



# Region II Regional Water Supply Plan Update

Public Workshop  
*December 3, 2024*

## 2024 Region II Regional Water Supply Plan

Northwest Florida Water Management District

January 2025

Publication Number: PDS 20-01



Choctawhatchee River

# Regional Water Supply Plan Update



**2023 Water  
Supply  
Assessment**

**NFWFMD**

**Section 373.036, F.S. and Chapter 62-40, F.A.C.  
Need for Regional Plans**

**2024 Regional  
Water Supply Plan  
Update**

**NFWFMD and Stakeholders**  
**Section 373.709, F.S.**  
**Water Resource and Water Supply  
Development Projects**

**Water Supply  
Facilities Work  
Plans**

**Local Governments**  
**Work Plans within 18  
months**  
**Section 163.3177, F.S.**

# Regional Water Supply Plan Update



## **Per s. 373.709, F.S., the RWSP must include:**

- Population projections for 20-year planning horizon
- Water demand projections for 20-year planning horizon (average and 1-in-10 yr. drought)
- Water supply and water resource development options that collectively meet future needs, including:
  - amount of water provided, timeframe, cost estimates, funding sources
- Adopted minimum flows and minimum levels and associated recovery or prevention strategies
- Consideration of how projects serve the public interest by preventing the loss of natural resources or avoiding greater future expenditures for water resource development or water supply development

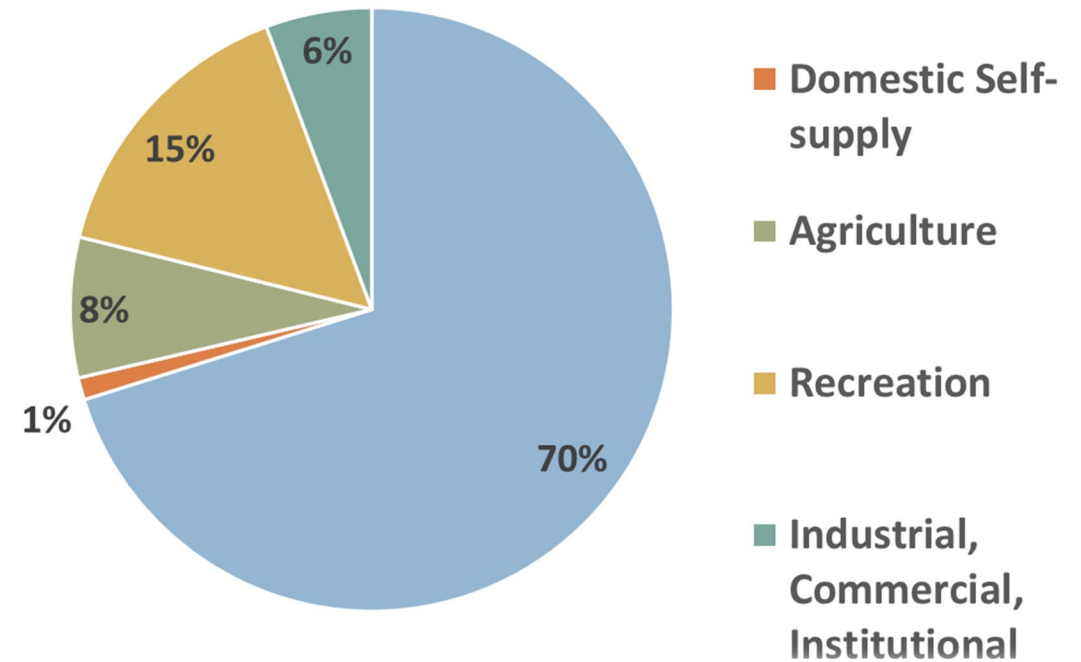
# Regional Water Supply Plan Update



## Water Demand Estimates and Projections

Use Category	2020 Estimates			2045 Projections		
	Okaloosa	Santa Rosa	Walton	Okaloosa	Santa Rosa	Walton
Public Supply	24.10	18.39	11.67	28.96	24.61	21.32
DSS	0.89	0.75	0.43	0.39	0.63	0.25
Agriculture	0.41	1.89	0.61	0.84	5.29	1.89
Recreational	5.45	2.21	4.48	6.45	2.97	7.07
ICI	1.67	2.93	0.09	2.29	3.73	0.05
Power	-	-	-	-	-	-
<b>TOTALS</b>	<b>32.52</b>	<b>26.17</b>	<b>17.29</b>	<b>38.93</b>	<b>37.24</b>	<b>30.59</b>
<b>REGIONWIDE TOTAL</b>	<b>75.98</b>			<b>106.75</b>		

