



# Withlacoochee Regional Water Supply Authority

Water Supply Plan Update #10  
February 15 – April 15

# Presentation Topics

- The First Draft of the Water Supply Plan will be Delivered to the Technical Advisory Committee and the Water Management Districts by May 1<sup>st</sup>.
- Today's Presentation is an Overview of the Most Important Information in the Plan

# Highlights of the Draft Water Supply Plan

- Demand Projections
- Water Source Evaluation
  - Water Conservation
  - Reclaimed Water
  - Groundwater
  - Surface Water
  - Seawater Desalination
- Results of Regional Groundwater Modeling
- Results of Modeling Potential Impacts from the Four Proposed Wellfields
- Water Supply Potential of the Lower Floridan Aquifer

# Public Supply Demand Projections (2010-2035)

County	2010 Water Use (mgd)	Increase in Demand from 2010-2035 (mgd)
Citrus	16.9	5.5
Hernando	22.1	6.0
Marion	37.5	16.7
Sumter	22.9	14.2
TOTALS	<b>99.4</b>	<b>42.4</b>

# Demand Projections for All Use Categories (2010-2035)

Use Category	2010 Water Use (mgd)	Increase in Demand from 2010-2035 (mgd)	2035 Water Use (mgd)
Public Supply	99.4	42.4	141.8
Domestic	29.1	26.8	55.8
Industrial Commercial	17.7	4.8	22.6
Recreational	23.6	13.5	37.1
Agriculture	17.7	3.2	20.2
TOTALS	186.8	90.7	277.5

# Water Source Evaluation

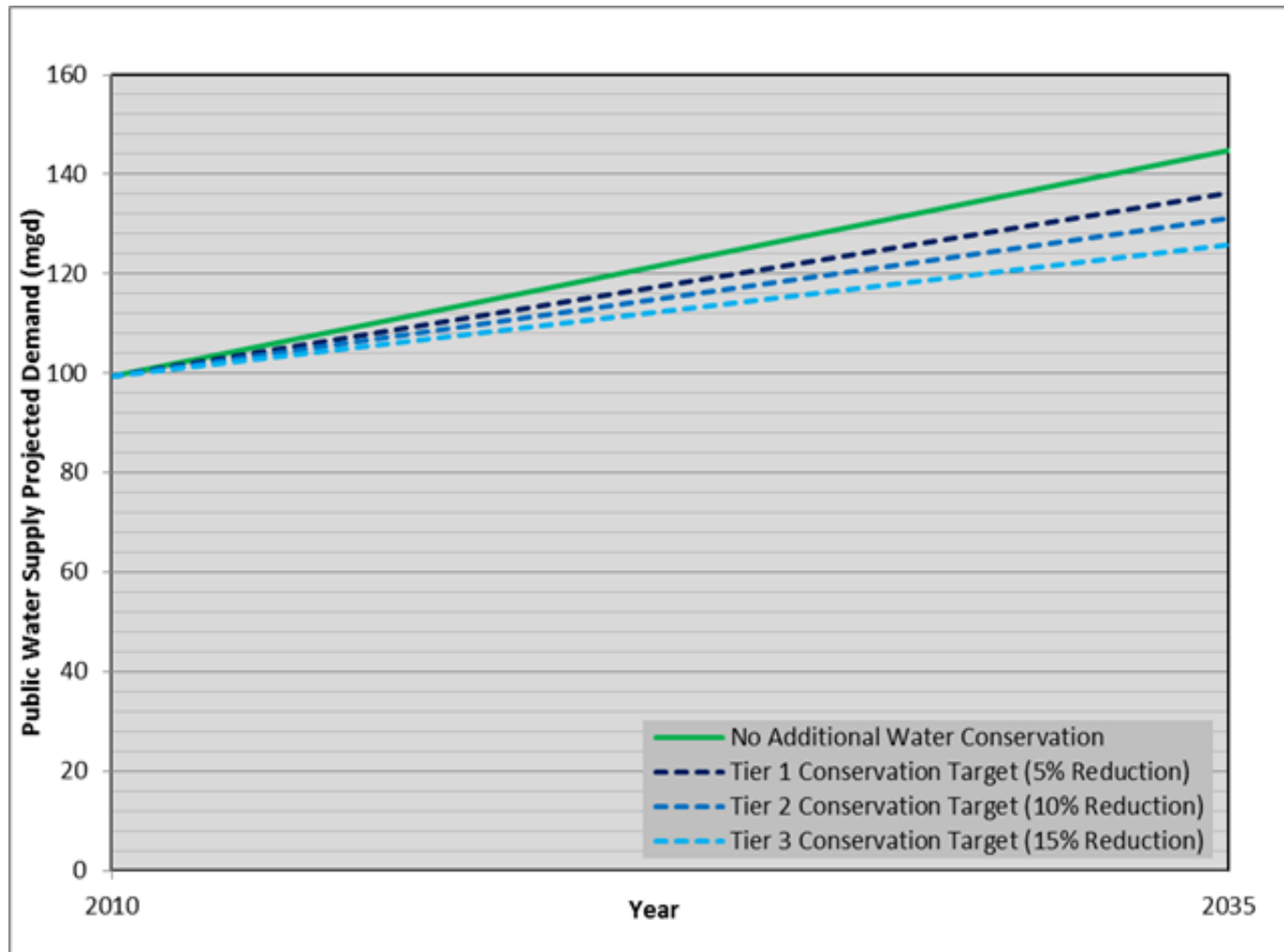
- The Availability of Water from all Sources by 2035 was Quantified
  - Public Supply Water Conservation
  - Reclaimed Water
  - Groundwater
  - Surface Water
  - Seawater Desalination

