Wastewater, Rivers, Springs, and Floridan Aquifer

John S. Quarterman, Suwannee RIVERKEEPER®

WATERKEEPER® ALLIANCE MEMBER

and Executive Director with

WWALS Watershed Coalition, Inc. (WWALS)

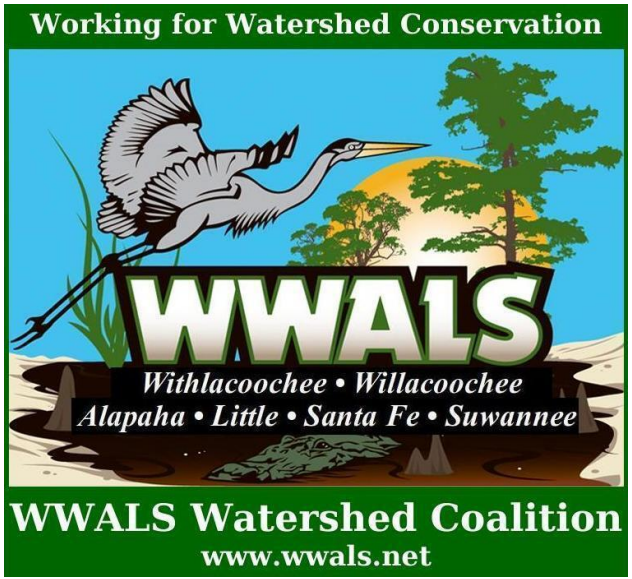
a 501(c)(3) nonprofit, est. 2012,

for clean water

In the 10,000-square-mile

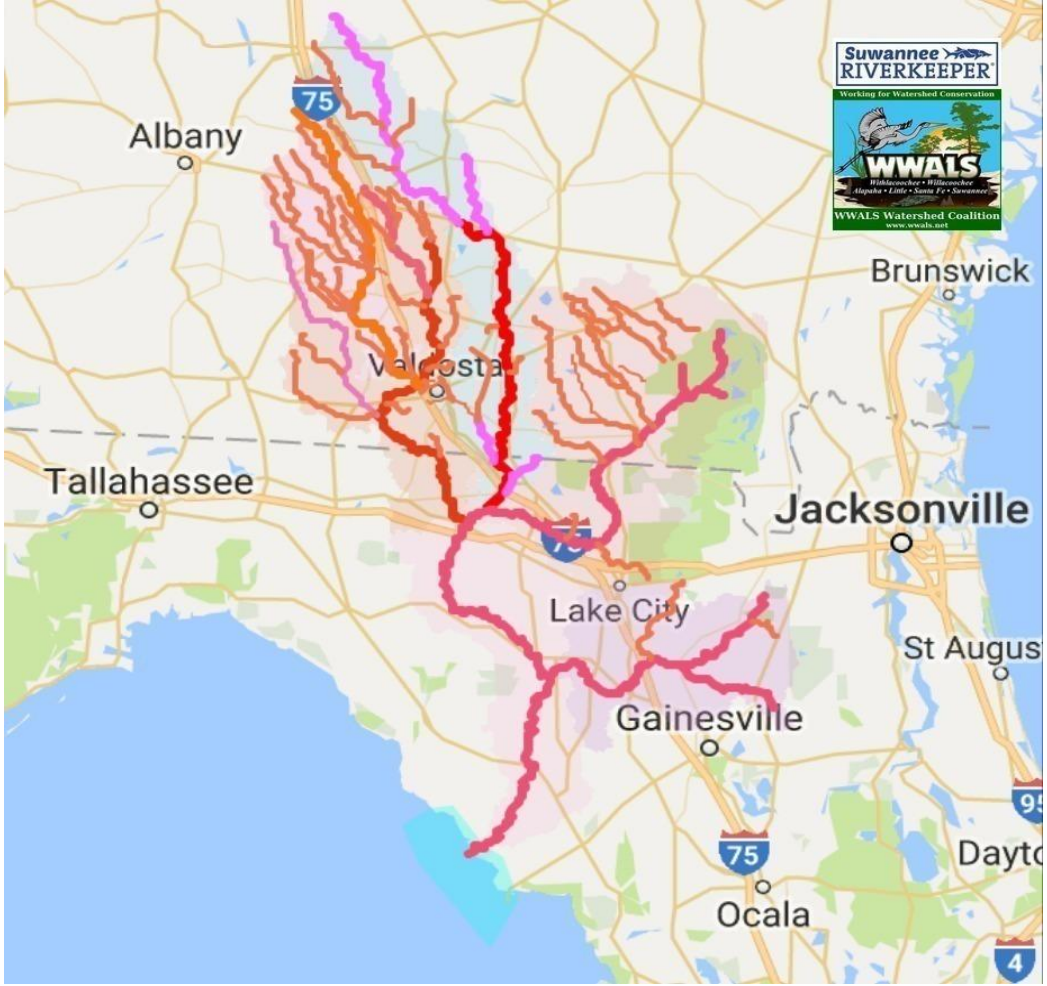
Suwannee River Basin

in Georgia and Florida



Suwannee River Basin and Estuary

More area than any of six states
Less population than any state



WWALS Vision: A healthy watershed with clean, swimmable, fishable, drinkable water.

WWALS Mission:

WWALS advocates for conservation and stewardship of the surface waters and groundwater of the Suwannee River Basin and Estuary, in south Georgia and north Florida, among them the Withlacoochee, Willacoochee, Alapaha, Little, Santa Fe, and Suwannee River watersheds, through education, awareness, environmental monitoring, and citizen activities.

