Projects Supervisor

- Oversee execution of implementation (real estate/design/construction) projects and provide guidance and support to implementation project managers.
- Coordinate with grant funding agencies and respective project managers to ensure compliance with project/grant requirements, objectives, and grant reporting.
- Support overall resiliency projects controls and budget in coordination with the Budget, Finance, Procurement, Construction, Real Estate and Legal teams.
- Complete Strategic Plan / Executive team recurring monitoring and reporting.

Yvette Bonilla

(Office of the Clerk)

Resiliency Coordination Forum Lead

- Schedule and confirm dates for public forums.
- Distribute related notifications and announcements to the public.
- Ensure all relevant calendars reflect accurate meeting dates and details.
- Prepare meeting agendas and scripts.
- Liaise with speakers and presenters to confirm participation and content.
- Moderate meetings, manage meeting flow and adherence to agenda

<p>Stephanya Salazar <i>Resiliency Project Manager (Metrics)</i></p> <ul style="list-style-type: none"> • Water and Climate Resilience Metrics (Metrics Hub / new metrics) development) • South Florida Environmental Report – Chapters 2A and 2B 	<p>Karin Smith <i>Resiliency Project Manager (Water Supply)</i></p> <ul style="list-style-type: none"> • Water Supply Vulnerability Analysis • Water Supply Plan – CC/SLR Chapter review/support • Water Supply – Technical Assessments (C&SF Flood Resiliency, BBSEER SLR, etc. • Metrics support (groundwater) 	<p>Francisco Peña <i>Resiliency Project Manager (Flood Protection)</i></p> <ul style="list-style-type: none"> • FPLOS Program Coordination, Deliverables review; crosswalk analyses • Plan updates and Grant Applications (technical support) • Flood Damage Cost Estimate Tool (updates, runs) • C&SF Flood Resiliency Studies (Compound Flooding; H&H Sub-team) 	<p>Aaron Duecaster <i>Resiliency GIS Specialist</i></p> <ul style="list-style-type: none"> • GIS support (resiliency spatial database structure and content updates, data visualization and analysis; support to resiliency plan, grant applications, resiliency metrics including flood observations, and others) 	<p>David Colangelo <i>Resiliency Plan Coordinator</i></p> <ul style="list-style-type: none"> • Sea Level Rise and Flood Resiliency Plan (annual updates, project list, costs, descriptions, tracking) • Grant applications (FEMA BRIC, FDEP, FDEO, others) • Stakeholder Comments and Partnerships 	<p>David Griffin <i>Resiliency Project Manager (Grants Implementation)</i></p> <ul style="list-style-type: none"> • Grants Management and Reporting • Overall PM Support to Resiliency Implementation Projects • Technical review of water quality/nature base features studies • Presents analysis, recommendations and status information to the District and collaborating agencies as needed 	<p>First Last <i>Resiliency Intern (Summer 2025)</i></p> <ul style="list-style-type: none"> • To be confirmed 	<p>First Last <i>Resiliency Project Manager C&SF FRM Studies</i></p> <ul style="list-style-type: none"> • Manage the implementation of Flood Resiliency/Risk Management Studies with USACE and project partners/ stakeholders • Manage all C&SF FRM studies related contracts and interlocal agreements and execute project delivery process. • Presents analysis, recommendations and project status information to the District and collaborating agencies 	
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Water and Resilience Climate Metrics Updates

Enhanced NOAA Tide Predictions Project

Collaboration with the University of Miami Rosenstiel School

- Project wraps up in November
- Supporting 2024 King Tide season coordination – agenda item 5

2025 South Florida Environmental Report (SFER)

Chapter 2A

- Water Year 2024 Hydrology, Water Management, Event Summaries

Chapter 2B

- Updated Evapotranspiration correlations, Florida Bay Seasonal Salinity Trends, Atlantic Multiscale Variability

Important Dates

- October 2, 2024 – public comment period begins
- March 1, 2025 – publication date



Water and Climate Resilience Metrics Update

Phase II

- Internal kick off meeting held Friday, August 23
- Coordination is ongoing

Monitor the Evolution of Established Trends

Continue monitoring trends to track changes and identify emerging patterns as they occur.

Enhance and Expand Analyses

Improve existing metrics by identifying relevant datasets and factors driving observed trends and incorporating additional indicators.

Expand Data Collection and Monitoring

Integrate real-time sensors and new monitoring stations to enhance data collection capabilities and monitoring efforts.

Evaluate and Update Climate Models

Continuously assess and update climate model datasets to refine projections and improve understanding.

Integrate Observations and Projections

Connect current data with historical trends and future projections to develop a comprehensive understanding of evolving conditions.

Share Results and Best Practices

Disseminate findings and lessons learned to support resilience planning and adaptation efforts across the region and state.

Engage and Educate Communities

Focus on outreach and education to increase awareness and engagement, particularly in underserved communities.

Who

Collaborative Effort

- Engage internal experts and partner with local, regional, and national agencies, as well as academic institutions.

When

Timeline

- Project activities will take place from Fall 2024 to Summer 2027.

How

Funding

- Utilize interagency collaborations and grant funding opportunities.

Florida Flood Hub

- Ongoing Collaboration on Statewide Rainfall Projections

USGS Rapid Deployment Flood Sensors

Partnering to enhance flood data collection and support advanced analysis

- 5 RDG flood sensors installed in the Upper Kissimmee Basin (UKB):
 - S-69 (headwater), S-69 (tailwater), Lake Ajay, Culvert D, and Nova Road bridge (SJRWMD partnership)
- 2 RDGs and 1 flood sensor will be installed in the Lower East Coast (LEC)
 - NW 7th Ave bridge, El Portal Nature Trail; east of the NW 87th Ave bridge



Critical Elevations

Background

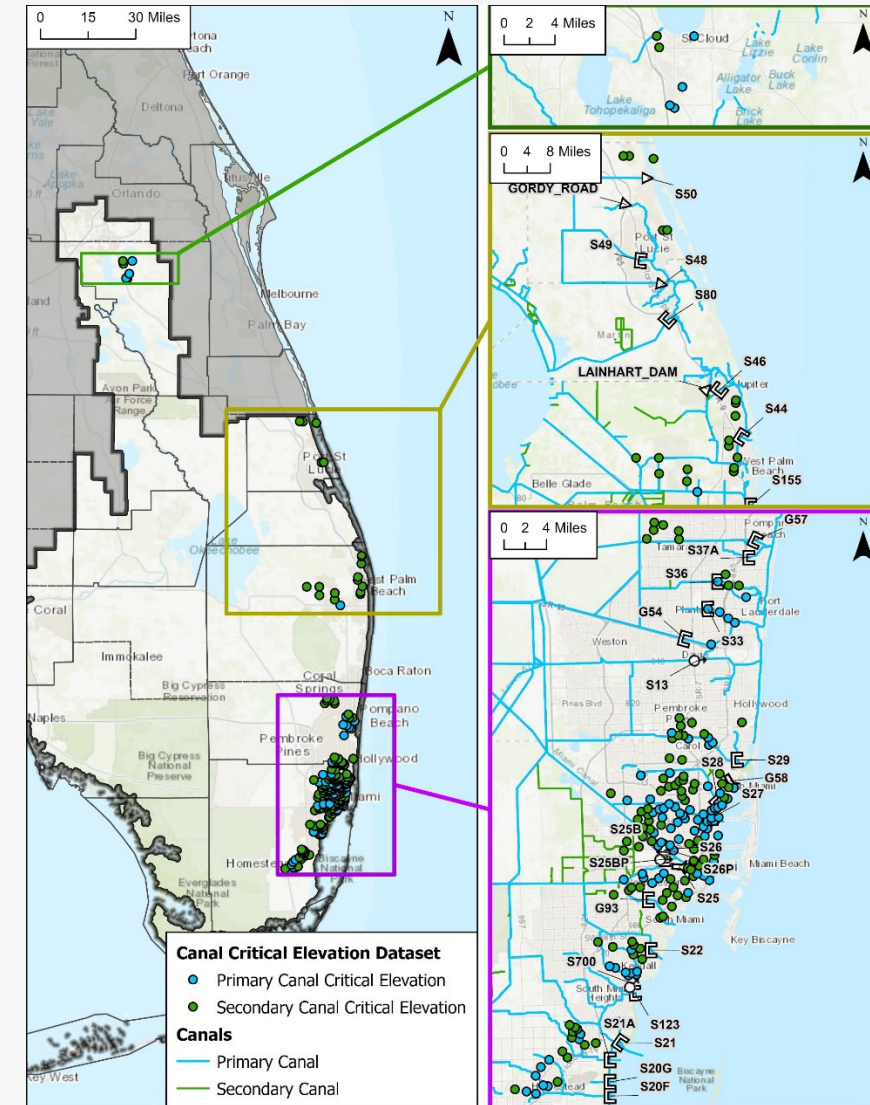
- Effort initiated November 2023
- Identifying critical elevations in the primary and secondary systems to support interagency operational response and resiliency planning.

Progress

- SFWMD developed GIS based service to view available data

Next Steps

- Refine received data in GIS
- Follow up questions/actions:
 - delineate clear and accurate impact areas for these critical elevations
 - capacity of each canal to hold water up to these critical elevations
 - capacity of structures to convey water up to / from these critical elevations
 - interpolate critical elevations along canals
- Publish to repository in South Florida Flood Information Resource
- Continue data collection and refinements



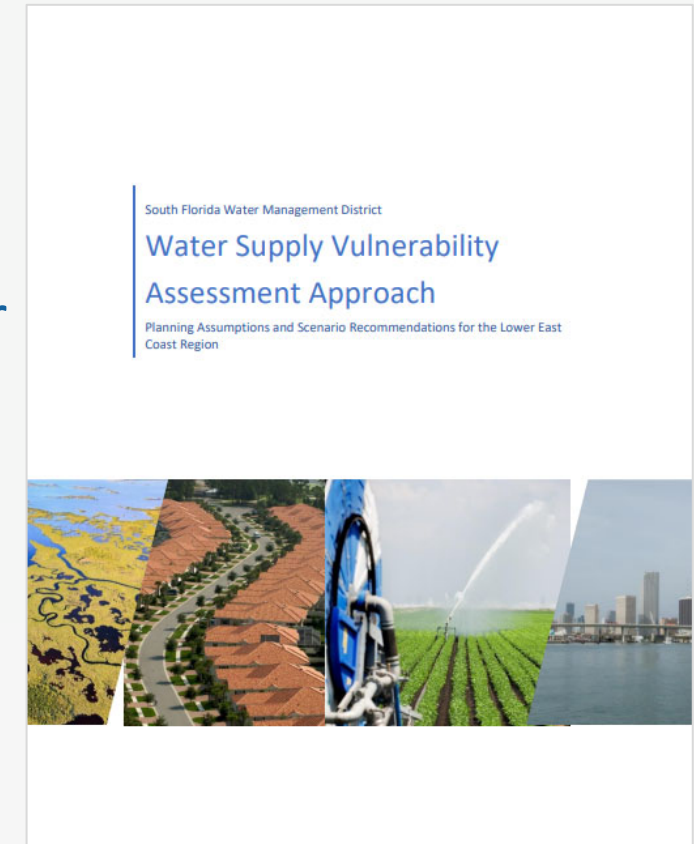
Lower East Coast Water Supply Plan & Vulnerability Assessment Update

Both Utilize the East Coast Surficial Model (ECSM)

- **Water Supply Plan (WSP):**
20-year look ahead (2045) + SLR scenarios
- **Water Supply Vulnerability Assessment (WSVA):** 50-year look ahead (2075) + SLR + Future Climate scenarios

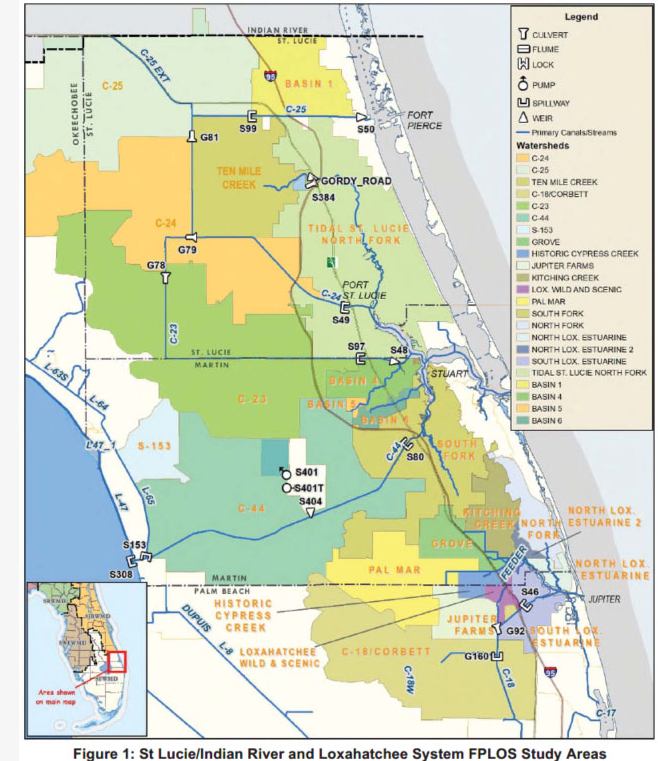
Current Status

- Model development is ongoing; input model data under development (future land use, future population per service area, well data)
- First model runs anticipated in early 2025



FPLOS Program Updates – Ongoing Studies

- St. Lucie/Martin Counties FPLOS Phase I & II Study
 - *Model Development is underway*
- Palm Beach County FPLOS Phase I Study
 - *Future Conditions model results are under review*
- Upper Kissimmee Basin FPLOS Phase I Study
 - *Future Conditions model results are under review*
- C-7 Basin (Miami-Dade County) FPLOS Phase II Study
 - *Future with Project Alternatives model runs are underway*
- Western Basins (Hendry & Collier Counties) FPLOS Phase I Study
 - *Model Tool Selection and Project Workplan under review*
- High Level Cost Estimates
 - *Completed: Miami Dade and Broward FPLOS Phase I Studies*
 - *Added to FPLOS Studies in Palm Beach and Upper Kissimmee*



Phase I: Flood Vulnerability Assessment
Phase II Adaptation and Mitigation Planning

USACE-SFWMD Resiliency Coordination Efforts

- **C&SF Flood Resiliency Study – Section 216:**
 - Coordinating scope and budget update to VTAM
 - FWOP Total Benefits Evaluation
 - Upcoming Workshop on Total Benefits
- **C&SF Flood Resiliency Study – Section 203:**
 - Being initiated in Broward County
 - Leveraging 216 Study milestones
- **C&SF Comprehensive Study**
 - Implementation Guidance / FSCSA review underway
 - Compound flood proposal being reviewed by ERDC



US Army Corps
of Engineers®
Jacksonville District

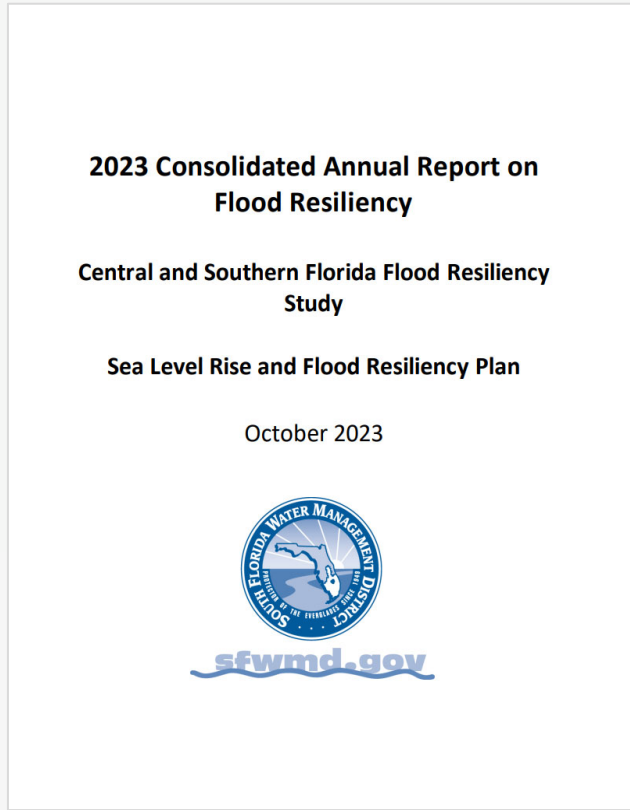
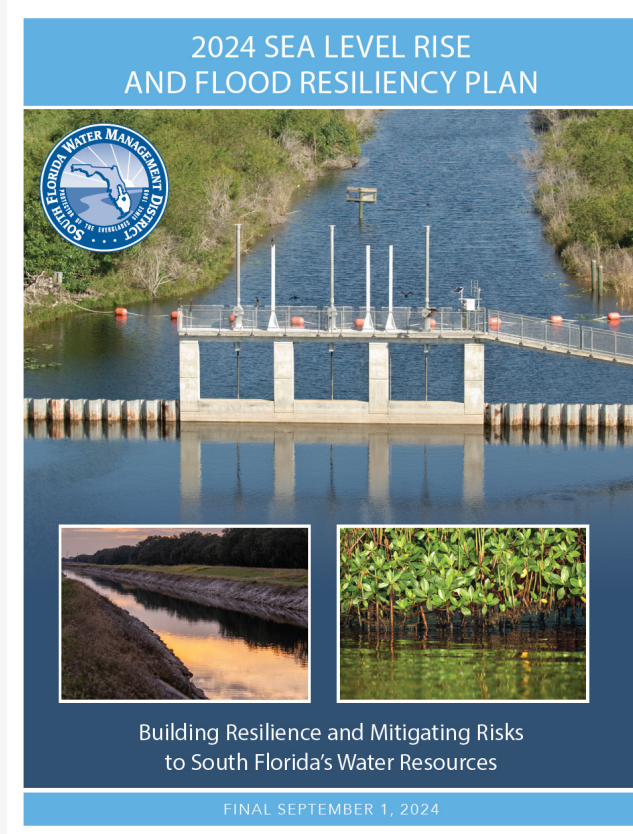


www.sfwmd.gov/C&SF



Resiliency Planning: 2024 Updates

The **2024 Sea Level Rise and Flood Resiliency Plan** is published!



