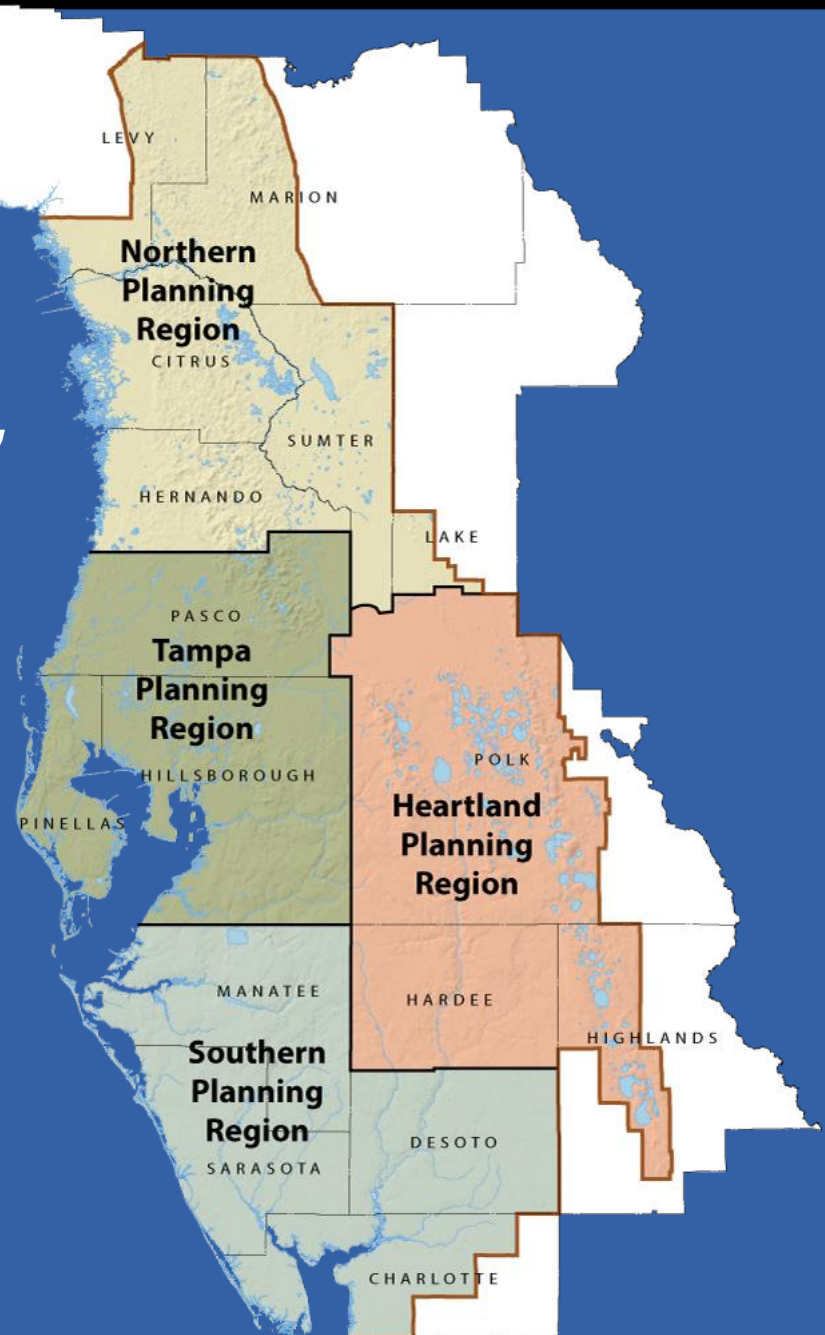


# Water

## *Regional Challenges, Regional Solutions*

March 2016

**Robert Beltran, P.E.**  
Executive Director,  
SWFWMD



# Strategic Plan Regional Priorities

Northern Region	Objectives
<b>Improve first-magnitude northern coastal spring systems</b>	<ol style="list-style-type: none"><li>1. Complete plans with identified targets and projects</li><li>2. Implement plans and projects</li></ol>

Strategic Plan  
2014–2018  
*Updated January 2016*

Southwest Florida  
Water Management District

# What's Ahead for Springs...

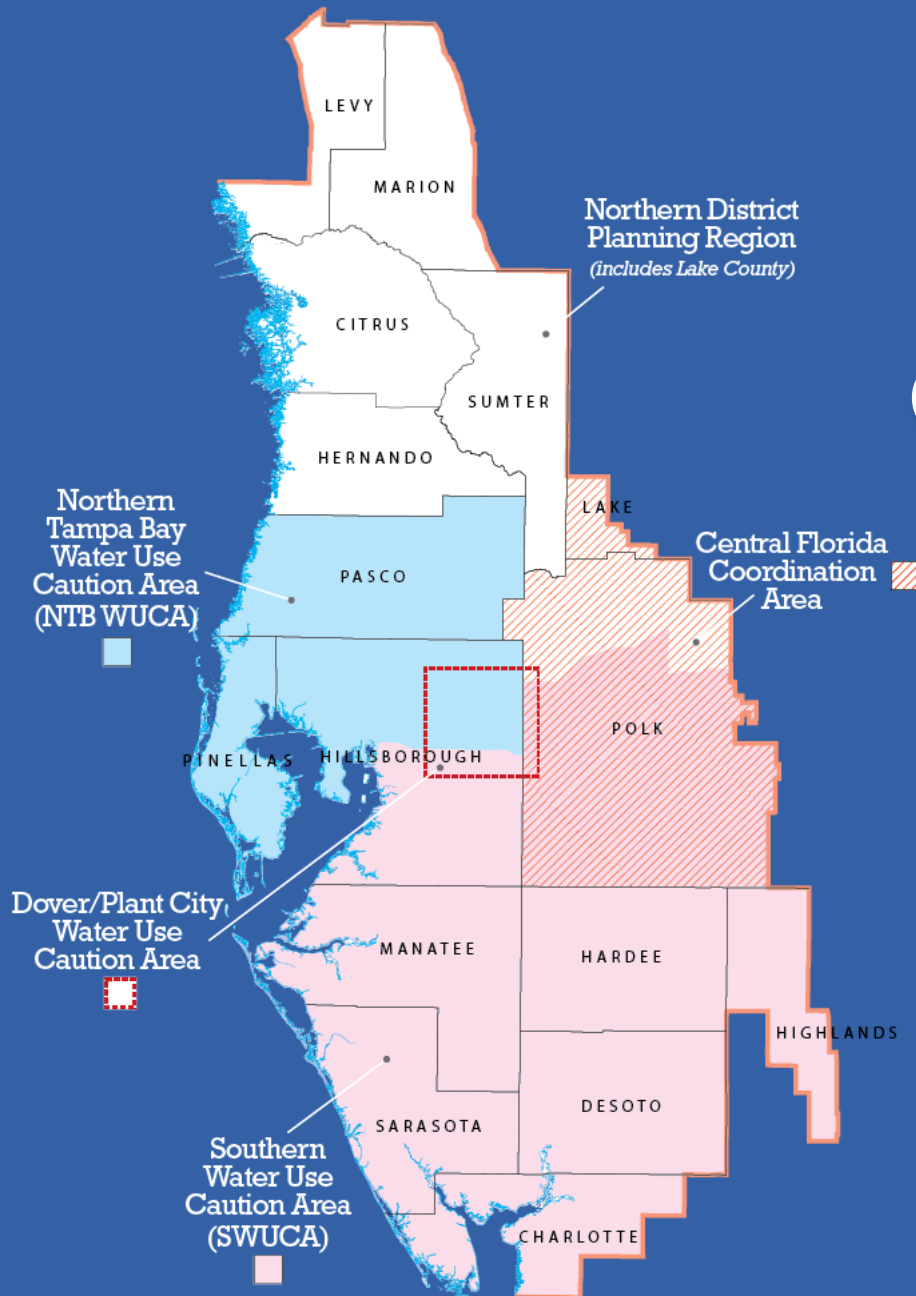
- Rainbow River and Crystal River/Kings Bay SWIM Plans – March Governing Board
- Weeki Wachee, Homosassa and Chassahowitzka River SWIM Plans – next 18 months
- Minimum Flows & Levels (MFLs) – Rainbow River and Crystal River/Kings Bay
- Projects (Fort Island Trail Force Main, Heritage Pines Reclaimed Water, Three Sisters Bank Stabilization, M&B Dairy ...)

# Strategic Plan Regional Priorities

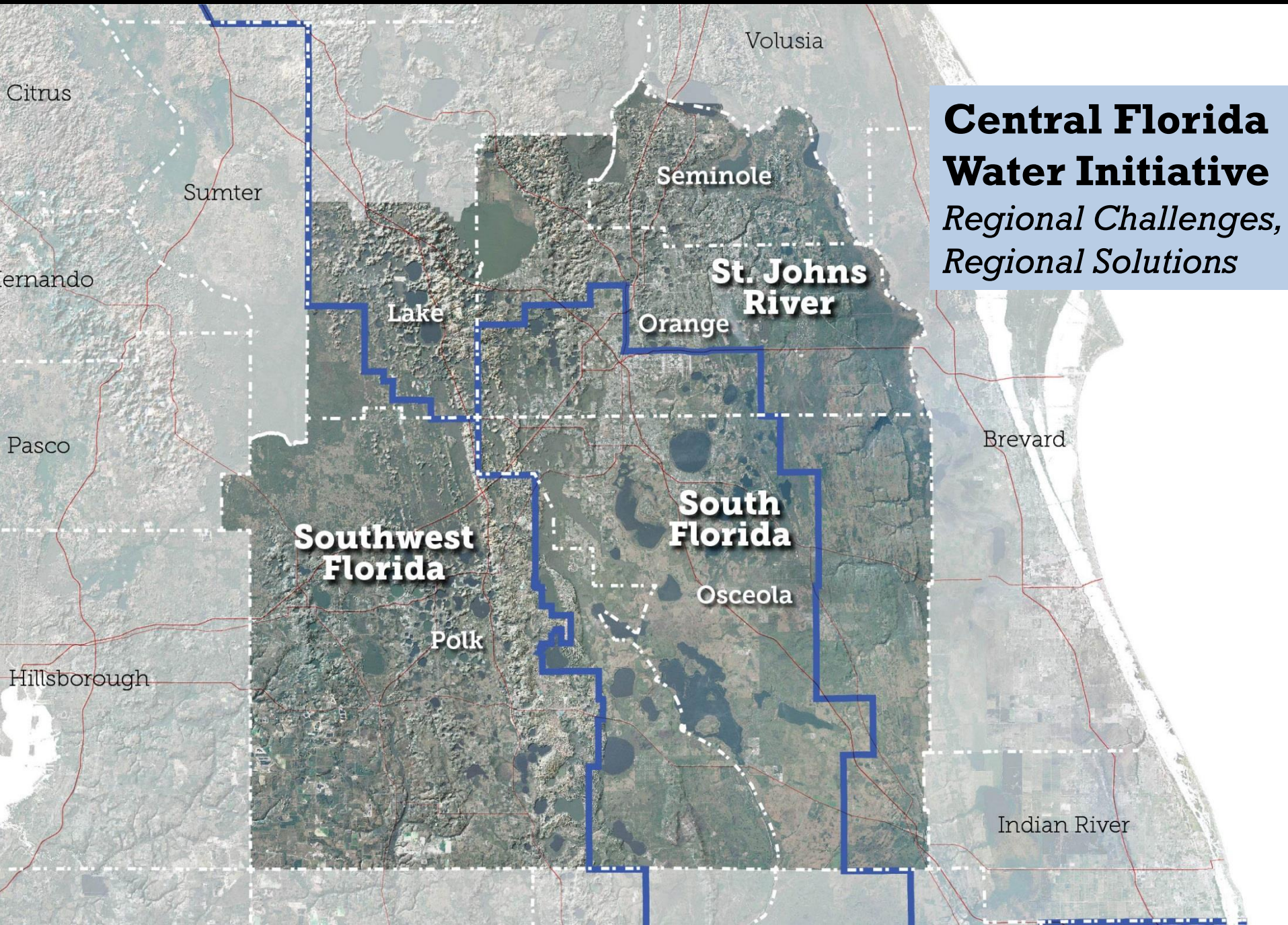
Northern Region	Objectives
<b>Ensure long-term sustainable water supply</b>	<ol style="list-style-type: none"><li>1. All utilities within 150 gpcd by Dec. 31, 2019<ol style="list-style-type: none"><li>1. As of 2015, four utilities above 150</li></ol></li><li>2. Reduce regional average compliance per capita to 113<ol style="list-style-type: none"><li>1. Average in 2015 was 121</li></ol></li><li>3. 75/75 reclaimed water target by 2040<ol style="list-style-type: none"><li>1. As of 2014, 63/71</li></ol></li><li>4. 21 mgd of reuse flows by 2035<ol style="list-style-type: none"><li>1. As of 2014, reuse flows 12.85</li></ol></li><li>5. Increase reuse recharge to RIBs in springsheds</li><li>6. Partner with WRWSA<ol style="list-style-type: none"><li>1. Regional Water Supply Planning and development</li></ol></li></ol>



