Central Springs/East Coast Draft Regional Water Supply Plan

Public Workshop
at the
Indian River County Commission Chambers

July 28, 2021

St. Johns River Water Management District

St. Johns River
Water Management District

Welcome and Introductions

Clay Coarsey, Bureau Chief
Water Supply Planning

Agenda

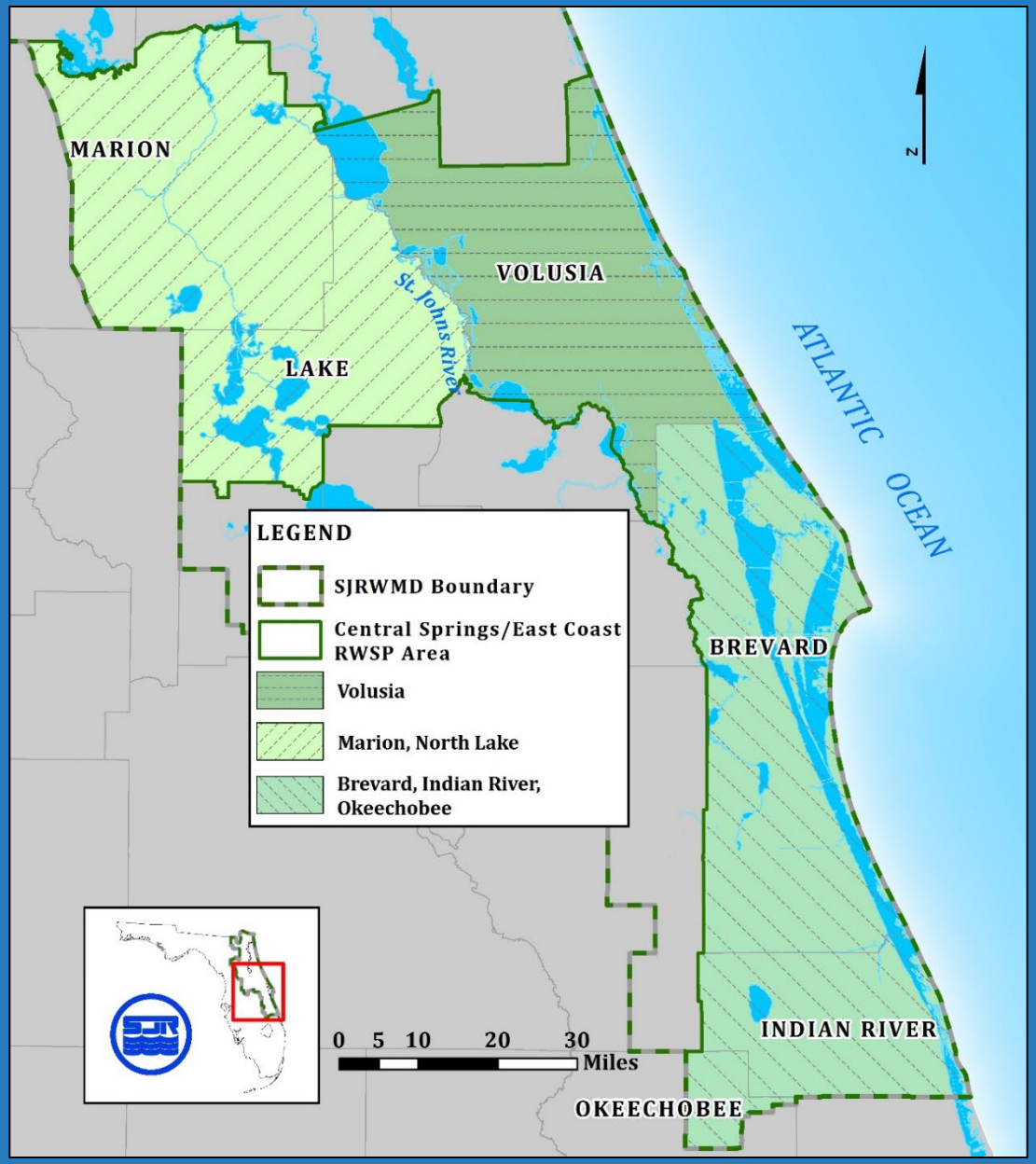
- Welcome and Introductions
- Central Springs/East Coast (CSEC) Display Panel Stations (Q&A)
- CSEC RWSP Overview Presentation
- Public Comment
- Closing Remarks

Central Springs/East Coast Display Panels

- Water Supply Planning
- Data and Projections
- Resource Constraints
- Projects
- Water Conservation

CSEC RWSP Overview Presentation

Joy Kokjohn, Regional Water Supply Planning Coordinator
Bureau of Water Supply Planning



Regional Water Supply Planning
§373.709, F.S.

The governing board of each water management district shall conduct water supply planning for a water supply planning region…, where it determines that existing sources of water are not adequate to supply water for all existing and future reasonable-beneficial uses and to sustain the water resources and related natural systems for the planning period.

What is a Regional Water Supply Plan (RWSP)?

Constitutes an assessment of:

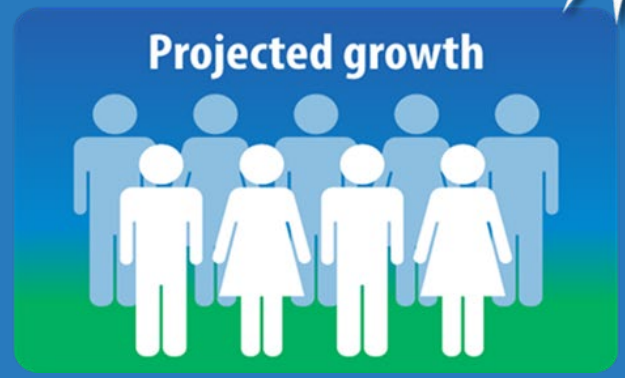
- how much water is needed over the planning horizon, and
- whether traditional sources can meet that demand

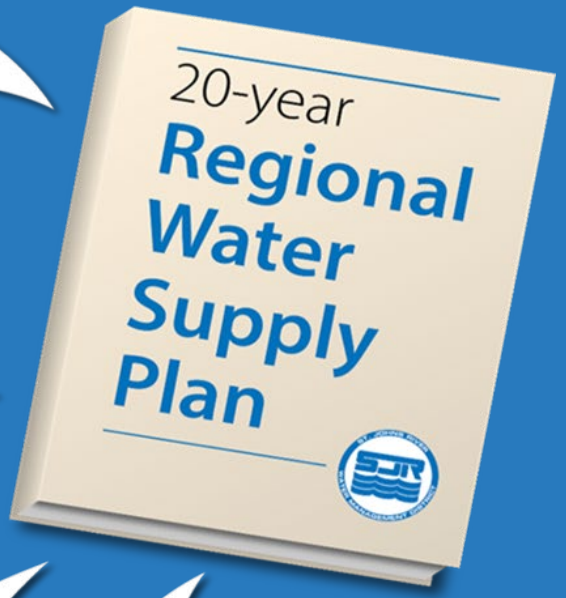
While:

- protecting the water resources and related natural systems, and
- identifying future water supply sources