# Water Source Evaluation

## Potential Water Supply Availability in 2035

Source	Potential Quantity in 2035
Public Supply Water Conservation	13.5
Reclaimed Water	4.9
Groundwater	90.7
Surface Water (Withlacoochee & Ocklawaha Rivers)	65.6
Seawater Desalination	15.0
Total	<b>189.5</b>

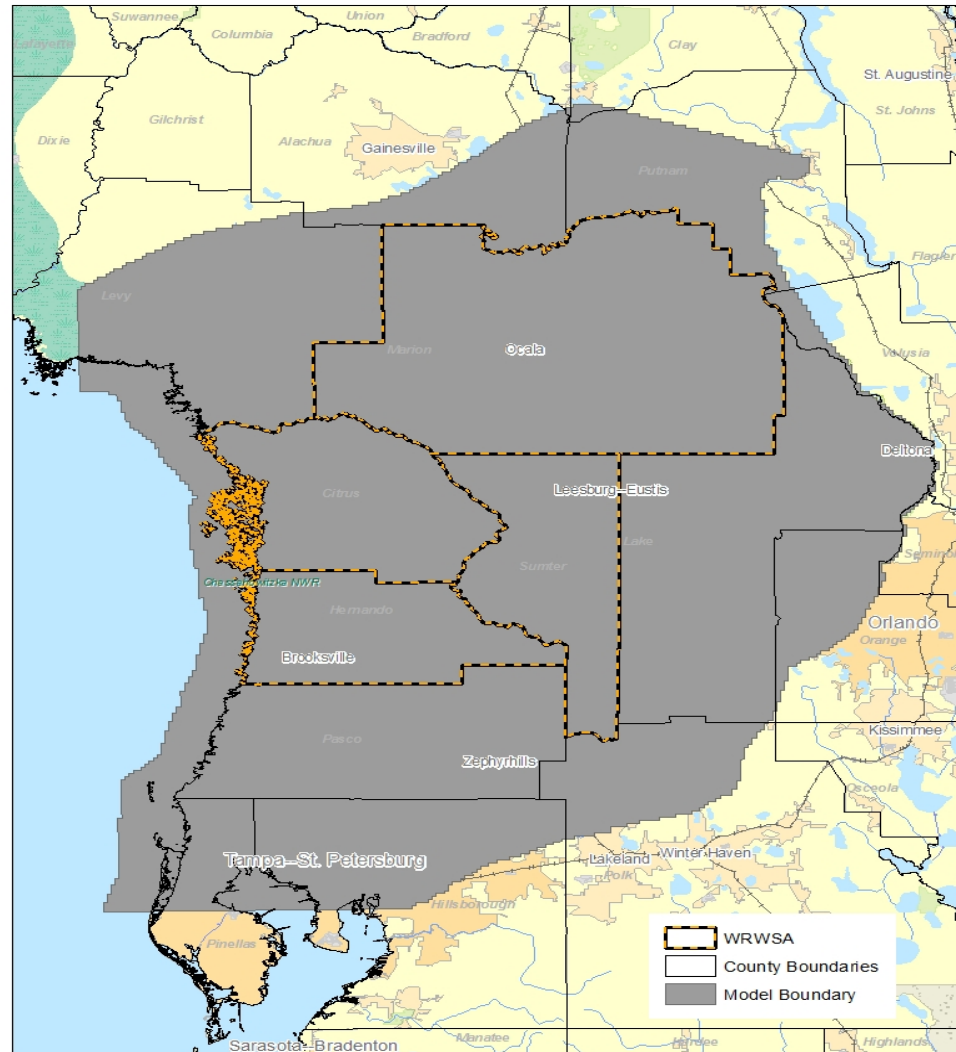
# Public Supply Water Conservation Potential





