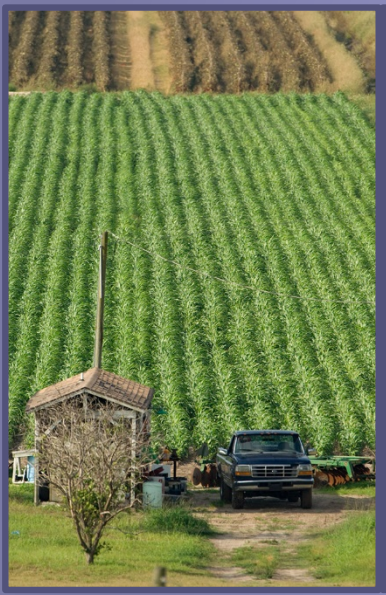
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

2021 Upper East Coast Water Supply Plan Update



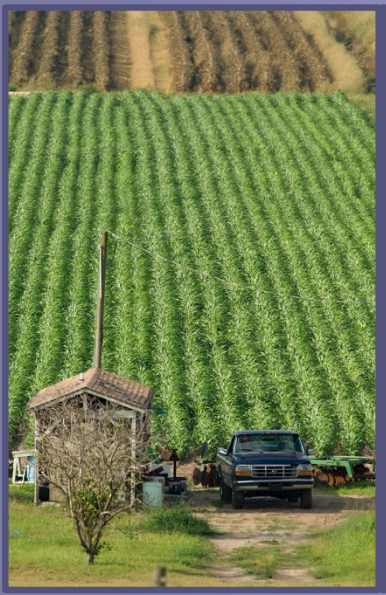

Welcome

2021 UEC Stakeholder Meeting #2

September 3, 2021

Questions and public comment will occur after each presentation.

Welcome




Tom Colios

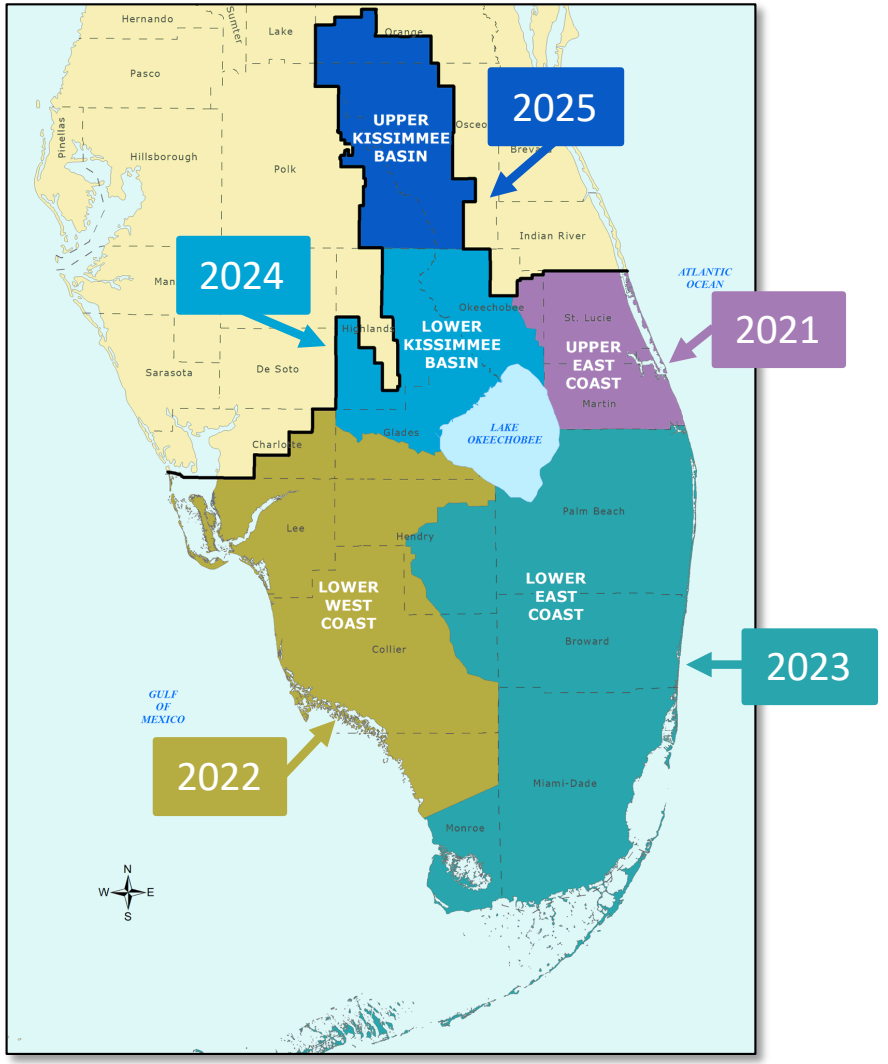
Section Leader, Water Supply Planning, SFWMD

Today's Agenda

- Opening Remarks – *Tom Colios*
- Public Water Supply in the UEC Planning Area – *Brad Macek*
- East Coast Floridan Model Overview – *Rob Earle*
- Draft 2021 UEC Water Supply Plan Update – *Nancy Demonstranti*
  - Posted online August 25, 2021
- Next Steps – *Nancy Demonstranti*

Water Supply Plan Requirements

- 20-year planning period
- Demand estimates and projections
- Resource analyses
- Issue identification
- Evaluation of water source options
- Water resource development
  - Responsibility of water management district
- Water supply development
  - Responsibility of water users
- Minimum flows and minimum water levels (MFLs)
  - Recovery and prevention strategies



Presenter: Tom Colios

Regional and Local Planning Linkage

- After the District's Governing Board approves the water supply plan update:
  - All local governments must amend their Comprehensive Plan to incorporate a Water Supply Facilities Work Plan within 18 months of the plan update's approval
    - If the plan update is approved in November 2021, Work Plans will be due by May 2023
  - Utilities identify the projects to be developed
  - Utility annual progress reports
    - District's automated WaSUP database – due annually in November

Questions and Public Comment

- If you are participating via Zoom:
  - Use the Raise Hand feature
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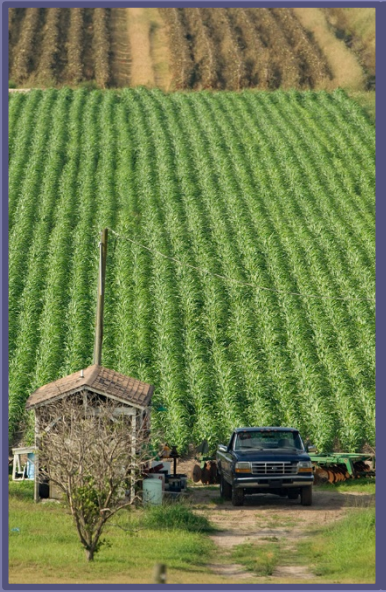
Public Water Supply in the UEC Planning Area




James Christopher

Tetra Tech

Brad Macek

Utility Director, City of Port St. Lucie

The Floridan Aquifer and Beyond! Expanding the City of Port St. Lucie's Water Supply Portfolio

James Christopher, PE, Tetra Tech; Brad Macek, City of Port St. Lucie

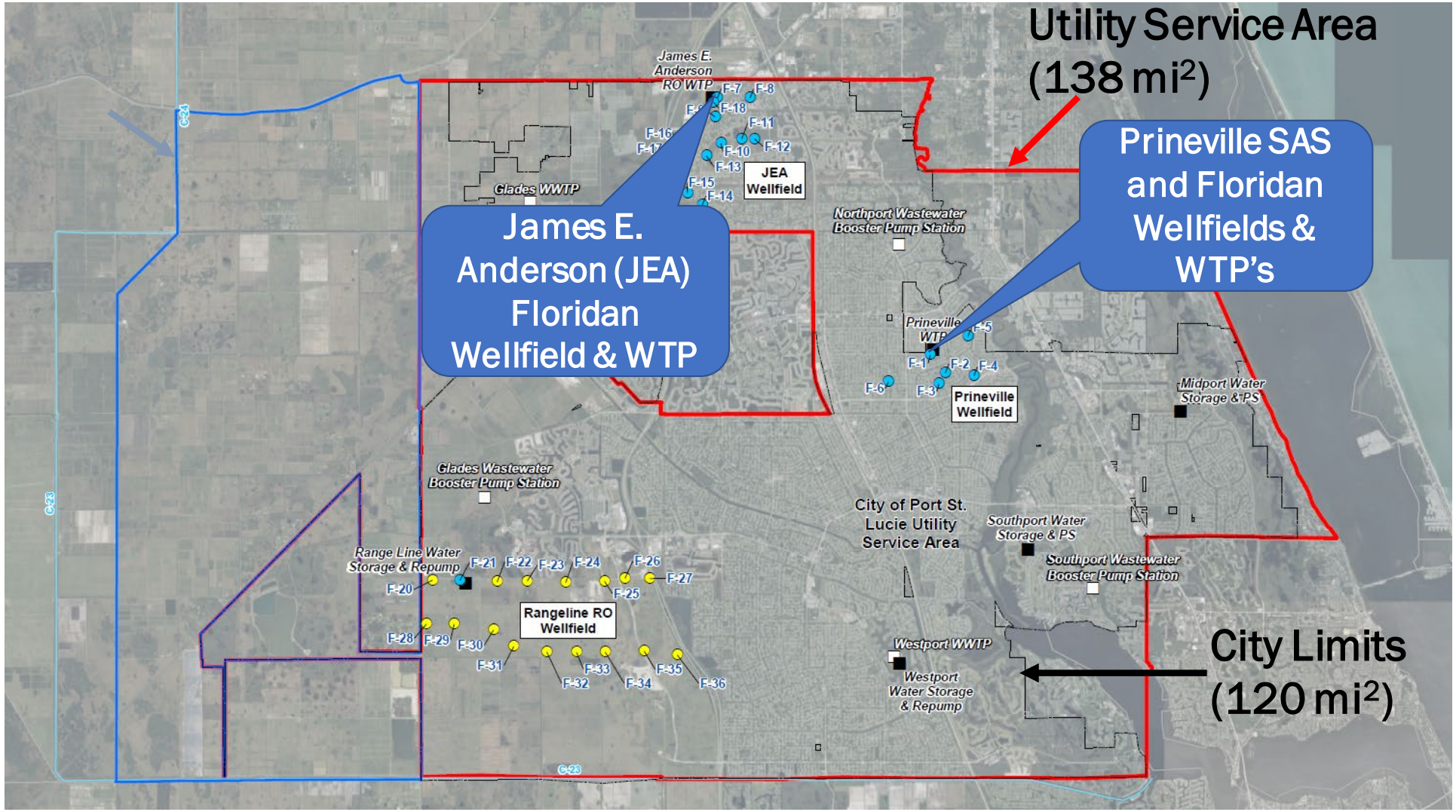
September 3, 2021

complex world | CLEAR SOLUTIONS™

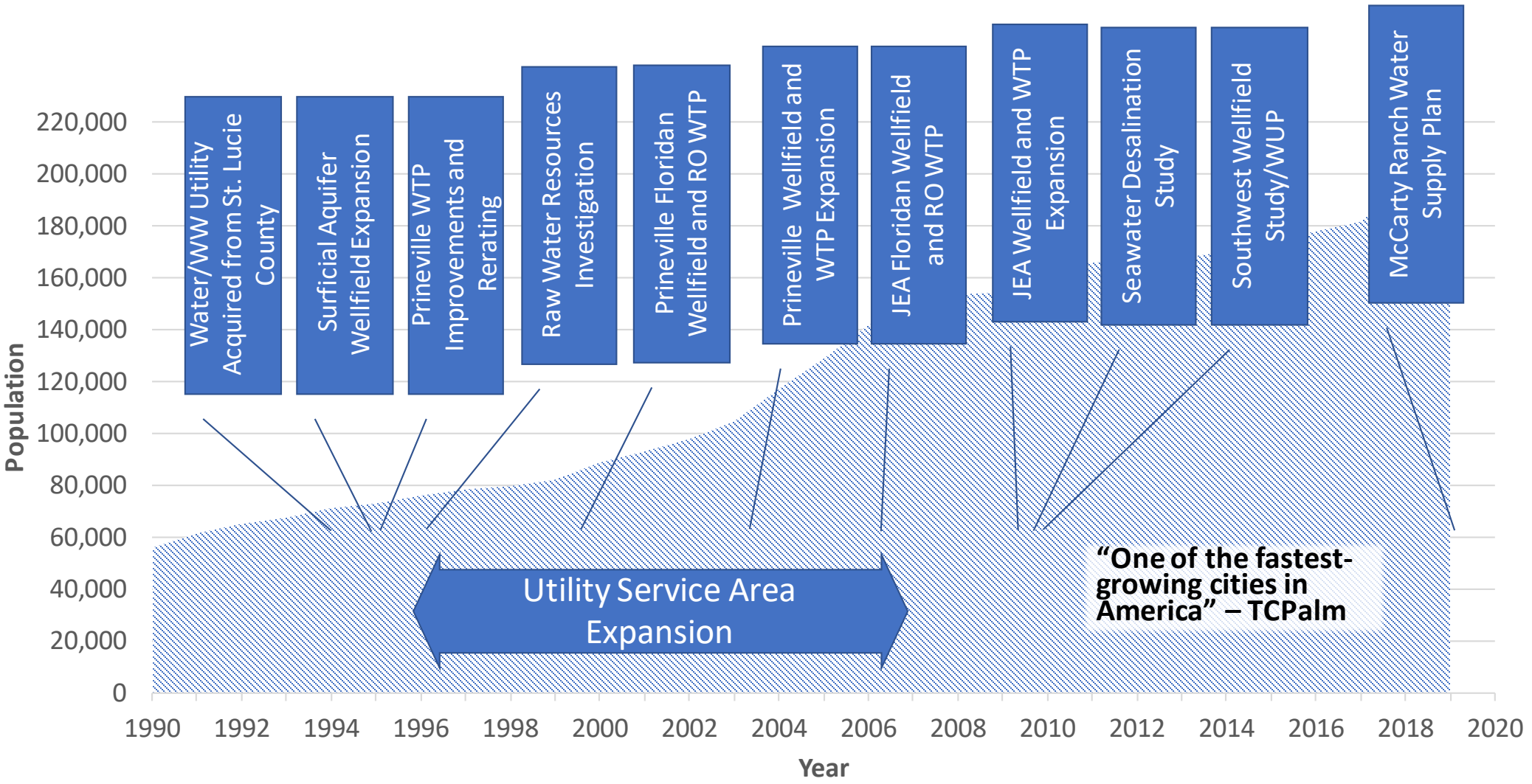
Utility Background

City of Port St. Lucie's Water System

City of Port St. Lucie's Existing Water Supply Sources



City of Port St. Lucie: Responds to Outsize Population Growth

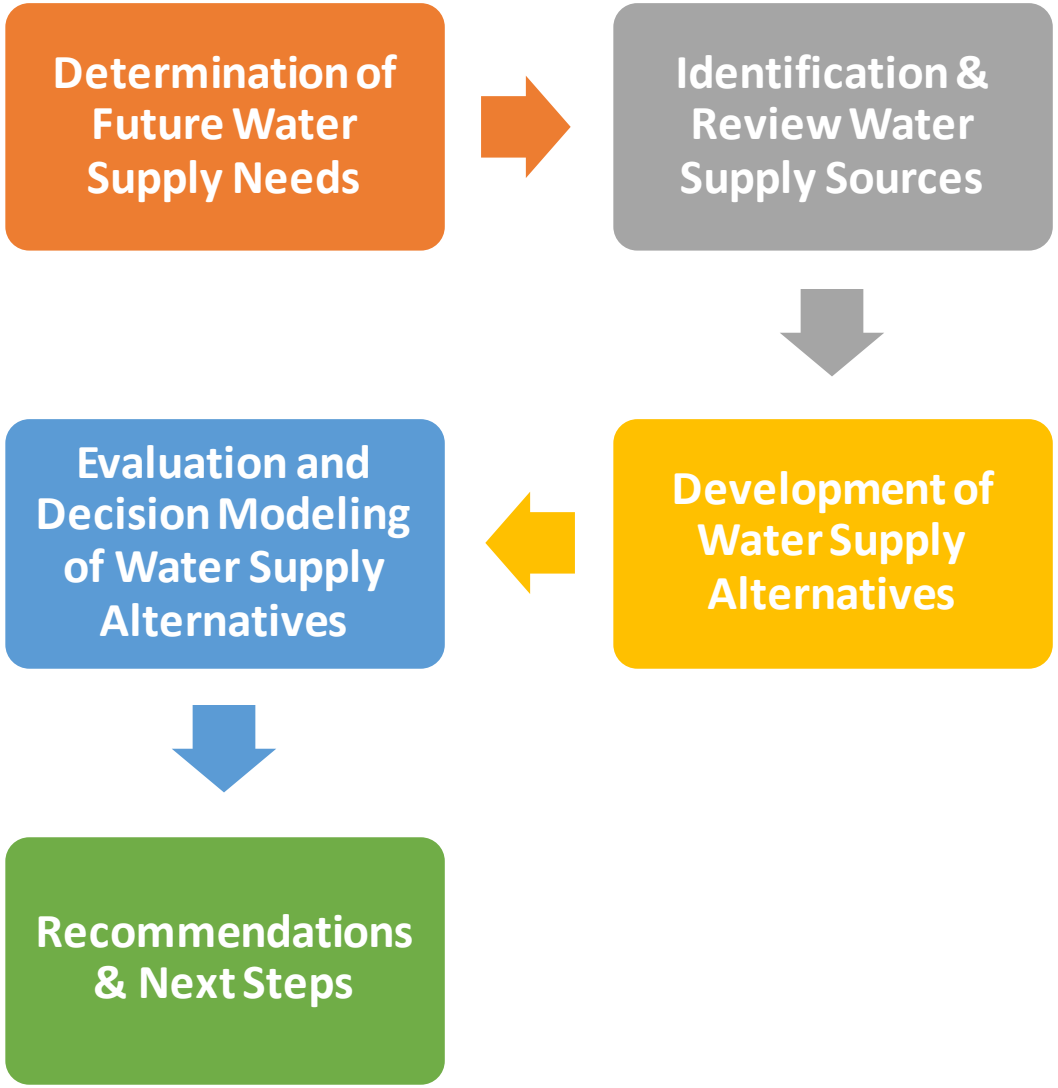


What's Next?

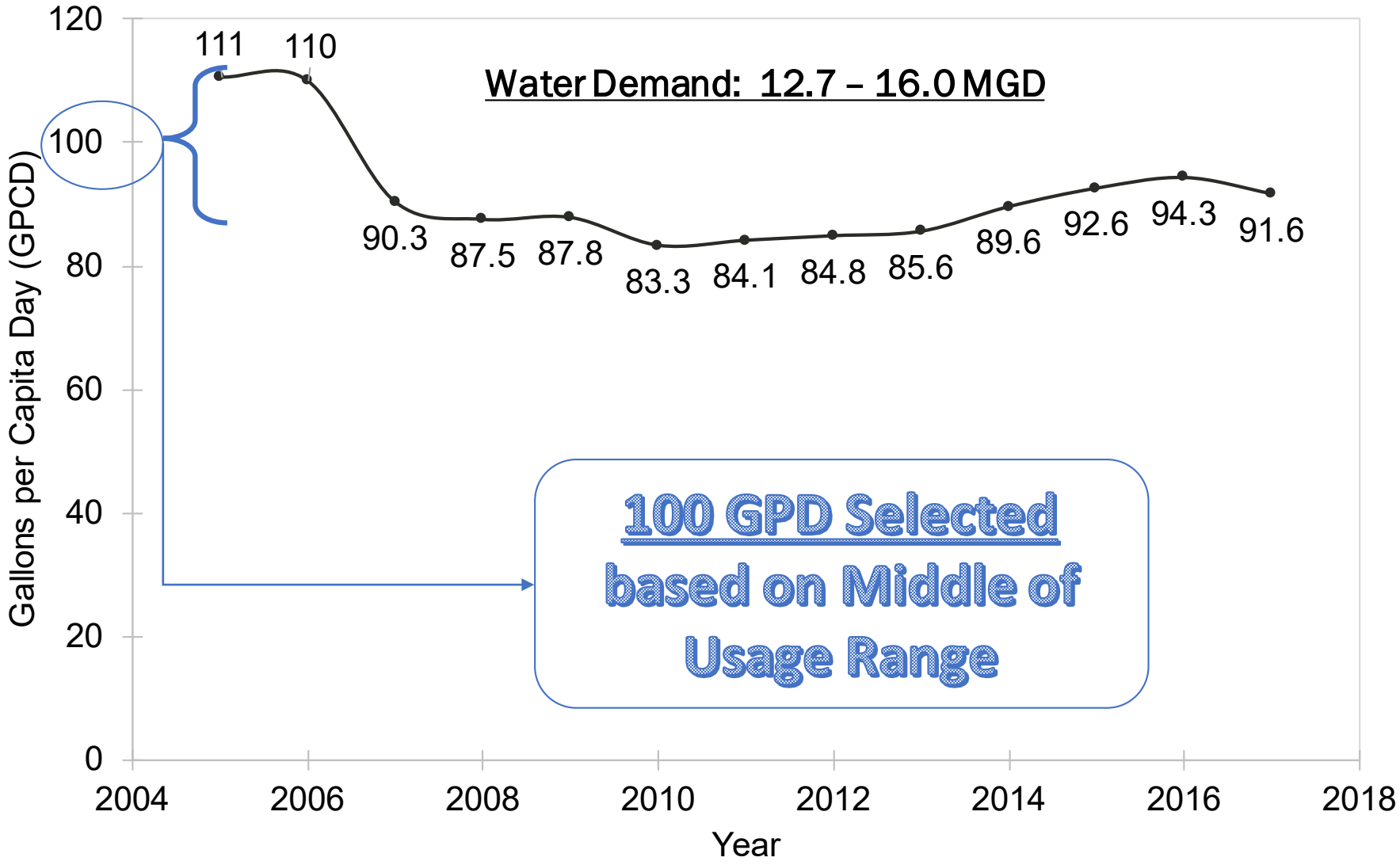
McCarty Ranch Water Supply Plan

Water Supply Master Plan Approach

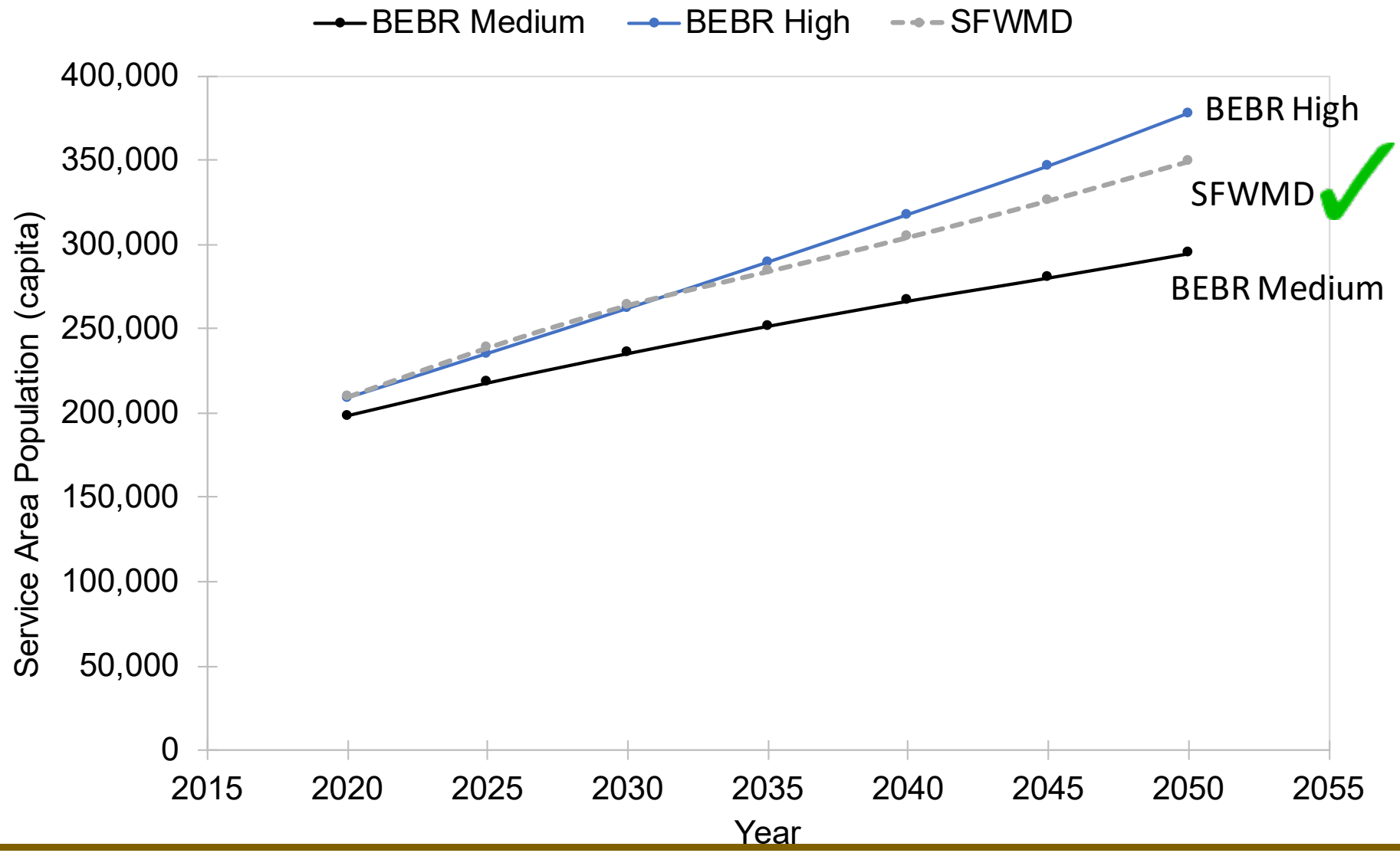
- The **goal** of this work was to identify and evaluate **innovative water supply** strategies that could be integrated within the McCarty Ranch site and meet **future** water demands through the **30-year planning** period.