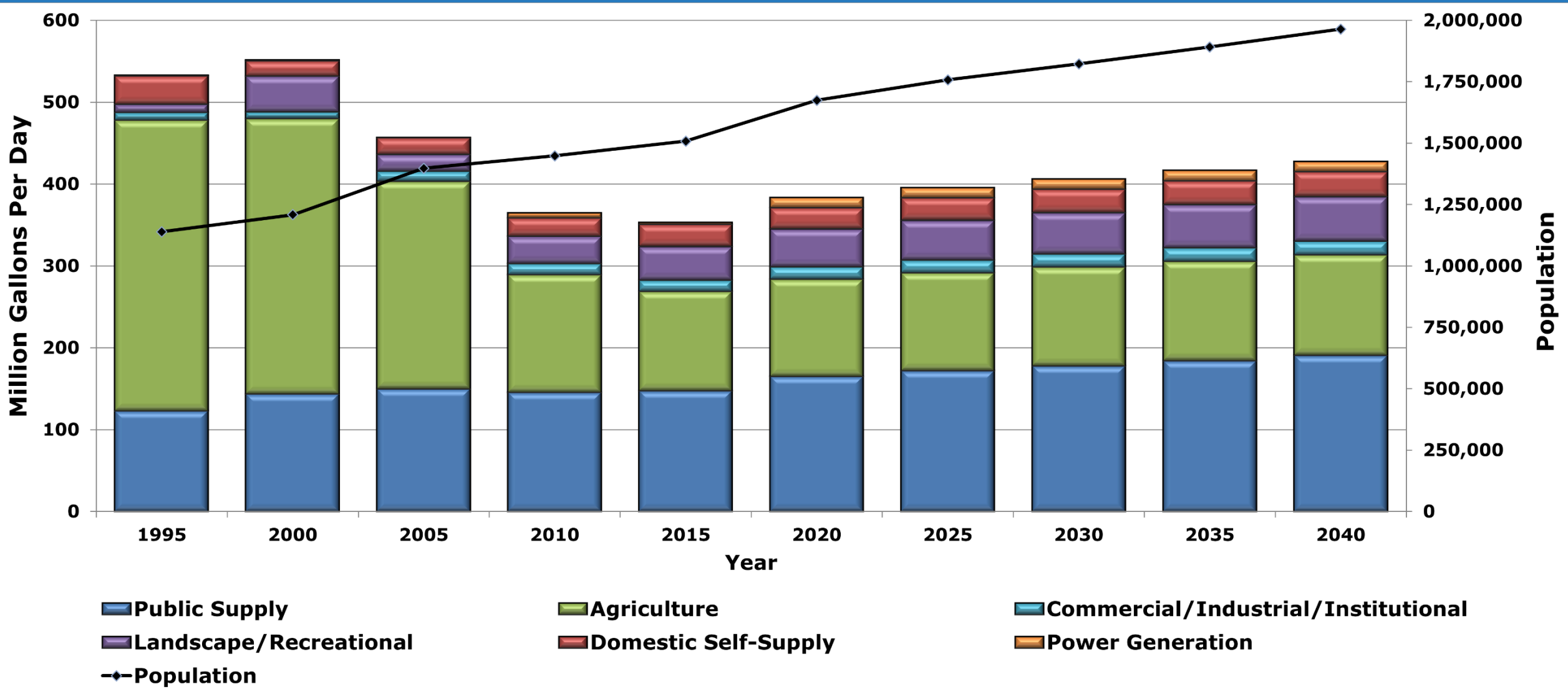
Regional Water Supply Planning Process

- 20-year planning horizon
- Conducted in an open public process
- Coordination with other agencies
- Approval by the Governing Board
- Updated every five years



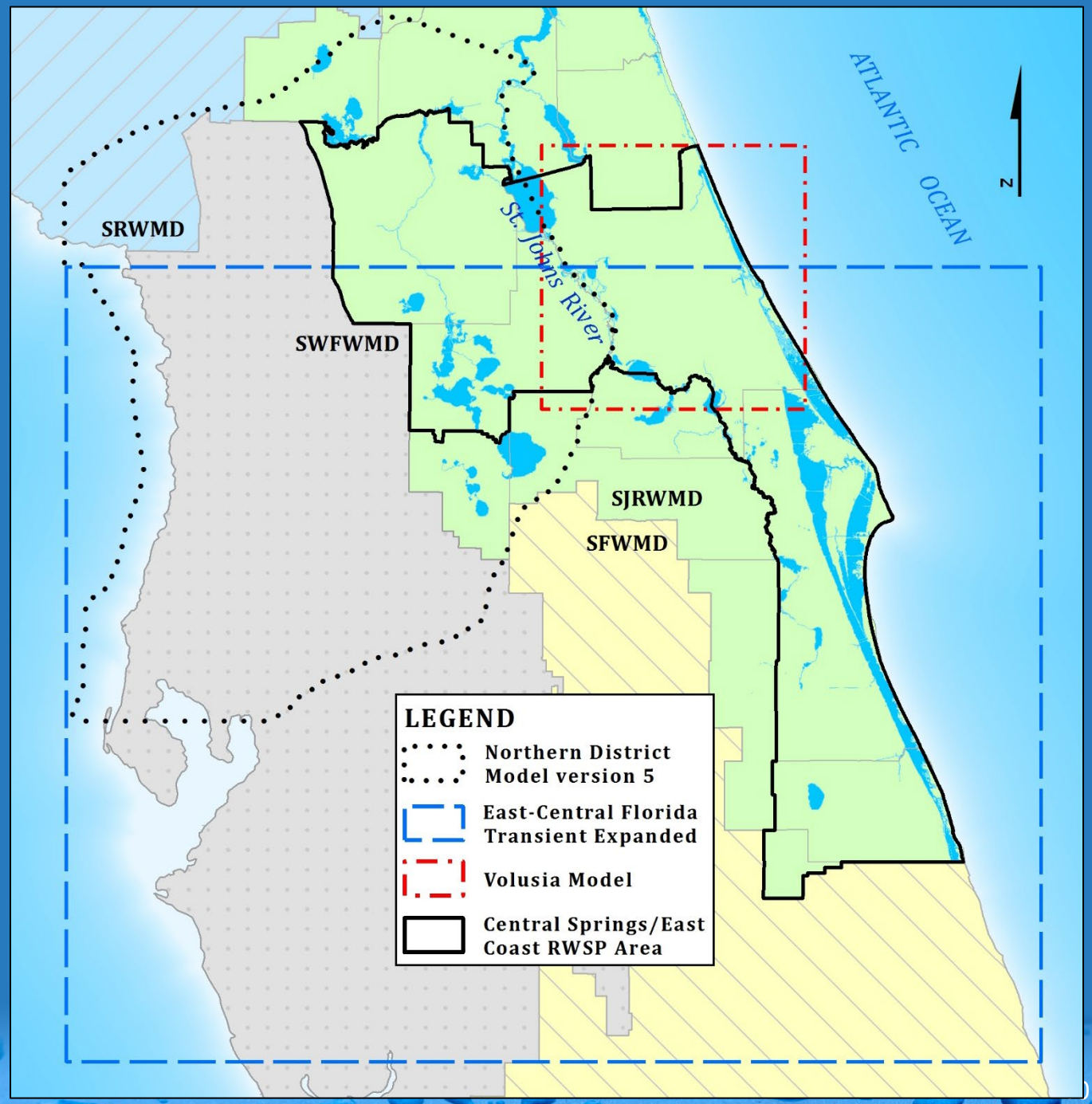


CSEC Historic and Projected Water Use and Population



CSEC Groundwater Flow Models

- Northern District Model v 5
- Volusia Model
- East-Central Florida Transient Expanded Model



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Water Resource Evaluation

Can future water demand be met with traditional sources, while protecting water resources and related natural systems?

Minimum flows and minimum levels

Groundwater quality

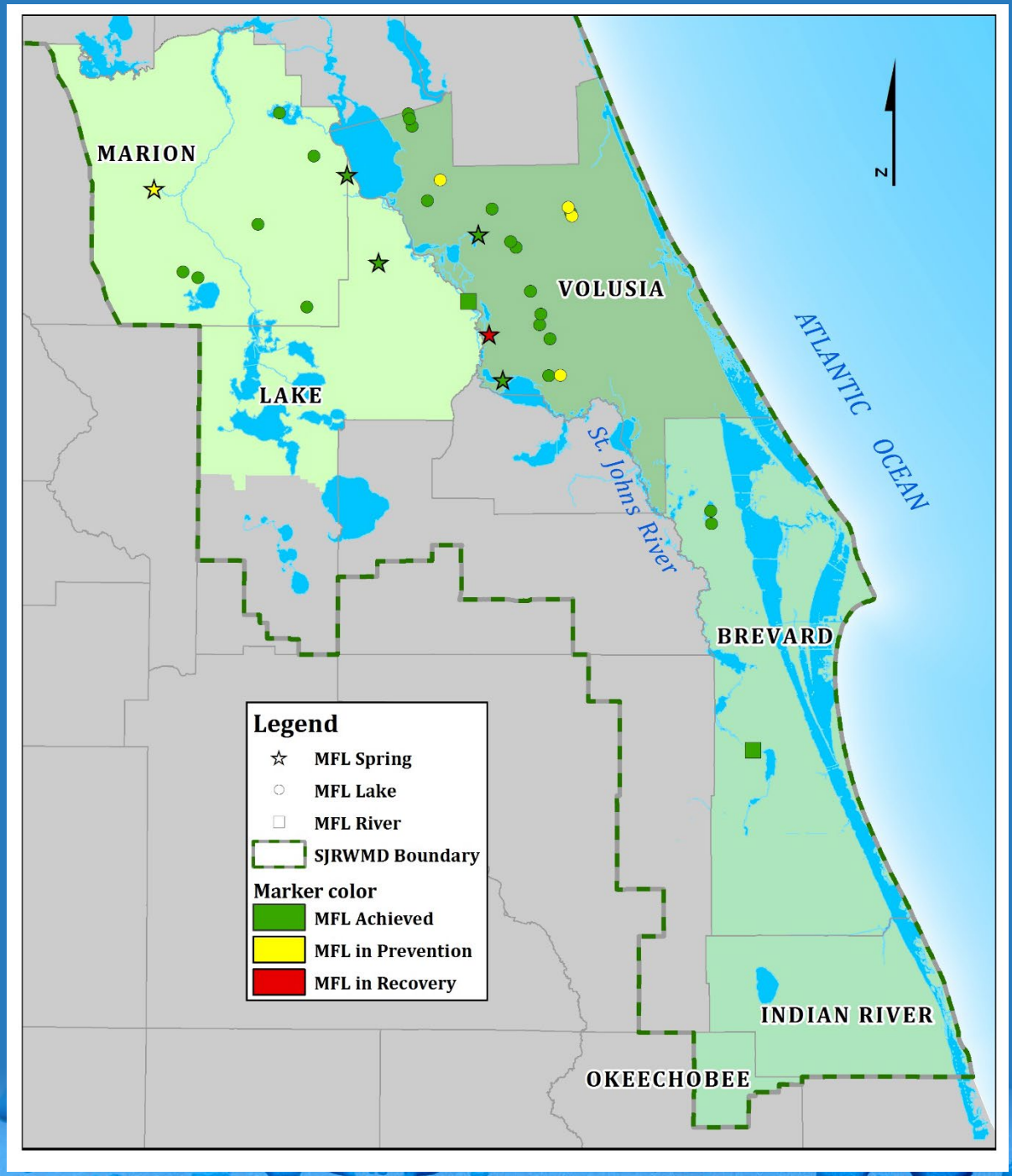
Wetlands

Minimum Flows and Minimum Levels (MFLs)