Floridan Aquifer

Basis of all our drinking water, agriculture, and industry

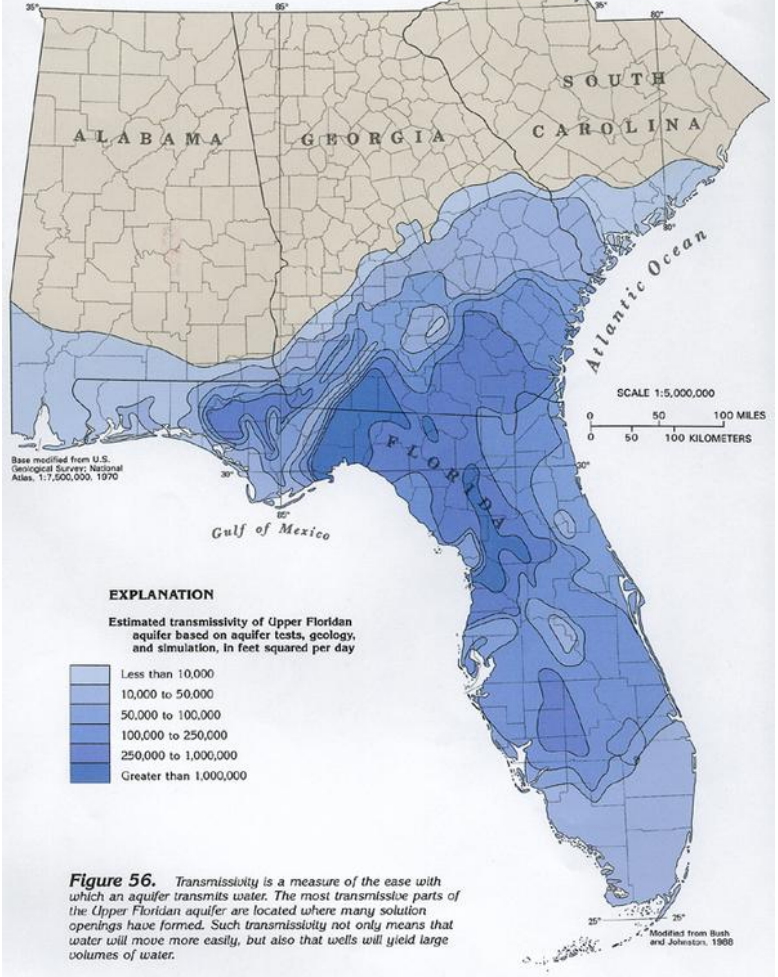


Figure 56. *Transmissivity is a measure of the ease with which an aquifer transmits water. The most transmissive parts of the Upper Floridan aquifer are located where many solution openings have formed. Such transmissivity not only means that water will move more easily, but also that wells will yield large volumes of water.*

Rick Davis, chair of the River contamination Task Force of the dozen downstream Florida counties

Spoke about the more than $160 million Valdosta has spent fixing its sewer system

- He urged more water quality testing by Valdosta

WWALS thanks Lowndes County for no sewage spills in years.

- Thanks to Valdosta for fewer spills that don't last as long.
- Thanks to GA-EPD for the daily Sewage Spills Report,
- after WWALS got 30 GA & FL orgs to propose it in 2018.

Please fully fund Georgia Environmental Protection Division

2025-10-06--GA-EPD-Sewage-Spills-Report.html by WWALS Watershed Coalition; see https://wwals.net/issues/vww/ga-spills

FACILITY NAME	BEGIN DATE	COUNTY	CITY	OVERFLOW LOCATION	QUANTITY GALLONS	OVERFLOW TYPE	PERMIT NUMBER	SPILL SOURCE	CAUSE	RIVER BASIN	WATERWAY IMPACTED	OVERFLOW DESTINATION
Valdosta, City of (Withlacoochee WPCP)	2025-08-23	Lowndes	Valdosta	1212 Wainwright Drive Valdosta, Georgia 31601	**20,000**	Raw Sewage	GA0033235	Collection System	Hurricane or Large Stormwater Event,High Levels of Inflow, Inadequate Treatment Plant Capacity High Levels of Inflow,	Suwannee	One MIle Branch	Spill Waters of the State
Valdosta, City of (Withlacoochee WPCP)	2025-08-24	Lowndes	Valdosta	3180 Wetherington Lane Valdosta, Georgia 31601	**1,500,000**	Raw Sewage	GA0033235	WWTP	Aging Infrastructure,Hurricane or Large Stormwater Event,High Levels of Inflow, Inadequate Treatment Plant Capacity High Levels of Inflow,Inadequate TWTDS Capacity Due to Stormwater Event,	Suwannee	Withlacoochee River	Spill Waters of the State

Stigma

Not downstream from Valdosta:

- Suwannee River upstream from the Alapaha
- Ichetucknee River
- Santa Fe River
- New River

Yet **all 12 SRWMD counties**

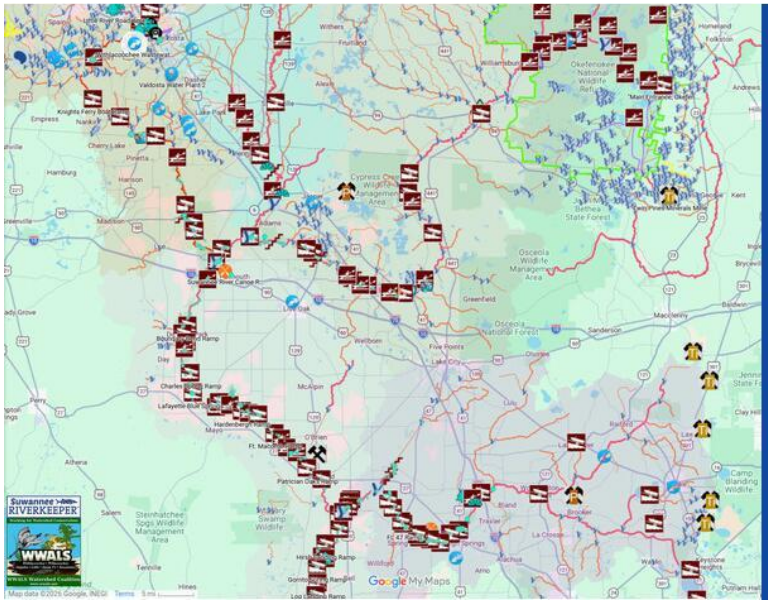
Are represented on the Task Force:

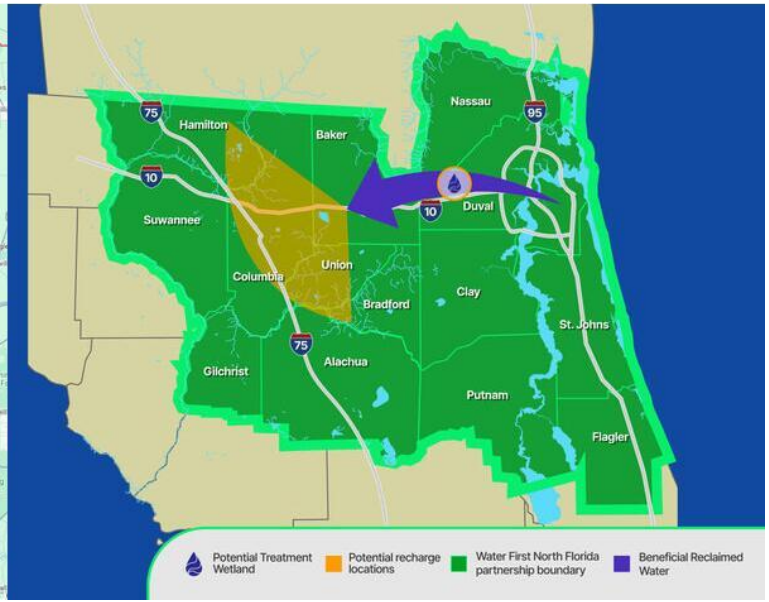
- **Sewage reputation affects them all.**

The Suwannee River Basin in Florida

is downstream from Valdosta's wastewater spills

Should it also be downstream from Jacksonville?