2024 Consolidated Annual Report on Flood Resiliency coming October 2024.

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



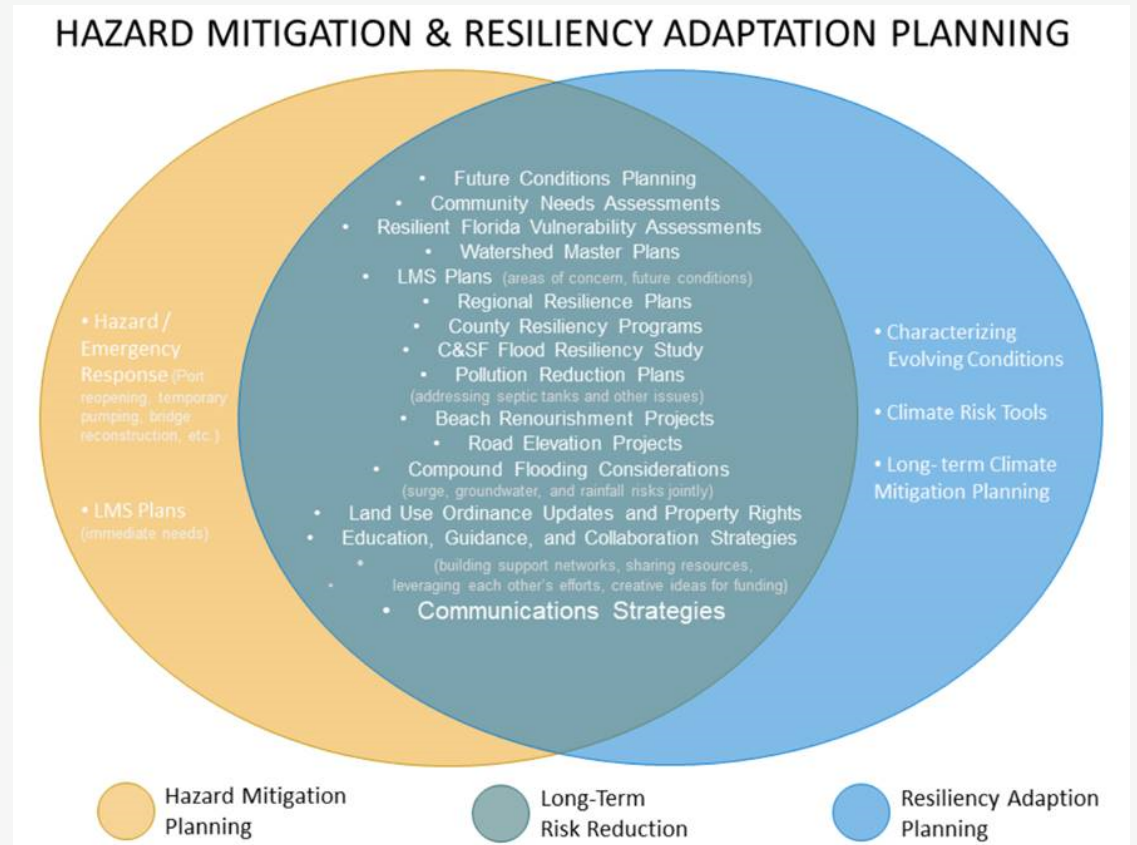
2024 SLR & Flood Resiliency Plan Comments

- Over 250 comments received from 23 partners:
 - 6 Counties (Broward, Miami Dade - 3, Collier, Martin, Orange, St. Lucie)
 - 2 Municipalities (Cutler Bay, Pompano)
 - FDOT
 - Seminole Tribe
 - 5 NGOs (Audubon, CHNEP, Everglades Foundation, SCCF, SF Wildlands)
 - 6 members of the public and 2 companies



LMS Coordination Post 2024 Plan Update

- **SFWMD will be sending the latest list of prioritized projects and updated cost estimates in each county for inclusion in the respective LMS plans.**
- *Please be on the lookout for this!*



Grant Proposals

Resiliency Florida

- 12 grant proposals submitted by SFWMD
 - 3 planning projects; 9 implementation projects
- 2 feasibility study proposals submitted by SFRPC and MDC

FEMA BRIC

- 3 Notices of Intent (NOIs) submitted by SFWMD

Partners

- Broward, Miami-Dade, St. Lucie, Lee, Osceola, Orange, Polk, Palm Beach Counties and the South Broward Drainage District (SBDD)

Next Steps

- Ongoing coordination with grant partners
- Continue exploring project(s) partnership opportunities



Projects for Review and Award Consideration

- FDEM Hurricane Ian HGMP DR4673 – Ongoing RFIs
 - S-61 Structure Enhancement & S-61 Navigation Lock Erosion Control
 - C-29, C-29a, C-29b and C-29c Canal Conveyance Improvement
 - S-59 Structure Enhancement and C-31 Canal Conveyance Improvements
 - S-58 Structure Enhancement
 - Big Cypress Basin Microwave Tower
 - L-8/Corbett Water Control Structures
- FDEP 2024 Resilient Florida ~\$40M (Notices of Award Received)
 - C-8 Basin Resilience (Miami Dade County)
 - Homestead Field Station Improvements
 - S169W Structure Improvements (Glades and Hendry Counties)



Projects/Grant Implementation

Ongoing Coordination with:

- **FDEP Resilient Florida Grants Implementation:**

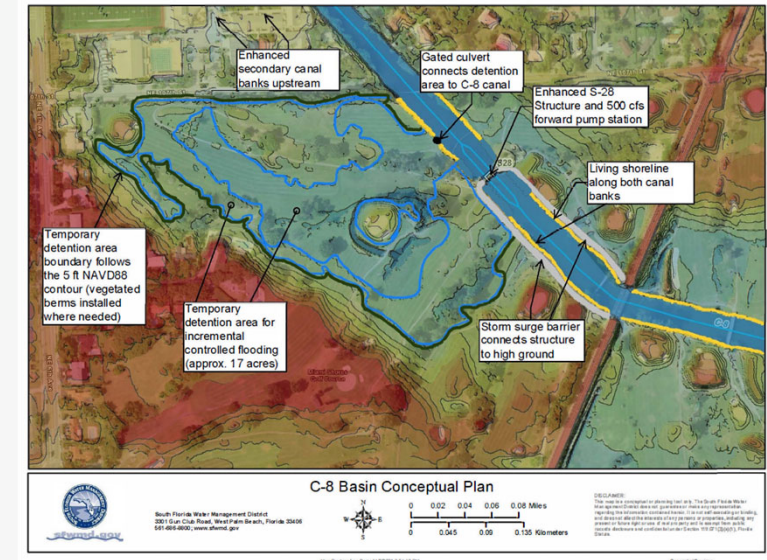
- 3 Grant Agreements Executed + 3 under review; Site visits and quarterly reports; Interagency agreement with Palm Beach County
- Flood Adaptation Planning Study initiated for Martin/St. Lucie Counties and Broward Basins

- **FDEM/FEMA BRIC Grants Implementation:**

- 3 projects sub-awarded to the SFWMD by FEMA through FDEM.
- Seeking for Governing Board's approval on September GB Meeting
- 2 grant agreements and 3 interagency agreements final review

- **FDEP Innovative Tech Grant Implementation:**

- Draft grant work plan currently under final FDEP review, in collaboration with Miami-Dade County



Projects/Grant Implementation (continued)

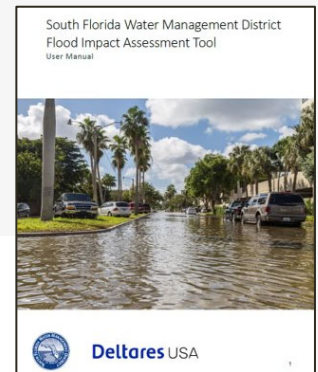
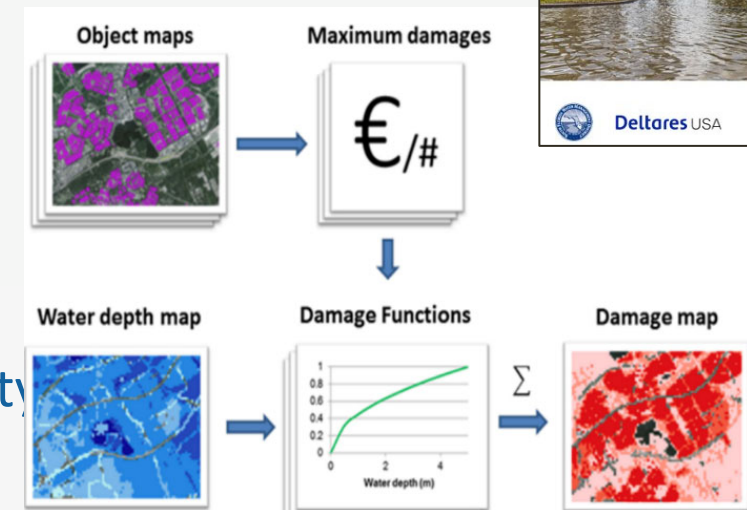
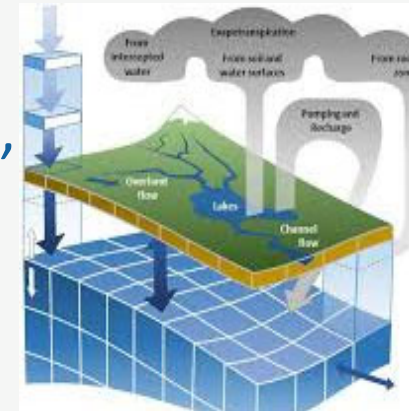
Coordination with local sponsors and key stakeholders initiated:

- Interagency Workshop on C-8 Basin Project
 - August 27, 2024
- Interagency Workshop on C-7 & C-9 Basin Projects
 - September 10, 2024
- Projects coordination with Miami Dade County
- On-going design and real estate coordination with Miami Shores Village and Miami Dade Parks
- Real Estate Coordination with Miami Dade School and City of North Miami Beach are being initiated
- Public Outreach in Winter



Other Relevant Recent Updates

- Florida Flood Hub Workgroups
- Flood Risk Modeling (Silver Jackets: USACE, FDEM, WMDs, Florida Flood Hub and FL Statewide Office of Resilience)
 - Models submitted (500+ from SFWMD)
 - Flood Vulnerability Assessments and the need for advanced H&H tools in South Florida
- Statewide Regional Climate Model/ Projections:
 - Assisting Florida Flood Hub on contract execution
 - Project to be funded by 3 WMDs and FDEP
 - Working with University of Miami and Florida State University on contract execution
 - Draft contracts are currently with FDEP/FFH for review



Upcoming Events

- Florida Resilience Conference, September 11-13, 2024 – Bonita Springs, FL: <https://floridaresilienceconference.org/>
- Florida Engineering Society Miami Chapter, September 20, 2024 – Miami, FL: <https://tinyurl.com/24FESRESP>
- Florida Water and Climate Alliance and Florida Flood Hub Workshop, October 17, 2024 – St. Petersburg, FL: <https://www.floridawca.org/>
- Symposium on Flooding Adaptation, October 28-31, 2024 – Kissimmee, FL: <https://conference.ifas.ufl.edu/flooding/index.php>
- Southeast Florida Climate Leadership Summit, Dec. 16-18, 2024 – Key West, FL: <https://southeastfloridaclimatecompact.org/summits/>



Please share other relevant events during *Around the Table Updates (Agenda #9)*



Thanks!

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

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www.sfwmd.gov/resiliency



Mitigation Updates

South Florida Water Management District Resilience Forum

Mitigation Bureau

Florida Division of Emergency Management

September 2024

What is mitigation?

Actions taken to reduce or eliminate long-term risk to people and property.

On average,

\$1 spent on
HAZARD MITIGATION

provides the
NATION
approximately

\$6 IN FUTURE
BENEFITS



HAZARD MITIGATION GRANT PROGRAM (HMGP)

*Federal, post-disaster grant
authorized by Section 404 of the
Robert T. Stafford Disaster Relief and
Emergency Assistance Act.*

GOAL: Assist in implementing long-term hazard mitigation measures following a major disaster declaration.

PERIOD OF PERFORMANCE

3 years

TYPE & COST SHARE

*Cost reimbursement grant
75% federal / 25% non-federal*

ALLOCATION

*20% of federal disaster assistance for a
disaster*

*FL allocates using a 3-tier system (established
by F.A.C. 27P-22), providing to impacted
counties first*

ELIGIBLE APPLICANTS

*States, local governments, and certain private
non-profits*



Eligible Project Activities – HMGP



Elevations
Acquisitions
Dry Floodproofing
Flood Risk Reduction



Critical Facility Generators
System Retrofits



Structural Retrofitting
Infrastructure Retrofitting



Mitigation Planning*
Planning Initiative Funds Only



Wildfire Mitigation



New Construction*
Safe rooms, Code Plus, Mitigation
Reconstruction, WWTP Relocation



HMGP Ian Success

- Total available: \$1,026,021,800
 - Received 442 total applications
 - Total Project Cost of all submitted applications: \$2,238,710,454
 - Total Federal Share Requested: \$1,687,852,524.52
- Submission through online system DEMES
 - DEMES has allowed us to expedite reviews to submit to FEMA faster
- Top project types
 - 126 projects for Generators
 - 80 projects for Flood Risk Reduction
 - 54 projects for Infrastructure Retrofit
 - 52 projects Residential applications
 - 47 projects for Wind Retrofits



HMGP Ian Success

- Broward: 22 projects
- Charlotte: 37 projects
- Collier: 10 projects
- Glades: 1 project
- Highlands: 1 project
- Lee: 78 projects
- Miami-Dade: 26 projects
- Monroe: 11 projects
- Okeechobee: 6 projects
- Orange: 13 projects
- Osceola: 6 projects
- Palm Beach: 8 projects
- Polk: 8 projects
- St Lucie: 6 projects

Projects are either already submitted to FEMA or undergoing programmatic, engineering, and environmental and historic preservation reviews at this time



HMGP Broward Flooding Success

- Total available: \$8,159,739
 - Received 23 total applications
 - Total Project Cost of all submitted applications: \$46,168,803
 - Total Federal Share Requested: \$33,650,698
- Top project types
 - 11 Generators
 - 6 Flood Risk Reduction
- Submissions
 - Broward: 21 projects
 - Monroe: 2 projects



HMGP Broward Flooding Success

- Top project types
 - 11 Generators
 - 6 Flood Risk Reduction
- Submissions
 - Broward: 21 projects
 - Monroe: 2 projects



Bureau Resources

Mitigation Bureau Communications

- Bureau Communication Subscriptions: <https://www.floridadisaster.org/subscription-topics/>

Office of Floodplain Management

- <https://www.floridadisaster.org/dem/mitigation/floodplain/>

Planning Unit

- State Hazard Mitigation Plan: <https://flshmp-floridadisaster.hub.arcgis.com/>
- Local Mitigation Strategy: <https://www.floridadisaster.org/dem/mitigation/local-mitigation-strategy/>
- Florida Silver Jackets Program: <https://silverjackets.nfrmp.us/State-Teams/Florida>



Bureau Resources – Grant Programs

Hazard Mitigation Grant Program (HMGP)

- <https://floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/>
- <https://www.fema.gov/hazard-mitigation-grant-program>

Building Resilient Communities and Infrastructure (BRIC)

- <https://www.floridadisaster.org/dem/mitigation/builing-resilient-infrastructure-and-communities-bric-grant-program/>
- Program Support Materials: <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities/resources>

Flood Mitigation Assistance (FMA)

- <https://floridadisaster.org/dem/mitigation/flood-mitigation-assistance-program/>
- <https://www.fema.gov/flood-mitigation-assistance-grant-program>

Hurricane Loss Mitigation Program (HLMP)

- <https://floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/>

MITIGATION DIRECTORY



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King Tide and Wet Season Readiness

Resiliency Coordination Forum – September 4, 2024

Todd Kimberlain, Lead Meteorologist; Diana Alvarez, Geographer; Nicole Cortez, Resiliency Coordinator; and Christine Carlson, GIS Architect
South Florida Water Management District

Documenting King Tide & Flood Occurrences

- 1. Long-term Data Strategy:** Capture and store relevant data to better understand and characterize flood risks.
- 2. Flood-Related Information Repository:** Consolidate historical data into the South Florida Flood Information Resource for analysis and insights.
- 3. Flood Risk Modeling:** Focus on calibration and validation of flood risk models.
- 4. Flood Vulnerability:** Identify flood vulnerabilities and develop mitigation and adaptation scenarios.
- 5. Grant Applications and Project Justification:** Prepare grant applications and justify projects to secure funding and support.



