BOARD OF COUNTY COMMISSIONERS
WORKSHOP MEETING MINUTES
June 19, 2017
Administration Building,
4th Floor, BCC Meeting Room, 477 Houston Street,
Green Cove Springs, FL 32043
3:00 PM

CALL TO ORDER

Chairman Bolla

INVOCATION

Commissioner Hutchings

PLEDGE

Commissioner Rollins

ROLL CALL

Chairman Bolla

PUBLIC COMMENTS

1. Public Comments

NEW BUSINESS

2. Introduction & Objective(s) of Summit - Dr. Bradley Burbaugh
3. Water Supply Planning in North Florida - Dr. Anne Shortelle, SJRWMD Executive Director
4. Long-term Water Supply Strategy - Mr. Tom Morris, CCUA Executive Director
5. Panel discussion with presenters and Commissioners
6. Back-up Materials and Reference Links
   a) North Florida Regional Water Supply Plan
      http://northfloridawater.com/watersupplyplan/

   b) North Florida Regional Water Supply Partnership
      http://northfloridawater.com/

c) Lower St. Johns River Basin
http://www.sjrwmd.com/lowerstjohnsriver/

In accordance with the Americans with Disabilities Act, any person needing a special accommodation to participate in this matter should contact the Clay County ADA Coordinator by mail at Post Office Box 1366, Green Cove Springs, FL 32043, or by telephone at number (904) 269-6347 no later than three (3) days prior to the hearing or proceeding for which this notice has been given. Hearing impaired persons can access the foregoing telephone number by contacting the Florida Relay Service at 1-800-955-8770 (Voice), or 1-800-955-8771 (TDD).

Agenda Item
Clay County Board of County Commissioners

Clay County Administration Building
Monday, June 19 3:00 PM

TO: DATE:

FROM:

SUBJECT:

AGENDA ITEM TYPE:

REVIEWERS:

Department	Reviewer	Action	Date	Comments
County Manager	Kopelousos, Stephanie	Approved	6/9/2017 - 1:09 PM	
County Manager	Kopelousos, Stephanie	Approved	6/9/2017 - 1:09 PM	

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County Manager	Slaybaugh, Jaclyn	Approved	6/16/2017 - 10:32 AM	Item Pushed to Agenda

Agenda Item
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	Description	Type	Upload Date	File Name
	Dr. Shortelle Presentation	Cover Memo	6/16/2017	Shortelle_Presentation.pdf

REVIEWERS:

Department	Reviewer	Action	Date	Comments
County Manager	Kopelousos, Stephanie	Approved	6/16/2017 - 12:15 PM	
County Manager	Slaybaugh, Jaclyn	Approved	6/16/2017 - 1:10 PM	

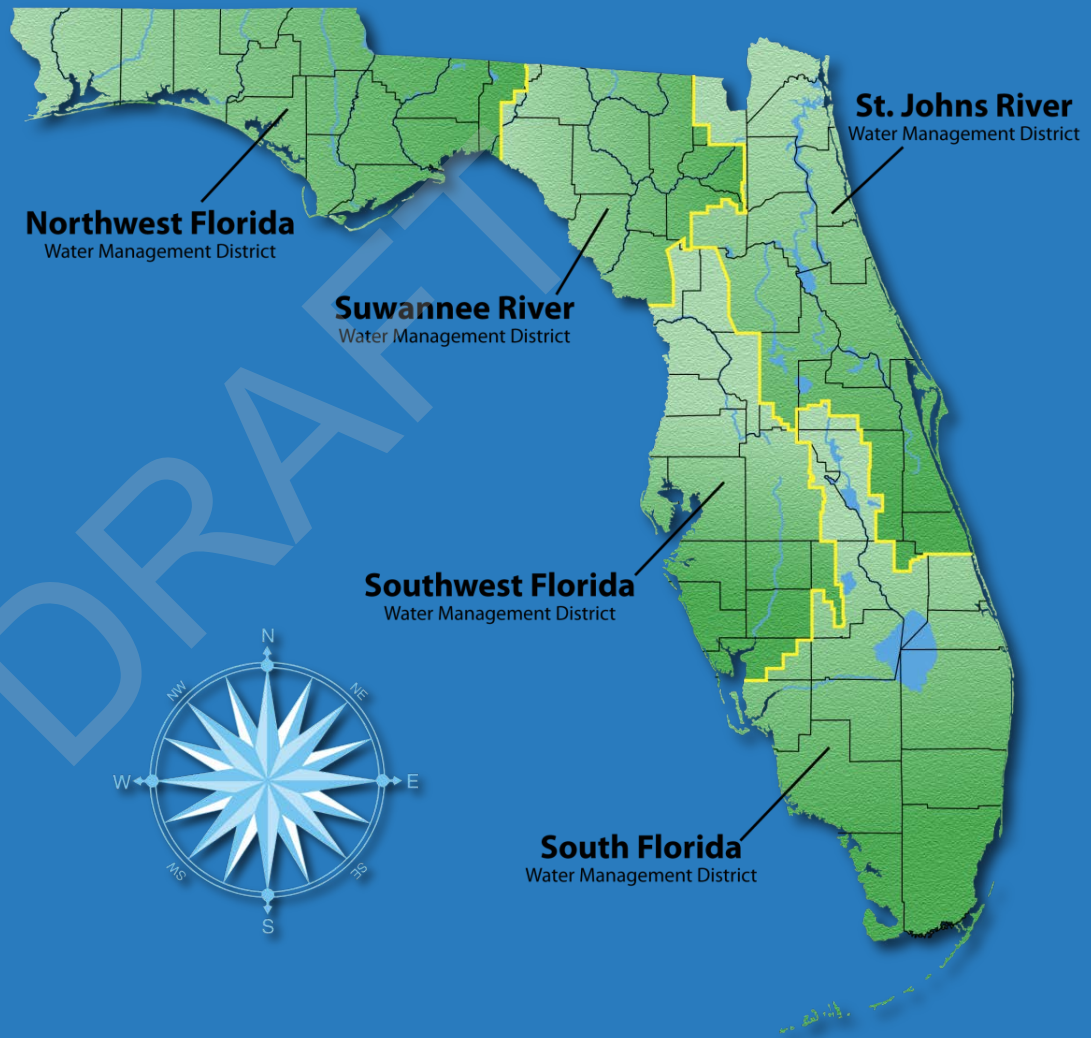
Water Supply Planning in North Florida

Ann B. Shortelle, Ph.D.
Executive Director

June 19, 2017

Who We Are

- 12,283 square miles
- Covers all or part of 18 counties in northeast and east-central Florida



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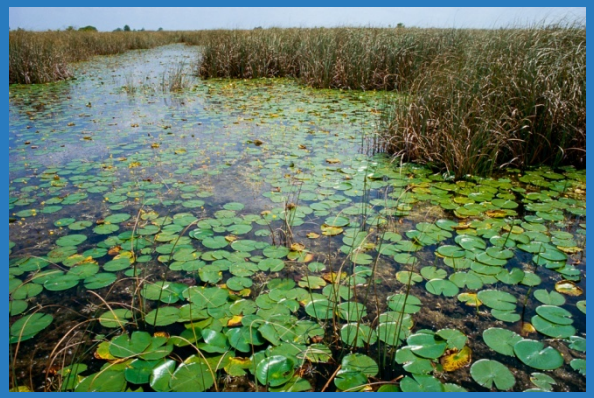
Core Missions

Water supply

Flood protection

Water quality



Natural systems

Florida's Water Resources

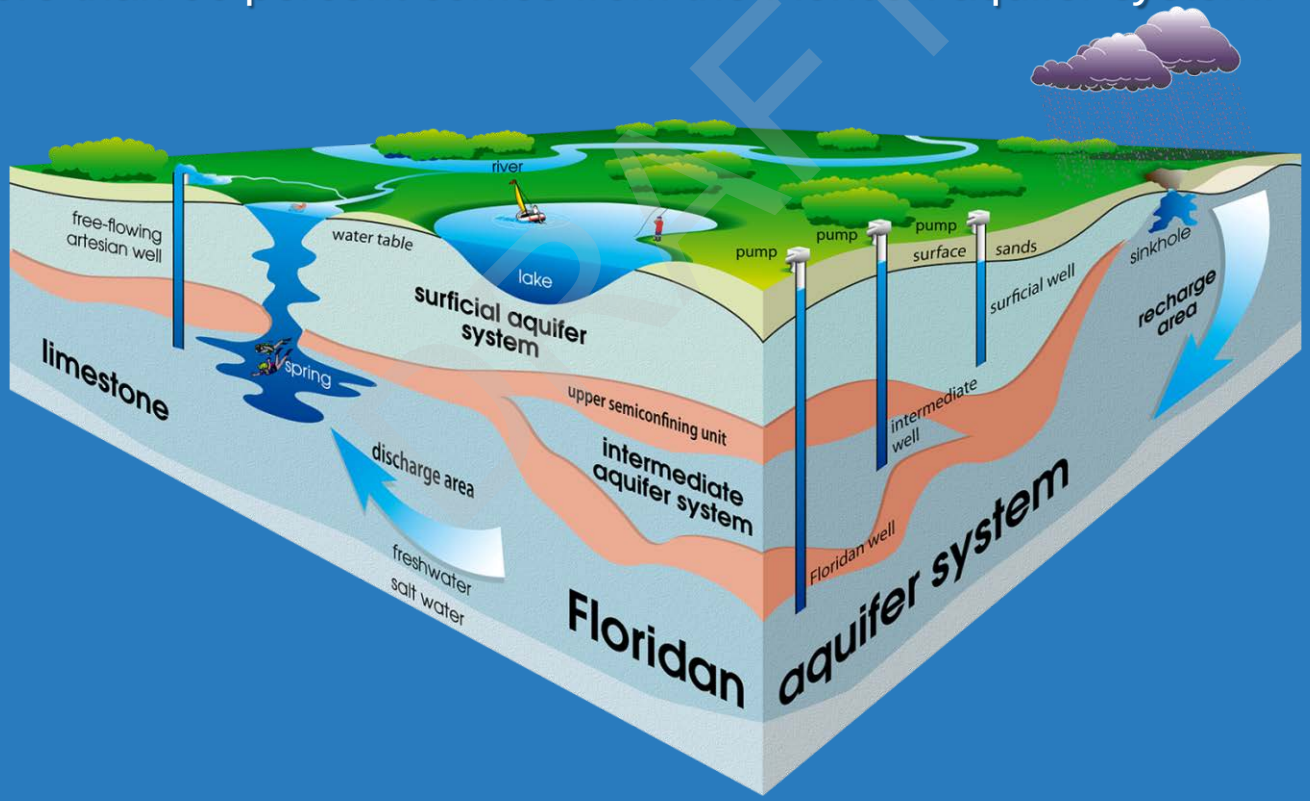
- About 54 inches of rain annually
- 7,700 lakes
- 50,000 miles of rivers and streams
- 700 springs