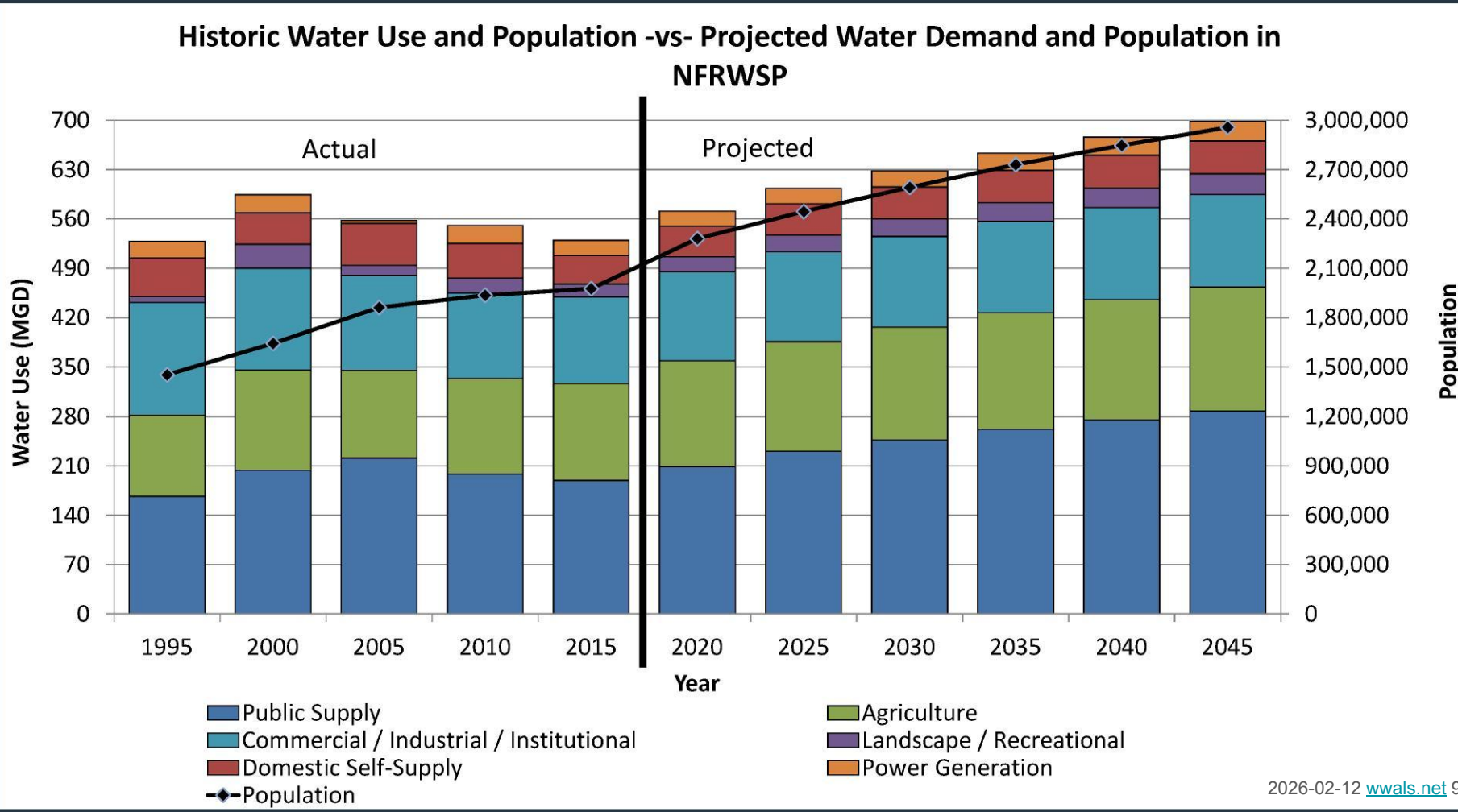




What problem needs solving?

SRWMD and SJRWMD say
increasing water demand is the problem

What is projected to increase the most:
“Public Supply”


Historic Water Use and Population -vs- Projected Water Demand and Population in NFRWSP
Actual
Projected
Water Use (MGD)
Population
Year
700
630
560
490
420
350
280
210
140
70
0
3,000,000
2,700,000
2,400,000
2,100,000
1,800,000
1,500,000
1,200,000
900,000
600,000
300,000
0
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
Public Supply
Commercial / Industrial / Institutional
Domestic Self-Supply
Population
Agriculture
Landscape / Recreational
Power Generation

Demand and population where?

The area of the

North Florida Regional Water Supply Partnership

(NFRWSP)

Much of the area of

Suwannee River Water Management District

(SRWMD)

St Johns River Water Management District

(SJRWMD)