- Assessed MFL water bodies = 33
- Water bodies in prevention = 5
- Water bodies in recovery = 1

Prevention/Recovery Strategies

- 2013 Volusia Strategy and five-year assessment
- 2017 Silver Springs Prevention Strategy
- 2020 Lake Butler Strategy



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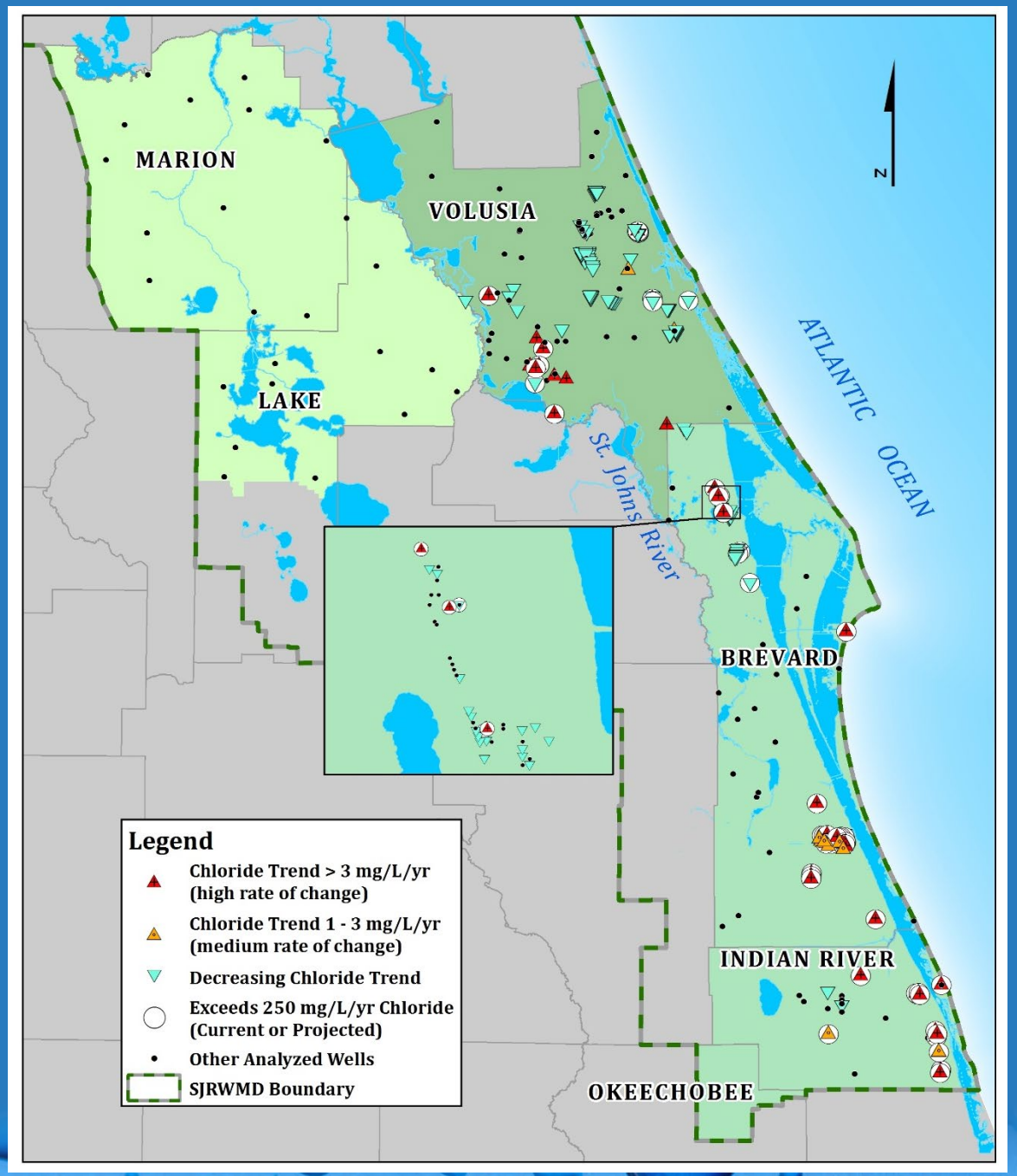
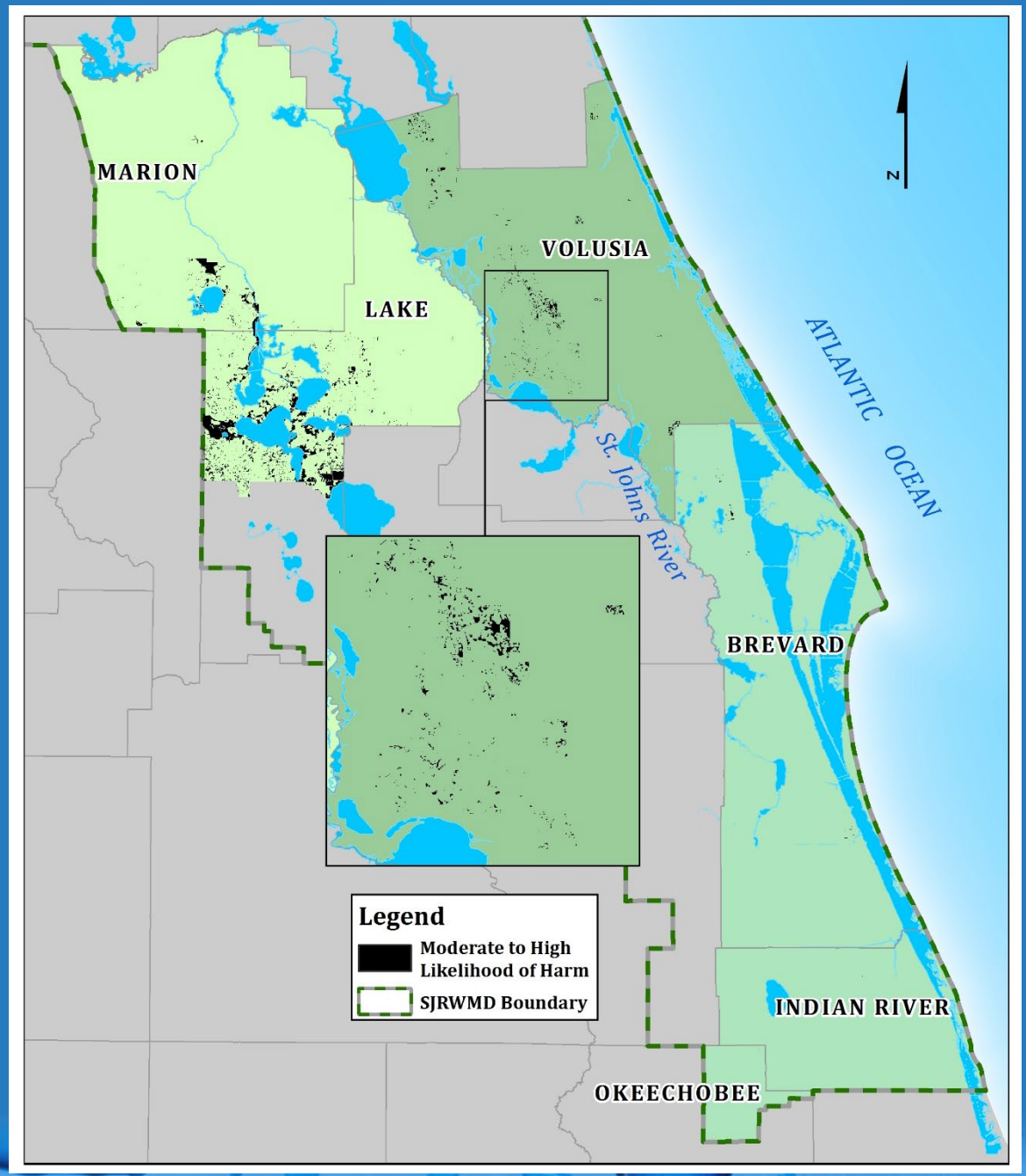
Water Quality (Saltwater Intrusion)

