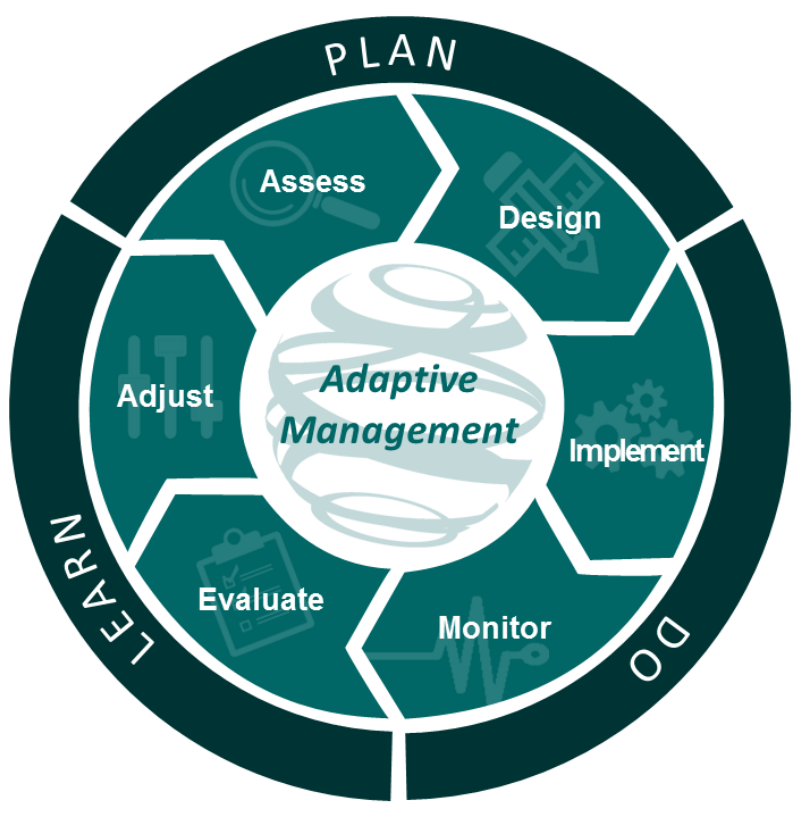
Lower Santa Fe and Ichetucknee Project Update

MFL Overview

MFL Development Process

- Data collection
  - Hydrologic and environmental data
- Data analysis, modeling, and reporting
- Peer review and public comment solicitation
  - Technical documents revised as necessary
- Status assessment
- Recovery/prevention strategy if needed
- Rule development and adoption



MFLs Process - Overview

MFLs Determination:

- Determine the water resource values and the minimum hydrologic regime required for their protection (MFLs condition)

