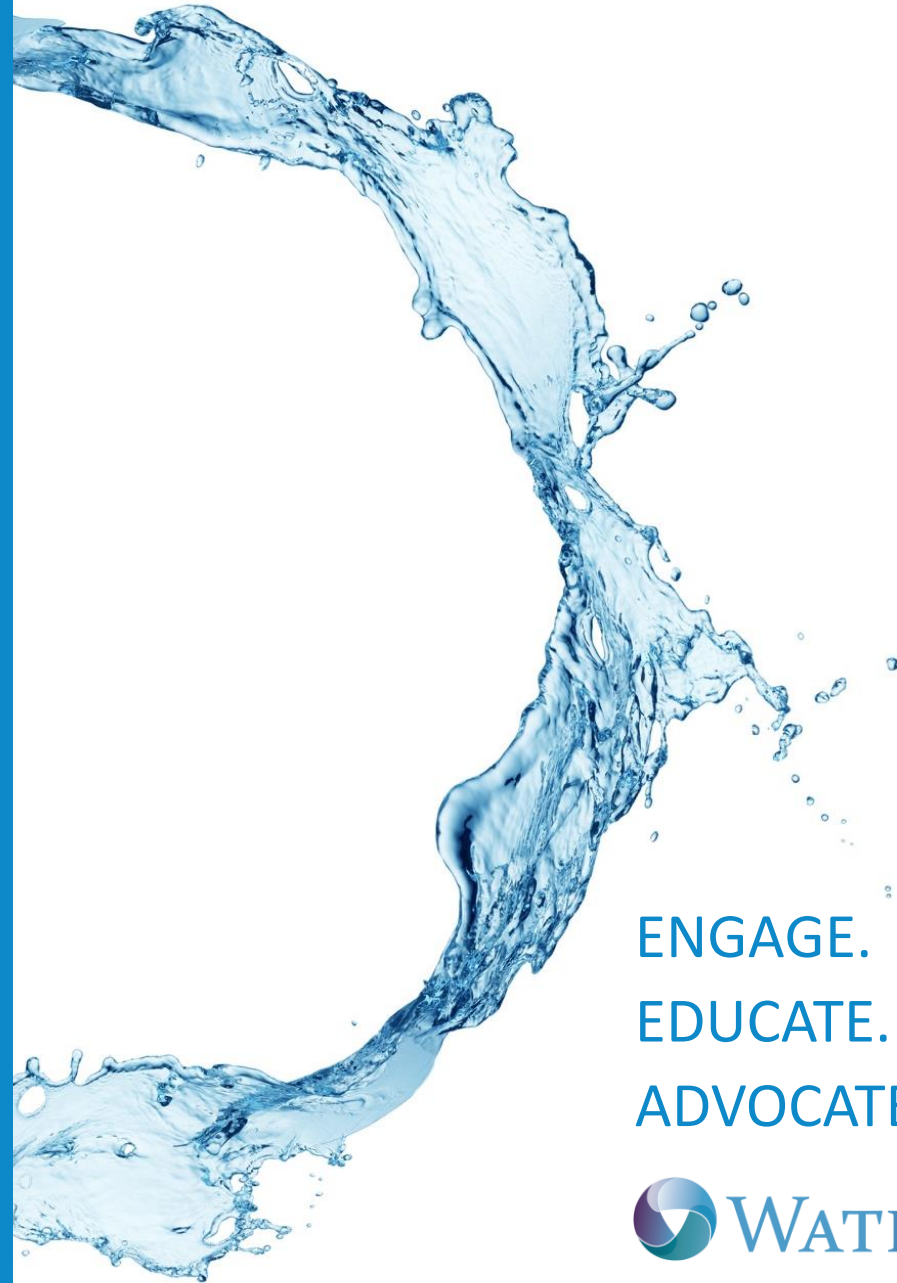


FLORIDA SB64 – Compliance Planning And Incorporating Non-beneficial Discharges Into Your Water Supply Portfolio

WATEREUSE FLORIDA WEBCAST

NEW TECHNOLOGY AND INNOVATION COMMITTEE

TUESDAY, MARCH 21ST, 2023 | 12:00 – 1:30 PM EST

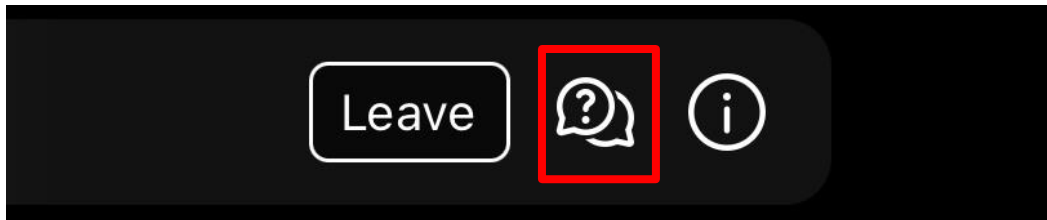


ENGAGE.
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ADVOCATE.



A Few Notes Before We Start...

- Today's webcast is scheduled for 90 minutes.
- A PDF of this presentation will be shared afterwards via email
- Please type questions for the presenters into the Q&A box located at the right side of your screen.
- There is one (1) Professional Development Hour (PDH) available for this webcast.



Thanks to Our Digital Sponsor!



Today's Presenters

Moderator:



Jeff Greenwell
Env. Services Manager
Hillsborough County, FL



Sydney Cummings
Senior Program
Analyst
FDEP



Megan Ross
Utilities Director
Pinellas County



Rob Zammataro
Director of Water
Planning
JEA



SB64 – Elimination of Surface Water Discharges

Sydney
Cummings,
FDEP



SENATE BILL 64: ELIMINATION OF SURFACE WATER DISCHARGES

SYDNEY CUMMINGS

Division of Water Resource Management
Florida Department of Environmental Protection

WaterReuse Florida Webinar| March 21, 2023



BACKGROUND

Senate Bill (SB) 64 was signed into law on June 29, 2021, now Chapter 2021-168, Laws of Florida; created section 403.064(17), Florida Statutes (F.S.).

- The law required domestic wastewater facilities to submit to the Department of Environmental Protection (DEP) by Nov. 1, 2021, a plan for the facility to eliminate nonbeneficial surface water discharge by Jan. 1, 2032.
- DEP is required to approve or deny the plans within nine months of receipt (not a final agency action).
- Facilities' submitted plans were required to include:
 - The average number of gallons per day (gpd) that would no longer be discharged into surface waters and the date of such elimination.
 - The average gpd of surface water discharge which would continue if allowed by provisions of the statute.
 - The level of treatment of any continued discharge.



ADDITIONAL PLAN REQUIREMENTS

- Plan modifications were allowable, but time extensions were not.
- Permit applications for new or expanded surface water discharge permit applications are required to include a plan.
- If a plan was not timely submitted by a utility or approved by DEP, the facility may not discharge to surface waters after Jan. 1, 2028.



PLAN SUBMITTAL

- DEP sent letters to permittees notifying them of the requirements to submit plans by Nov. 1, 2021. This letter included:
 - A DEP email address for plan submittal:
NPDESDischargePlan2021@FloridaDEP.gov.
 - A cover sheet for the employees to summarize key information and submit with the plan.
- DEP's Division of Water Resource Management continues to work with the district offices on periodic status updates.



PLAN APPROVAL

- DEP is required to approve or deny each plan (not a final agency action) within nine months of receipt.
- DEP must approve a plan that includes all the required information and results in:
 - Eliminating the surface water discharge.
 - Meeting the requirements of section 403.086(10), F.S.
 - Meeting at least one of the allowable statutory surface water discharge provisions.
 - Discharge is associated with an indirect potable reuse project.
 - Discharge is a permitted wet weather discharge.
 - Discharge is to a stormwater management system and withdrawn for irrigation purposes.
 - Facility reuses a minimum of 90% of its annual average flow.
 - Discharge provides direct ecological or public water supply benefits.



ADDITIONAL CONSIDERATIONS

- Plans could include conceptual projects for indirect potable reuse and for direct ecological or public water supply benefits, but no time extensions are allowed for implementation.
- The inclusion of a plan for backup discharges under section 403.086(8)(a), F.S., is not prohibited.
 - Section 403.086(8)(a), F.S., allows backup discharges of up to 30% of permitted reuse capacity on an annual basis from a functioning reuse system.
 - Backup discharges may occur during periods of reduced demand.
- Permittees cannot cause or contribute to violations of surface water quality standards, including ground water discharges that affect surface waters.



FACILITY EXEMPTIONS

The requirements for a plan did not apply to:

- A facility located in a fiscally-constrained county, per section 218.67(1), F.S.
- A facility located in a municipality in rural area of opportunity, per section 288.0656, F.S.
- A facility located in a municipality that has less than \$10 million in total revenue, as determined by the municipality's most recent annual financial report submitted to the Florida Department of Financial Services in accordance with section 218.32, F.S.
- A facility for a mobile home park with a permitted capacity of less than 300,000 gpd.



ANNUAL LEGISLATIVE REPORT

By Dec. 31, 2021, and annually thereafter, DEP is required to submit an annual report to the legislature which provides for each utility:

- The amount of discharge eliminated.
- The amount of discharge continuing.
- The treatment level of the continued discharge.
- Any modified or new plans submitted.



ANNUAL PLAN UPDATES

In December 2021, DEP adopted new rule language [section 62-600.680(3), Florida Administrative Code] requiring permittees to submit the following annual plan updates to DEP by Nov. 1 each year:

- The average gpd that will no longer be discharged into surface waters and the date of the elimination.
- The average gpd of surface water discharge which will continue if allowed by provisions of the statute.
- The level of treatment of any continued discharge.
- Any modifications to the facility's existing plan to eliminate nonbeneficial surface water discharge.
- Whether a new plan was submitted since Nov. 1 of the previous year.
- If the facility's plan has been fully implemented in accordance with section 403.064(17), F.S., and the implementation has been acknowledged by DEP, the facility should indicate that the annual submittal is intended to be the facility's last.