# Regional Groundwater Modeling

## Northern District Model Boundary



# Results of Regional Groundwater Modeling

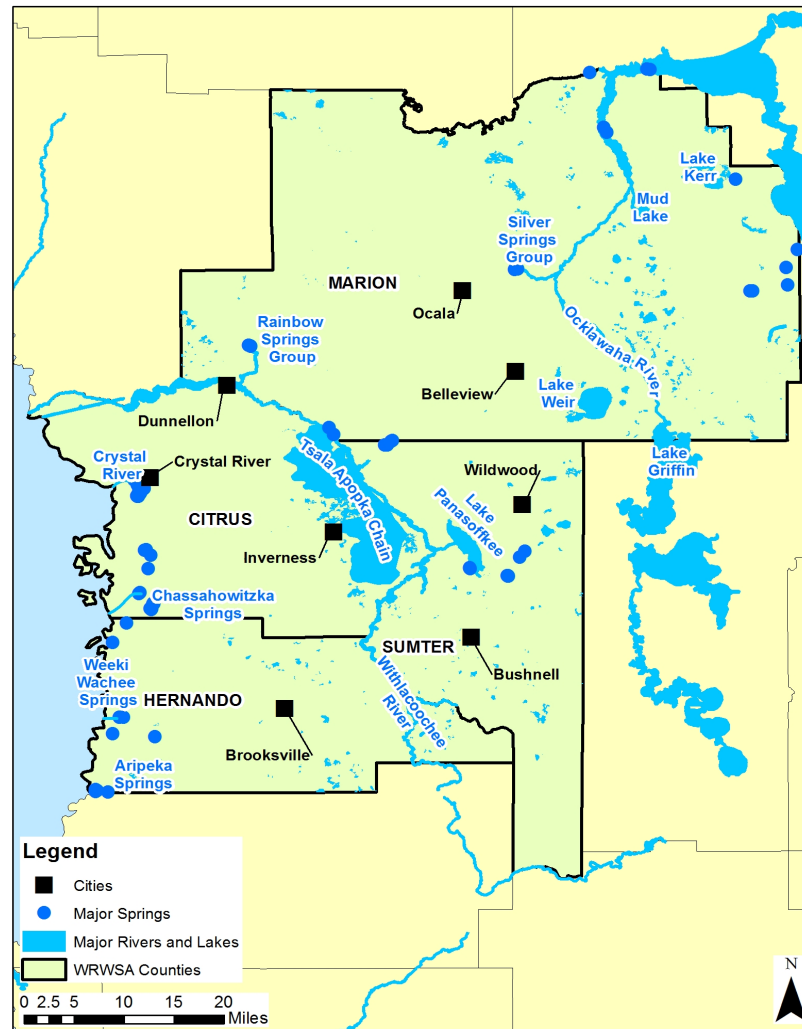
Projected Groundwater Use in 2035 (input into the model)