2022 King Tide Season

Hurricane Nicole coincided with the November 8, 2022, King Tide event.

King Tide Flooding Observations (Hurricane Nicole, November 2022)

Report Flooding Date	11/10/2022
What type of flooding?	Structure Flooding
What type of structure?	other
Other	Coastal Structure
How deep is flooding?	Other
Other	1 foot to gate overtopping
Does this area flood frequently?	Other
How frequently?	Other
Other	King Tide Observations
Please enter other information about this flooding you would like to report.	

West Elevation
93°E (T) 25°54'1"N, 80°9'44"W s22ft ▲ 14ft
G-58.jpg

Legend

- Flood Observation Survey Viewer
- Flood Observation Survey
- Flood Concerns Reported to Ft Lauderdale
- Broward County Flood Survey Observations
- SFWMDC Collected Photos
- Nicole 2022
- Flood Locations - from Public Calls/Emails
- Flooding Observed
- Flooding Concern
- All District and Non-District Structures
- AHED Structures
- Active Structures
- Primary Structures
- Culvert
- Lock
- Pump
- Spillway
- Weir
- Flume
- Administrative Boundaries
- Boundaries
- County



2023 King Tide Season

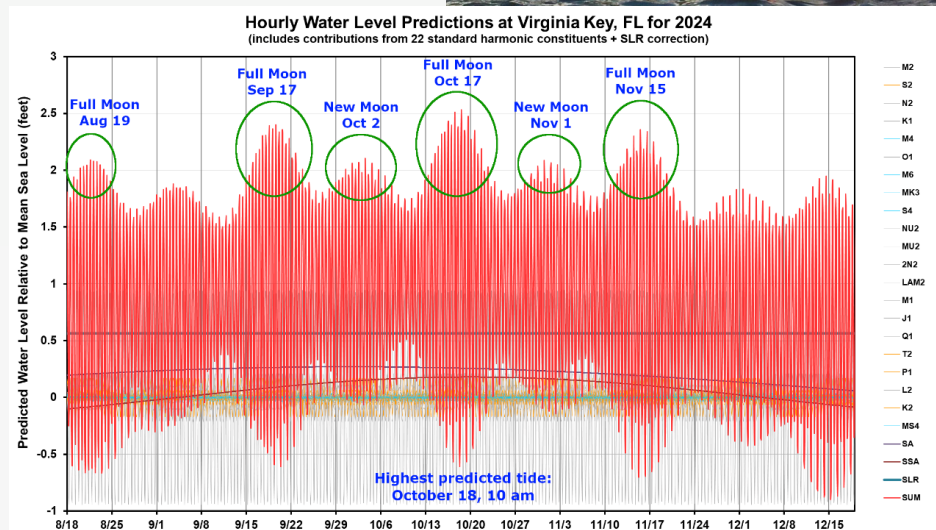
Outflows at S-26 showing high tailwater levels during the October 30, 2023, King Tide event.



2024 King Tide Season

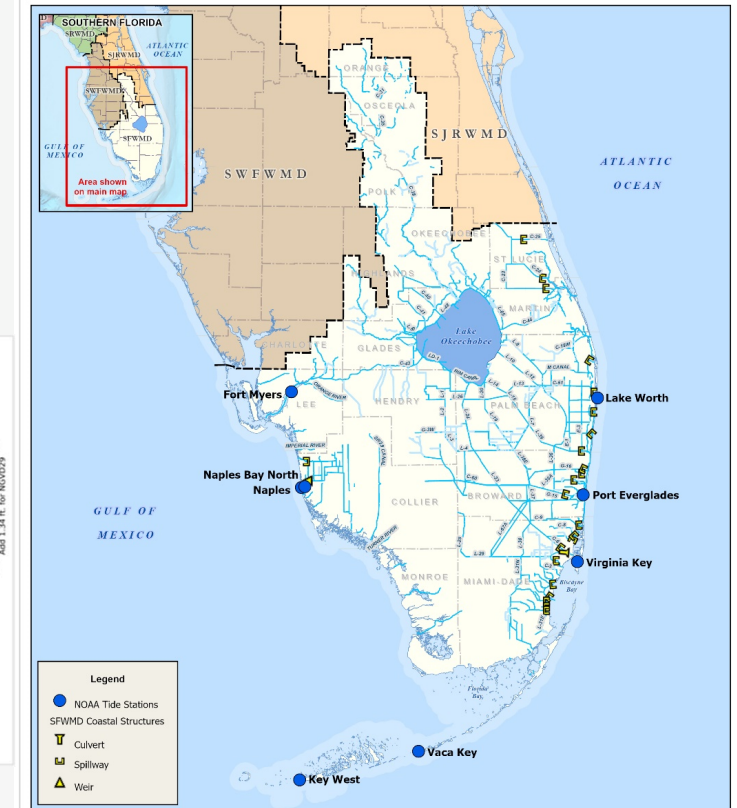
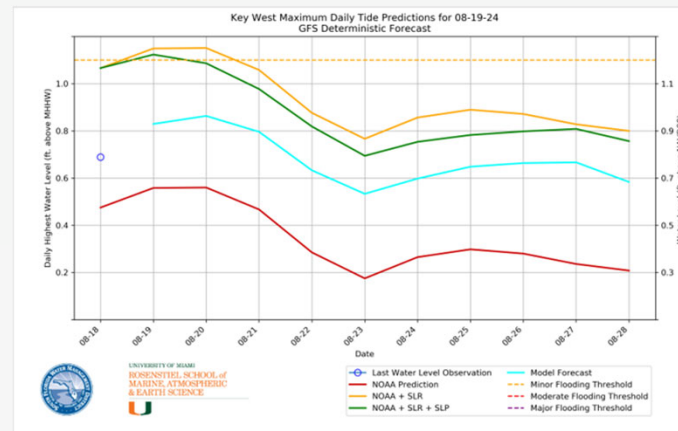
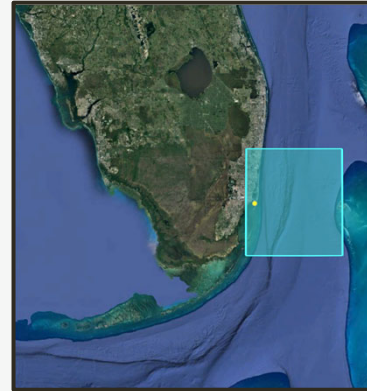


- Heavy rains coinciding with King Tides pose significant challenges
- Swell energy from tropical cyclones and very warm oceans are key enhancing factors
- SFWMD will continue issuing weekly tidal outlook to highlight coastal flooding risks



Tidal Prediction Model


- A UM/SFWMD partnership began in 2023 to improve tidal predictions
- Major component is sea level rise adjustment
- Other predictors include:
 - Sea level pressure
 - Local wind direction/speed
 - Significant wave height of combined wind and swells
 - Sea surface temperature



SFWMD's Resilience Metrics Hub


Online Resources – Resilience Metrics Hub

→ Emerging Trends in Regional Resiliency



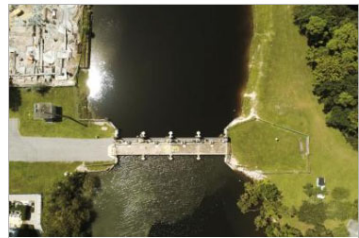
Regional Rainfall

Changes in rainfall patterns will impact people and ecosystems by altering the amount of water in our region throughout the year.




Evapotranspiration Trends in South Florida

Evapotranspiration (ET) determines water exchanges between the land, plant communities, and the atmosphere.



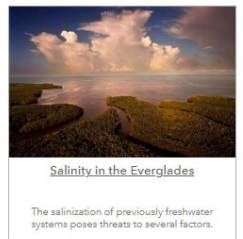
Tidal Elevations at Coastal Structures and Sea Level

Flood control and the prevention of saltwater intrusion in South Florida relies heavily on the operation of coastal gravity structures.




Saltwater Intrusion in Coastal Aquifers

The inland migration of saltwater poses a threat to water supply and critical freshwater habitats.




Salinity in the Everglades

The salinization of previously freshwater systems poses threats to several factors.



Estuarine and Mangrove Inland Migration


Trends in Estuarine Inland Migration provide insights to the impacts of sea level rise in...



Soil Subsidence in South Florida

Maintaining soil elevations within coastal and intertidal habitats, as sea level changes, is a...


→ Future Outlook in Regional Resiliency



WebApp

Future Extreme Rainfall Change Factors for Flood Resiliency Planning in South Florida Web Application

This tool provides access to future extreme rainfall change factors for resiliency planning for the 16 counties and 14 rainfall areas within...



Enhanced Tide Predictions

Locally Relevant Tide Forecasts to Support Effective Planning and Response

→ SFWMD Data and Support

DBHYDR
DBHydro Insights

DBHYDR is the South Florida Water Management District's corporate environmental database that stores hydrologic, meteorologic, hydrogeologic and water quality data.

[Details](#) [View](#)

SFWMD GIS Open Data Hub

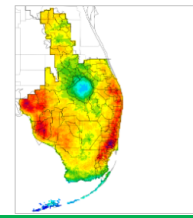
Our Open Data site is where our publicly available spatial datasets can be viewed and downloaded. Additional Web Apps and Story Maps are featured to explore and learn more about the data.

[Details](#) [View](#)

2023 SOUTH FLORIDA ENVIRONMENTAL REPORT

Highlights

[Details](#) [View Full Report](#)



SFWMD Weather

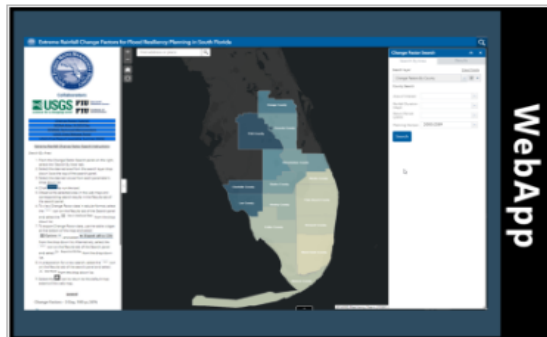
The SFWMD weather page displays real-time radar images and up-to-date rain gauge data from more than 200 sites across the water management district. It also shows estimates of rainfall based on the radar data. For those interested in evolving weather conditions, the website makes it easy to review past rainfall conditions for daily, seasonal, or yearly time frames.



Resilience Metrics Hub and Weekly Outlook

Resilience Metrics Hub (arcgis.com)

→ Future Outlook in Regional Resiliency



WebApp

Future Extreme Rainfall Change Factors for Flood Resiliency Planning in South Florida Web Application

This tool provides access to future extreme rainfall change factors for resiliency planning for the 16 counties and 14 rainfall areas within...



Enhanced Tide Predictions

Locally Relevant Tide Forecasts to Support Effective Planning and Response



2024 King Tides Forecast

With approximately 700 miles of shoreline and 40+ gravity coastal structures upstream of tidally influenced canals, the South Florida Water Management District (SFWMD)'s water management mission is influenced by sea levels. Along with rainfall and surge, high tide events also contribute to flood risks in South Florida. The variation in strength and direction of the gravitational pull of the moon, especially during the new and full moon phases in the Fall, contributes to King Tide occurrences.

As the 2024 King Tide Season approaches, SFWMD is continuing efforts for the monitoring, operational response and documentation of these events.

Extreme high tides are predicted by the **National Oceanographic and Atmospheric Administration to peak above 2.5-3.0 feet Mean Lower Low Water** along the South Florida Coast during the following days (peak varies by location):

- August 19-23 (Full Moon)
- September 18-21 (Full Moon)
- October 1-5 (New Moon)
- October 18-20 (Full Moon)
- October 30 - November 4 (New Moon)
- November 13-18 (Full Moon)
- November 29-30 (New Moon)

WEEKLY TIDAL OUTLOOK FORECAST

With the onset of the 2024 King Tide season, SFWMD will be publishing the weekly Tidal Outlook Forecast, every Monday, beginning today, August 12, to report conditions – such as wind strength and direction, ocean currents – that can cause tides to occur higher or lower than predicted at certain locations. These weekly updates are intended to be informational for interested stakeholders and the public. **To subscribe to receive these weekly updates, please visit our [email signup](#) page, enter your email address and check the "King Tide Forecast" option.**

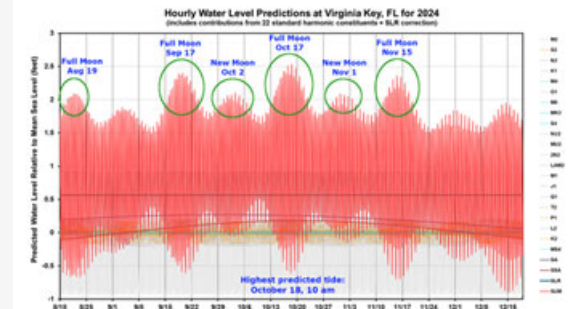


Weekly King Tide Forecast

The South Florida Water Management District's Tidal Outlook for the forecast period of August 19, 2024 through August 26, 2024, is now available. Tidal water levels along the southeast coast of Florida are expected to stay below the National Weather Service's "Minor Flooding" threshold. Tidal water levels on the west coast and in the Florida Keys are predicted to be slightly above the "Minor Flooding" threshold.

View the daily forecast [HERE](#).

SFWMD is continuing efforts for the monitoring, operational response and documentation of these events. These weekly updates are intended to be informational for interested stakeholders and the public. If conditions warrant, additional updates may be issued throughout the forecast period.

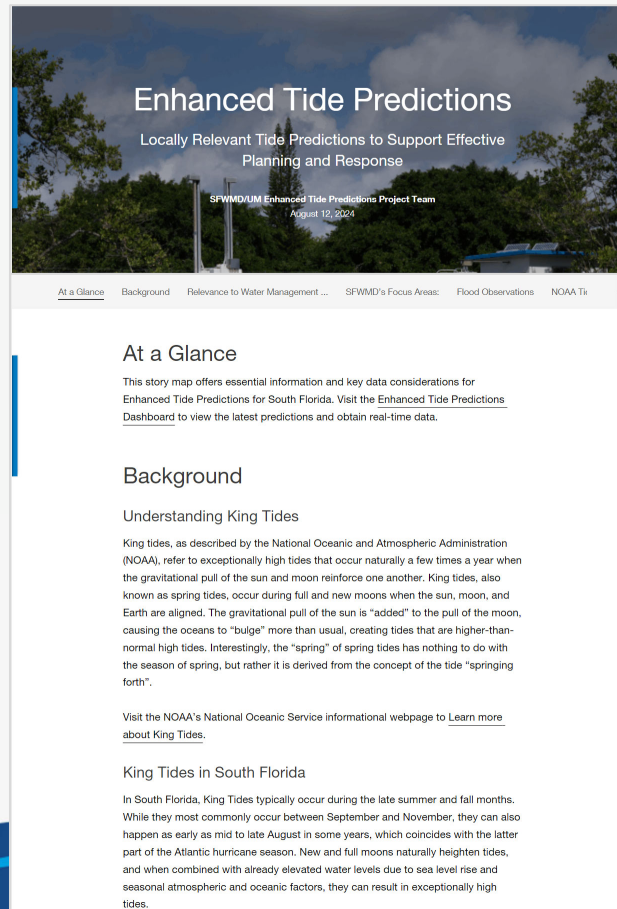


Source: University of Miami



Enhanced Tide Predictions StoryMap

Enhanced Tide Predictions | Resilience Metrics Hub (arcgis.com)



Enhanced Tide Predictions

Locally Relevant Tide Predictions to Support Effective Planning and Response

SFWMD/UM Enhanced Tide Predictions Project Team
August 12, 2024

At a Glance Background Relevance to Water Management ... SFWMD's Focus Areas Flood Observations NOAA Ti...

At a Glance

This story map offers essential information and key data considerations for Enhanced Tide Predictions for South Florida. Visit the [Enhanced Tide Predictions Dashboard](#) to view the latest predictions and obtain real-time data.

Background

Understanding King Tides

King tides, as described by the National Oceanic and Atmospheric Administration (NOAA), refer to exceptionally high tides that occur naturally a few times a year when the gravitational pull of the sun and moon reinforce one another. King tides, also known as spring tides, occur during full and new moons when the sun, moon, and Earth are aligned. The gravitational pull of the sun is "added" to the pull of the moon, causing the oceans to "bulge" more than usual, creating tides that are higher-than-normal high tides. Interestingly, the "spring" of spring tides has nothing to do with the season of spring, but rather it is derived from the concept of the tide "springing forth".

Visit the NOAA's National Oceanic Service informational webpage to [Learn more about King Tides](#).

King Tides in South Florida

In South Florida, King Tides typically occur during the late summer and fall months. While they most commonly occur between September and November, they can also happen as early as mid to late August in some years, which coincides with the latter part of the Atlantic hurricane season. New and full moons naturally heighten tides, and when combined with already elevated water levels due to sea level rise and seasonal atmospheric and oceanic factors, they can result in exceptionally high tides.

Relevance to Water Management and Resiliency

Coastal water resources managers must anticipate high king tides, as they can lead to flooding that impacts homes, businesses, and infrastructure. By understanding the timing of these tides, managers can prepare and respond effectively, implementing flood prevention measures and issuing timely warnings.