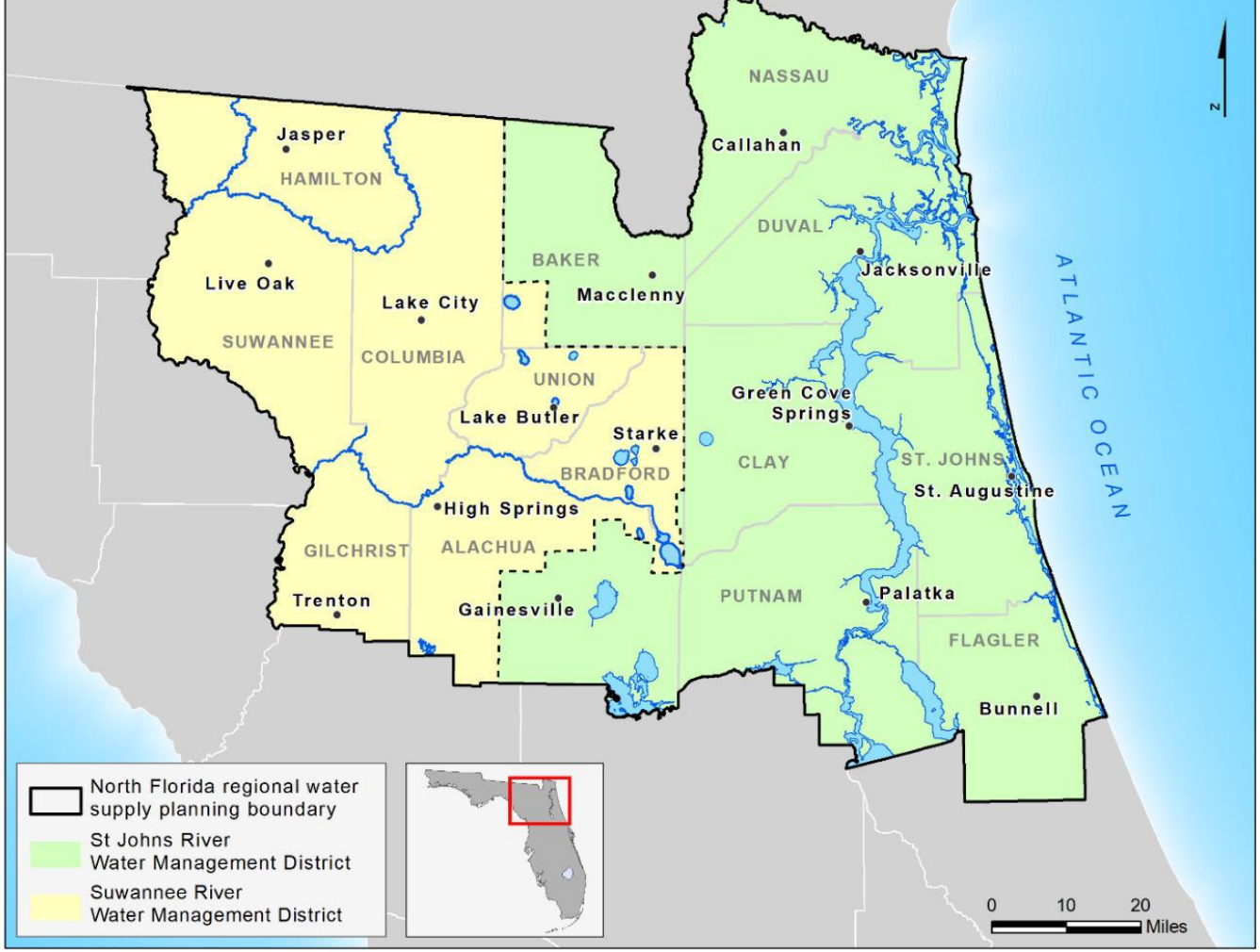


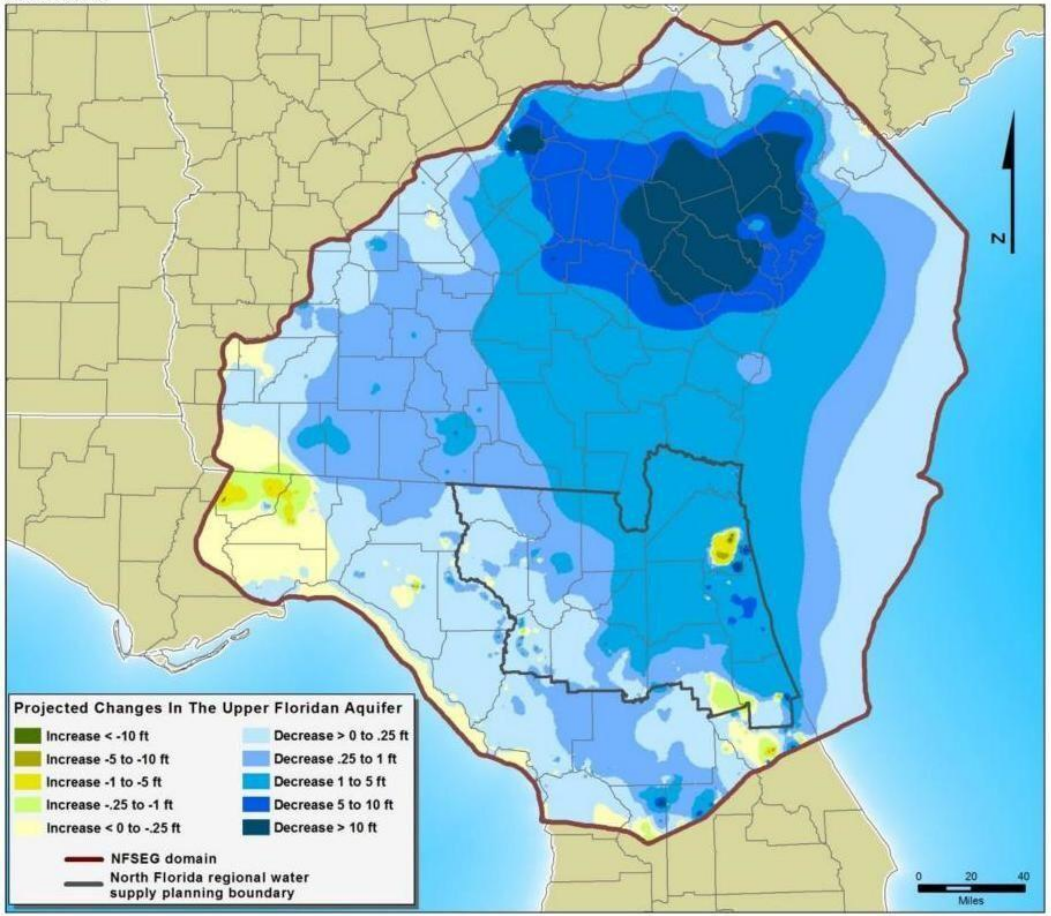
Figure 2. North Florida Regional Water Supply Partnership area

The island of higher aquifer water around JAX

Is because “Public Supply” pumping

Draws water from everywhere else

Figure C3: Change in Upper Floridan aquifer from 2035 withdrawals within the NFSEG domain.



SRWMD and SJRWMD want to fix:

Lower levels and flows

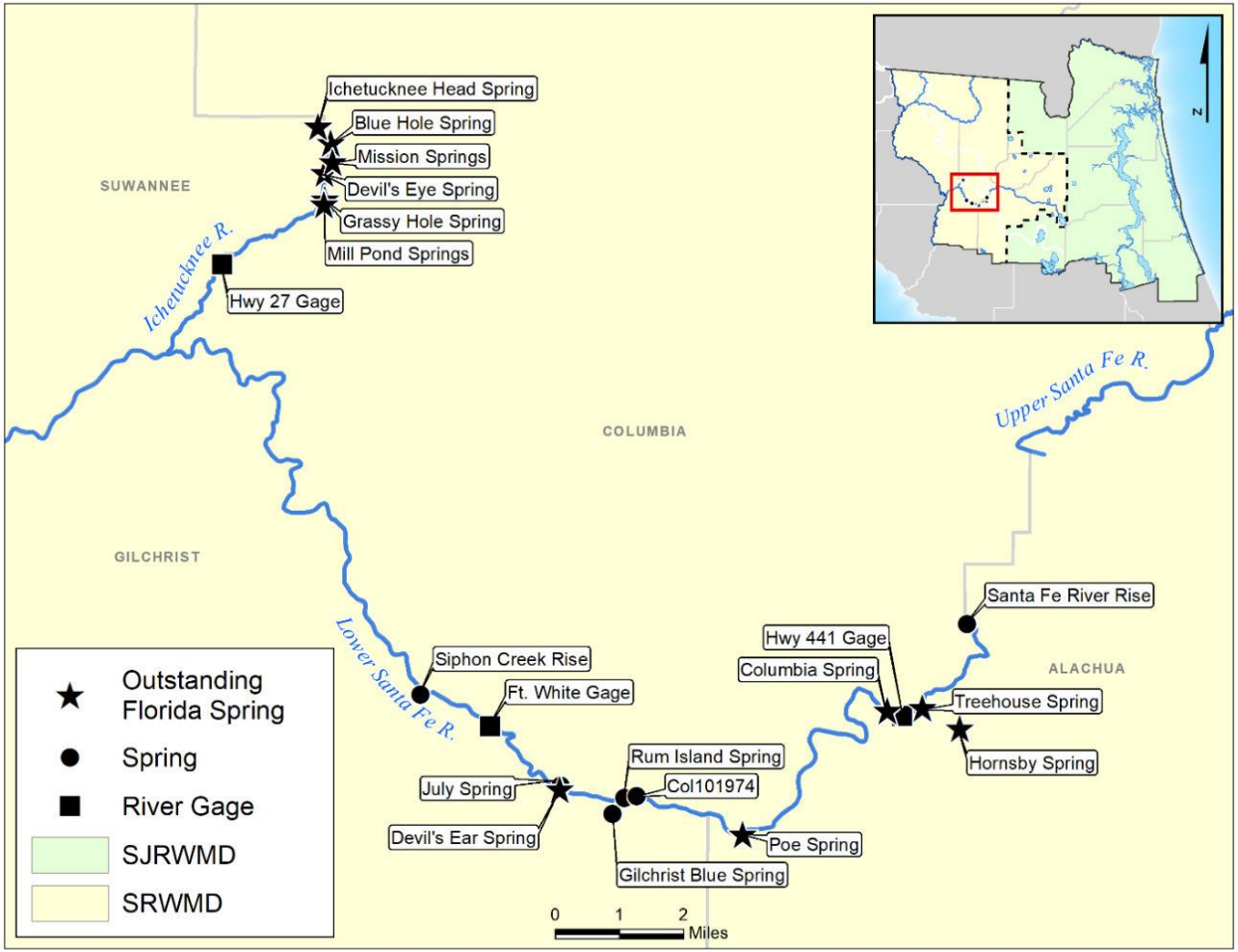


Figure 1. Santa Fe and Ichetucknee Rivers and Priority Springs

Agriculture uses most SRWMD water

But **Public Supply** uses most SJRWMD water

Table 5. Percent of 14-18AVG withdrawal impacts by water use type and compliance gage for the SRWMD portion of the Partnership area