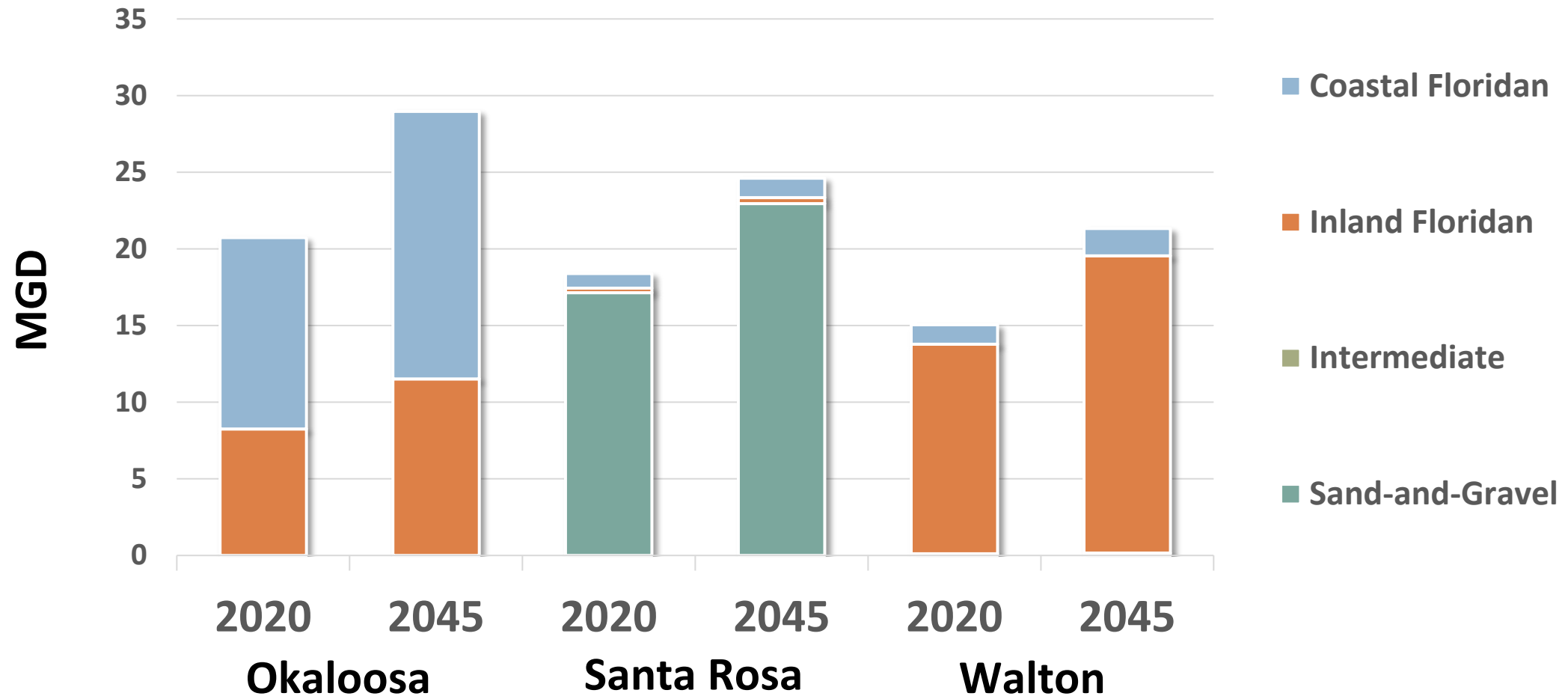
Region II 2045 Future Demand By Use Type