THANK YOU

SYDNEY CUMMINGS

Division of Water Resource Management
Florida Department of Environmental Protection

CONTACT INFORMATION:

850-245-8640

Sydney.Cummings@FloridaDEP.gov

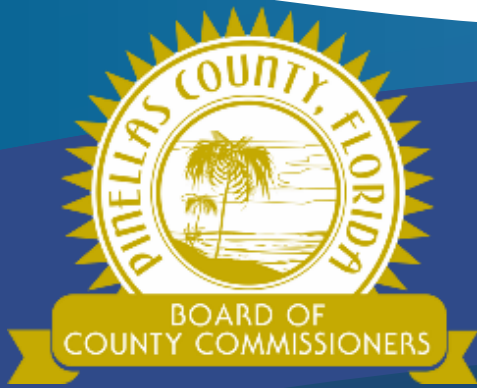


Effluent Management at South Cross Bayou AWRF

Megan Ross,
Pinellas
County

WaterReuse FL – March Webinar

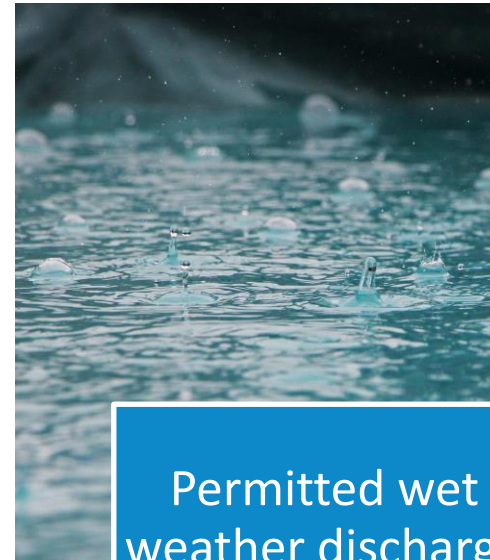
March 21, 2023



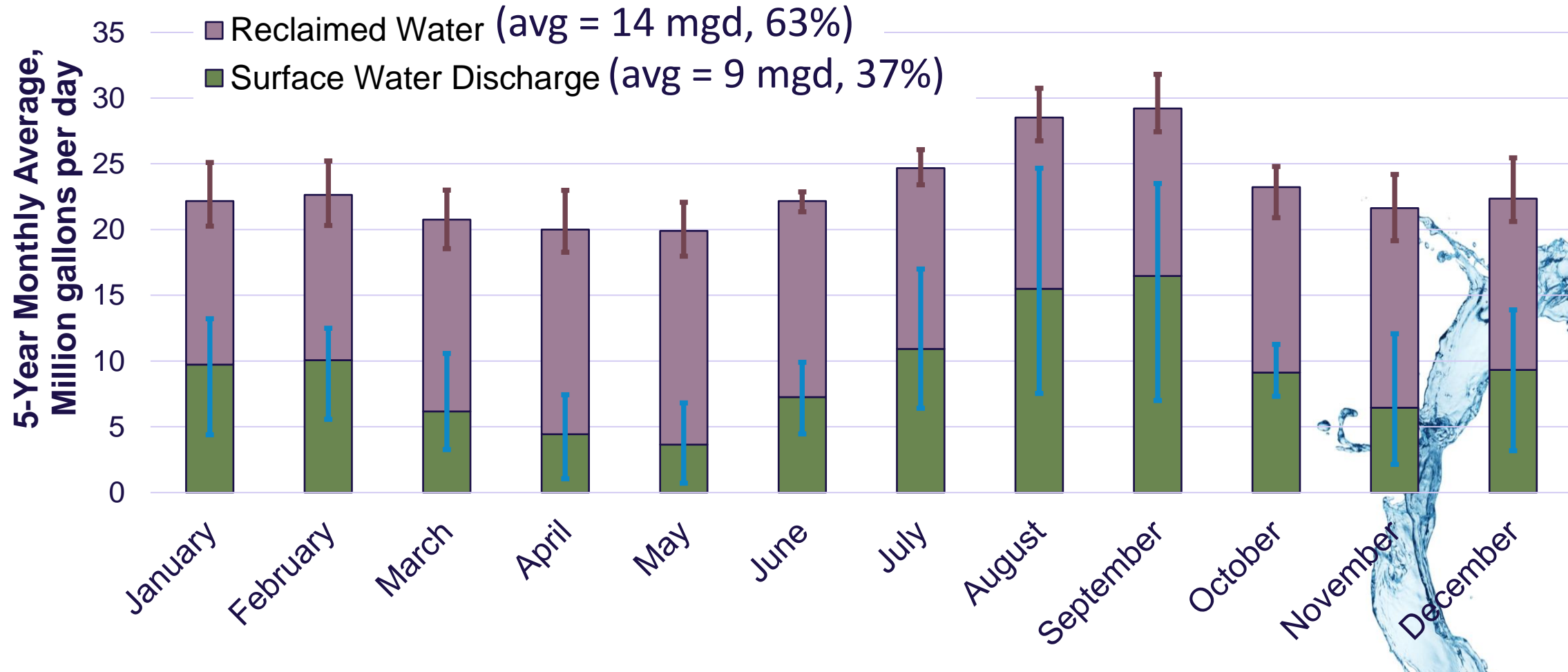
Presented by
Megan Ross, P.E.
Director of Utilities

Our Vision: To Be the Standard for Public Service in America

Surface Water Discharge Exceptions



Effluent Management at South Cross Bayou Advanced Water Reclamation Facility (SCBAWRF)





Continued surface water discharge



Increased water reuse



Aquifer alternatives





Continued surface water discharge

Existing or modified outfall location

Requires demonstration of a resulting ecological benefit

Must consider effluent water quality requirements and SCBAWRF treatment implications



Increased water reuse



Aquifer alternatives



SCBAWRF Compliance Plan



Continued surface water discharge



Increased water reuse



Aquifer alternatives

Increased reclaimed water use by existing (inactive), new customers, and/or other utilities

Advanced treatment for Tampa Bay Water use as an alternative water supply

Requires customer outreach and regional collaboration

SCBAWRF Compliance Plan



Continued surface water discharge



Increased water reuse

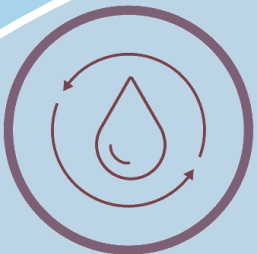


Aquifer alternatives

Includes aquifer storage and recovery (ASR), managed aquifer recharge (without recovery), and deep well injection

Requires evaluation of aquifer conditions relative to existing reclaimed water infrastructure and demands

Partnership Potential for Regional Benefits



Advanced treatment for Tampa Bay Water to use as an alternative water supply



Aquifer recharge for potential new groundwater credits



Public Outreach and Education Program



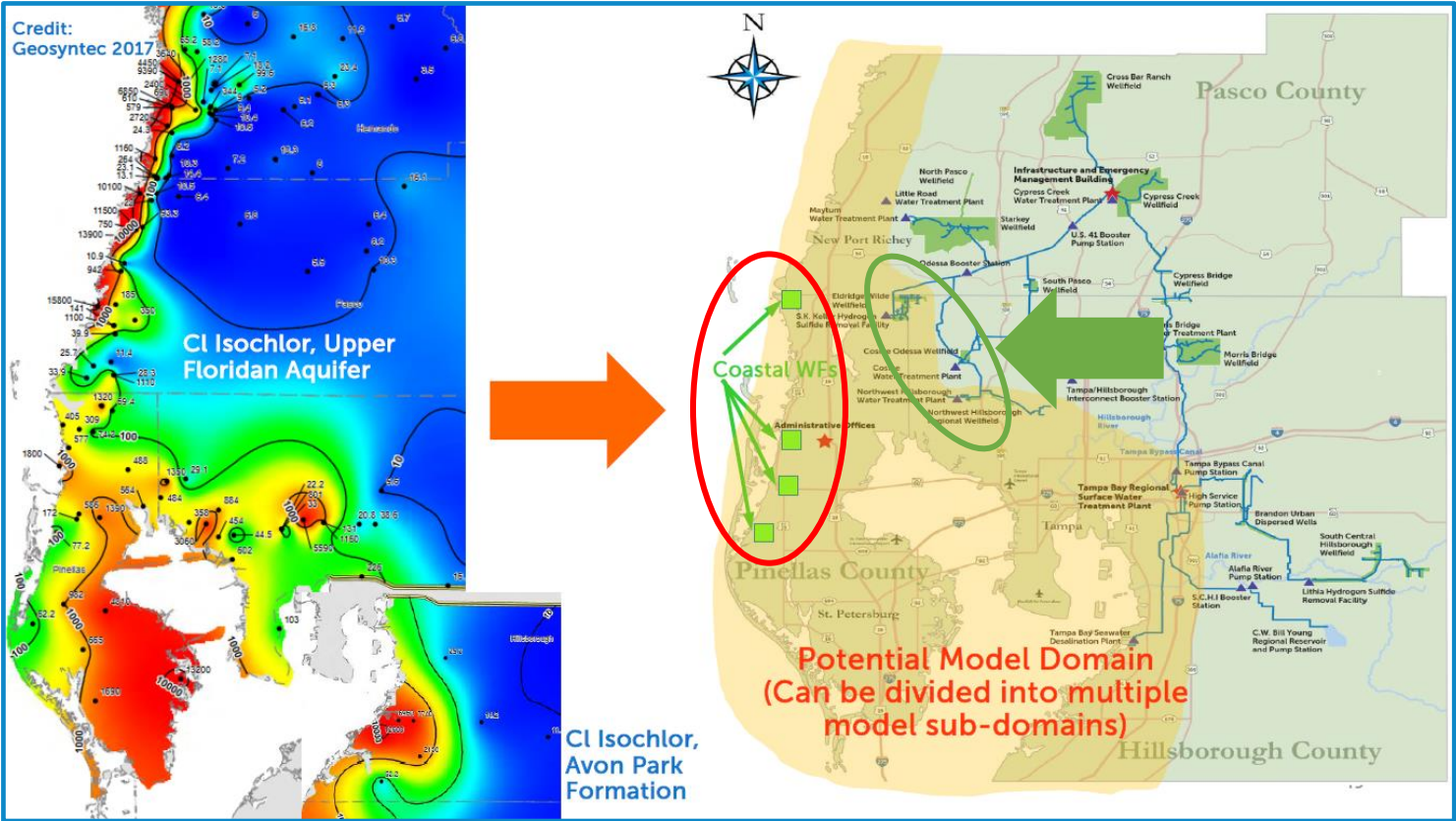
Partnership Potential for Regional Benefits



Coastal Wellfields

(25MGD Permitted)