Water Use Type	Lower Santa Fe Fort White	Lower Santa Fe Hwy 441	Ichetucknee Hwy 27
Public Supply	6%	6%	6%
Domestic Self-Supply	5%	4%	6%
Agricultural	26%	20%	24%
Commercial/Industrial/Institutional & Mining/Dewatering	3%	3%	4%
Landscape/Recreation	1%	1%	2%
Power Generation	2%	3%	1%
Total	43%	37%	42%

*Numbers may not add to 100% due to rounding

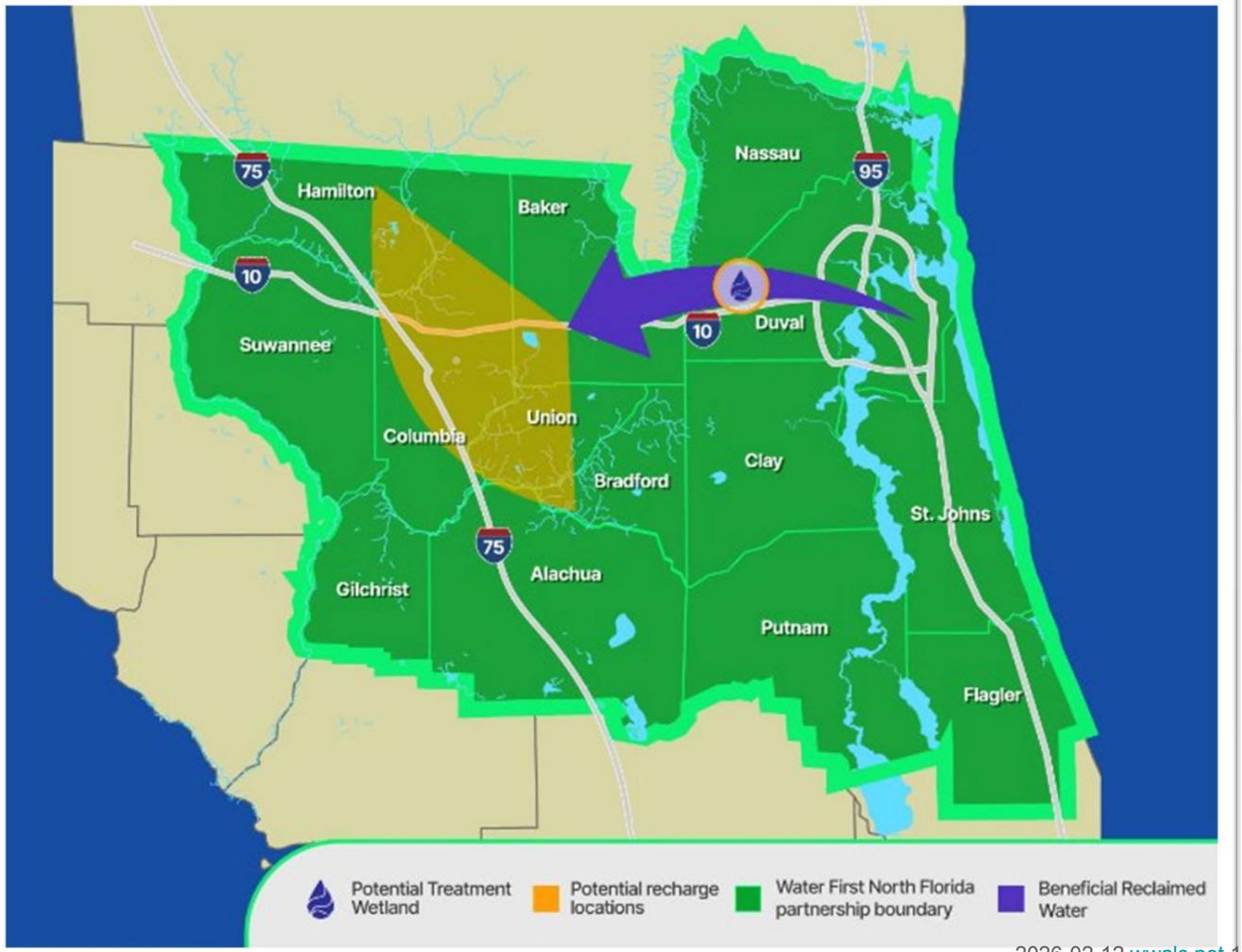
Table 6. Percent of 14-18AVG withdrawal impacts by water use type and compliance gage for the SJRWMD portion of the Partnership area

Water Use Type	Lower Santa Fe Fort White	Lower Santa Fe Hwy 441	Ichetucknee Hwy 27
Public Supply	28%	32%	23%
Domestic Self-Supply	4%	5%	4%
Agricultural	2%	2%	2%
Commercial/Industrial/Institutional & Mining/Dewatering	5%	6%	6%
Landscape/Recreation	<1%	<1%	<1%
Power Generation	1%	1%	1%
Other	<1%	<1%	<1%
Total	39%	45%	35%

*Numbers may not add to 100% due to rounding

Why is this a solution?

(Treated JAX wastewater piped into wetlands in the Suwannee Basin)



Why is **SJRWMD** hiring

to fix **SRWMD** levels & flows?

AGENDA REQUEST FOR GOVERNING BOARD MEETING November 12, 2025

Account Name: Water First North Florida

Funding Source: State Sources – DEP

Budget Authority: FY 2025–28 (anticipated)

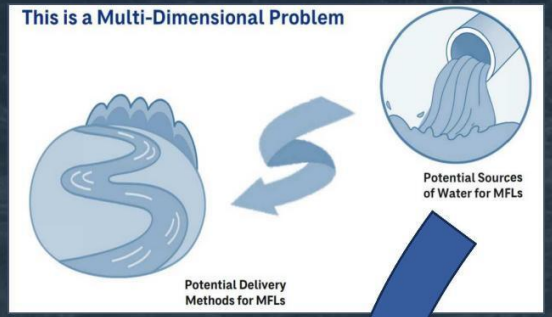
Budget: $2,170,000 (anticipated)