# Water Use Caution Areas (WUCAs)







# What is CFWI?

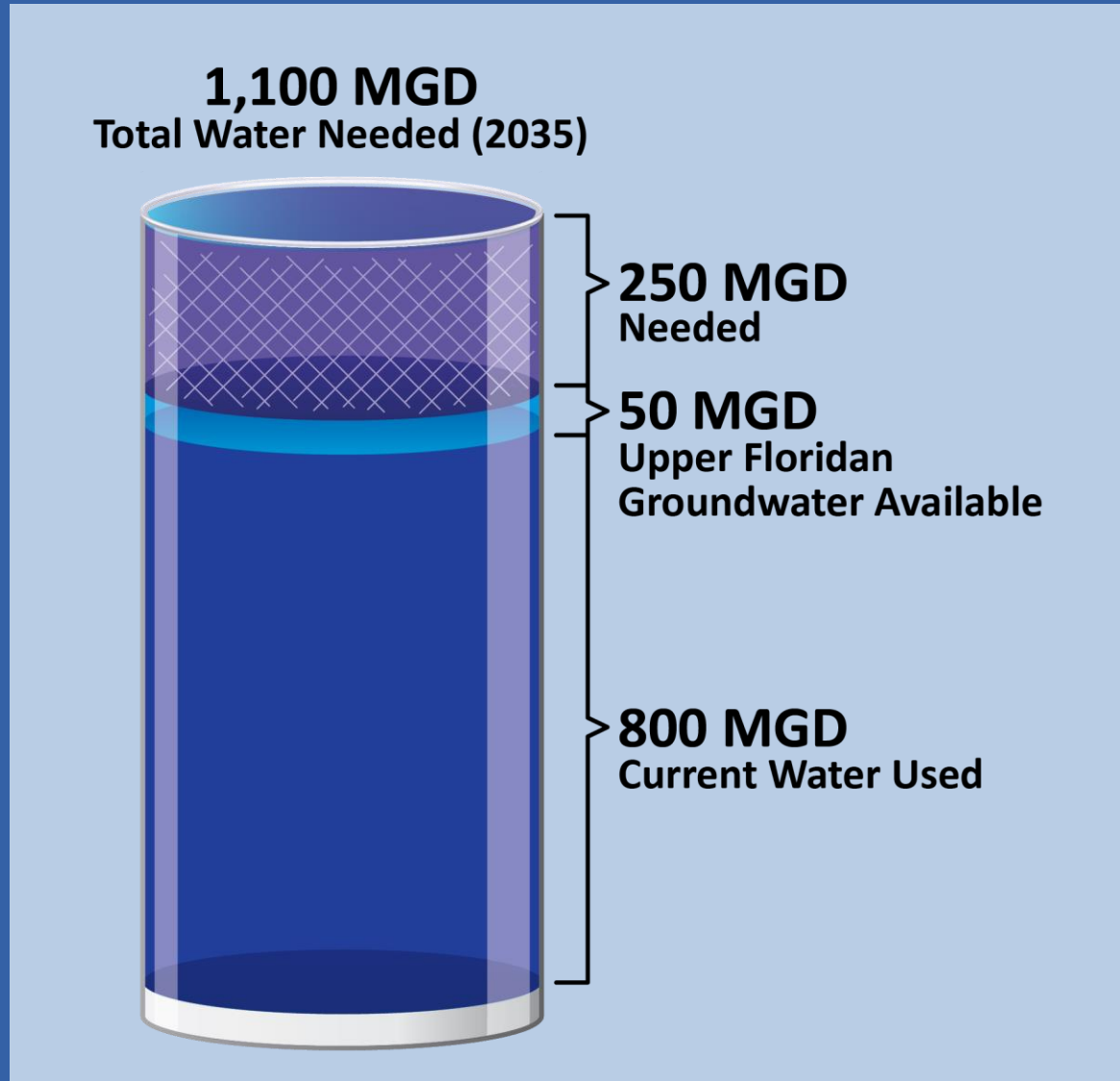
A collaborative **regional** water supply effort to protect, conserve and restore our water resources.

- State agencies (DEP, FDACS)
- Three water management districts
- Local governments/utilities
- Agricultural organizations
- Environmental organizations
- General public



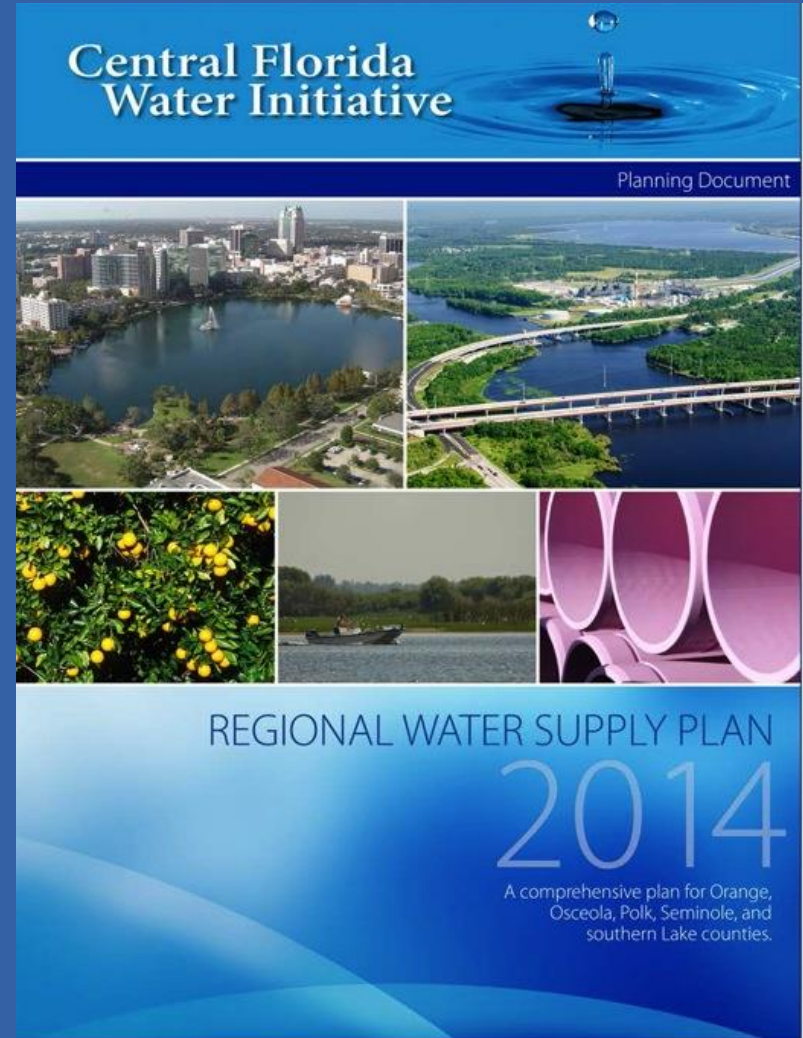
# The Region's Challenge

With  
population  
growth in  
central Florida,  
the pressures  
on water supply  
will only  
increase