- Quality of life
- Recreation
- Economy
- Agriculture

Hydrologic Cycle

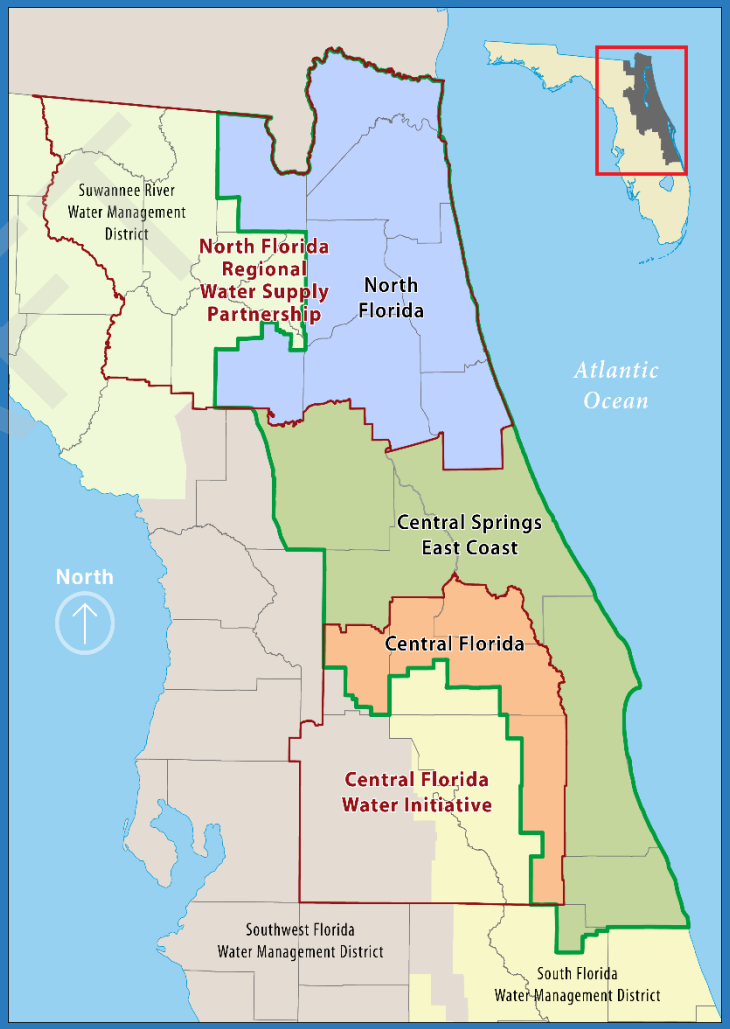
Our water in northeast and east-central Florida

- More than 90 percent comes from the Floridan aquifer system.

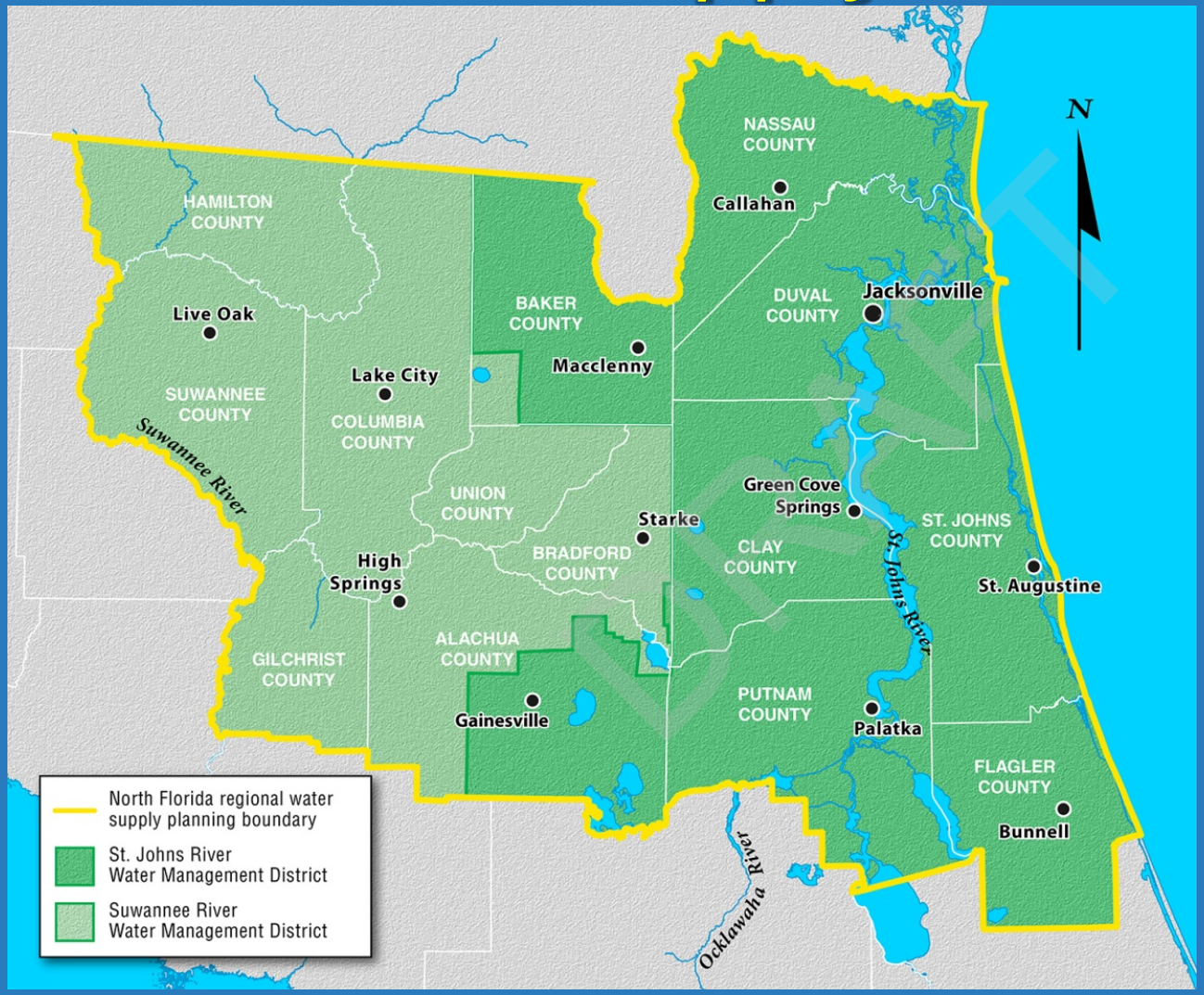


Water Supply Planning

- Districtwide water supply plan and regional plans
- Looks 20 years out
- Three regions



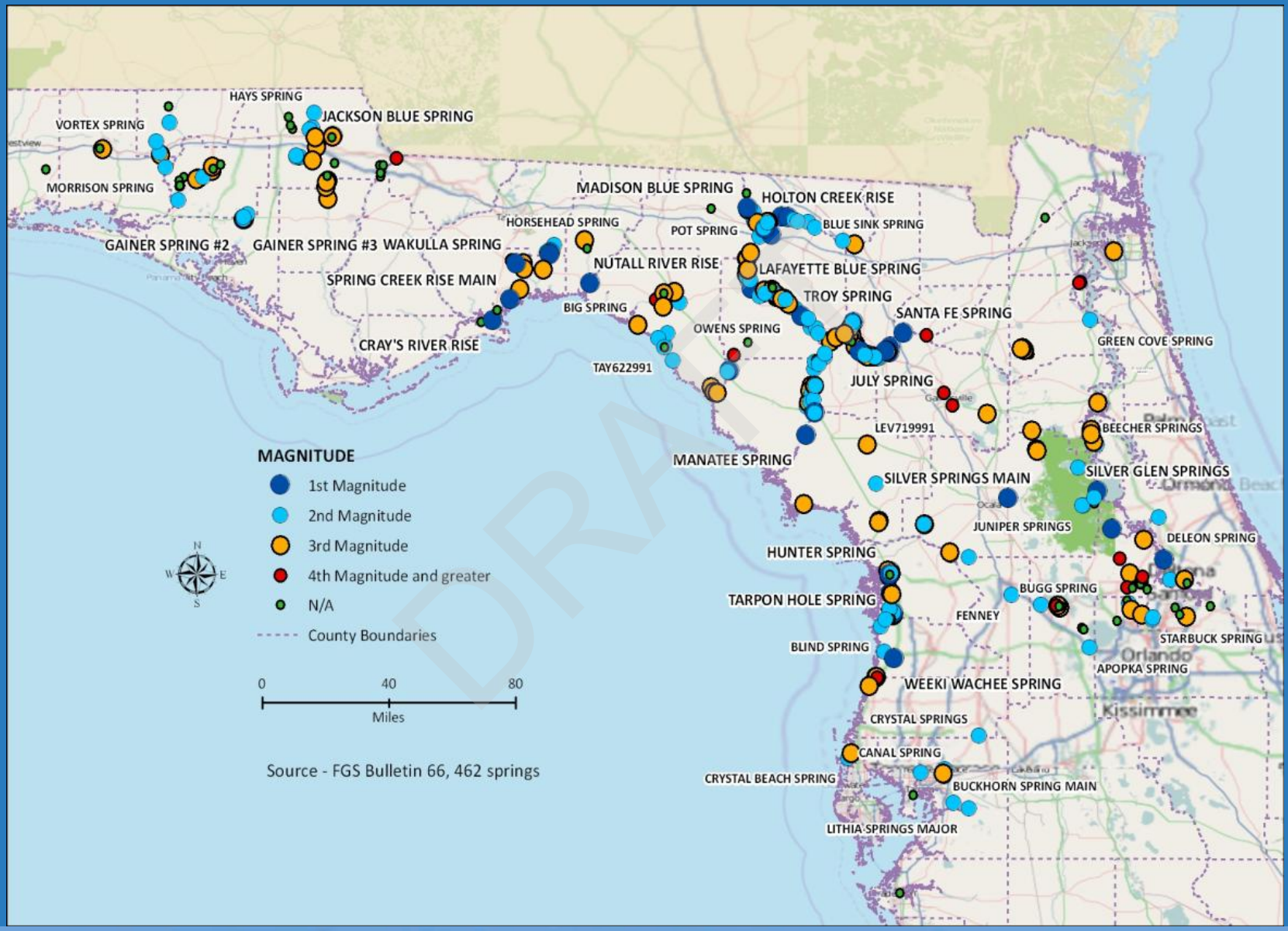
North Florida Regional Water Supply Partnership