SFWMD's Focus Areas:

- **Resilience Strategies and Adaptation Planning:** Develop and implement strategies to address sea level rise and manage tidal extremes. This includes advanced modeling techniques to predict impacts and prioritizing projects that enhance resilience against rising sea levels and extreme tides.
- **Support for Water Management and Operations:** Collaborate with local governments to overcome current limitations on gravity discharges and improve overall water management practices. This involves optimizing infrastructure and operational protocols to better handle water flow and reduce flooding risks.
- **Data Collection and Analysis:** Guide the data collection and analysis of flood occurrences and event data to support water and climate resilience metrics. The metrics provide insights into flood-prone areas, track changing conditions over time, and inform strategic decision-making for improved resilience and preparedness.

Flood Observations

Observed flood data are crucial for understanding where recurrent flooding is occurring and how flood patterns are evolving over time. Local governments, drainage districts, and the public can submit flood observations conveniently through the agency's dedicated flood survey [sfwmd.gov/FloodingApp](#). This crowdsourced data significantly enhances the breadth and depth of flood information available to planners. It is accessible online through the [South Florida Flood Information Resource](#), which serves as a comprehensive repository, ensuring transparency and equipping stakeholders with the information needed for informed decisions about infrastructure, emergency response, and community resilience initiatives.

NOAA Tide Predictions

NOAA provides tide predictions based on astronomical data and historical tide records, using sophisticated models to forecast tide heights and times. These predictions rely on a relatively long time series of tide measurements from specific locations where the effects of dozens of astronomical influences, known as harmonic constituents, are calculated, and combined. Astronomical influences, including the moon's path around the Earth and its location relative to the sun, are used to estimate whether the moon is nearing a full or new moon phase that is aligned with the earth and sun. Historical tide records are also used to identify when previous King Tide events occurred and better predict when another King Tide might happen again.

NOAA produces tidal predictions at over 200 tide gauge locations across the United States. These predictions are based on tidal datums, which represent the mean sea level over a historical 19-year period. The vertical reference coordinate, or datum, is updated approximately every 20 years. The current [National Tidal Datum Epoch \(NTDE\)](#) covers 1983-2009, which means it does not reflect recent sea level rise. It's important to note that NOAA's tide predictions do not account for current conditions in the atmosphere and ocean, which can have a significant impact on the tidal elevations, especially during King Tide events.

Visit NOAA's [Tides & Currents](#) web page to view the latest tide predictions.

2024 King Tide Season

Variation in the strength and direction of the moon's gravitational pull, especially during the new and full moon phases, along with conditions such as wind strength and direction and ocean currents, can cause tides to be higher or lower than predicted at certain locations. During certain times, higher King Tides are expected, which may lead to flooding in low-lying areas.

As illustrated in the graphic below, tide predictions for 2024 in southeast Florida show an absolute peak around October 18, coinciding with a full moon. It's important to note that these predictions rely solely on astronomical factors, along with sea level rise adjustments based on the 1983-2009 NTDE. They do not account for actual atmospheric or oceanic conditions, which can significantly heighten tidal levels and are locally more relevant.

In 2024, potential flood risks in South Florida are anticipated around the following dates: September 19-21, October 16, October 18, November 14, November 17-18. Additionally, higher tides are predicted October 17-19 and November 15-16, which could further flood risks.

However, the impact of oceanic and atmospheric conditions on flood risk cannot be fully predicted. As these dates approach, the Enhanced Tide Predictions model will provide better forecasts of potential flooding levels. Generally, the highest tides and greatest risk of flooding occur within two to three days before or after the full and new moons, based on astronomical and climatological factors.



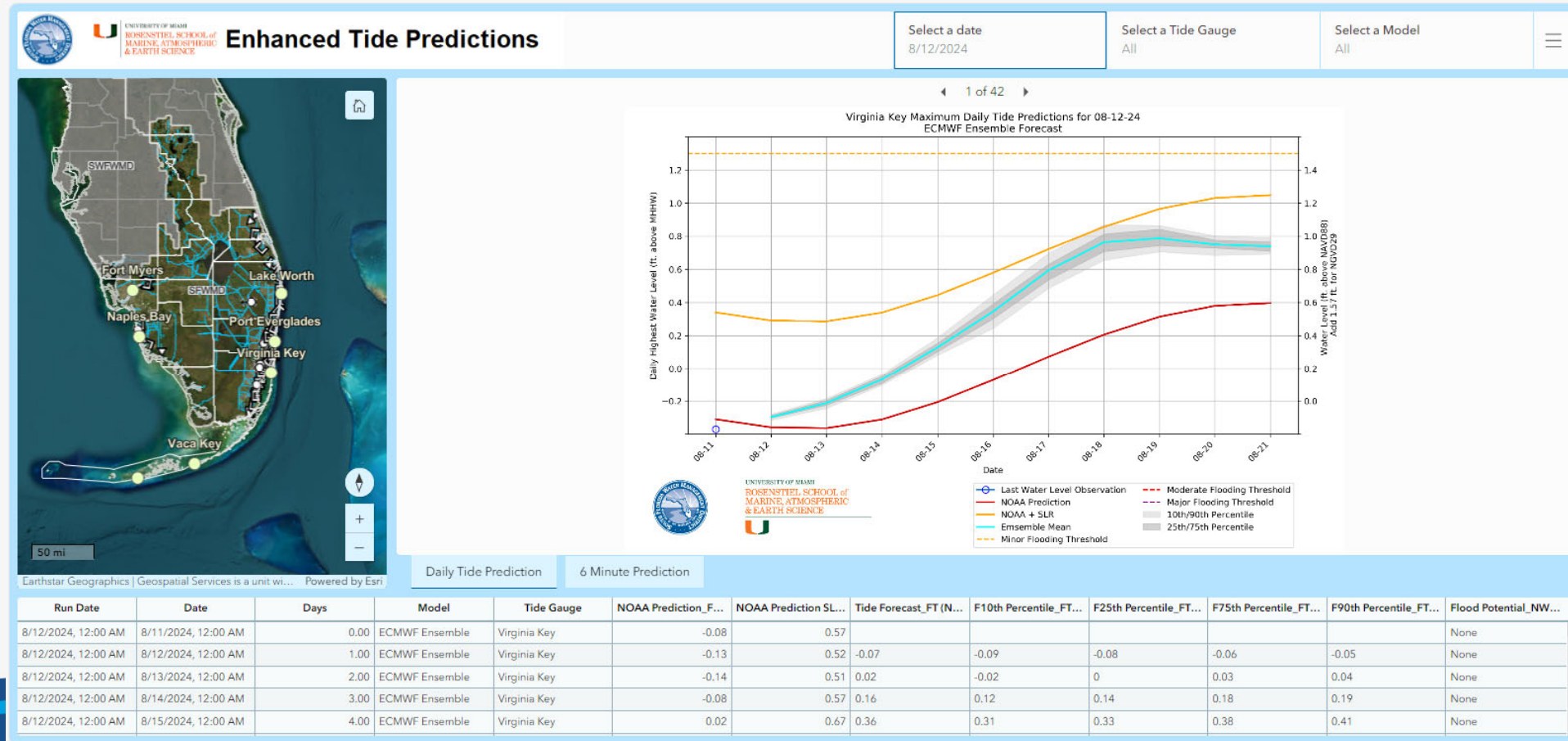
Hourly Water Level Predictions at Virginia Key, FL for 2024
(Includes contributions from 22 standard harmonic constituents + S&R corrections)

Highest predicted tide: October 18, 10 am



Enhanced Tide Predictions Dashboard

- [Enhance Tide Predictions Dashboard \(arcgis.com\)](https://arcgis.com)



Flood Observations and High-Water Mark Trainings

SFWMD Training Team


- Madelyn Rinka, Geospatial Mapping
- Diana Alvarez, Geospatial Mapping
- Brian McEachern, Survey & Mapping
- Kealan Weldon, Survey & Mapping



Training to Field Staff and Local Government Staff

- SFWMD hosted 9 training sessions at various locations across the region throughout the month of April.
- Total of 121 participants from across the region:
 - 50 from SFWMD field stations
 - 33 from 9 counties
 - 21 from 9 municipalities
 - 16 from 3 Water Control/Drainage Districts

Report Flooding and Early Concerns



The information collected in this survey is used by agencies to better understand flooding conditions in Central and Southern Florida. This survey does not replace the need to contact your local drainage operator.

All flooding that poses a risk to your home or property should be reported to your local drainage operator. Life-threatening flooding should always be reported to 9-1-1.

To learn who to contact, go to [SFWMD.gov/FloodControl](https://www.sfwmd.gov/flood-control) and enter your address.


Questions with a red * are required.

Photos (Optional)
Submit up to 3 photos.

1 Drop image here or select image (maximum number of files allowed: 3)

Flood Location*

SFWMD HWM Survey



Questions with a red * are required.

Collecting organization

Recorder name*

Recorder email*



Flood Observations and High-Water Mark

Trainings

Training Content


- What SFWMD tools are available, when to use them, and how to use them to collect and share flood data.

1. Flood Observations (publicly accessible)

2. High-Water Marks (only accessible to training participants)

- Training Resources are available at [Resiliency and Flood Protection | South Florida Water Management District \(sfwmd.gov\)](https://www.sfwmd.gov/ResiliencyandFloodProtection)
- SFWMD is providing training opportunities each year, ahead of the wet season.
- We welcome your feedback and any suggestions on how we can further support your local staff. Email us at resiliency@sfwmd.gov or reach out directly.

Report Flooding and Early Concerns



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Flood Location*

SFWMD HWM Survey



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Collecting organization

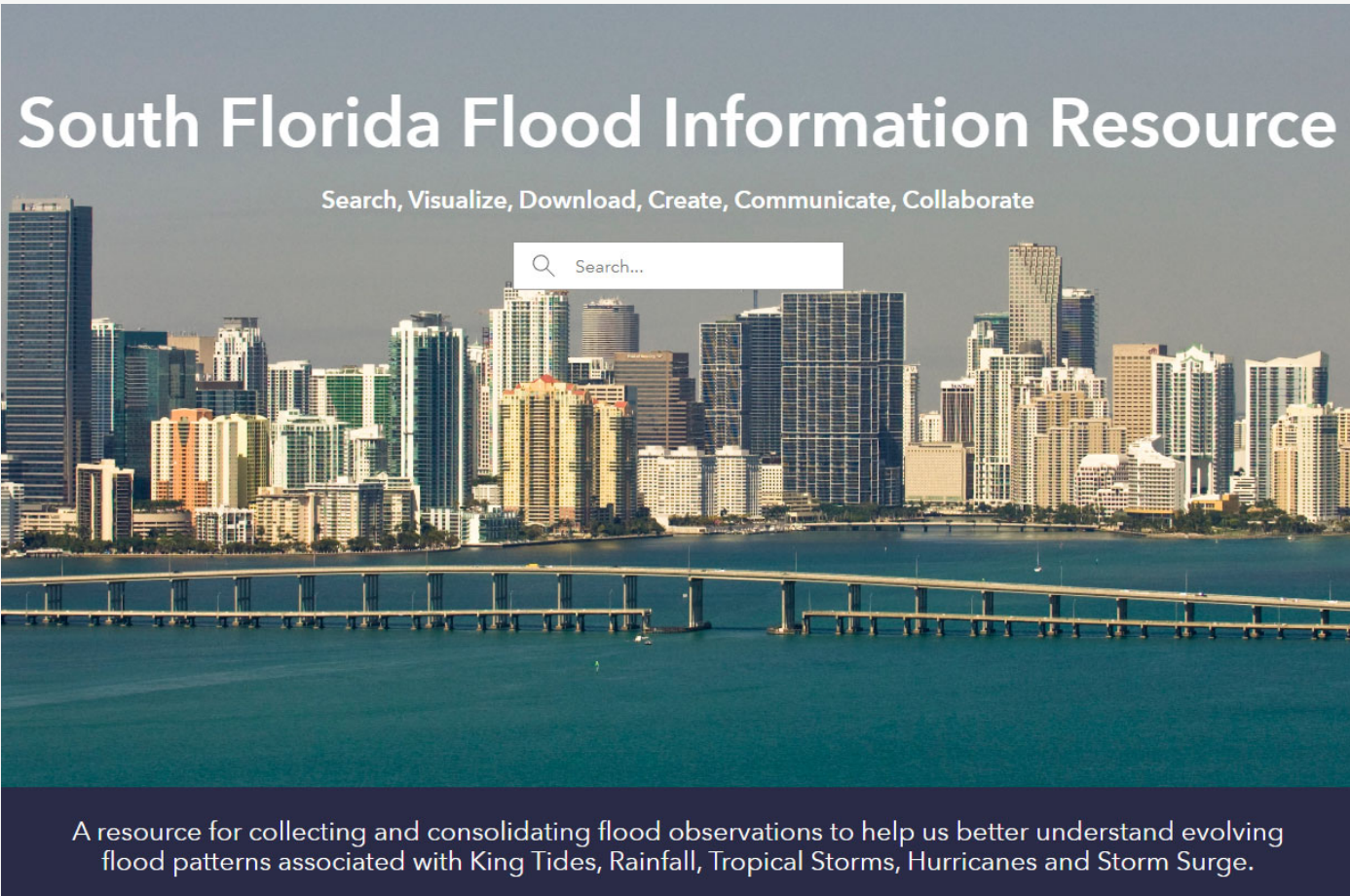
Recorder name*

Recorder email*

[sfwmd.gov/FloodingApp](https://www.sfwmd.gov/FloodingApp)



Sfwmd.gov/FloodResource

The image shows a screenshot of the South Florida Flood Information Resource website. The background is a photograph of a city skyline with a bridge over water. Overlaid on the image is the website's header, which includes the title "South Florida Flood Information Resource" and the tagline "Search, Visualize, Download, Create, Communicate, Collaborate". A search bar with the text "Search..." is visible. At the bottom of the screenshot, there is a dark blue banner with white text describing the resource.

South Florida Flood Information Resource

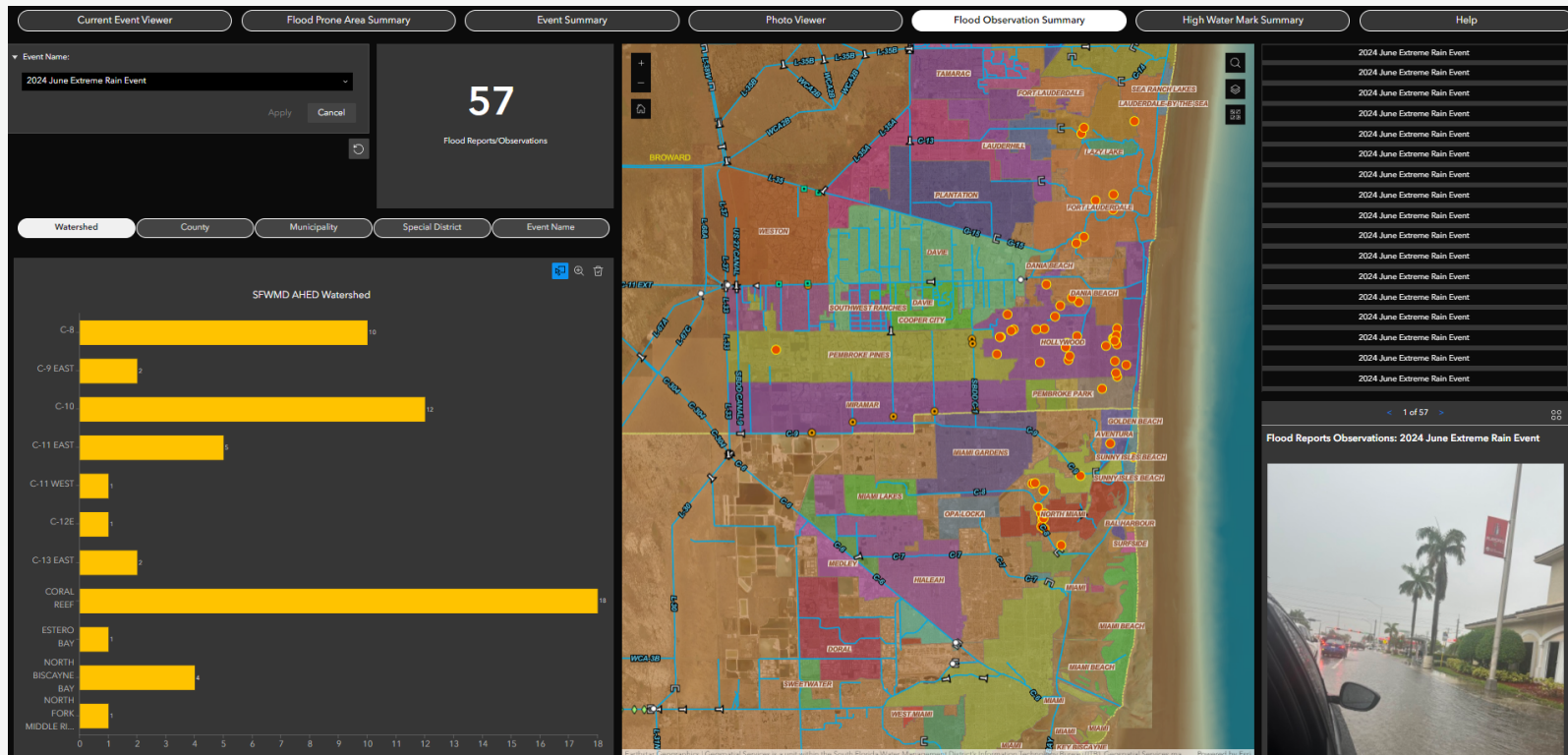
Search, Visualize, Download, Create, Communicate, Collaborate

Search...