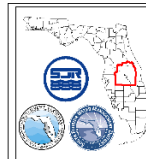
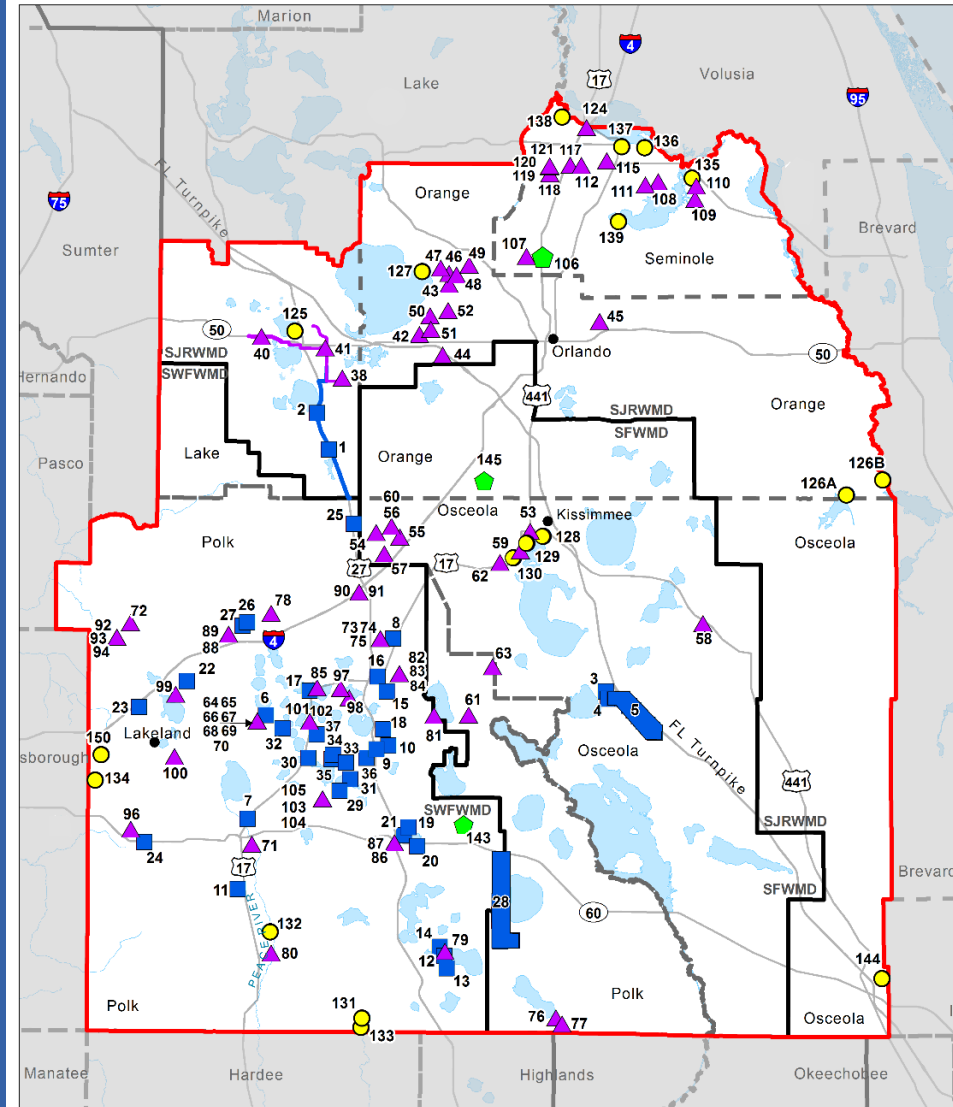
# One Plan for CFWI Region

- **Developed first-ever**
- **Collaborative effort**
- **Strong scientific foundation**



# RWSP Projects

- 152 RWSP Projects
- 415 mgd
- \$3.7B

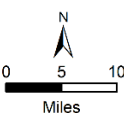


spbrown/workspace/cfw/WSOPs - spbrown

## Water Supply Option Projects (WSOPs) Within the Central Florida Water Initiative (CFWI) Planning Area

- Groundwater
- ▲ Reclaimed Water
- Surface Water
- ◆ Storm Water

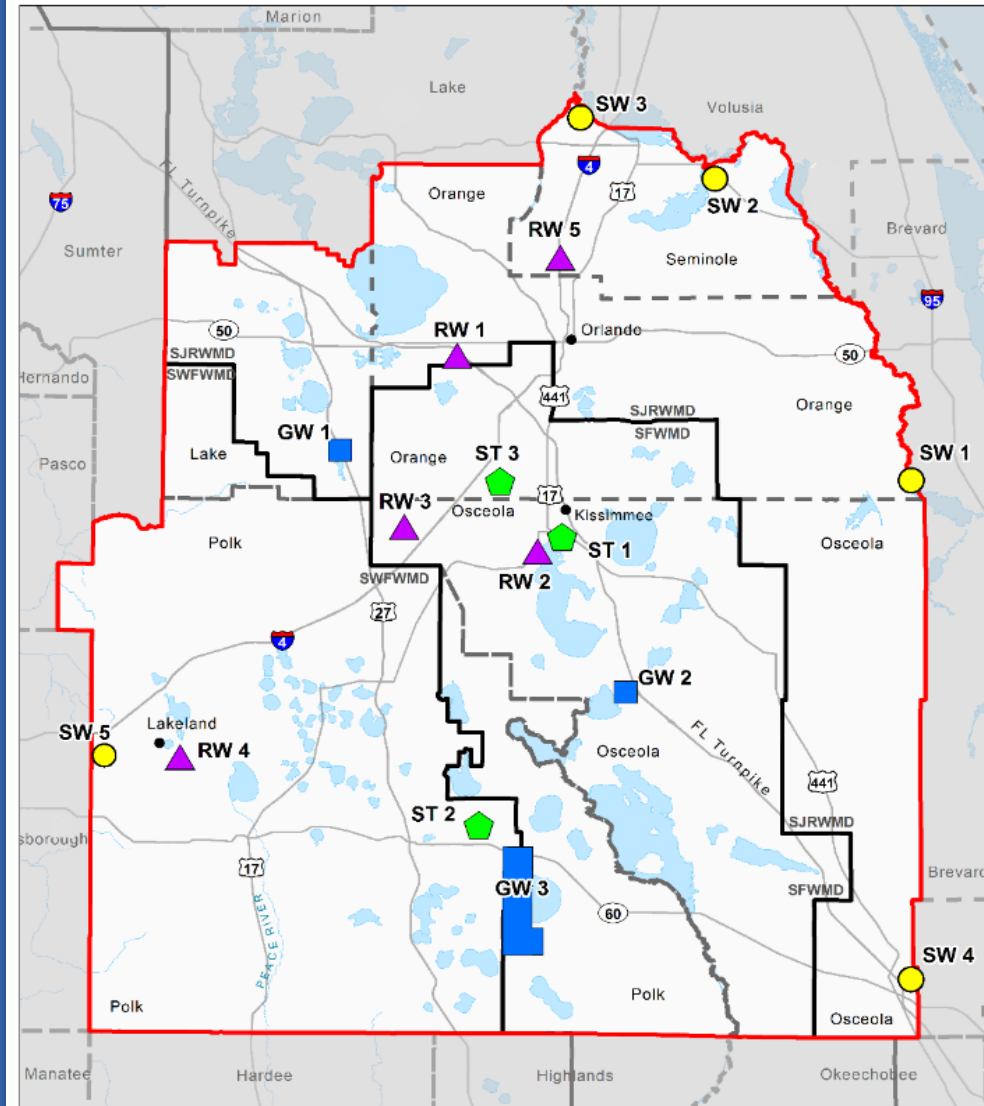
- CFWI Boundary
- County Boundaries
- Water Management District Boundaries





# Solutions Team Projects

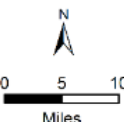
- Focused on 20 projects/programs
- 224 MGD
- \$2.8B



**Solution Phase Water Supply Option Projects (WSOPs) Within the Central Florida Water Initiative (CFWI) Planning Area**

- Groundwater
- Reclaimed Water
- Surface Water
- Storm Water

- CFWI Boundary
- County Boundaries
- Water Management District Boundaries



# CFWI Water Conservation

- Projects
  - Public Supply
    - 10 BMPs, \$122M, 27.9 MGD
  - Other Self Supply (LRA,DSS, CII, PwGn)
    - 8 BMPs, \$17.9M, 4.6 MGD
  - Agriculture Programmatic Approach
    - 8 BMP Categories, \$10.1M, 4.3 MGD
- Additional
  - Public Education
  - Statewide Clearinghouse
  - Conservation Planning Tools
  - Research

# Northern Region Strategies

Priorities	Strategies
<b>Ensure long-term sustainable water supply</b>	<ol style="list-style-type: none"><li>1. Extend traditional groundwater supplies<ol style="list-style-type: none"><li>1. Reclaimed water</li><li>2. Conservation</li></ol></li><li>2. Regional water supply planning<ol style="list-style-type: none"><li>1. Needs and sources</li><li>2. Regional projects and cooperation</li><li>3. Alternative water supplies</li><li>4. MFLs/Springs management</li></ol></li></ol>

# District Conservation Tools

- Cooperative Funding Initiative
  - Conservation
  - Reclaimed water
- Technical Assistance
  - Water Conservation Model
  - Leak detection
  - Water audits
  - Water-conserving rate tool

# District Conservation Tools

- Engagement/outreach
  - Advertising materials
  - Social media
  - Florida Water Star
  - Water CHAMP
  - Florida-Friendly Landscaping

# **Leak Detection Activities**

## **in Northern Region Since 2010**

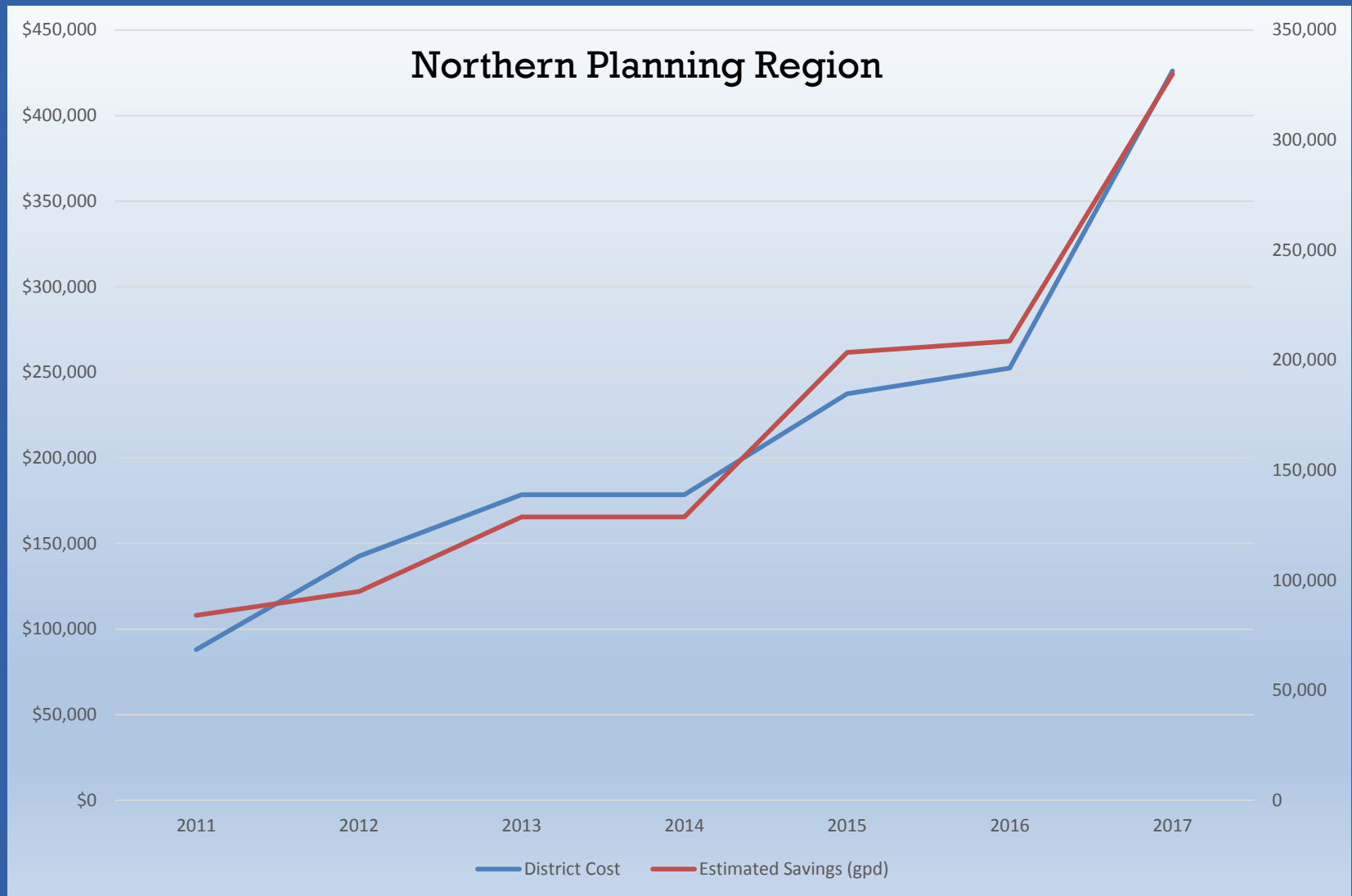
- 20 leak detection surveys
- 14,060 points accessed
- 113 leaks found
- 1.1 mgd savings



