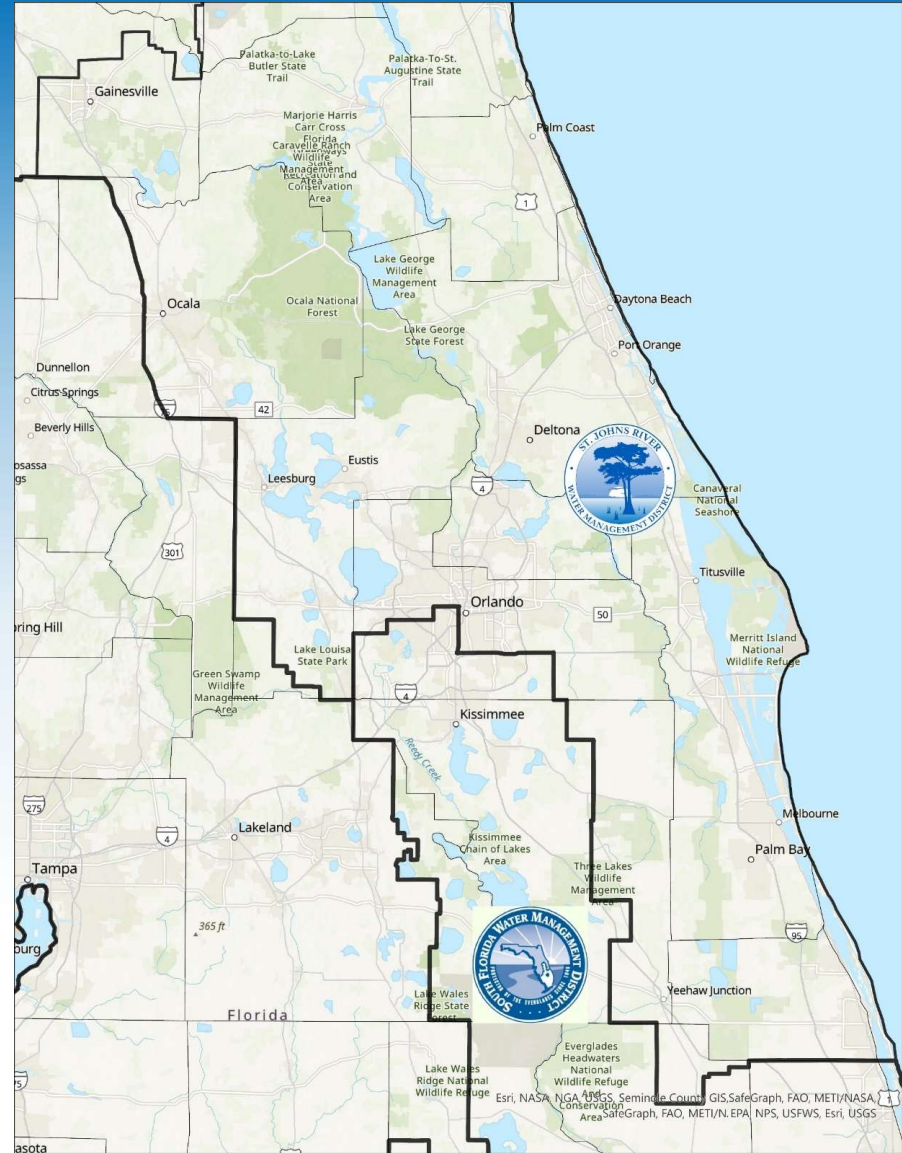


Partnering for Resilience: Water Management District's Effective Collaboration to Enhance Hurricane Response and Recovery

Tom Frick, Chief Resilience Officer, SJRWMD
Dr. Carolina Maran, Chief of District Resiliency, SFWMD