A resource for collecting and consolidating flood observations to help us better understand evolving flood patterns associated with King Tides, Rainfall, Tropical Storms, Hurricanes and Storm Surge.

- Launched in November 2023
- Resource account creation enabled August 2024
- Training held August 16, 2024
- 138 stakeholders participated

Flood Information Repository Application



- Experience Builder Developer Application
- Launched in July 2024
- Six experiences bundled into one application

Thank you!



SFWMD Resiliency Forum City of Hollywood Stormwater and Coastal Master Plan and Coordination With Flood Vulnerability Assessments and Implementation, September 4, 2024

Michael Schmidt, P.E., BCEE, BC.WRE, Senior Vice President, CDM Smith
Jon Goldman, P.E., BCEE, PMP, Associate, CDM Smith
Thomas Nye, Ph.D., P.E., Engineer, CDM Smith



PRESENTATION

CDM Smith

Presentation Agenda



1. SWMP Program Goals
2. Constraints and Stormwater Flooding in the City
3. Stormwater Master Plan and Coordination with Vulnerability Assessment
4. Proposed Capital Improvements and Implementation Strategies



Hollywood, FL
News Flash • Hollywood, FL • CivicEngage



WSVN
King tides flood streets in Hollywood ...



Hollywood, FL
Your Stormwater Utility



WPLG Local 10
flooded water in Hollywood Beach

SWMP Goals Are Consistent with Regulatory Requirements and Establish the Metrics for Success

- ✓ Flood Control
- ✓ Water Quality Protection
- ✓ Aquifer Recharge and Water Supply
- ✓ Conservation and Reuse
- ✓ Operation and Maintenance
- ✓ Stormwater Utility Sufficiency
- ✓ Long Term Financing
- ✓ Community Acceptance

Levels of Service

- Adaptability
- Resiliency
- Sustainability
- Equity

Hollywood Stormwater Issues and Constraints

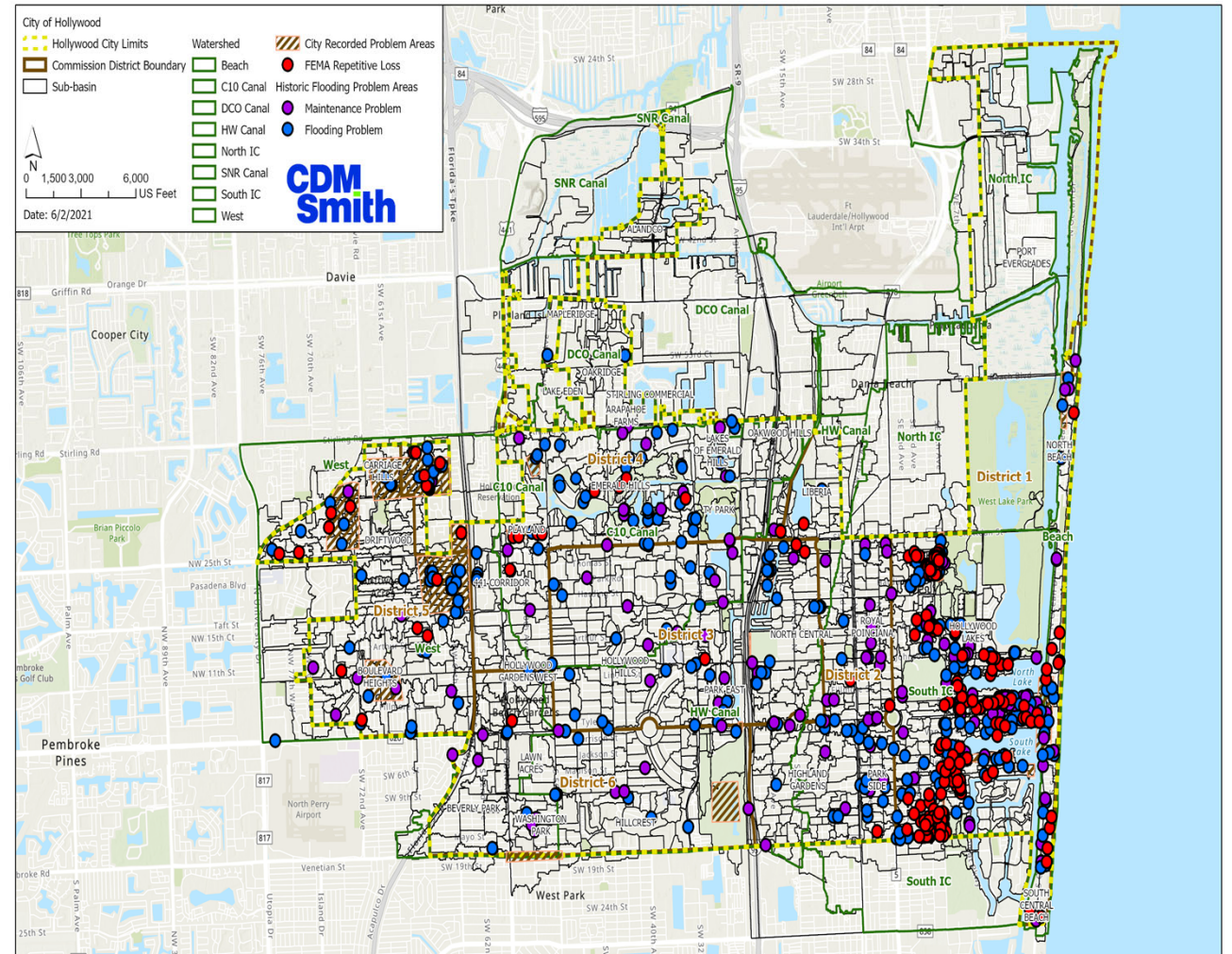
- Low, relatively flat terrain
- High groundwater table
- Near build-out, impervious
- Homes in low-lying areas
- Little available area for storage
- Increasing high tides, rising sea levels and tidal surge, tidal flooding
- Lack of existing systems
- Aging stormwater system with increasing O&M needs
- Runoff into City from offsite areas
- Saltwater intrusion and aquifer protection
- Waterway discharge limits
- Water quality regulations
- Recharge wells limited to salinity zone
- Exfiltration and wells limits:
 - Higher elevations (> 6 ft-NAVD)
 - No known contamination
 - No potable wellfield cones



Stormwater Problem Areas Identification

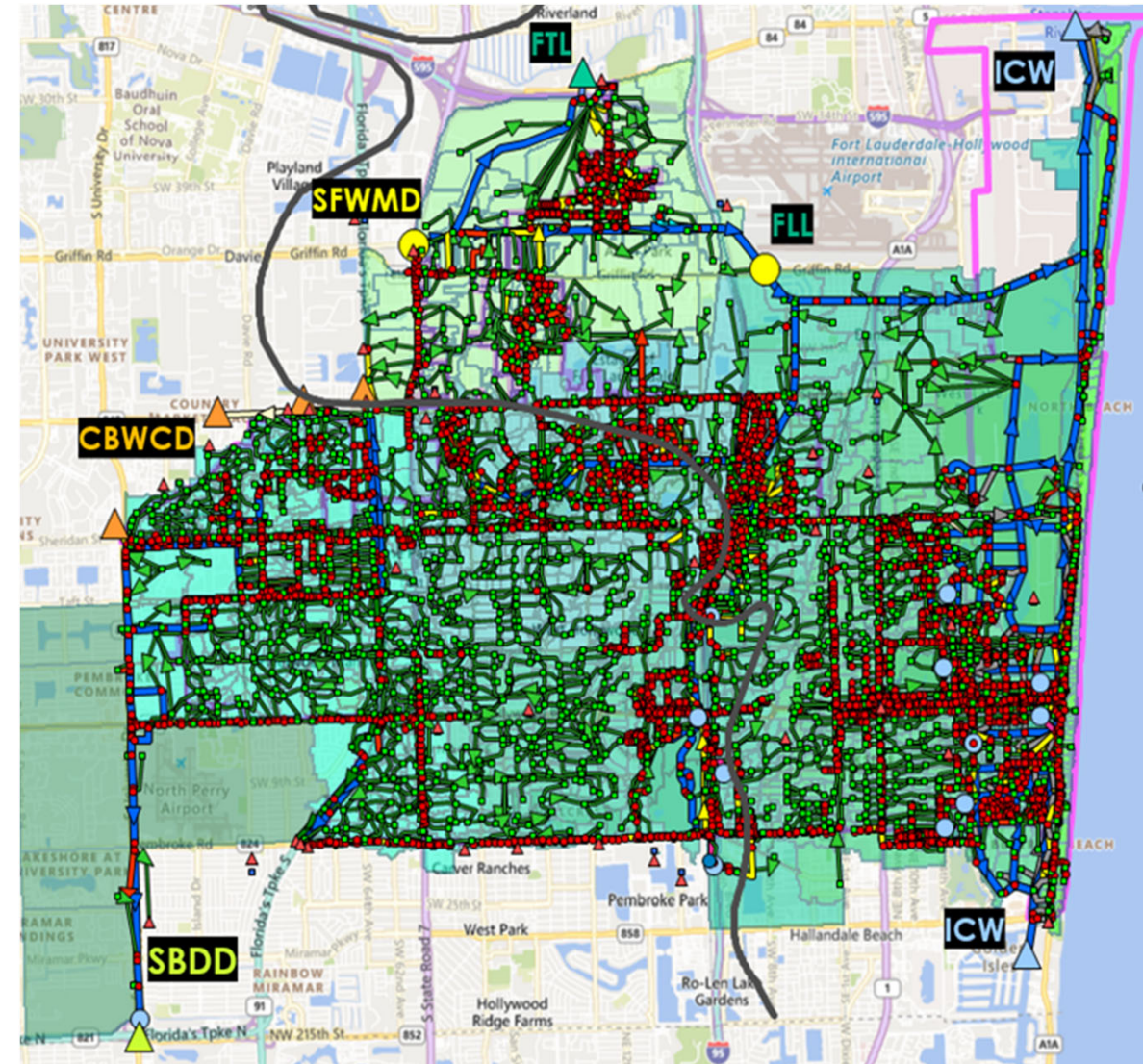
Flood Complaint Data from:

- Resident Flooding Problem Area Workshops
- Commission Flooding Problem Area Workshops
- Department of Public Utilities O&M Workshops
- FEMA Floodplains and Repetitive Loss Data
- City Flood Complaint Database
- County Complaint Data
- First Responder/ Media Coverage

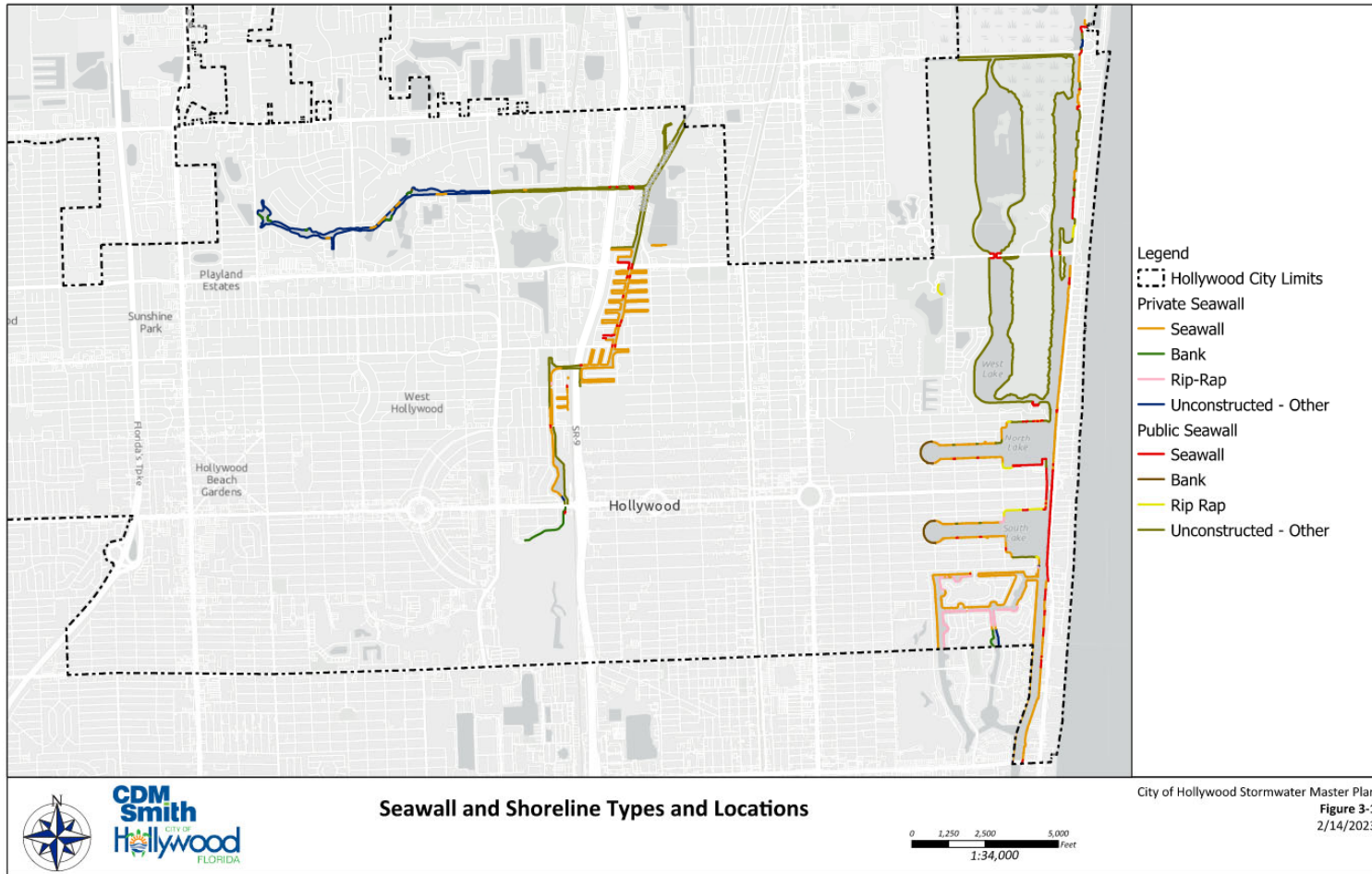


USEPA SWMM of Hollywood Stormwater System

- Subbasins to a “neighborhood” level of detail (5-7 Ac)
- Simulated 2D overland flow channel connections
- 45 sq. mile study area in and outside of City limits
- 12 pump stations, 217 miles of stormwater pipe
- 29 miles of canals and 250 existing outfalls
- SFWMD, FDOT, SBDD, CBWCD and BC control structures
- ✓ Calibrated model to historical rainfall and flood data events
- ✓ Addresses Compound rainfall and tidal surge (King Tide)
- ✓ Addresses Climate change sea level rise and rainfall considered
- ✓ Public domain tools
- Continually updated and refined to new data as available



City Seawall Inventory – Special Purpose Shoreline LiDAR



Some Statistics:

- 36 miles total shoreline in City limits
- 13 of 29 miles is unimproved shoreline
- 16 of 29 miles (65%) is armored
- 5% of 29 miles of armoring (~1 mile) is City-owned seawalls
- Unarmored City Shoreline ~1.5 miles
- Total of ~2.5 miles City responsibility
- 96% of City owned seawall mile is below initial 4 ft ordinance height
- 11% of City owned is currently below King Tide (2+ ft)
- 81% of Private/other owned seawall (~16 miles) is below 4-ft initial ordinance height
- Unarmored others shoreline 8.5 miles

City-Desired Level of Service Goals

Two LOS goals for CIP provides wider range of implementation affordability

1. Alternative 1 LOS

- Up to 3-inches over road crown in the 10/24 for major roadways and identified evacuation routes
- Up to 3-inches above road crown in the 5/24 for residential streets
- Flooding maintained below building finished-floor elevations in the 100-year design storm wherever practicable

2. Alternative 2 LOS (more affordable)

- Short duration, up to 6-inches over road crown in the 10/24 for evacuation routes
- Short duration, up to 6-inches over road crown for a 5/24 for residential streets
- Flooding maintained below building finished-floor elevations in the 100-year design storm wherever practicable