# FY2011-17 Co-Funded Projects

FY	Cooperator	Title	Total Costs	District Costs	Savings (GPD)
2011	Marion County	Toilet Rebate Program - Phase 1	\$37,814	\$18,907	4,700
2011	WRWSA	Regional Irrigation Evaluations Program - Phase 1	\$138,258	\$69,129	79,352
2012	Bay Laurel CDD	Toilet Rebate Program	\$60,000	\$30,000	4,708
2012	Marion County	Toilet Rebate Program - Phase 2	\$49,062	\$24,531	6,030
2013	WRWSA	Regional Irrigation Evaluations Program - Phase 2	\$71,842	\$35,921	33,930
2015	Citrus County	Rain Sensor Rebate Program	\$9,400	\$3,133	10,000
2015	Citrus County	Toilet Rebate Program	\$19,208	\$6,397	3,388
2015	Marion County	Toilet Rebate Program	\$19,364	\$9,682	2,614
2015	WRWSA	Regional Irrigation Evaluations Program - Phase 3	\$79,500	\$39,750	58,800
2016	Marion County	Toilet Rebate Program - Phase 3	\$30,000	\$15,000	5,095
2017	Bay Laurel CDD	Irrigation Controller ET Sensor	\$83,356	\$41,678	24,234
2017	Marion County	Toilet rebate program phase 4	\$62,000	\$32,000	10,190
2017	WRWSA	Enhanced regional irrigation system evaluations	\$200,000	\$100,000	86,944
Totals			\$859,804	\$426,128	329,985

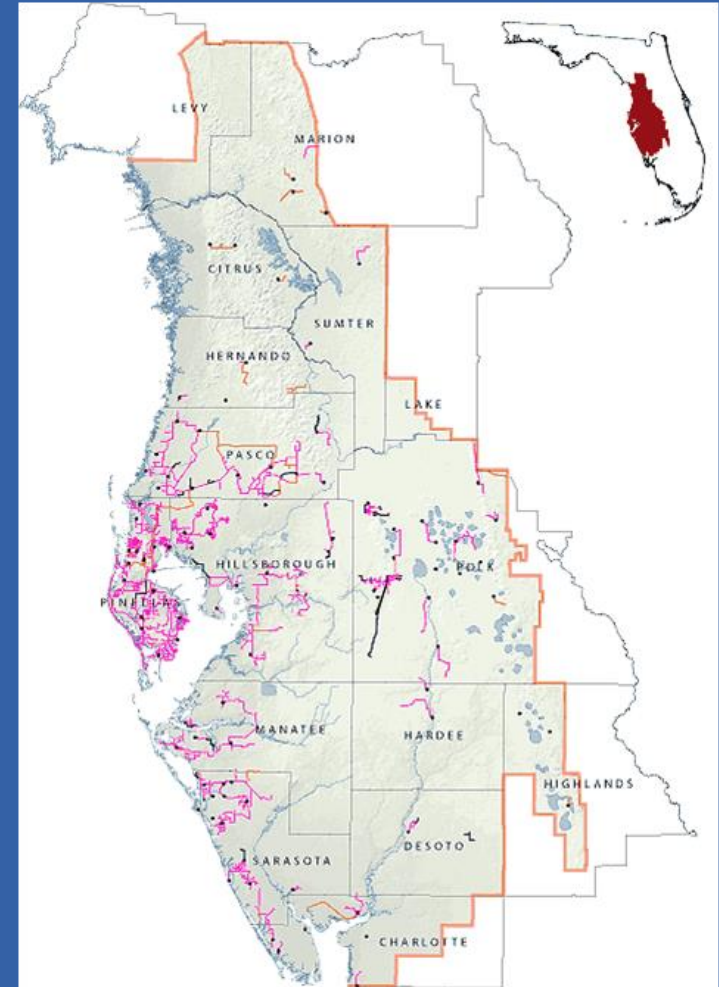
# 2011-2017 District Costs on Co-Funded Projects\*



\*Costs only District expenses; savings include estimated and projected

# Northern Region Reuse Existing & Under Development

- **\$20M Leveraged \$32M (2010-2015)**
- **13 mgd of Reuse (+60% utilization)**
- **9 MGD of New Water (+70% efficiency)**
- **Projects Under Development 1-2 mgd**
- **Already Exceeding 2020 Goals (55%/55%)**
- **Well On the Way to 2040 Goals (75%/75%)**

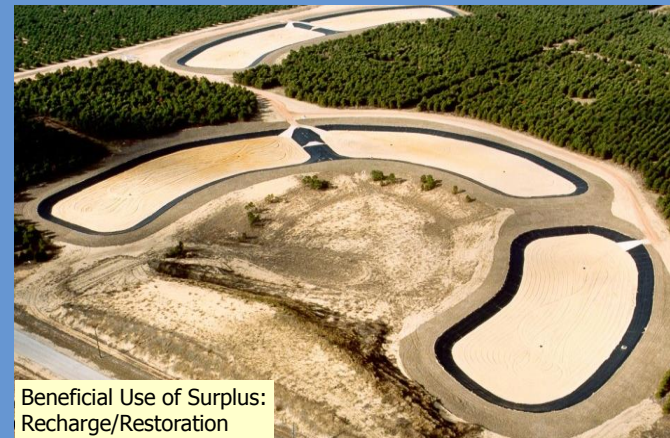


# What's Next?

## Opportunities for Enhancement

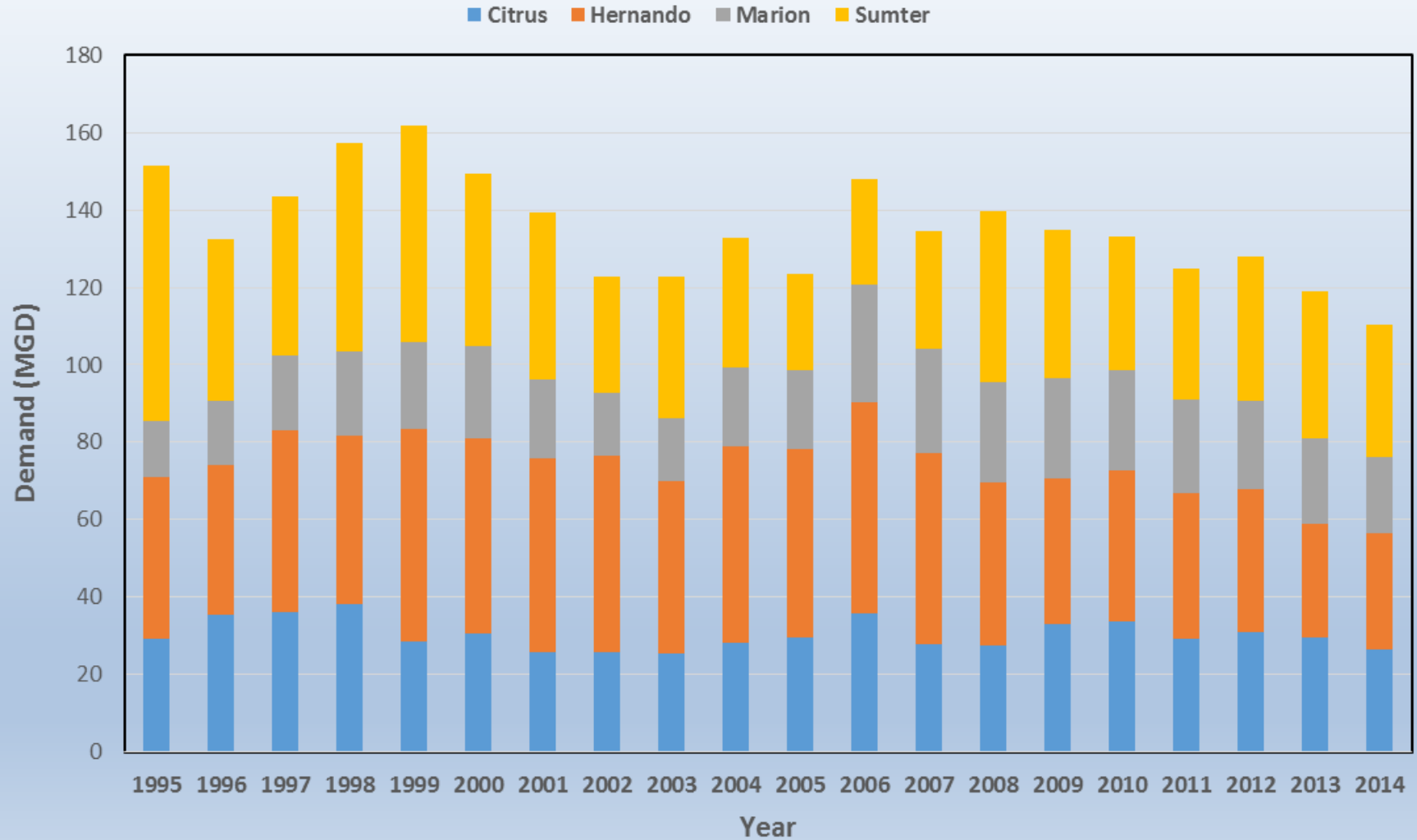


Recharge,  
Natural System  
Enhancement,  
as well as  
Traditional  
Reuse Projects