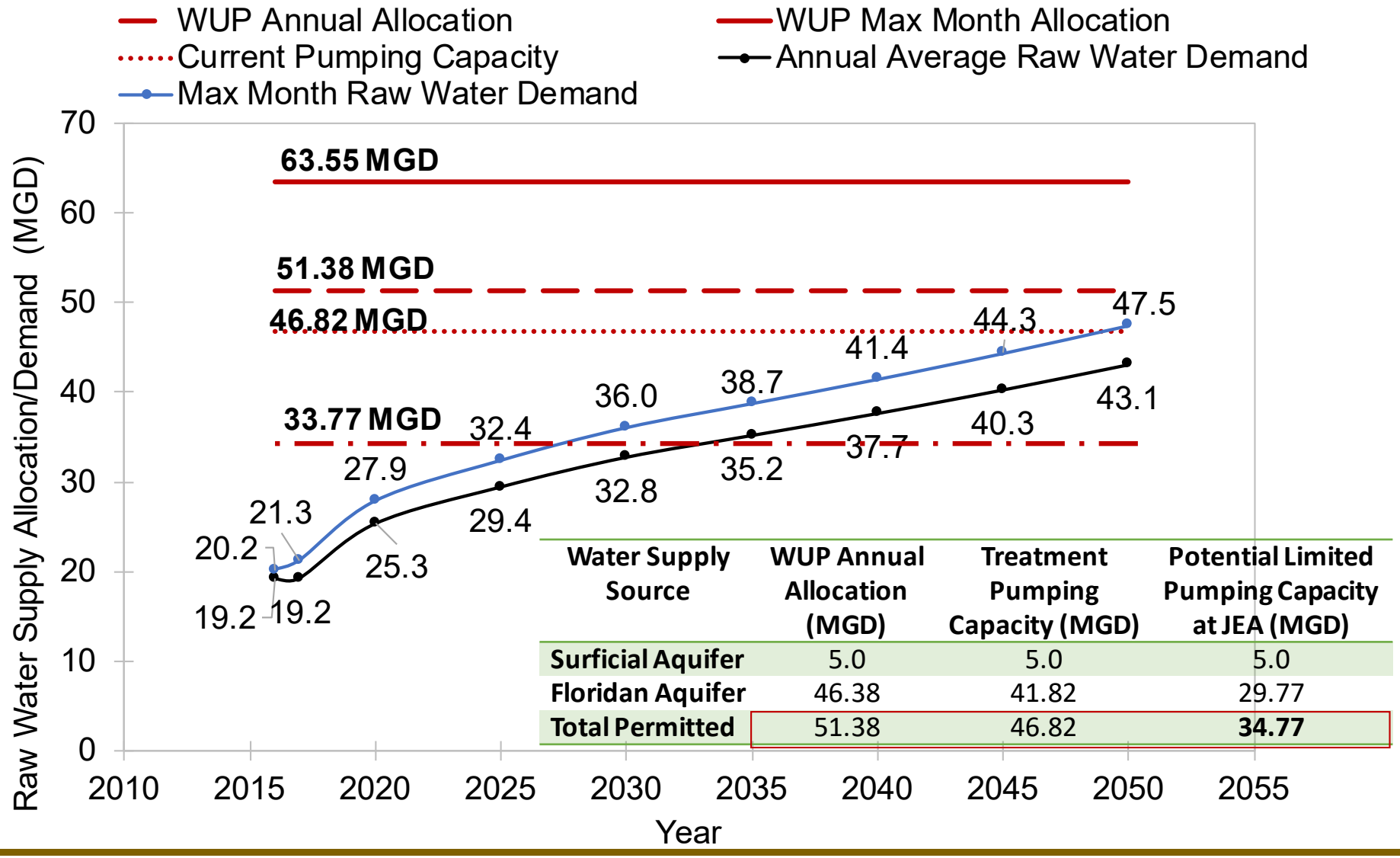
Future Water Needs: Historical Average Daily Water Usage



Service Area Population Projections



Raw Water Demand Projections



Water Supply Source	WUP Annual Allocation (MGD)	Treatment Pumping Capacity (MGD)	Potential Limited Pumping Capacity at JEA (MGD)
Surficial Aquifer	5.0	5.0	5.0
Floridan Aquifer	46.38	41.82	29.77
Total Permitted	51.38	46.82	**34.77**

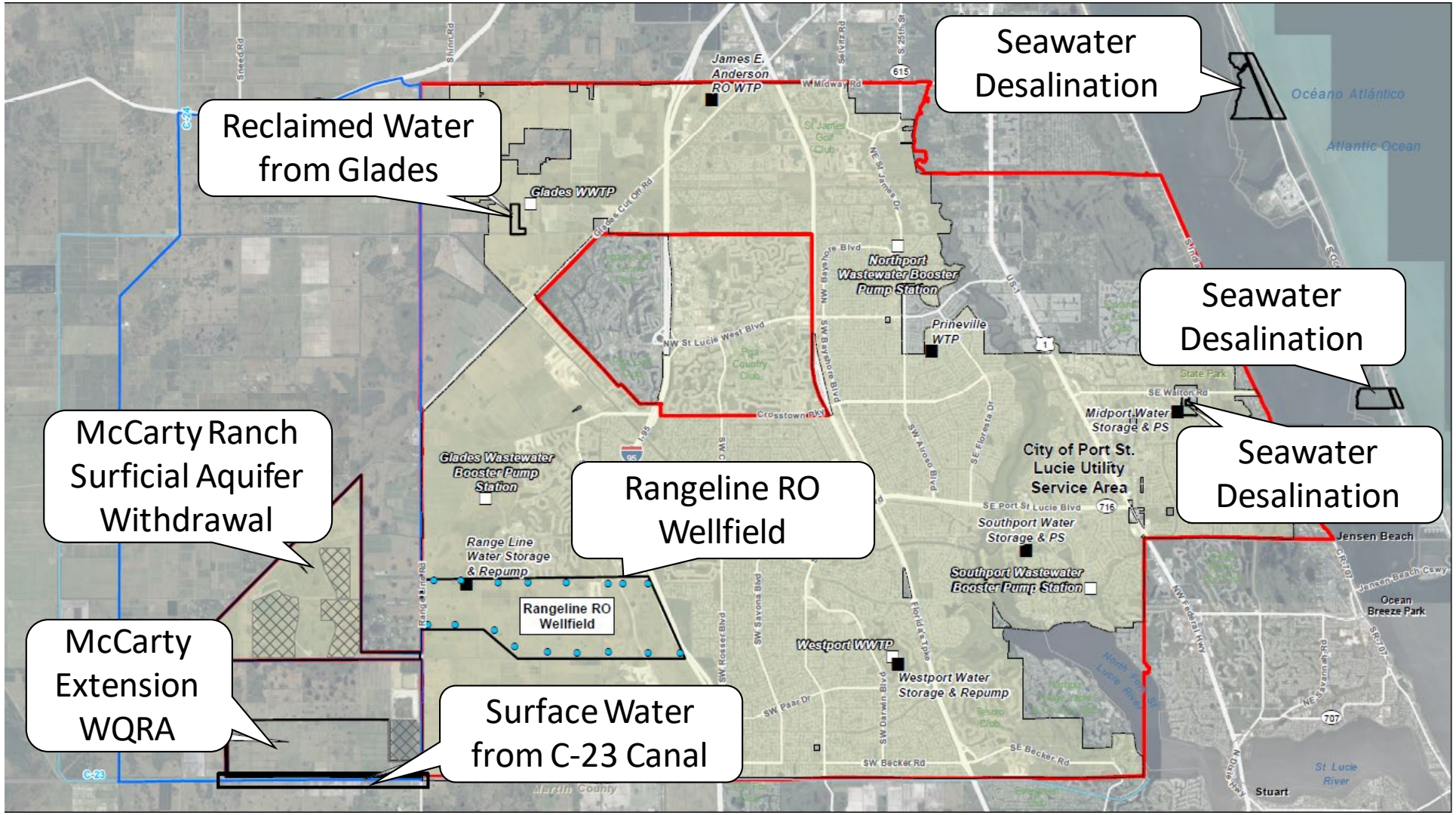
Future Water Needs

Projected water demands reveal a need for at least 5.1 MGD of additional maximum day finished water capacity

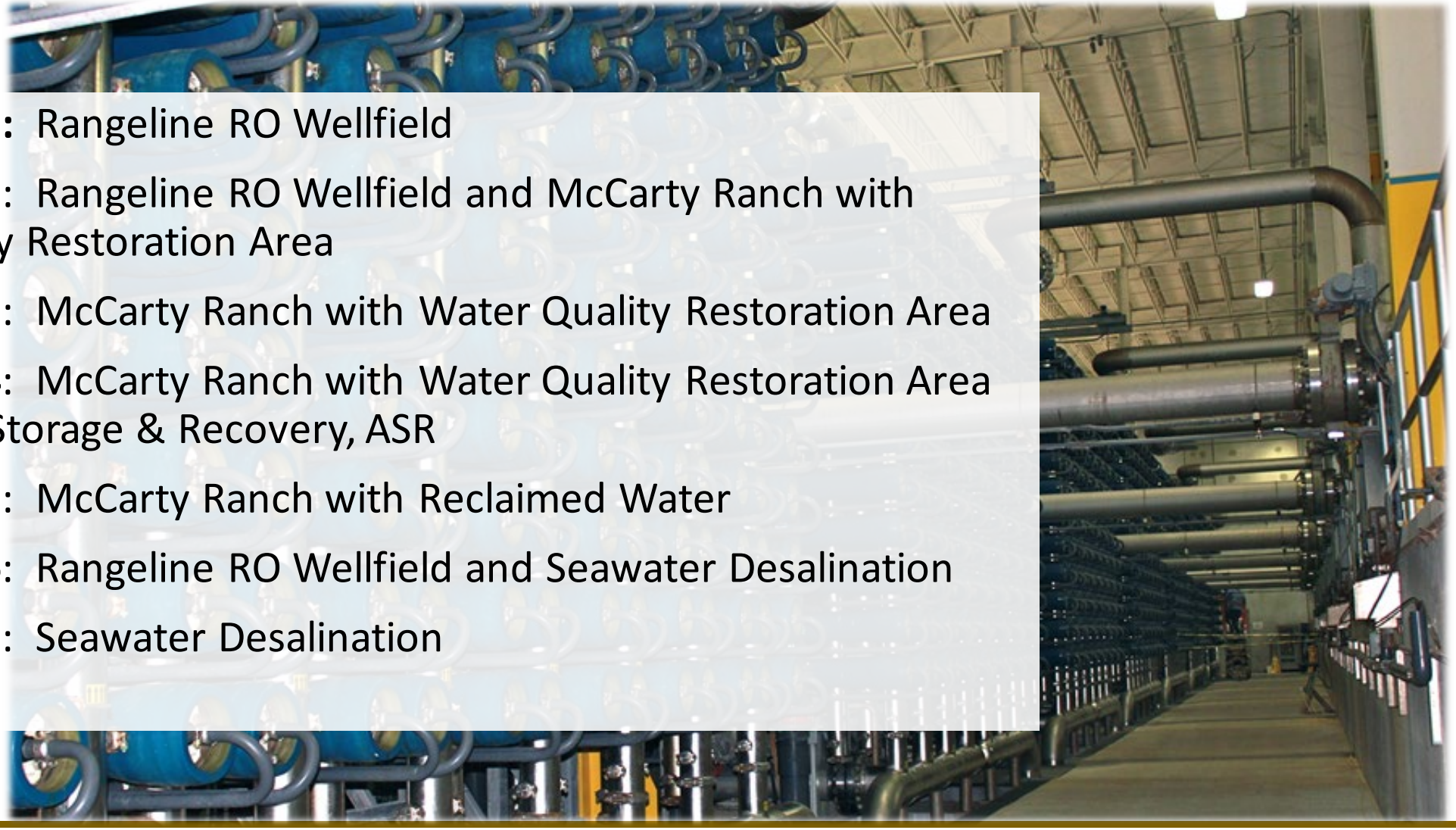
While water use permit is sufficient, groundwater modeling & water quality shows potential need of upwards of 12 MGD

Securing up to 20 MGD was investigated to allow City to conservatively & reliably meet the future 30-yr demands

Identification of Future Water Supply Sources



Water Supply Alternatives Evaluated

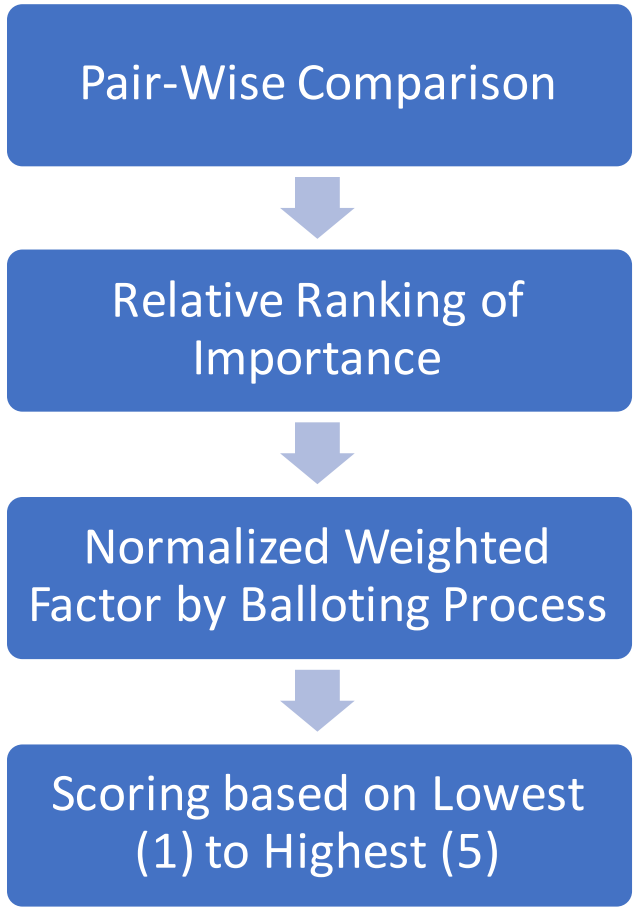


- **Alternative 1:** Rangeline RO Wellfield
- **Alternative 2**: Rangeline RO Wellfield and McCarty Ranch with Water Quality Restoration Area
- **Alternative 3**: McCarty Ranch with Water Quality Restoration Area
- **Alternative 4**: McCarty Ranch with Water Quality Restoration Area and Aquifer Storage & Recovery, ASR
- **Alternative 5**: McCarty Ranch with Reclaimed Water
- **Alternative 6**: Rangeline RO Wellfield and Seawater Desalination
- **Alternative 7**: Seawater Desalination

Evaluation and Decision Modeling of Water Supply Alternatives

Non-Cost Factors

1. Source Water Quality.
2. Diversification of Water Supply Sources.
3. Ecological Benefit.
4. Benefit to Community.
5. Institutional Control.
6. Permittability.
7. Schedule.
8. Risk from Third-Party Actions.
9. Operability.
10. Meet Treated Water Quality Goals.
11. Treatment and Facility Phasing.
12. Residuals Management.

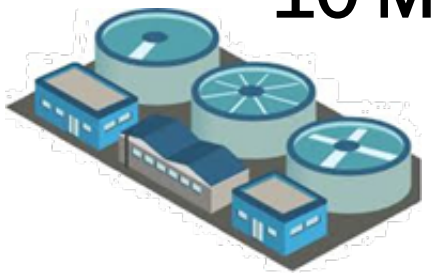


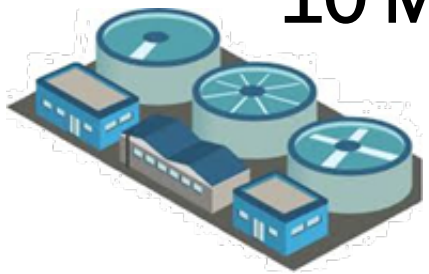
The Future Plan

Recommendations and Next Steps

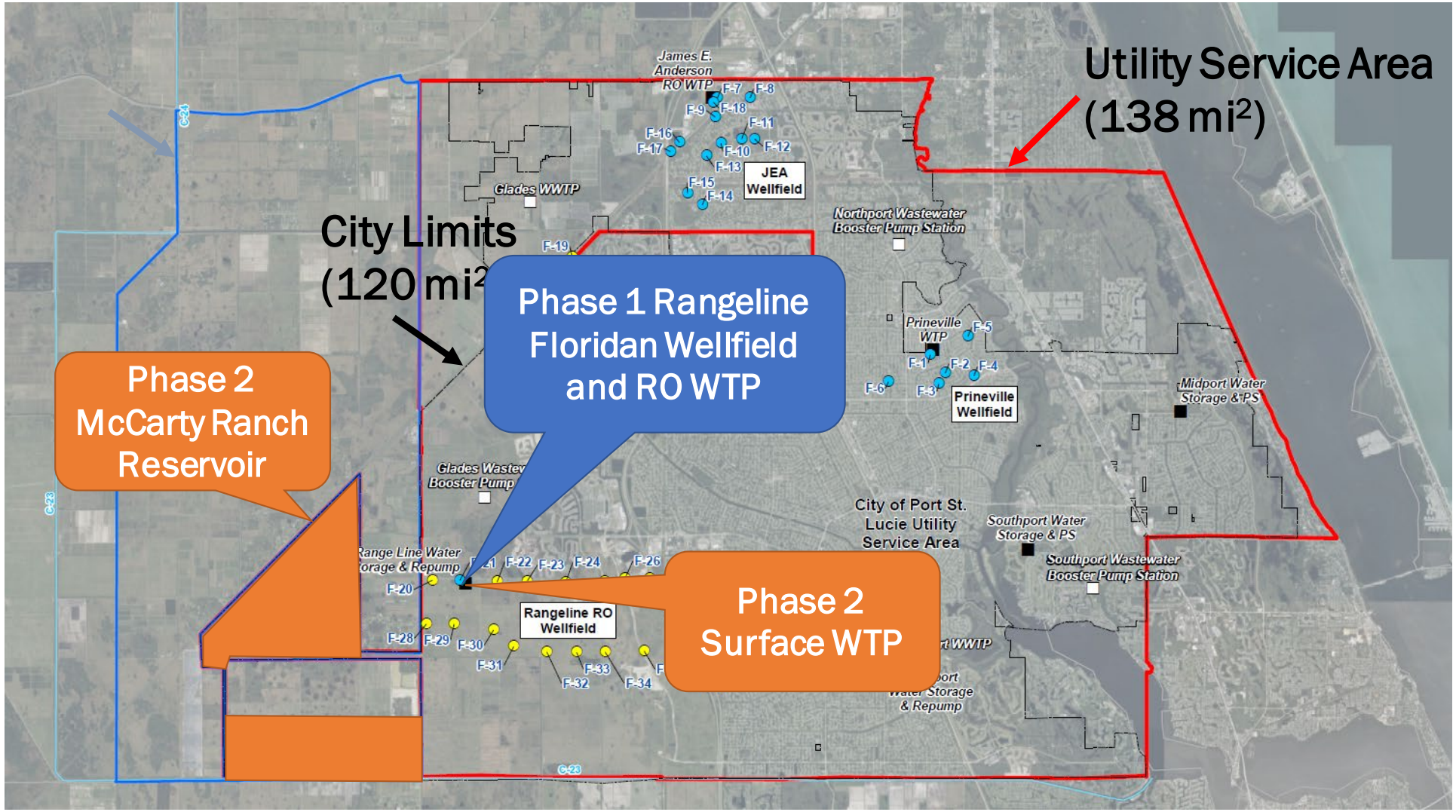
- The **Rangeline RO wellfield** with the **McCarty Ranch surface water** supply alternative offers the City the best opportunity to **diversify** their water supply portfolio while also **meeting** the projected **demands**
- Implementing the Phase I of the Rangeline RO wellfield would allow the City to have more time to **further investigate** the feasibility and implementation of the **McCarty Ranch water supply** alternative in Phase II.
- The overall cost/benefit analysis also revealed that using **ASR** as a means of supplementing surface water storage **increases** the water supply **reliability** at a relatively minimal additional cost.
- The **recommended** water supply concept consists of developing and treating the **Rangeline RO wellfield** supply in Phase I, followed by the development of the **McCarty Ranch surface water** supply concept with ASR in Phase II.

10 MGD + 10 MGD = 20 MGD



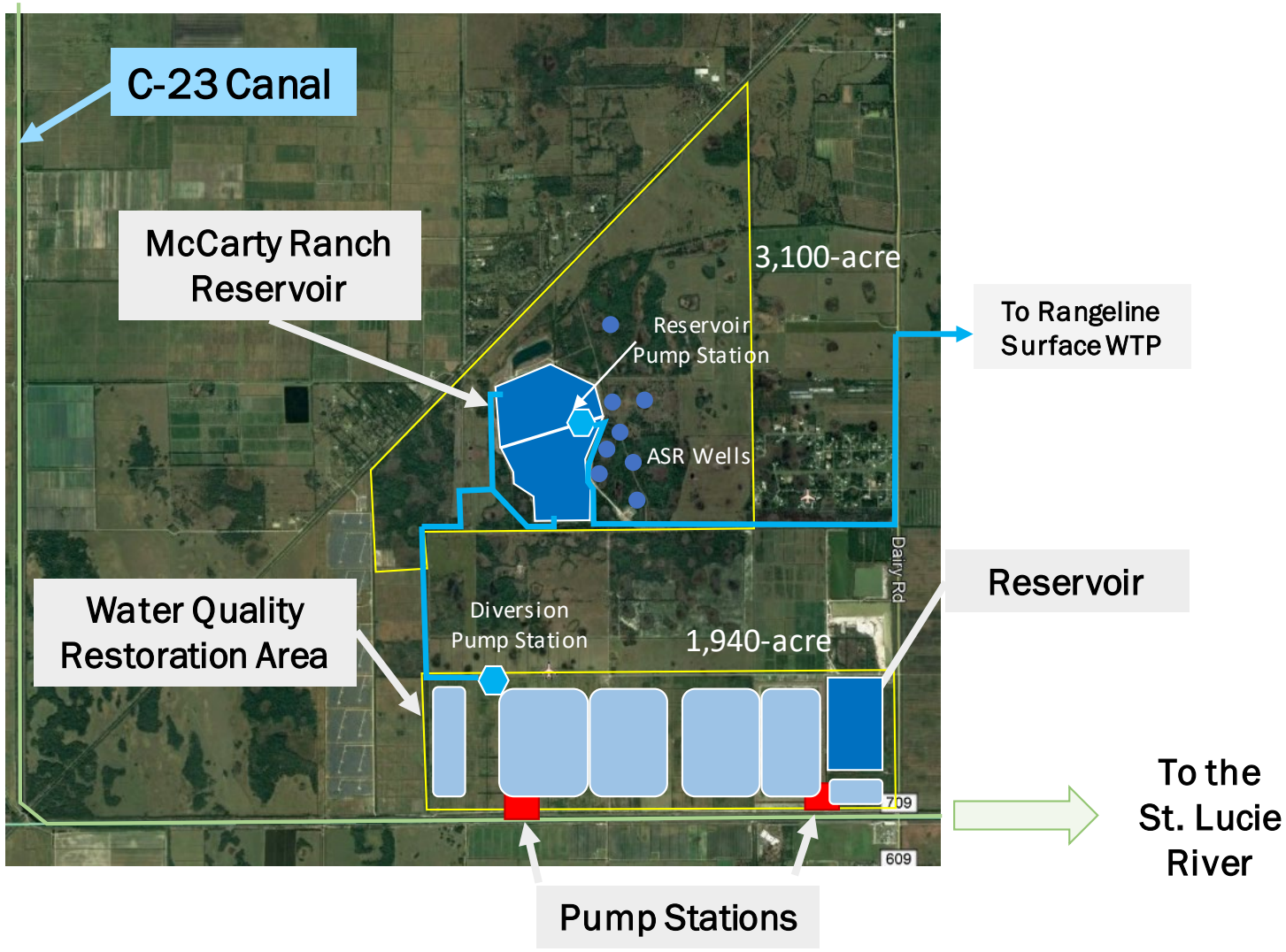


Proposed Water Supply Sources and Facilities



McCarty Ranch Preserve & Extension Concept

- City purchased the McCarty Ranch Preserve and Extension properties for developing new and alternative water supplies
- With SFWMD and FDEP support, the City is making beneficial use of Extension property by converting the fallow farmland into a Water Quality Restoration Area (WQRA)
- The WQRA diverts, stores, and naturally treats peak flows from the C-23 canal to avoid excess loading of nutrient-laden freshwater into the St. Lucie River
- Existing two (2) pumping stations at 20,000 gpm and 28,000 gpm
- **The proposed use of the diverted surface water for potable supply**