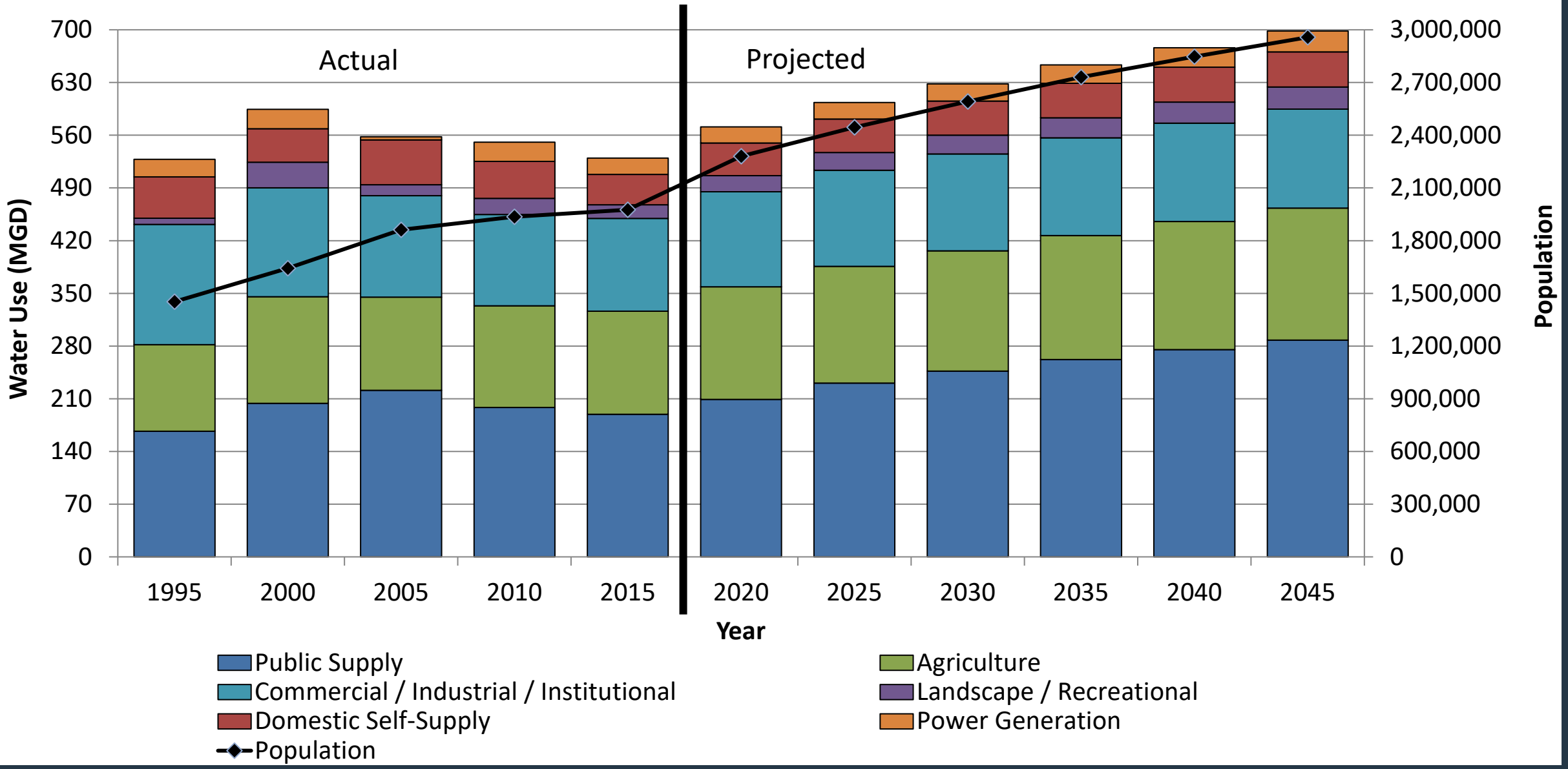
MFLs Assessment:

- Compare the MFLs and current-pumping conditions to determine if water is available
- Compare the MFLs based on projected future pumping conditions to determine if traditional water sources are sufficient to meet future demands while sustaining systems.

Lower Santa Fe and Ichetucknee Rivers and Priority Springs MFL Re-evaluation

- Limiting Water Resource Value Metrics
  - Lower Santa Fe River gages
    - Ft White: General fish passage
    - Hwy 441: Largemouth bass habitat area
  - Ichetucknee River gage
    - Hwy 27: Woody habitat / hydric soils

Historic Water Use and Population -vs- Projected Water Demand and Population in NFRWSP



MFL Status Assessment Summary

	Lower Santa Fe Fort White	Lower Santa Fe Hwy 441	Ichetucknee Hwy 27
Available Flow (cfs)	**103**	**50**	**10**
Current Water Use Impact (cfs)	73.3	51.0	16.3
Current Net Flow (cfs)	29.7	***-1.0***	***-6.3***
Projected Water Use Impact (cfs)	98.8	67.3	23.2
Projected Net Flow (cfs)	4.2	***-17.3***	***-13.2***
Proposed MFL Status	**Meeting**	**Recovery**	**Recovery**
Existing MFL Status	**Recovery**	**N/A**	**Recovery**

RULE AND IMPLEMENTATION STRATEGY

Implementation Strategy Requirements

The Strategy must:

- Be adopted concurrently with the MFL
- Be expeditiously implemented
- Include a phased approach or timetable:

"which will allow for the provision of sufficient water supplies for all existing and projected reasonable-beneficial uses, including development of additional water supplies and implementation of conservation and other efficiency measures concurrent with and, to the maximum extent practical, to offset reductions in permitted withdrawals" (s.373.0421(2), F. S.)