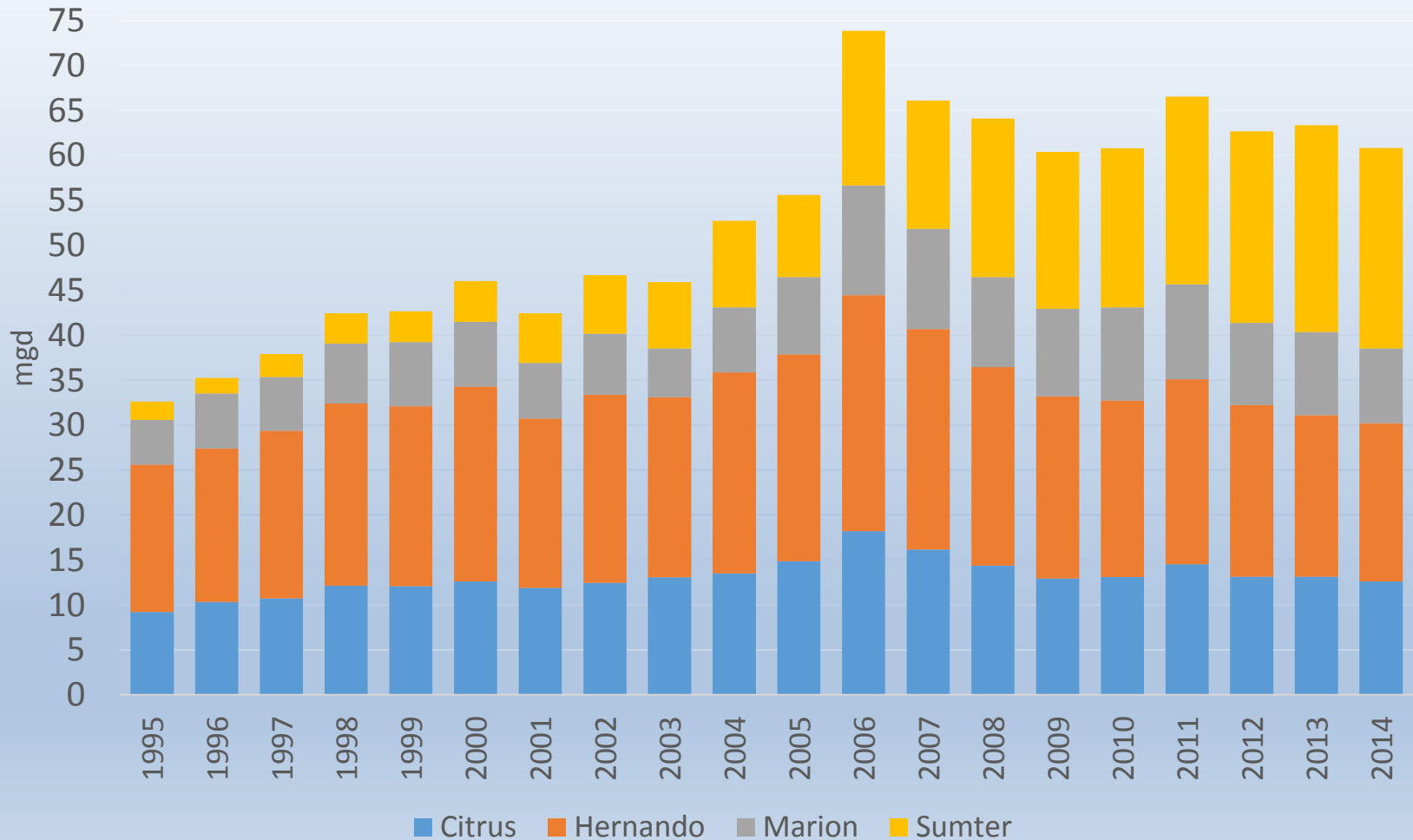
Seasonal storage, recharge, and  
restoration

## WRWSA Total Water Use: All Use Types (1995 - 2014)



## Public Supply in WRWSA Region

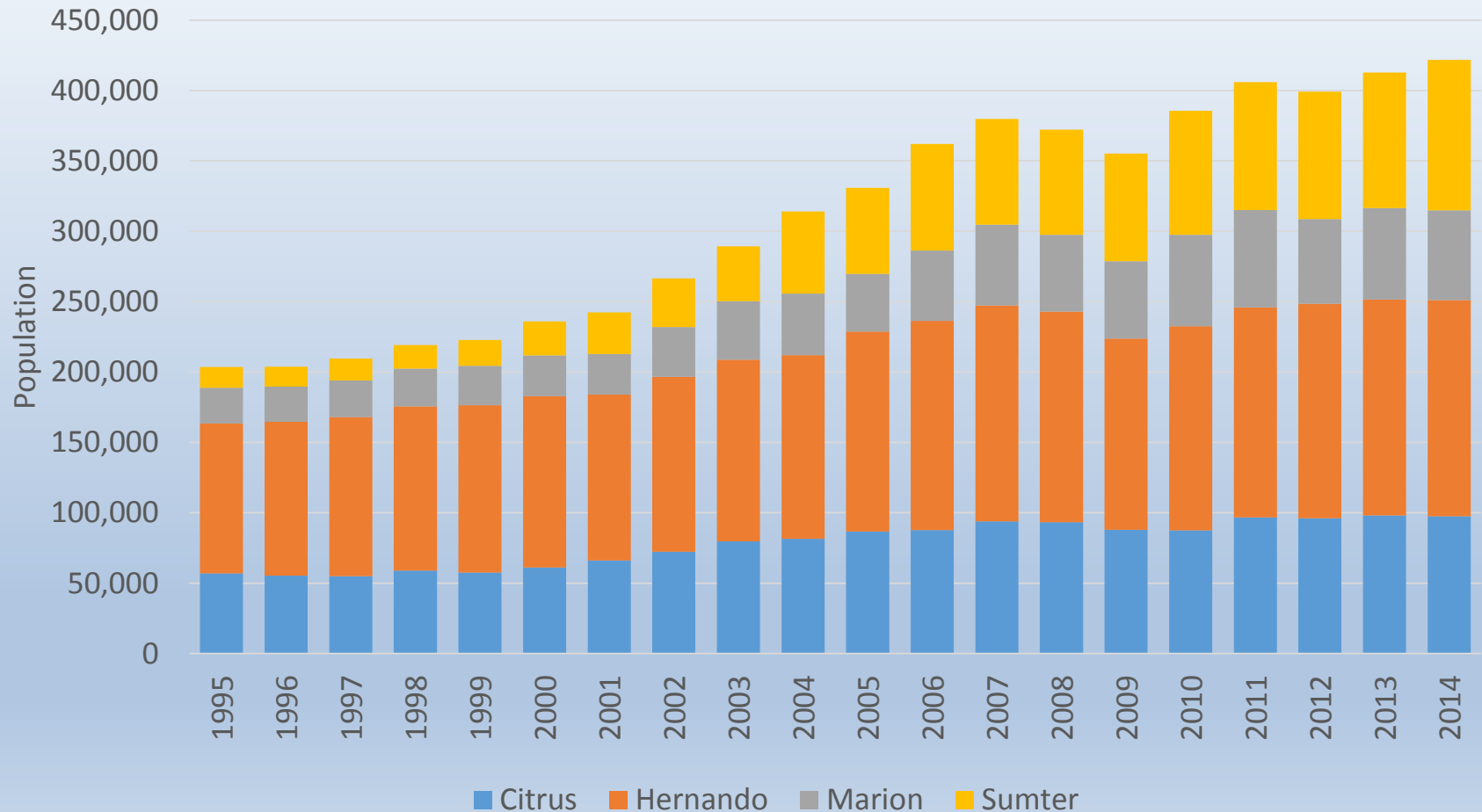
Public Supply Gross Use in WRWSA Counties