# Regional Water Supply Plan Update



## Public Supply Water Use Estimates and Projections, by Source

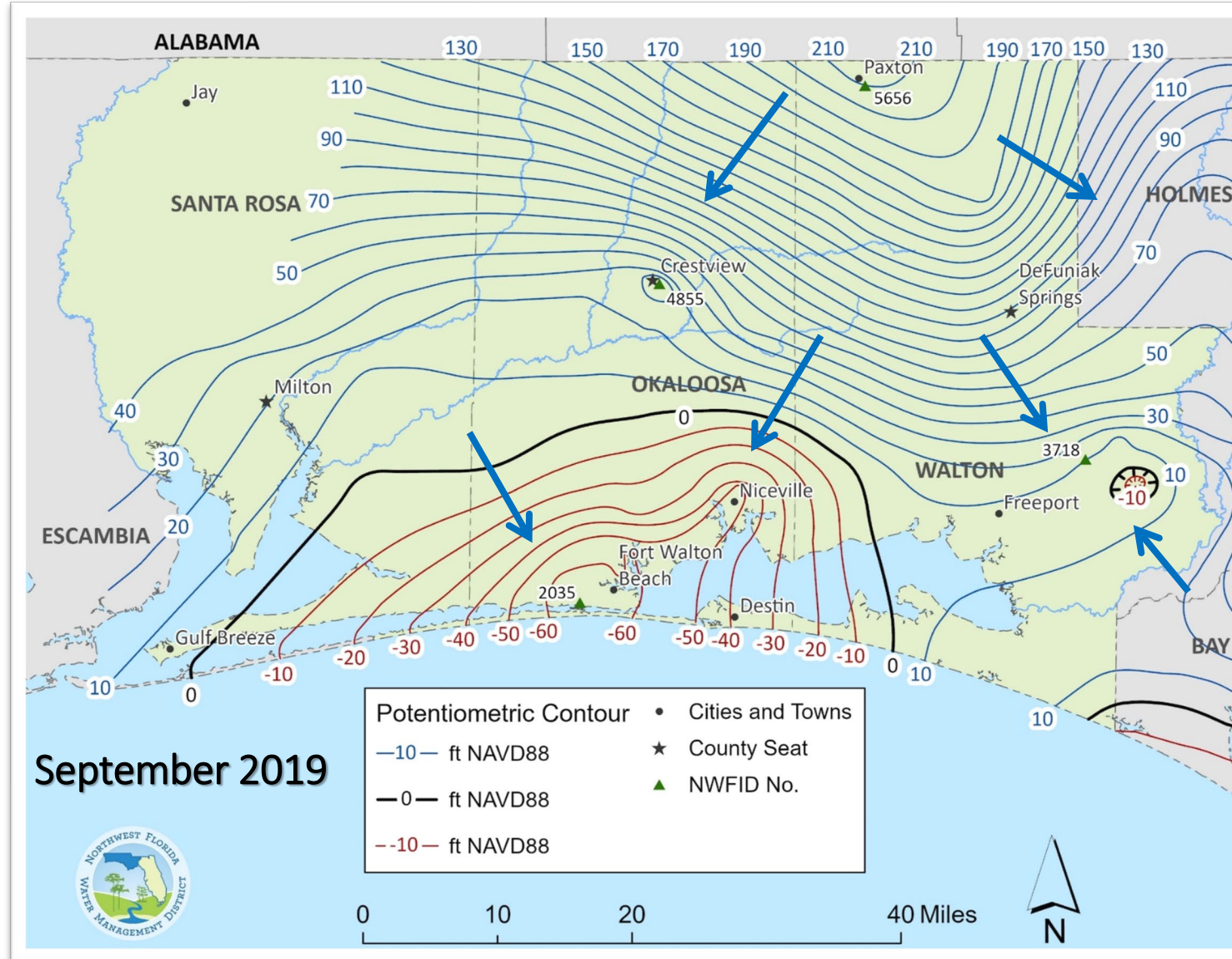




# Regional Water Supply Plan Update



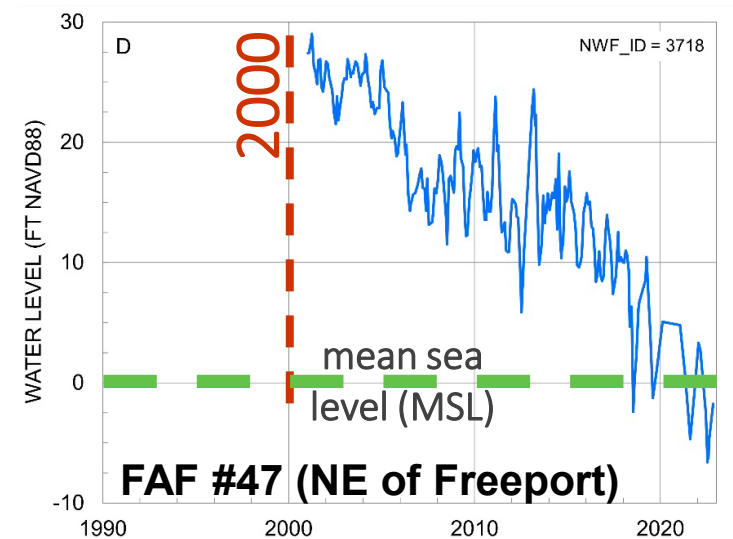