Outstanding Florida Springs Implementation Strategy Requirements (1)

The recovery or prevention strategy for each Outstanding Florida Spring must, at a minimum, include:

- Specific projects for implementation.
- A priority listing of each project.
- The estimated cost of and the estimated date of completion;
- An implementation plan designed with a target to achieve the adopted minimum flow or minimum water level no more than 20 years after the adoption of a recovery or prevention strategy.
- A schedule establishing 5-year, 10-year, and 15-year targets for achieving the adopted minimum flows or minimum water levels.

MFL Use in Water Allocation

To obtain a water use permit, renewal, or modification, an applicant must provide reasonable assurance that the proposed consumptive use of water, on an individual and cumulative basis.....

.....Is in accordance with any minimum flow or level and implementation strategy established pursuant to Sections 373.042 and 373.0421, F.S. (Rule 40B-2.301, F.A.C.)

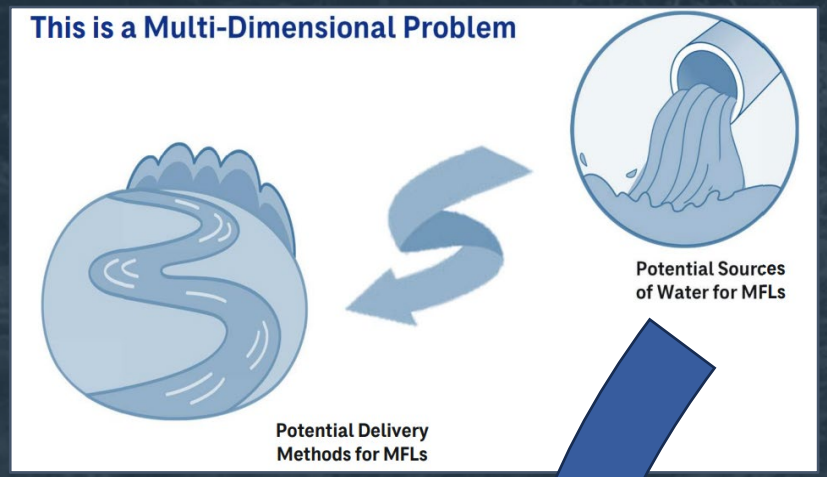
Regional Project Development

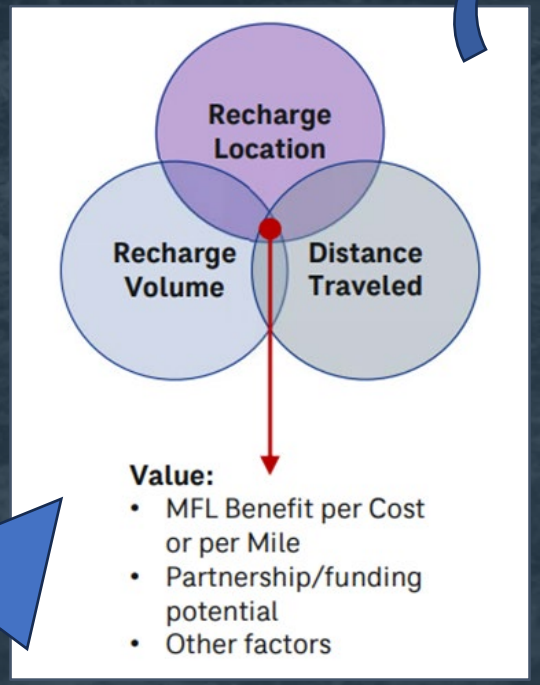
- Investigation of potential source waters throughout the partnership:
  - Reclaimed water
  - Surface water
  - Storm runoff
  - Changes to silvicultural management
- Districtwide investigation of potential storage and recharge locations:
  - Storage in the upper Suwannee and Santa Fe Basins
  - Recharge via injection well, rapid infiltration basin, or via high permeability zones, with appropriate permitting
  - Focus on optimizing regional benefits for the long term