- Tarpon Springs
- Dunedin
- Clearwater
- Belleair



SOURCE: TBW Sea Level Rise Seminar 3.24.22

TBW Wellfields

- Eldridge Wilde
- Cosme Odessa
- NW Hillsborough

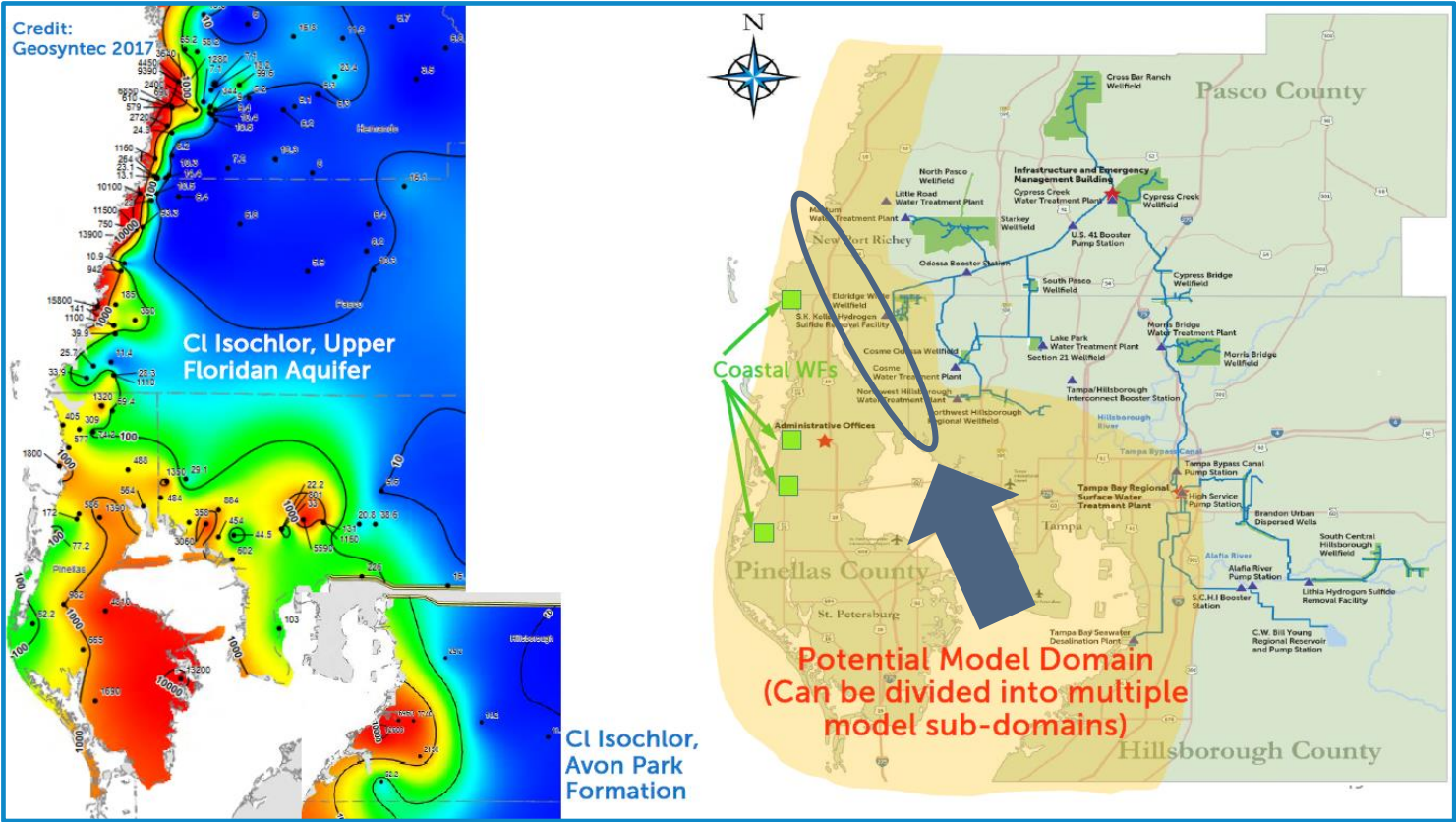


Partnership Potential for Regional Benefits



2020 WWTP Surface Water Discharges in Pinellas County

- Pinellas County 9.0mgd
- Clearwater 8.4mgd
- Largo 6.0mgd
- Dunedin 1.5mgd
- Tarpon Springs 0.4mgd
- Oldsmar 0.2mgd
- TOTAL 25.5mgd**



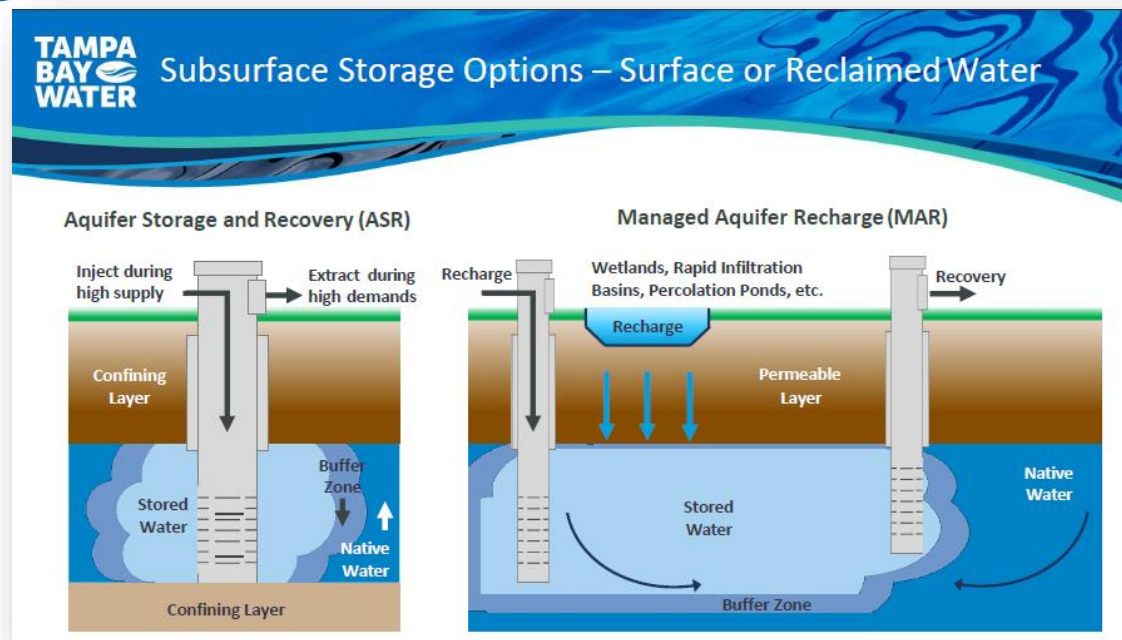
SOURCE: TBW Sea Level Rise Seminar 3.24.22



Aquifer recharge for potential new groundwater credits



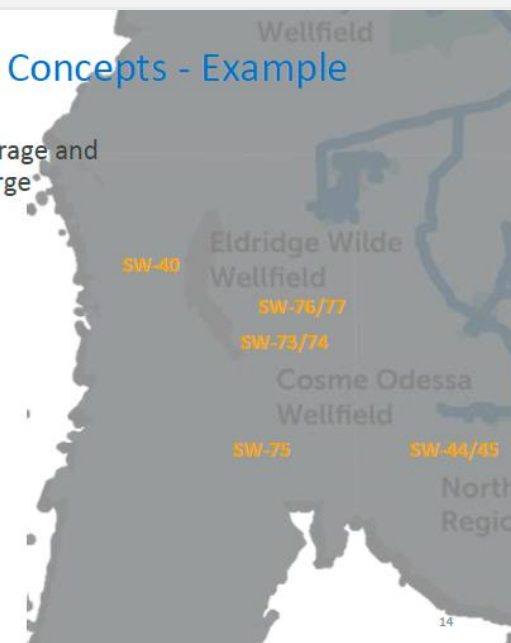
Tampa Bay Water – Master Water Plan Update



Combining Options into Concepts - Example

North Pinellas SWTP via Aquifer Storage and Recovery / Managed Aquifer Recharge

- SW-40: Lake Tarpon
- SW-44: Channel "A" Irrigation
- SW-45: Channel "A" Potable
- SW-73: Chestnut Park ASR
- SW-74: Chestnut Park MAR
- SW-75: Canal Park MAR
- SW-76: East Lake Shallow MAR
- SW-77: East Lake Deep MAR

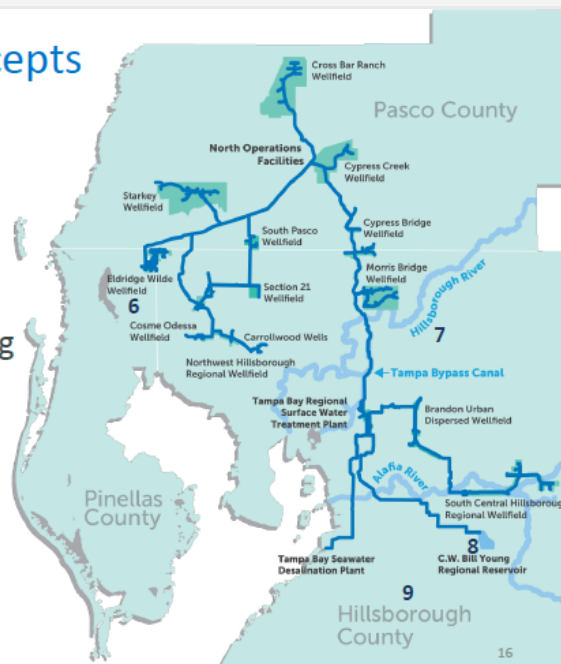


Tampa Bay Water - Master Water Plan Update

Coarse Screening Concepts

Surface Water Supplies

6. North Pinellas SWTP via ASR / MAR Storage*
7. New SWTP via Lake Thonotosassa
8. New SWTP at the Bill Young Reservoir via increased Alafia Withdrawal *
9. New SWTP at a New Reservoir via New Supplies*

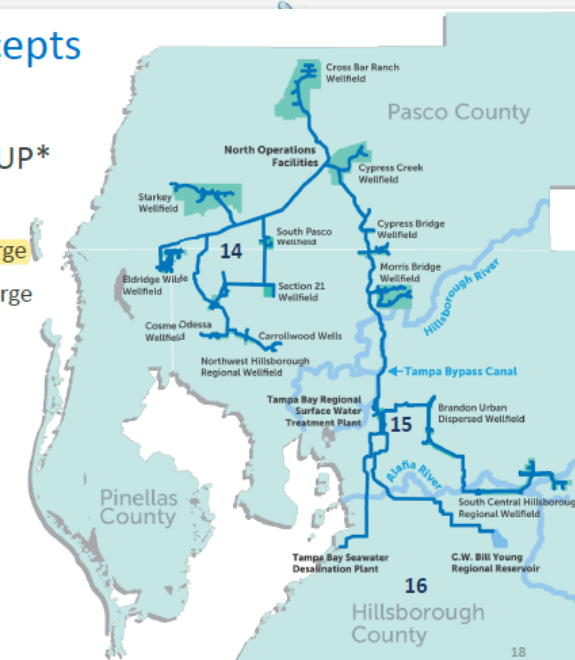


* Indicates multiple options within concept. Same water supply type and general location