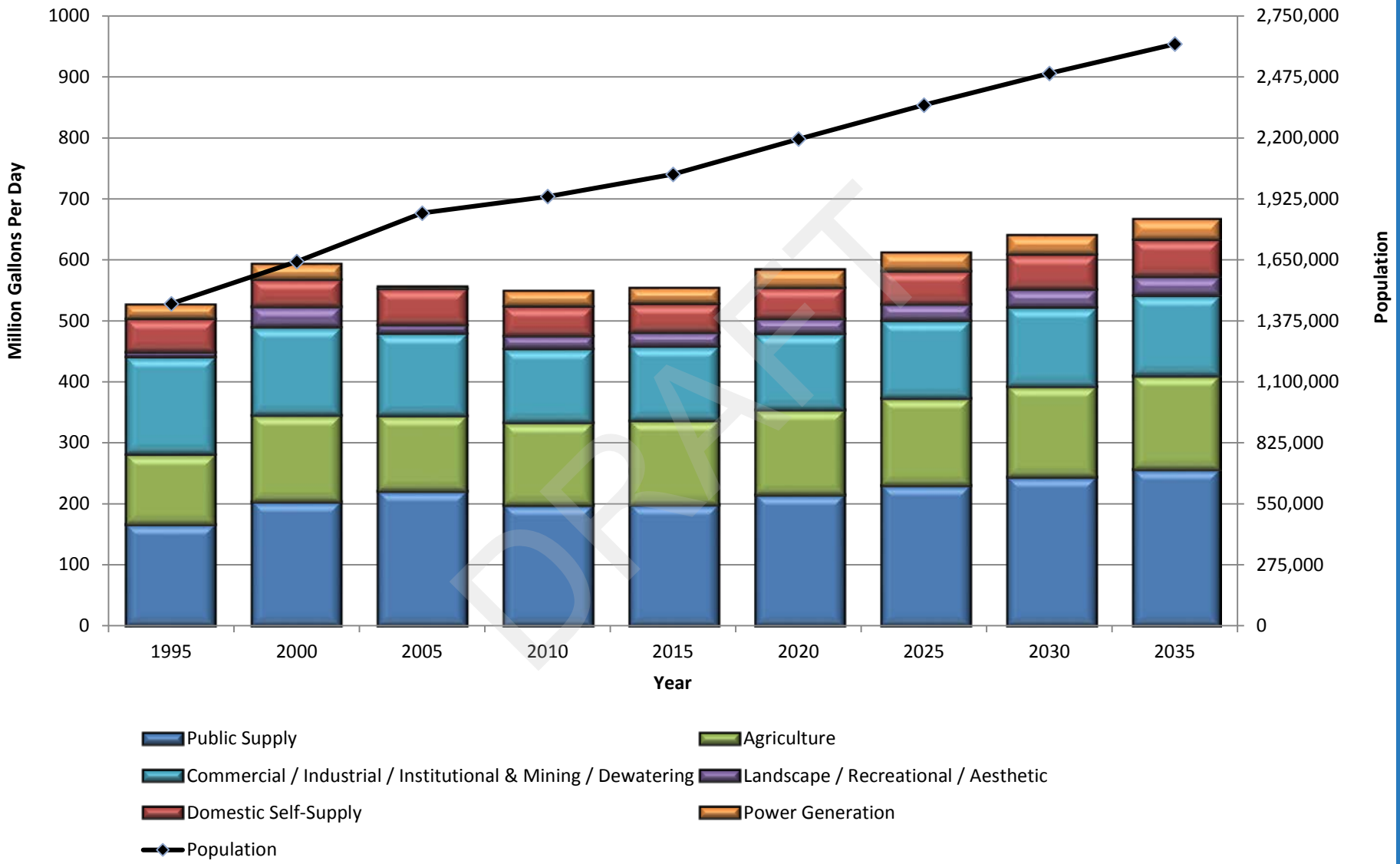
Challenges

- Hydrogeology
- Springs and MFLs
- Current and future demands

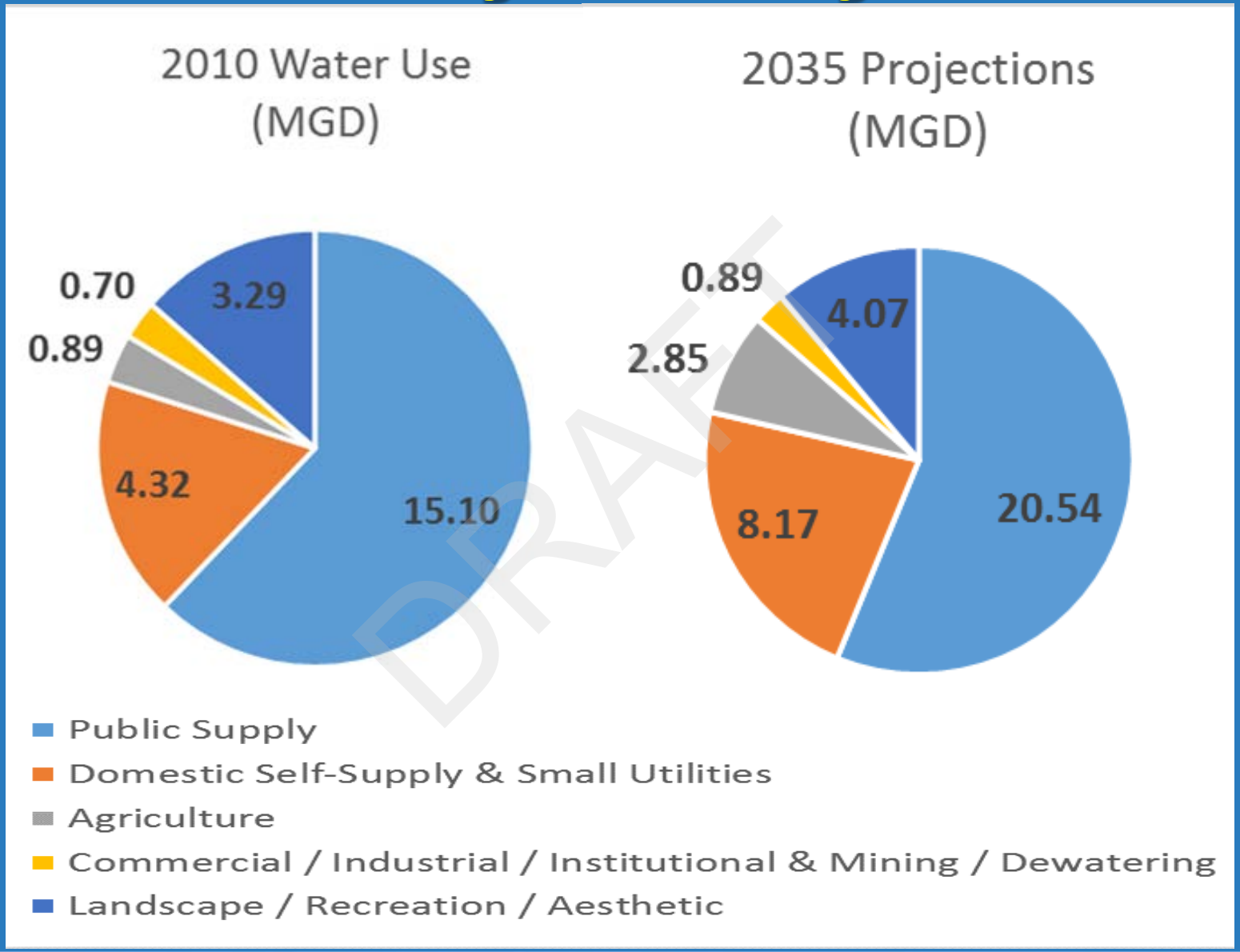
North Florida is the Springs Heartland



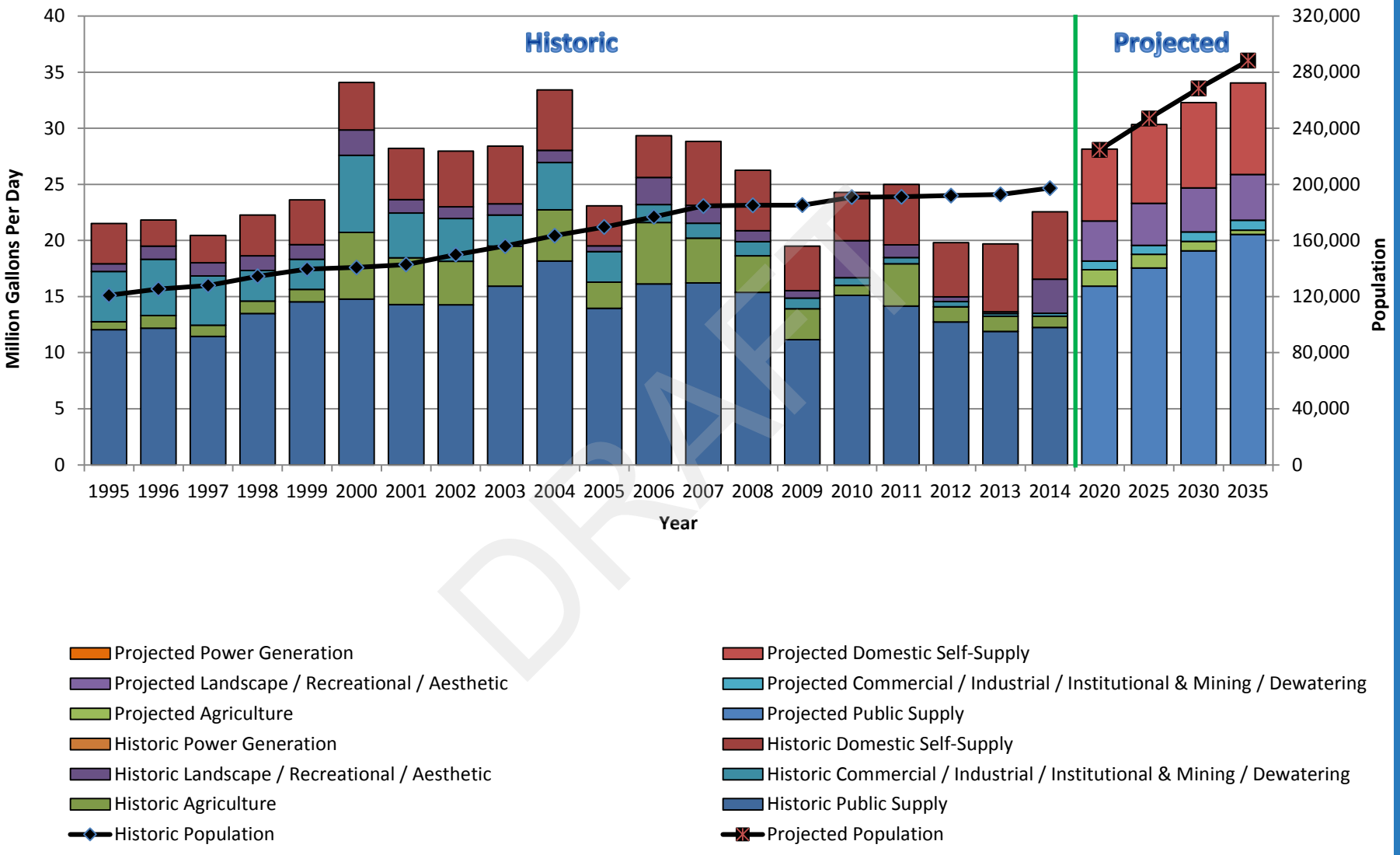
Historic Water Use and Population -vs- Projected Water Demand and Population in NFRWSP