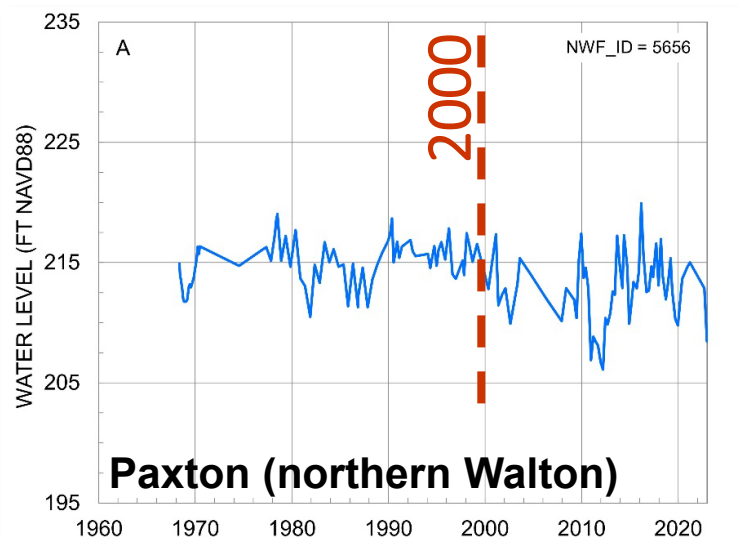
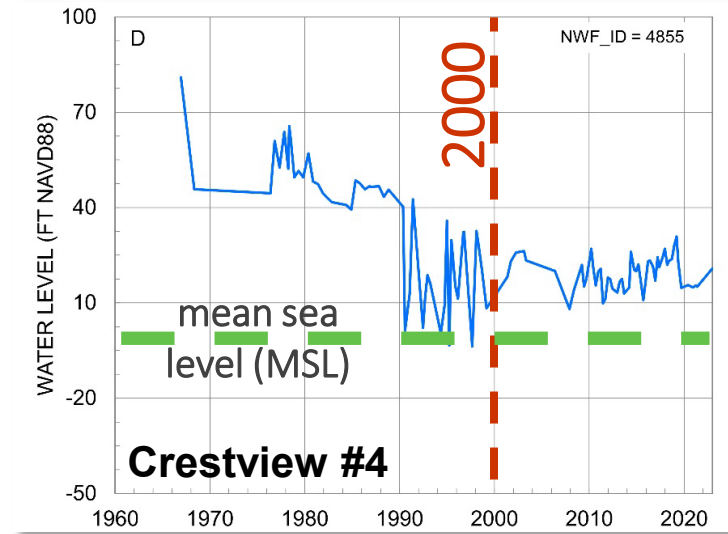
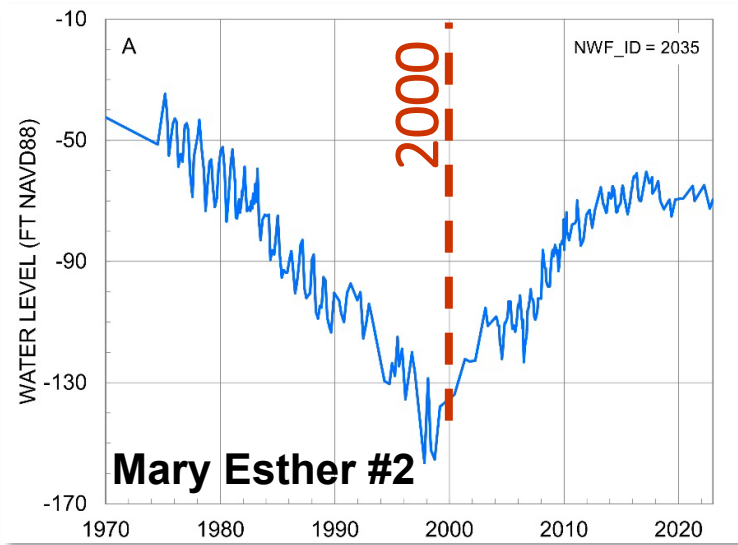
## 2019 Upper Floridan Aquifer Potentiometric Surface Map