Coarse Screening Concepts

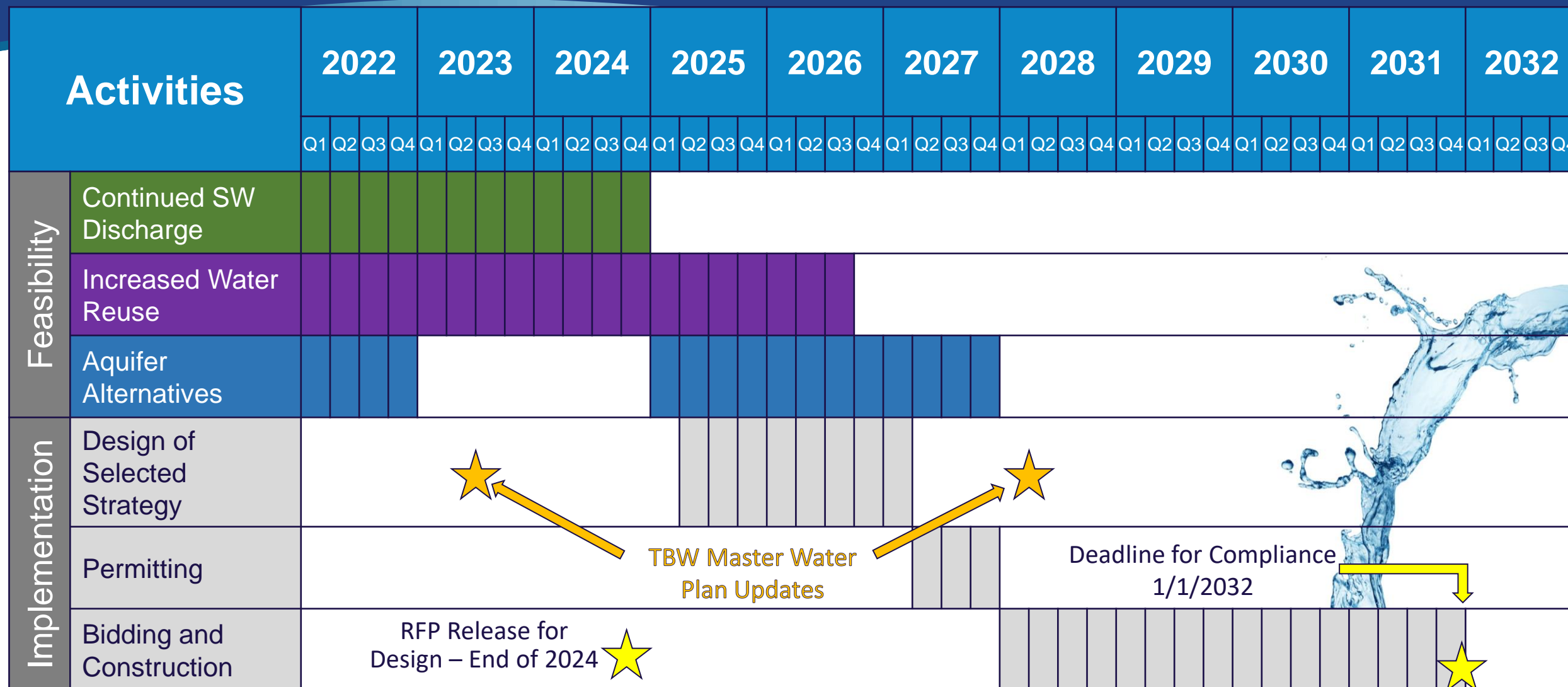
Reuse Supplies

14. Increase Consolidated WUP*
 - a) without mitigation
 - b) via Pinellas County reuse recharge
 - c) via Natural systems reuse recharge
15. Direct Potable Reuse (HC, PC & COT)*
16. South Hillsborough Wellfield*
 - a) without mitigation
 - b) via SHARP
 - c) via indirect potable reuse



* Indicates multiple options within concept. Same water supply type and general location

SCBAWRF Implementation Schedule



Next Steps

Feasibility Studies

- Continued Surface Water Discharge:
 - Hydrodynamic water quality model
- Increased Water Reuse:
 - Customer outreach, and desktop feasibility study
- Aquifer Alternatives:
 - Hydrogeological study
- Coordination with Tampa Bay Water

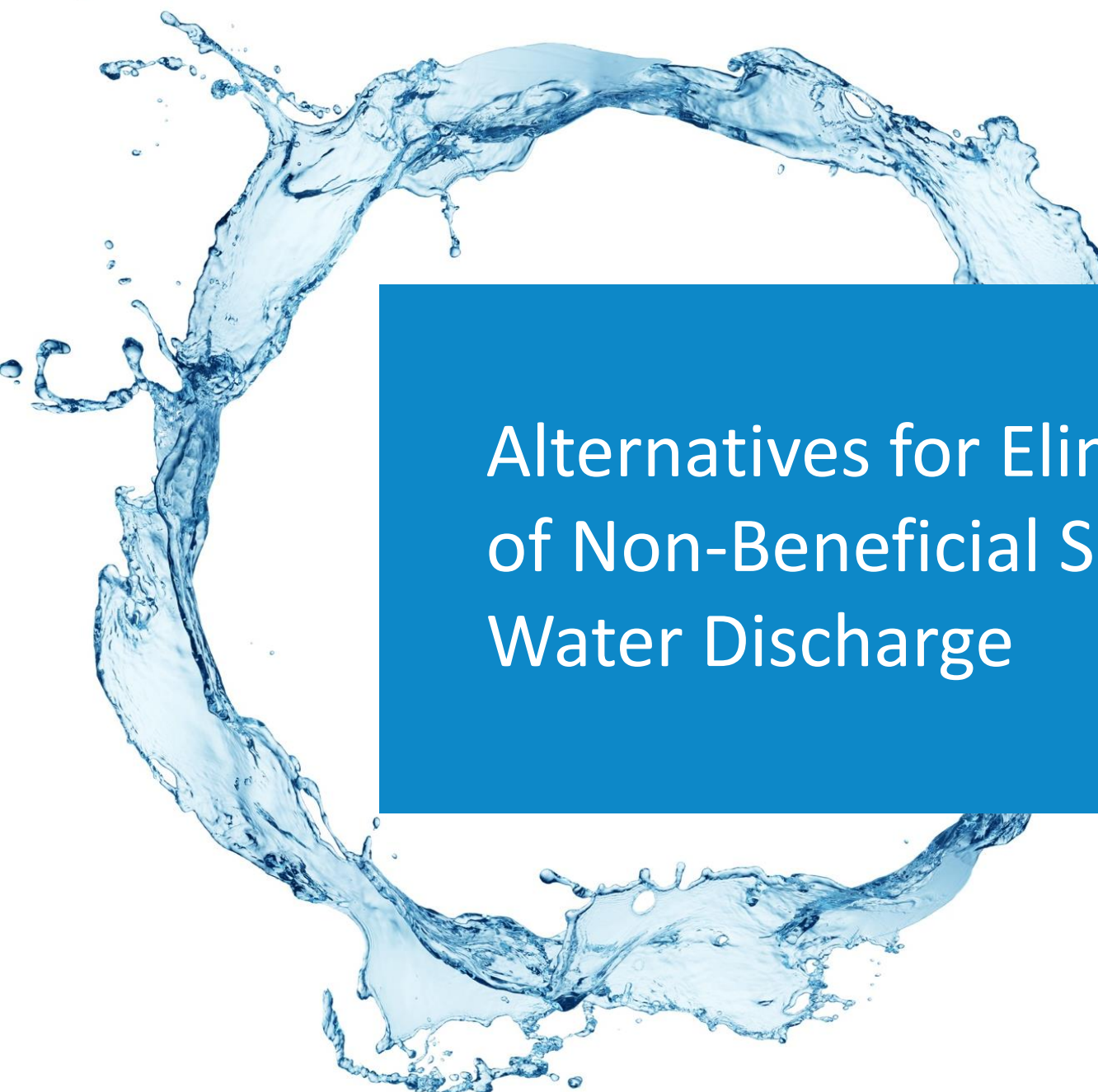


Thank you!



Megan Ross, P.E., Director of Utilities
mross@pinellas.gov
727-582-2300





Alternatives for Elimination of Non-Beneficial Surface Water Discharge

Rob
Zammataro,
JEA



Alternatives for Elimination of Non-Beneficial Surface Water Discharge

*Robert Zammataro, P.E., JEA
Director W/WW Planning & Development*



March 21, 2023

WATERUSE

JEA: The Largest Community Owned Electric & Water Utility in the State

Customers:

- 478,720 electric
- 367,145 water
- 288,275 sewer
- 18,015 reclaimed



Population of Greater Jacksonville Area is **1.5M** based on 2017 U.S. Census estimate



4th largest GDP in Florida and **2nd highest** wage growth in Florida



JEA's Service Area covers **900 square miles** including all of Duval County and parts of Clay, St. Johns and Nassau counties



134 Floridan Aquifer wells, **38 WTPs** and **>4,450 miles** of water pipelines



>1,500 lift stations, **>3,900 miles** of sewer collection pipelines and **11 WRFs**