Overview Map of Area



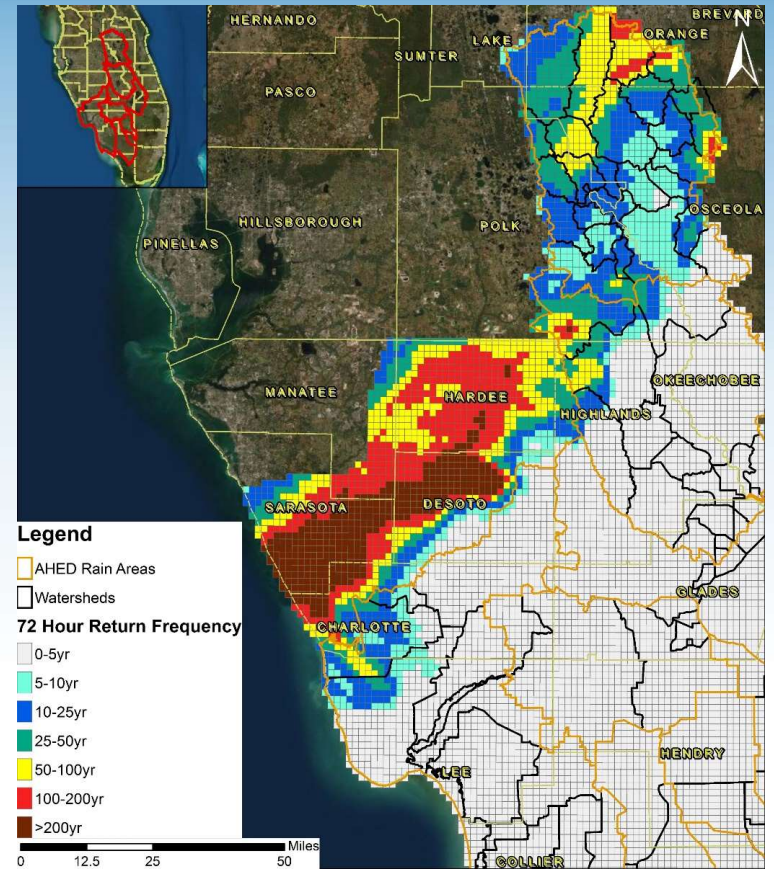
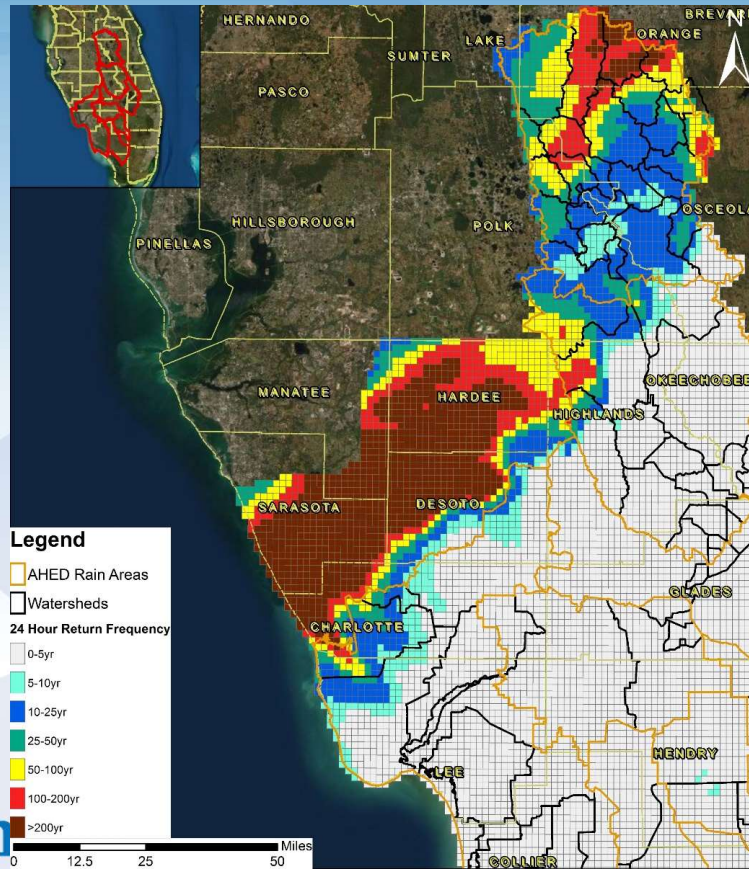
St. Johns River
Water Management District

SFWMD- Rainfall from Ian

Maxima 14.83"
East Lake Toho

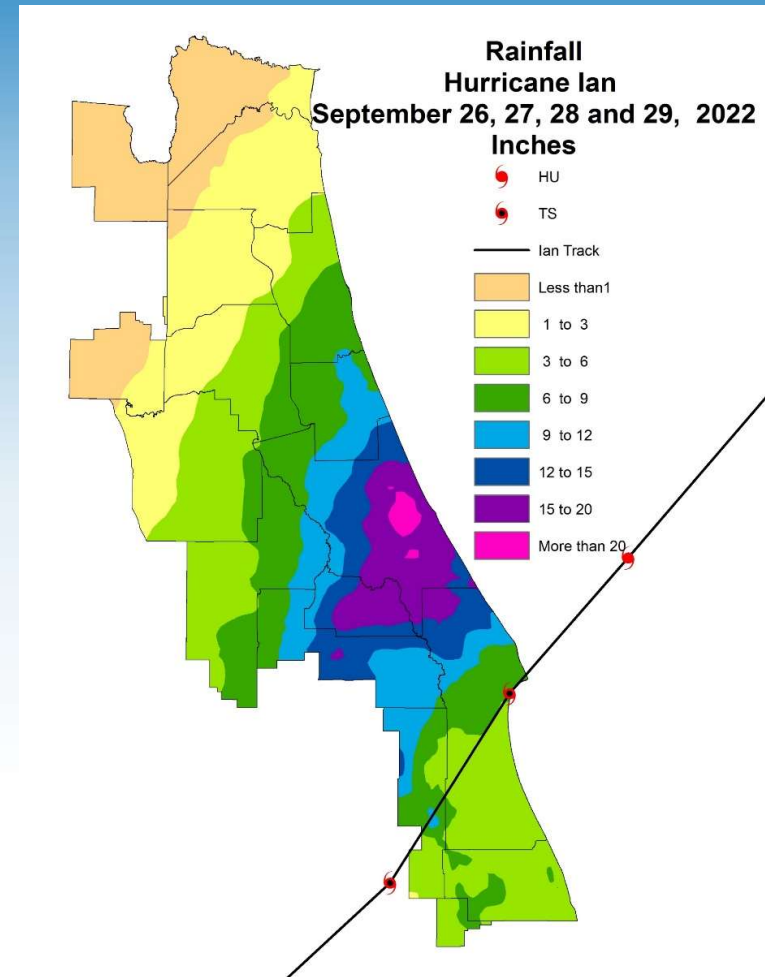
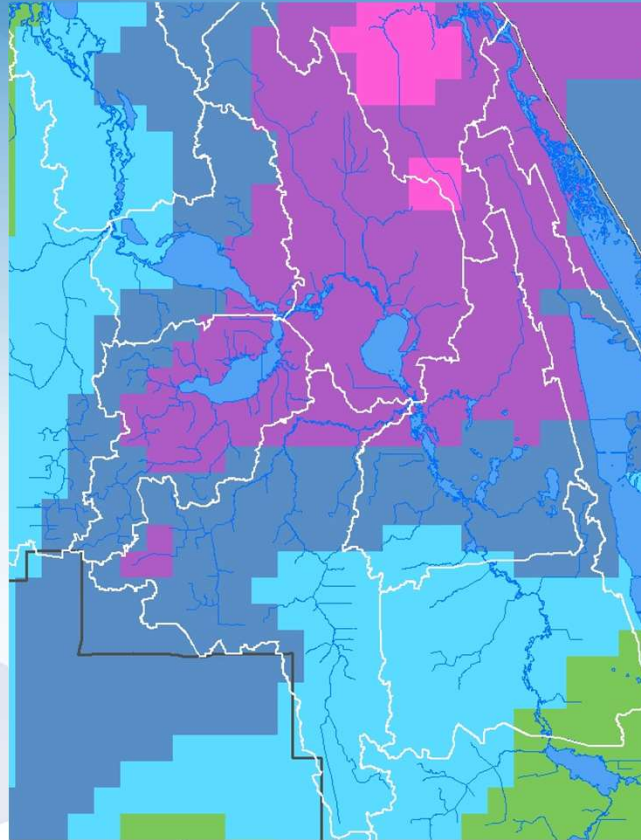