# Regional Water Supply Plan Update



## Water Level Trends



## Resource Evaluation Summary from Water Supply Assessment

- Upper Floridan aquifer (UFA) water levels have partially recovered during the last 20 years.
- Decreasing trends in UFA groundwater levels were observed.
- Water quality from most coastal production wells met drinking water standards for salinity parameters.
- Increasing trends in salinity parameters were observed.
- Most wells with increasing trends in salinity parameters were not projected to exceed drinking water standards during 2025 - 2045.

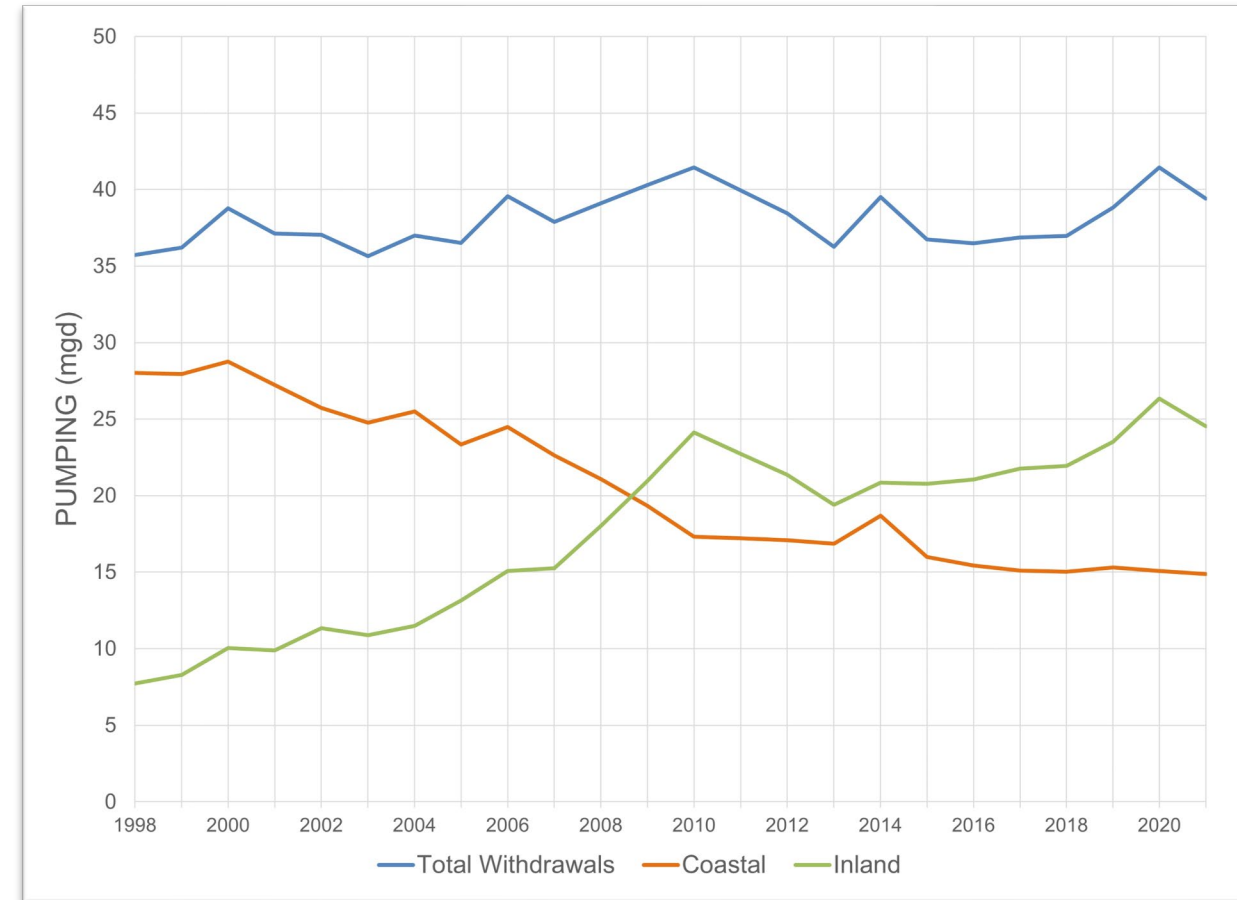


# Regional Water Supply Plan Update



## RWSP Updated Modeling

- Utilized reported major UFA groundwater withdrawals through 2020 base year
- Simulated current permitted water use and projected average daily demands through 2045
- Assessed long-term saltwater intrusion risks (2045 and 2100)
- Examined the effects of sea level rise
- Evaluated sand-and-gravel aquifer withdrawals



## **RWSP Upper Floridan Aquifer Modeling Scenarios**

1. Currently permitted average daily water use allocations (~61.3 mgd)
2. WSA projected average daily demands through 2045 (~57.4 mgd)
3. WSA projected average daily demands through 2045 and sea level rise
4. Reduced coastal Region II pumpage to recover UFA water levels to sea level

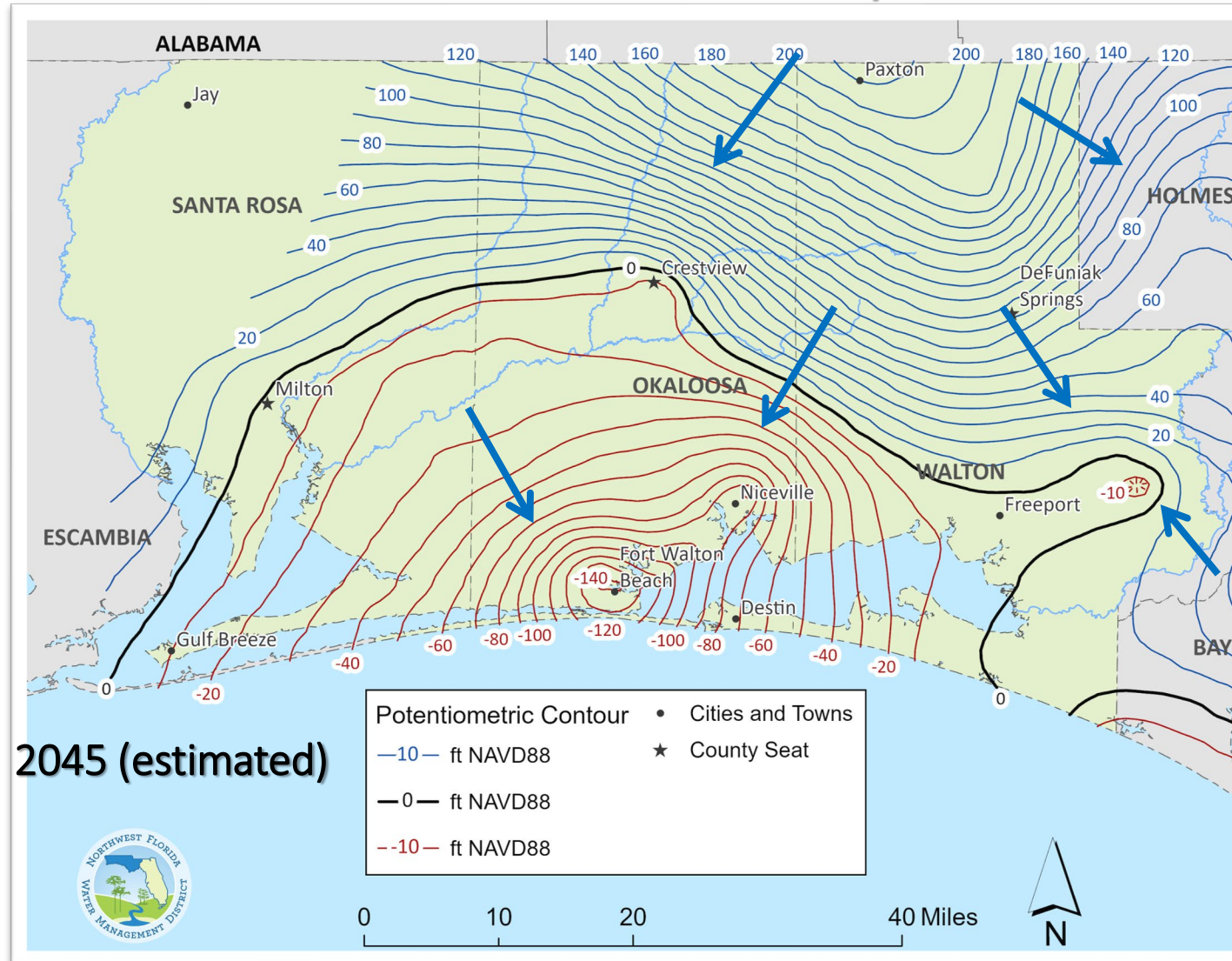
## **Sand-and-gravel aquifer water budget evaluation**

An order-of-magnitude comparison of reported water use and projected demands to model-simulated recharge.