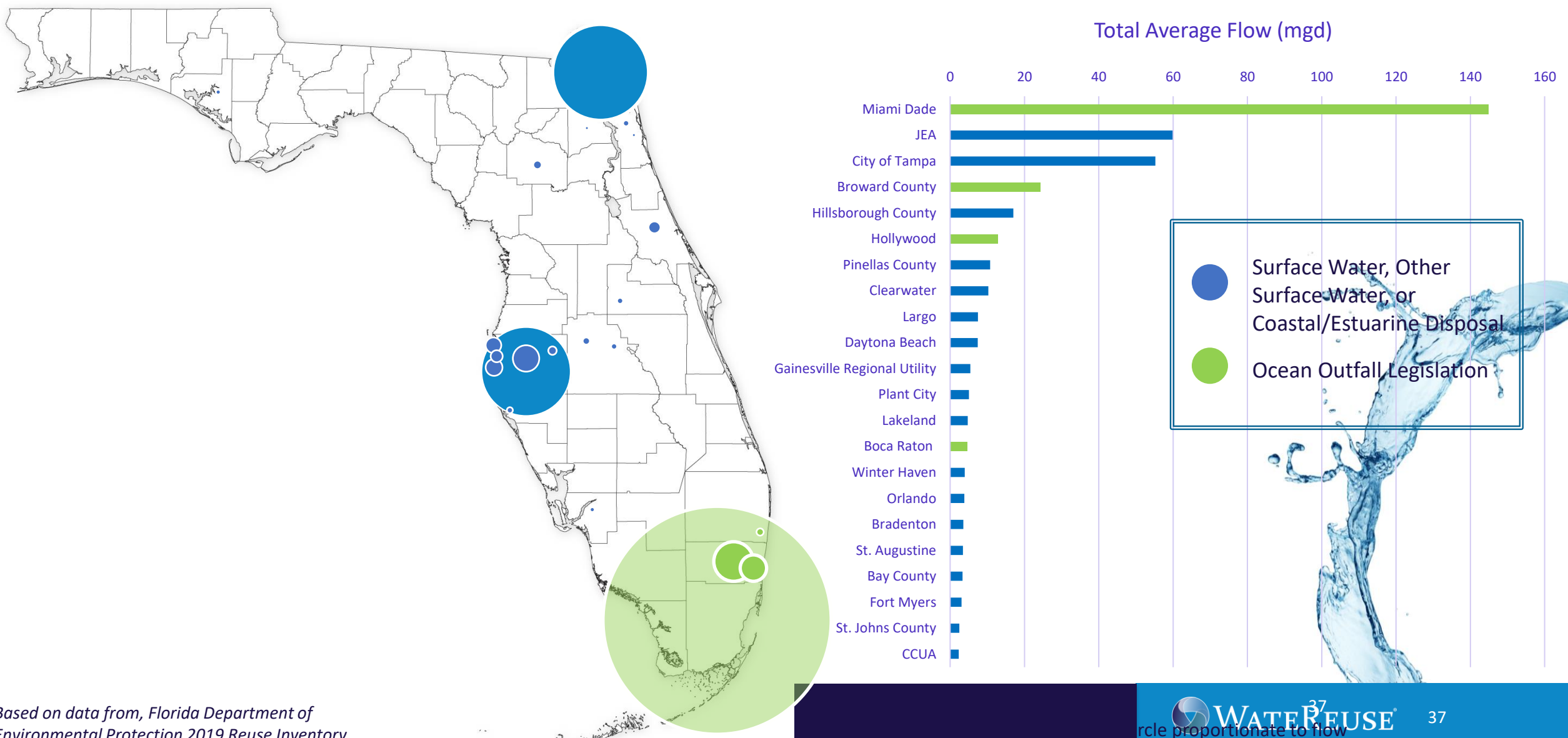
Can produce up to **30 MGD** of reclaimed water distributed by **>300 miles** of pipelines

JEA's Current System Includes 11 WRFs with a Total of 81 MGD AADF

Current 5 year Average (MGD, 2015-Present)			
Grid	WRF	Average Flow	Max Flow
North	Buckman	26.8	105.7
	Cecil West	--	--
	Cedar Bay	5.5	8.9
	Northwest	--	--
	Southwest	11.4	27.9
	Total	43.6	
South	Arlington East	20.5	36.3
	Blacks Ford	5.1	7.5
	Greenland	--	--
	Julington Creek	0.8	1.9
	Mandarin	7.3	18.8
	Total	33.7	
Other	Nassau	1.2	7.4
	Monterey	1.8	4.5
	Ponce De Leon	0.1	0.6
	Ponte Vedra	0.5	1.0
	Total	3.6	
System Total		81.0	221



JEA Manages About 14% of Florida Surface Discharges

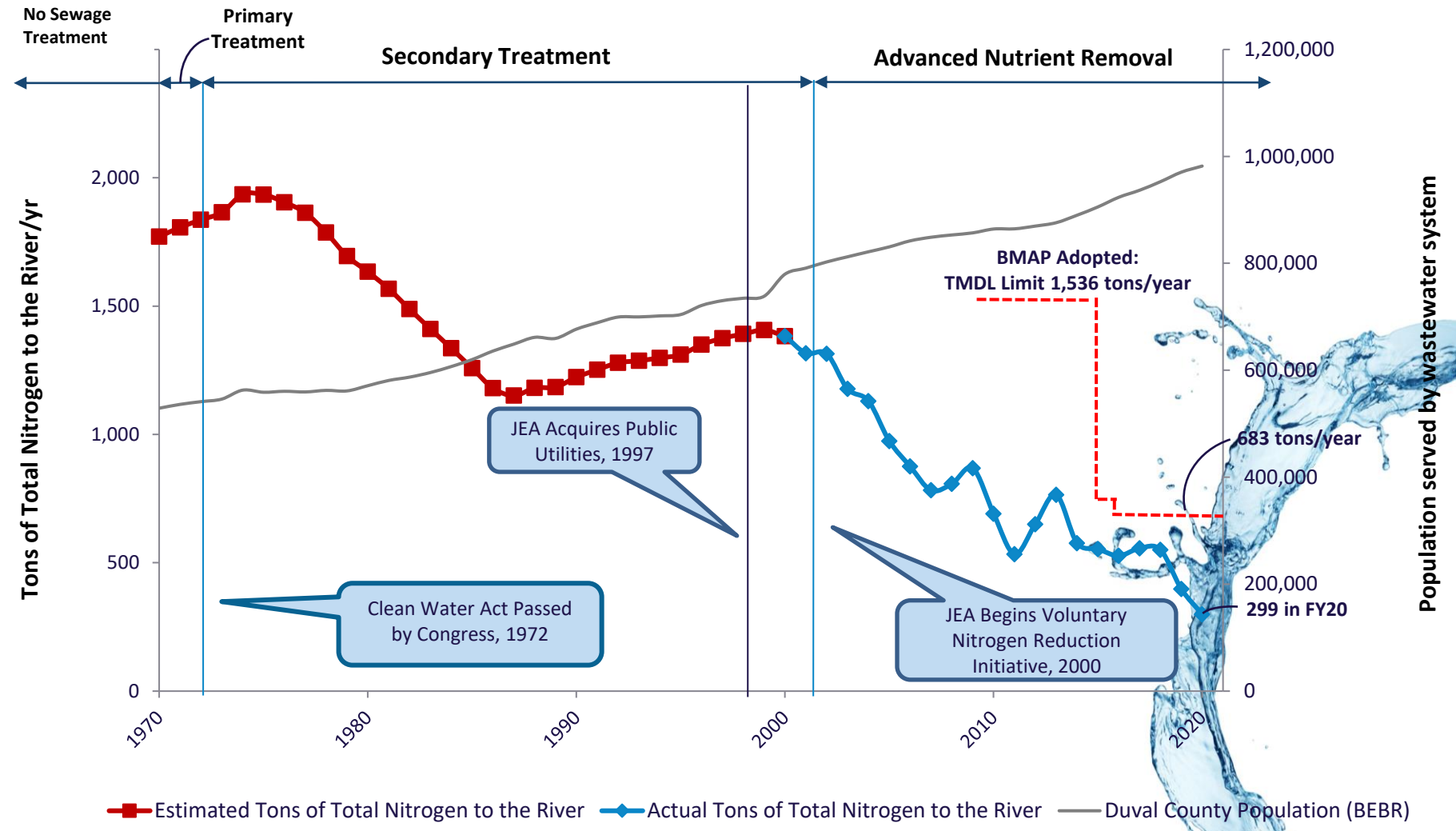


JEA has Reduced Nitrogen Discharge to the St. Johns River

60% Reduction

in nitrogen discharges
even while population
grew by 37%

- Improve treatment at regional facilities
- Phase out old technology
- Build reclaimed system