Thanks for Your Attention

Questions and Public Comment

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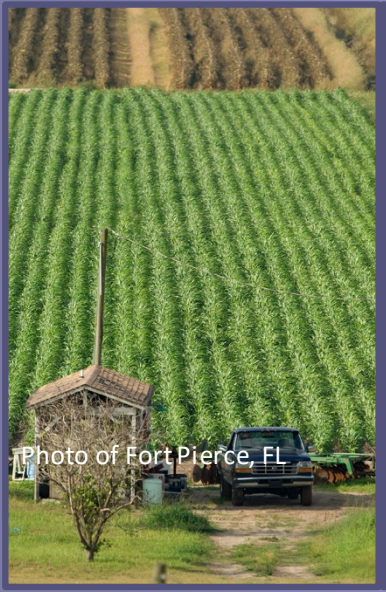
East Coast Floridan Modeling to Support the 2021 Update to the Upper East Coast Water Supply Plan





Stakeholder Meeting #2 – September 3, 2021

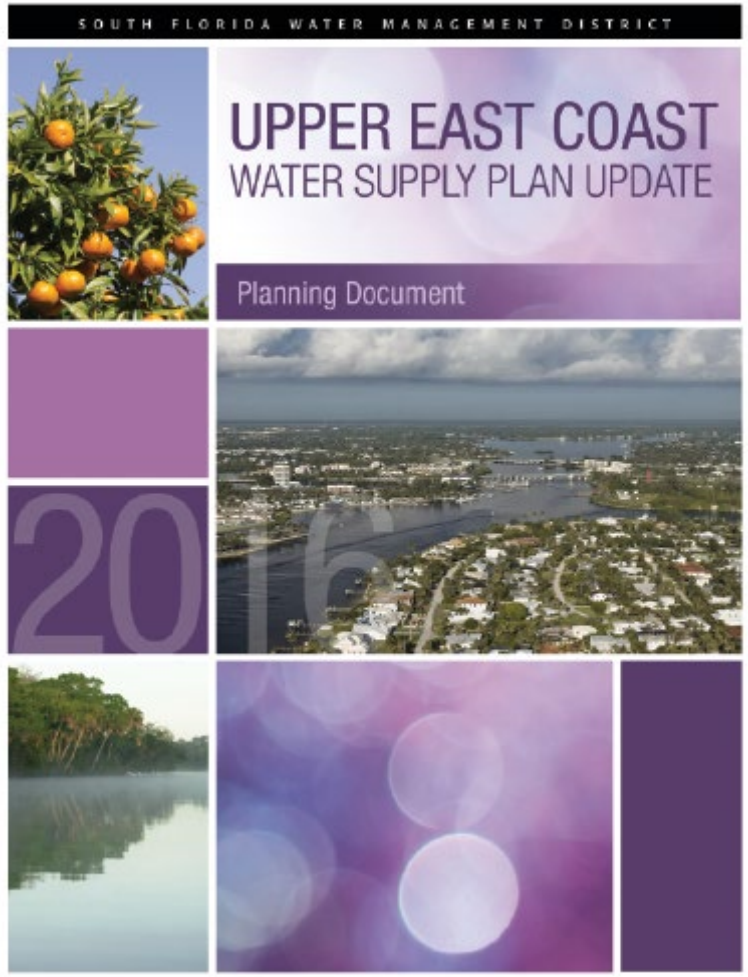
Presented by Rob Earle

Lead Modeler, Groundwater Modeling Unit

South Florida Water Management District

2016 Upper East Coast Water Supply Plan Update
Future Direction

- The Surficial Aquifer System (SAS) use is limited
  - Increases in water use expected to be supported by the Floridan Aquifer System (FAS)
  - Brackish water from the FAS can serve as a supplemental Agricultural (AG) water source
- Maintain wells critical to long-term monitoring and modeling
- New, Avon Park Permeable Zone wellfields should have greater spacing and lower per-well capacity



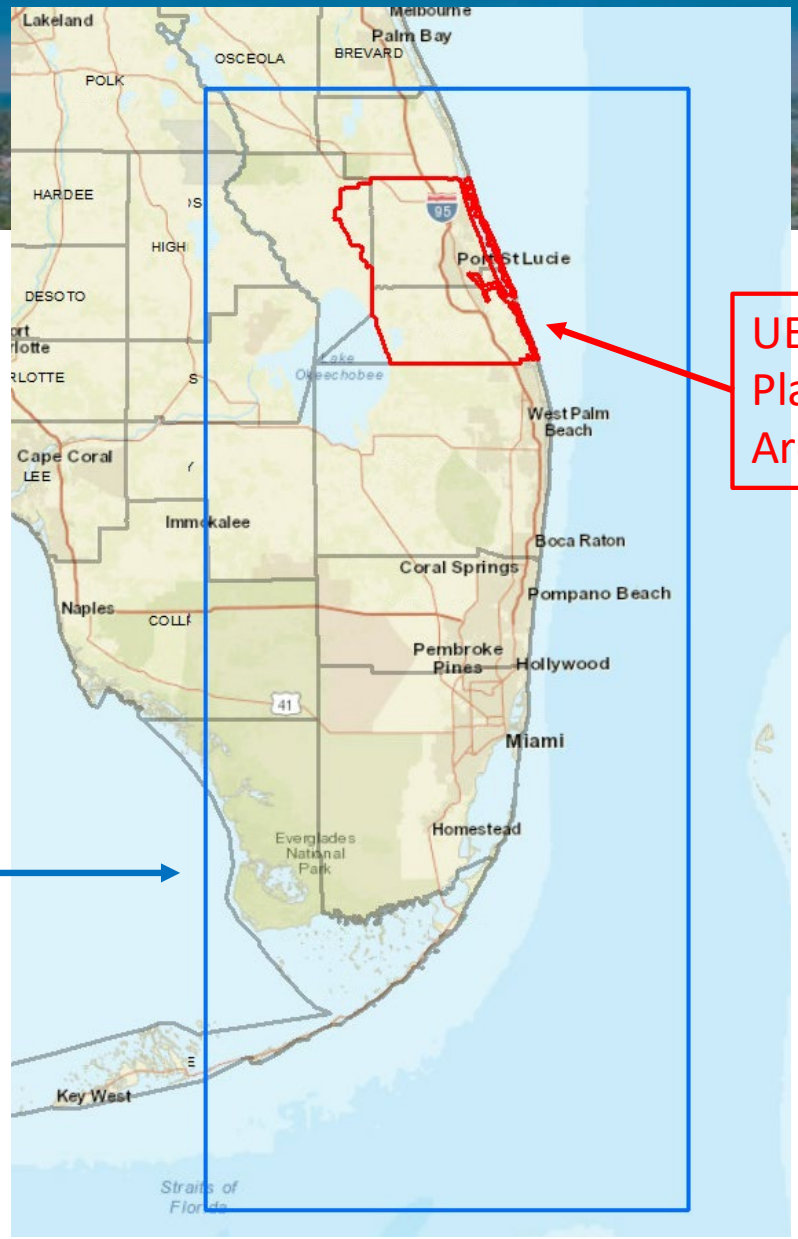
Paraphrased from 2016 UEC WSP Update, Chapter 7:
https://www.sfwmd.gov/sites/default/files/documents/uec_2016_plan_planning_document.pdf

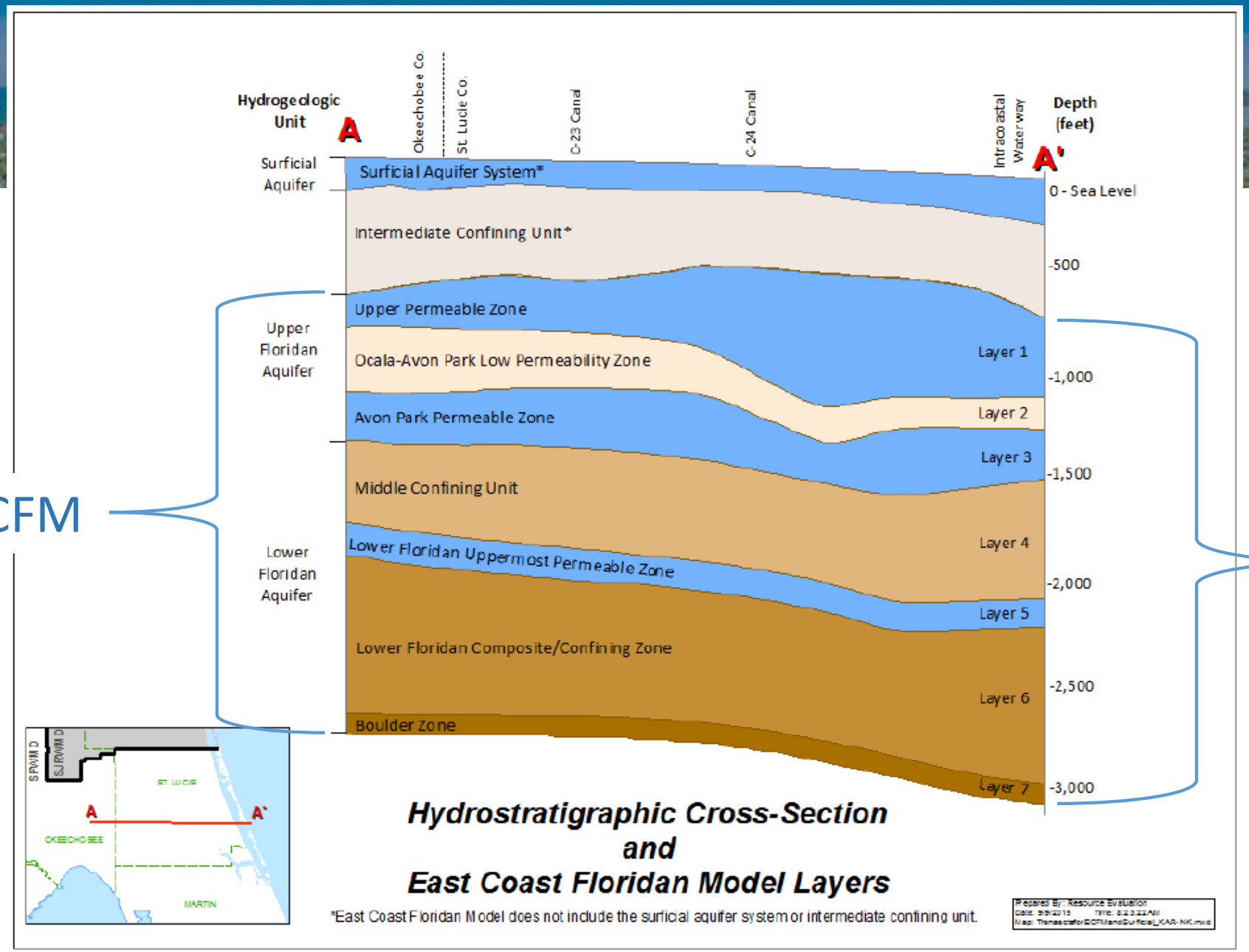
Agenda

- ECFM Model overview & re-calibration
- Application to UEC Planning scenarios
- UEC Planning scenario results

East Coast Floridan Model

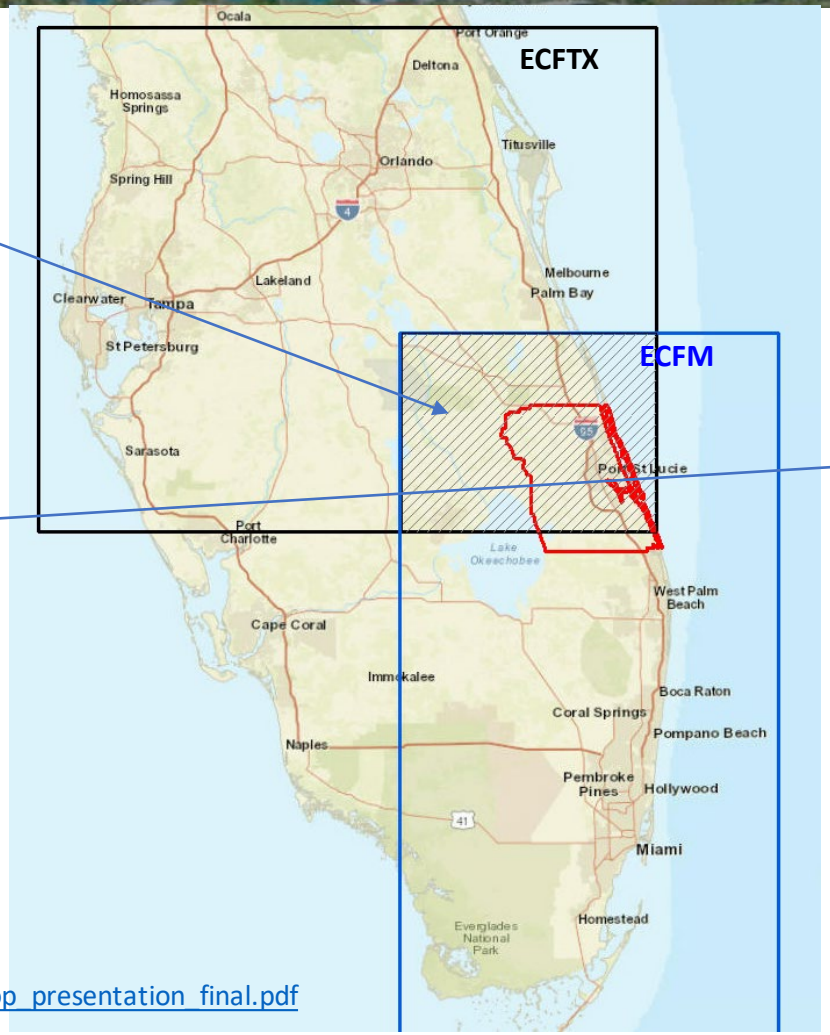
- MODFLOW-SEAWAT Model (USGS 2012)
- Period of Record: 1989-2012
- 288 Monthly simulation (stress) periods (288/12=24 years)
- Cell size: 2,400 ft × 2,400 ft
- 7 model layers including:
  - Layer 1: Upper Floridan Aquifer
  - Layer 3: Avon Park Permeable Zone
- Calibrated to water levels and water quality (TDS concentration – mg/L)

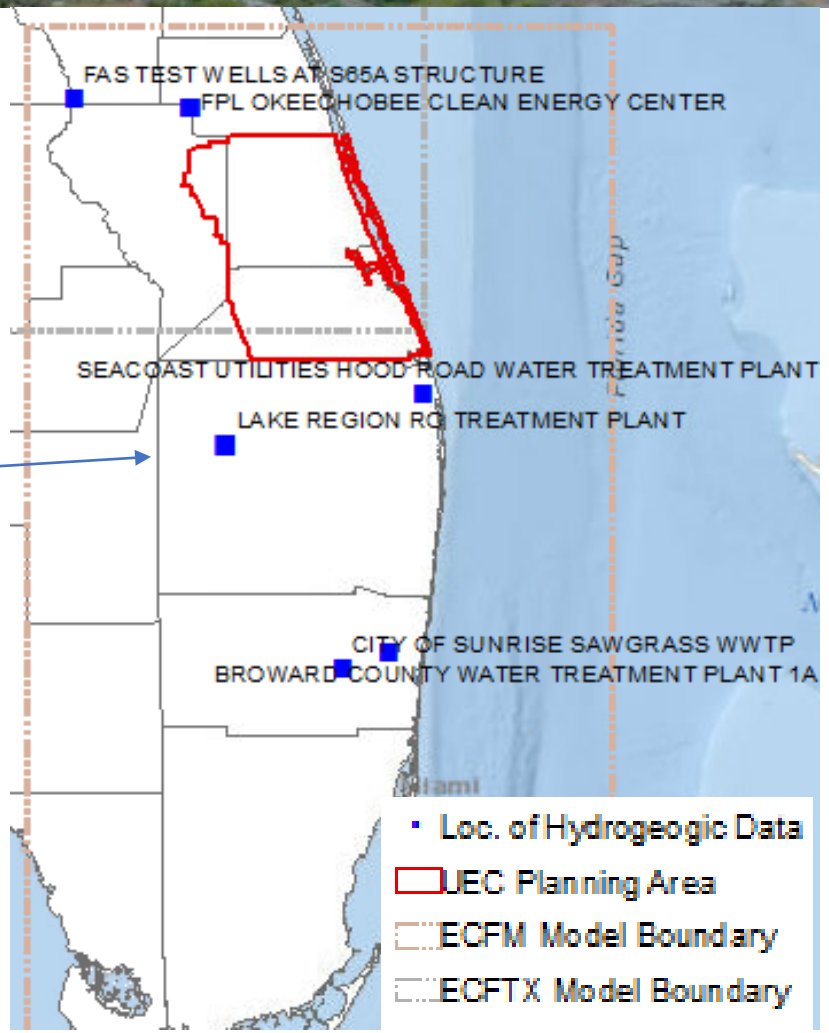



Hydrogeologic Unit
A
A'
Okeechobee Co.
St. Lucie Co.
C-23 Canal
C-24 Canal
Intracoastal Waterway
Depth (feet)
Surficial Aquifer
Surficial Aquifer System*
Intermediate Confining Unit*
Upper Floridan Aquifer
Upper Permeable Zone
Ocala-Avon Park Low Permeability Zone
Avon Park Permeable Zone
Middle Confining Unit
Lower Floridan Aquifer
Lower Floridan Uppermost Permeable Zone
Lower Floridan Composite/Confining Zone
Boulder Zone
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Layer 7
0 - Sea Level
-500
-1,000
-1,500
-2,000
-2,500
-3,000
ECFM
ECFM
SFWMD
SJRWMD
ST. LUCIE
OKEECHOBEE
MARTIN
Hydrostratigraphic Cross-Section
and
East Coast Floridan Model Layers
*East Coast Floridan Model does not include the surficial aquifer system or intermediate confining unit.

Update to the East Coast Floridan Model

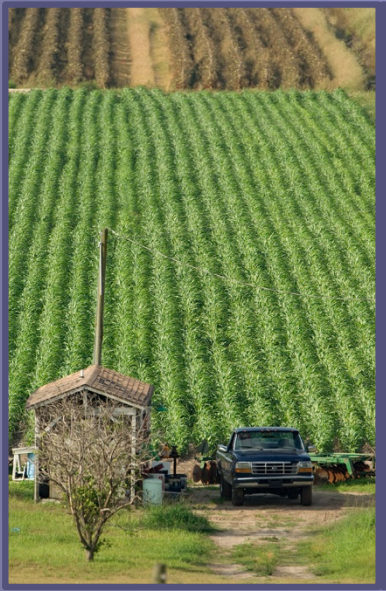
- Hydrostratigraphy (model layer elevation) data from the East Central Florida Transient Expanded (ECFTX)
- Hydraulic Conductivity data from six new aquifer test sites around the domain
- **Re-calibrated the model and met calibration criteria for water levels and water quality**

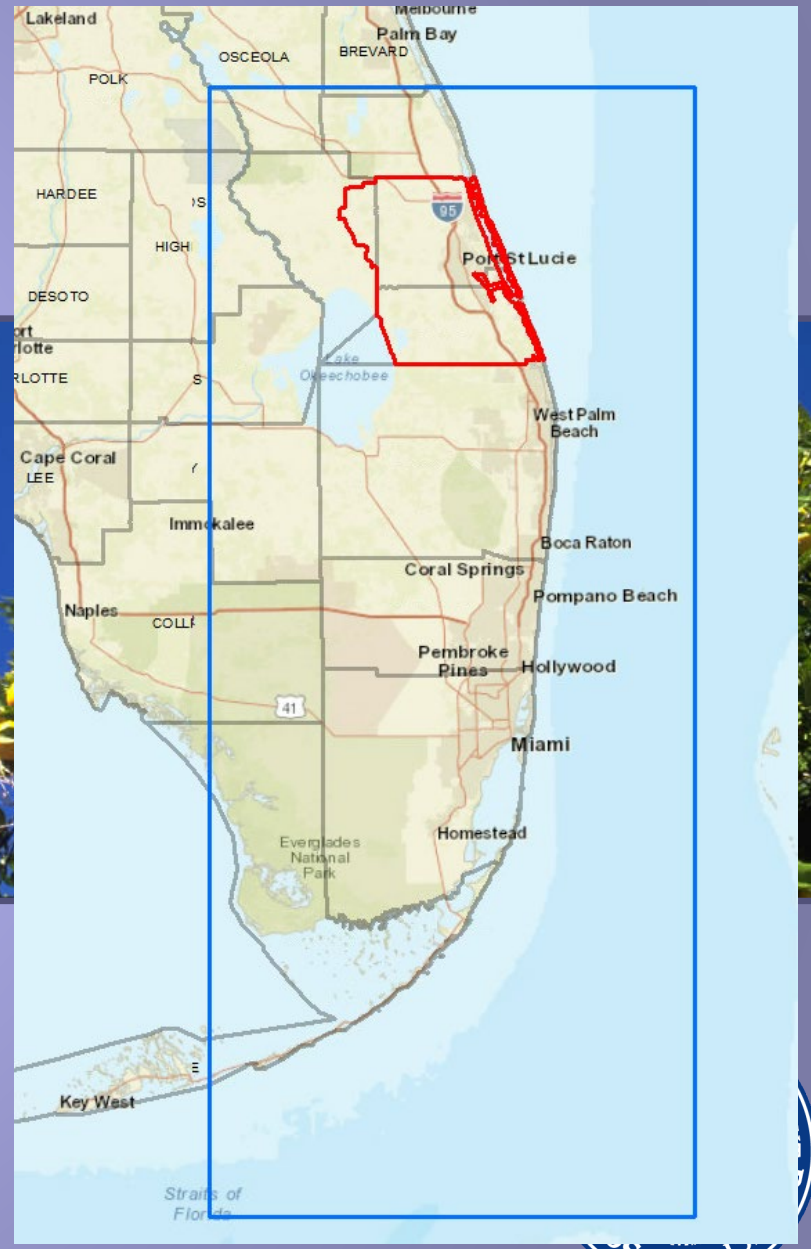




https://www.sfwmd.gov/sites/default/files/ECFM_workshop_presentation_final.pdf

Model Application: Upper East Coast Planning Scenarios





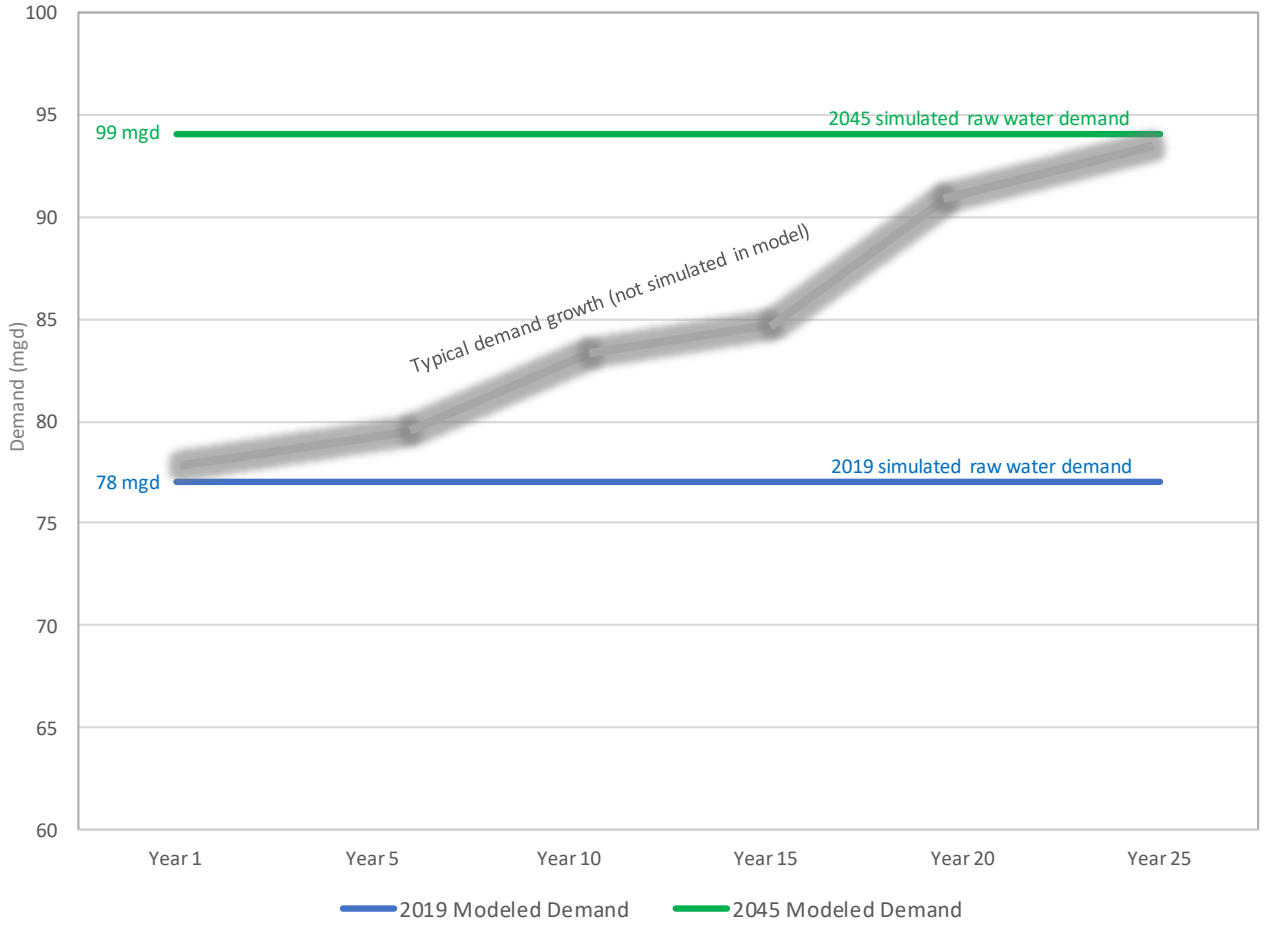
Upper East Coast Planning Scenarios

- **2019 Base Condition**
  - Public Supply, Power Generation, Landscape/Recreational and Commercial/Industrial/Institutional demands from historical 2019 pumpage data
  - Agricultural demands estimated based on AFSIRS (simulates irrigation demands)
- **2045 Future Condition**
  - Public Supply, Power Generation and Commercial/Industrial/Institutional demands based on future population growth rate
  - Agricultural demands based on future land use (FSAID-2019*) and AFSIRS
  - Landscape/Recreational demands based on 2045 planning projections
- Looked at the differences in Water Levels and Water Quality (TDS) between 2019 and 2045 in the UFA and the APPZ (Model layers 1 and 3)