# Regional Water Supply Plan Update



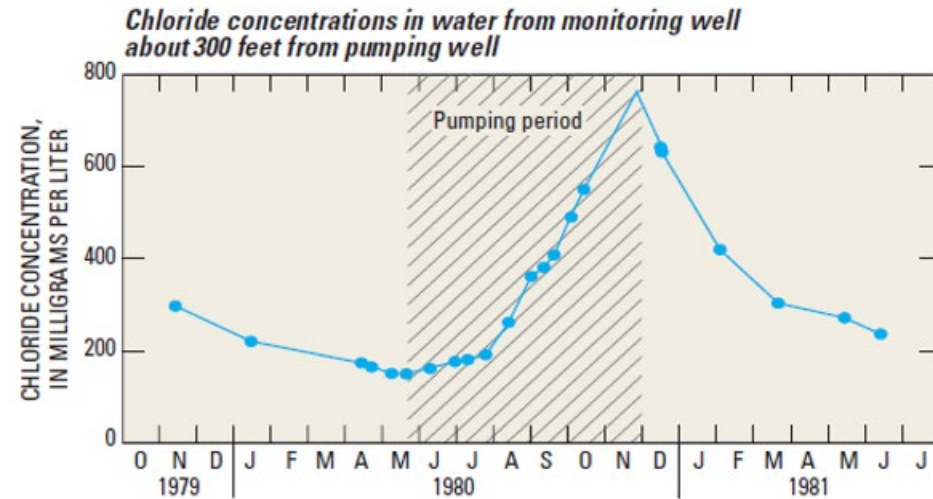
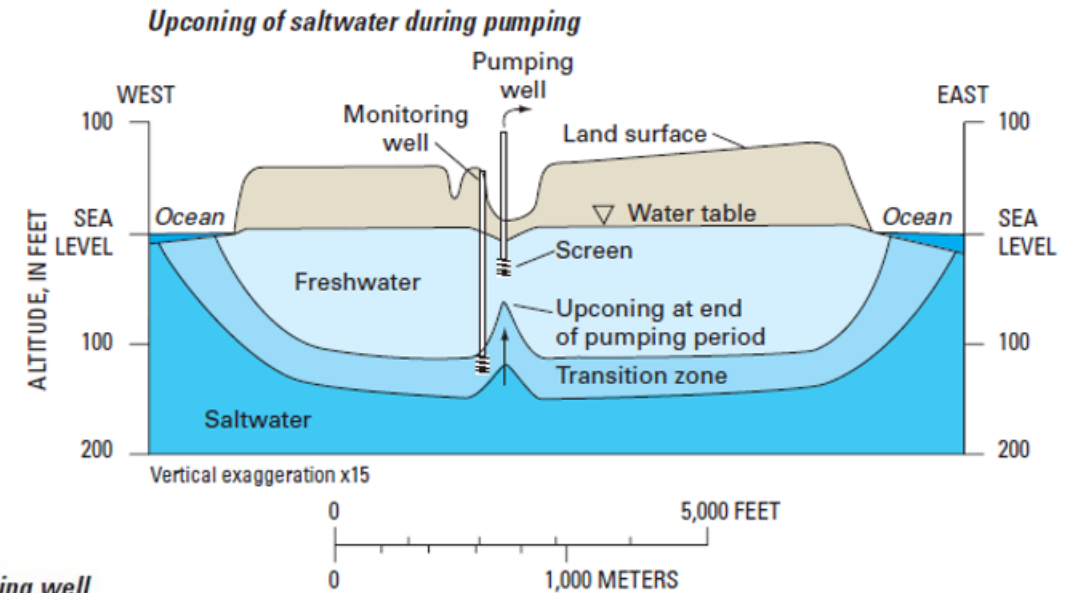
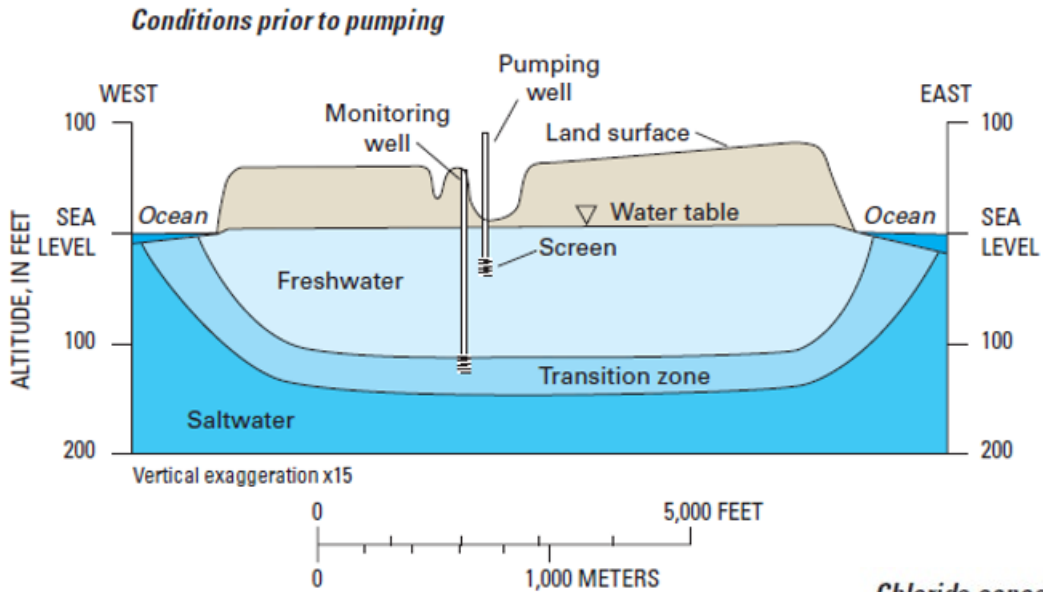
## Scenario 2 Results for Projected 2045 Demands: Upper Floridan Aquifer Potentiometric Surface Map