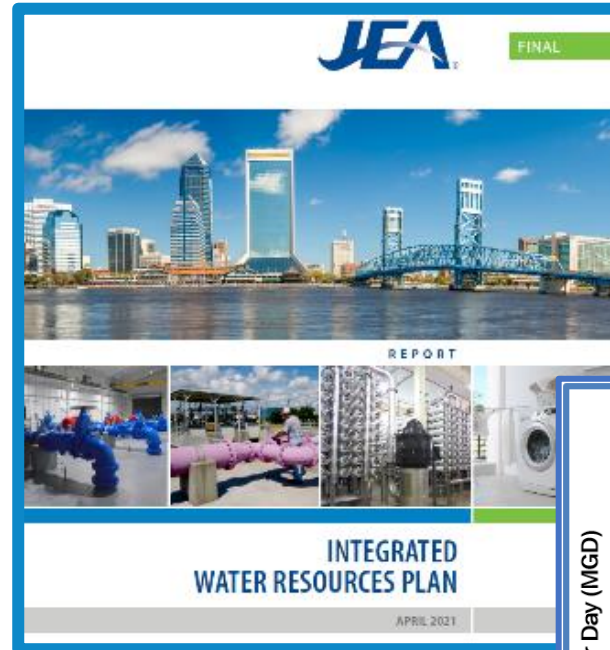
Timeline Overview



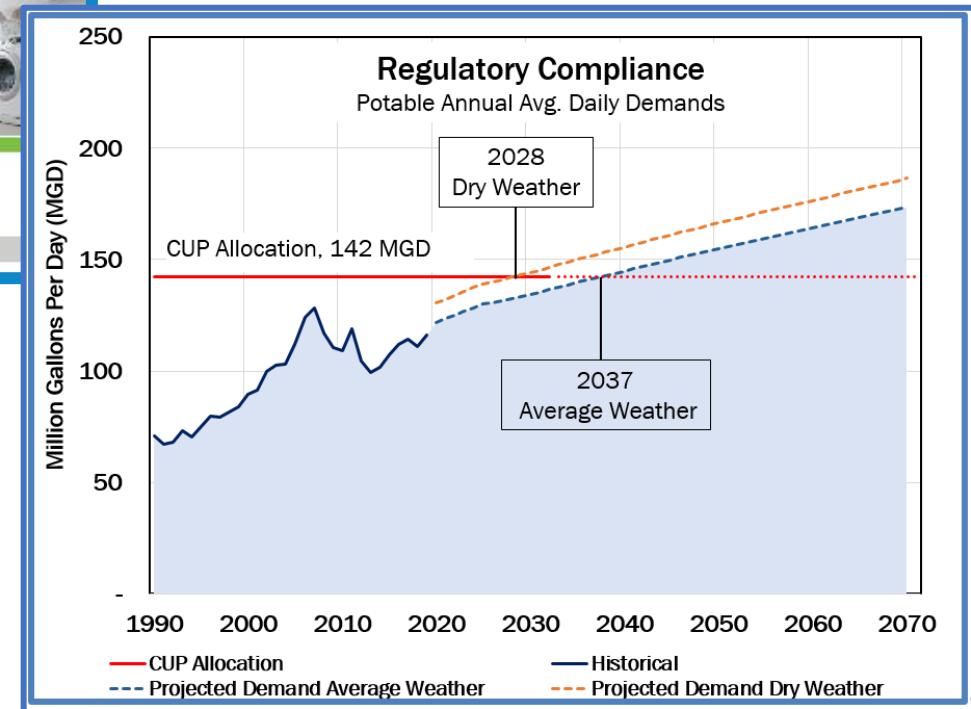
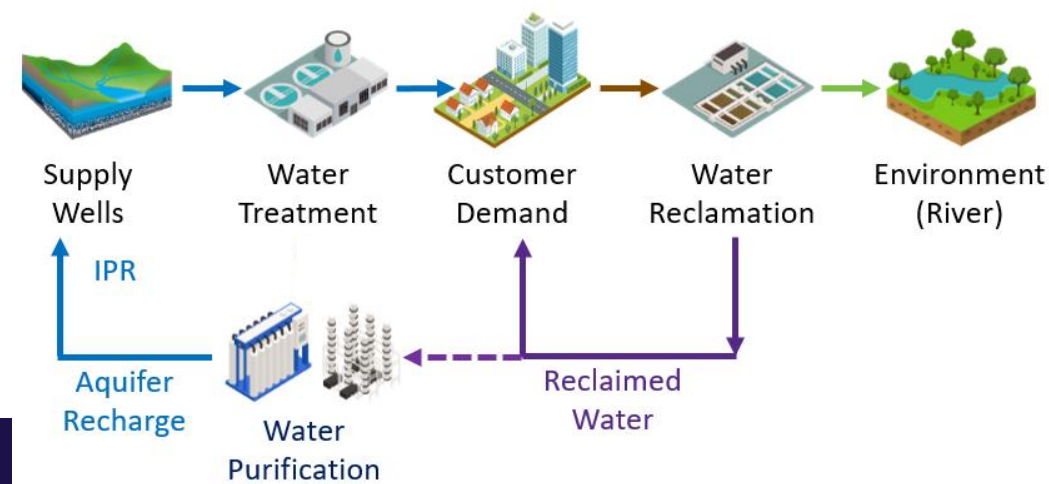
JEA's Integrated Water Resource Plan (IWRP) Identified Needs for Alternative Water Supplies

Water Supply

- JEA received 20-year consolidated CUP in 2011 with a groundwater allocation of 142 mgd
- Aquifer approaching permitted withdrawal limit
- IWRP identified need to develop alternative supplies



Integrated Water Resource Planning



JEA Considered Four Main Management Options



Expanded Reclaimed Water

- Public access reuse for irrigation
- Directly offsetting



Purified Water

- Advanced multi-barrier treatment process
- CUP credits awarded for aquifer recharge



Deep Well Injection

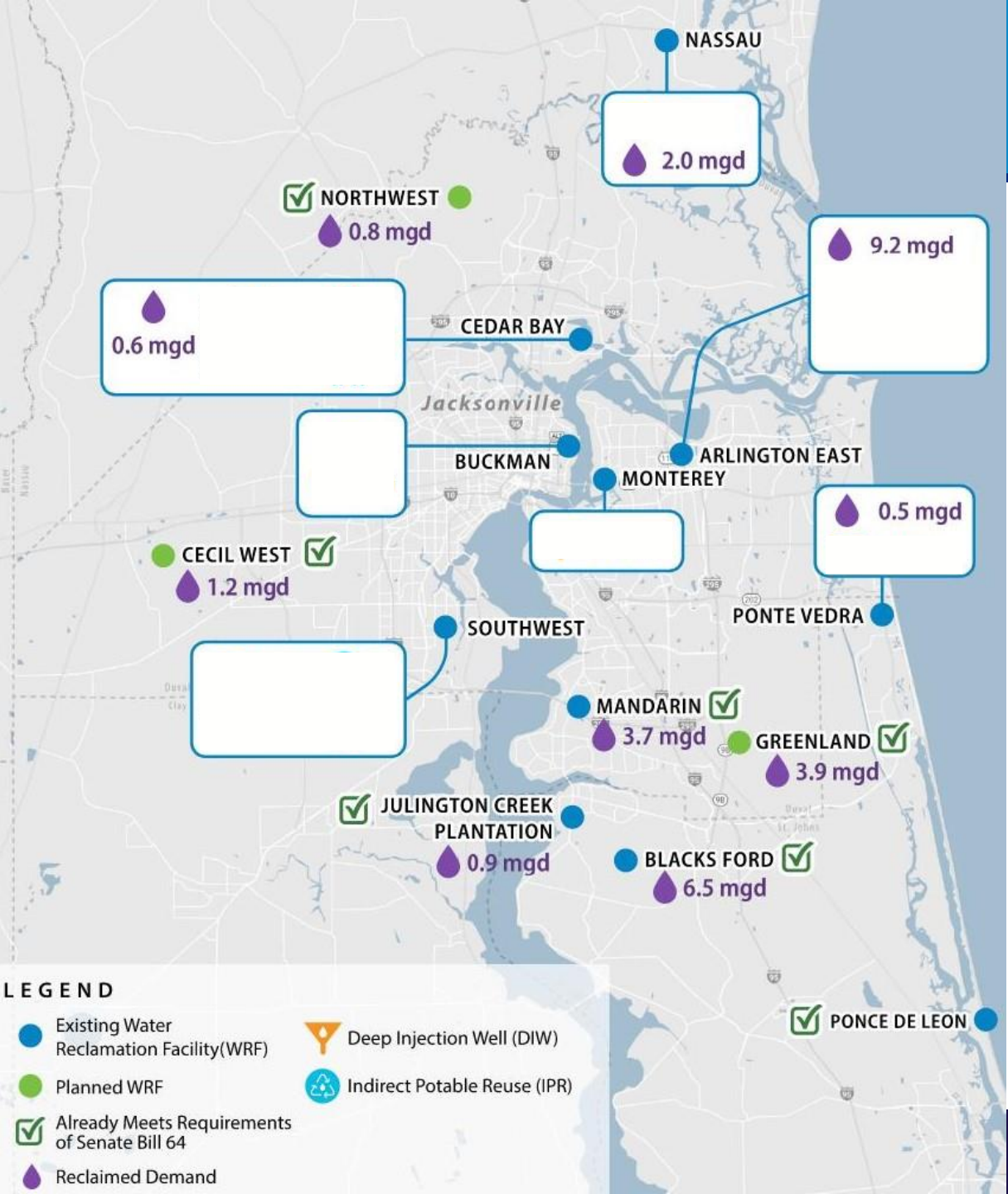
- No deep wells in NE Florida yet
- Used for reclaimed water and residuals management



Wetland Hydration

- Large land area required
- High permitting complexity
- Not readily available in NE FL

JEA Systemwide Plan Includes Expanded Reclaimed



Expanded

Reclaimed

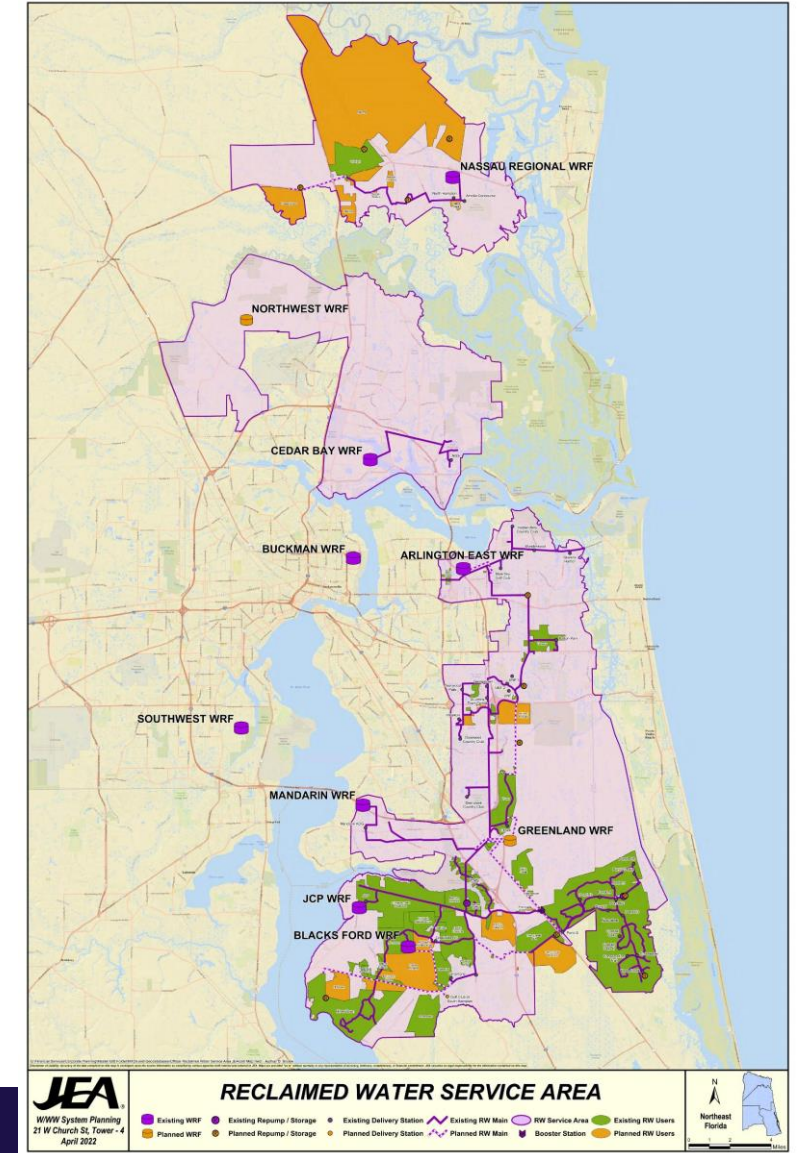
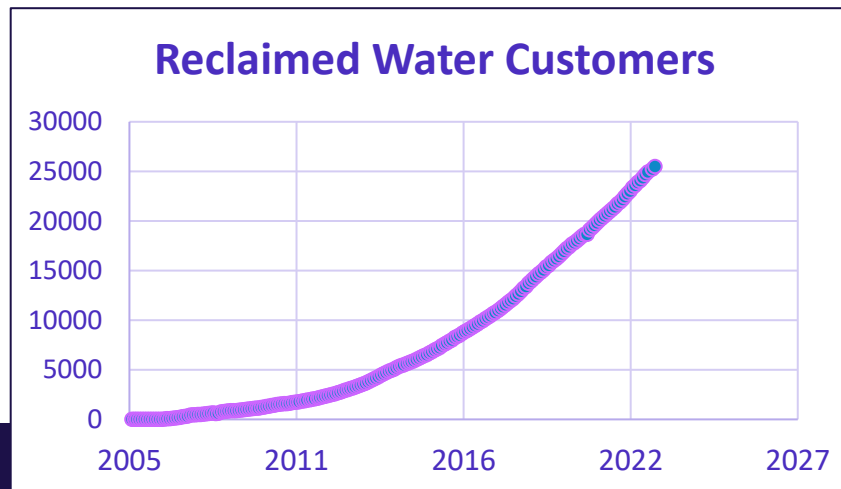
29.4 mgd