* FSAID-Florida Statewide Agricultural Irrigation Demand Report 2019: https://www.fdacs.gov/content/download/92578/file/FSAID-VII-Water-Use-Estimates-Final-Report.pdf

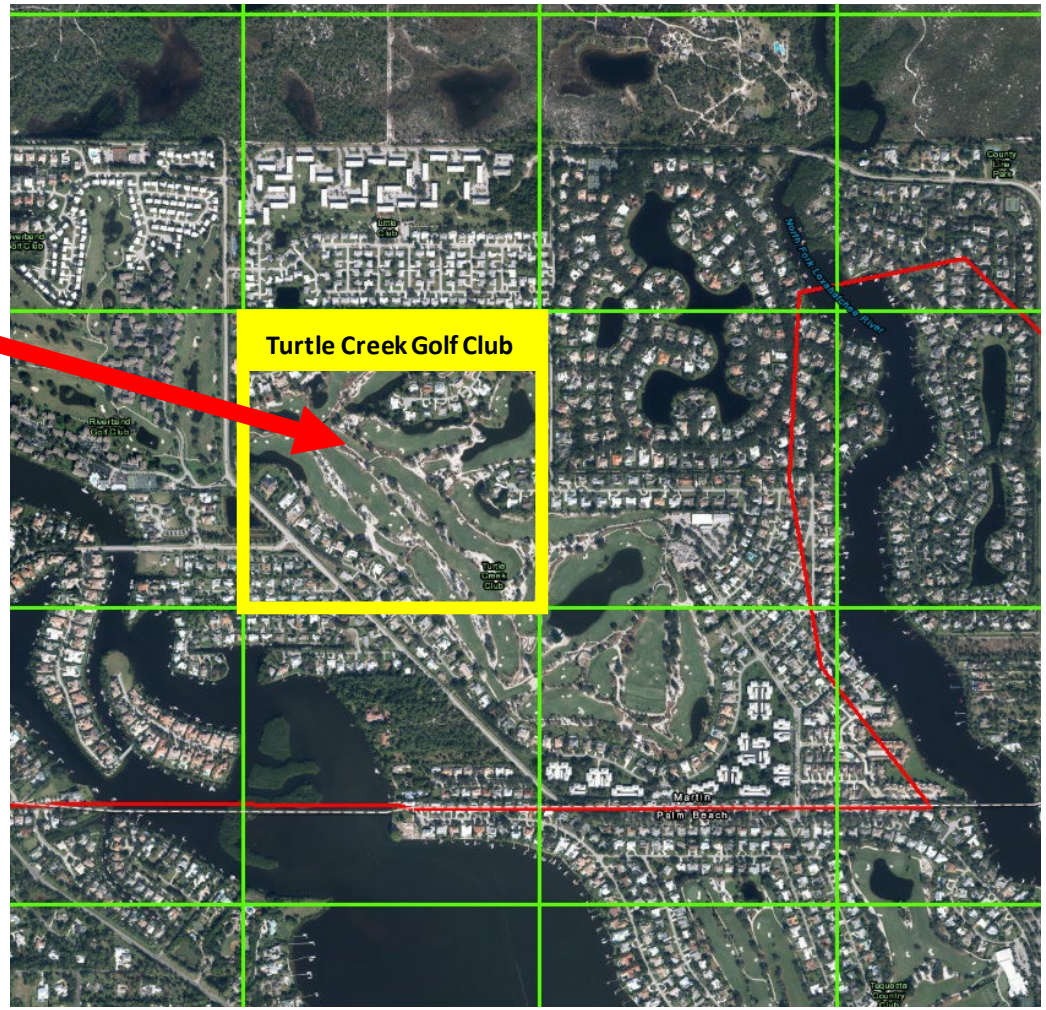
Limitations in Simulating Demands

- Each simulation is 24 years
  - Same as calibration period
- Model does not simulate annual demand growth
- Simulated demands are “instant on”
- Raw water demand shown for all use types
- Results from the 2045 simulation are considered conservative



Regional Model Limitations

- Large model cell size (2400' X 2400')
  One cell covers 132 acres!
  - Cannot accurately simulate local drawdowns
- Regional model may not capture local heterogeneity in the Floridan aquifer system and the response at individual wells
- Regional model results should be used as an overall planning tool; results should not be considered absolute

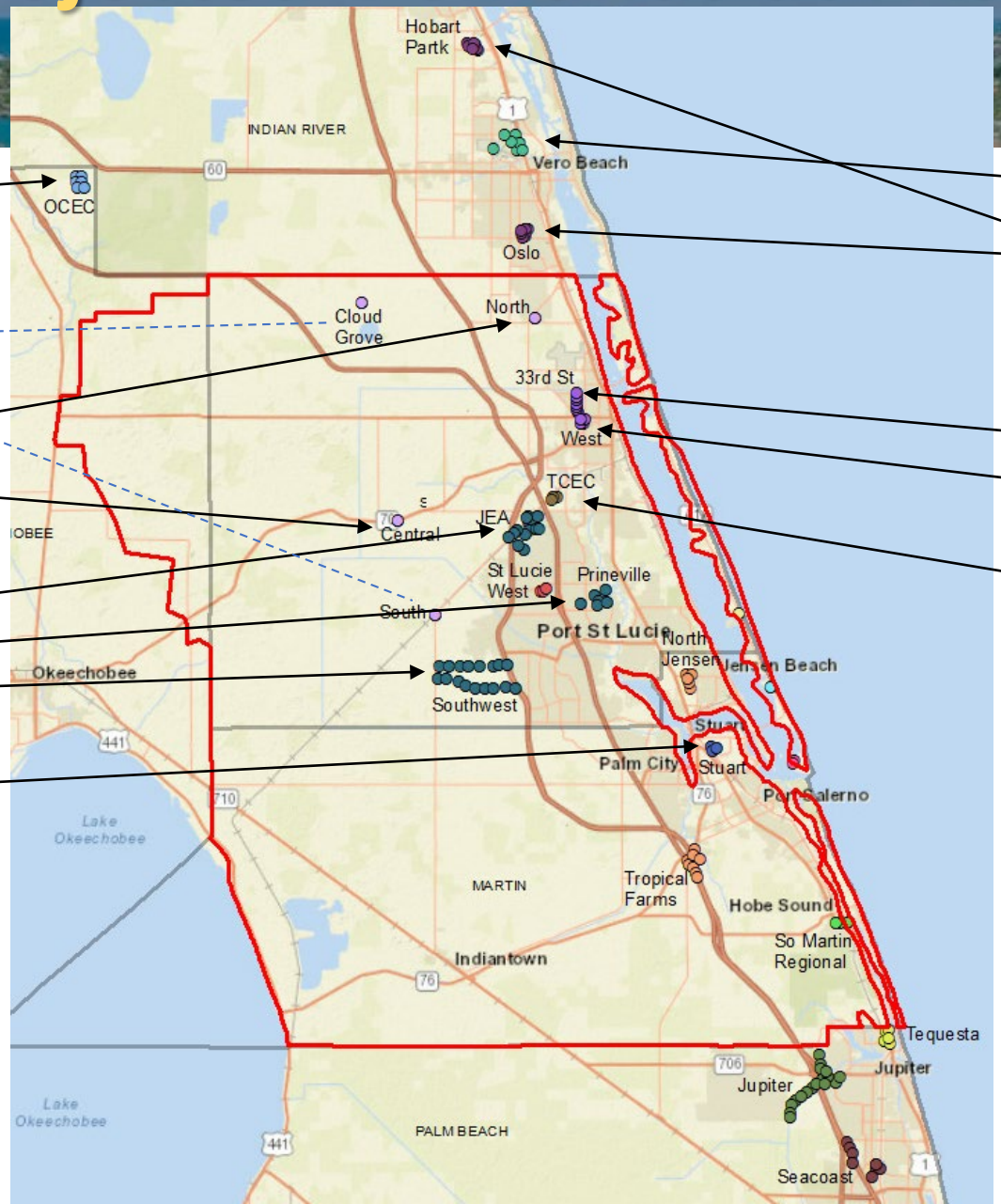


Floridan Aquifer Demands in the Upper East Coast (UEC) Planning Area

Water Use Category	2019 (mgd)	2045 (mgd)	Difference (mgd)
AG	37.42	31.22	-6.20
CII	0.18	0.18	0.00
L/R	2.72	4.17	1.45
PG	1.45	3.34	1.89
PS	36.18	59.74	23.56
Total	**77.95**	**98.65**	**20.70**

AG = Agricultural
CII = Commercial/Industrial/Institutional
L/R = Landscape/Recreational & Golf
PG = Power Generation
PS = Public Supply

2045 Projected Demands at FAS Wellfields



Okeechobee Clean Energy Center (PG)

- 1.37 mgd increase UFA
- 2.07 mgd increase APPZ

St Lucie County

- *5.4 mgd increase*
  - *No pumping in 2019*
  - *4 mgd from North in 2045*
  - *1.4 mgd from Central in 2045*
  - *UFA only*

Port St Lucie Util

- *JEA: 0.94 mgd decrease*
- *Prineville: 0.27 mgd decrease*
- *Southwest: 12.96 mgd increase*
  - *3.53 mgd from UFA, 9.43 mgd from APPZ*

City of Stuart

- *2.62 mgd increase*
  - *no pumping in 2019*
  - *mostly APPZ in 2045*
    (2.6 mgd APPZ, 0.02 mgd UFA)

Hobart & Oslo

- *1.93 mgd increase Hobart*
- *0.7 mgd decrease Oslo*
- *UFA only*

City of Vero Beach

- *1.67 mgd increase, UFA only*

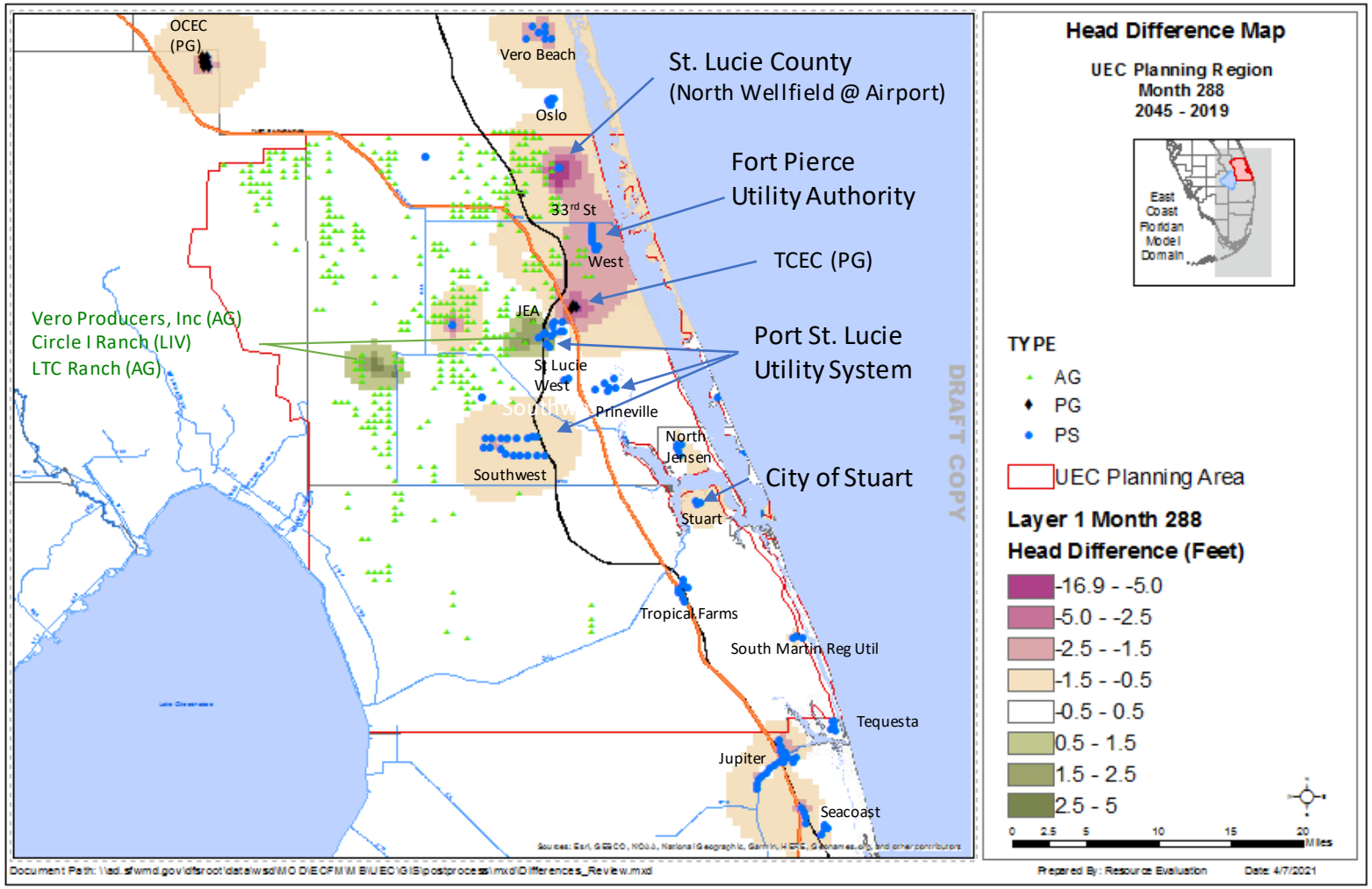
Fort Pierce Util Auth

- *2.43 mgd increase*
  - *33rd St UFA increase = 1.17 mgd*
  - *33rd St APPZ increase = 0.28 mgd*
  - *West UFA increase = 0.94 mgd*
  - *West APPZ increase = 0.05 mgd*

Treasure Coast Energy Center (PG)

- *1.89 mgd increase, UFA only*

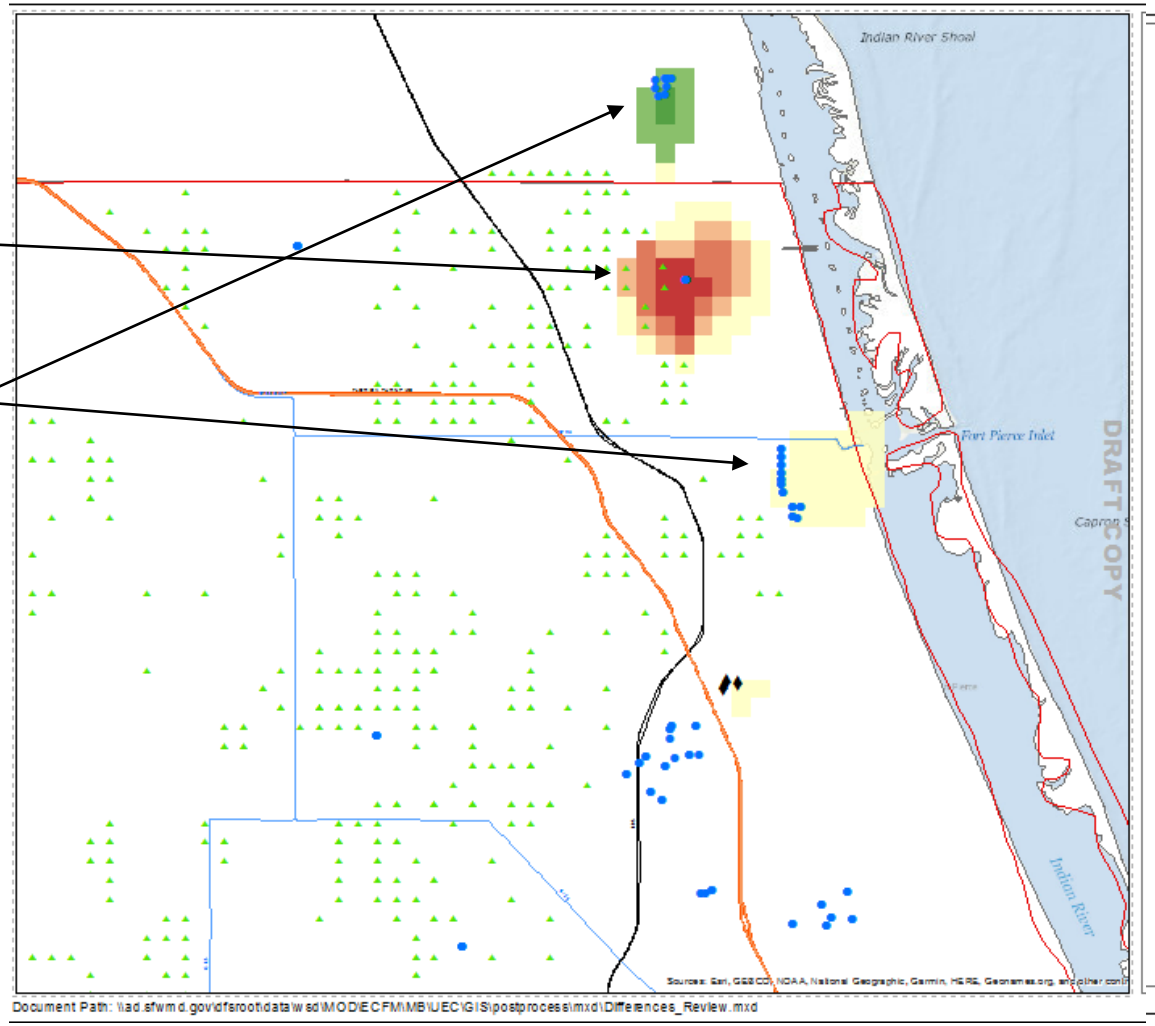
Upper Floridan Aquifer Water Level Difference (2045 - 2019)



- Approx 17 feet of drawdown at St. Lucie County (North)
  - No demand in 2019
  - 4 mgd in 2045
- Approx 6.5 feet of additional drawdown at Treasure Coast Energy Center PG wells
  - 1.9 mgd increase
- Approx 1 foot of drawdown at City of Stuart wellfield.
  - 0.02 mgd demand from UFA
- Up to 3 feet of rebound at Port St. Lucie JEA wellfield
  - 0.42 mgd decrease
  - AG decreases may also contribute

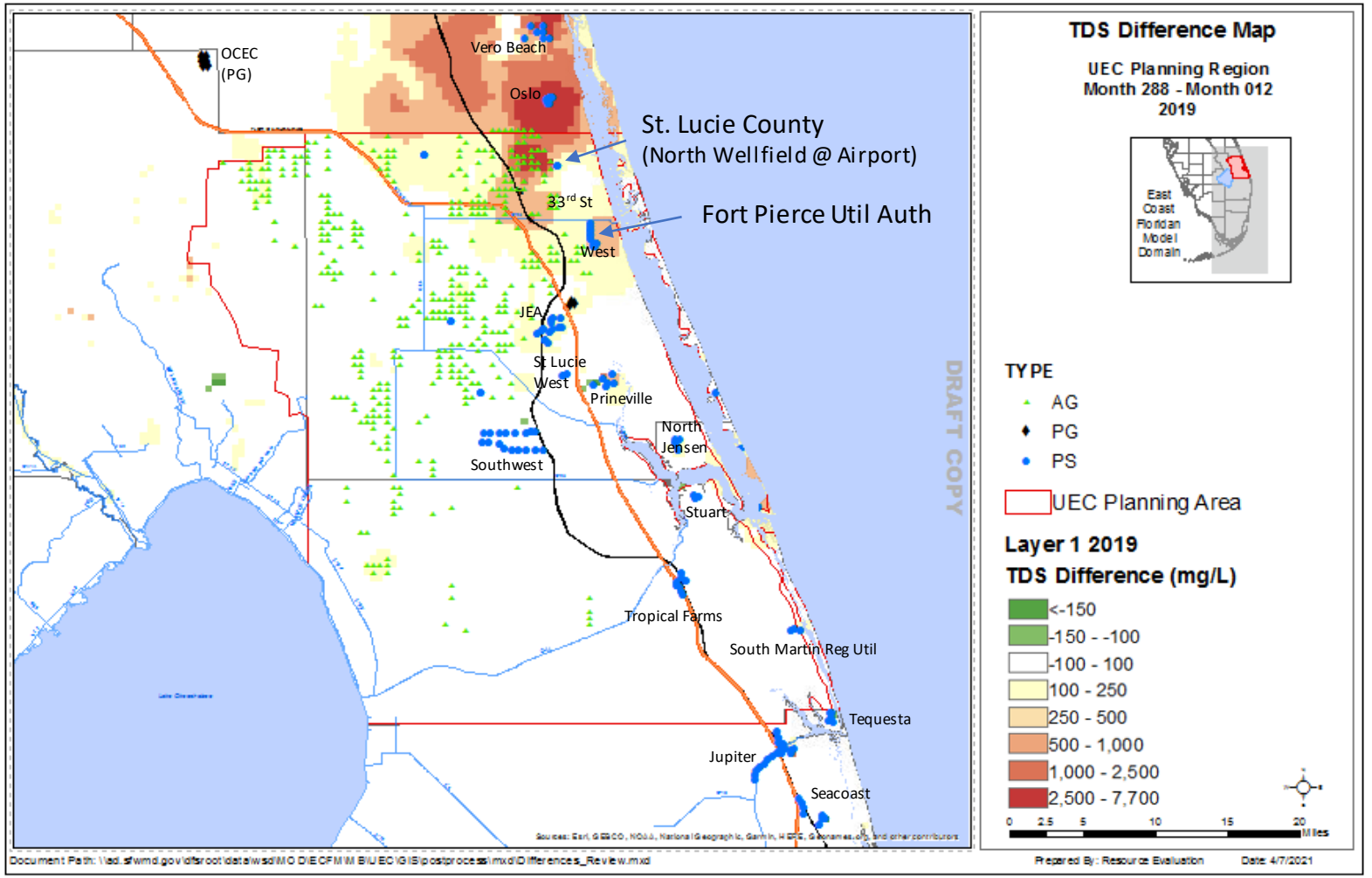
Upper Floridan Aquifer Water Quality (Total Dissolved Solids) Difference (2045 – 2019)

- TDS differences of <100 mg/L in most of the area
- Increase in TDS at St. Lucie County (North):
  - Increase in demands 0 to 4 mgd
  - TDS increase as high as 4,800 mg/L
- Slight increase in TDS at Fort Pierce Utility Authority
  - 33rd St demand increase from 1.64 to 2.81 mgd
  - West demand increase from 1.32 to 2.26 mgd
- Slight decrease in TDS at Oslo WTP
  Demand decreases from 6.28 to 5.58 mgd



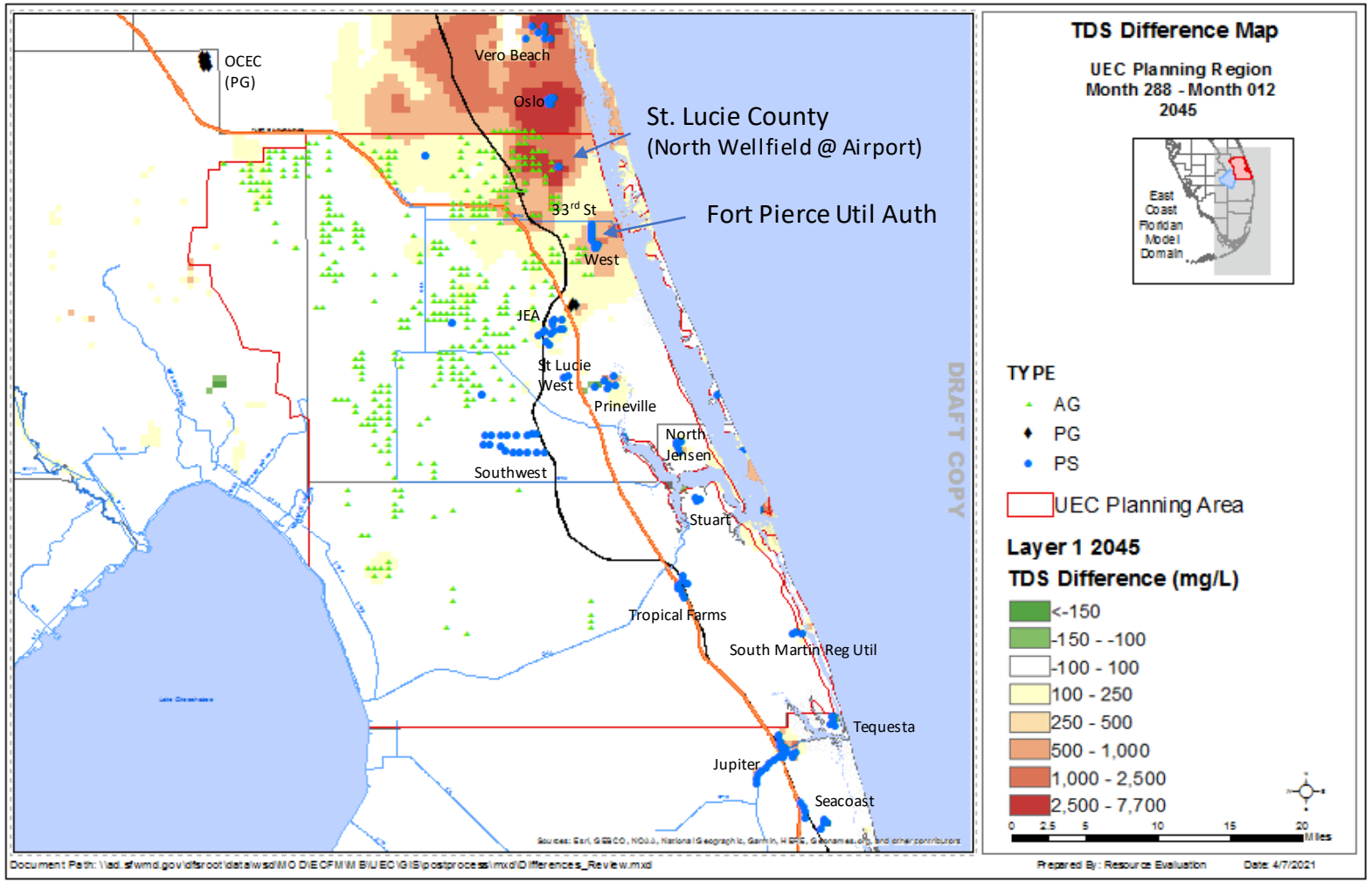
Upper Floridan Aquifer Water Quality (Total Dissolved Solids) Difference