# Regional Water Supply Plan Update



## Scenario 2 Results: Upper Floridan Aquifer Supply Wells "At Risk"



Figures modified from LeBlanc and others (1986)

# Regional Water Supply Plan Update



## Scenario 2 Results: Upper Floridan Aquifer Supply Wells “At Risk” (cont.)

Analyte	2020 Model Results			2023 WSA Trend Results	
	# of Wells "at Risk"	Production Volume (mgd) "at Risk"	% of Major UFA Pumping <sup>1</sup>	# Wells Currently Exceeding Standard	# of Wells with An Increasing Trend <sup>2</sup>
Total Dissolved Solids	15	3.82	10.0%	2	6
Sodium	14	3.68	9.0%	3	4
Chloride	24	4.97	13.0%	0	8

<sup>1</sup> 2020 Region II UFA major pumping is estimated to be 39.4 mgd.

<sup>2</sup> Sodium trend analysis is from the 2020 CR2 MFL evaluation.

Analyte	2045 Model Results			Change from 2020 to 2045		Projected Trends
	# of Wells "at Risk"	Production Volume (mgd) "at Risk"	% of Major UFA Pumping <sup>3</sup>	Additional wells "at risk"	additional volume (mgd) "at risk"	# of Additional Wells Estimated to Exceed Standards by 2045
Total Dissolved Solids	17	6.56	11.0%	2	2.74	0
Sodium	16	5.47	10.0%	2	1.79	0
Chloride	25	8.57	15.0%	1	3.60	0

<sup>3</sup> 2045 Region II UFA major pumping is projected to be 57.4 mgd.



## Water Supply and Water Resource Development Projects

- Water supply projects submitted by utilities
  - Conservation
  - Reuse
  - Surface water
  - Traditional groundwater sources
  - Storage and transmission facilities
- Water conservation opportunities (passive savings and additional measures)
- Evaluation of future surface water sources, with focus on Walton County
- District water resource development projects

# Regional Water Supply Plan Update



## Water Supply Development Projects

On February 19, 2024, the District sent out a questionnaire to all Region II utilities.

Returned project questionnaire data was combined with grant projects and other planning data.

114 projects were identified with costs totaling \$517.5 million.

RWSP WSD Projects		
Project Type	Projects (##)	Total Estimated Cost
Interconnection	8	\$10,850,000
Distribution	30	\$52,965,318
Pump Station	6	\$35,050,000
Reuse	12	\$99,500,000
Storage	20	\$61,550,625
Conservation	13	\$6,630,245
Water Supply	23	\$250,900,000
Source Evaluation	1	TBD
Facility Improvements	1	\$100,000
<b>Total</b>	<b>114</b>	<b>\$517,546,188</b>

# Regional Water Supply Plan Update



## Alternative Water Supply Projects

### Reclaimed Water – 11.9 mgd

- Twelve (12) reuse projects were submitted, including reuse distribution expansion, interconnections, capacity increases, and new system construction.
- Projects include Deer Moss Creek Reclaimed Water Project, South Santa Rosa Reuse, Jerry D. Mitchem WRF Reclaimed Water Supply, and the Shoal River Ranch WRF Program.
- In 2020, about 33% or 9.2 mgd of wastewater was reused.
- By 2045, it is estimated that 60% of wastewater generated will be reused.

### Surface Water – 5 mgd

- The Shoal River Off-Line Reservoir & Surface Water Treatment Plant is proposed, with an estimated cost of \$200 million.

### Water Conservation – 0.8 mgd

- Projects include water meter replacements, replacement of older water mains, and upgraded billing and metering software.

# Regional Water Supply Plan Update



## Potential Additional Water Conservation Savings

### Alliance for Water Efficiency Tool

- The tool examined 23 different water conservation measures.
- To ensure viability for all measures evaluated, a cost per 1,000 gallons cap of \$4 was used.
- Cost per 1,000 gallons for the 23 examined measures ranges from \$0.43 to \$3.74, with an overall measure average of \$2.23 per 1,000 gallons.