- 389 wells analyzed for chloride trends
- 61 wells with high rate of change (> 3 mg/L/yr)
- 14 wells with medium rate of change (1 – 3 mg/L/yr)
- 23 wells predicted to exceed 250 mg/L SDWS by 2040



Wetlands

- 34,091 acres at risk in 2040
- Represents 4% of the wetland (sensitive vegetation) acreage in the CSEC planning region
- Provides regional picture of potential change (not realized change)
- Regulatory program provides actual verification and monitoring



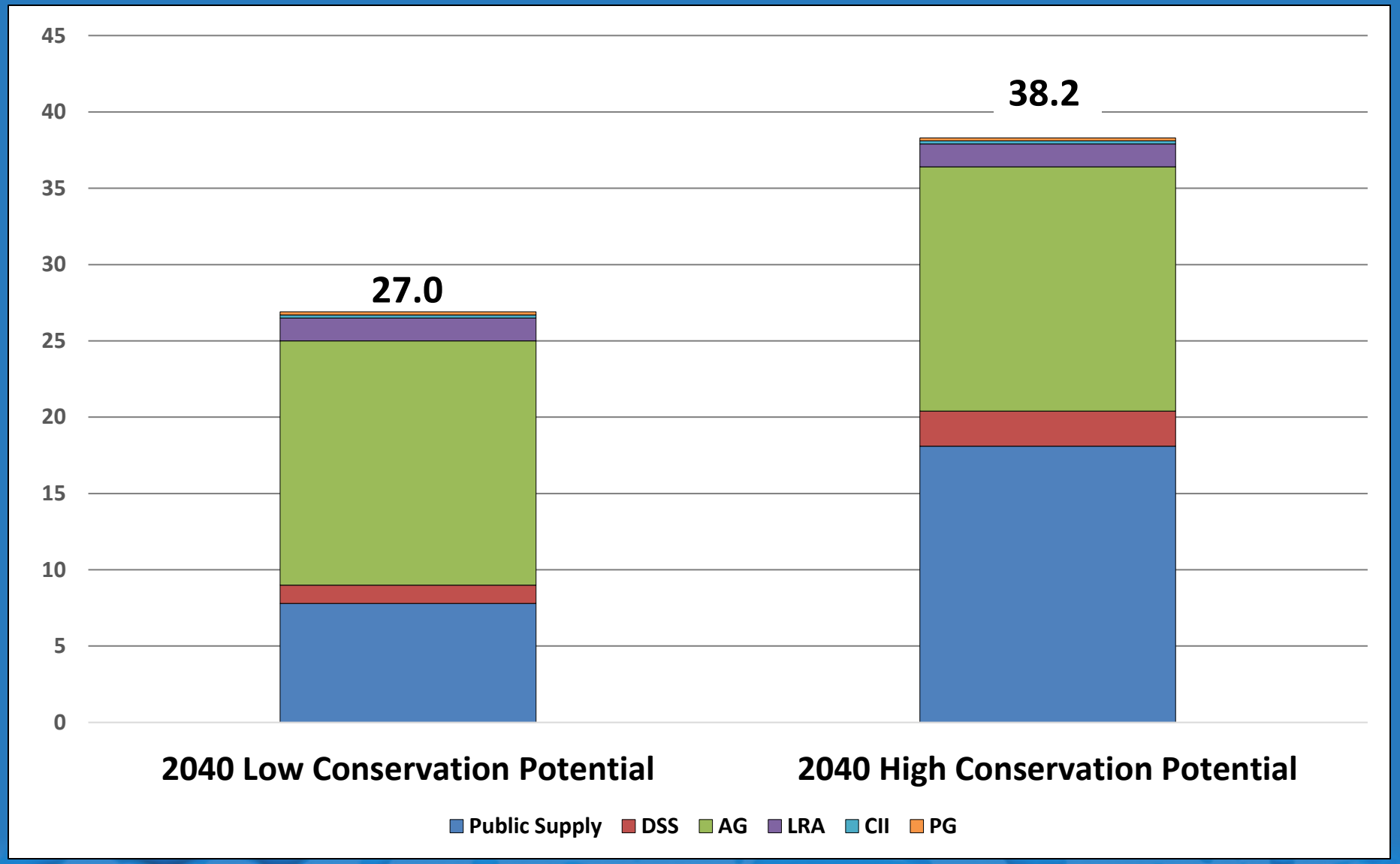
Water Resource Evaluation Results

- Traditional groundwater sources can meet some, but not all projected water demand
- Water demand projections exceed fresh groundwater availability
- There are springs and lakes that are currently not achieving or projected to not achieve their MFLs
- There are wells with increasing chloride trends and wells projected to exceed the chloride standard
- Wetland acreage at potential risk for change

Since traditional sources cannot meet future demand while protecting water resources…

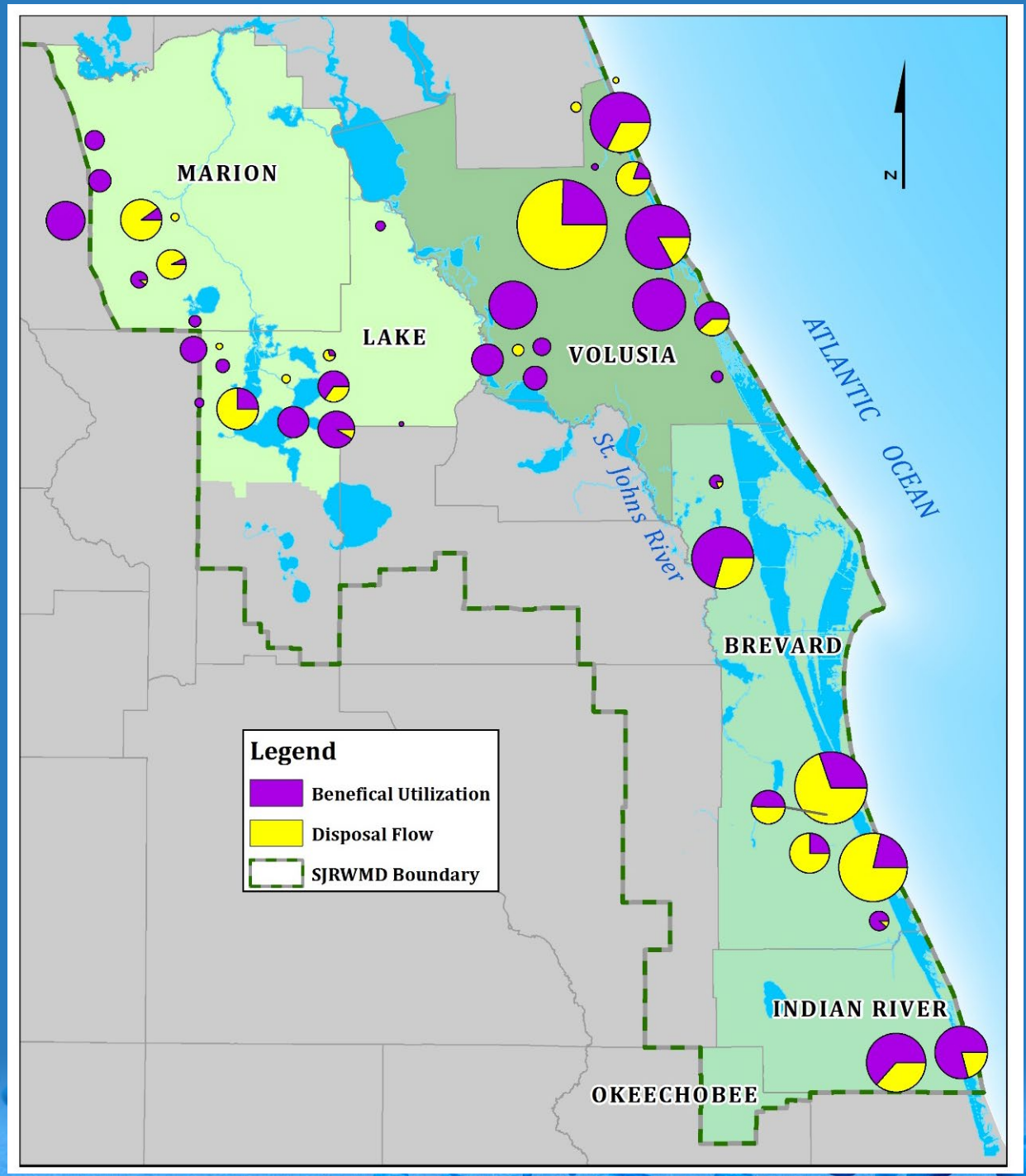
- The plan identifies projects to meet future water demands
  - water supply development
  - water resource development
  - water conservation
  - reclaimed water
- Future demand can be met, while protecting water resources, through a combination of alternative sources and other identified projects