Clay County



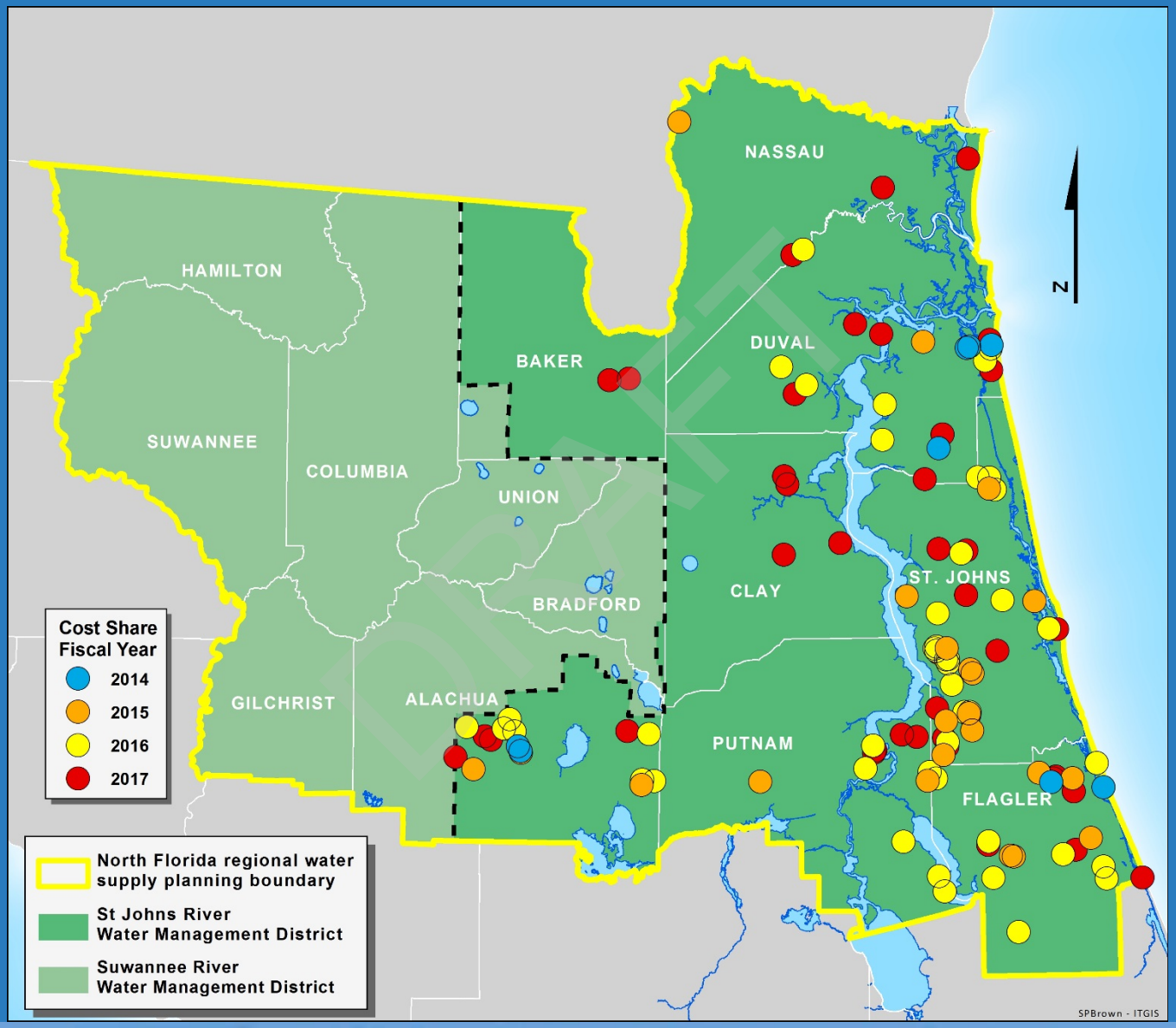
Historic and Projected Water Use and Population for Clay County



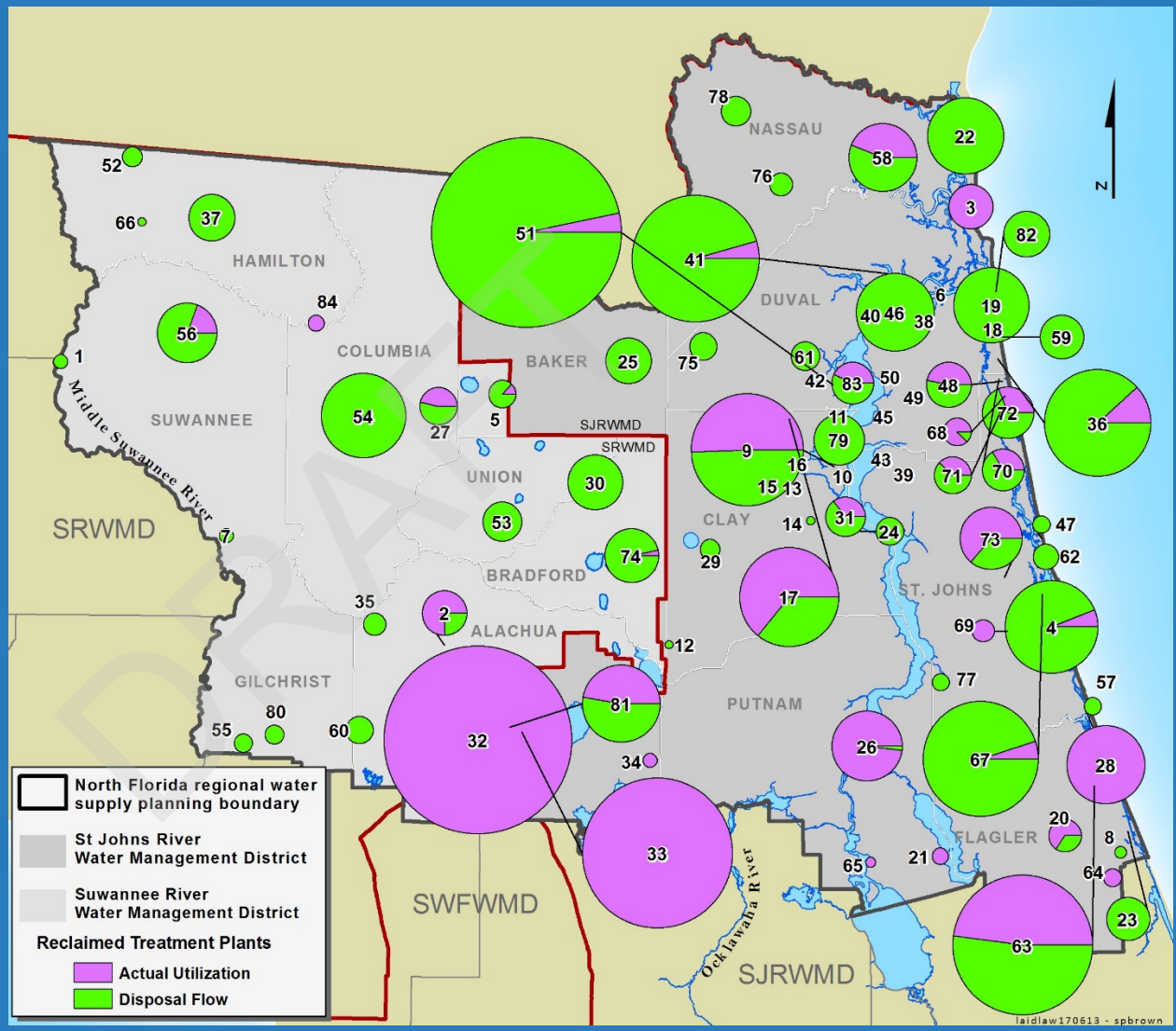
To meet future demand of 117 MGD in the planning region, while protecting natural systems, the NFRWSP identifies up to 216 MGD of potential projects region wide, including:

- **41 mgd to 54 mgd of water conservation**
- **65 mgd of water resource development projects**
- **97 mgd of water supply development projects**

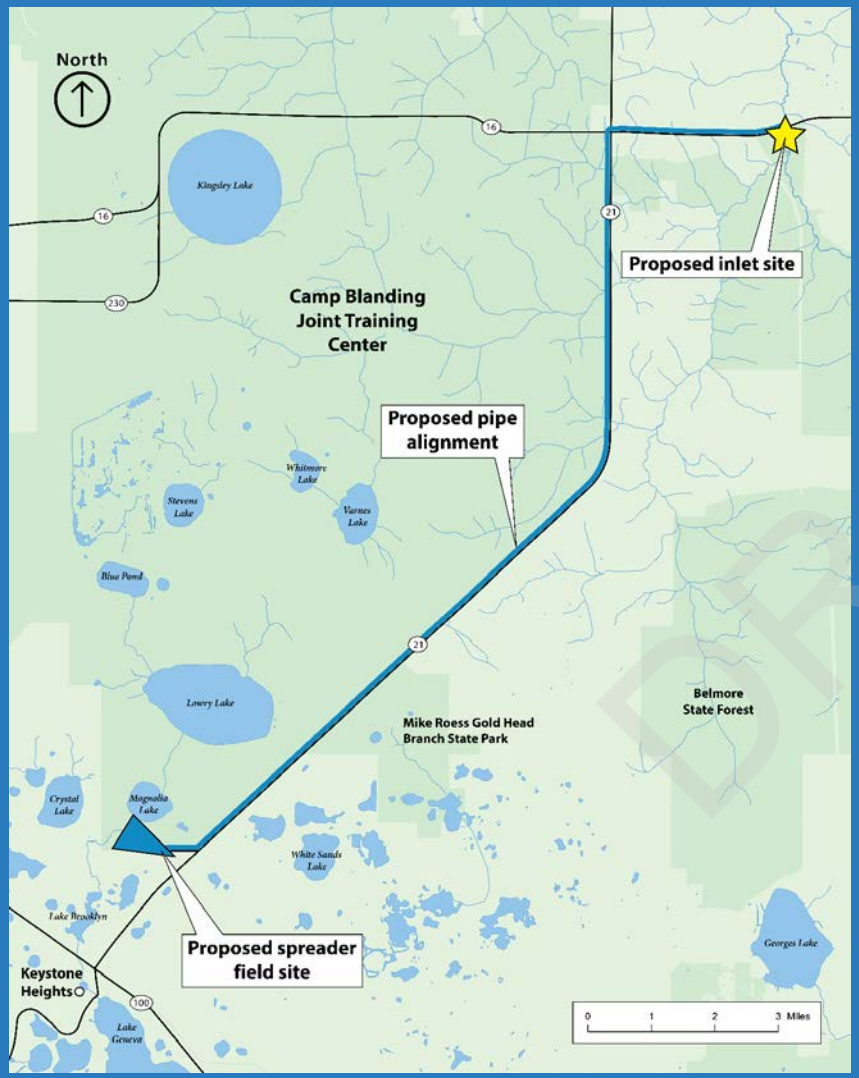
SJRWMD Cost-Share Projects



2015 Reuse and Wastewater Disposal



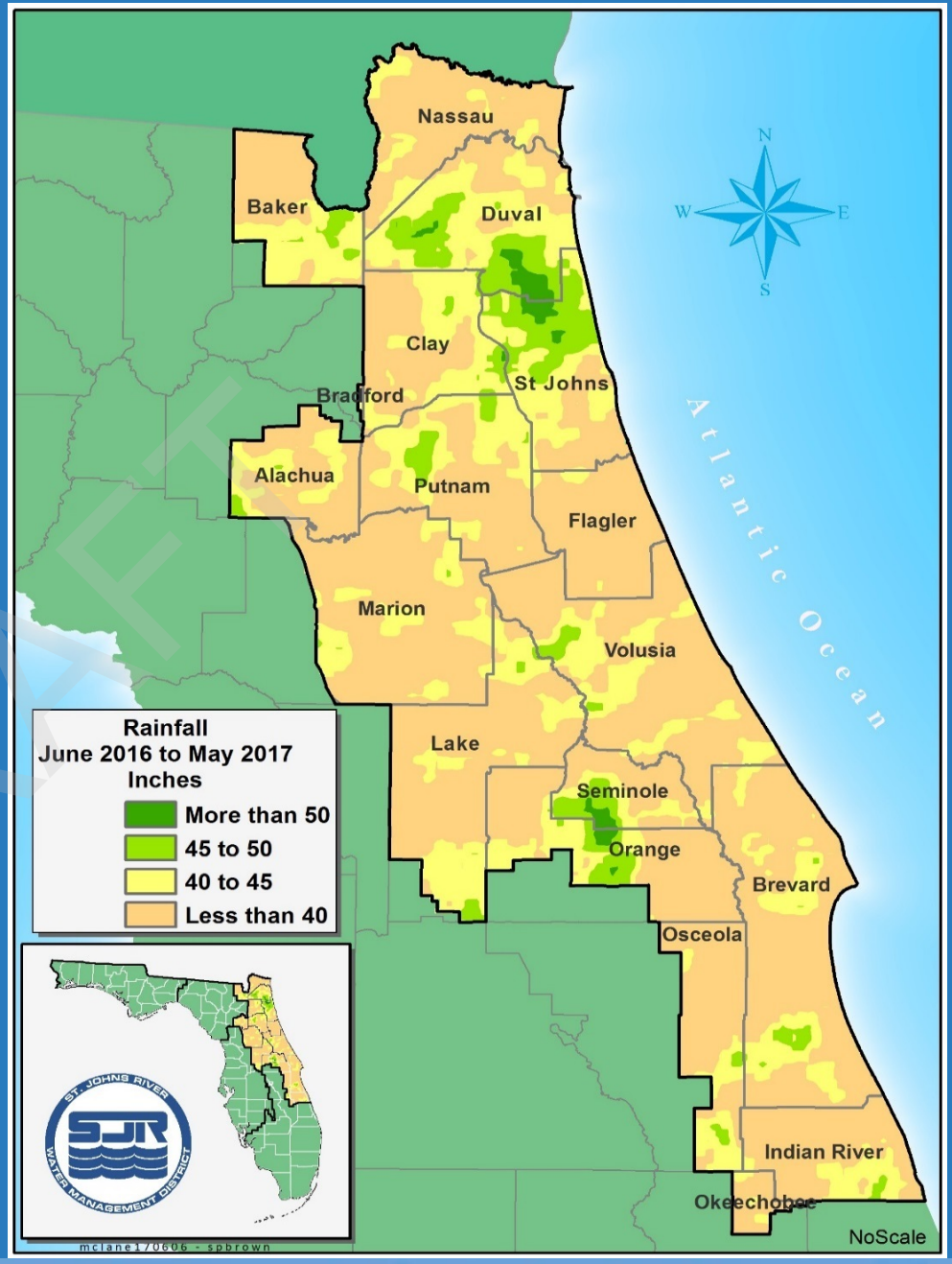
Black Creek WRD Project



- 2017 Funding for St. Johns River and Keystone Heights lake region restoration
  - $5.5 M – recurring
  - $7.8 M – non-recurring
- Project milestones
  - Design and Permitting in 2017-18
  - Construction begins in 2018

Water Shortage Warning

- Manages drought; is not a long-term strategy
- Monitoring groundwater levels, surface water flows and rainfall



Importance of Collaboration

- **Must meet business, agricultural, residential and environmental needs**
- **Want to meet recreational and quality of life needs**
- **Business and community leader engagement is vital**
- **Working together to meet all the needs will ensure a vital economy**

Questions?