Use Category	2010 Water Use (mgd)	Increase in Demand from 2010-2035 (mgd)	2035 Water Use (mgd)
Public Supply	99.4	42.4	141.8
Domestic	29.1	26.8	55.8
Industrial Commercial	17.7	4.8	22.6
Recreational	23.6	13.5	37.1
Agriculture	17.7	3.2	20.2
TOTALS	186.8	90.7	277.5

# Regional Groundwater Modeling Assumptions

- The projected 2035 water demands used in the model were adjusted to account for the effects of water conservation and use of reclaimed water.
  - The adjustments for water conservation included reductions of 10 percent for public supply, 20 percent for agriculture, and 20 percent for recreational/aesthetic.
  - The effects of reclaimed water use projected for 2035 were represented in the model as an increase in recharge in the vicinity of reclaimed water facilities.

# Regional Groundwater Modeling



# Regional Groundwater Modeling

## Predicted Flow Reduction for the Homosassa Springs Group

Allowable Flow Reduction Based on the  
Homosassa Springs MFL (3%)

Spring Name	Pre-Pumpage Flow	Predicted 2035 Flows	2035 Percent Change
Homosassa 1 Spring	85.0	82.9	2.5
SE Fork Homosassa Spring	36.5	35.6	2.4
Halls River Head Main Spring	99.6	96.8	2.8
Halls River 1 Spring	6.3	6.1	2.4
Hidden River Head Spring	5.8	5.1	11.5
Trotter Spring	4.9	4.8	2.5
Belcher Spring	4.8	4.5	6.7
Abdoney Spring	5.6	5.5	2.5
McClain Spring	5.6	5.5	2.5
Pumphouse Spring	4.2	4.1	2.4
Homosassa River and Spring System	258.4	250.9	2.9

# Regional Groundwater Modeling

## Predicted Flow Reduction for the Rainbow Springs Group

Allowable Flow Reduction Based on the  
Rainbow Springs MFL (TBD)

Spring Name	Pre-pumpage Flow	Predicted 2035 Flows	2035 Percent Change
Rainbow 1 Spring	643.1	626.5	2.6
Bubbling Spring	1.7	1.7	2.4
Waterfall Spring	4.50	4.4	1.3