Water Conservation Potential



Reclaimed Water Availability

Category	2015 Percent (mgd)	FDEP 75% (mgd)
Existing Additional Reclaimed Water for Reuse	13.6	27.0
2040 Potential New Reclaimed Water for Reuse	16.6	21.5
2040 Total	**30.3**	**48.5**



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Water Resource Development Projects

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater (brackish)	3	22.5	$0.3
Reclaimed Water	1	6.0	$5.3
Surface Water	2	14.9	$38.7
Stormwater	1	3.0	$0.3
Multi-Source[1]	5	12.6	$30.0
Total	12	59.0	$74.6

[1] Combined source that can include reclaimed water, surface water, and stormwater

Water Supply Development Projects

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater (fresh)	5	14.3	$89.5
Groundwater (AWS[1])	9	31.1	$160.6
Reclaimed Water	34	26.4	$172.3
Surface Water	3	3.6	$10.5
Multi-Source[2]	2	12.1	$11.6
Total	53	87.5	$444.5

[1] Includes brackish groundwater and groundwater from Lower Floridan aquifer in Marion and north Lake counties
[2] Combined source that can include reclaimed water, surface water, and stormwater

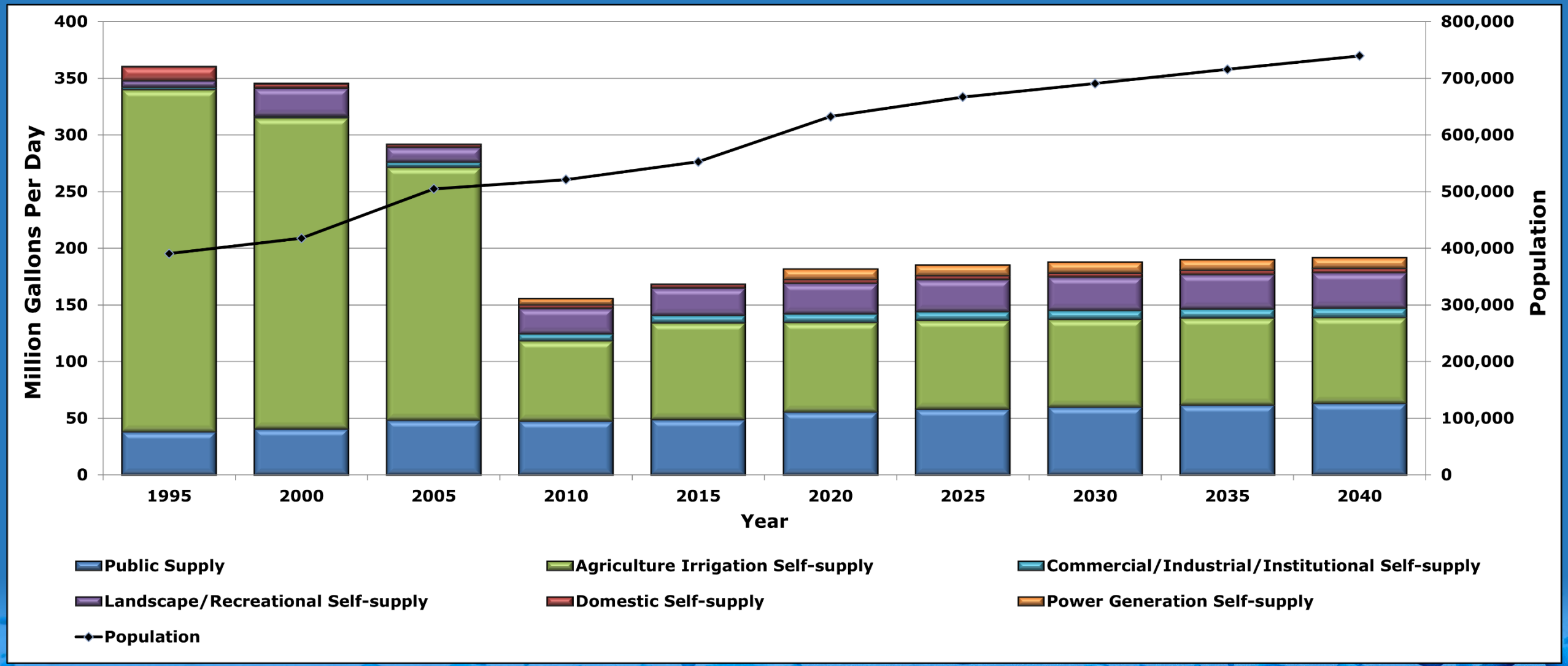
Conclusions

- Projected 75 mgd increase in demand from 2015 to 2040
- Cannot be met with traditional sources alone without predicted impacts to MFL water bodies, groundwater quality, wetlands
- CSEC RWSP identifies 229.4 mgd of projects and measures that will meet future demand, while protecting water resources and related natural systems

Brevard, Indian River, and Okeechobee Sub-Region

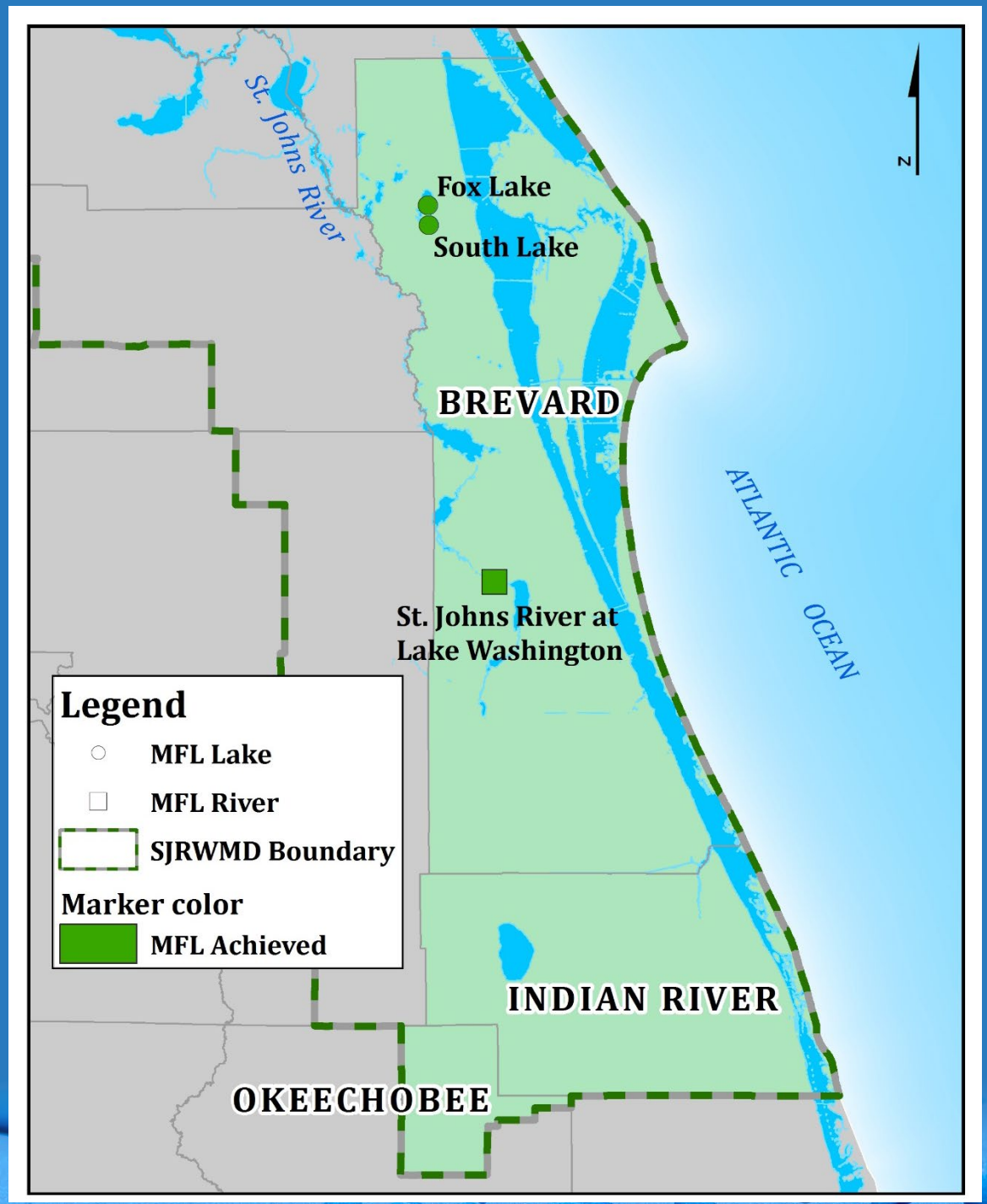
Indian River Lagoon, Brevard County

Brevard, Indian River, and Okeechobee Historic/Projected Water Use and Population