### Potential Water Savings

- Water conservation savings vary throughout Region II.
- Walton County has the highest water conservation savings potential.
- Region II Tier totals:
  - Tier 1: 4.3 mgd
  - Tier 2: 6.0 mgd
  - Tier 3: 6.4 mgd

Region II Water Conservation by County (mgd)						
<b>Santa Rosa County</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>	<b>Total Water Savings</b>
Tier 1: Passive Only Savings	0.7	1.2	1.6	1.9	2.1	<b>1.4</b>
Tier 2: Passive and Active Savings	0.8	1.4	1.9	2.4	2.7	<b>1.9</b>
Tier 3: Passive and Active Savings	0.8	1.5	2.1	2.5	2.8	<b>2.0</b>
<b>Okaloosa County</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>	<b>Total Water Savings</b>
Tier 1: Passive Only Savings	0.7	1.1	1.3	1.5	1.7	<b>1.0</b>
Tier 2: Passive and Active Savings	0.7	1.3	1.7	2.0	2.3	<b>1.6</b>
Tier 3: Passive and Active Savings	0.7	1.4	1.9	2.2	2.5	<b>1.8</b>
<b>Walton County</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>	<b>Total Water Savings</b>
Tier 1: Passive Only Savings	0.9	1.5	1.9	2.4	2.8	<b>1.9</b>
Tier 2: Passive and Active Savings	0.9	1.7	2.3	2.8	3.4	<b>2.4</b>
Tier 3: Passive and Active Savings	0.9	1.8	2.4	3.0	3.5	<b>2.6</b>

# Regional Water Supply Plan Update



## Potential Future Surface Water Projects

- The District contracted with Hazen and Sawyer to assess potential surface water projects:
  - 10 mgd from Choctawhatchee River
    - Project options could include direct withdrawals, or storage via an off-stream reservoir or aquifer storage and recovery (ASR).
    - Delivery points would depend on partnering utilities.
    - Capital costs range from \$231 million to \$498 million.
  - Analyses confirmed the availability of 5 to 10 mgd of water from the Shoal River.
- Future coordination and evaluations are needed to determine feasibility, project components, project partners, costs, and funding sources.





## Potential Additional Groundwater

### Sand-and-gravel aquifer

- Utility-submitted projects for new/replacement wells total at least 3.4 mgd (East Milton Water System, Fairpoint Regional Utility System, and Midway Water System).
- Due to high recharge rates and yield, the sand-and-gravel aquifer is anticipated to be sufficient to meet future needs in Santa Rosa County.

### Floridan aquifer system

- Utility submitted projects for new/replacement wells total 6.68 mgd.
- Additional capacity remains within many current Individual Water Use Permits.
- However, due to continued concerns for saltwater intrusion at projected future withdrawal rates, the District will work with utilities to explore additional opportunities to further shift groundwater production inland in Okaloosa and Walton counties.

## **RWSP Strategies for Water Resource Sustainability**

- Continue to reduce reliance on the Floridan aquifer;
- Ensure appropriate and efficient use of all water resources;
- Expand the reliance on alternative water supplies, including reclaimed water, surface water, and water conservation; and
- Expand system interconnections and provide sufficient water storage capacity.

## RWSP Recommendations (draft)

- Implement the Lower Floridan Aquifer Enhanced Data Collection Project to improve saltwater intrusion risk assessment.
- Continue to collaborate with local governments and utilities to develop alternative water supplies to meet future needs and reduce reliance on the Upper Floridan aquifer.
- Identify opportunities to further reduce Upper Floridan aquifer pumpage in the Water Resource Caution Area.

## RWSP Recommendations cont. (draft)

- Explore the potential for managed aquifer recharge to offset groundwater withdrawals and enhance the sustainability of the Upper Floridan aquifer.
- Add the Upper Floridan aquifer in coastal Region II re-evaluation to the MFL Priority List and Schedule.
- Continue hydrologic and water quality data collection and updates to regional groundwater flow and solute transport models to refine saltwater intrusion risks.

# Regional Water Supply Plan Update



## Schedule and Next Steps

## Timeframe

Public Workshop

December 3, 2024

Public Comment Period

December 4 – 27, 2024

Finalize RWSP Report

January 8, 2025

NFWFMD Governing Board for Approval

January 2025



# Regional Water Supply Plan Update



## Contacts

### Water Supply Project Data:

Garrett Ifland, [Garrett.Ifland@nfwwater.com](mailto:Garrett.Ifland@nfwwater.com)

### Groundwater Modeling and Resource Evaluations:

Tony Countryman, [Tony.Countryman@nfwwater.com](mailto:Tony.Countryman@nfwwater.com)

### Project Coordination:

Jerrick Saquibal, [Jerrick.Saquibal@nfwwater.com](mailto:Jerrick.Saquibal@nfwwater.com)

Kathleen Coates, [Kathleen.Coates@nfwwater.com](mailto:Kathleen.Coates@nfwwater.com)

District Headquarters phone: (850) 539-5999

# 2024 Regional Water Supply Plan Update



**Questions?**