St. John
Water Management District

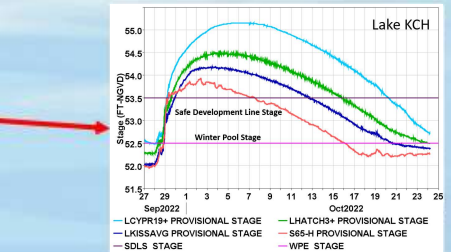
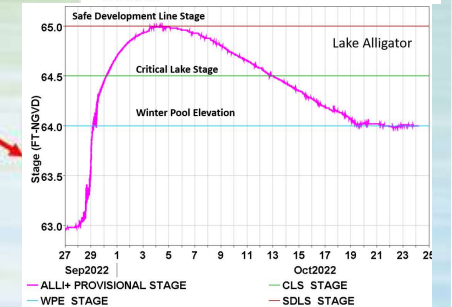
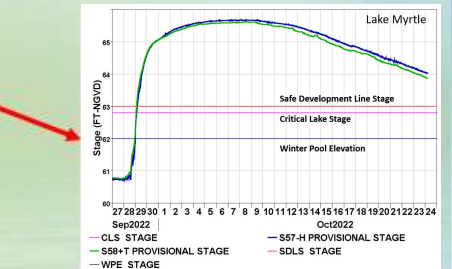
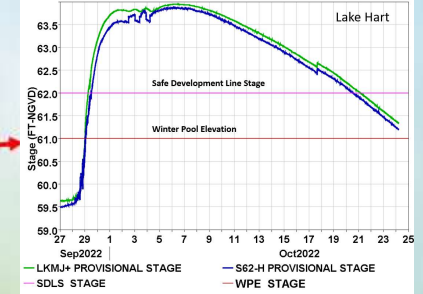
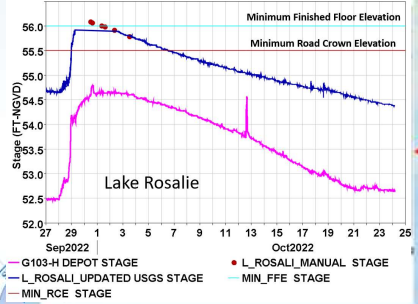
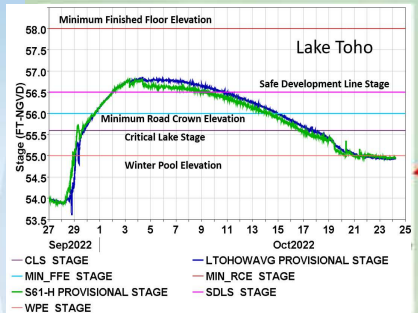
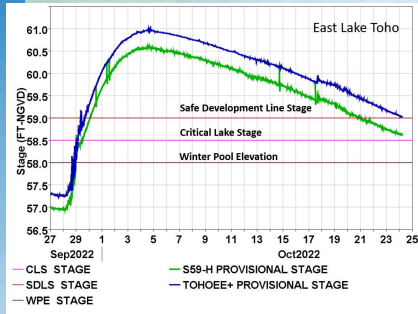


Rainfall from Ian

Hurricane Ian
rainfall totals
(inches)