Brevard, Indian River, Okeechobee MFLs

- Fox Lake
- South Lake
- St. Johns River at Lake Washington



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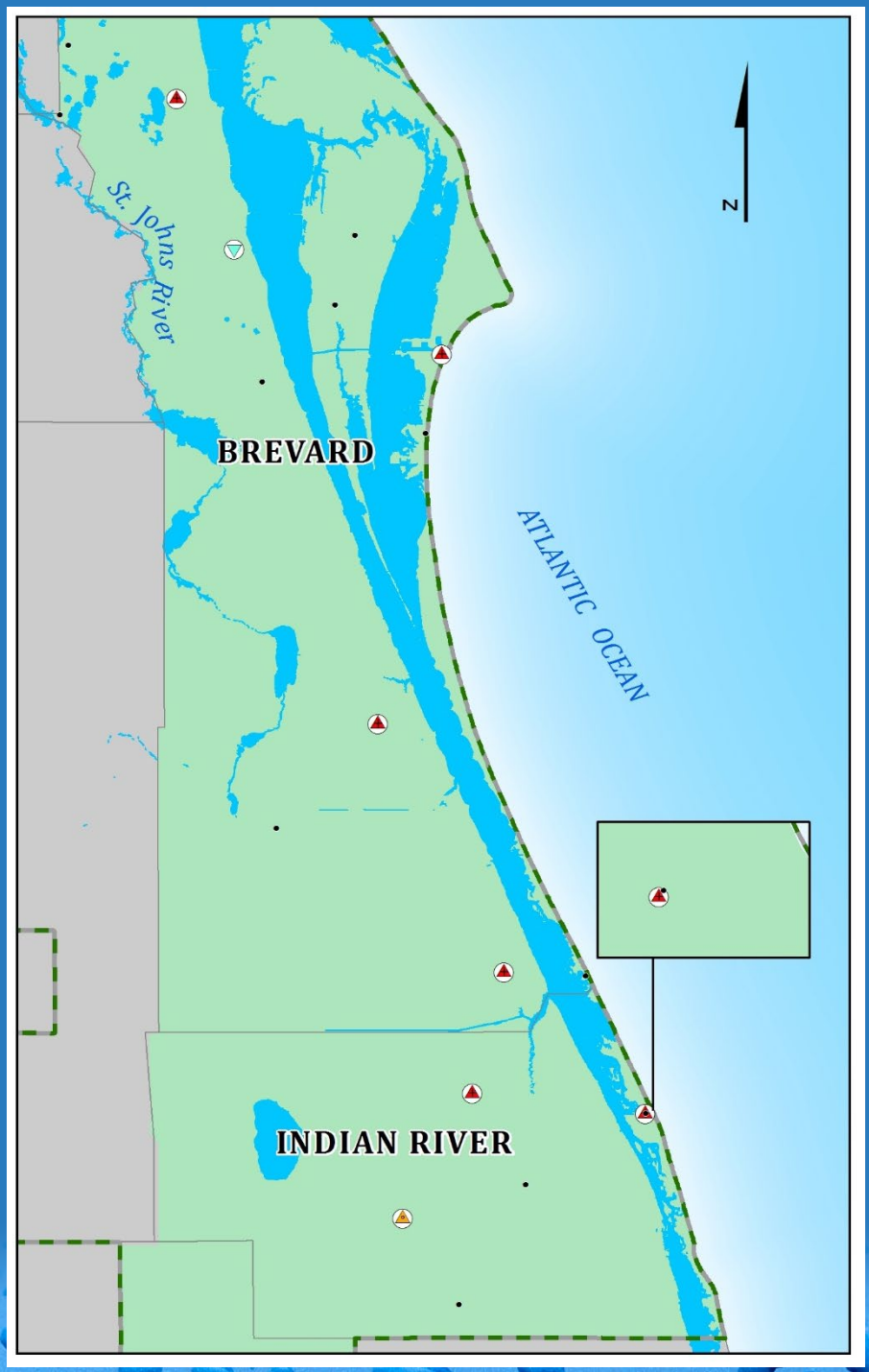
Brevard, Indian River, and Okeechobee Groundwater Quality

DOWN Wells (Upper Floridan aquifer)

- High rate Cl^- change = 6
- Medium rate Cl^- change = 1
- All 7 wells currently exceed Cl^- drinking water standard (250 mg/L)



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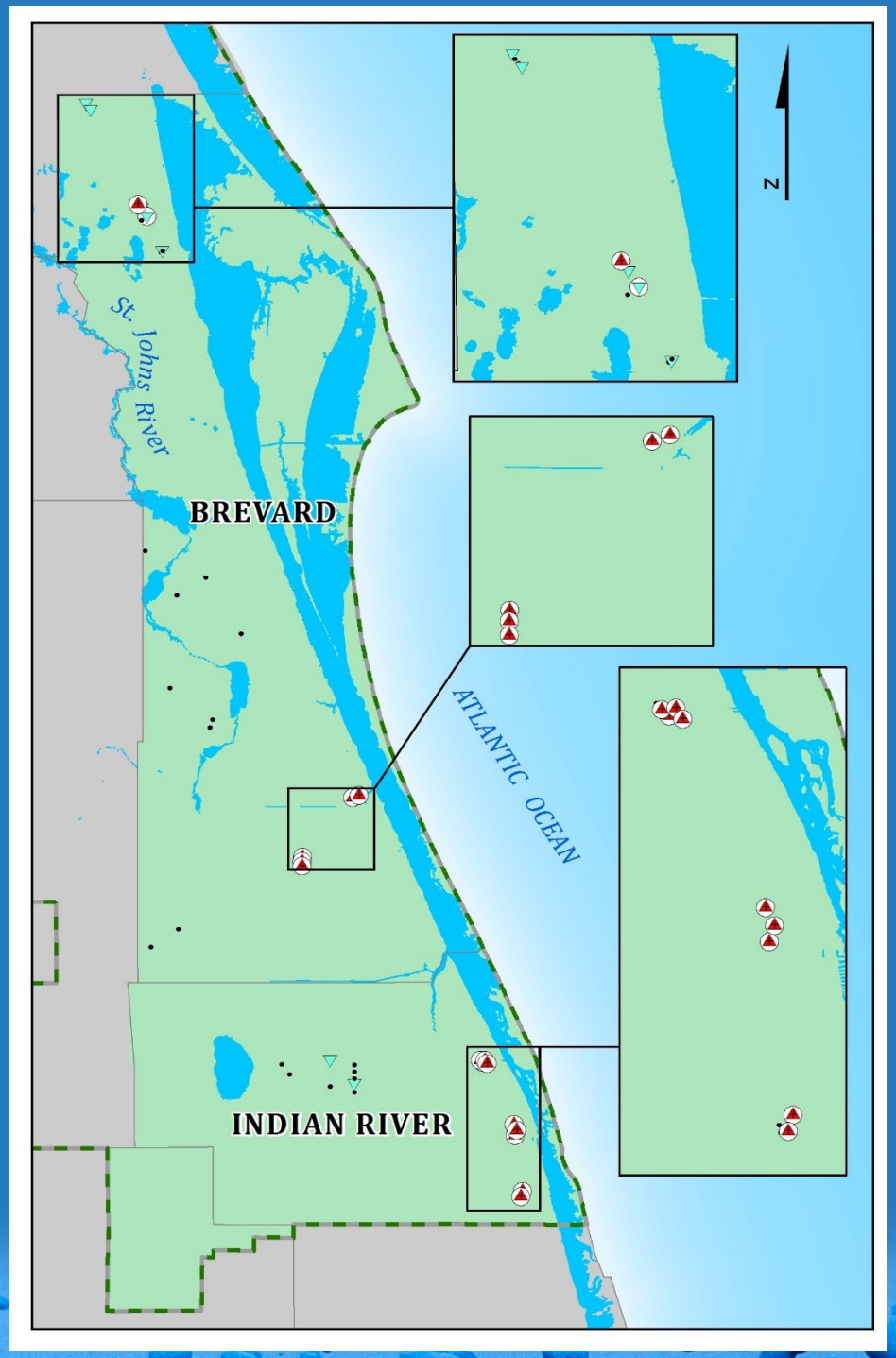
Brevard, Indian River, and Okeechobee Groundwater Quality

Permitted UFA Wells

- High rate Cl^- change = 15
- Medium rate Cl^- change = 0
- All 15 wells currently exceed Cl^- drinking water standard (250 mg/L)