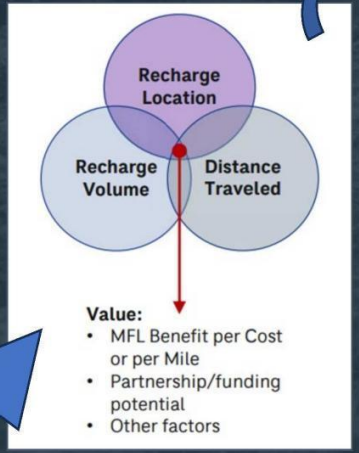
Fiscal Year	Estimated Amount*
FY 2025-26	$800,000
FY 2026-27	$900,000
FY 2027-28	$470,000

Slides from a July 8, 2025, staff presentation to SRWMD Board

North Florida Regional Recharge Project - Conceptualization

- Cooperative funding agreement with SJRWMD, SRWMD, FDEP and four NE Florida utilities
- Evaluate potential project options for the North Florida Partnership area



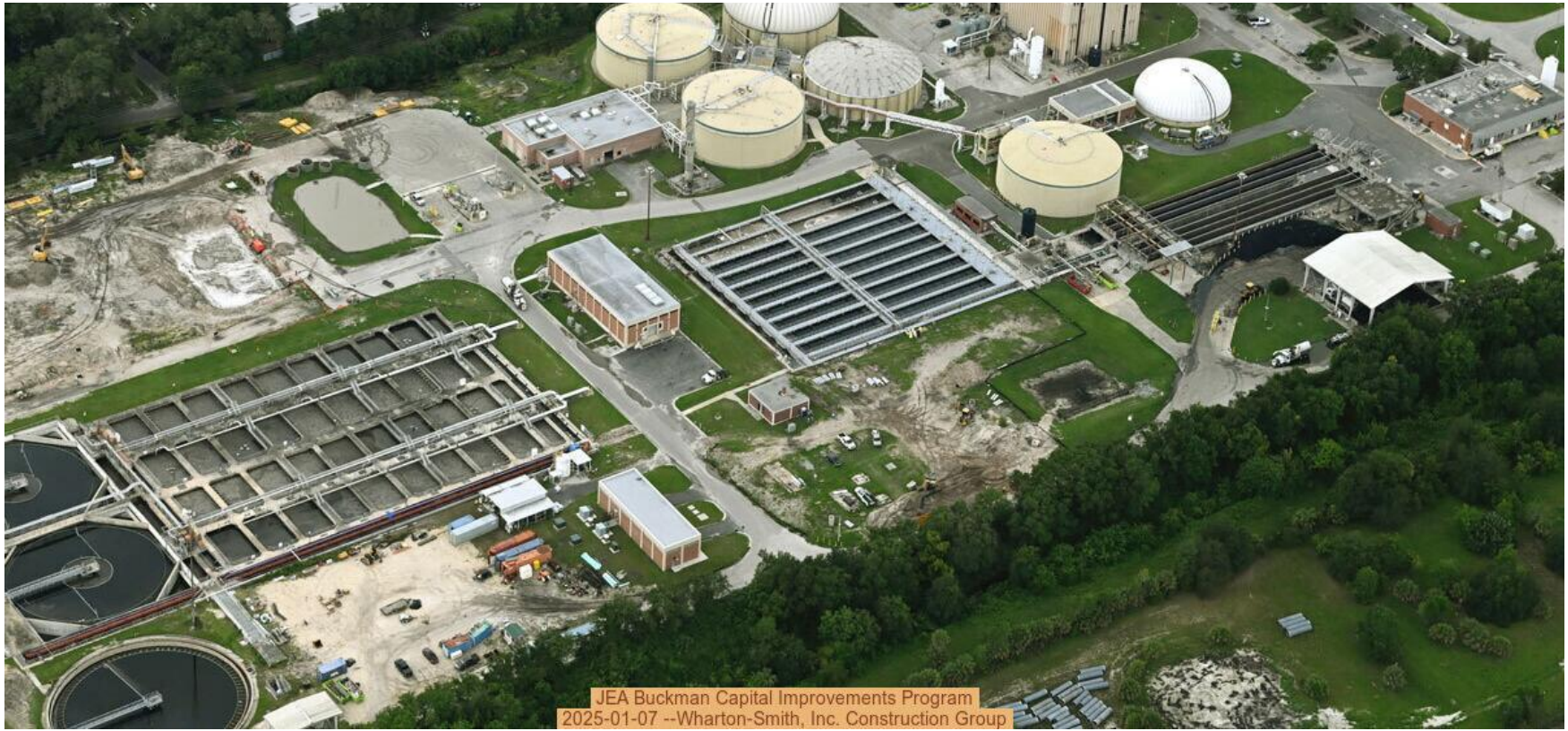


Comparative process to select project that results in aquifer recharge and flow restoration in Outstanding Florida Springs

Project Cost: **$1 Billion**
Who Pays?

- Which four NE Florida utilities?
  - How much from each?
  - How much will customer rates rise?
- How much from
  - SRWMD, SJRWMD, FDEP?
  - How much will taxes rise?

JEA approved $400 million for WFNF 2025-11-19



“According to JEA, minimum flows and water levels stipulate how much water can be drawn from certain sources to avoid environmental damage from groundwater pumping. Because the Lower Santa Fe and Ichetucknee Rivers have not met those MFLs, **the region has created Water First as its solution.”**

–Marcela Camargo, new4jax.com, November 19, 2025

Who is this “the region”?

- Floridians, do you remember voting for this project?
- Do you remember any candidate saying they were for this project?
- So who is this “the region” who created WFNF?

"JEA said the project will use high-quality reclaimed water **and further treat it through a wetland filtration system** before recharging it to the Floridan Aquifer."

Why should the Suwannee Basin provide wetlands for **"further treatment"** of Jacksonville wastewater?

What's in it for JEA?

FL 2021 Senate Bill 64: into Florida Statutes 403.064 and 403.892 **eliminating nonbeneficial surface water discharge** within a specified timeframe: by 2032.

Then JEA can't send treated wastewater into St. Johns River.

FL SB 64

"providing for the applicability of specified **reclaimed water aquifer storage and recovery well** requirements" was JEA's first choice.

But: Florida Statutes 403.064 Section 17 (a)1.e. "The discharge provides

direct ecological or public water supply benefits,
such as **rehydrating wetlands**
or implementing the requirements
of **minimum flows and minimum water levels**
or **recovery or prevention strategies for a waterbody**."