Ann B. Shortelle, Ph.D.
ashortelle@sjrwmd.com

www.sjrwmd.com

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	Description	Type	Upload Date	File Name
	CCUA Presentation	Cover Memo	6/16/2017	CCUA_Presentation_Revised.pptx

REVIEWERS:

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County Manager	Kopelousos, Stephanie	Approved	6/16/2017 - 12:14 PM	
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CLAY COUNTY UTILITY AUTHORITY AND PLANNING FOR THE FUTURE IN CLAY COUNTY

Board of Supervisors:
Mike Vallencourt, Chairman
Frank Gerwe, Vice-Chairman
Russell Buck
Greg Clary
Mona Gardella
Matt Welch
John Wilkinson

Tom Morris, Executive Director
Grady H. Williams, Jr., Esq. Legal Counsel

TOM MORRIS
EXECUTIVE DIRECTOR

- OVER 25 YEARS OF EXPERIENCE IN EXECUTIVE LEVEL UTILITY LEADERSHIP – RESPONSIBLE FOR ALL ASPECTS OF THE UTILITY THAT PROVIDES PUBLIC WATER, WASTEWATER & RECLAIMED WATER TO THE UNINCORPORATED AREAS OF CLAY COUNTY
- MBA, UNIVERSITY OF NORTH FLORIDA
- BACHELORS OF ARTS, UNIVERSITY OF CINCINNATI

AS A PUBLIC UTILITY, CCUA……

- WORKS FOR OUR RATE PAYERS
- THE HEALTH, SAFETY, AND GENERAL WELFARE OF THE PUBLIC REMAINS CENTRAL TO OUR MISSION
- WORKS TO ENSURE ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY OF THE

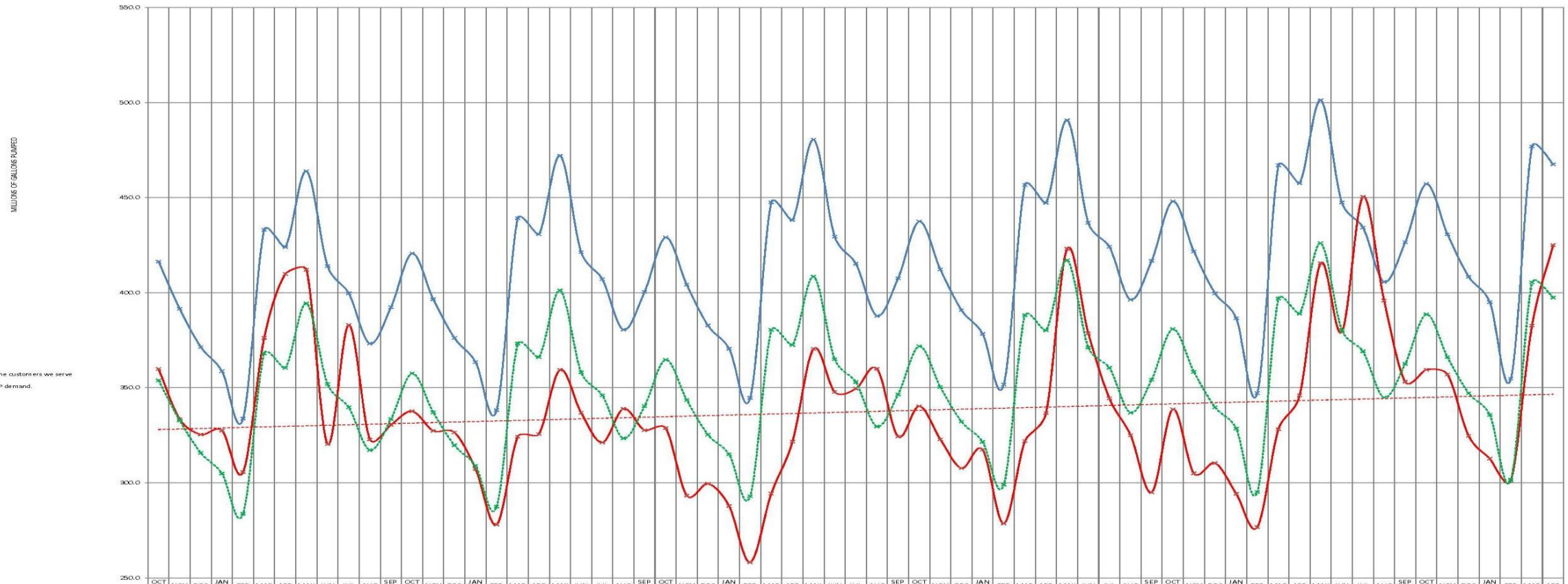
AS A PUBLIC UTILITY, CCUA'S...

- WATER PUMPING IS DRIVEN BY THE PEOPLE CONNECTED TO OUR SYSTEM
- CONSERVATION EFFORT DEPENDS ON THE PEOPLE CONNECTED TO OUR SYSTEM
- CHOICES AND DECISIONS MADE TODAY AFFECT PEOPLE FOR YEARS INTO THE FUTURE

TOTAL WATER DEMAND AND SEASONAL FLUCTUATIONS

CLAY COUNTY UTILITY AUTHORITY
Adjusted Monthly WTP Demand, Base Year -v- Current Year
(Accounts for Population Increase Since End of Base Year)

Water Conservation Report
Chart 3
05-11-2017



NOTE:
Base year represents total water demand for the customers we serve today, using water at base year usage levels.
Current year represents total actual water WTP demand.

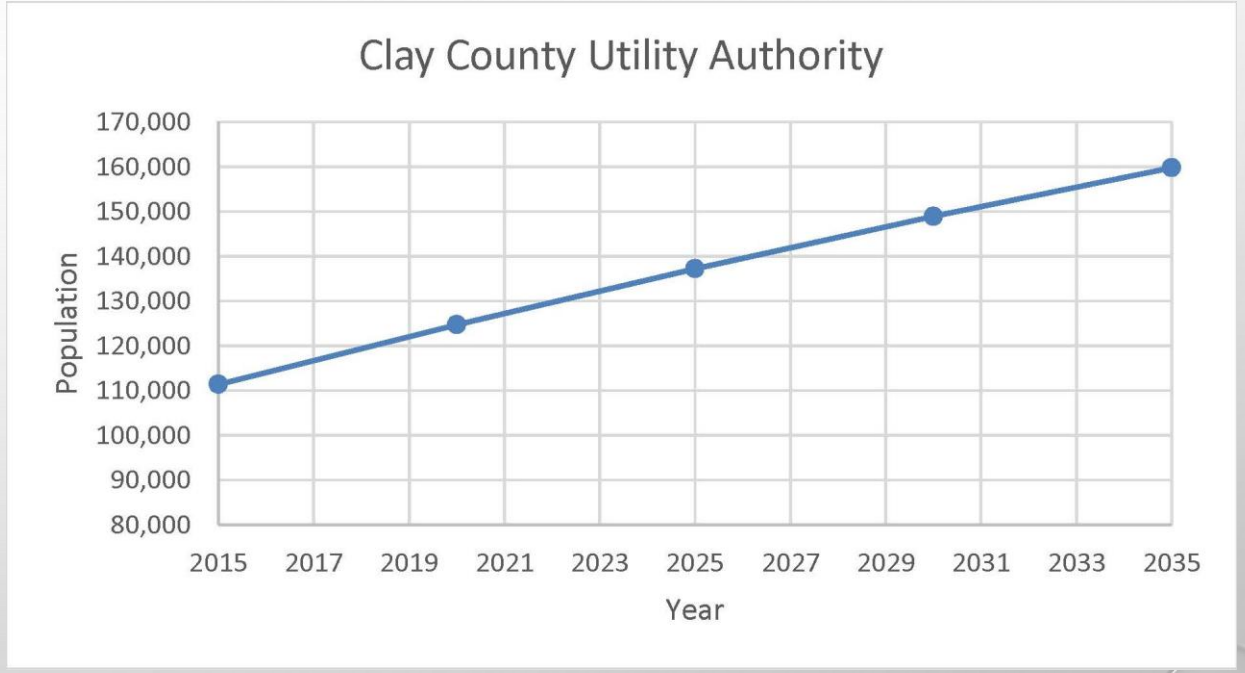
	OCT '11	NOV	DEC	JAN '12	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP '12	OCT '12	NOV	DEC	JAN '13	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP '13	OCT '13	NOV	DEC	JAN '14	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP '14	OCT '14	NOV	DEC	JAN '15	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP '15	OCT '15	NOV	DEC	JAN '16	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP '16	OCT '16	NOV	DEC	JAN '17	FEB	MAR	APR
BASE YEAR (08-09)	416.	391.	371.	358.	393.	433.	424.	469.	414.	399.	373.	392.	420.	396.	376.	363.	398.	439.	430.	472.	421.	407.	380.	400.	429.	404.	382.	370.	344.	447.	438.	480.	429.	415.	387.	407.	437.	412.	390.	378.	351.	456.	447.	490.	436.	424.	396.	416.	448.	421.	399.	386.	347.	466.	457.	501.	447.	434.	405.	426.	457.	490.	408.	395.	354.	476.	467.
MGAL PUMPED	359.	333.	325.	327.	305.	376.	403.	412.	320.	383.	322.	330.	337.	327.	326.	307.	278.	324.	325.	359.	336.	321.	338.	327.	328.	293.	299.	287.	258.	294.	321.	370.	347.	349.	359.	324.	340.	322.	307.	317.	278.	321.	336.	423.	378.	344.	325.	295.	338.	306.	310.	294.	276.	328.	346.	415.	379.	450.	395.	353.	359.	356.	324.	312.	301.	382.	425.
CONSERVATION GOAL (15%)	353.	332.	315.	304.	283.	368.	360.	394.	351.	339.	317.	333.	357.	337.	319.	308.	287.	373.	366.	401.	358.	346.	323.	340.	364.	343.	325.	314.	293.	380.	372.	408.	365.	352.	329.	346.	371.	350.	332.	321.	298.	388.	380.	417.	371.	360.	336.	354.	380.	358.	339.	328.	295.	396.	388.	426.	380.	369.	344.	362.	388.	366.	347.	335.	301.	405.	397.
CONSERVATION IMPACT (%)	13.5	14.8	12.3	8.71	8.42	13.1	3.34	11.1	22.6	4.18	13.4	15.7	19.7	17.4	13.2	15.4	17.7	26.1	24.4	23.8	20.0	21.0	10.9	18.1	23.3	27.4	21.7	22.3	25.0	34.2	26.5	22.9	19.0	15.8	7.18	20.4	22.2	21.6	21.2	16.1	20.7	29.5	24.7	13.7	13.3	18.7	17.9	29.2	24.4	27.6	22.3	23.8	20.2	29.7	24.3	17.1	15.2	-3.7	2.44	17.2	21.3	17.1	20.4	20.8	15.1	13.7	9.07