PROJECT SOLUTIONS

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

						PRINCIPAL QUANTITATIVE FACTORS						QUALITATIVE FACTORS			OTHER QUANTITATIVE FACTORS			
DEFINITIONS OF ALTERNATIVES						MFL Benefit Ichetucknee (CFS)	MFL Benefit Santa Fe (CFS)	TOTAL COST (Source Development, Treatment, Conveyance, Recharge)				ANCILLARY BENEFITS	IMPLEMENTATION EASE	PROJECT DEVELOPMENT TIME	OPERATIONAL COMPLEXITY	SOURCE WATER RELIABILITY	POTENTIAL FOR REGIONAL BENEFITS (CFS)	OTHER CONSIDERATIONS
ID #	Source	Recharge Site (See Map Tab)	Volume (MGD)	Recharge Efficiency	Recharge Method			Capital Cost High ($M)	O&M Cost High ($M/yr)	Capital Cost Low ($M)	O&M Cost Low ($M/yr)							
1	Buckman WRF Full	Rest Full MFL Target Balance	25	100%	Injection			506.2	12.5	506.2	12.5	22.2	•$8.64	•Permitting (H) •Public/political (M) •Land acquisition (M) •Conveyance (H)	20+ Years	•Governance (H) •Monitoring (H) •Training (M)	100%	1.5	
2		Initially Silviculture 3 - Move to Kirby Pit based on Hydrogeologic Analysis	25	90%	Wetland			425.5	9.0	318.3	2.2	21.3	•$8.64 •Recreation •Ecosystem restoration •Water quality improvement	•Permitting (M) •Public/political (L) •Land acquisition (H) •Conveyance (H)	20+ Years	•Governance (H) •Monitoring (H) •Training (L)	100%	0.9	
3	Buckman - Southwest (NEW TREATMENT OPTION)	Best Full MFL Target Balance (OR Kirby Pit if Wetland/RIB)	40	90%	Wetland Treatment + RIB			857.0	15.9	706.8	6.6	23.4	•$8.64 •Recreation •Ecosystem restoration •Water quality improvement	•Permitting (L) •Public/political (L) •Land acquisition (M) •Conveyance (H)	20+ Years	•Governance (H) •Monitoring (H) •Training (L)	100%	1.6	Treatment wetland in Duval County, 1500 Acres on Peterson Tract accessible to JEA. Future flexibility with using water. Could use RIB or injection in recharge zones, as well as multiple recharge sites (not currently costed). High cost is RIB recharge with UF/RO + AOC treatment; low cost is injection with only wetland treatment
4	GRU WWTF Transfer	Initially Santa Fe High Influence - Move to Kirby Pit	3	90%	Wetland			88.1	2.5	80.3	0.3	33.5	•$8.64 •Recreation •Ecosystem restoration •Water quality improvement	•Permitting (L) •Public/political (L) •Land acquisition (M) •Conveyance (L)	10-20 Years	•Governance (L) •Monitoring (M) •Training (L)	100%	0.11	Moved one of these alternatives to Kirby Pit, the other to Best Incremental Balance Site.
5		Initially Silviculture 3 - Move to Best Incremental Target Balance	3	80%	Wetland			72.6	2.5	43.1	0.3	31.1	•$8.64 •Recreation •Ecosystem restoration •Water quality improvement	•Permitting (L) •Public/political (L) •Land acquisition (M) •Conveyance (L)	10-20 Years	•Governance (L) •Monitoring (M) •Training (L)	100%	0.10	
10	Suwannee River	Suwannee Bell / Lake City Parcel 1	40	100%	Injection			784.1	23.9	633.9	14.6	23.2	None	•Permitting (H) •Public/political (H) •Land acquisition (M) •Conveyance (L)	10-20 Years	•Governance (M) •Monitoring (H) •Training (H)	Able to withdraw 84% of time while leaving flow with 85% exceedence frequency instream.	5.6	request from SRWMD to evaluate 8-10% flowbeing available for flows above the median. How much time is the excess water available given these criteria
13		Suwannee Branford / Silviculture 1	40	100%	Injection			718.0	23.9	567.8	14.6	21.8	None	•Permitting (H) •Public/political (H) •Land acquisition (M) •Conveyance (L)	10-20 Years	•Governance (M) •Monitoring (H) •Training (H)	Able to withdraw 84% of time while leaving flow with 85% exceedence frequency instream (2130 cfs)	2.5	request from SRWMD to evaluate 8-10% flowbeing available for flows above the median. How much time is the excess water available given these criteria
19	NF Black Creek	Santa Fe High Influence	5.2	100%	Injection			273.0	7.3	228.5	4.4	34.8	None	•Permitting (M) •Public/political (M) •Land acquisition (L) •Conveyance (L)	10-20 Years	•Governance (M) •Monitoring (H) •Training (H)	Able to withdraw 78% of time while leaving flow with 85% exceedence frequency instream (96 cfs)	0.2	