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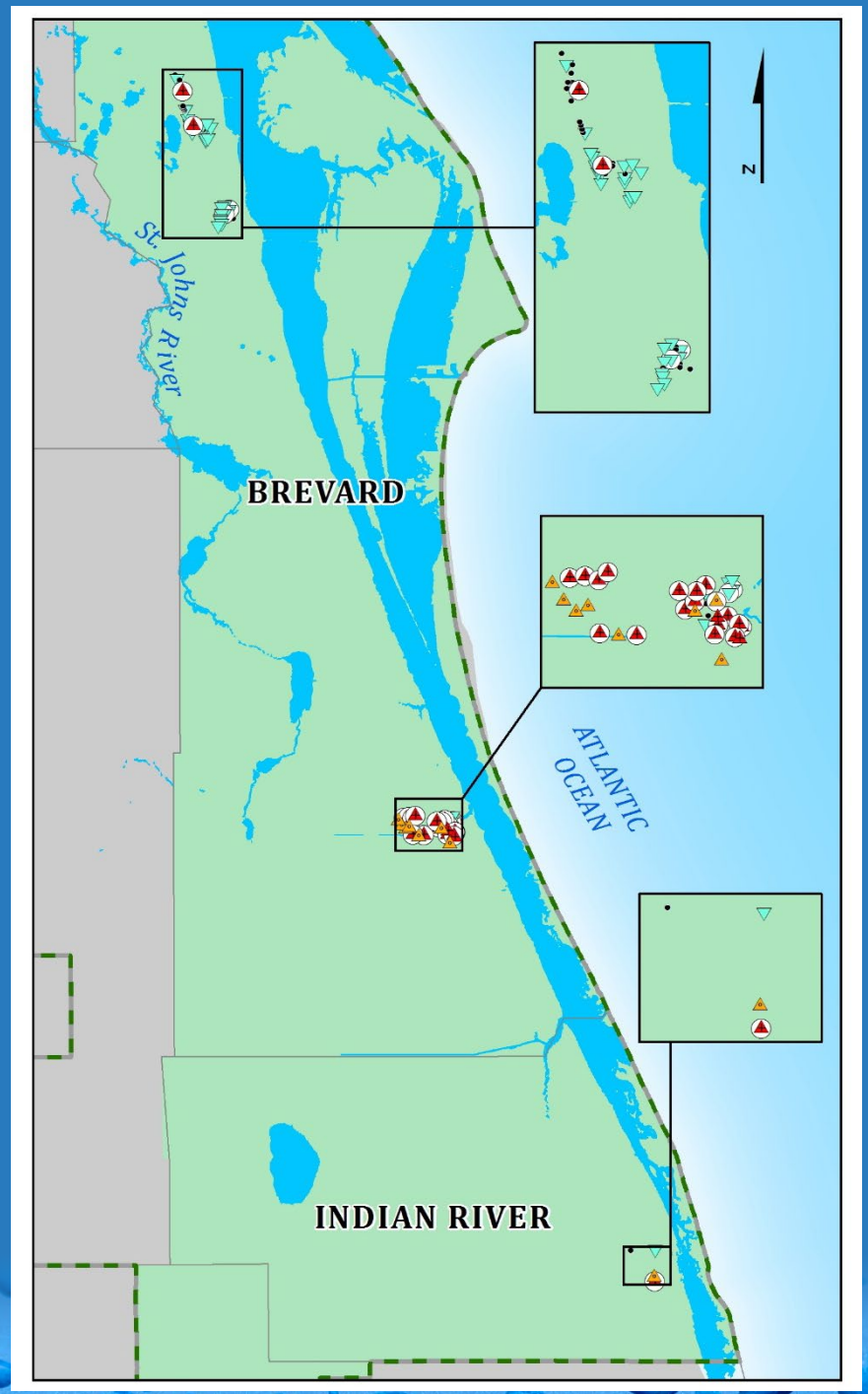
Brevard, Indian River, and Okeechobee Groundwater Quality

Permitted SAS Wells

- High rate Cl^- change = 22
- Medium rate Cl^- change = 9
- Wells predicted to exceed Cl^- drinking water standard (250 mg/L) by 2040 = 13
- Decreasing Cl^- trend = 34



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Water Quality Summary for Brevard, Indian River, and Okeechobee Counties

Upper Floridan aquifer

- 32% of DOWN wells and 43% of permitted wells with high and medium increased chloride trend (all currently > 250 mg/L)
- Groundwater withdrawals projected to increase by 18.4 mgd by 2040
- Impacts to agricultural users?
  - No increasing Cl^- trends in analyzed AG wells (contrary to anecdotal info)
  - Public supply demand to increase by 29%, AG to decrease by 11%
  - Continued development of AG land
  - Continuation of abandoned artesian well plugging programs

Water Quality Summary for Brevard, Indian River, and Okeechobee Counties

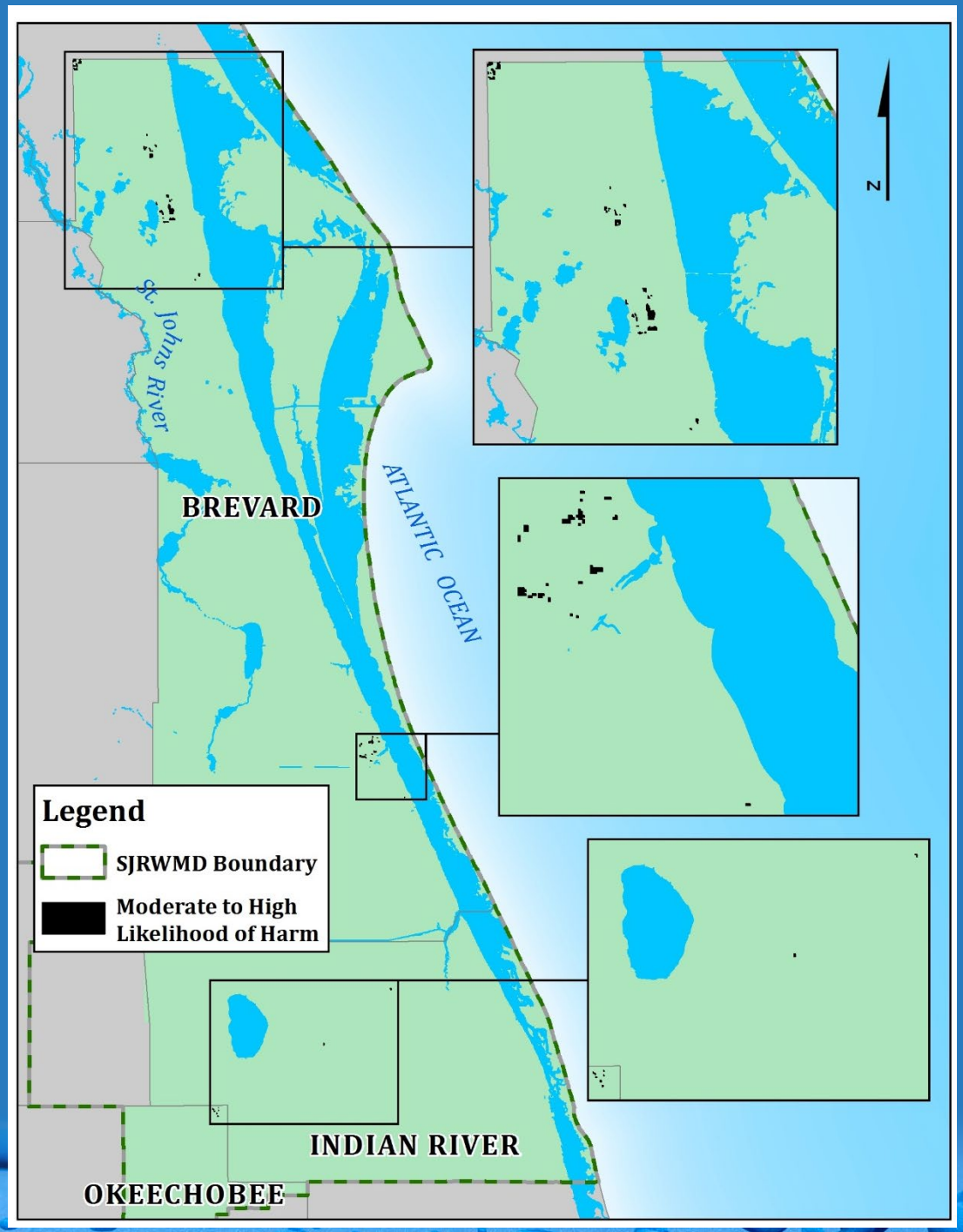
Surficial aquifer

- 31% of surficial public supply wells had high or medium trends
  - 8 wells currently exceed 250 mg/L
  - 13 wells projected to exceed 250 mg/L by 2040
- Surficial aquifer is historically fresh and often used by private domestic wells near the coast (70% of DSS in sub-region)
- Impacts to domestic self-supply?
  - No reports of poor water quality
  - Future adherence to wellfield management strategies
  - Expansion of alternative water supplies (reduced surficial withdrawals)

Brevard, Indian River, and Okeechobee Wetlands

Wetland acreage at moderate or high potential for change due to increased withdrawals by 2040