THE FIRST COAST EXPRESSWAY

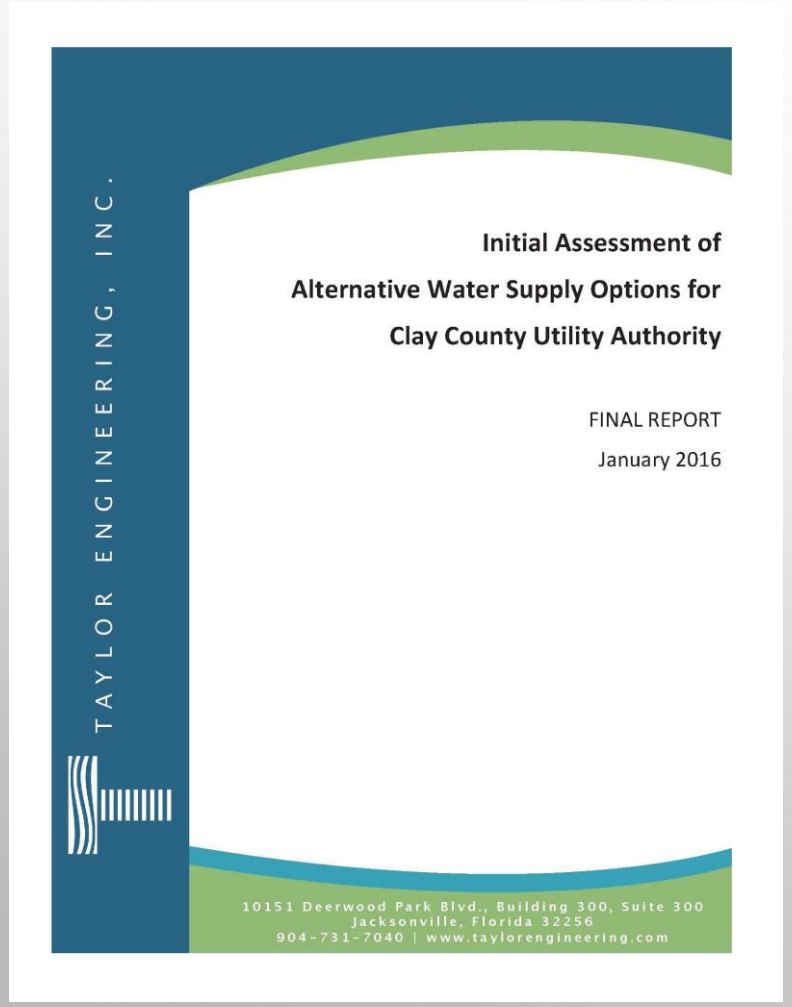
http://firstcoastexpressway.com/

GROWTH IS COMING TO CLAY COUNTY

- THE FIRST COAST EXPRESSWAY WILL BRING GROWTH AND ECONOMIC DEVELOPMENT
- POPULATION SERVED BY CCUA IS EXPECTED TO GROW FROM 111,000 PEOPLE TO 160,000
- HOW DO WE MAINTAIN THE ENVIRONMENT THAT IS SO VITAL TO OUR COMMUNITY?



ALTERNATIVE WATER SUPPLY INITIATIVES STUDIES UNDERWAY OR BEING CONSIDERED



- STORM WATER HARVESTING
- HIGH WATER / FLOOD CONTROL / CAPTURE
- SURFACE RESERVOIR
- AQUIFER INJECTION
- AQUIFER STORAGE AND RECOVERY
- INDIRECT POTABLE RECLAIMED WATER
- DIRECT POTABLE RECLAIMED WATER

ALTERNATIVE WATER SUPPLY THE INVESTMENT NEEDED

- $1 AWS SURCHARGE ON EVERY CCUA BILL
- AWS PROJECTS ARE IDENTIFIED IN THE 5 YEAR CAPITAL IMPROVEMENT PROGRAM
- LONG RANGE CAPITAL RESERVE STRATEGY OF $153 MILLION

- FDOT STORM WATER HARVEST PILOT PROJECT: $1.2 MILLION
- FDOT STORM WATER HARVESTING PROJECT FIRST COAST EXPRESSWAY: $25 MILLION (APPROX.)
- SURFACE RESERVOIR: $100 MILLION (APPROX.)

ENVIRONMENTAL AND ECONOMIC SUSTAINABILITY

- SOLUTIONS MUST MEET THE NEEDS OF THE COMMUNITY
- SOLUTIONS MUST NOT HARM OR DEGRADE THE ENVIRONMENT NOW OR IN THE FUTURE
- SOLUTIONS MUST BE ECONOMICALLY FEASIBLE NOW AND IN THE FUTURE
- SOLUTIONS MUST WORK FROM THE BEGINNING

QUESTIONS?

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a) North Florida Regional Water Supply Plan
http://northfloridawater.com/watersupplyplan/

b) North Florida Regional Water Supply Partnership
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c) Lower St. Johns River Basin
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	NFRWSP Exec Summary	Cover Memo	6/16/2017	NFRWSP_01192017_Exec_Summ.pdf
	North Florida Regional Water Supply Partnership	Cover Memo	6/16/2017	North_Florida_Regional_Water_Supply_Partnership.pdf
	Lower St. Johns River Basin	Cover Memo	6/16/2017	Basins__Lower_St.pdf

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North Florida Regional Water Supply Plan (2015 – 2035)

St. Johns River Water Management District
Palatka, Florida

Suwannee River Water Management District
Live Oak, Florida

January 13, 2017

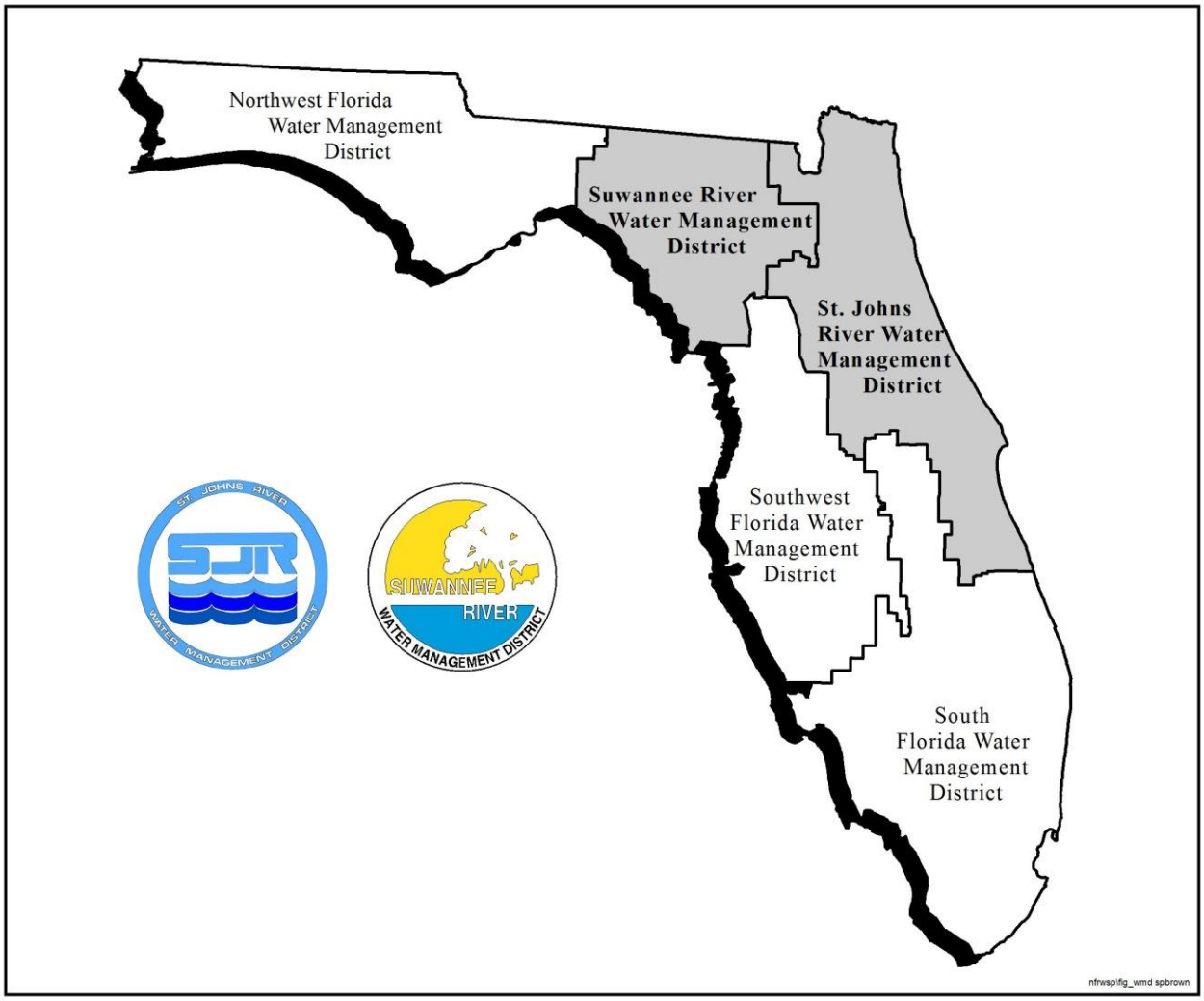

Figure 1: Location and Boundaries of the St. Johns River and Suwannee River Water Management Districts

Acknowledgements

The Florida Department of Environmental Protection (FDEP), St. Johns River Water Management District (SJRWMD) and Suwannee River Water Management District (SRWMD) recognize and thank the Stakeholder Advisory Committee, state agencies and other stakeholders for their contributions, comments, advice, information, and assistance throughout the development of the North Florida Regional Water Supply Plan. Furthermore, SJRWMD and SRWMD express their appreciation to all staff who contributed to the development and production of this collaborative regional water supply plan. For further information about this document, please visit northfloridawater.com.