- Difference in TDS concentrations within the ECFM **2019** scenario model run (Year 1 to 24)
- Highest TDS increase within UEC Planning area is near St. Lucie County (North Wellfield @ Airport)
  - 2,100 mg/L
  - *No pumping in 2019 at North Wellfield*
  - *Increase likely due to Oslo WTP and AG demands in 2019*

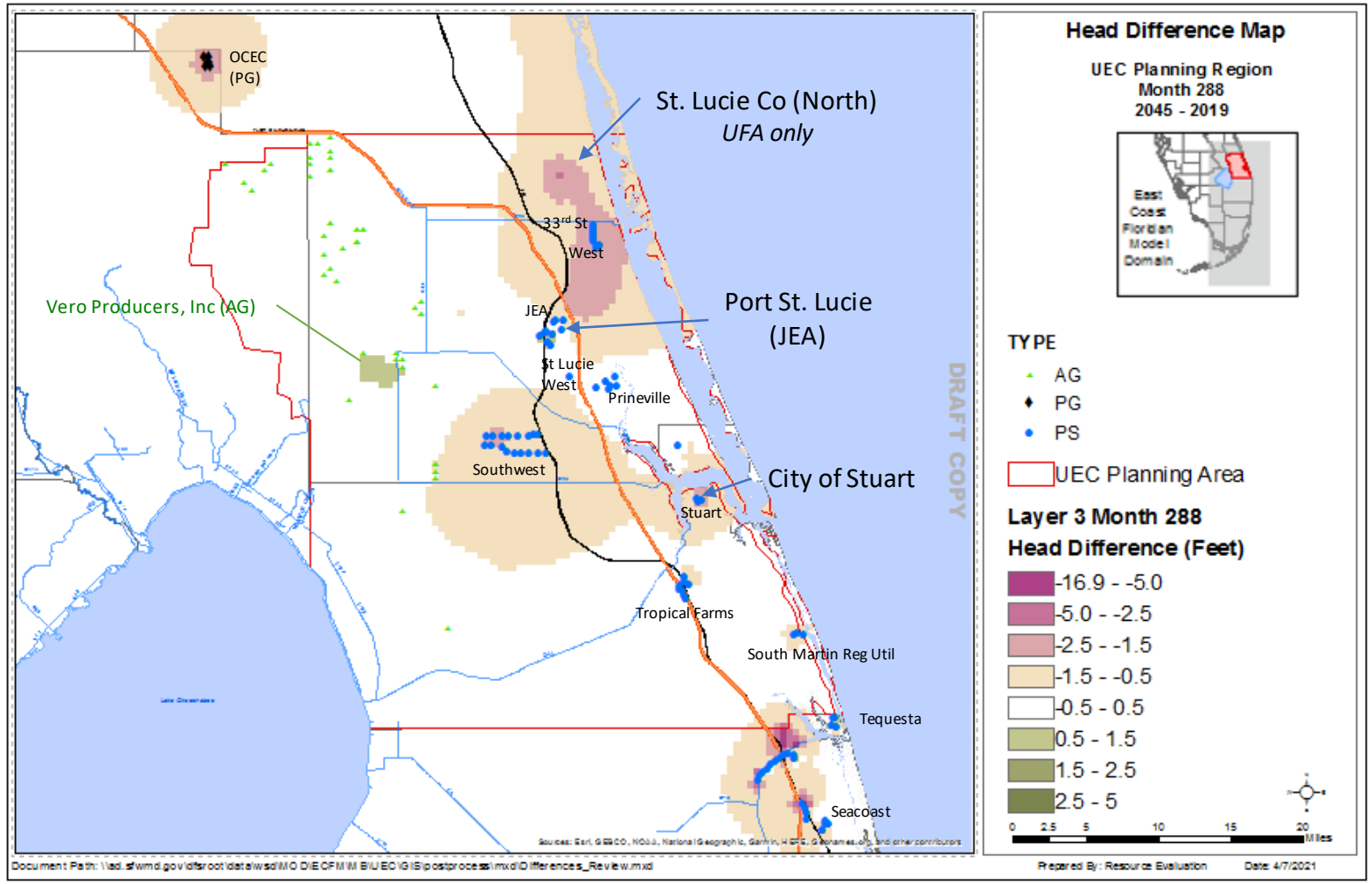


Upper Floridan Aquifer Water Quality (Total Dissolved Solids) Difference

- Difference in TDS concentrations within the ECFM **2045** scenario model run (Year 1 to 24)
- Highest TDS increase within UEC Planning area is at St. Lucie County (North Wellfield @ Airport)
  - 4,600 mg/L
  - *North Wellfield demand = 4 mgd in 2045*



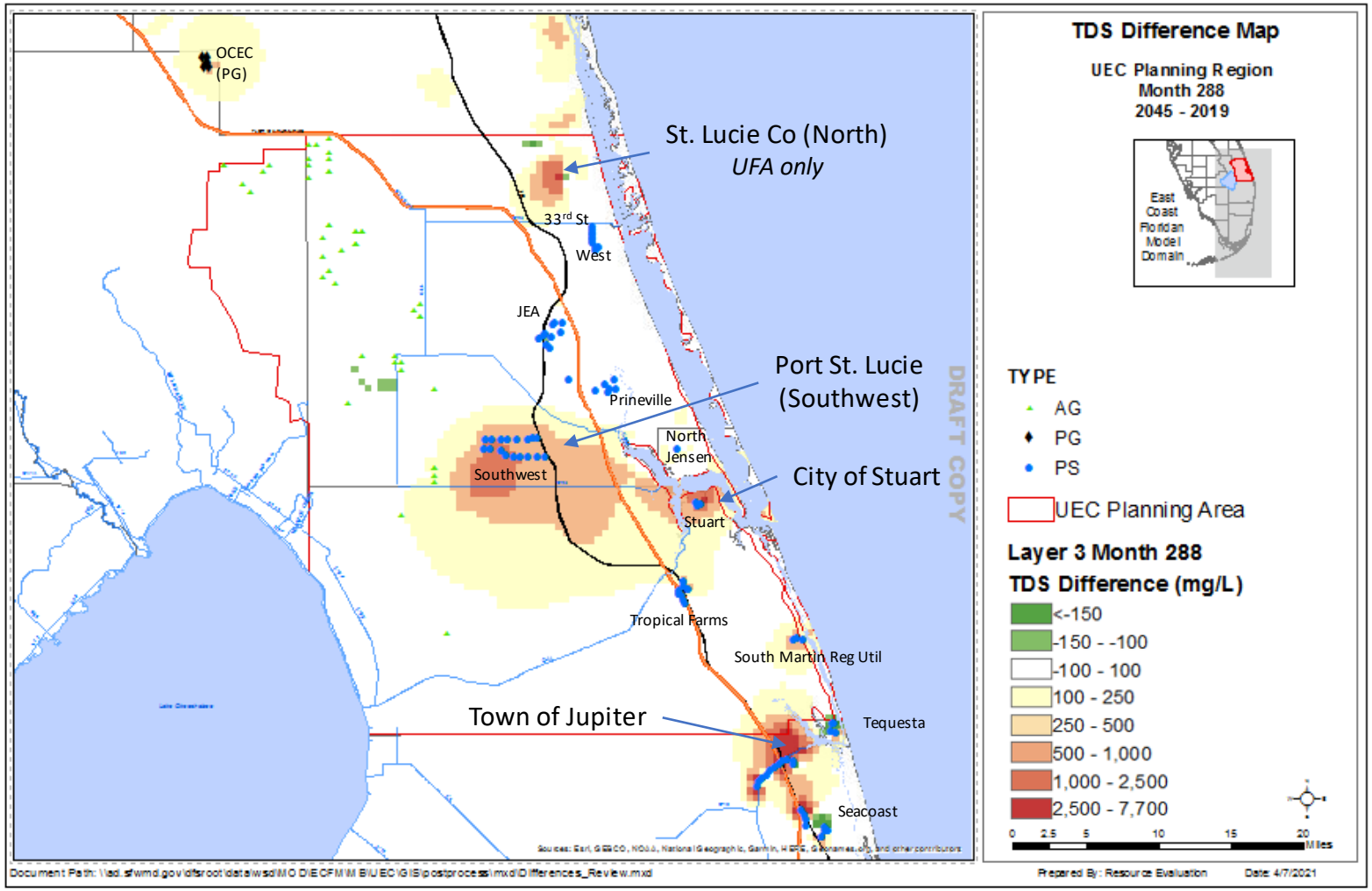
Avon Park Permeable Zone Water Level Difference (2045 – 2019)



- Up to 3 feet of drawdown at St. Lucie Co (North Wellfield). 4 mgd UFA demand
- Approx 2 feet of drawdown at City of Stuart wellfield. 2.6 mgd APPZ demand
- Approx 2 feet of rebound at Port St. Lucie Utility (JEA Wellfield). 0.52 mgd decrease
- Approx 1 foot of rebound in western St Lucie Co due to AG demand reduction

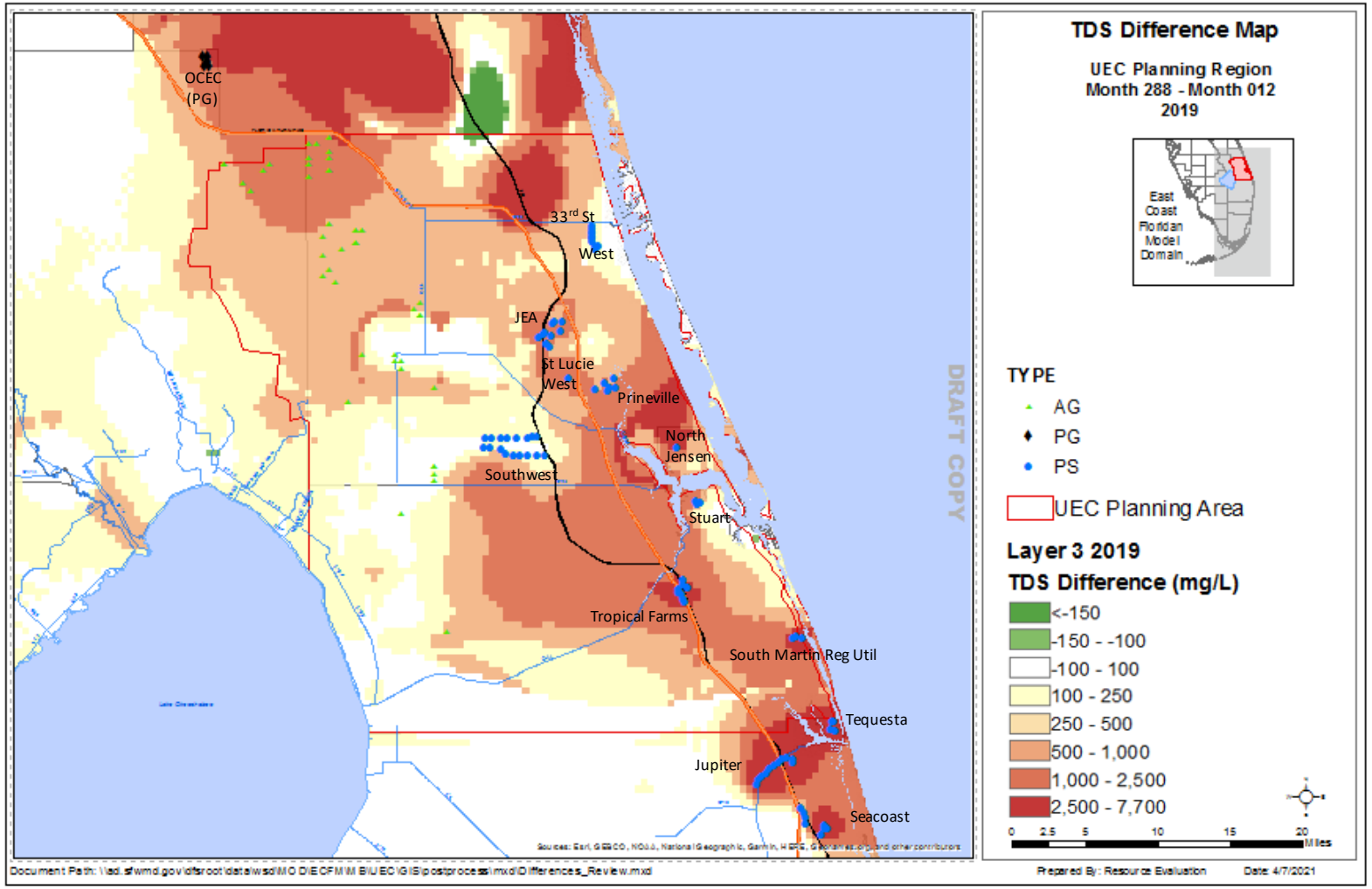
Avon Park Permeable Zone Water Quality (TDS) Difference (2045 – 2019)

- St. Lucie County (North Wellfield)
  - No wells in the APPZ
  - TDS increases as high as 1,000 mg/L
- Port St. Lucie (Southwest Wellfield)
  - Increase in TDS as high as 700 mg/L
  - 2019 demand = 0 mgd
  - 2045 demand = 9.43 mgd
- City of Stuart
  - Increase in TDS as high as 1,040 mg/L
  - 2.6 mgd APPZ demand in 2045



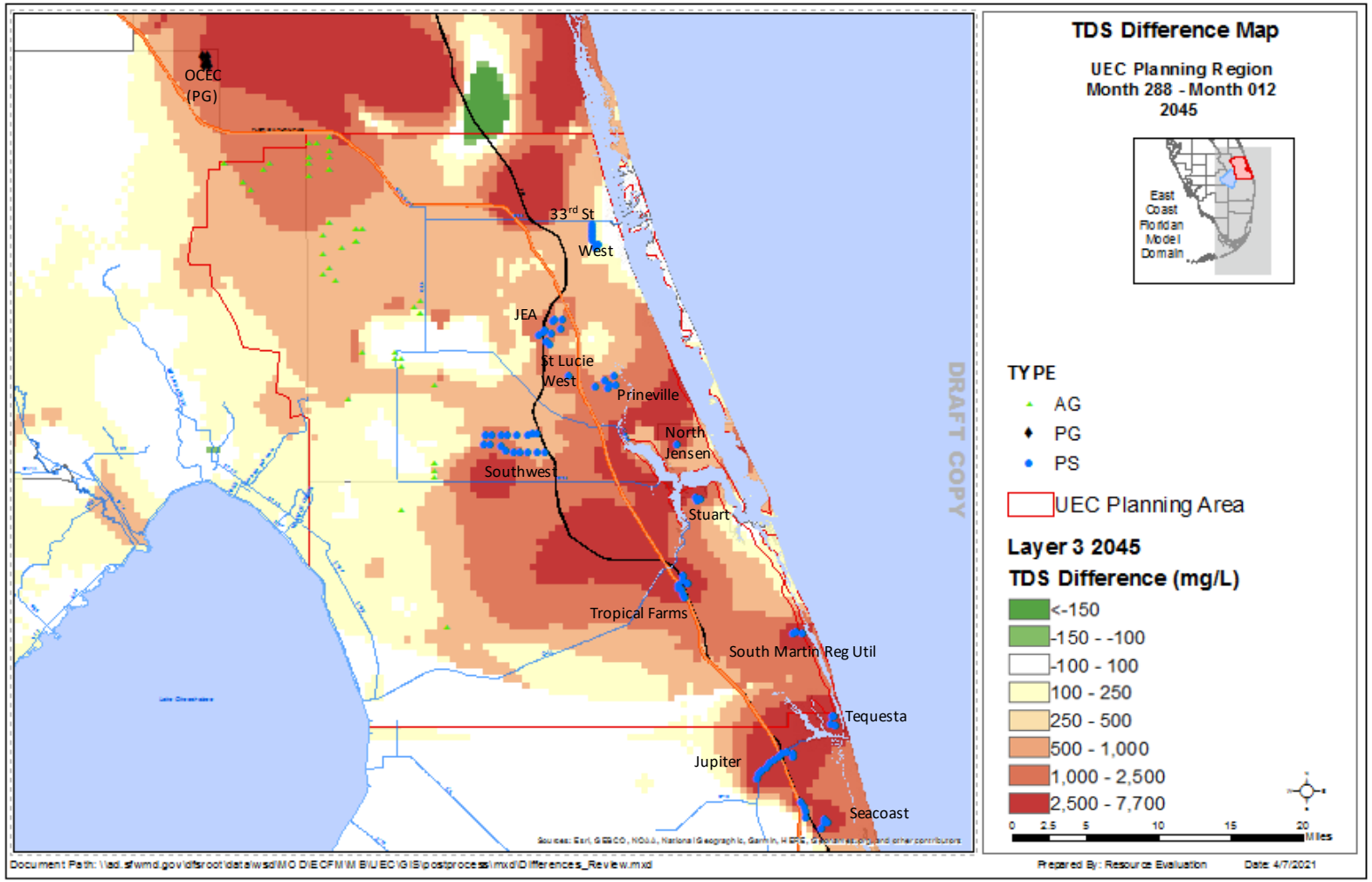
Avon Park Permeable Zone Water Quality (TDS) Difference in 2019

- Difference in TDS concentrations within the ECFM **2019** scenario model run (Year 1 to 24)
- Highest TDS concentration within the UEC Planning Area = 2,300 mg/L near Village of Tequesta wellfield
  - *Demand = 1.99 mgd in 2019*

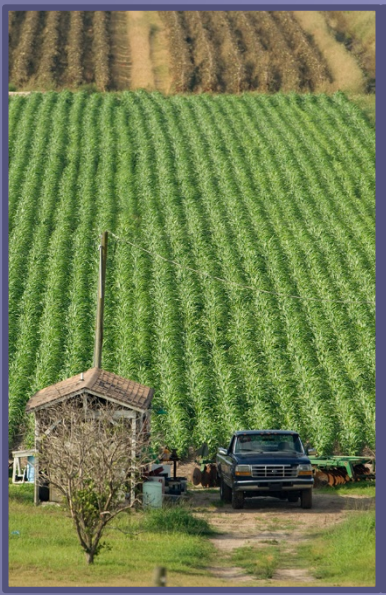


Avon Park Permeable Zone Water Quality (TDS) Difference in 2045

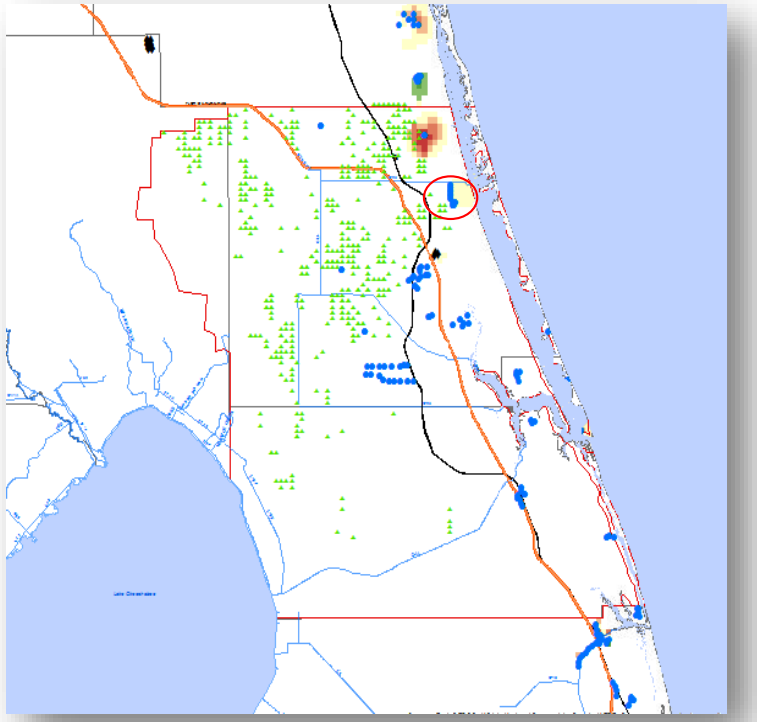
- Difference in TDS concentrations within the ECFM **2045** scenario model run (Year 1 to 24)
- Highest TDS concentration within the UEC Planning Area = 2,800 mg/L near Town of Jupiter wellfield
  - *Demand = 8.27 mgd in 2045*