WATER FIRST NORTH FLORIDA

40-mgd project utilizing treated reclaimed water from JEA Buckman-Southwest WRFs for aquifer recharge in the North Florida region

Project Milestones

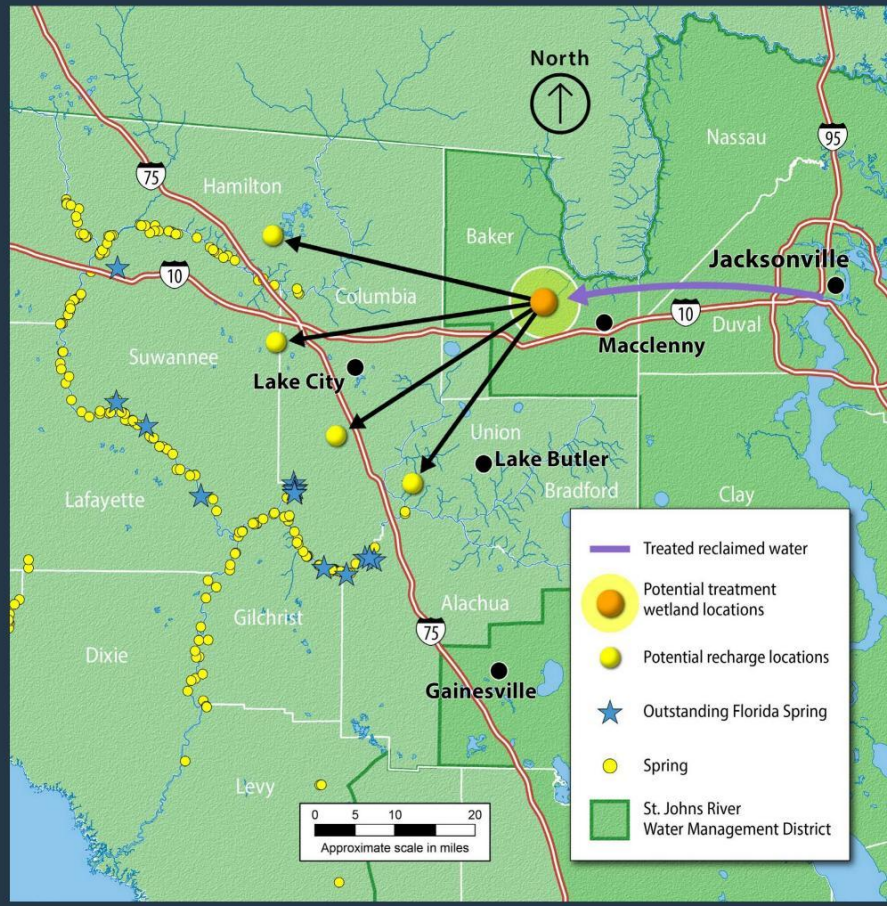
Years 1 to 3 - Governance/Planning/Funding
- Communication Plan
- SJRWMD Wetland-Recharge Siting Investigation
- JEA WRF to Wetland Routing Study

Years 3 to 4 - Preliminary Design Report Development

Years 4 to 7 - 30%, 60%, 100% Design and Permitting

Years 4 to 12 - Construction

Year 13 - Start up



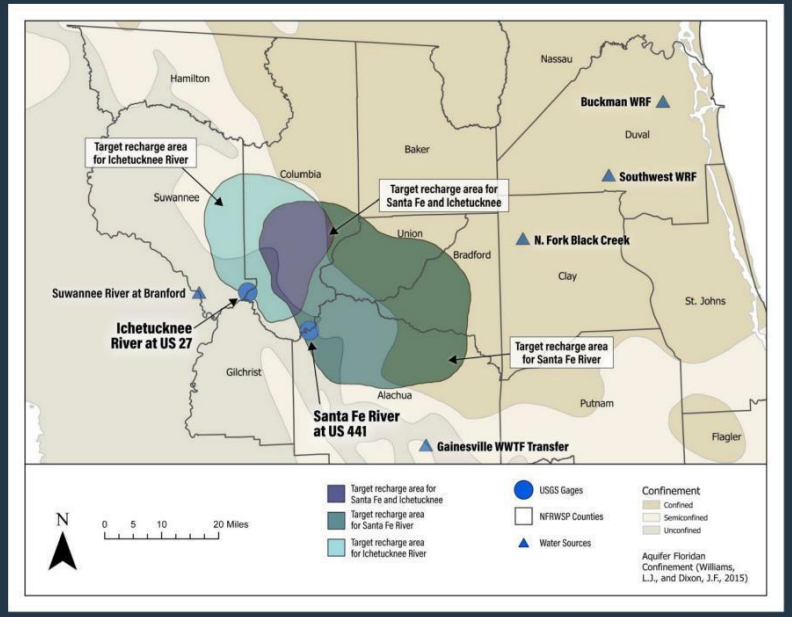
- Route of this 60-mile-plus pipeline or pipelines?
  - Eminent domain?
  - Land values nearby?
- Risks to drinking water wells?
- Risks to agriculture?
- Risks to industry?
- Risks to recreation in springs and rivers?

Tourism is Florida’s biggest industry

Water First North Florida- Next Steps

PILOT STUDY

SITING STUDY RFQ



WETLAND SITE ASSESSMENT

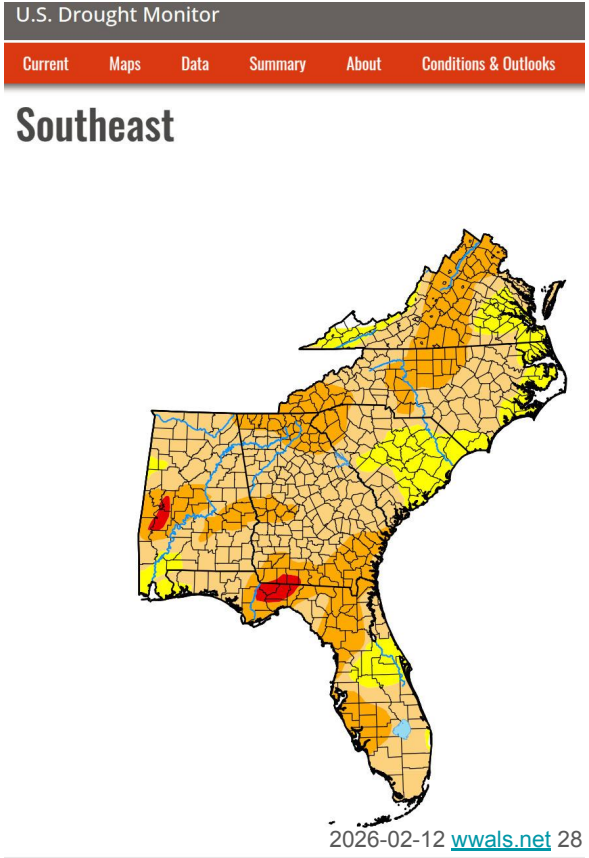
- Why is SRWMD a junior non-voting partner along with JEA, GRU, Clay Utilities, and St. Johns Co. Utilities?
- Where is the evidence that the source wastewater plant would remove PFAS forever chemicals, drugs, and artificial sweeteners?
- Why should we believe that JEA's Buckman wastewater plant will never fail and send untreated wastewater through the pipe,
    - despite being bigger than Valdosta's wastewater system, which has repeatedly failed?