- Brevard = 327
- Indian River = 7
- Okeechobee = 10



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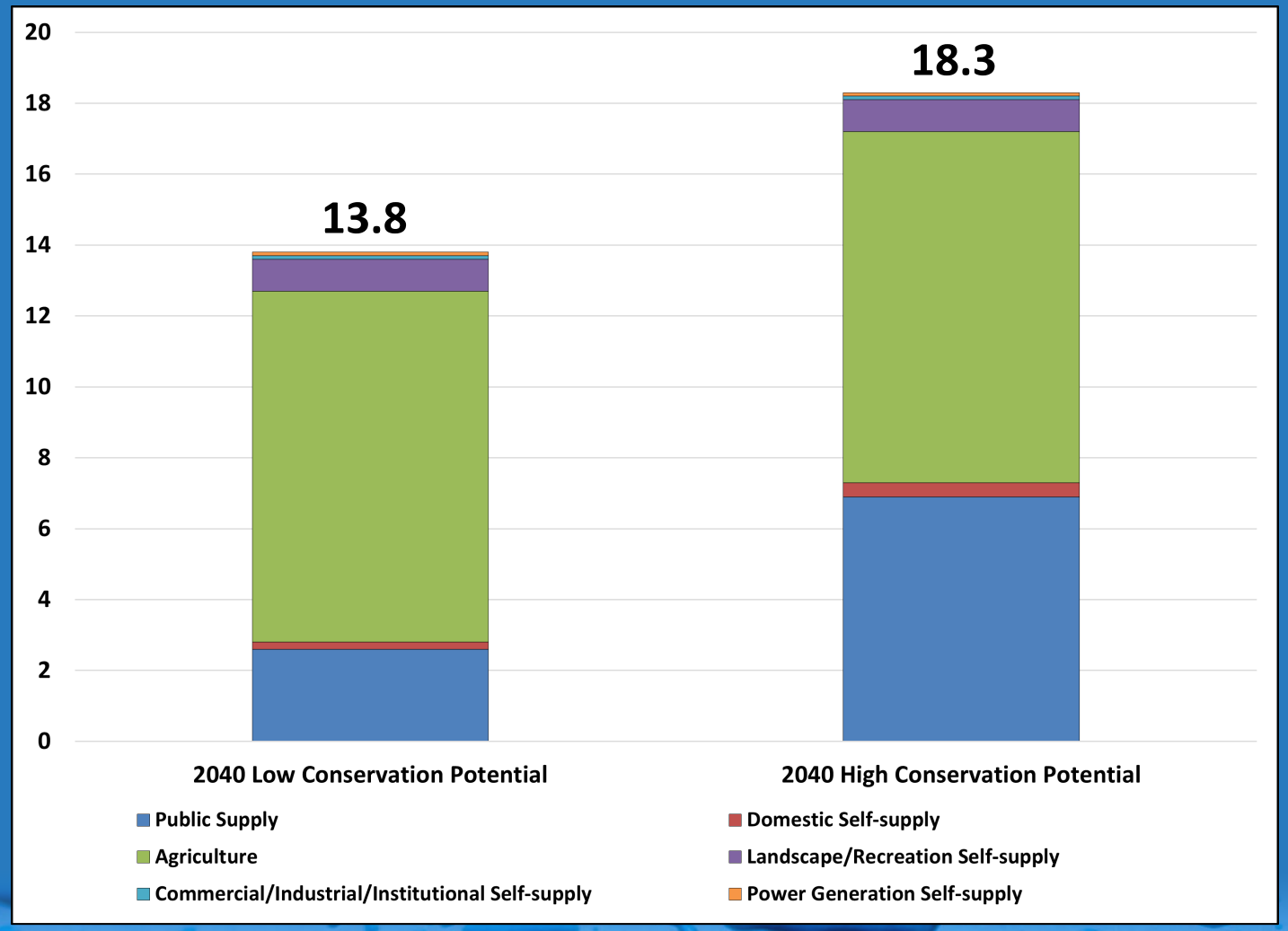
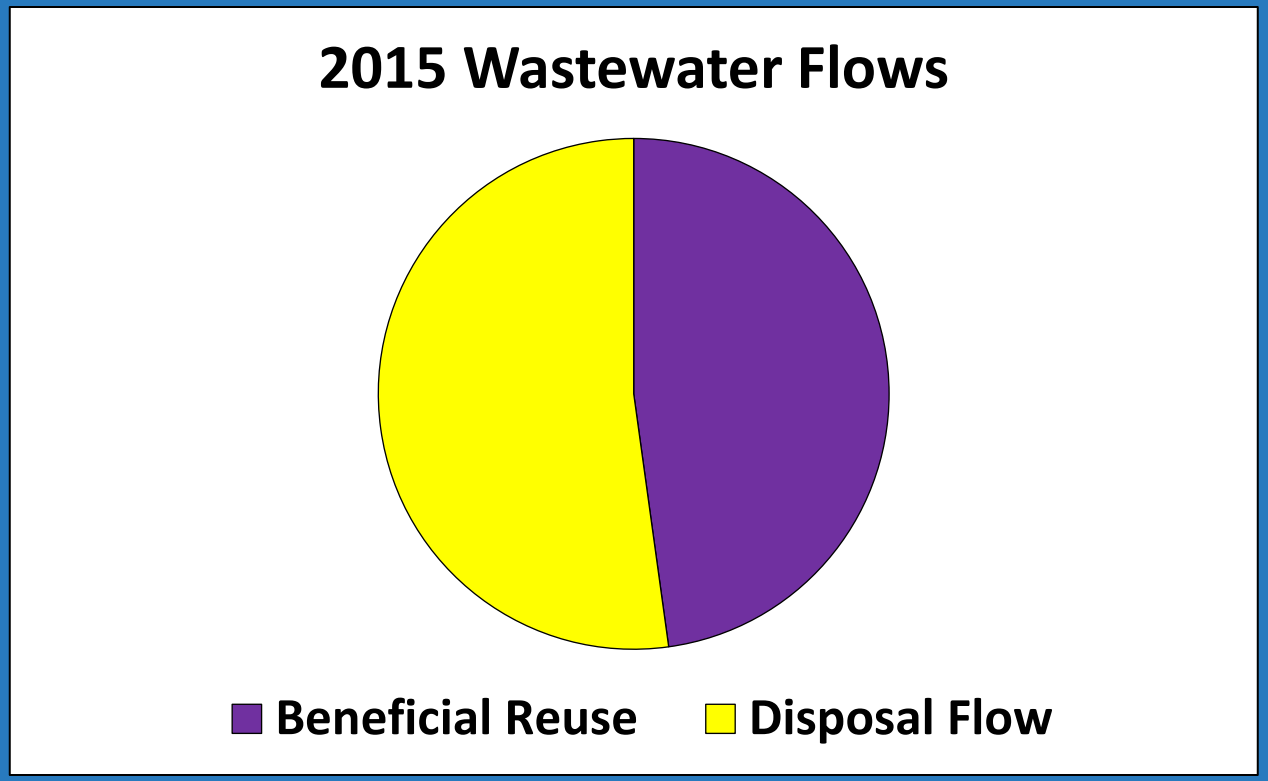
Brevard, Indian River, Okeechobee Water Conservation Potential



Brevard, Indian River, and Okeechobee Reclaimed Water Availability



Category	2015 Percent (mgd)	FDEP 75% (mgd)
Existing Additional Reclaimed Water for Reuse	6.4	12.6
2040 Potential New Reclaimed Water for Reuse	6.3	10.1
2040 Total	12.6	22.6

Brevard, Indian River, and Okeechobee Water Resource Development Projects

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater (brackish)	3	22.5	$0.3
Surface Water	2	14.9	$38.7
Total	5	37.4	$39.0

Brevard, Indian River, and Okeechobee Water Supply Development Projects

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater (brackish)	7	18.2	$107.7
Reclaimed Water	6	7.3	$67.1
Surface Water	3	3.6	$10.5
Total	16	29.2	$185.3

SJRWMD Cost-Share in Brevard, Indian River, and Okeechobee Counties
(Fiscal years 2014 to 2020)

- Total funds to cooperators = $12.9M
- Funds for water supply, water conservation, and natural systems projects = $3.8M
  - Alternative water supplies = 2.9 mgd
  - Water conservation = 4.1 mgd

Conclusions for Brevard, Indian River, and Okeechobee Counties

- Projected 23.5 mgd increase in demand from 2015 to 2040
- Areas where traditional sources cannot meet projected demand without potential water quality impacts
- The increase in demand can be met entirely with water conservation and reclaimed water (low estimate)
- CSEC RWSP identifies 105.1 mgd of projects and measures that will meet future demand, while protecting water resources and related natural systems

Public Comment

Moderated by Kraig McLane, Senior Project Manager
Bureau of Water Supply Planning

SJRWMD also welcomes comments in writing to be submitted no later than August 27, 2021.

Please submit written comments by email to csecrwspcomments@sjrwmd.com or online at www.sjrwmd.com/water-supply/planning/csec-rwsp/#documents

Workshop Closing

Clay Coarsey, Bureau Chief
Water Supply Planning

For additional CSEC information,
visit www.sjrwmd.com/water-supply/planning/csec-rwsp/
or contact Joy Kokjohn at (386)329-4223 or jkokjohn@sjrwmd.com