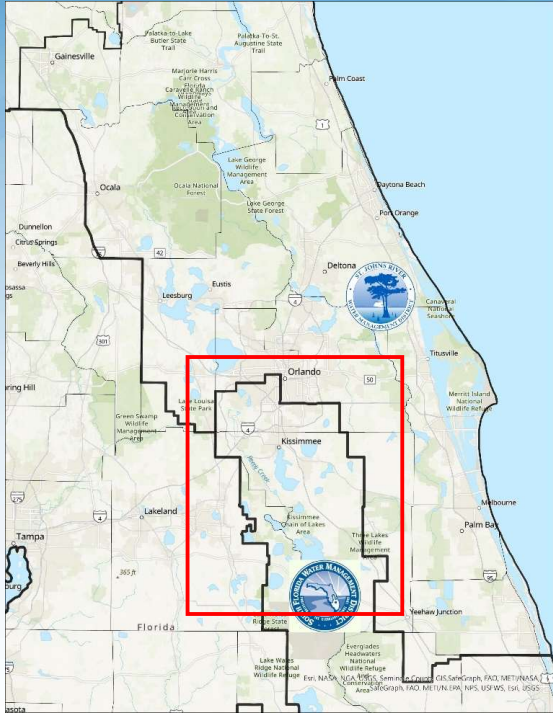


St. Johns River
Water Management District



Slide Courtesy: John Mitnik

Upper Kissimmee- Ian



Pump in operation.
 Pump being installed.
 Pump installed but not operating.
 Pending.
 As of 3:30 pm 10/12/2022



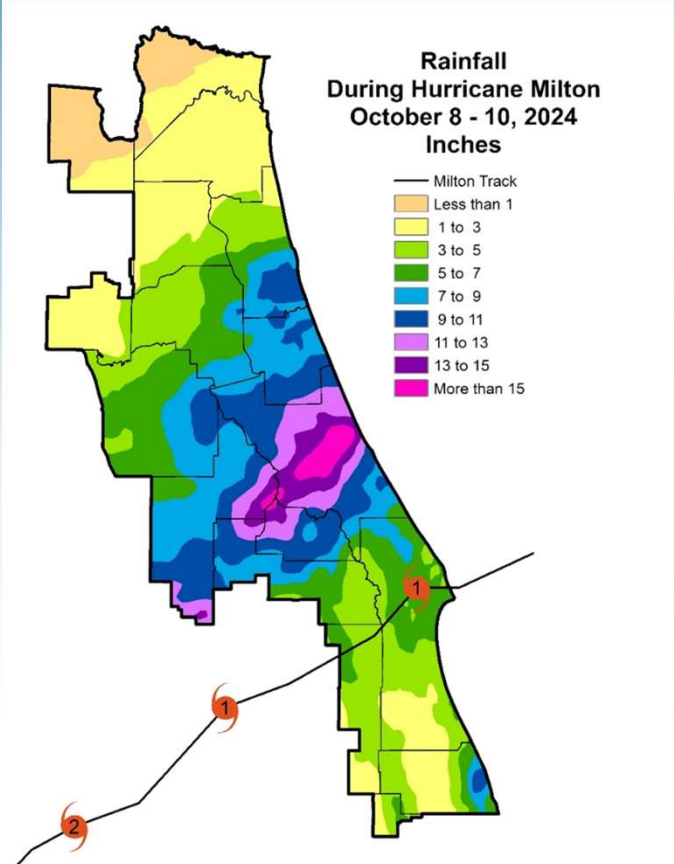
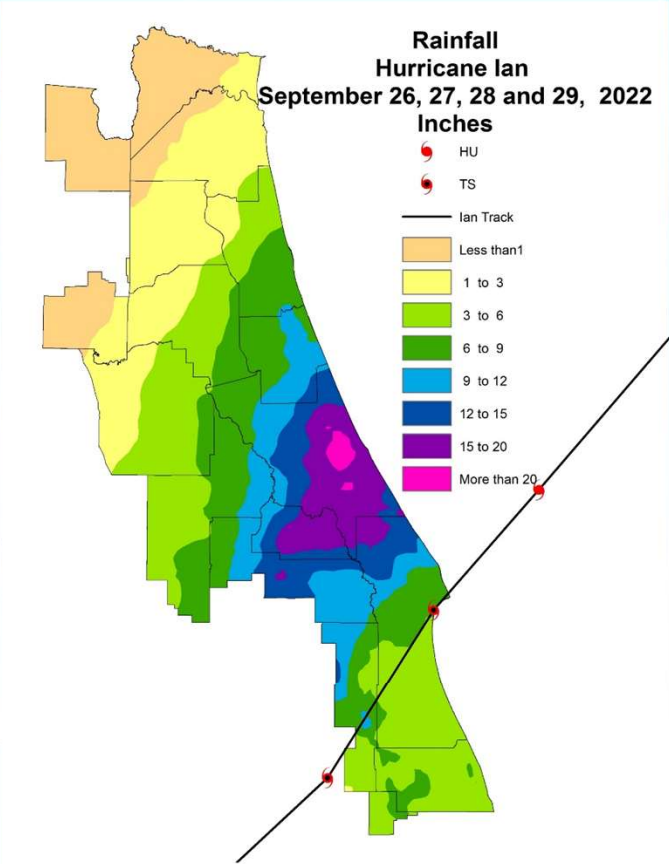
St. Johns River
Water Management District