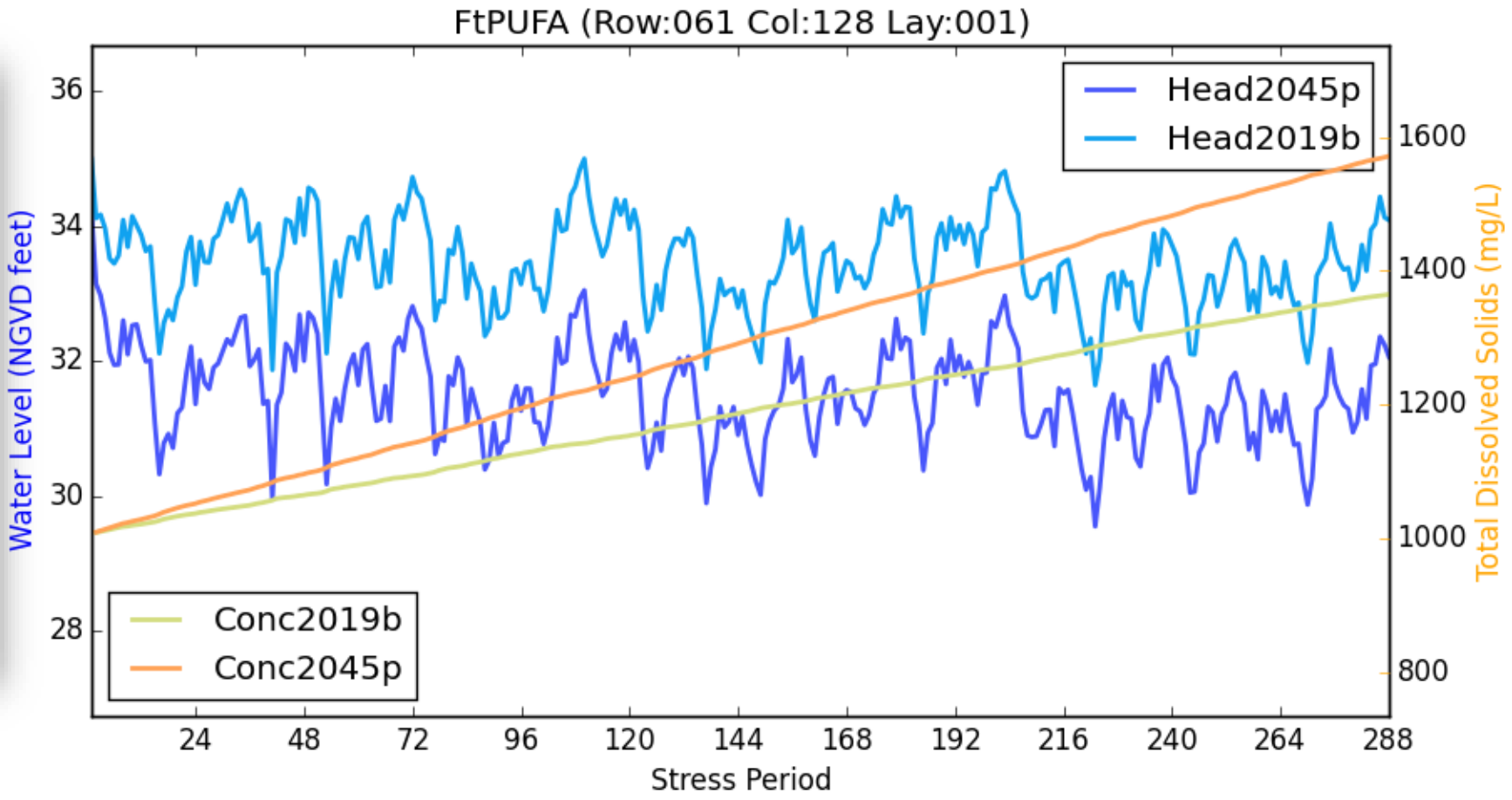


Individual Monitoring Well Hydrographs

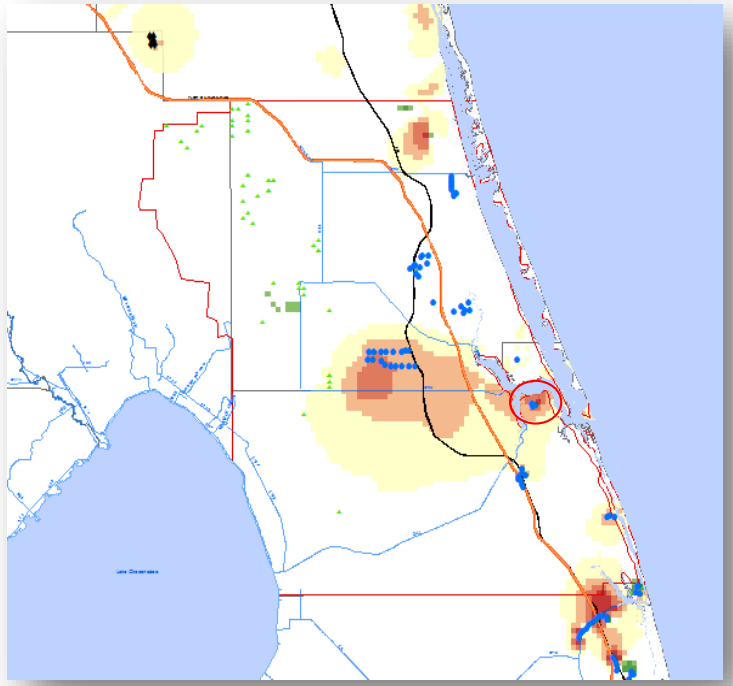


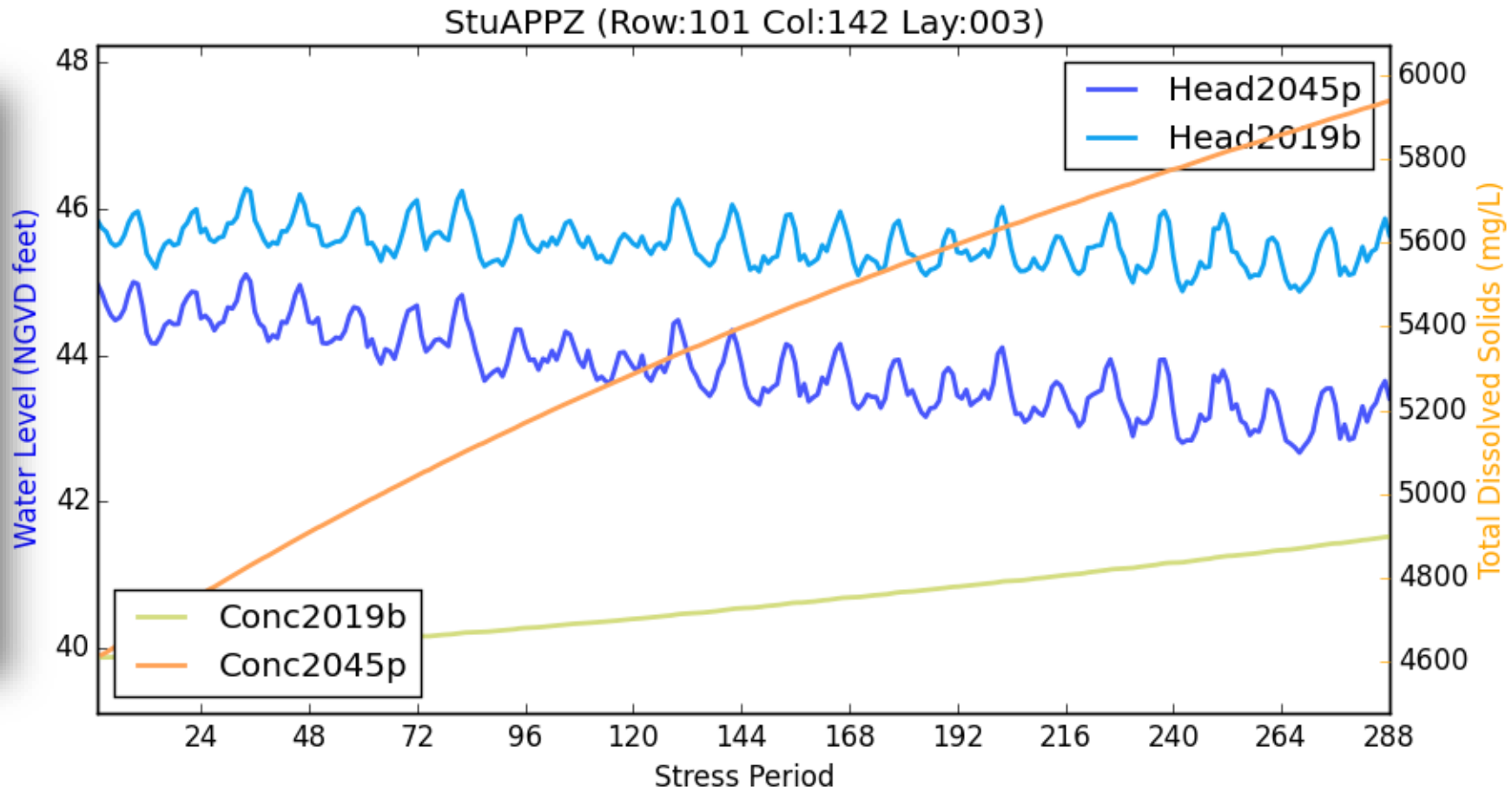

Upper Floridan Aquifer Near Fort Pierce Util Auth





Avon Park Perm Zone Near City of Stuart Wellfield





Model Conclusions

- Water Levels
  - UFA – Except for northeastern St. Lucie County, predicted drawdown in most of the UFA are less than 2.5 ft
  - APPZ – Less than 1.5 ft of drawdown predicted throughout the UEC Planning Area, except in northeastern St. Lucie County where a 3 ft decrease predicted

- Water Quality
  - UFA – Except for northeastern St. Lucie County, predicted TDS changes in the UFA are less than 250 mg/L
  - APPZ
    - Potential 500-1,000 mg/L increase in TDS with 2019 demands in central and eastern Martin County and southeastern St. Lucie County over 24 year simulation period
    - Potential upward movement of APPZ water into the UFA may degrade water quality in northeastern St. Lucie County
    - Additional 700-1,040 mg/L increase from 2019 to 2045 in TDS predicted at Port St. Lucie's Southwest Wellfield, Stuart, and St. Lucie County Utilities North Wellfield; less than 250 mg/L everywhere else

- FAS appears capable of meeting projected demands of all users through 2045 with appropriate wellfield management

Modeling Team

- Mirza Billah, Ph.D., E.I.T.
- Rob Earle
- Uditha Bandara, Ph.D., P.E.

Questions and Public Comment

- If you are participating via Zoom:
  - Use the Raise Hand feature
- If you are participating via phone:
  - *9 raises hand
  - *6 mutes/unmutes your line
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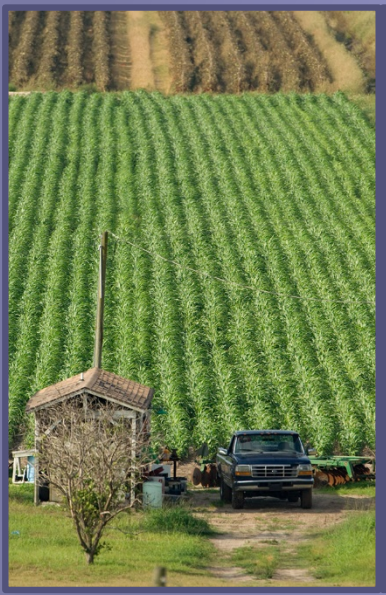
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

2021 Upper East Coast Water Supply Plan Update

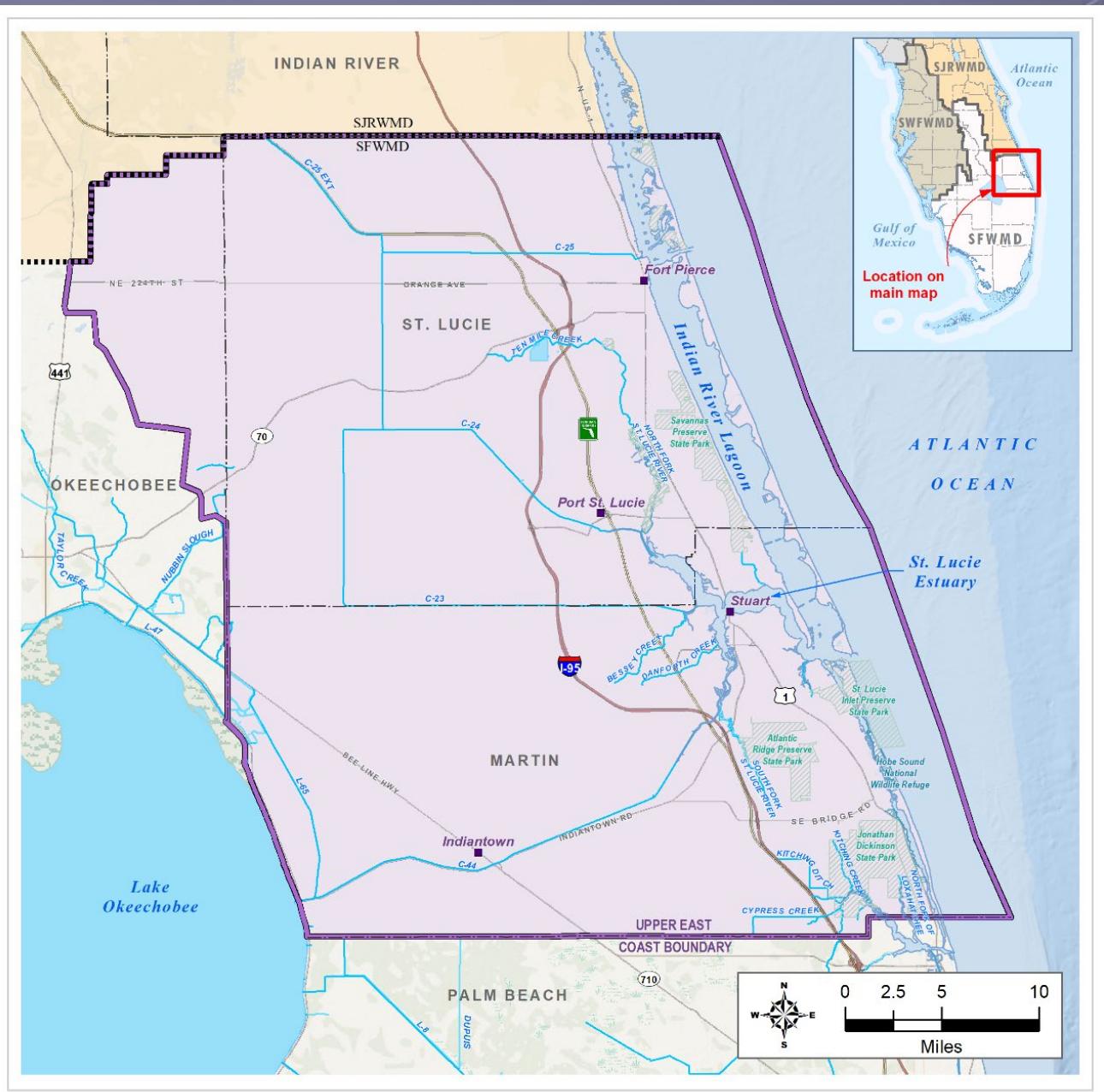



Nancy Demonstranti, P.G.

Upper East Coast Plan Manager, SFWMD

UEC Planning Area

- All of Martin and St. Lucie counties and the northeastern portion of Okeechobee County
- 1,230 square miles
- 15 public supply utilities
- Major agricultural industry
- Important natural and water resources
  - C-23, C-24, C-25, and C-44 canals
  - St. Lucie River and Estuary
  - Indian River Lagoon
  - North Fork of the Loxahatchee River



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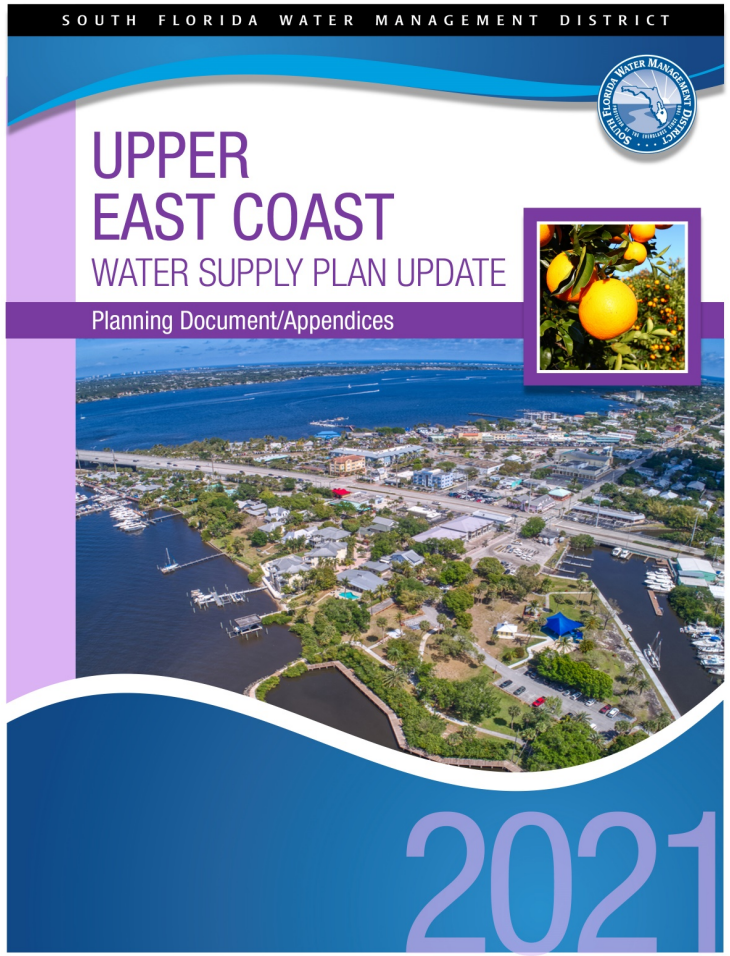
Public Participation

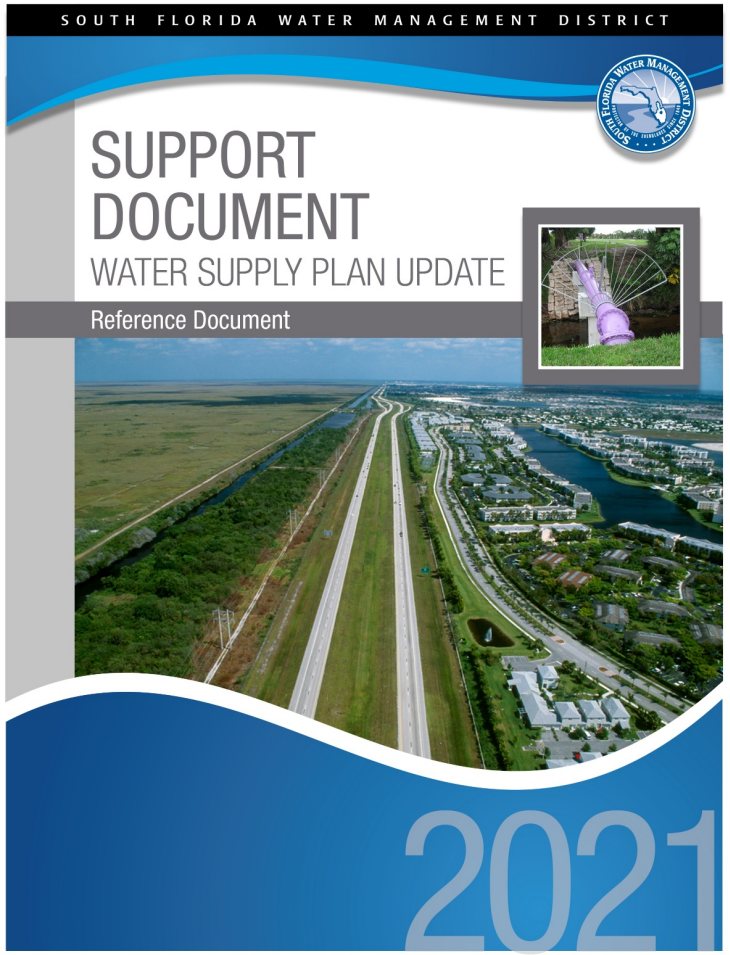
- Governing Board updates
- Two stakeholder workshops and one technical model workshop
- Discussions with local government, agricultural, and utility representatives
- Draft plan documents posted online August 25, 2021, for public comment
- Written comments due back **October 1, 2021**

2021 Upper East Coast Water Supply Plan Update Documents

Planning Document/Appendices



Support Document



Planning and Support Document Outlines

Executive Summary

Chapter 1: Introduction

Chapter 2: Demand Estimates and Projections

Chapter 3: Demand Management – Water Conservation

Chapter 4: Water Resource Protection

Chapter 5: Water Source Options

Chapter 6: Water Resource Analyses

Chapter 7: Water Resource Development Projects

Chapter 8: Water Supply Development Projects

Chapter 9: Conclusions and Future Direction

Appendices:

- A: Water Demand Projections
- B: Public Supply Utility Summaries
- C: St. Lucie Estuary MFL and Prevention Strategy
- D: Groundwater Monitoring and Analysis
- E: Wastewater Treatment Facilities

Support Document:

- Chapter 1: Introduction
- Chapter 2: Water Conservation
- Chapter 3: Water Use Permitting
- Chapter 4: Water Resource Protection
- Chapter 5: Ecosystem Restoration and Water Resource Development
- Chapter 6: Water Source Options and Treatment
- Appendix: Conservation Glossary

Statutory Goal of Water Supply Plans (Section 373.709, F.S.)

*To identify sufficient water supply sources and future projects to meet existing and future reasonable-beneficial uses during 1-in-10-year drought conditions through **2045** while sustaining water resources and related natural systems.*


Downtown Stuart

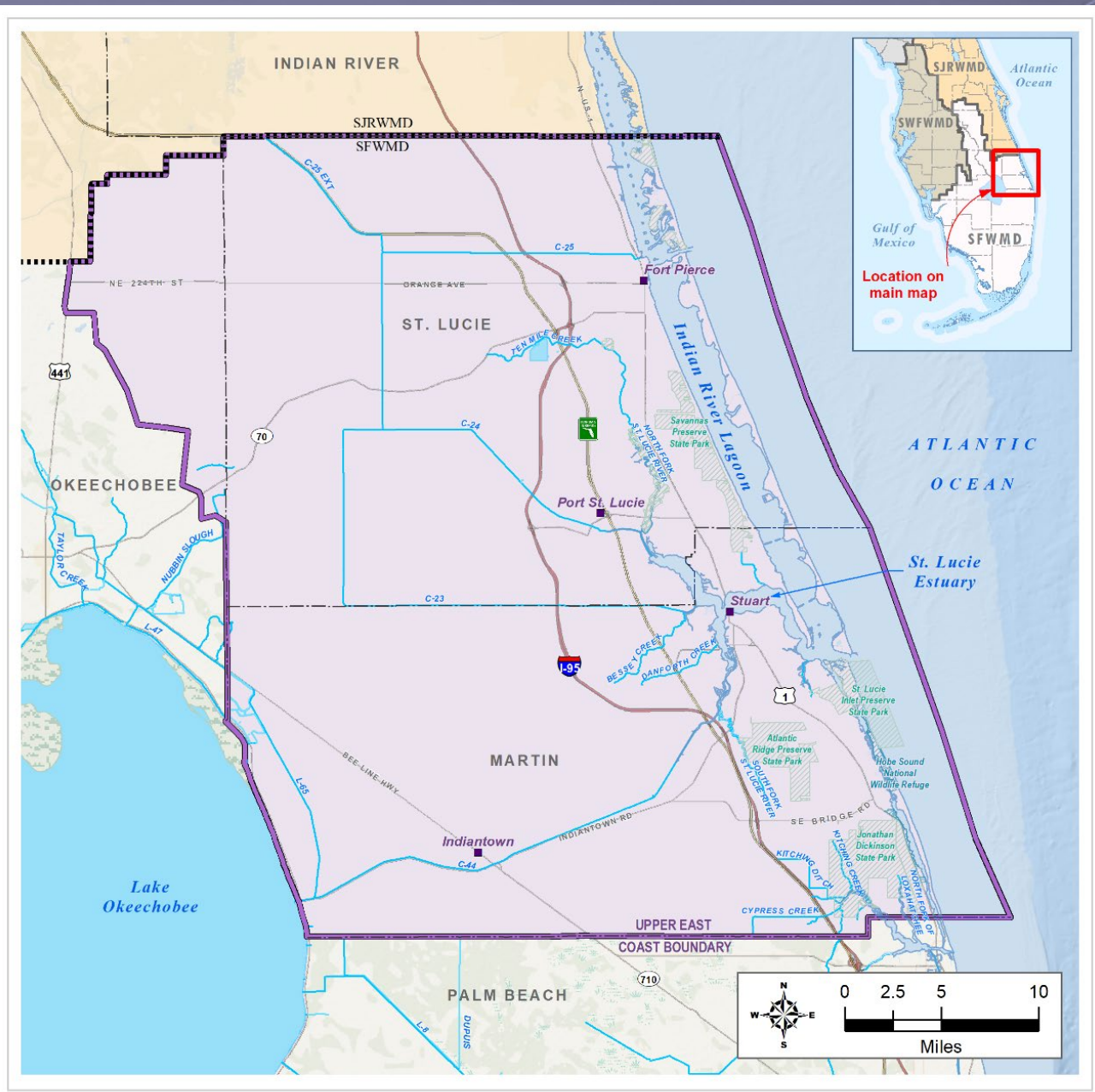
2021 UEC Plan Update Objectives

- Identify water supplies
- Increase water conservation & alternative water source development
- Protect & enhance natural systems
- Ensure compatibility and linkage with other efforts
- Provide linkage with local governments

South Fork of the St. Lucie River

UEC Planning Area

- Population:
  - 2019 468,499
  - 2045 686,409
  - 47% increase
- Irrigated agricultural acreage:
  - 2019 107,383
  - 2045 79,004
  - 26% decrease
- Gross water demands:
  - 2019 291.11 mgd
  - 2045 281.18 mgd
  - 3% decrease