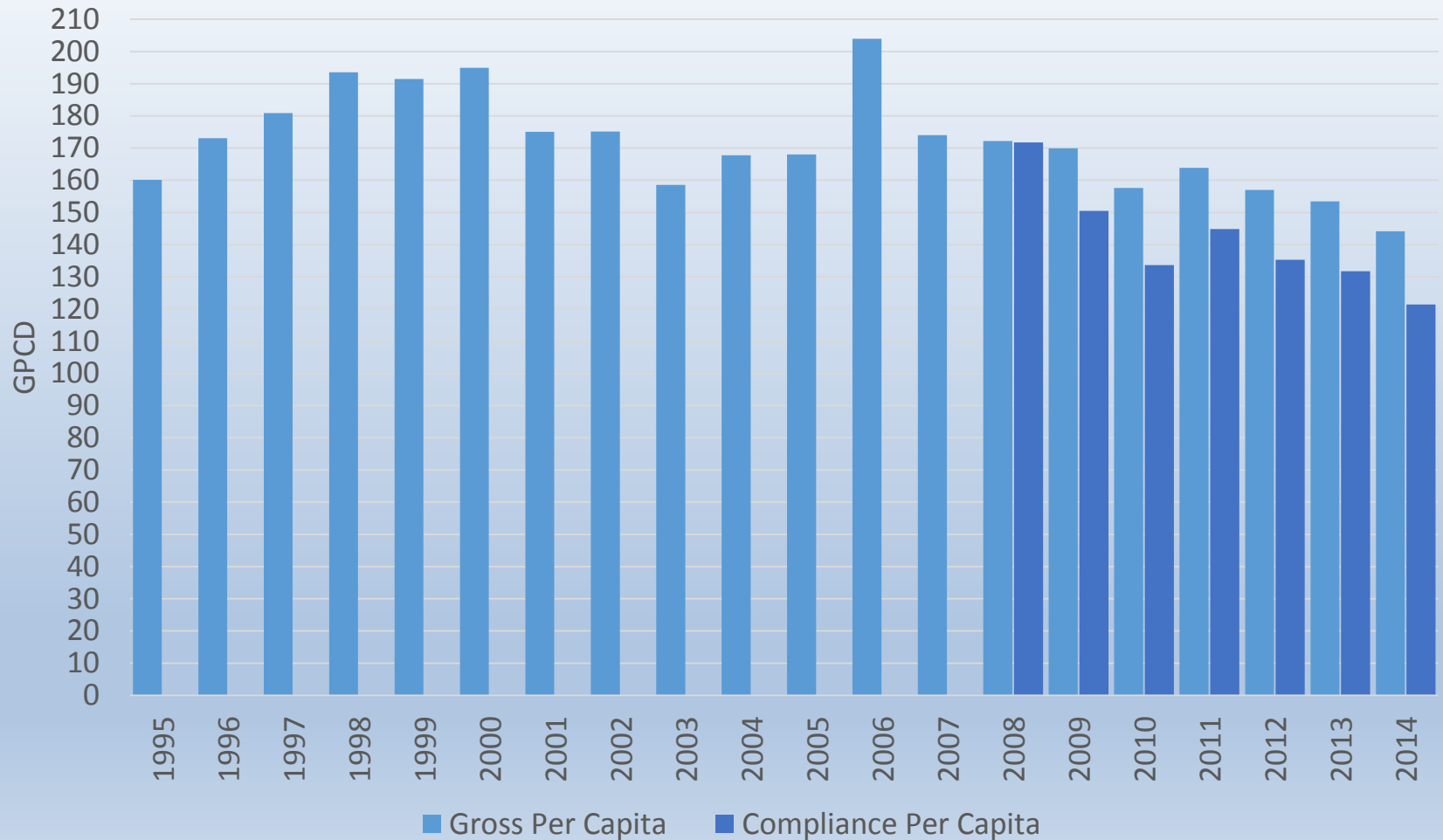
## Public Supply in WRWSA Region

Population served by Public Supply Utilities in WRWSA  
Member Counties

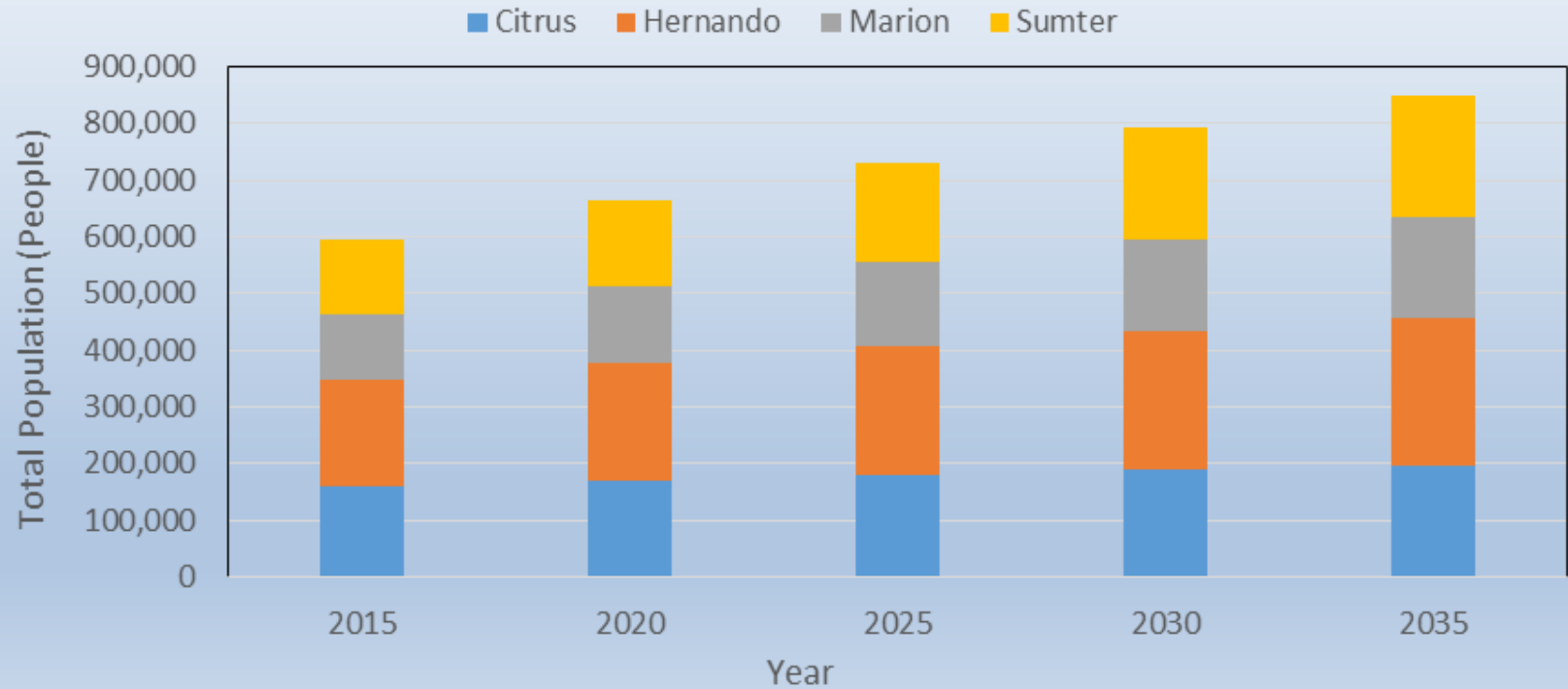


# Public Supply in WRWSA Region

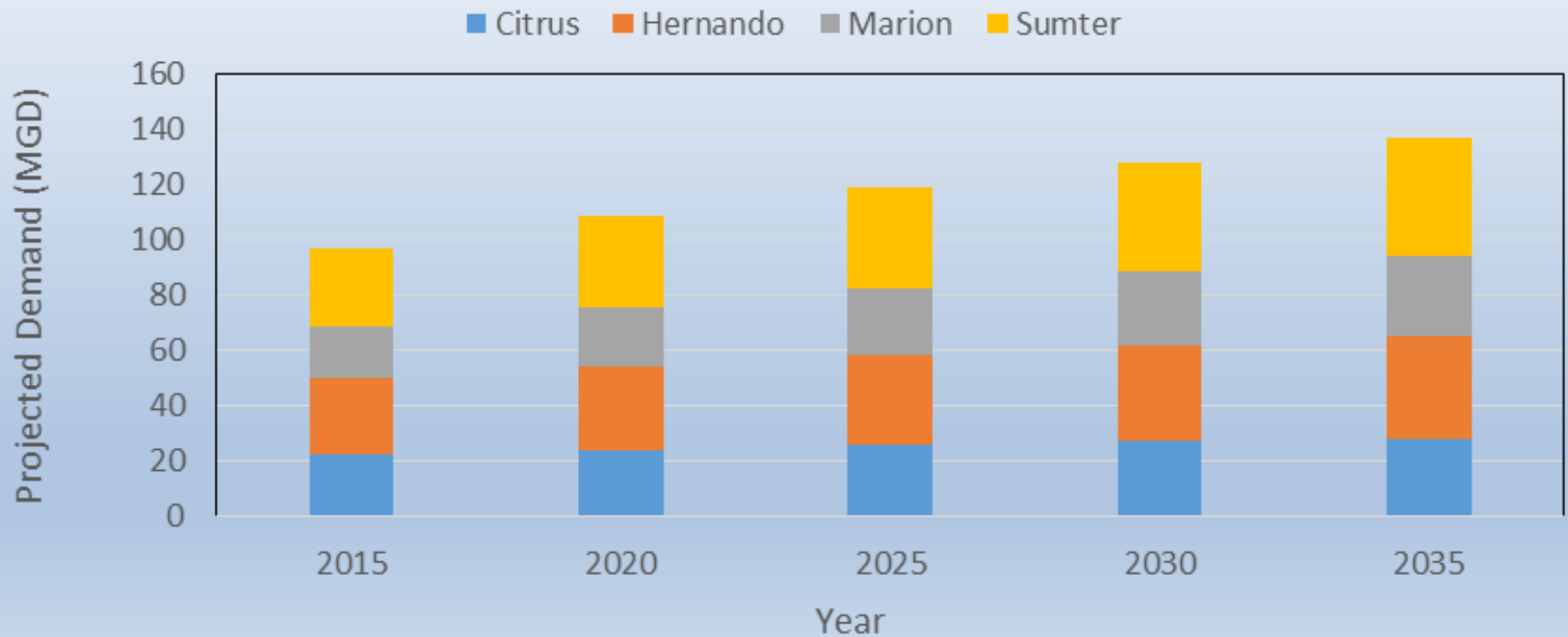
WRWSA Average Gross/Compliance Per Capita