# Regional Groundwater Modeling

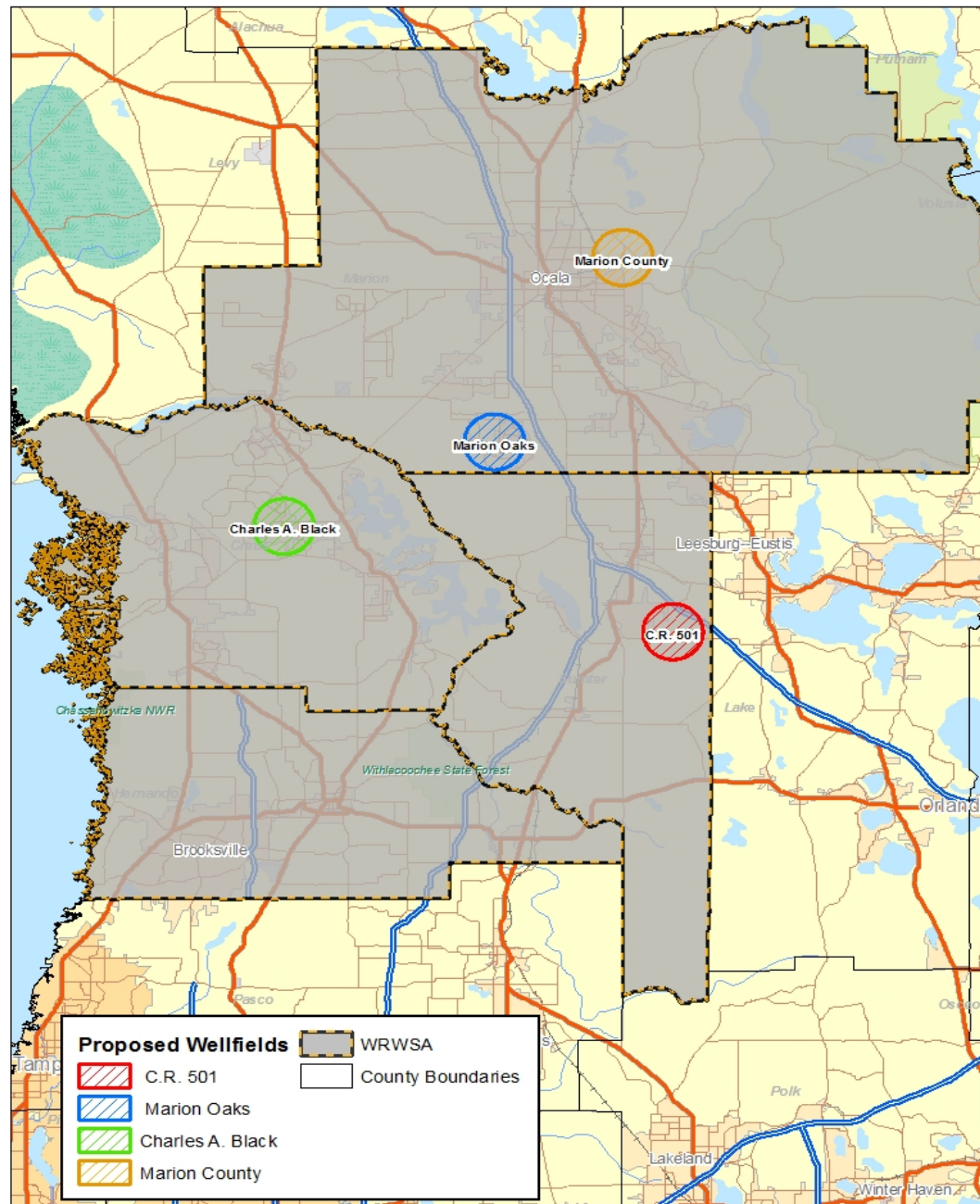
## Conclusions

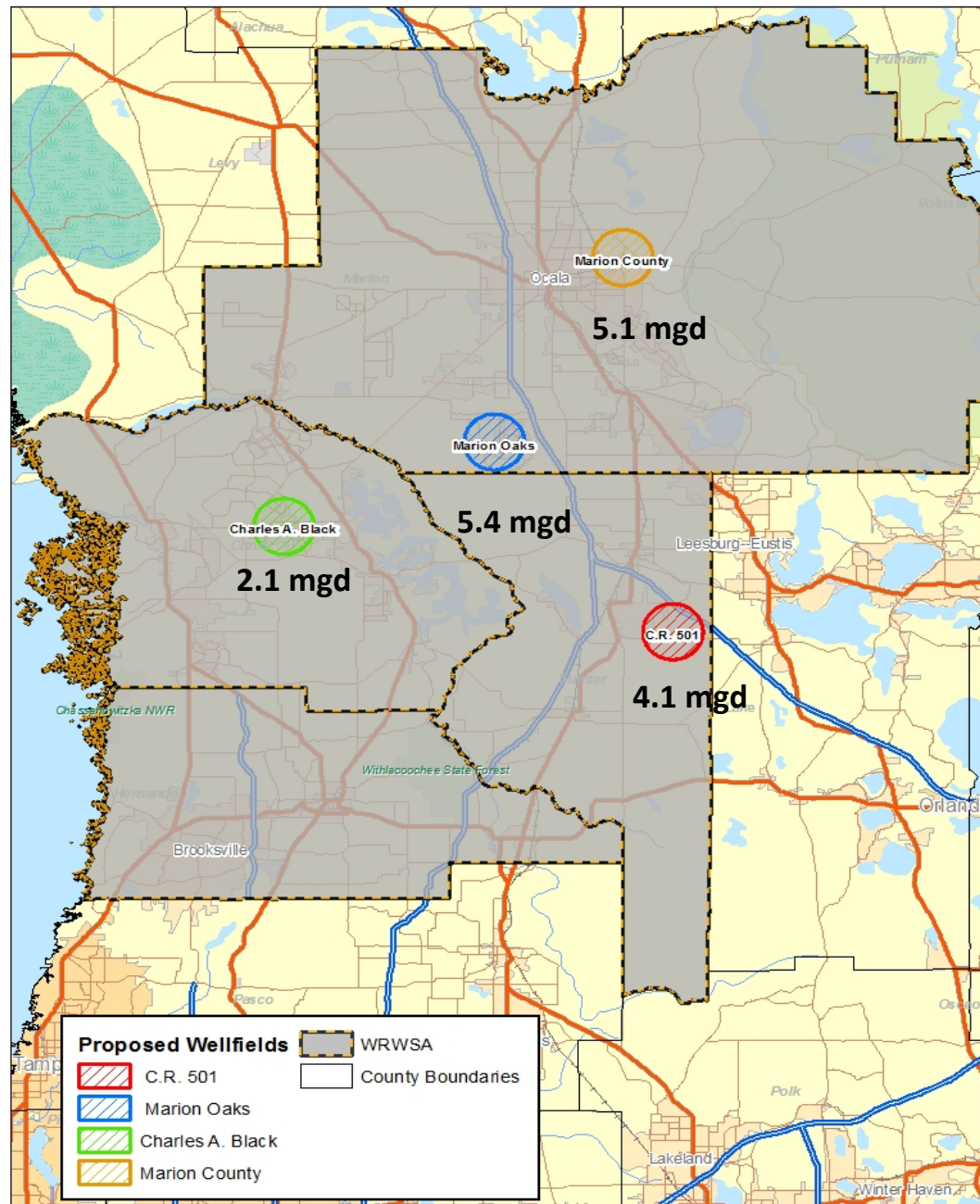
- The 2035 demands for all use categories can be met with groundwater from the Upper Floridan aquifer with no exceedences to springs and rivers for which MFLs have been proposed or adopted.
- Groundwater from the Upper Floridan aquifer will be sufficient to meet demands through 2035 only if demand is reduced by water conservation and aquifer drawdowns are offset by recharge from the use of reclaimed water.
- Without demand reductions due to conservation and reclaimed water offsets, MFL exceedences would have been more significant.
- The implication of this result is that beyond 2035, the ability of groundwater from the Upper Floridan aquifer to meet demand will be much more limited.