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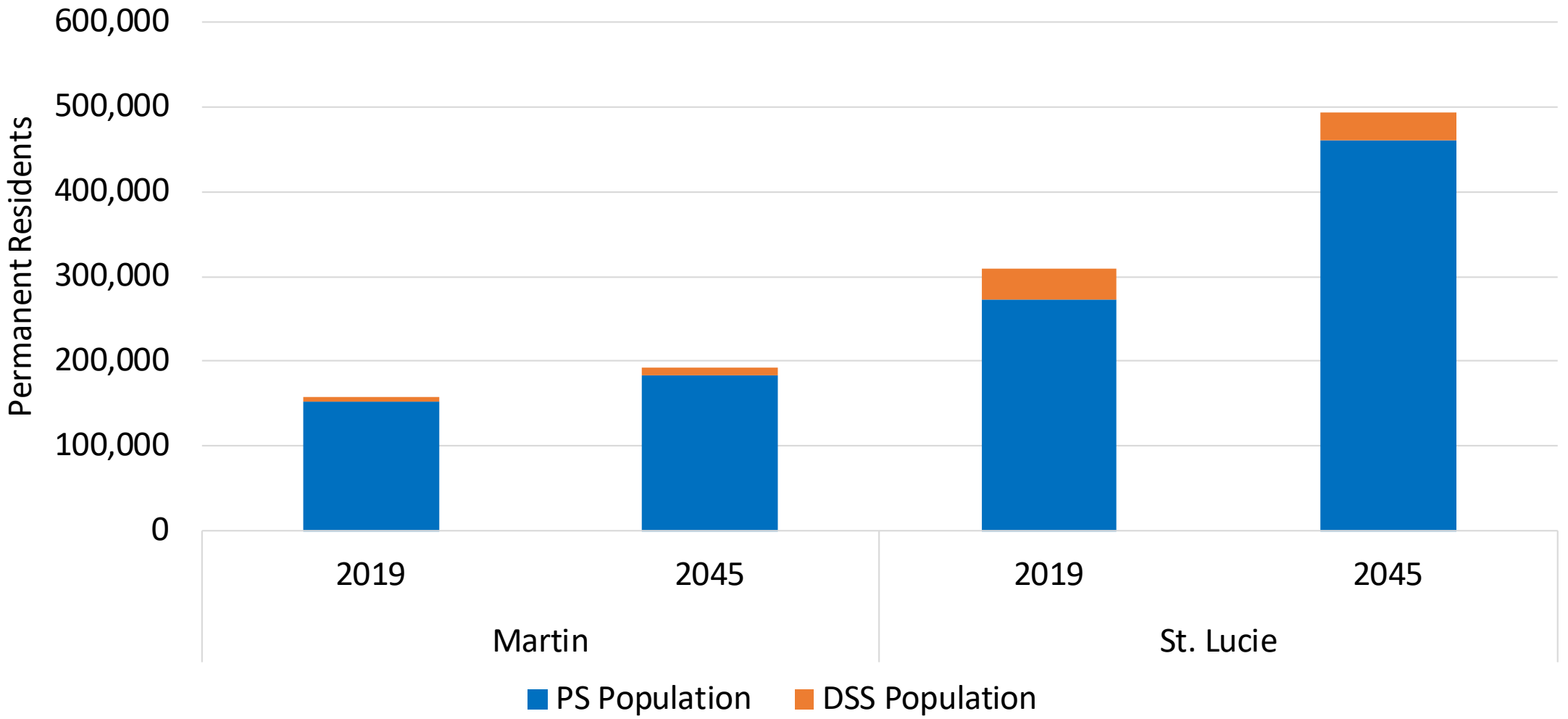
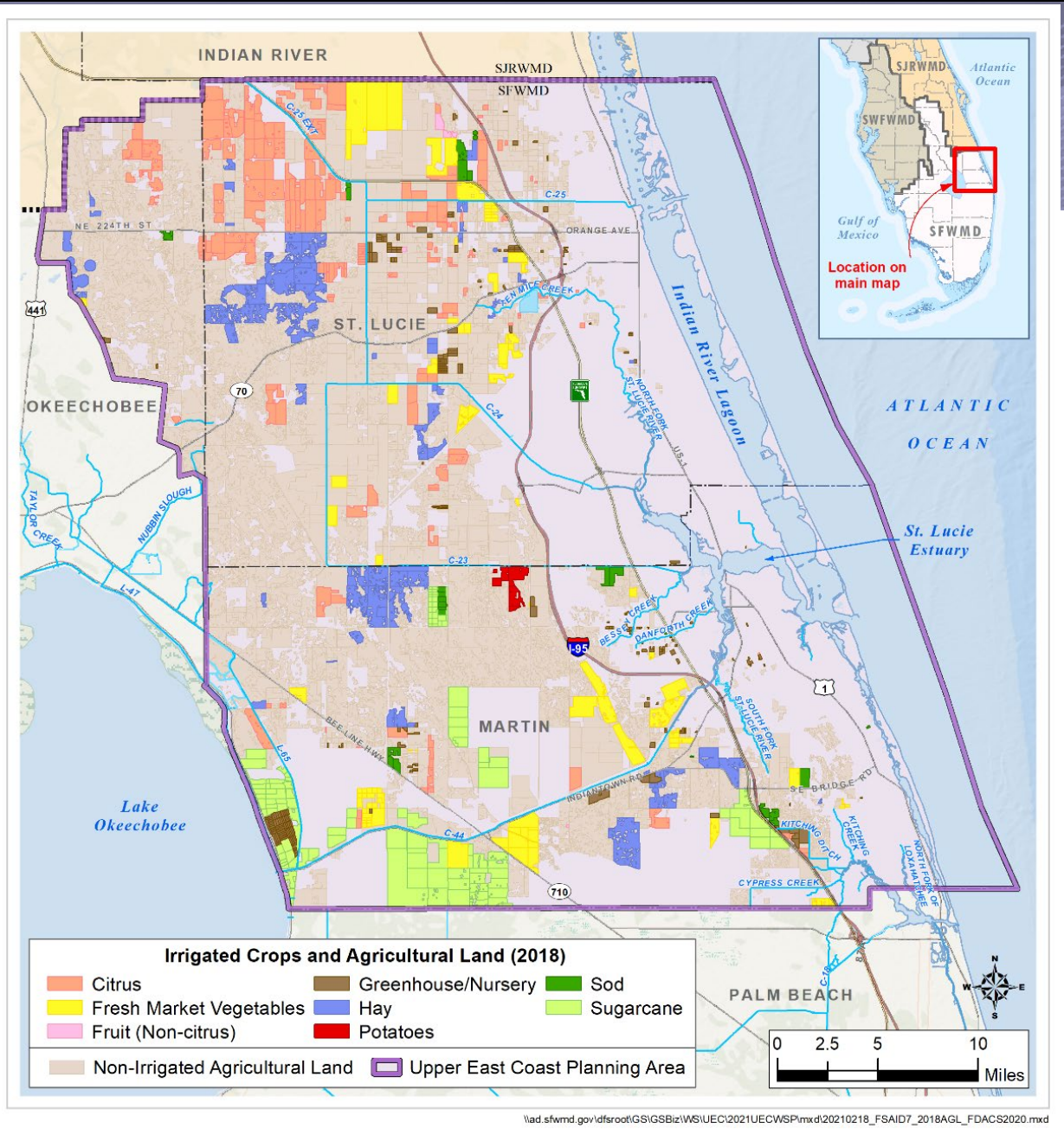
Population Projections

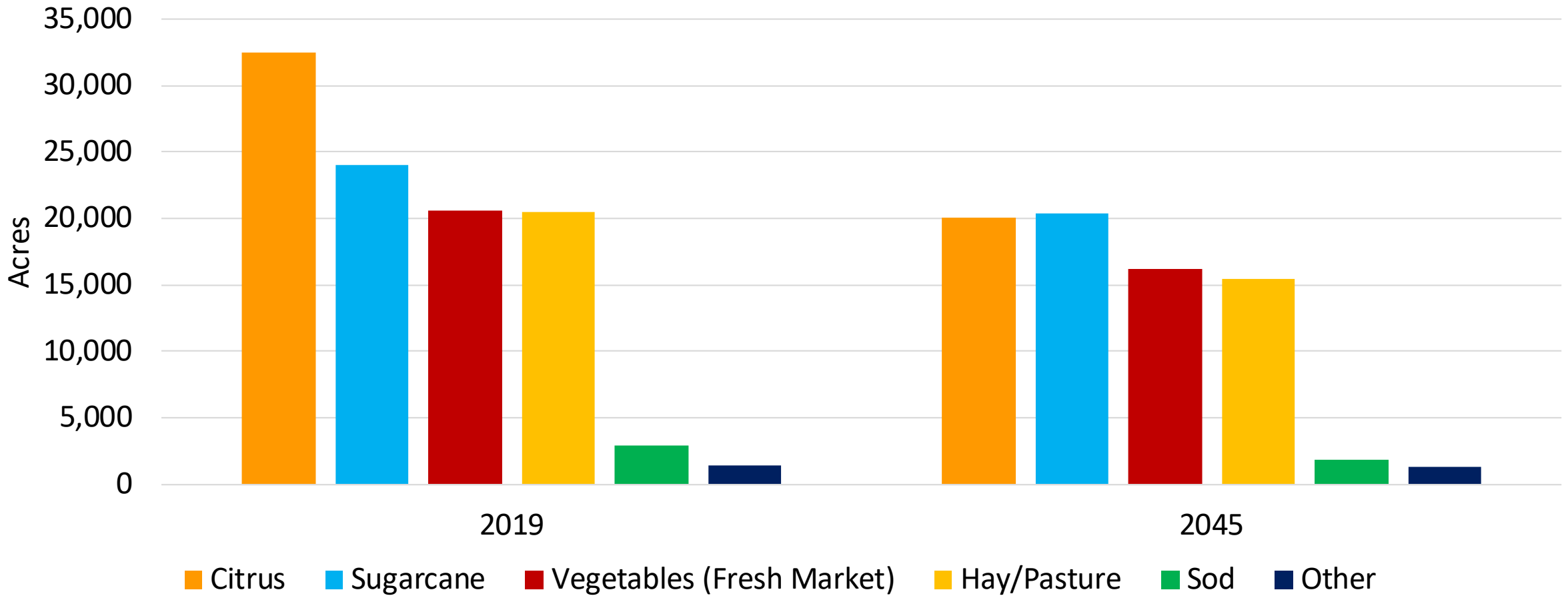


Irrigated Agricultural Areas



Data from: Florida Department of Agriculture and Consumer Services (FDACS) Florida Statewide Agricultural Irrigation Demands Geodatabase (FSAID)

Agricultural Acreage (FSAID)



* Other category includes sod, greenhouse/nursery, field crops, fruit (non-citrus), and potatoes.

Agriculture Demands Summary

Agriculture Subcategory	2019	2045
Crops	172.74	128.12
Livestock	1.91	1.91
Aquaculture	0.07	0.07
UEC Planning Area Total	**174.72**	**130.10**

Demands presented in million gallons per day under average rainfall conditions.

Total Water Demands Summary

Water Use Category	2019	2045
Public Supply	56.26	81.62
Domestic Self-Supply	5.76	5.61
Agriculture	174.72	130.10
Commercial/Industrial/Institutional	4.43	5.74
Landscape/Recreational	32.03	40.64
Power Generation	17.91	17.47
UEC Planning Area Total	**291.11**	**281.18**

Demands presented in million gallons per day under average rainfall conditions.

Water Conservation

- Agriculture
  - FDACS best management practices
  - More efficient irrigation systems
- Public supply
  - Indoor and outdoor programs
  - Conservation rate structures
- Public supply per capita use rate (gallons per capita per day)

2000	167
2014-19	130

22% decrease

look for WaterSense Meets EPA Criteria

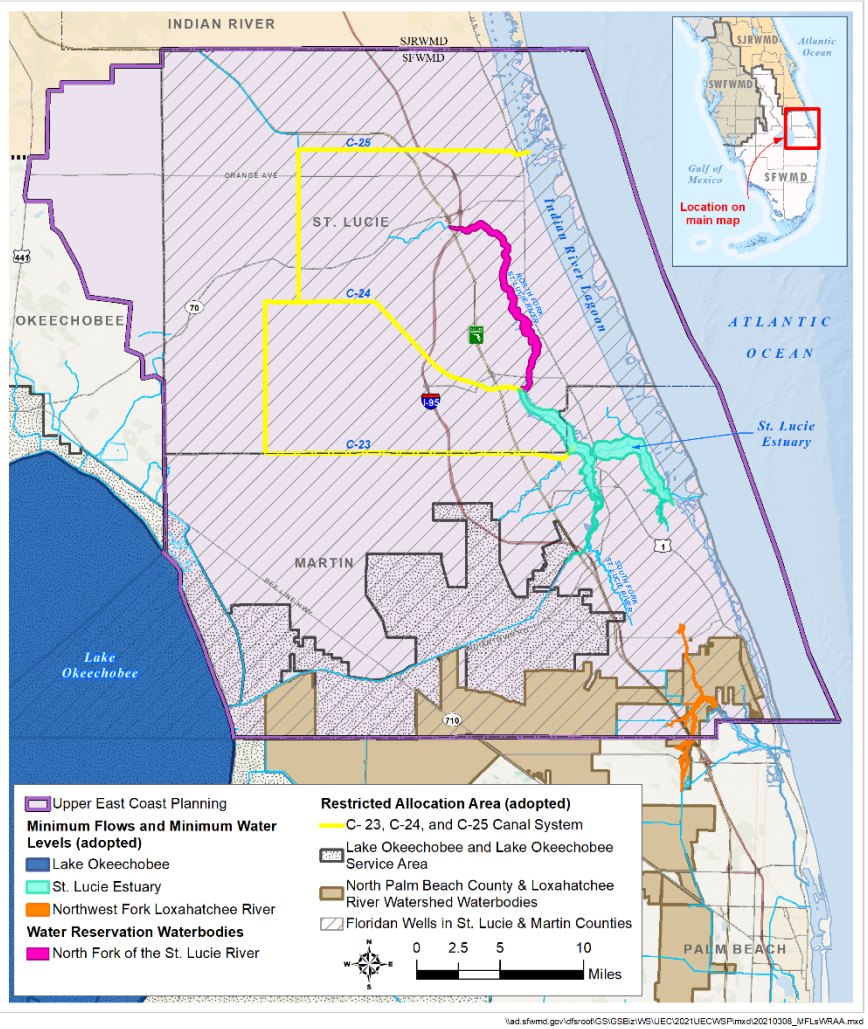
- 12 mgd potential savings through conservation
  - Urban – 6 mgd
  - Agriculture – 6 mgd

The cheapest gallon of water is the gallon we don't use

Water Resource Considerations

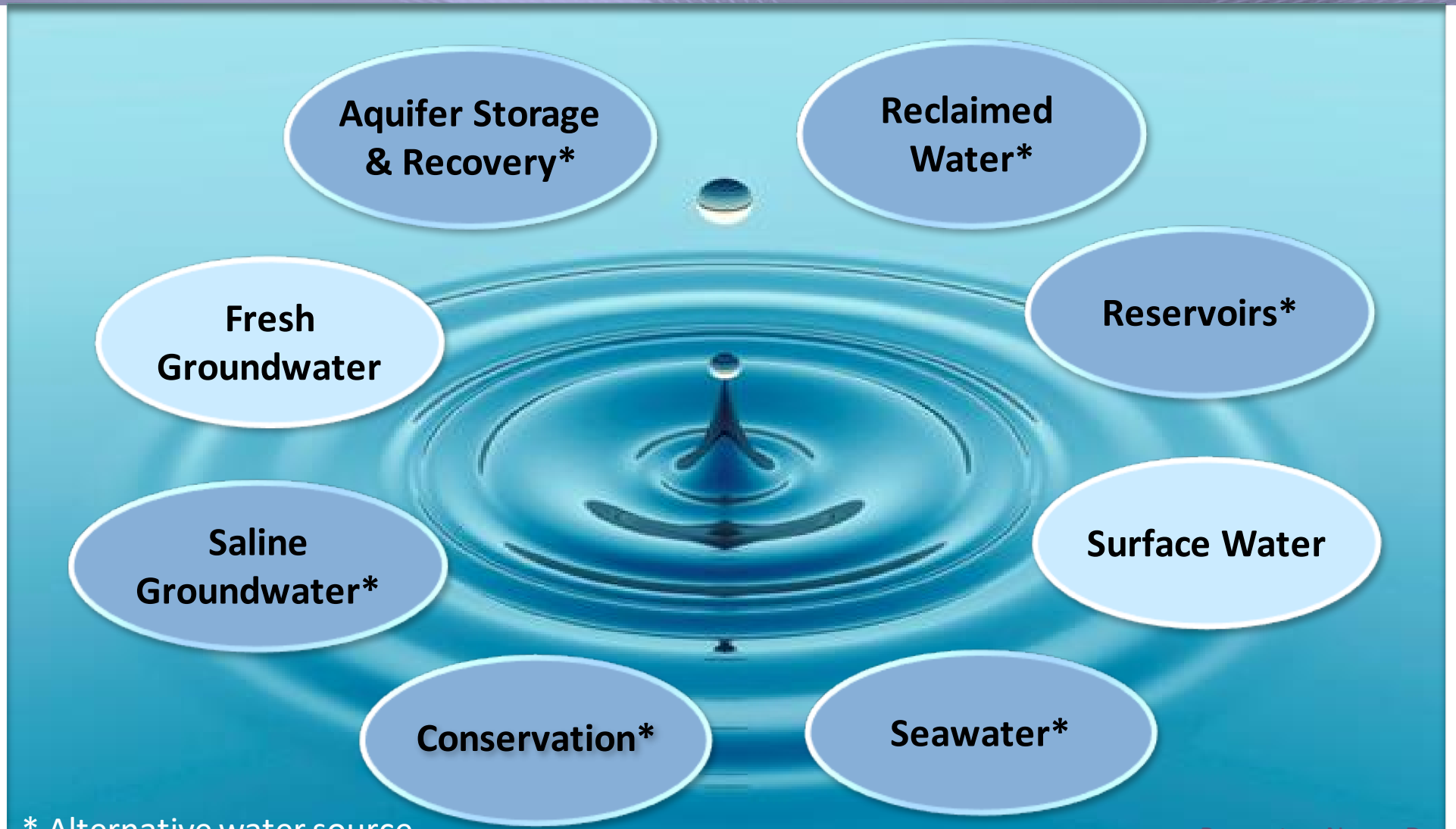
- In many areas, especially coastal areas, large increases in withdrawals from the surficial aquifer system are limited due to low aquifer productivity
- Regulatory limitations on surface water availability
  - C-23, C-24, and C-25 canals
  - Lake Okeechobee Service Area (including C-44 Canal)
  - Freshwater discharges affecting coastal resources
  - Timing and volume
- Long-term availability of the Floridan aquifer system
- Climate change and sea level rise

Water Resource Protection



- Minimum Flows and Minimum Water Levels
  - St. Lucie Estuary
  - North Fork of Loxahatchee River (Lower East Coast)
  - Lake Okeechobee (Lower East Coast)
- Water Reservations
  - North Fork of the St. Lucie River
- Restricted Allocation Areas
  - C-23, C-24 and C-25 canal system
  - Lake Okeechobee Service Area
  - North Palm Beach County and Loxahatchee River Watershed waterbodies
  - Floridan wells in Martin and St. Lucie counties

Water Source Options & Alternatives



* Alternative water source

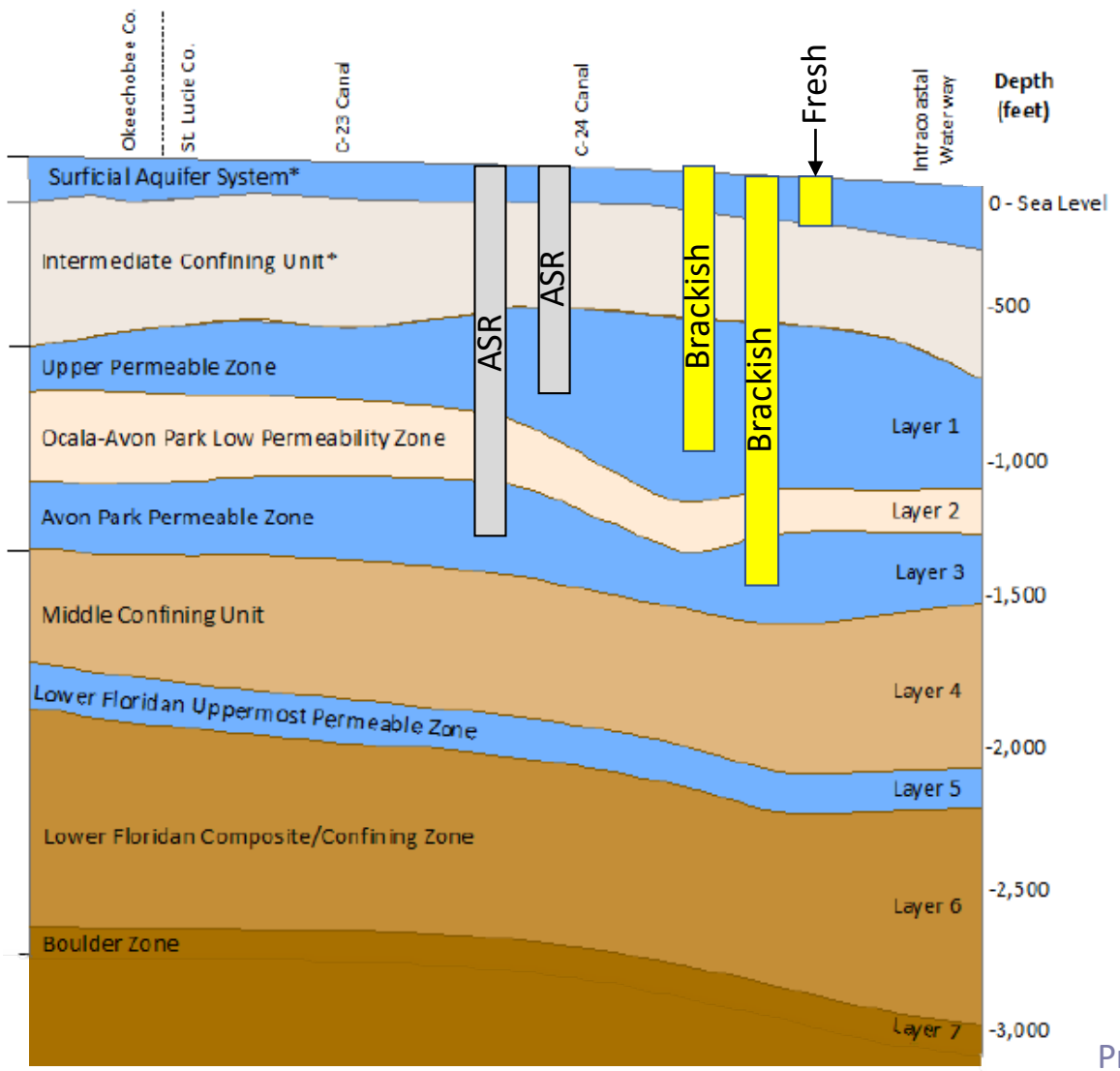
Water Source Options

Category	Surface Water	Fresh Groundwater	Brackish Groundwater	Reclaimed Water	Storage
Public Supply		✓	✓		✓
Domestic Self-Supply		✓			
Agriculture	✓	✓	✓		✓
Landscape/Recreational	✓	✓	✓	✓	✓
Commercial/Industrial/Institutional	✓	✓		✓	✓
Power Generation	✓	✓	✓	✓	✓

Groundwater Sources

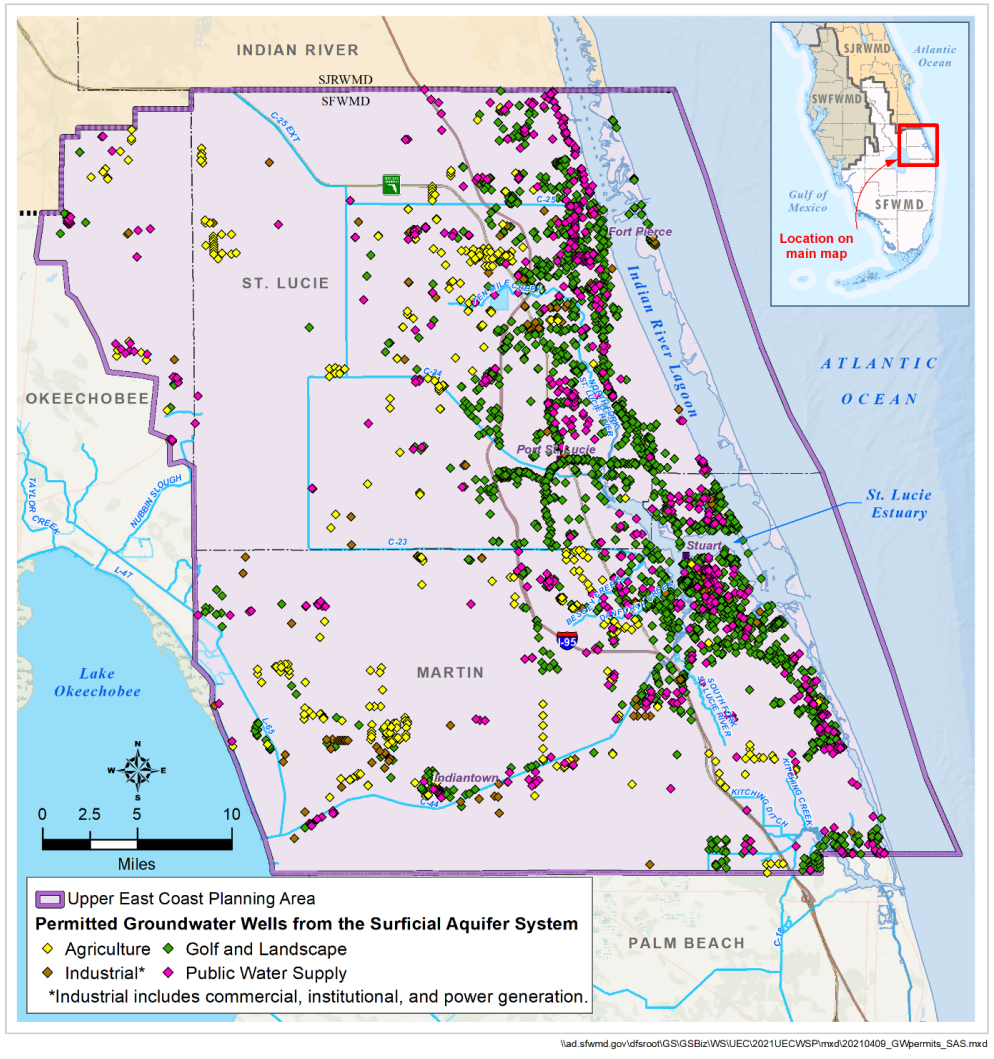
Surficial Aquifer System

Floridan Aquifer System



Presenter: Nancy Demonstranti

Surficial Aquifer Wells



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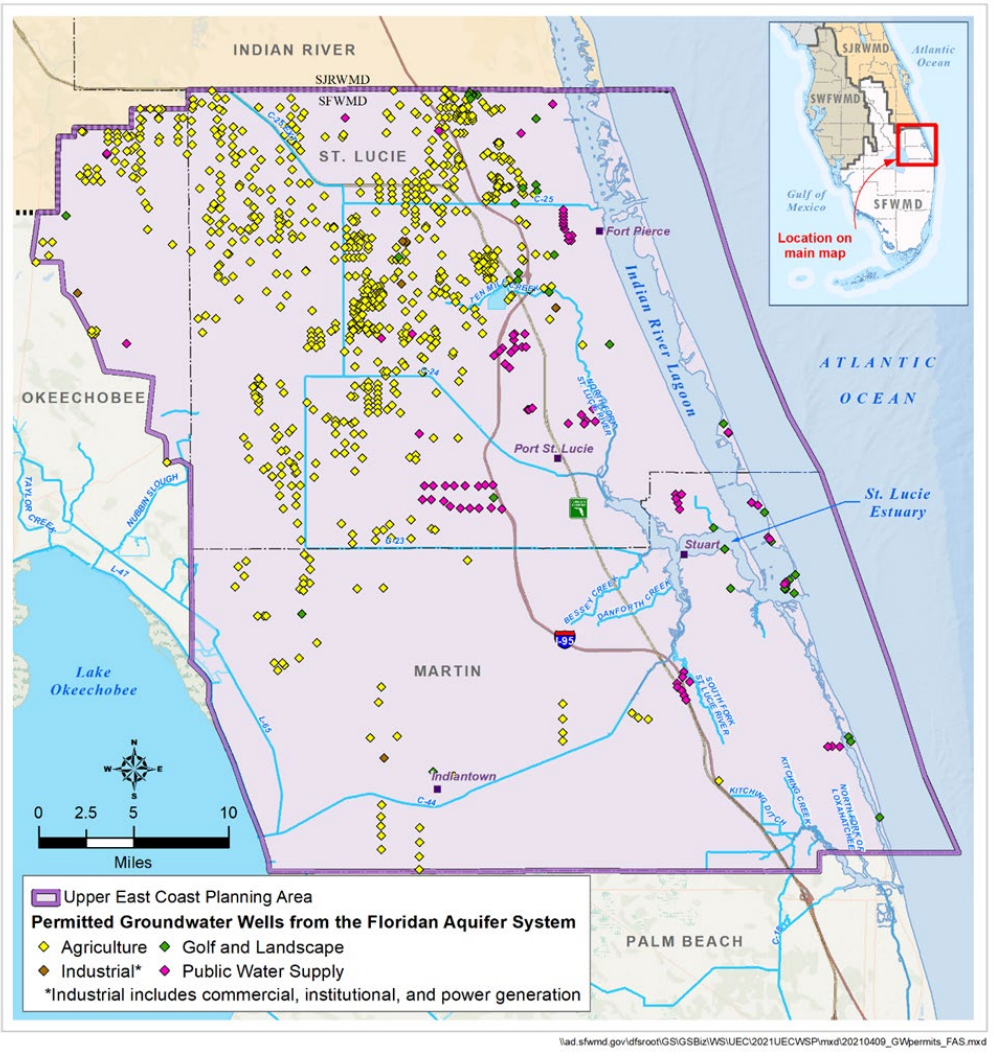
Floridan Aquifer Wells