## WRWSA Projected Population (2015 - 2035)



## WRWSA Projected Public Supply Demand With DSS (2015 -2035)



# Regional Solutions

1. Shared interests
2. Partnerships
3. Creativity,  
collaboration,  
resolve

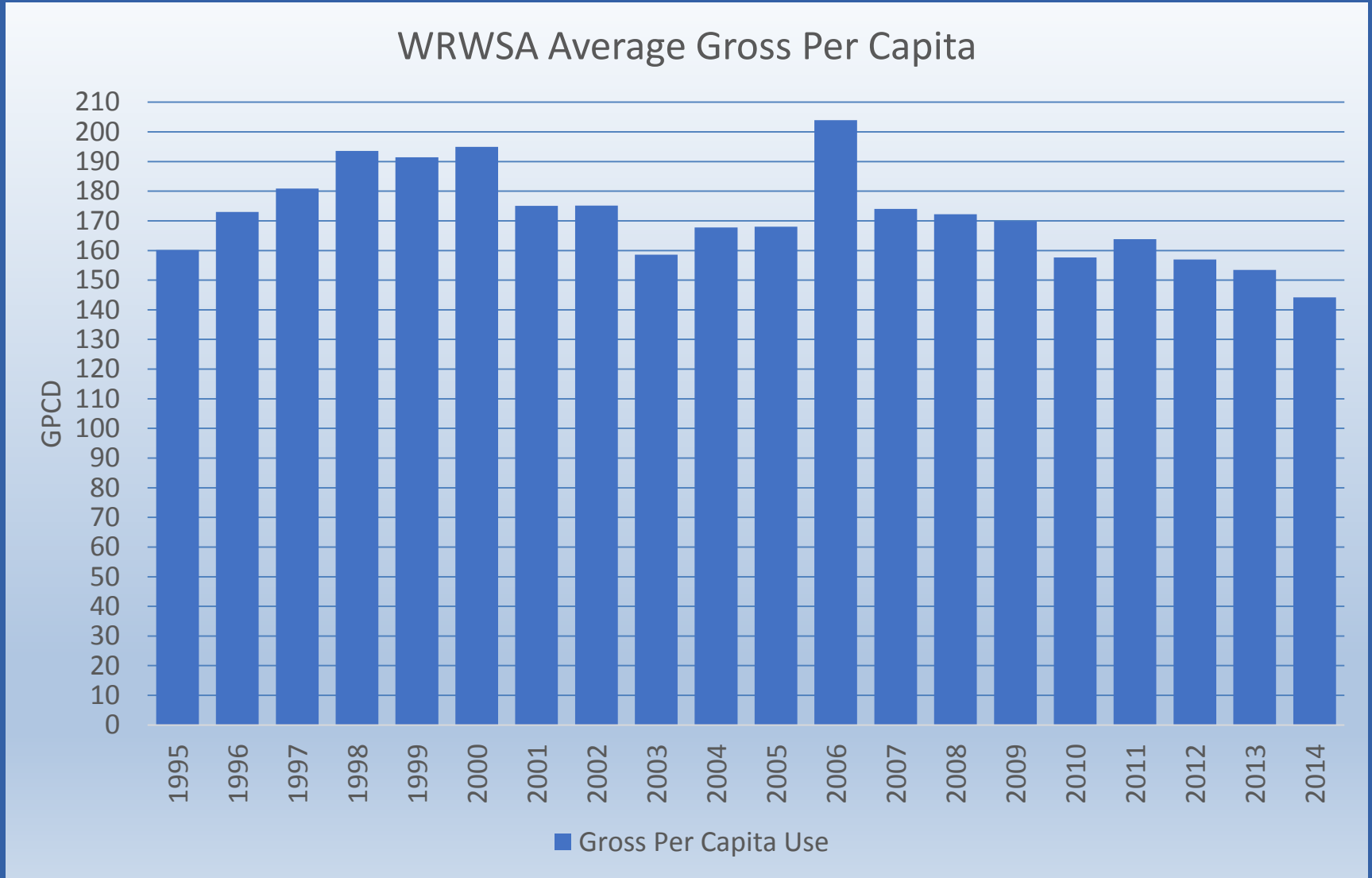


# QUESTIONS?

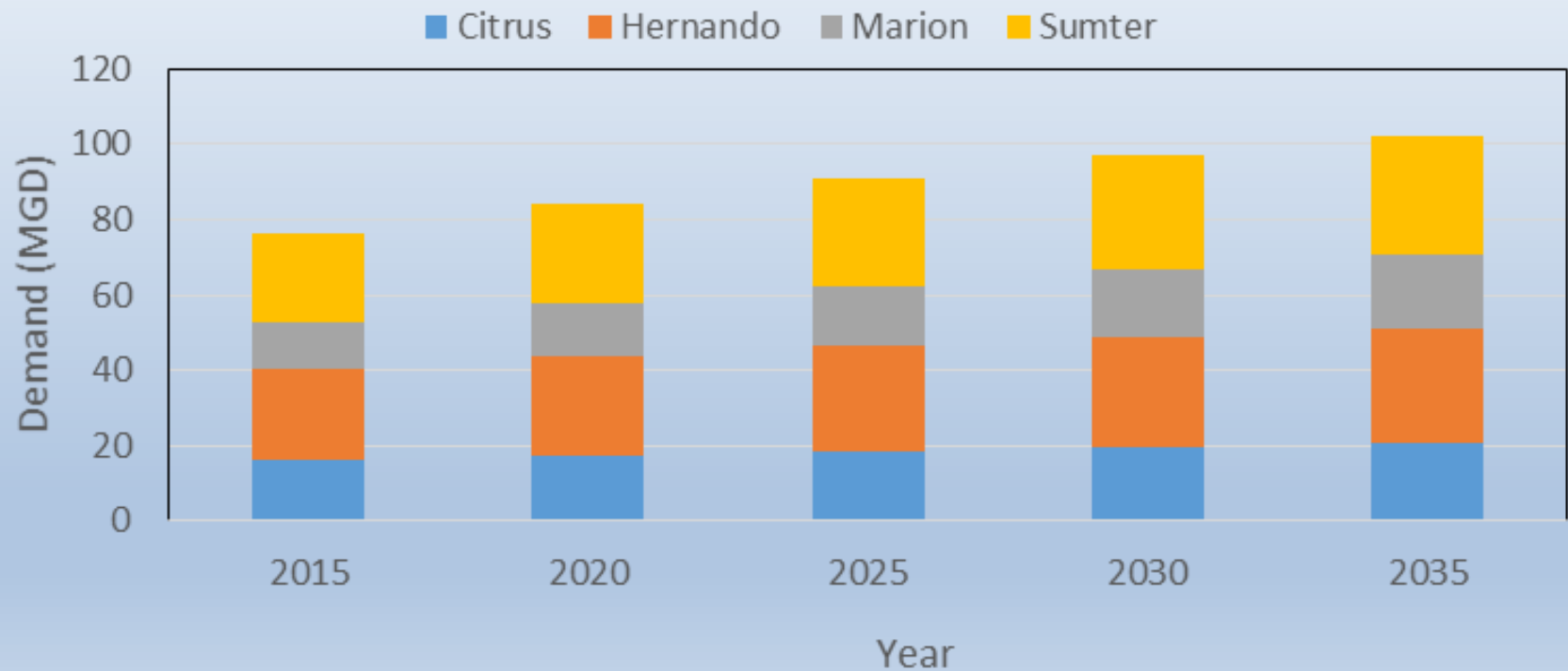




## Public Supply in WRWSA Region

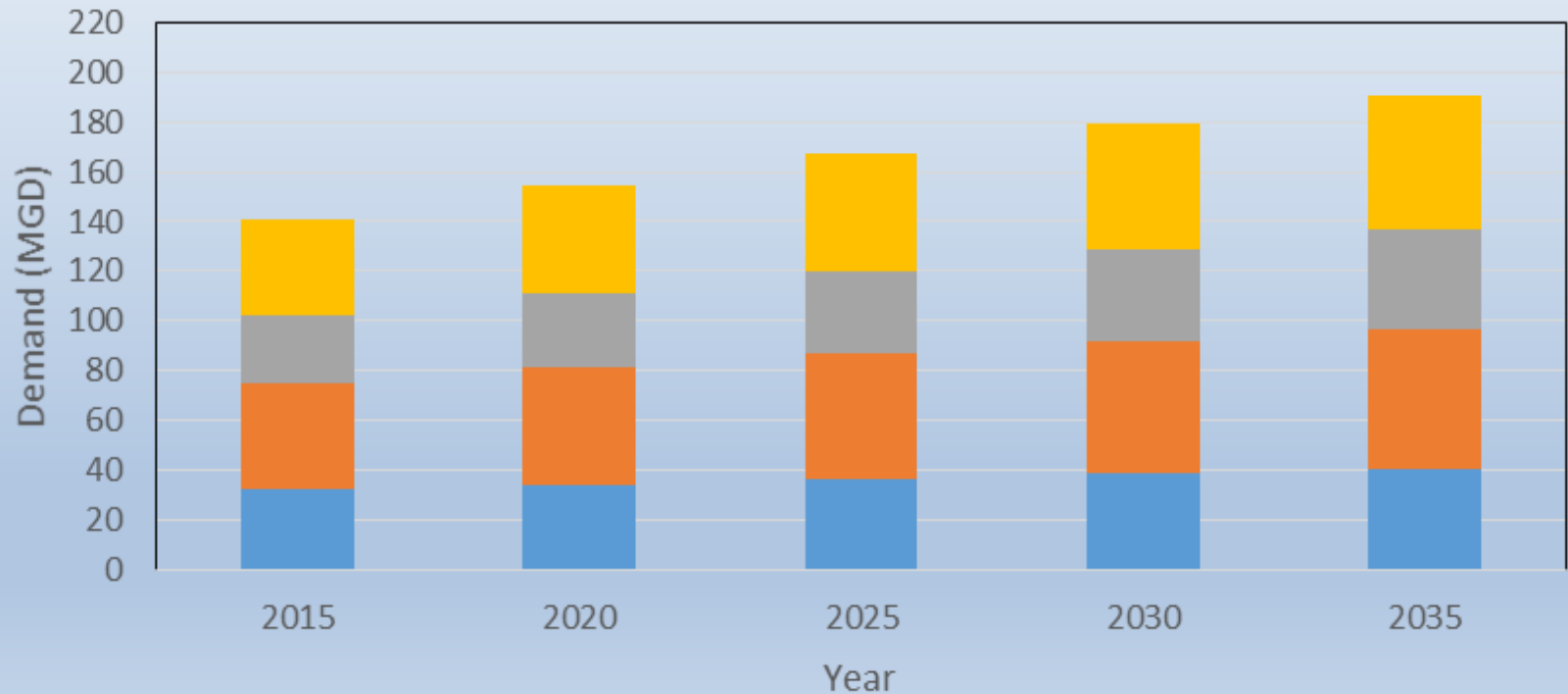


## WRWSA Projected Public Supply Demand W/O DSS (2015-2035)



## WRWSA Total Projected Water Demand - All Use Types (2015 -2035)

■ Citrus ■ Hernando ■ Marion ■ Sumter



# Chapter 7: Conclusions

- Water conservation is an important element
- Sufficient options to meet the regions' needs through 2035
  - 150 options – more than 340 mgd
- Conceptual management strategies can be developed into specific projects
- Stakeholder engagement has and will continue to be important
- Project cost estimates scenario
  - \$2.8 billion for 225 mgd
- Establishment of consistent rules and regulations to be developed to implement the results of CFWI Planning effort



# Springs Protection and Restoration



**Jennette Seachrist, P.E.**  
**Bureau Chief, Natural Systems  
& Restoration**

Southwest Florida  
*Water Management District*





# SWIM Program



WEEKI WACHEE  
SPRINGS

CHASSAHOWITZKA  
SPRINGS

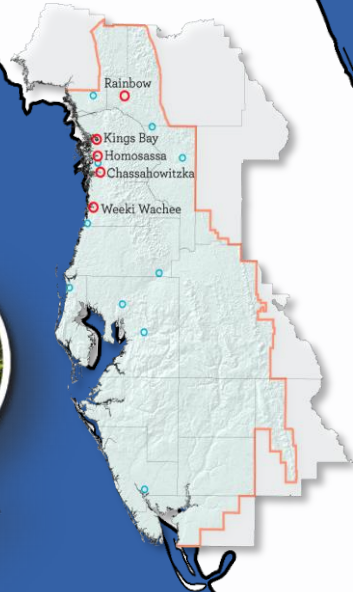


RAINBOW  
SPRINGS

CRYSTAL RIVER/  
KINGS BAY



HOMOSASSA  
SPRINGS



[WaterMatters.org/projects/swim](http://WaterMatters.org/projects/swim)



# Springs Coast Steering Committee

Define Issues, Drivers, &  
Quantifiable Objectives



Develop Management  
Actions



Priority Projects &  
Initiatives



SWIM Plan Adoption

**Rainbow River Surface Water Improvement  
and Management (SWIM) Plan**  
A Comprehensive Conservation and Management Plan  
November 2015











3 SEP 2013

# Management Actions

## Water Quality

- Stormwater Management
- Fertilizer Management
- Waste Disposal

## Water Quantity

- Water Conservation
- Reclaimed Water Use

## Natural Systems

- Habitat Conservation
- Habitat Restoration



# Restoration

- Water quality & quantity
  - Stormwater retrofits
  - Treatment wetlands
  - Reclaimed water projects
  - Agricultural BMPs
  - Conservation programs
- Aquatic habitat
  - Re-vegetation
  - Living shorelines
  - Sediment removal