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

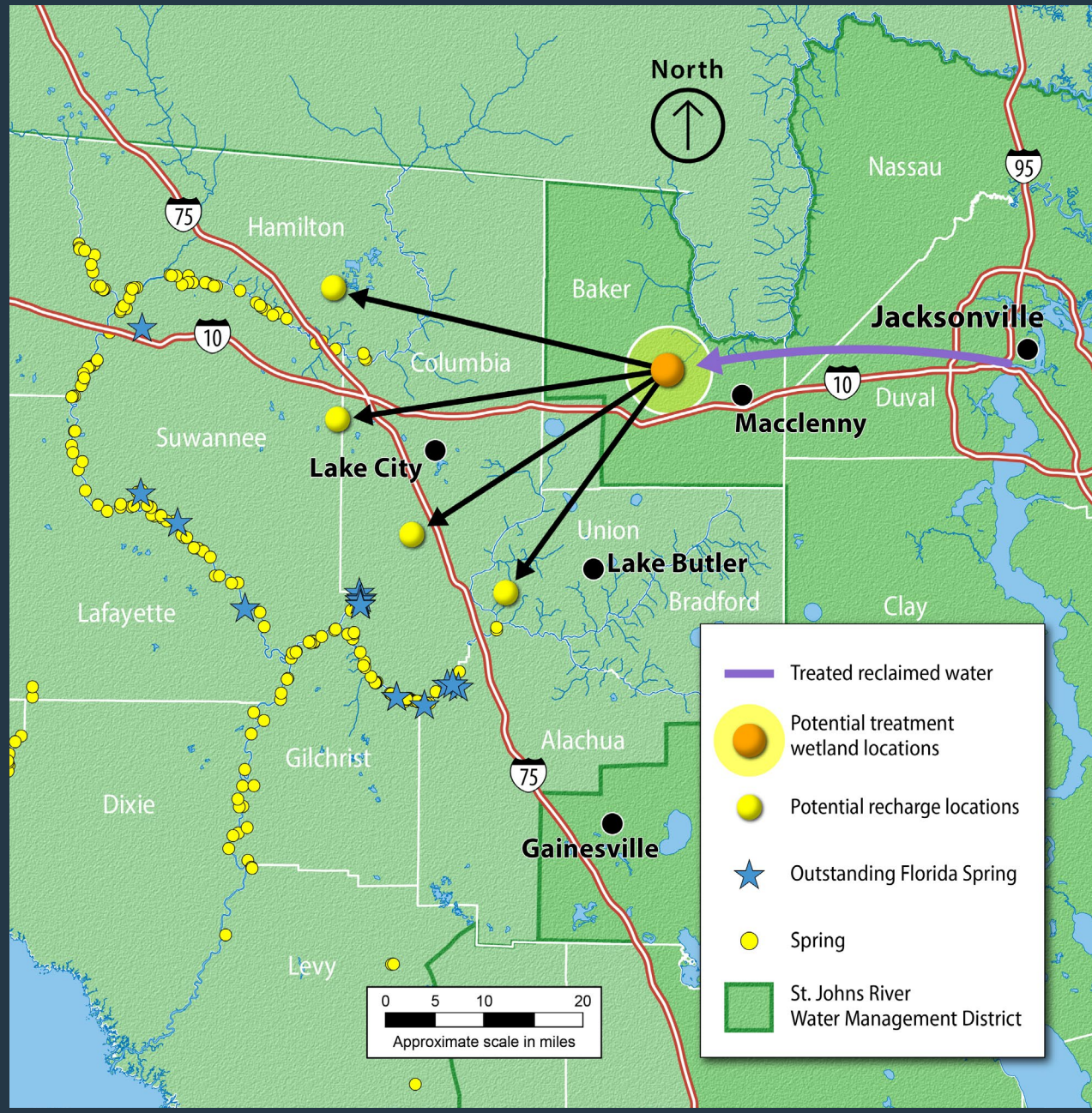
Years 1 to 3
- Governance/Planning/Funding
- Communication Plan
- SJRWMD Wetland-Recharge Siting Investigation
- JEA WRF to Wetland Routing Study