Demand

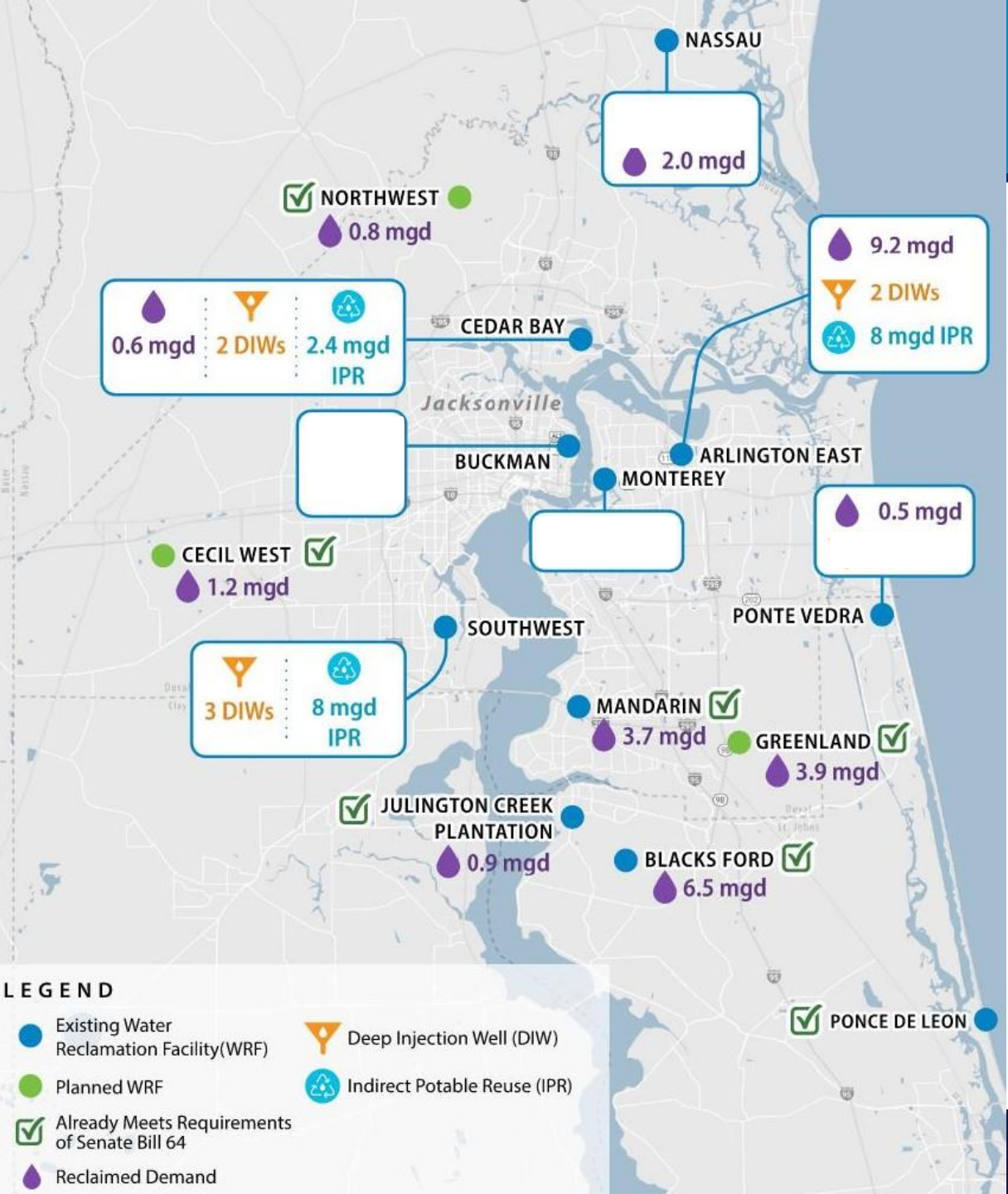


JEA Has One of Florida's Largest Interconnected Reclaimed Water Systems

- Reclaimed use offsets aquifer withdrawals
- System started in 2000, focused on areas of growth
- >\$100M investment to date
- Used as a resource, not disposal
- Use has grown to 20 MGD in 2021, increasing 23% annually over past 5 years
- Additional supply available for expanded traditional reclaimed and/or potable reuse



JEA Systemwide Plan Includes Expanded Reclaimed, DIWs, and IPR



Expanded Reclaimed Water

- 29.4 mgd

Purified Water

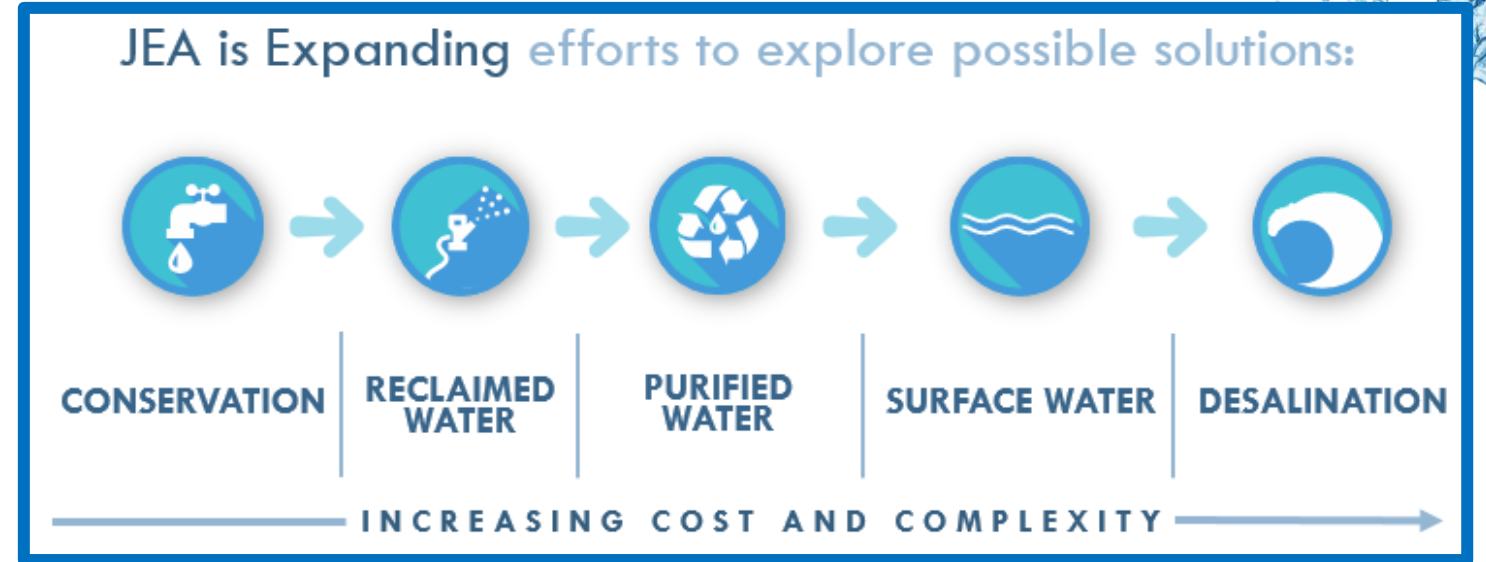
- 3 Facilities
- 18.4 mgd



Why Water Purification?

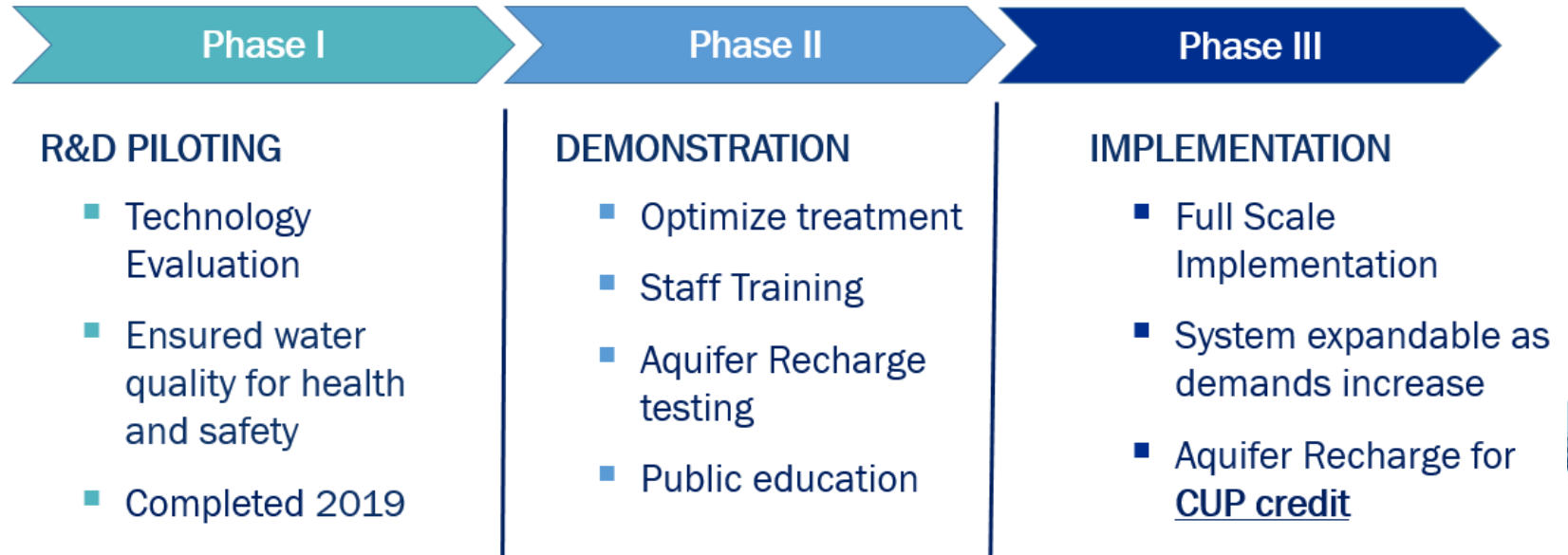


- Economic growth of the region requires sustainable supply
- Conservation & reclaimed water alone are not enough
- Protect the aquifer and diversify the water portfolio
- Maximizes use of available reclaimed and minimize discharge
- Purification is cost competitive to meeting future demands