Slide by UFL researchers presented at SRWMD Workshop 2025-12-09

Solutions without massive infrastructure:

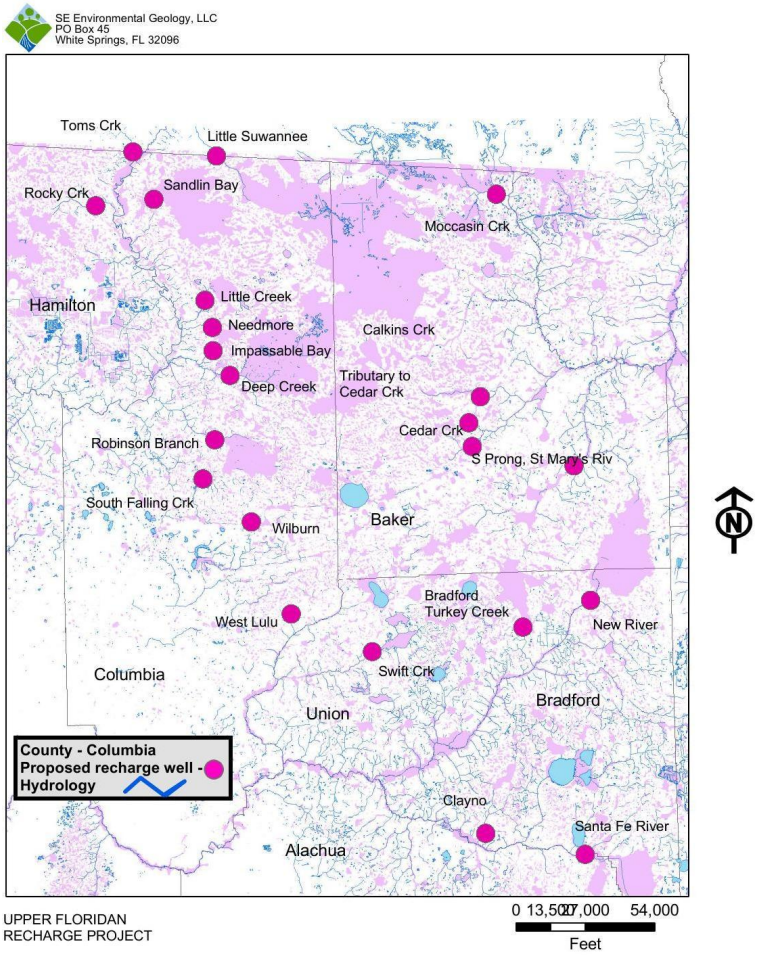
Limiting withdrawals

- WMD permit standard conditions can require withdrawal limits, as in [Phase II, III, IV Water Shortage]
- In November 2025, a SRWMD Board member asked for preparation for dryer and hotter
- Eventually: limit permits issued



Wells below forestry ditches:
Why not considered?

- Dennis J. Price, P.G. proposed in 2016
- They’re at overflow of wetlands below such ditches
- Similar to WFNF wetlands
- How can treated wastewater be cleaner than rainwater?



If Jacksonville’s wastewater is treated so well it can be piped into the Suwannee River Basin,

- How about instead pipe that water into Jacksonville’s drinking water?
- If people don’t want to drink it, how about use it for golf courses, datacenters, and other industrial uses in their own basin?

Desalination

SRWMD Board member for Upper Suwannee River Basin Larry Sessions: 2025-07-05:

- the water need is mostly on the coast
- and desalination is cheaper,
- at least to flush toilets and wash cars.

Reduce JAX water use: eliminate effects on Suwannee Basin

Usual objection: desalination is expensive

- Why can Texas, Arizona, and California do it?
- For drinking water, not just grey water?
- **If they can, why not Florida?**

Desalination plants elsewhere

TX: **Harbor Island Seawater Desalination Facility**; 2025; "**up to 100 million gallons of drinking water per day** for use by residents on the Gulf coast of Texas."

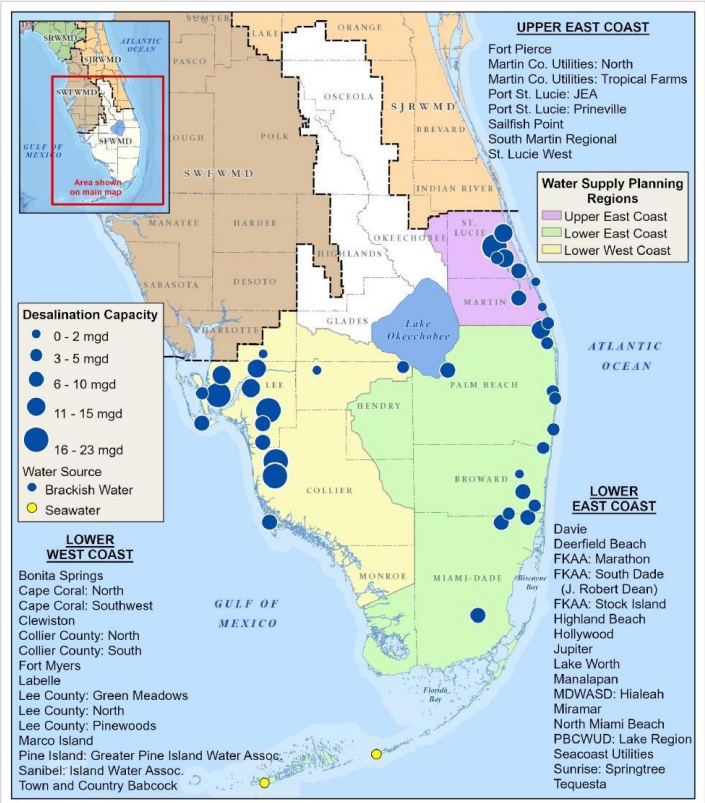
AZ: **Arizona water board approves desalination plants in California, Mexico; "trading that new water for Colorado River allocations** currently used by those states or Mexico." ? mgd

CA: These are just examples.

- Doheny Ocean Desalination Project; "This new, locally managed water supply will **fortify our resilience against future droughts and adapt to the challenges posed by a changing climate and emergencies.**" 2025; 15 mgd
- Diablo Canyon **nuclear power plant** (NPP) desalination plant; since 2015; 1.5 mgd
- **Poseidon Resources Corp. Claude "Bud" Lewis desalination plant, Carlsbad, CA; since 2015; 50 mgd**
- City of Santa Barbara's Charles E. Meyer desalination plant; restarted 2015; 6.7 mgd
- Monterey Peninsula desalination plant; 2025; ? mgd
- Rejected: Huntington Beach desalination plant; 2022

Actually, Florida already desalinates

- Tampa Bay Seawater Desalination Plant; 2007; 25 mgd
- Kermit H. Lewin Stock Island Reverse Osmosis Facility (Key West); May 2025; 4 mgd
- SFWMD numerous facilities, 2023 totdal capacity 292 mgd



2023
Facilities Using Brackish Groundwater and Seawater in South Florida

Number of Facilities: 40

Total Capacity (MGD): 292

sfwmd.gov

Desalination could **eliminate** Jacksonville's water withdrawals

- **WFNF:**
  - Only 40 mgd
  - More than a dozen years to build
  - Exports JAX water withdrawal problem to Suwannee Basin
  - In the form of treated wastewater
  - **Huge engineering project prone to failures**
- **Desalination:**
  - **Could be many distributed desalination plants**
  - **Why not all 120 mgd for JEA Drinking Water Service Areas?**

Ask for explanations or to stop the project:

- Members of Congress & Statehouse
  - http://openstates.org/find_your_legislator/
- SRWMD and SJRWMD Board
  - https://www.mysuwanneeriver.com/134/Current-Board-Members
  - https://www.sjrwmd.com/about/organization/directors/
- County Commissioners and City Councils
  - https://www.fl-counties.com/2025-fac-directory/
- Florida Counties Task Force about wastewater
  - https://wwals.net/?p=68081

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