Flooding from Ian



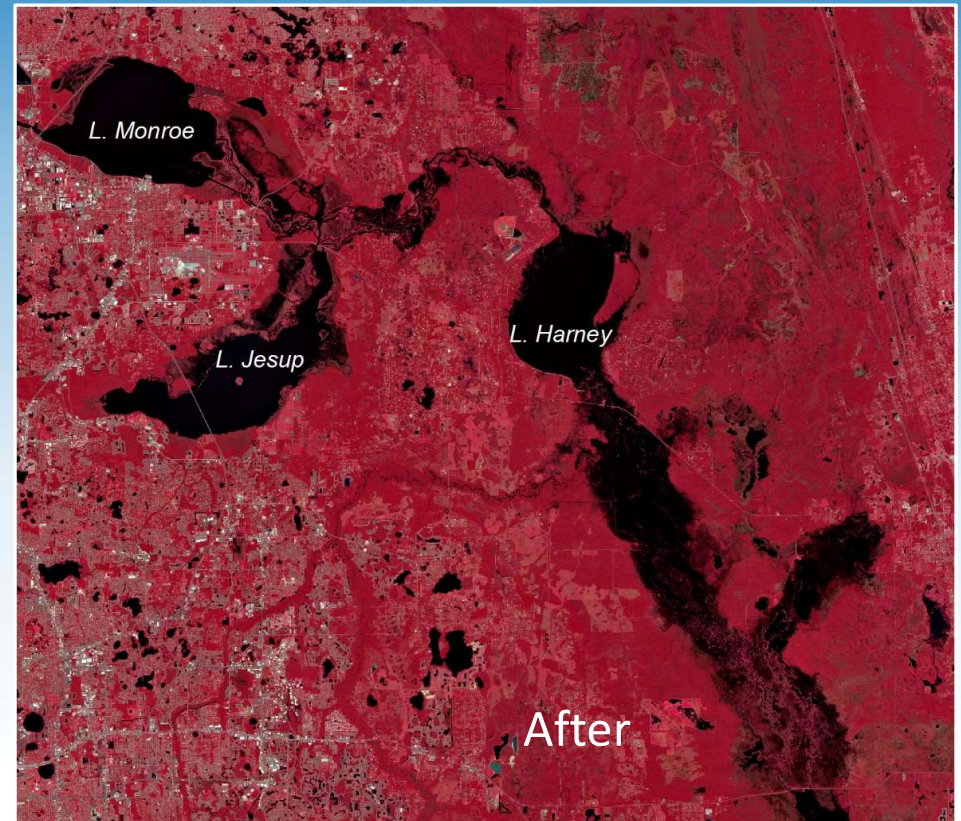
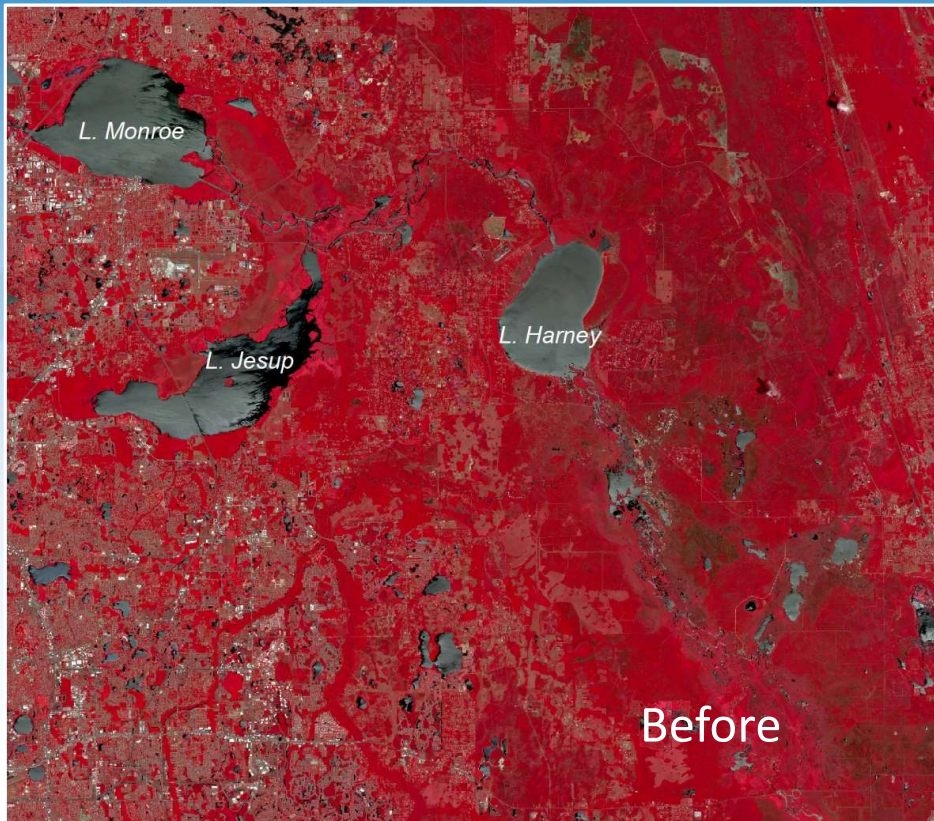
St. Johns River
Water Management District

Hurricane Ian & Milton Storm Tracks and Rainfall



St. Johns River
Water Management District

Hydrologic Conditions: Hurricane Milton



European Space Agency Sentinel satellite color infrared imagery,
May 27 and October 14, 2024



St. Johns River
Water Management District

Hurricane Milton Impacts (Seminole Ranch)

BEFORE HURRICANE MILTON



St. Johns River
Water Management District

Post Ian Efforts



St. Johns River
Water Management District

Successes between Hurricane Ian & Milton Storm

- Enhanced Coordination pre-, during and post-EOC Activation
- Communication and Emergency Pumping Coordination
 - MOU between agencies that covered review and noticing for discharges/pumping
 - Enhanced communication with local governments for pumping
- Better data
 - USGS stage monitoring gauges (specially between WMDs)
 - Continuous investments in Flood Vulnerability Modeling and Forecasting
 - SFWMD- Flood Protection Level of Service
 - SJRWMD- Flood Forecasting for St Johns River on East side
- Project Development – Building Resiliency