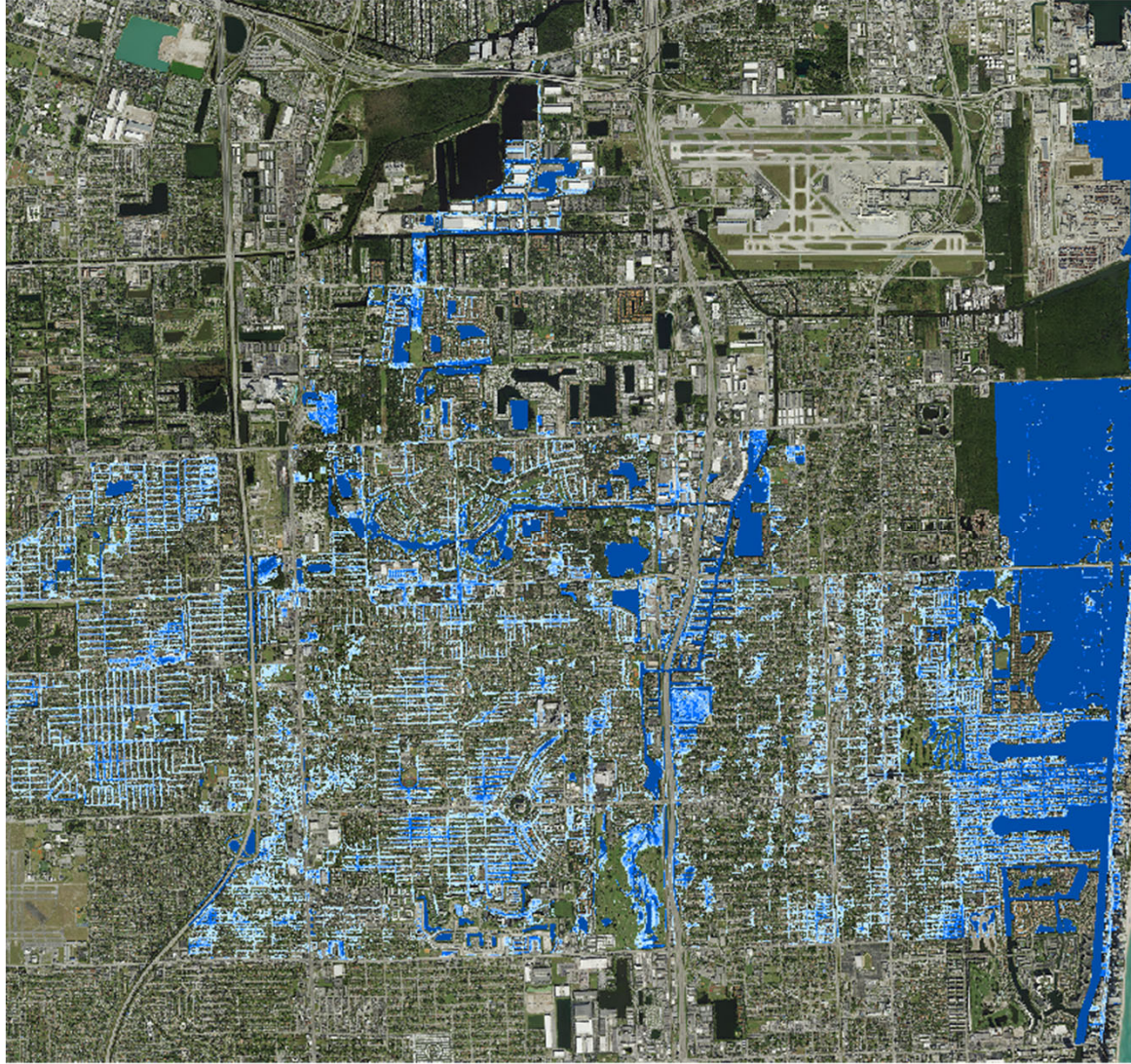


Not Meeting LOS

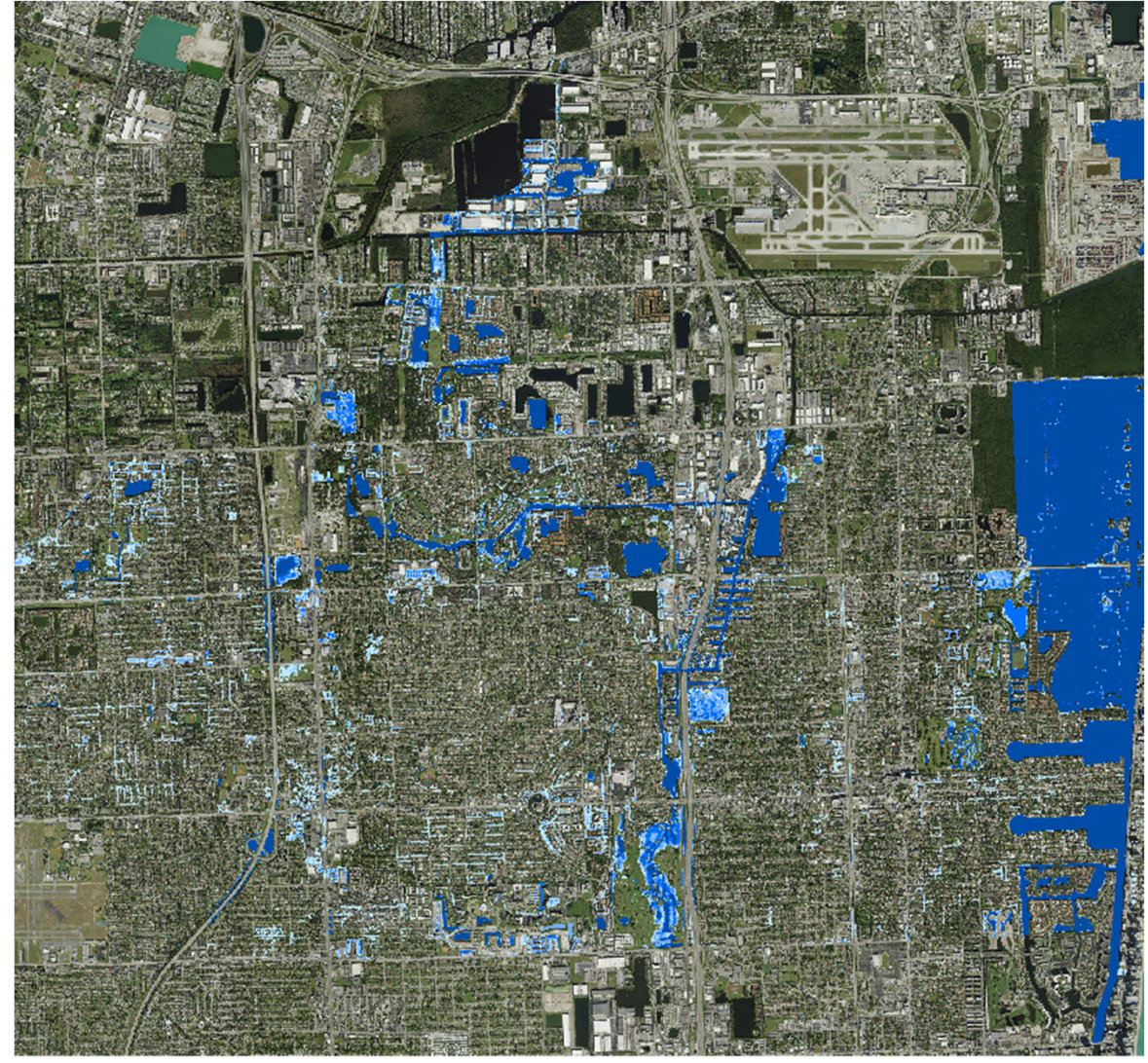


Allowable for Short Duration

Citywide Flood Inundation Reduction Map Post CIP Program



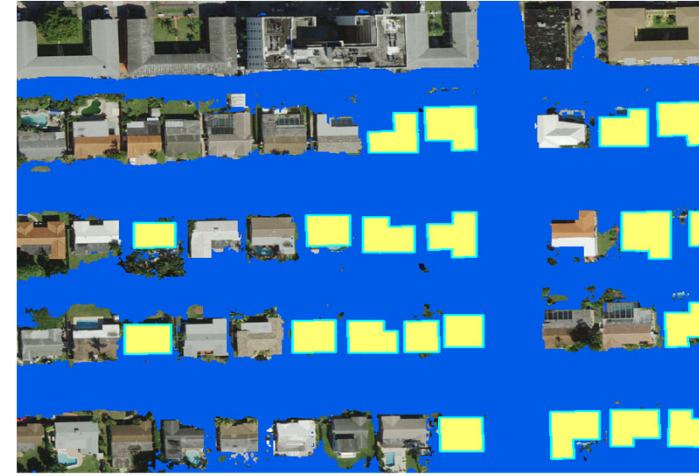
10 YR STORM CURRENT CONDITIONS FLOOD MAP



10 YR STORM POST CIP FLOOD MAP

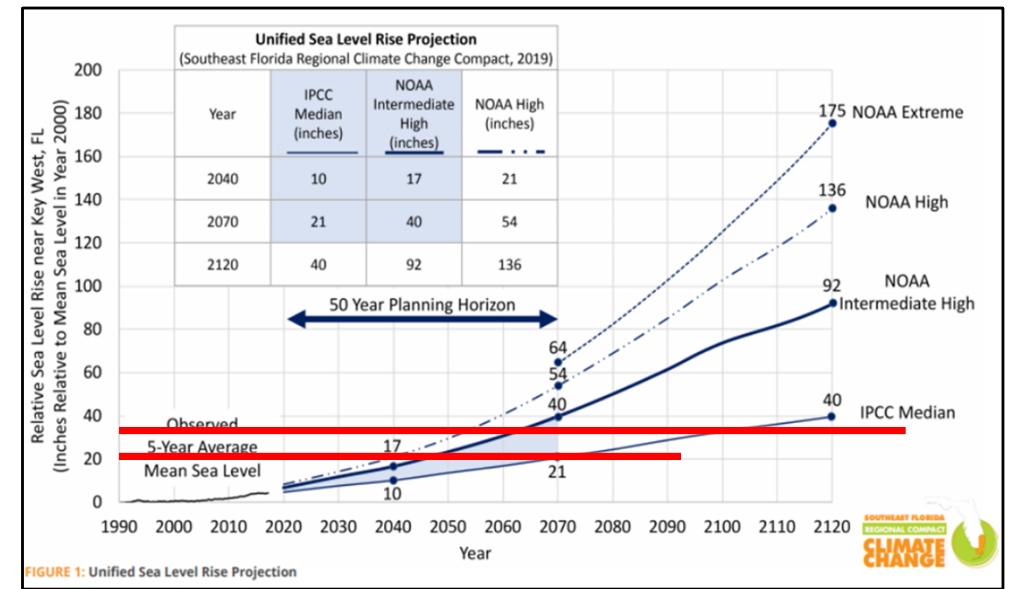
Pre-Post CIP Flooded Structures Estimation Citywide

- 100-yr Storm Structures Inundation Analysis
 - Small sheds and huts removed
 - Critical structures were noted
 - FFEL sampled for ground survey
 - LiDAR plus 1-foot
 - Sensitivity Analysis (+/-) 6 inches
- **Used as data for the Vulnerability Analysis**
- **Used for future NFIP-CRS score FEMA FIRM Flood Insurance Discounts**
 - Currently Approx 1,256 structures inundated Citywide
 - *Alt 2 reduction to Approx 554 (56%)*



Climate Change Considerations

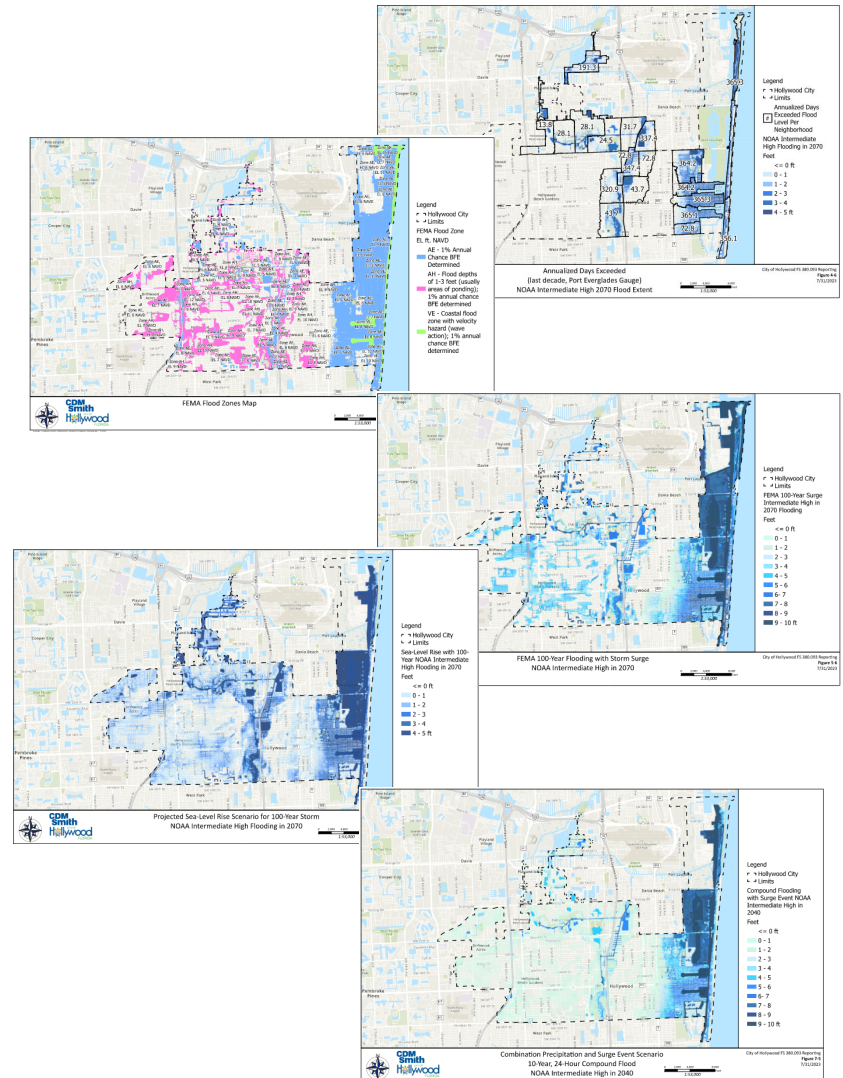
- Sea level rise tailwater and future groundwater table conditions
- “Climate change” storm run
- Coincident tidal influence and surge
 - 1-yr stillwater, King Tide
- Fluctuating groundwater routine during tides and storms for accuracy
- Seawall Improvements Flooding Analysis



- Plan considers sea level rise changes for FS 380.093 sea level scenarios:
 - NOAA Intermediate High and Low
 - 2040 and 2070
 - 0.4, 0.8, 0.9, and 2.6 ft rise above 2020
- Future tailwater and water table conditions
- Tidal influence and surge
- ~50 yr planning horizon

Vulnerability Analysis - SWMP Model Use

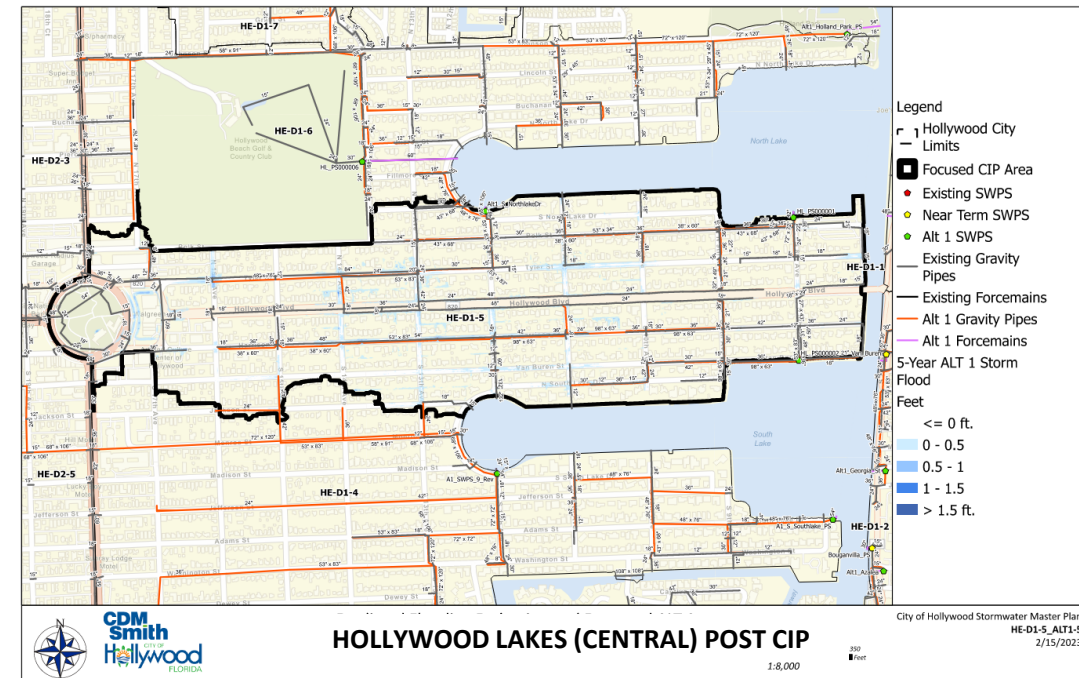
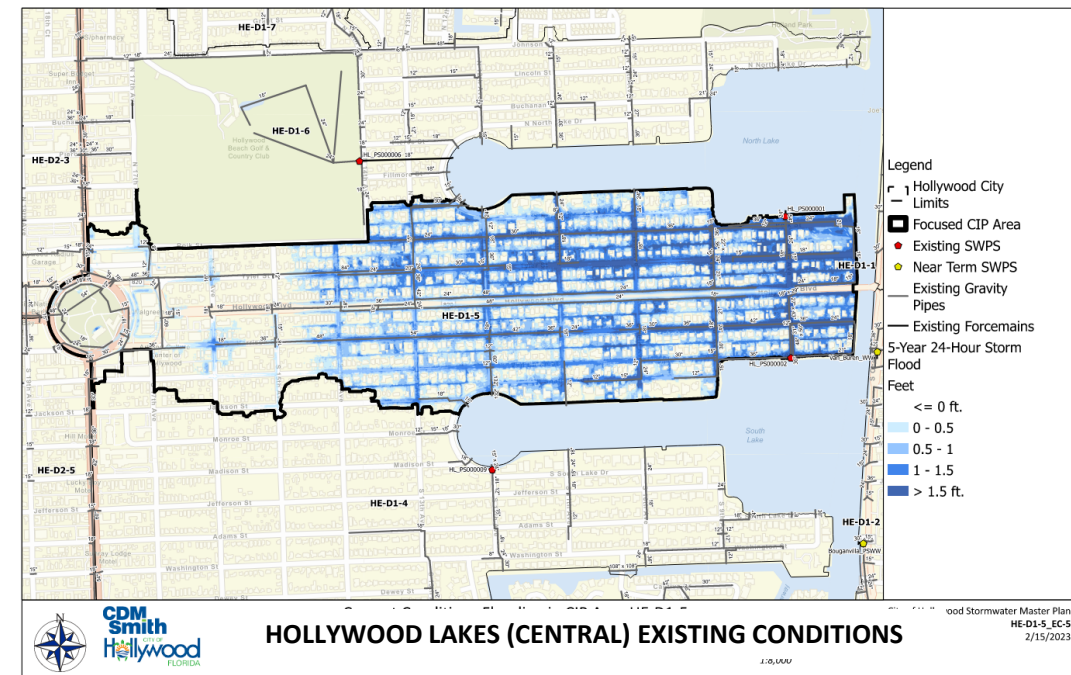
- Scenario evaluations developed and run in the model for required FS 380.093 Florida Resiliency reporting of:
 - ✓ Annualized days of tidal flooding
 - ✓ Storm surge flooding
 - ✓ Rainfall induced flood analysis
 - ✓ Compound flooding analysis
- Results Included in Vulnerability Analysis