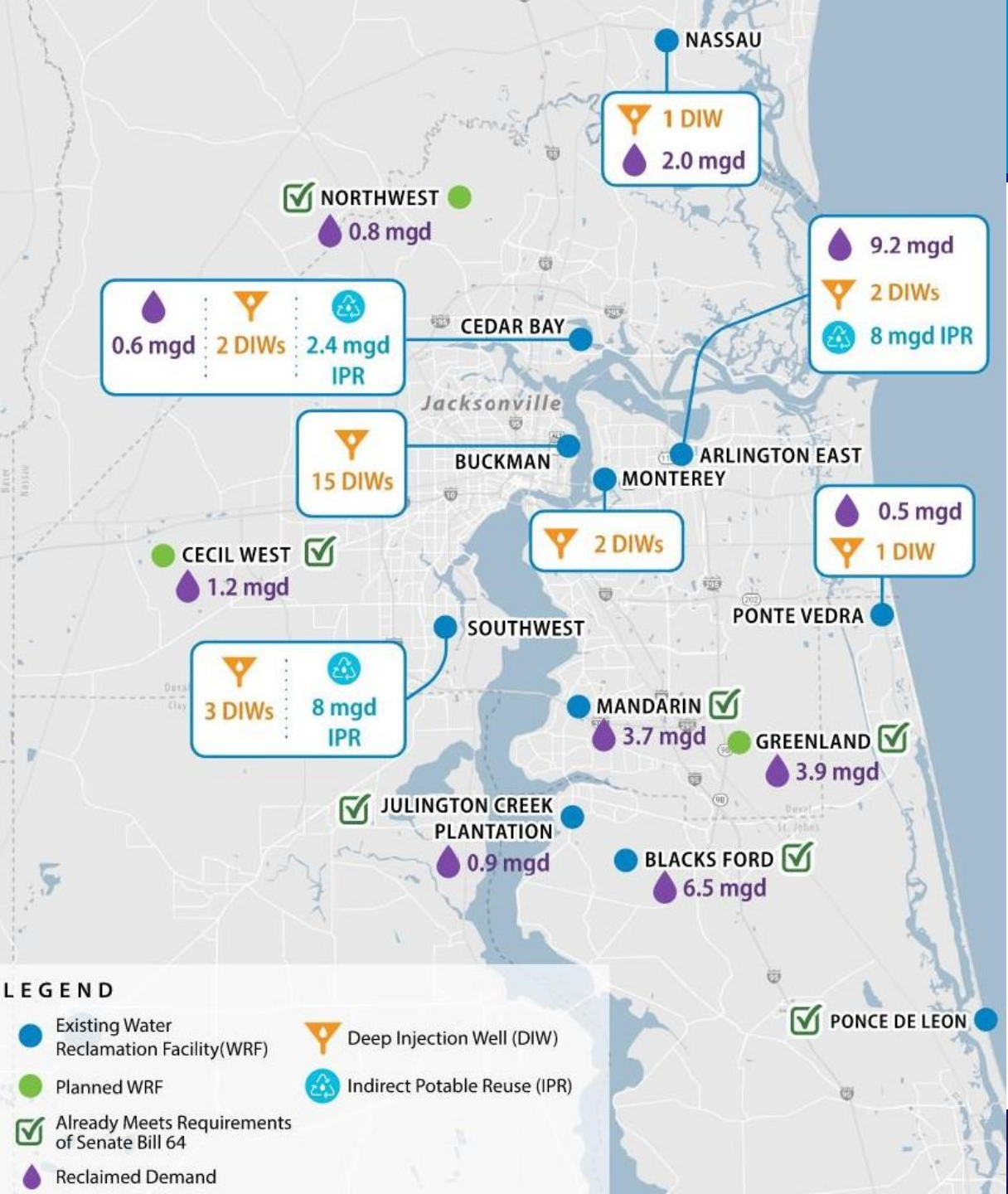


JEA has Piloted Water Purification for Aquifer Recharge and Planning a Potable Reuse Demonstration Facility

- Currently in Phase II
- Membrane-based Purification Process
- Aquifer recharge with purified water
- Visitor Education Center



JEA Systemwide Plan Includes Expanded Reclaimed, DIWs

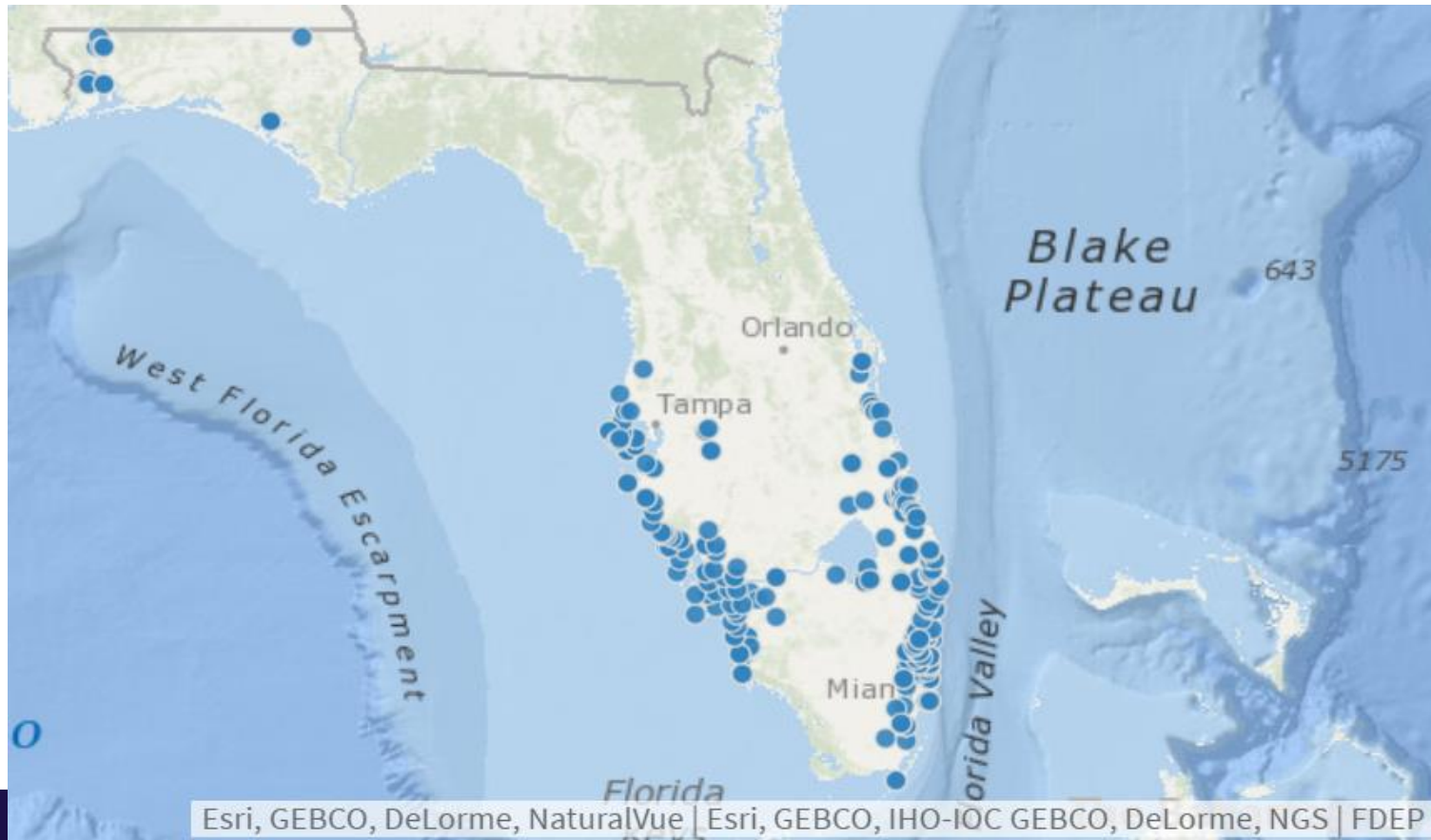


Expanded Reclaimed Demand	Purified Water	Deep Well
<p>Expanded Reclaimed Demand</p> <ul style="list-style-type: none"> 29.4 mgd 	<p>Purified Water</p> <ul style="list-style-type: none"> 3 Facilities 18.4 mgd Purified Water 	<p>Deep Well</p> <ul style="list-style-type: none"> 26 DIWs 52 mgd Capacity

Uncertainties in Permitting and Resources Present Plan Risks



- No deep injection wells have been needed in North Florida to date
 - Suitable formations have been identified (>2,000 ft BLS)
 - Recharge Rate (MGD/Well)
 - Location variability

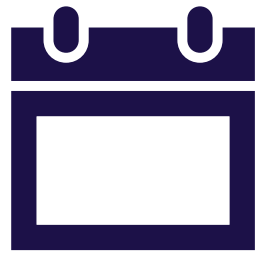


Class I Injection
Wells in Florida
WATER REUSE

JEA Plan will Eliminate Surface Water Discharges and Directly Benefit the Floridan Aquifer



Plan was approved by FDEP



Date of
Discharge
Elimination

✓ *January 1,
2032*



Avg. Gal/Day
No Longer
Discharged

✓ *83 MGD*



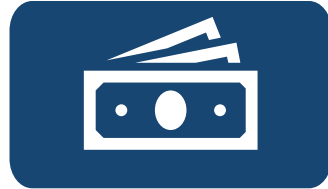
Directly benefiting
the potable
Floridan Aquifer

✓ *47 MGD*



Uncertainties in Permitting and Resources Present Plan Risks

Additional Risks:



- There is a potential for cost escalation due to competing resources (services and materials).



- Would require significantly more Engineering, Permitting and Construction capacity than what is currently available in Northeast Florida or the State.



- Timeline is challenging.



- Rules and regulations required for implementation of the projects are not in place. Permitting and testing could take significantly longer than anticipated.



- Current Staffing levels and training may need to be increased to operate proposed facilities.



Thank You



A dynamic splash of water, rendered in a light blue, semi-transparent style, forms a large, irregular circular shape on the left side of the slide. The water droplets and ripples are clearly visible, giving it a sense of motion.

Question & Answer