St. Johns River
Water Management District

District Immediate Actions to Reduce Water Levels during Ian

- Strategic draw-down of all canal levels within the impact area completed prior to tropical storm conditions and recovery operations
- Temporary pumps in Upper Kissimmee Chain of Lakes
- Debris removal in Lee County



USGS RDG/Flood Sensors: Long Term Actions

RDG Sites in UKB Recommended by SFWMD and SFRWMD and agreed with by USGS Orlando

1. Lake Ajay
2. Nova Rd Culvert
3. Econlockhatchee Bridge (In partnership with SJRWMD)
4. S-69 H
4. S-69 T

Prepared by J Goodson and J Gonzalez May 24, 2024



St. Johns River
Water Management District

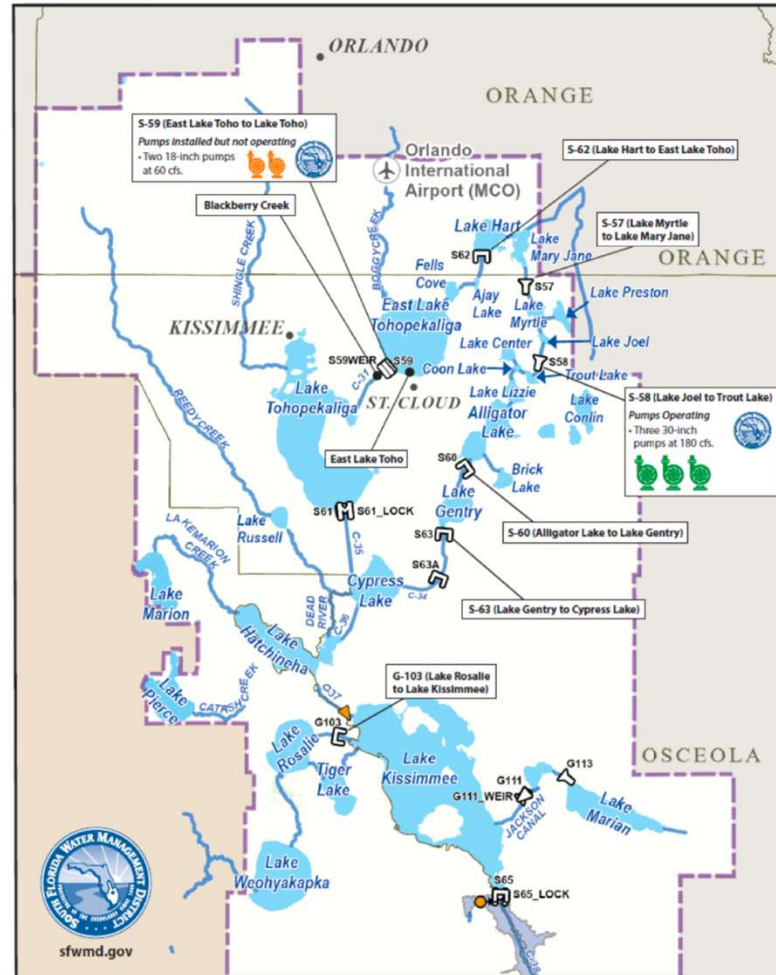


RDGs will be paired with smaller flood sensors in selected locations

Source: [USGS](https://www.usgs.gov/)

Post-Hurricane Milton Pump Location Map

Temporary Pumps in The Upper Kissimmee Chain of Lakes



RDGs at Nova Rd Culvert and Econlockhatchee Bridge provided valuable information throughout the storm

Slide Courtesy: John Mitnik



2024 Wet Season Tools & Innovations

South Florida Flood Information Resource

www.sfwmd.gov/FloodResource

Document the Flood Survey

sfwmd.gov/FloodingApp

South Florida Flood Information Resource

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.

Local Contact Viewer



Who to Contact about Flooding in your area:

Use this application to enter an address or location and be returned contact information for local governments and 298 / Special Districts responsible for addressing flooding at this location.

Photos and Flood Observations:

Click or scan this QR code to upload photos or submit information about flooding and/or flooding concerns in your area.

To provide information and photos for past events, please contact Resiliency@sfwmd.gov.



Flood Information and Current Event Viewers: Simple viewer applications designed for exploration of publicly shared Flood Information Repository content.



Flood Information Viewer



Current Event Viewer

Flooding from Ian: Staff Reports & Environmental Conditions Team High Water Mark and Drone Surveys