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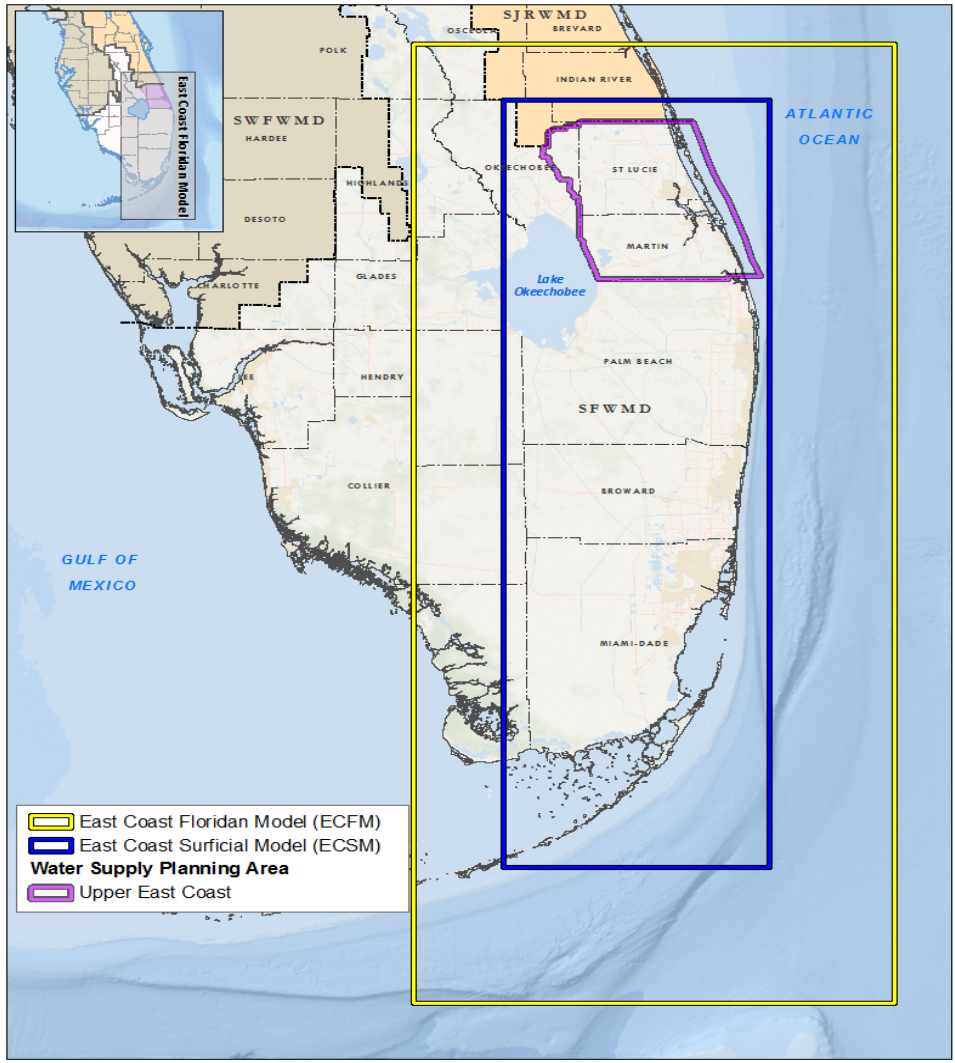
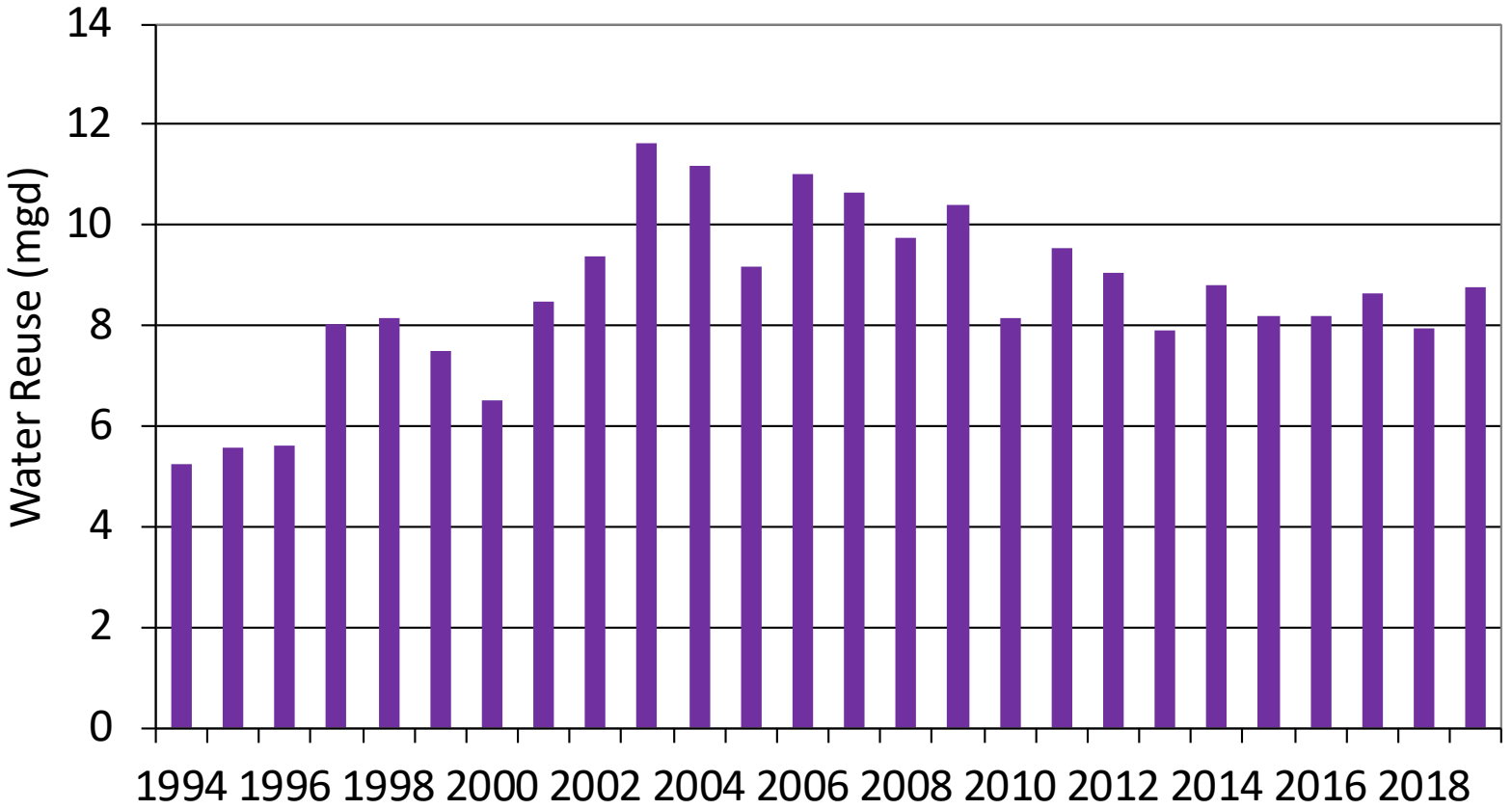
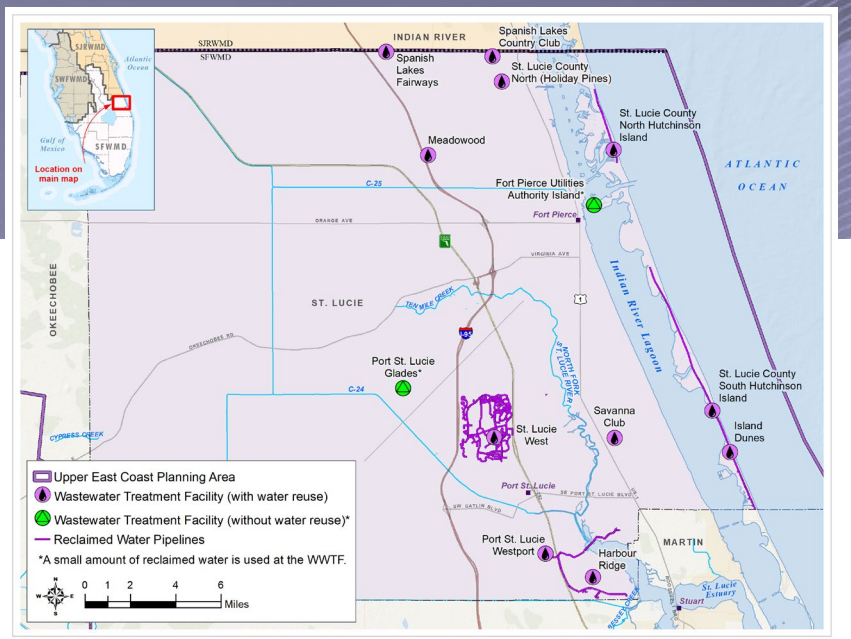
Groundwater Resource Evaluation & Analysis

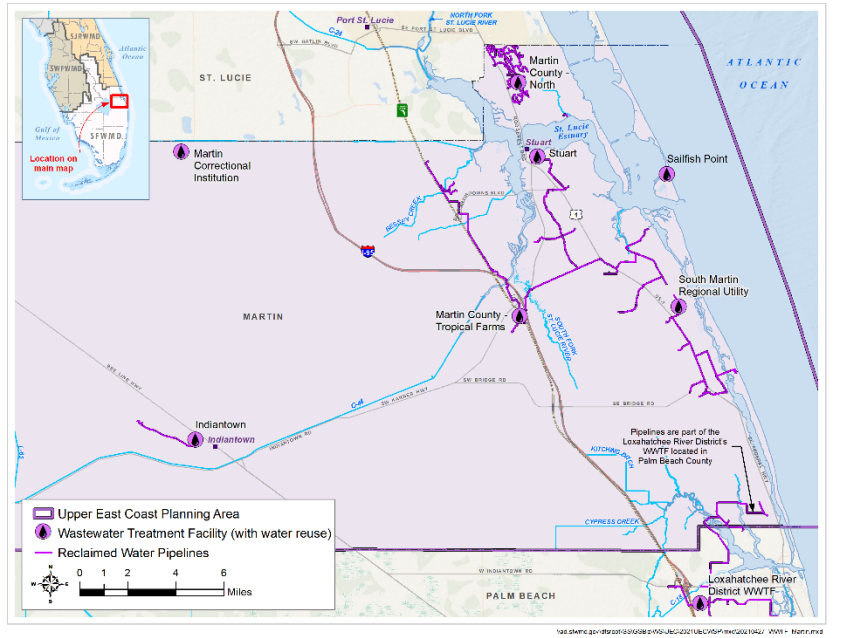
- Data sources:
  - Water use permit information
  - Regulatory limits on surface water withdrawals
  - Groundwater model scenarios
  - Groundwater level and salinity monitoring data
  - Demand estimates and projections
- Minimal increases in projected demands from the surficial aquifer system through 2045
  - East Coast Surficial Model under development
- East Coast Floridan Model
  - 20 mgd increase in FAS demands (2019-2045)



Water Reuse





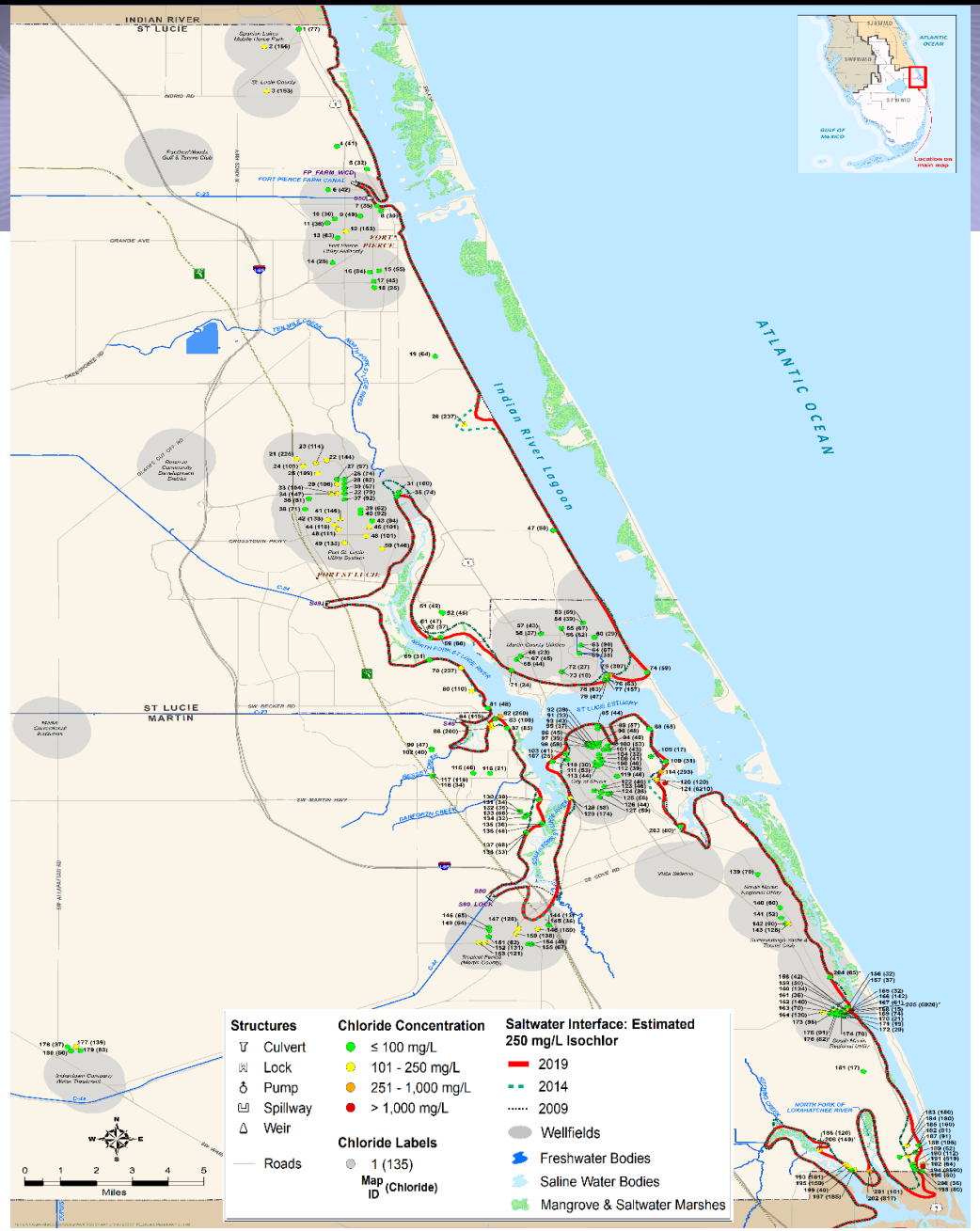


Presenter: Nancy Demonstranti

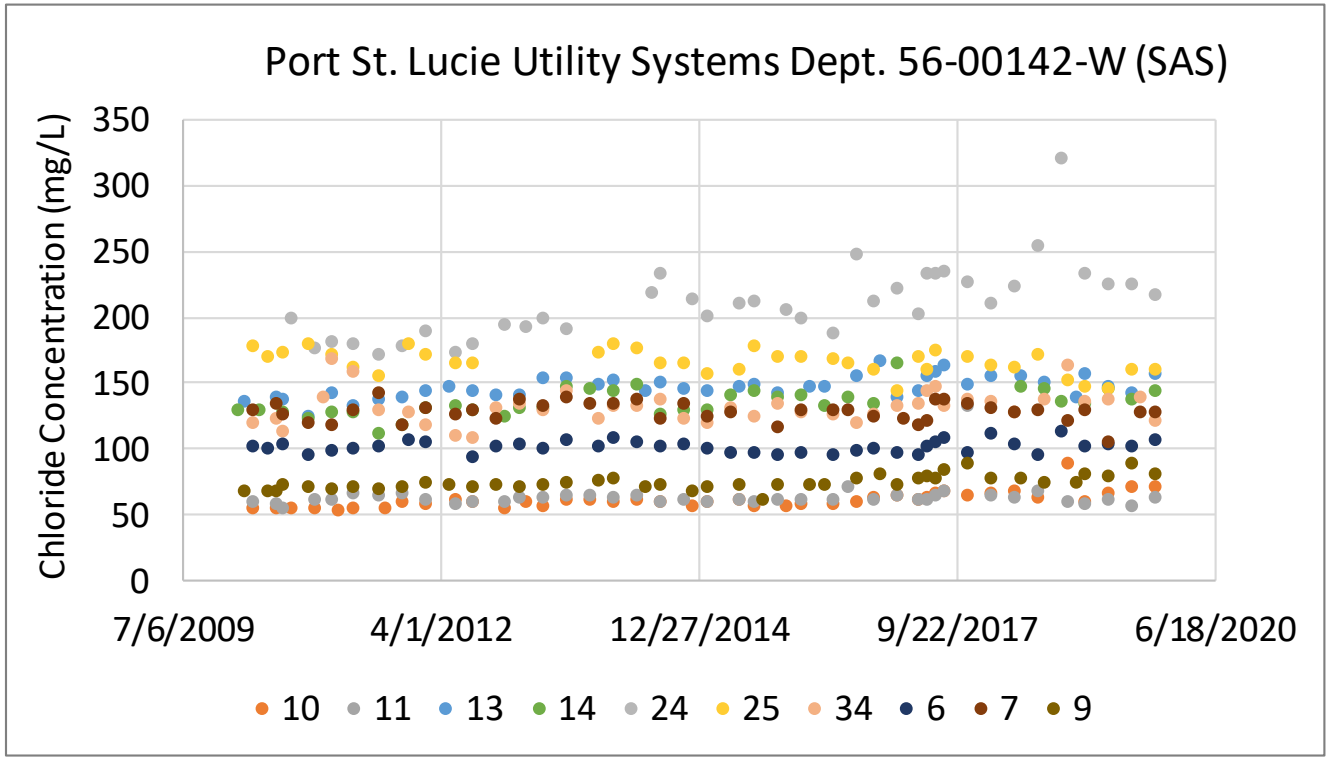
Sea Level Rise and Climate Change

- South Florida is particularly vulnerable
- Rate of sea level rise is predicted to accelerate
- The SFWMD is preparing by:
  - Conducting research
  - Performing computer simulations
  - Analyzing vulnerabilities in the current water management system and developing adaptation strategies
  - Developing East Coast Surficial Model scenarios
- Coordinate with other local and state agencies and stakeholders

Saltwater Intrusion



- Saltwater interface maps
  - Updated in 2009, 2014 and 2019 by SFWMD
- Chloride graphs



Presenter: Nancy Demonstranti

Water Resource Development Projects


Indian River Lagoon

- Implementation of CERP and other projects*
- Resource protection rules
- Hydrogeologic investigations
- Groundwater monitoring and modeling
- Alternative water supply and conservation programs

* *MFL recovery and prevention strategies rely on CERP implementation.*

Water Supply Development

- 16 proposed projects
- Potable
  - Most utilities have sufficient capacity and permit allocations to meet 2045 demands
  - 8 projects proposed by 4 utilities
  - Only 1 utility needs projects to meet 2045 demand projections or treatment requirements
- Nonpotable
  - 8 projects proposed by 4 utilities

Water Supply Projects Summary

Source	Number of Proposed Projects	Capacity (mgd)
Surface water/stormwater*	4	28.89
Surficial aquifer system	0	0.00
Floridan aquifer system	7	29.86
Aquifer storage and recovery	1	7.50
Reclaimed water**	4	17.20
Total	**16**	**83.45**

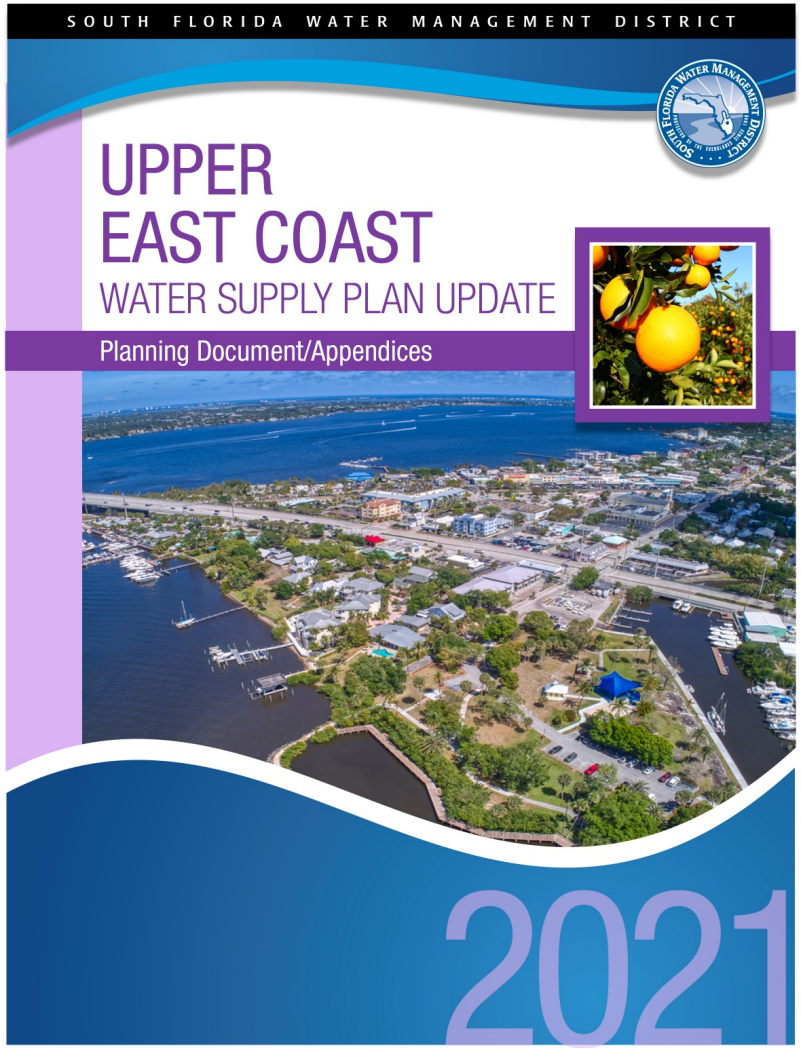
* Includes potable and nonpotable projects.

** Reclaimed water is not used as a potable water source in the UEC Planning Area; however, it is an alternative water supply used to reduce reliance on traditional water sources.

Future Direction

- Continue implementation of:
  - SAS and FAS monitoring programs
  - Water conservation programs
  - Alternative water supply development projects
  - CERP and other ecosystem restoration projects
- Evaluate, monitor, and design solutions in response to sea level rise and climate trends
  - Complete East Coast Surficial Model
- Implement long-term management measures for the FAS in coordination with utilities
- Coordinate with other agencies, local governments, and utilities on water supply elements

Draft Plan Conclusion



The future water needs of the region can continue to be met through the 2045 planning horizon with appropriate management, conservation, and implementation of projects in this plan.

- Construction of potable water supply development projects by one PS utility.
- Implementation of the CERP Indian River Lagoon – South Project and other ecosystem restoration projects.

Next Steps

- *August 25* — *Posted draft documents*
- *September 3* — *Stakeholder meeting #2*
- September 9 — Presentation to Governing Board
- October 1 — Deadline for external comments
- November 10 — Final plan to Governing Board for consideration

Questions and Public Comment

Written comments are due by October 1, 2021, to:

Nancy Demonstranti

Upper East Coast Plan Manager

ndemonst@sfwmd.gov

(561) 682-2563

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