Years 3 to 4
- Preliminary Design Report Development

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

Years 4 to 12
- Construction

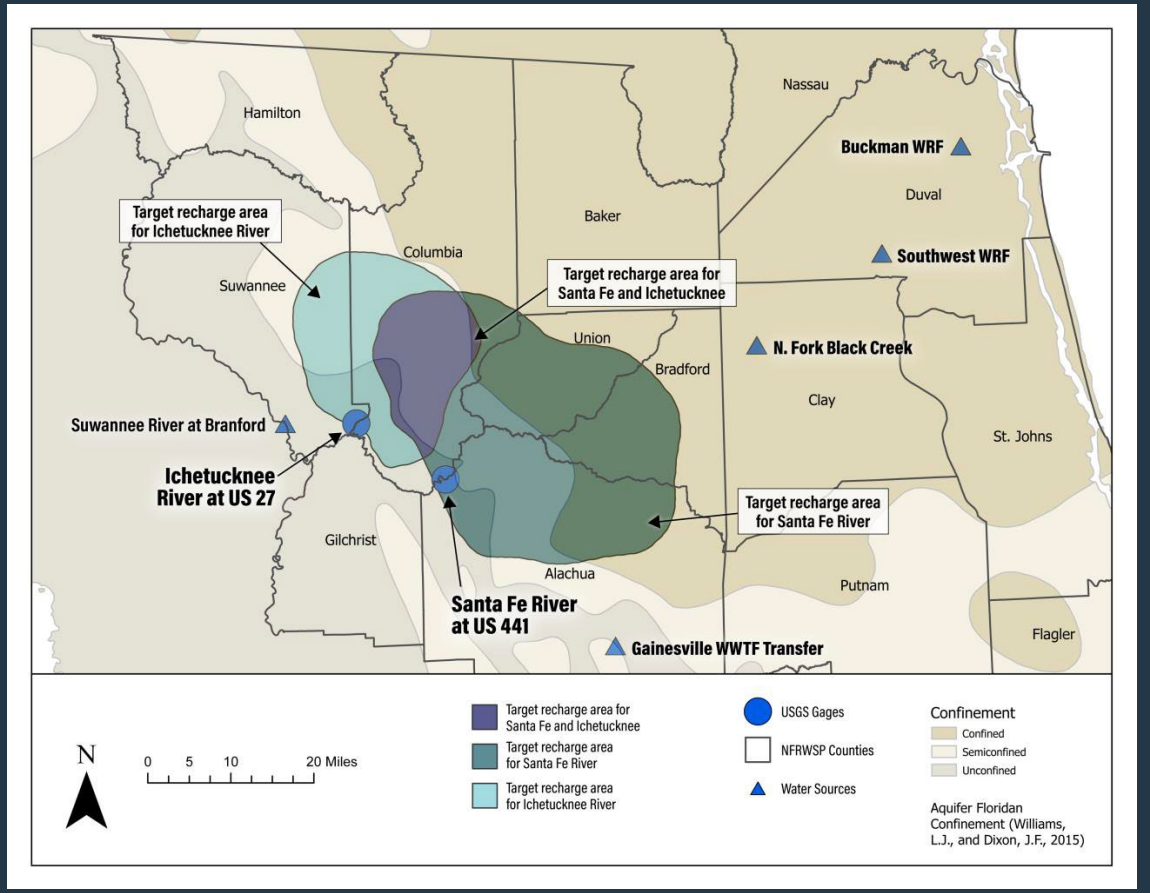
Year 13
- Start up



Water First North Florida- Next Steps

PILOT STUDY

SITING STUDY RFQ



WETLAND SITE ASSESSMENT


SUWANNEE RIVER
WATER MANAGEMENT DISTRICT
QUESTIONS?