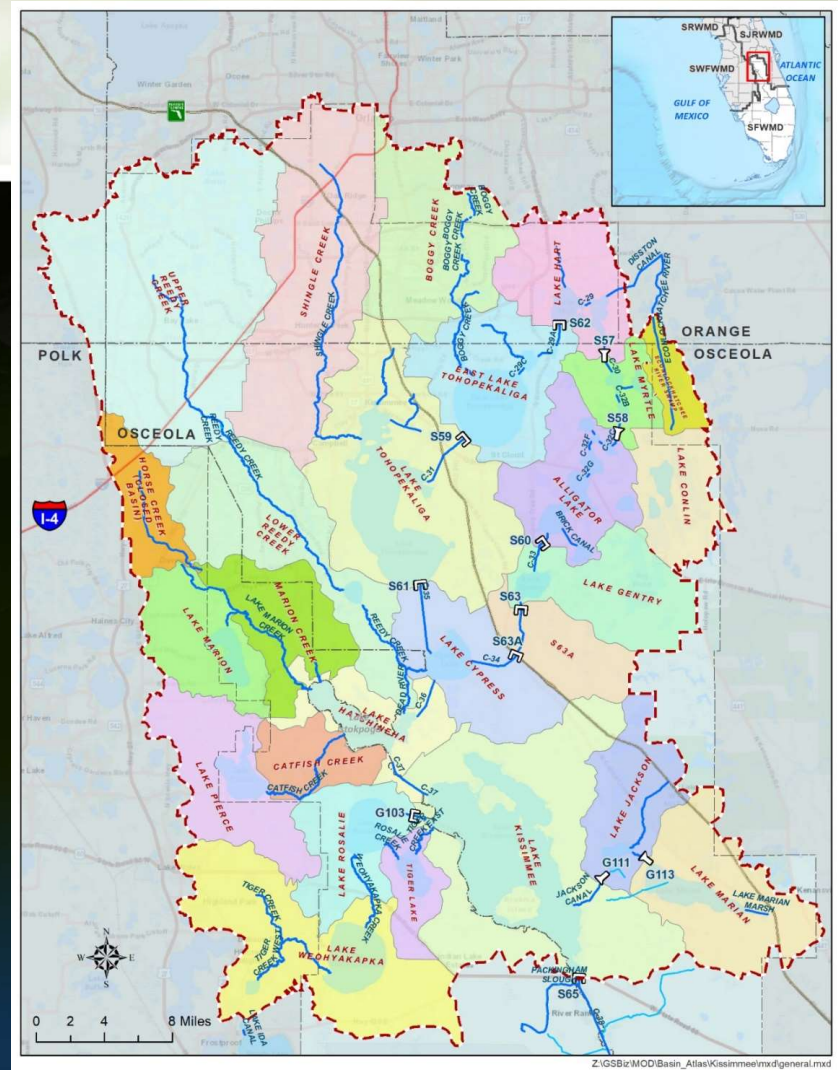
The central map, titled "Reported Flooding Incidents (Viewer App)", shows the South Florida Water Management District's jurisdiction. It is overlaid with numerous colored markers (red, blue, orange, and white) indicating the locations of reported flooding incidents across various counties including Volusia, Seminole, Orange, Polk, Osceola, Brevard, Indian River, St. Lucie, Martin, Palm Beach, Hendry, Collier, Broward, and Miami-Dade. The map interface includes a search bar, a scale bar, and a coordinate display showing -83.184 27.856 Degrees.

Surrounding the map are several photographs illustrating the impact of flooding:

- Top Left:** A photograph of a residential street with houses partially submerged in floodwater.
- Top Right:** An aerial drone photograph of a flooded residential area with houses and boats in the water. Red handwritten text "OUR HOUSES" is overlaid on the image.
- Middle Right:** A close-up photograph of a wooden post with a red circular marker attached, used for high water mark surveys.
- Bottom Left:** A photograph of a flooded area with palm trees and buildings, with the text "Drone and HWM" overlaid.
- Bottom Center:** A photograph showing a flooded area next to a building's exterior wall.
- Bottom Right:** A photograph of a flooded residential area with a grassy strip and a sidewalk.

Upper Kissimmee Basin Flood Protection Level of Service Assessment for current and future conditions (UKB FPLOS)


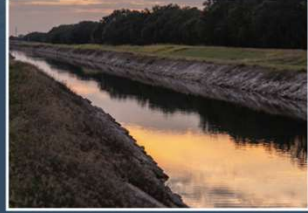


Hazen and Sawyer, PC
Vconnex Services, Inc.



PURPOSE OF STUDY

- Flood Protection Level of Service Assessment for Current and Future Conditions
- Identify areas necessitating improvements in the design, construction, operation, or upgrade of water management infrastructure
- Study focuses on twenty-six (26) watersheds in the Upper Kissimmee region
- Near final completion of Phase I

2024 SEA LEVEL RISE AND FLOOD RESILIENCY PLAN



Building Resilience and Mitigating Risks to South Florida's Water Resources

FINAL SEPTEMBER 1, 2024

HGMP Applications: DS 4673 – Hurricane Ian – Project Development

Orange County

- C-29, C-29A, C-29B, C-29C Canal Conveyance Improvements

**Estimated
Costs
\$115M**

Osceola County

- S-58 Structure Enhancement and Temporary Pump Pad
- S-59 Structure Enhancement and C-31 Canal Conveyance Improvements
- S-61 Spillway Enhancement and Navigation Lock Erosion Control