SWMP Implementation - Example CIP Area

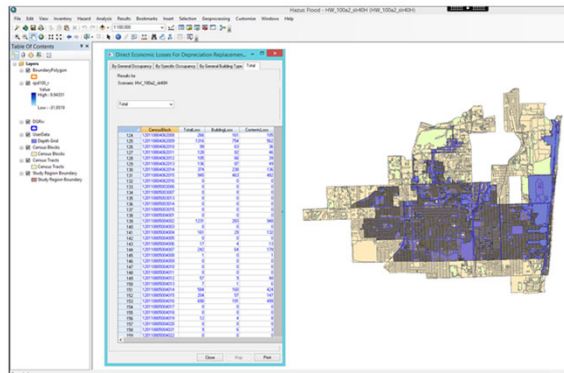
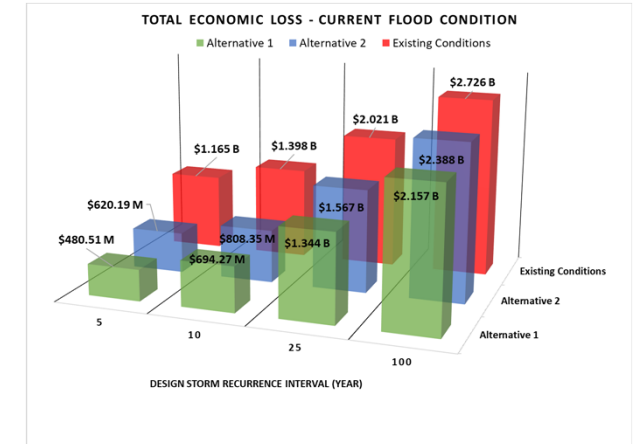
(Approximately 40 CIP areas identified Citywide)

- Inlets and piped collection systems
 - Pump stations and outfalls
 - Exfiltration systems to capture water “uphill”
 - Gravity and pumped aquifer recharge wells
 - Swales and detention ponds in parks
 - Shoreline protection seawalls/backflow preventers
- **Coordination with Vulnerability Analysis Recommendations**
- ✓ Diminishing Point of Return for CIP
 - ✓ Combination of Solutions for Critical Assets Resiliency

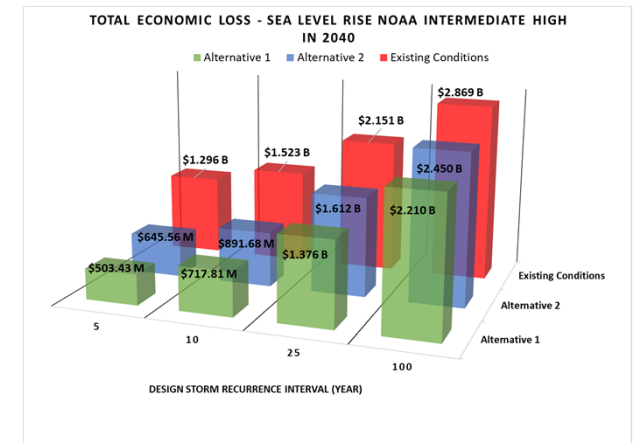


FEMA HAZUS Citywide Analysis – Flood Damage Avoidance

- Alt 1 Benefit Cost Ratio (BCR) = 1.7
- Alt 2 BCR = 2.5 for full program of ~\$1B, 2021 Dollars
- ✓ Includes Citywide cost of seawalls in CIP (Public/Private)
- ✓ FEMA Hazard US (HAZUS) tool considers flood damages and basic economic loss
- ✓ Compare flood damage and avoidance to the CIP costs and calculates BCR over 50 years
- ✓ BCR used to determine the economic viability of the SWMP CIP
- ✓ BCR greater than 1.0 will deliver a positive net present value



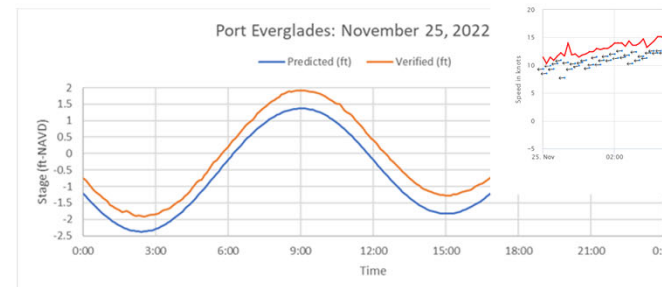
	Capital Stock Losses			Income Losses				Total Loss	
	Building Loss	Contents Loss	Inventory Loss	Building Loss (\$/sq ft)	Rentation Loss	Capital Stock Loss	Wages Losses		Market Income Loss
Florida									
Scenario	325,596	288,693	4,374	1.7	428,745	467,898	714,931	228,147	2,449,844
Total	325,596	288,693	4,374	1.7	428,745	467,898	714,931	228,147	2,449,844
Scenario Total	325,596	288,693	4,374	1.7	428,745	467,898	714,931	228,147	2,449,844



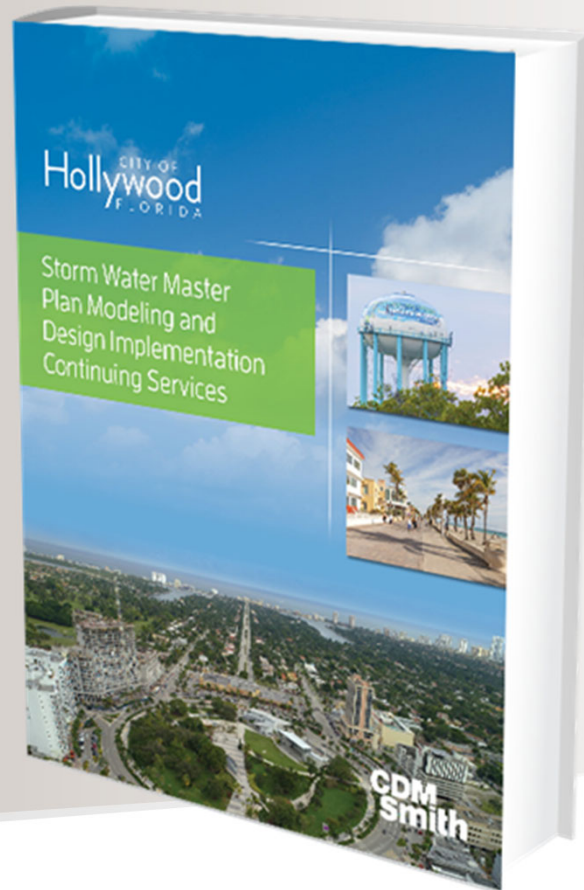
SWMP Model Use - King Tide Flood Prediction Tool

SWMP model adjusted to use fluctuating tidal boundary conditions and calibrated to King Tide events and a series of flood maps developed

1. Forecast wind and rain at high tide (1 to 2 days ahead of time)
2. Select the “adjusted” appropriate tidal flooding map considering tide, wind, and rain effects
3. Select “alert locations” from the flood map predictions
4. Deploy barricades, signage, and temporary pumps accordingly
5. Post tidal flooding hotspots map on website/social media
6. Coordinate with first responders and office of emergency management
7. Use results to identify required immediate action capital improvements for:
 1. Leaking seawalls
 2. Leaking backflow preventers
 3. Infiltrating pipes
 4. Roadway base seepage



Open Questions and Discussion





SFWMD RESILIENCY COORDINATION FORUM: USACE RESILIENCY PROJECTS UPDATE



4 September 2024

E. Timothy Gysan, P.E.,PMP
Resilience Sr Project Manager
Jacksonville District
U.S. Army Corps of Engineers



US Army Corps
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C&SF FLOOD RESILIENCE: INTEGRATED PATH FORWARD

Planning Reach A - Broward County Basins

- Section 203 with associated USACE agreements for technical assistance
- Feasibility Study (Initiated Q4 FY24) – Target WRDA 26
- Funding support from FDEP and Broward County
- Letter of intent from SFWMD to ASA(CW) submitted 17 JUL 2024; ASA(CW) acknowledgment letter sent 23 AUG 2024

Planning Reach B - C-7, C-8, C-9 Basins

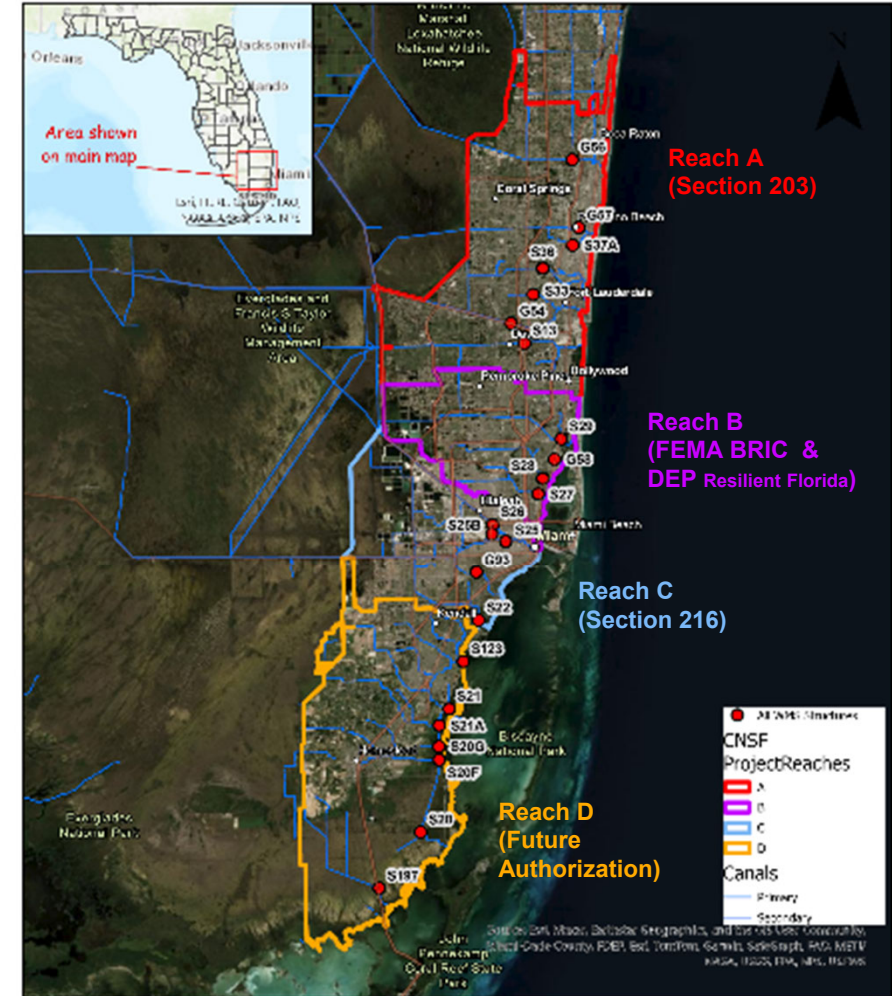
- FEMA Building Resilient Infrastructure and Communities (BRIC) / Resilient Florida Grant Funding Available with associated Section 408 requests
- Funding support from Miami Dade County

Planning Reach C - Miami River Basins

- C&SF Flood Resiliency Study – Section 216 Authorization – Budget to be agreed with VTAM
- Feasibility Study - Target WRDA 28

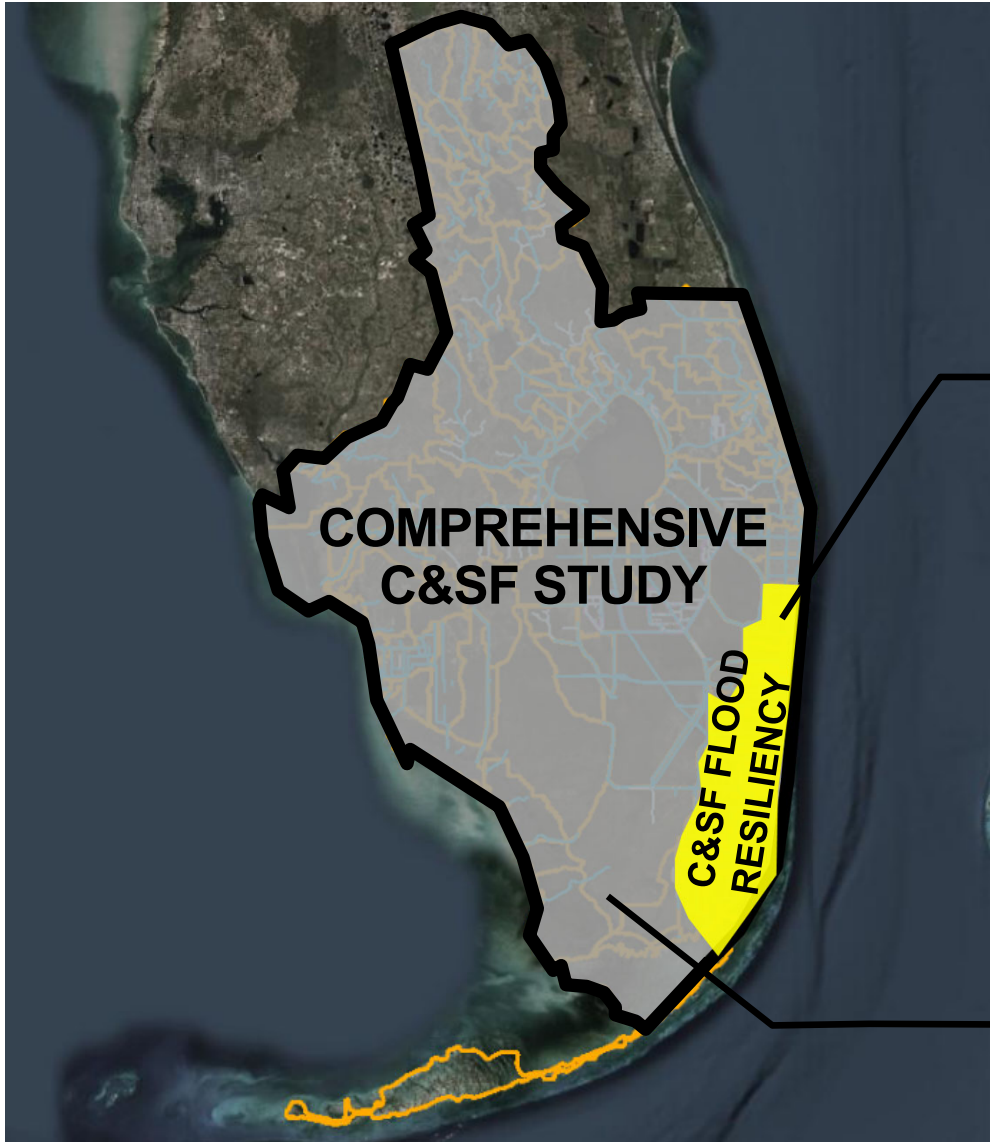
Planning Reach D – South Dade Basins

- Structures potentially to be integrated into the upcoming CS&F Comprehensive Study or future planning studies





C&SF FLOOD RESILIENCE PROGRAM



Status: Ongoing

C&SF Flood Resiliency Studies

- Focus: Coastal salinity structures for flood resilience
- 4 Planning Reaches / 3 Counties
- Many municipalities
- > 5 million population
- > 1,100 square miles

Status: Pending

WRDA22, SECTION 8214 COMPREHENSIVE C&SF STUDY

- Multipurpose project focus on short-term and long-term solutions for community resiliency
- Focus: Flood Risk Management; Water Supply; Ecosystem Restoration; Saltwater Intrusion; Recreation
- 18 counties, inland and coastal areas
- ~9 million population
- ~18,000 square miles
- Multiple federal projects including CERP