Executive Summary

The North Florida Regional Water Supply Plan (NFRWSP) is the first-ever regional water supply plan for 14 north Florida counties and was developed through a highly collaborative process among the Suwannee River and St. Johns River water management districts and the Florida Department of Environmental Protection (FDEP), local governments, public supply utilities, environmental advocates and other stakeholders. Over the past four years, the water supply planning process included 36 Stakeholder Advisory Committee (SAC) meetings, more than 50 other stakeholder meetings and two public workshops to engage stakeholders to understand their individual perspectives as related to water resource issues in north Florida. This plan is a direct result of the collaboration between these groups who each share the common goals of preserving and extending our future water supply.

This water supply plan covers a 20-year planning period and is based on the best data and research available. A key component of the plan is the North Florida Southeast Georgia groundwater flow model (NFSEG), developed by the two districts in collaboration with the Southwest Florida Water Management District in a separate open-public process with stakeholder input. This groundwater flow model is the largest in the state and incorporates all elements of the water budget including: recharge, evapotranspiration, surface water flows, groundwater levels and water use. The development of the model utilized a state-of-the-art calibration process to incorporate the most current data and provides the best available approximation of all components of the water budget within the planning area and the model domain. This model provides the most technologically sophisticated picture of groundwater withdrawals on water resources in North Florida.

As a result of the collaborative process, the Districts determined fresh groundwater alone cannot supply the projected 117 million gallons per day increase in water demand during the 20-year planning horizon without causing unacceptable impacts to water resources. The NFRWSP identifies solutions to meet the current and future water use needs of the region while ensuring the natural resources of the area are protected.

One of the major highlights of this plan is its focus on conservation. In fact, the NFRWSP is the most comprehensive water conservation plan in the region. The plan illustrates water conservation efforts which could potentially reduce the projected 2035 water demand by as much 54 million gallons per day (mgd). This represents 46% of the projected 117 mgd increase in demand over the 20-year planning horizon and demonstrates the Districts' commitment to water conservation.

In addition to water conservation, the plan identifies an additional 160 mgd of potential project options to guide water users and suppliers in their efforts to meet the projected demand while protecting our natural resources. Project options range from aquifer recharge, rehydration of wetlands and potable reuse, to alternative water supply sources like reclaimed and stormwater. Both Districts are committed to working with local governments to share costs to help get these beneficial projects implemented.

Water supply planning is an ongoing process, with enhanced scientific methodologies and new data acquired all the time. District staff are already working on the science and data collection for the plan's five-year update. Through this process, the Districts have been able to create a roadmap that offers options to achieve sustainable water use through the planning horizon.

North Florida Regional Water Supply Partnership

An overview of the North Florida Regional Water Supply Partnership

Protection of natural resources and cost-effective, sustainable water supplies in the St. Johns River and Suwannee River water management districts through collaborative planning, scientific-tool development and other partnership efforts

Ensuring sustainable water supplies and protecting north Florida's waterways and natural systems is a collaborative effort among the water management districts, Florida Department of Environmental Protection (DEP), local elected officials and area stakeholders.

Water managers have enhanced communications and improved coordination of programs to protect the shared resources of the Floridan aquifer system. Specifically, the water management districts are working closely together on regulatory programs in north Florida, sharing data and technology, developing joint water resource protection strategies, and focusing more attention on communication with stakeholders across district boundaries.

In May 2015, the St. Johns River and Suwannee River water management districts and DEP amended the agreement that formalizes the coordination of water resource management in north Florida.

Working together and exchanging scientific data and factual information is critical to an efficient, productive and successful effort. The North Florida Regional Water Supply Partnership seeks to do this in an open, public process involving both water management districts, DEP, local governments, concerned residents and other stakeholders throughout the region.

Activities and accomplishments

Contacts

- **St. Johns District:** Geoff Sample at gsample@sjrwmd.com or (904) 448−7904
- **Suwannee District:** Amy Brown at alb@srwmd.org or (386) 362−1001

Lower St. Johns River Basin

In the lower basin of the St. Johns River (that portion of the watershed from Lake George to the river's mouth at Mayport), a wide variety of everyday activities inadvertently add nitrogen and phosphorus, essential plant nutrients, to surface waters. In fact, in an average year, approximately 15 million pounds of nitrogen pollution and 1.8 million pounds of phosphorus pollution (or 1,680 dump trucks carrying 10,000 pounds each) enter the river between Palatka and the river's mouth.

Treated wastewater is the largest contributor of nutrient pollution in the lower St. Johns River. This partially treated sewage is treated and disinfected in wastewater utilities, then, often times, is pumped to the St. Johns River for disposal. Other significant **nutrient pollution sources** include farms in the **agricultural areas** of Flagler, Putnam and St. Johns counties, carrying animal wastes, fertilizers and pesticides into the waterway through canals, ditches and streams that lead to the river.

Storm water from urban and suburban areas sends lawn fertilizers, sediments, pesticides, roadway grease and trash into the river and its tributaries. Storm water contributes the majority of the toxic trace metals — such as copper, lead and cadmium — that enter Florida waters and the lower St. Johns River. The upstream watersheds of the river (the upper and middle St. Johns River basins) also contribute significant amounts of nitrogen and phosphorus to Lake George and the lower St. Johns River. The nutrient-rich discharges into the river have fed harmful algal blooms, which can concentrate with wind and tide to create aesthetically unappealing and occasionally foul-smelling shoreline mats. Such blooms can also harm the environment by blocking sunlight to submerged aquatic plants, deplete dissolved oxygen, and impact fish and other wildlife by reducing the quality of the aquatic food chain, and on occasion, producing algal toxins.

These pollutants currently exceed the amount that the lower St. Johns River can receive and still meet state and federal water quality standards.

Solutions

From the air, the St. Johns River appears to snake among the trees along its shoreline.

Florida's Surface Water Improvement and Management (SWIM) Act directed the St. Johns River Water Management District to conduct the necessary research to gain an understanding of what is needed to restore and properly manage the river, and to develop a **plan** for that work.

The district has formed partnerships over the years with local governments, other agencies, stakeholder groups and the public to develop initiatives to restore the river, including the 1998–2003 River Agenda and the 2006 River Accord.

The investments by the district and its partners are the largest in the lower St. Johns River's history and include a citywide no net-gain goal for septic tanks (Jacksonville/Duval County), a program to improve access to the river, an annual state of the river report and a research program to examine why the river's tributaries are filling in with silt.

Examples of the many projects either completed or under way include:

- **The district's** rough fish harvest was designed and implemented to meet downstream nutrient load reductions and reduce the severity of algal blooms in the lower St. Johns River. Utilizing $1.7 million in legislative appropriations over the last two years, approximately 20,000 pounds of phosphorus and 53,000 pounds of nitrogen have been removed from Lake George in Volusia, Putnam and Marion counties. In 2014, the May to September harvest removed more than 11,000 pounds of phosphorus and 29,000 pounds of nitrogen. The 2015 harvest, conducted with legislative appropriations for St. Johns River restoration and protection, removed 9,000 pounds of phosphorus and 27,000 pounds of nitrogen. Removing gizzard shad from Lake George will help to meet the necessary downstream nutrient loading reduction essential to meeting state water quality standards and reduce the severity of algal blooms in the lower St. Johns River.
- **JEA's** $32 million worth of completed and ongoing projects upgrade existing reclaimed water plants, provide reclaimed water for irrigation at golf courses and office parks, and make improvements to infrastructure to accommodate expanded reuse. Nutrient pollution removed from the river: 556,000 pounds/year. Discharge eliminated: 21 million gallons per day (mgd).
- **Clay County Utility Authority** (CCUA) launched operation of nine rapid infiltration basins at CCUA's Mid-Clay Wastewater Treatment Facility in February 2016, improving river water quality and reducing demands on the aquifer system. The project effectively eliminates wastewater discharges to the St. Johns River. Project benefits will include storing reclaimed water during wet periods for use during the dry months and reducing nitrogen to the lower St. Johns River by more than 19,000 pounds per year. The new basins allow the Mid-Clay facility to handle more than 2 million gallons of reclaimed water a day. Reclaimed water is stored and treated in a series of nine infiltration cells, where it percolates into the surficial aquifer. The recaptured water is pumped to CCUA's adjoining reclaimed water distribution system and used to augment the reclaimed water system. By redesigning the project in 2014 from an aboveground reservoir to the current footprint, CCUA saved taxpayers more than $1.6 million from the original cost estimate.

- **Naval Air Station Jacksonville** (NAS-Jax) launched its reclaimed water facility in October 2015. This project has far-reaching benefits, removing all of the NAS-Jax treated wastewater from the St. Johns River and reusing that water at NAS-Jax. Specifically, it eliminates 315 million gallons a year of wastewater effluent discharges to the river and approximately 45,000 lbs/yr of total nitrogen. With this “zero discharge,” NAS-Jax will exceed its anticipated state requirements to reduce phosphorus entering waterways. The project also will reduce groundwater withdrawals from the Floridan aquifer by 48 million gallons a year. The district provided $1.8 million in funds toward this collaborative effort. In addition the U.S. Navy, the city of Jacksonville was a funding partner.
- **Palatka** expanded reclaimed water to the city’s golf course, Ravine State Gardens and various recreational ball fields, ultimately removing all discharges from the river at a cost of $8.5 million. Completed in September 2012, the estimated total nitrogen reduction to the St. Johns River was 158,600 pounds per year and estimated total phosphorus reduction was 21,100 pounds per year.

The Jacksonville skyline along the St. Johns River.

The district is also engaged with the Florida Department of Agriculture and Consumer Services, Florida Department of Environmental Protection, Natural Resources Conservation Service, University of Florida’s Institute of Food and Agricultural Sciences and the Northeast Florida Growers Association in the **Tri-County Agricultural Area (TCAA) Water Management Partnership**. Partnership objectives are to contribute to the improved health of the lower St. Johns River through on-farm and regional water management projects and practices that reduce the movement of nutrients to the river, improve water conservation, and result in more efficient farm management while maintaining the long-term viability of agriculture in the TCAA.

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