**Estimated
Benefits
\$185M
(Flood
Damages,
Existing
Properties)**

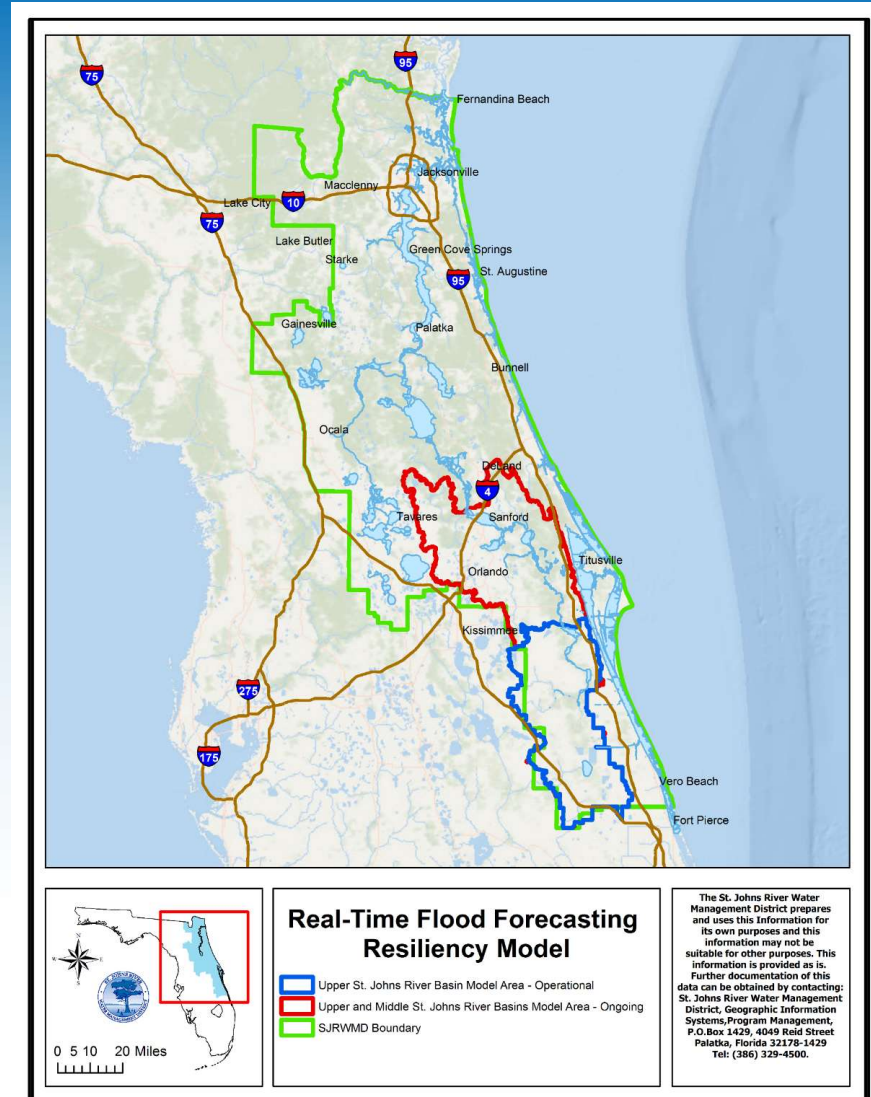
Currently responding to RFIs from FDEM

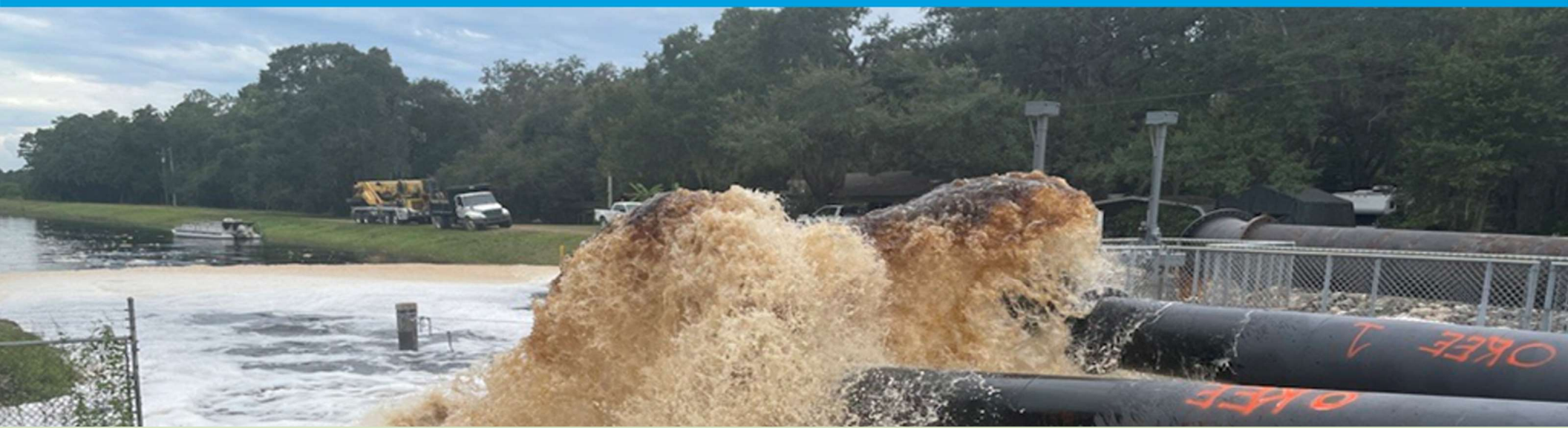
Upper & Middle St. Johns River Basin RTFF Model (Ongoing)

- Project goal:
 - Expand the model to cover the entire Upper and Middle St. Johns River Basins
 - Incorporate real time structural operations
- Capabilities:
 - Forecast flood conditions at key water bodies and roads
- Anticipated completion date: October 2027



St. Johns River
Water Management District





Thank You

Carolina Maran
Chief of District Resiliency
cmaran@sfwmd.gov
www.sfwmd.gov/resiliency

Tom Frick
Chief Resiliency Officer
tfrick@sjrwmd.gov
www.sjrwmd.gov