C&SF FLOOD RESILIENCY (SECTION 216) STUDY

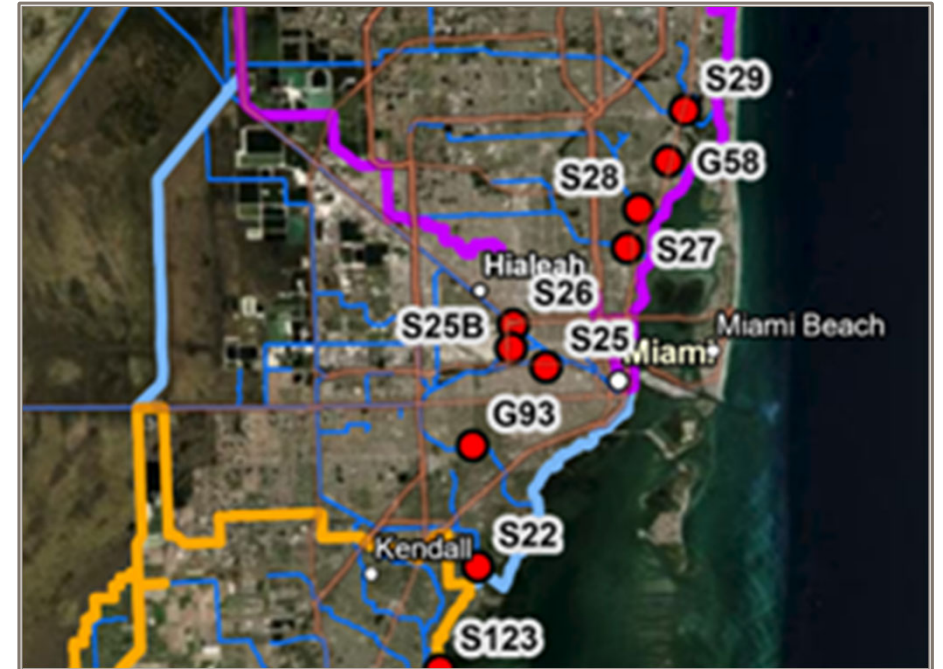


Study Process

- USACE Jacksonville District and SFWMD finalized an overall integrated strategy; Revised Section 216 will focus on Reach C
 - Five Structures in the reach to be evaluated
- USACE Jacksonville submitted revised Vertical Team Alignment Memorandum (VTAM) to the South Atlantic Division (SAD) on 14 August 2024 for the focused Reach C study; VTAM details the resources required to complete the study
 - Next steps are: endorsement by SAD, transmittal to Headquarters USACE, endorsement by HQ USACE, transmittal to the Assistant Secretary of the Army for Civil Works for review and approval

Technical Efforts

- Initial economic modeling (FDA model for NED evaluations) for the existing condition has been completed
 - Review of output and model assumptions are in process; team will be updating model details/assumptions based on the reviews
 - Interim runs for the existing condition and future without project (FWOP) will be run with a
- SFWMD and HDR have developed initial total benefit evaluations for the regional economic development (RED), environmental quality (EQ), and other social effects (OSE) benefit categories
- Target to share existing conditions and FWOP results with the PDT in October 2024



Planning Reach C – Miami River



SHINGLE CREEK & KISSIMMEE RIVER STUDY

Current Status –

- SAJ received FY24 Work Plan Funds
- Working to develop Feasibility Cost Share Agreement with Osceola County by January 2025

Authority –

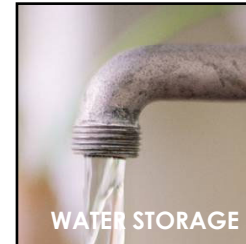
- Section 201 of the Water Resources Development Act of 2020, Division AA of Public Law 116-260 as amended, in Division H Section 8201 of the National Defense Authorization Act for Fiscal Year 2023..

Scope –

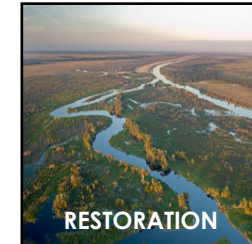
- The purpose of the project is to improve flood risk management, provide ecosystem restoration, and additional water storage conditions in Shingle Creek and Lake Toho within the Kissimmee Chain of Lakes by improving the storage and hydrologic connection throughout the system



INLAND FLOOD RISK



WATER STORAGE

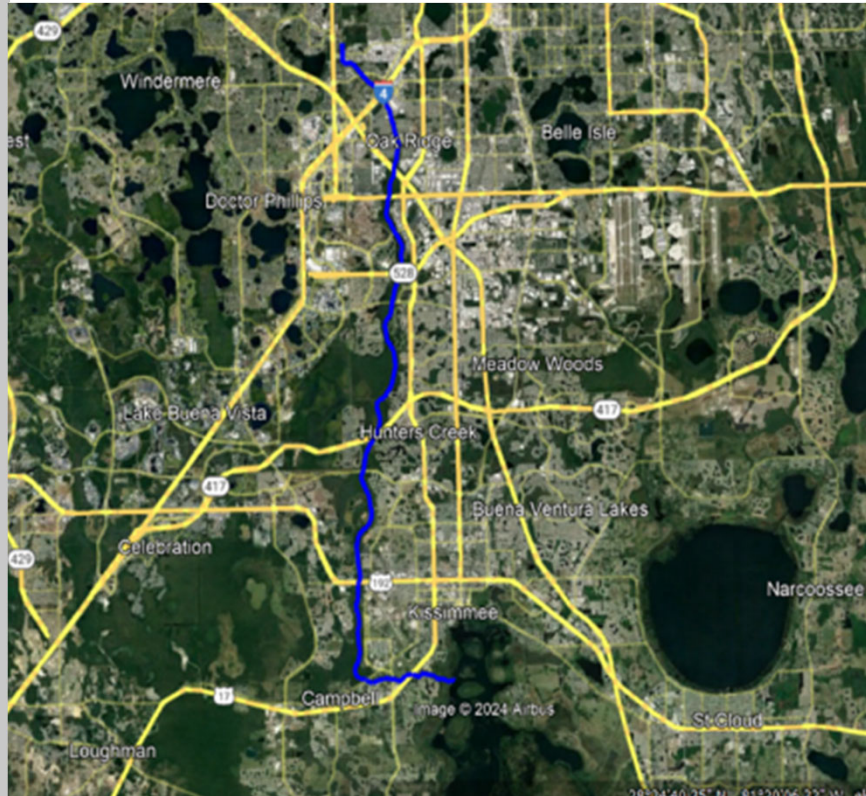


RESTORATION

- This may include taking actions to develop cost-effective structural, non-structural, and natural and nature based features to re-establish native riparian, upland, and riverine habitat and the hydrologic functions they historic performed

Key themes –

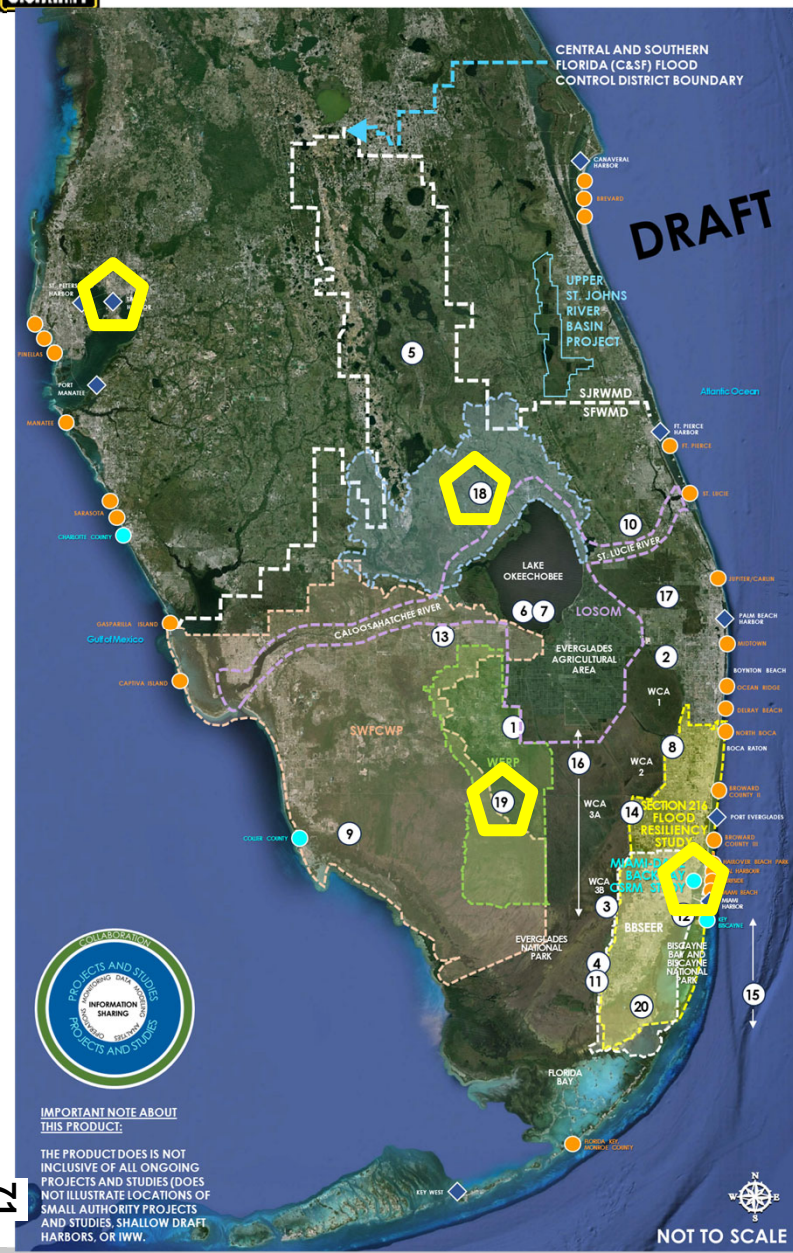
- Shingle Creek and the surrounding floodplain could convey the runoff from storm events and the S-61 outlet structure at Lake Toho could pass high flows into the lower lakes. Continued urbanization has constricted the flow area, filled natural storage, and increased the volume of runoff
- Opportunities exist for development of multipurpose features optimizing total benefits of the flood risk management, aquatic ecosystem restoration, and water storage solutions
- Project will support federal goals for benefits to Environmental Justice communities, habitat restoration, navigation, flood risk management, and recreation



Shingle Creek flow-way through Orlando to Kissimmee and outlet into Lake Tohopekaliga



COMMUNITY RESILIENCE PROGRAMS WRDA 2024 PROJECTS



- I SOUTH FLORIDA ECOSYSTEM RESTORATION (SFER) PROJECTS, STUDIES, AND REGULATION SCHEDULES**
- (H) NON-CERP (CURRENT)**
- 1) Seminole Big Cypress
 - 2) West Palm Beach Canal Stormwater Treatment Areas (STAs)
 - 3) Modified Water Deliveries (MWD) to Everglades National Park (ENP)
 - 4) C-111 South Dade
 - 5) Kissimmee River Restoration (KRR)
 - 6) Herbert Hoover Dike (HHD)
 - 7) Lake Okeechobee System Operating Manual (LOSOM)
- (H) CERP (CURRENT)**
- 8) Site 1 Impoundment
 - 9) Picayune Strand Restoration Project (PSRP)
 - 10) Indian River Lagoon - South (IRL-S) C-44 Reservoir and STA
 - 11) C-111 Spreader Canal Western Project
 - 12) Biscayne Bay Coastal Wetlands (BBCW) - Phase 1
 - 13) Caloosahatchee River C-43 Reservoir
 - 14) Broward County Water Preserve Areas (BCWPA)
 - 15) Melaleuca Eradication (system-wide)
 - 16) Central Everglades Planning Project (CEPP)
 - 17) Loxahatchee River Watershed Restoration Project (LOWRP)
 - 18) Lake Okeechobee Watershed Restoration Project (LOWRP)
 - 19) Western Everglades Restoration Project (WERP)
 - 20) Biscayne Bay and Southeastern Everglades Restoration (BBSEER)
- LARGE STUDY OUTLINES (CURRENT AND FUTURE)**
- WESTERN EVERGLADES RESTORATION PROJECT (WERP)
 - LAKE OKEECHOBEE WATERSHED RESTORATION PROJECT (LOWRP)
 - BISCAYNE BAY AND SOUTHEASTERN EVERGLADES RESTORATION (BBSEER)
 - SOUTHWEST FLORIDA COMPREHENSIVE WATERSHED STUDY (SWFCWP)
- Does not authorize USACE action but includes recommendations for site-specific studies that can be implemented by others, as well as those that USACE may be uniquely suited to implement.
- C&S FLOOD RESILIENCY (SEC 214) STUDY**
Study purpose is to enhance existing C&S water control system functionality and capacity to improve flood risk management and resiliency which has been degraded by inland inundation and changed conditions within southern Palm Beach, Broward and Miami Dade Counties.
- FUTURE COMPREHENSIVE C&S STUDY**
C&S boundary within SFWMD and SJRWMD is the preliminary study area. Study purpose is to evaluate current water resource system needs in light of climate change, population growth and land use changes to recommend comprehensive solutions to increase long-term community resiliency. Primary focus includes flood risk management, drainage and water control, prevention of saltwater intrusion, water supply, groundwater recharge, preservation of fish and wildlife, preservation of Everglades National Park, navigation, and recreation.
- FUTURE SOUTHERN EVERGLADES STUDY**
Preliminary study area based on current IDS components includes areas in and adjacent to northern WCA-3A and parts of WCA-3B.

Coastal Storm Risk Management (CSRM)

- Miami-Dade Back Bay
- Ponte Vedra

Navigation (NAV)

- Tampa Harbor

Aquatic Ecosystem Restoration (AER)

- Western Everglades Restoration Project (WERP)
- Lake Okeechobee Component A Reservoir (LOCAR)

CS&F Flood Resiliency Broward Basins



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON, DC 20310-0108

August 22, 2024

Mr. Drew Bartlett
Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

Dear Mr. Bartlett:

Thank you for your letter, dated July 17, 2024, informing my office of South Florida Water Management District's (SFWMD) intent to prepare a feasibility study for the Central and Southern Florida Flood Resiliency Study, Reach A (Broward and Hillsboro Basins) under Section 203 of the Water Resources Development Act of 1986, as amended ("Section 203 Study"), and offer to provide funds for the Government to undertake Federal Activities and Technical Assistance for the Section 203 Study.

Jacksonville District may accept SFWMD funds to undertake Federal Activities and Technical Assistance in accordance with Section 203. I will instruct the Jacksonville District Commander to develop and negotiate a Memorandum of Agreement (MOA) for Federal Activities, an MOA for Technical Assistance, and scopes of work to be executed under both MOAs, to be approved by the South Atlantic Division Commander. No credit or repayment shall be provided for any funds provided for the Federal Activities or Technical Assistance. Please note that the Section 203 authority does not enable the U.S. Army Corps of Engineers to conduct project planning for this study on your behalf.

My staff is available to discuss Section 203 study requirements or procedures at any time. My point of contact for Section 203 studies is Ms. Andrea Walker at andrea.e.walker.civ@army.mil.

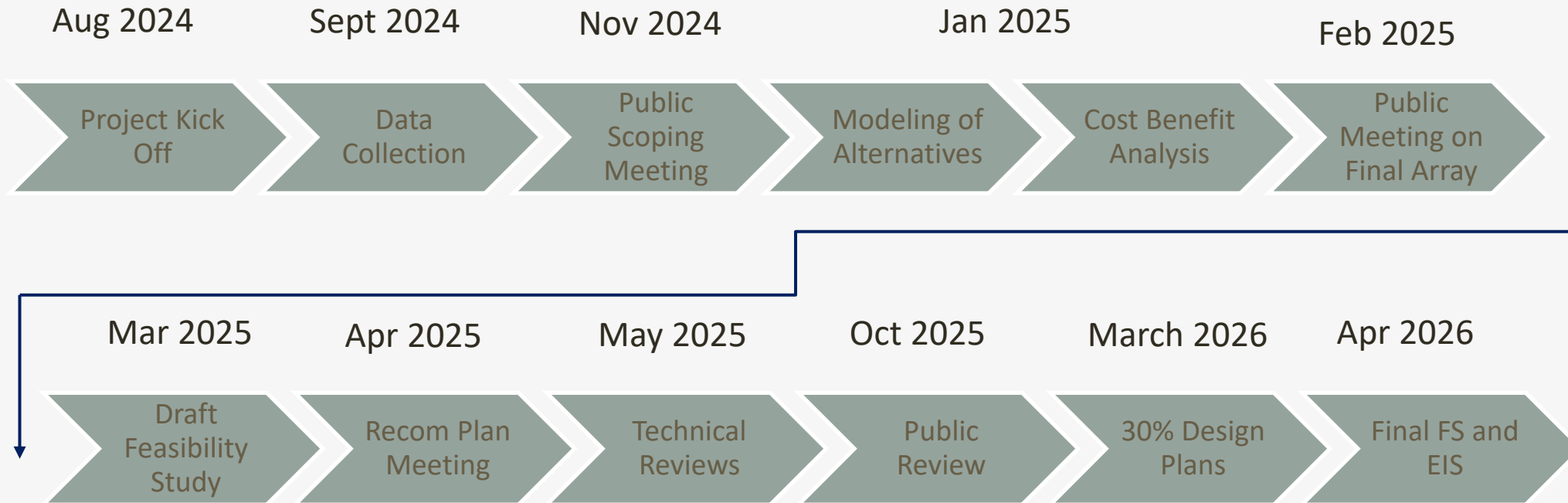
Thank you for your support of the Army Civil Works program.

Sincerely,

Michael L. Connor
Assistant Secretary of Army
(Civil Works)



Schedule and next steps



Deliver Final Feasibility Report and Environmental Impact Statement to ASA Civil Works – May 2026