# Regional Groundwater Modeling

- Modeling Impacts from the Four Proposed Wellfields





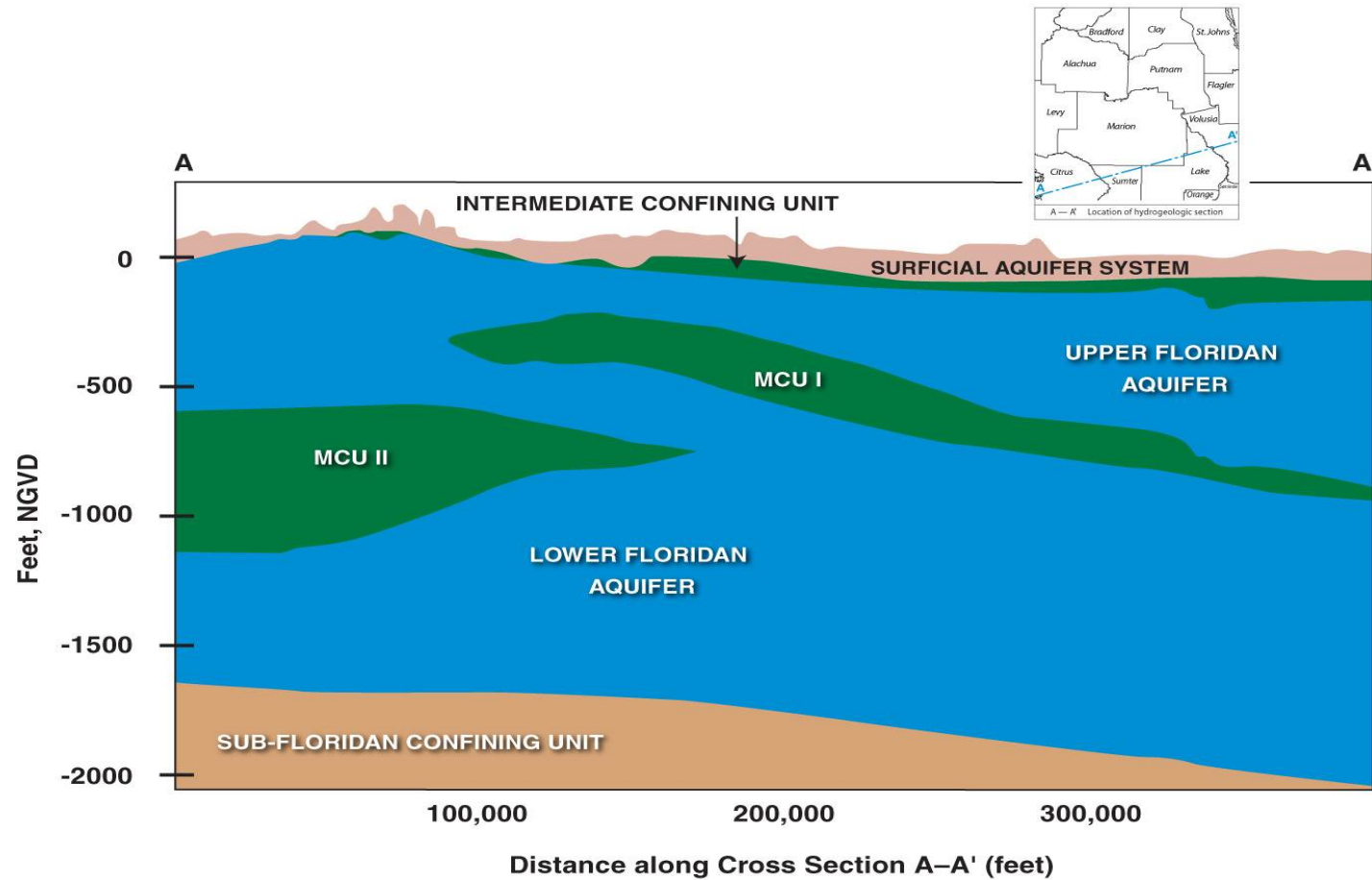


# Modeling Impacts from the Four Proposed Wellfields

## Conclusions

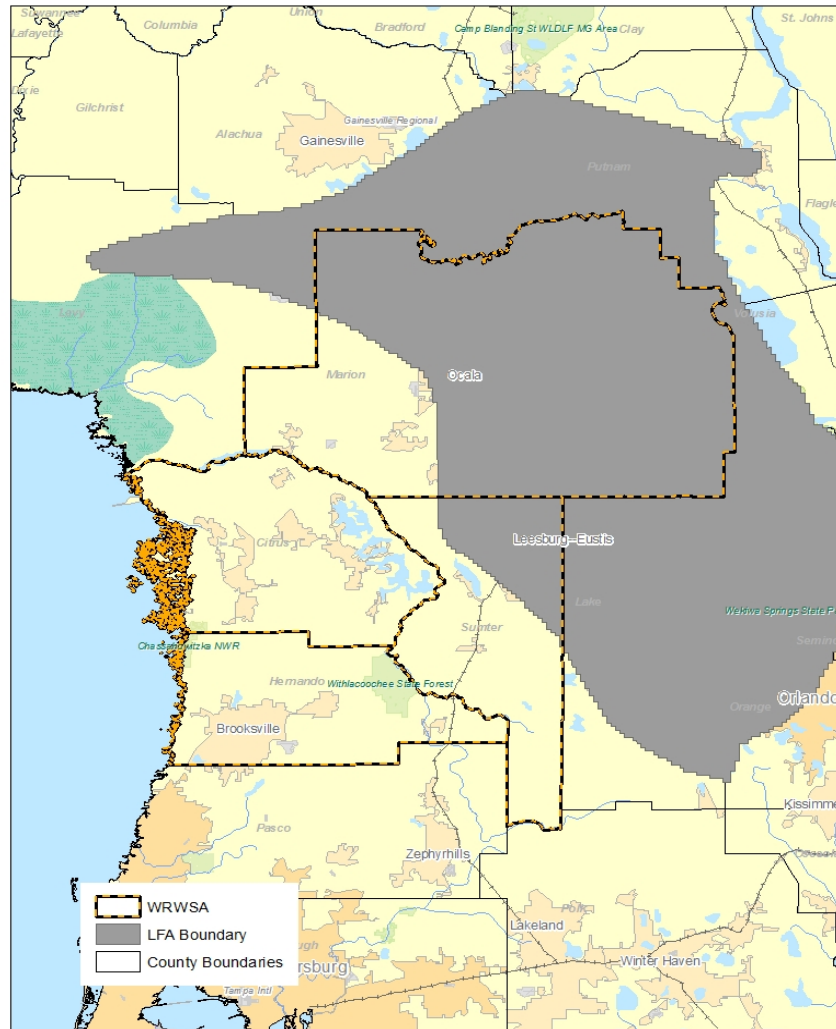
- The groundwater withdrawals from the proposed wellfields in conjunction with the 2035 demands for all use categories will not cause exceedences of proposed or adopted MFLs for springs and rivers.

# Water Supply Potential of the Lower Floridan Aquifer



# Water Supply Potential of the Lower Floridan Aquifer

## Extent of the Freshwater Portion





# Water Supply Potential of the Lower Floridan Aquifer

## Conclusions

- The Water Management Districts will continue to evaluate the water supply potential of the Lower Floridan aquifer through their exploratory well drilling and testing programs.
- The District's will use the data obtained from these programs to enhance the Northern District Model to more accurately evaluate the water supply potential of the Lower Floridan aquifer.
- The Districts should evaluate the potential of the aquifer to produce additional freshwater but also focus on portions of the aquifer that contain more mineralized or brackish groundwater.
  - The desalination of brackish groundwater for water supply is a common practice in the southern coastal portions of the SWFWMD and is becoming increasingly cost effective as the technology improves.
  - It may have the potential to become a significant source of supply in certain portions of the WRWSA region when freshwater supplies from the Upper Floridan aquifer are no longer available.

# Timeline for Completion of the Water Supply Plan

- Completion of first draft - May 1
- Delivery of the first draft to the TAC Committee - May 1
- TAC meeting to discuss 1<sup>st</sup> Draft - May 15
- TAC comments due May 23
- Release of 2nd draft for public comment - June 6
- End of public comment period - June 19
- Release of Final Draft - July 1