# Financial Assessment/Solutions Projects

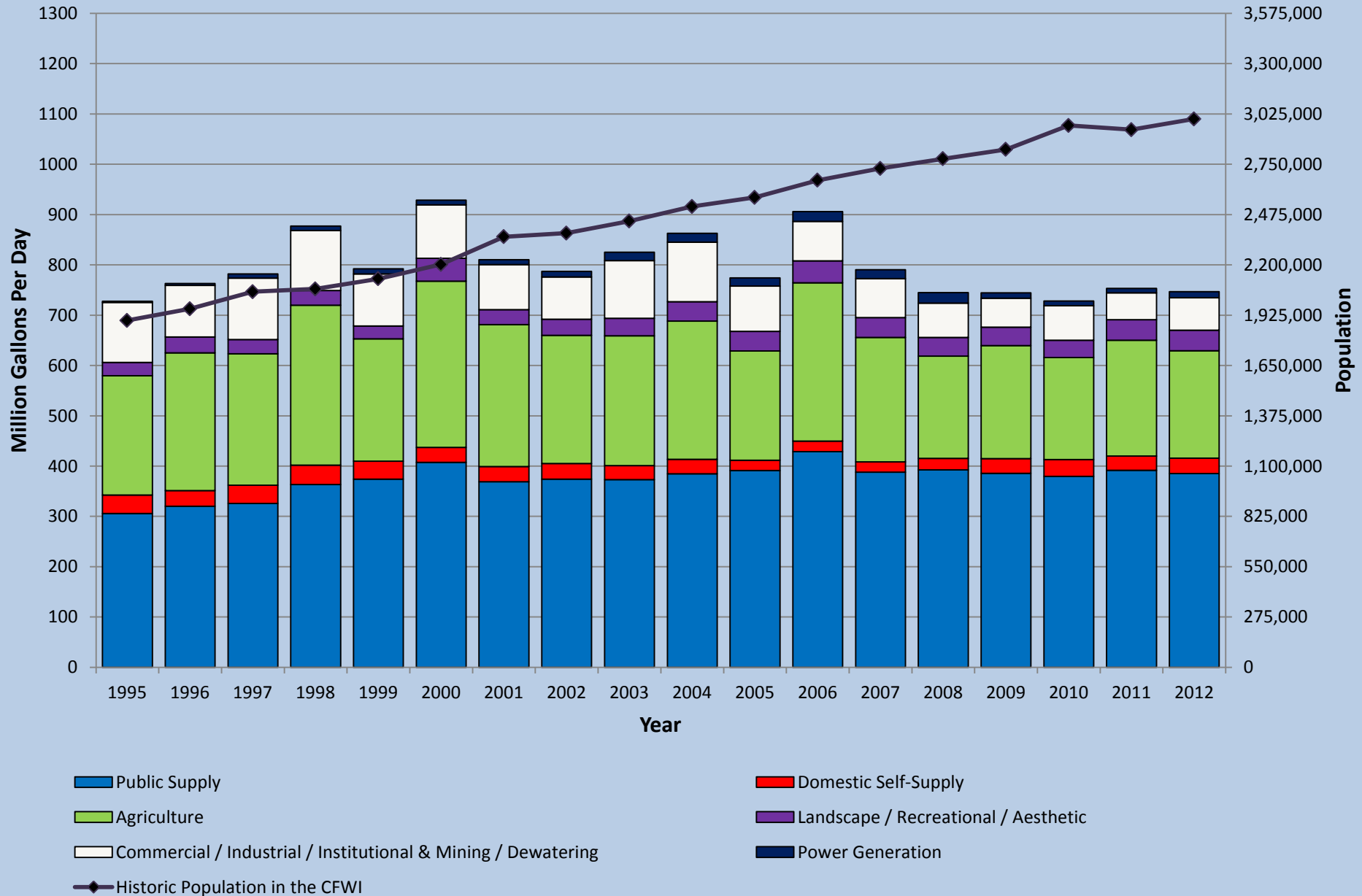
Projects	Total Quantity	Year 1 (MIL \$)	Year 2 (MIL \$)	Years 3-5 (MIL \$)	Total Cost (Mil \$)
Conservation (All)	36.8 mgd	3.8	6.1	24.5	170
Recovery Projects		2	1.5	10	50
Data Monitoring & Investigation		3	7.5	23.1	34.1
Other Investigations		1.3	3.3	3.7	8.9
<b>Groundwater Projects</b>					
South Lake County Wellfield	12.7 mgd			60.7	116.5
Cypress Lake Wellfield	30 mgd	14	25.8	153.7	374.3
Southeast Polk County Wellfield (centralized)	30 mgd	2.4	2.6	129.5	284.6
<b>Reclaimed Water Projects</b>					
Project RENEW	9.2 mgd			24.6	50.5
West Ditch Stormwater for Reuse Augmentation	0.9 mgd	1.6	2.3	11	28.2
160-ac Site Indirect Potable Reuse	4.5 mgd	0.6	0.7	6.4	7.7
TECO Polk Power Reuse	10 mgd				97
AFIRST/Altamonte Springs	4.5 mgd				15
<b>Surface Water Projects</b>					
St. Johns River/Taylor Creek Reservoir	54 mgd			10	637.6
St. Johns River near State Road 46	40 mgd				584.3
St. Johns River near Yankee Lake	40 mgd		2	20	536.7
Polk Regional Alafia River Basin	10 mgd				263.4
Grove Land Reservoir and Stormwater Treatment	122.4 mgd raw water	3	3		435.4
<b>Stormwater Projects</b>					
Judge Farms Reservoir and Impoundment	5 mgd	0.5	17.7	6.8	28.3
Lake Wailes Stormwater Mitigation	1.4 mgd		1.2	12.4	13.6
Reedy Creek Watershed	4 mgd				1.6
<b>Total Financial Plan</b>	224.5 mgd	32.2	73.7	496.4	2,775.7
<b>Total Solutions Projects</b>	415.4 mgd				3,737.7

# Chapter 7: Implementation Strategy

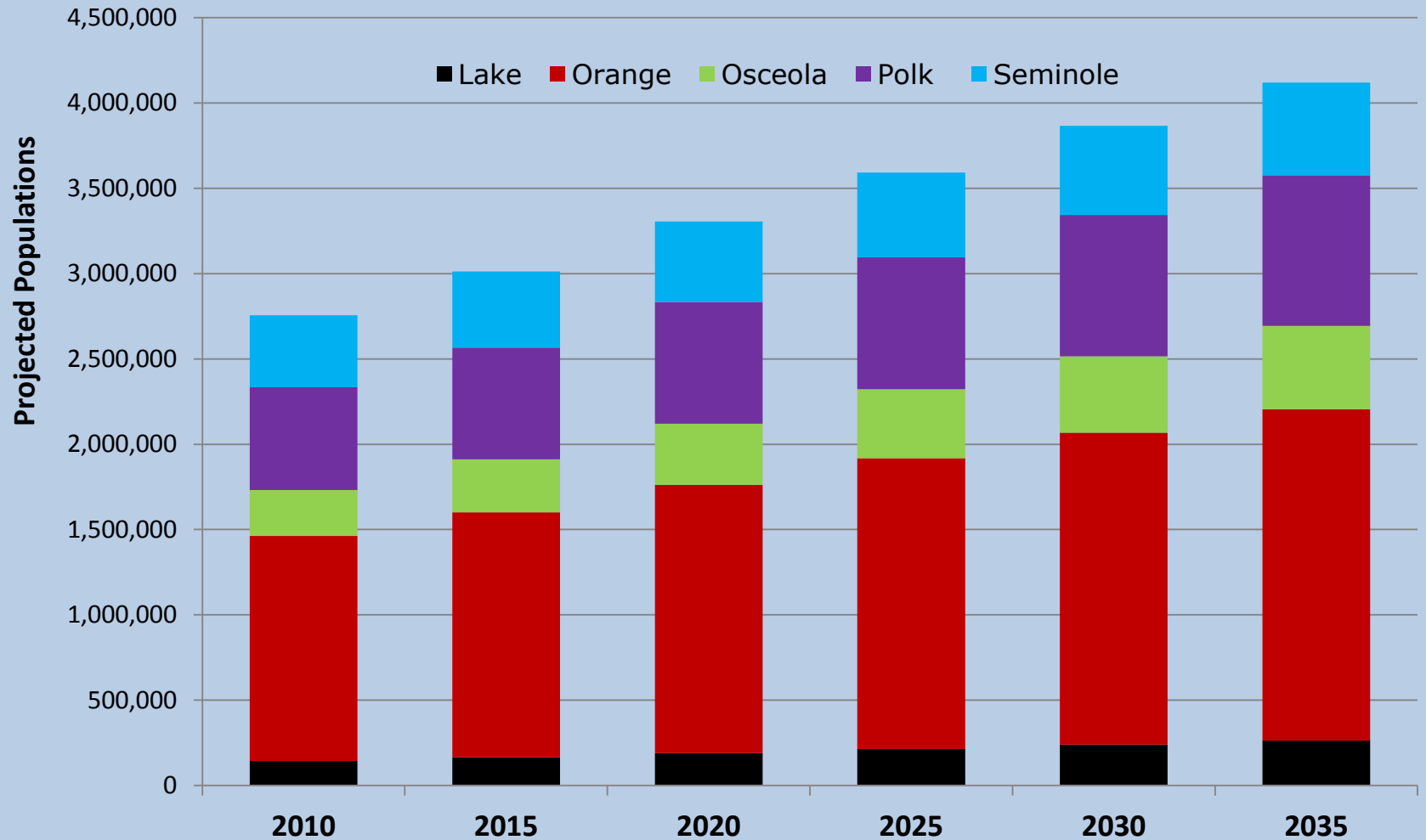
- Implement Water Conservation Programs
- Develop Specific Prevention and Recovery Projects
- Support Development and Implementation of Regional Project Solutions
- Support Additional AWS Projects
- Improve Water Resource Assessment Tools and Supporting Data
- Develop Options for Consistent Rules and Regulations
- Continued Communication and Outreach
- Identify Options for Future CFWI Framework to Support Implementation Strategies



## Historic Water Use -vs- Population in the CFWI

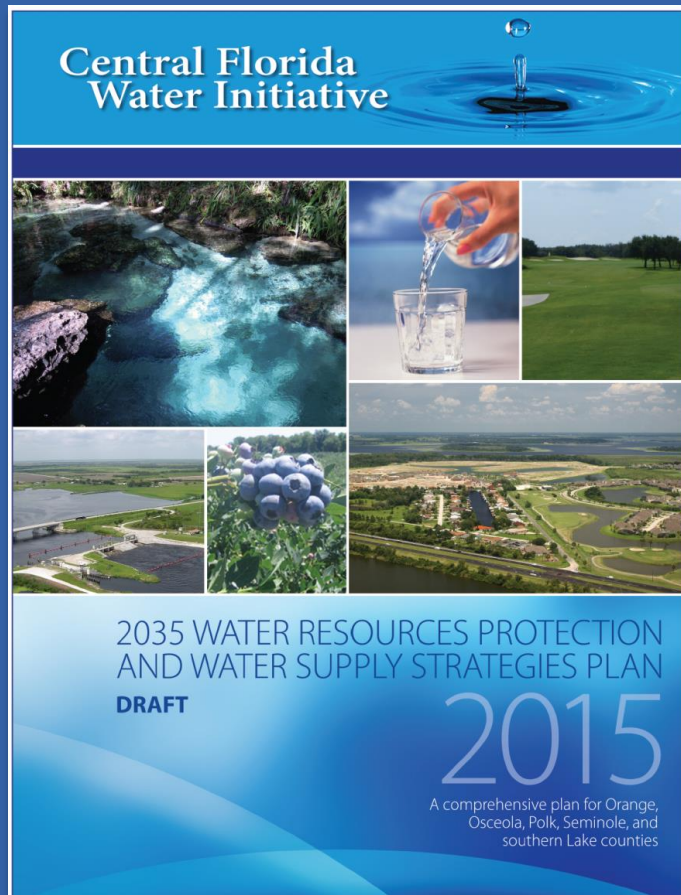


# Projected Population



**Projected Increase of 1.4 Million People**

# 2035 Water Resources Protection & Water Supply Strategies Plan



## CFWI Solutions Plan

### **Executive Summary**

### **Chapter 1: Introduction**

### **Chapter 2: Water Conservation**

### **Chapter 3: Solutions Project Options**

### **Chapter 4: Environmental Evaluation**

### **Chapter 5: Regulation**

### **Chapter 6: Financial Assessment**

### **Chapter 7: Conclusions & Implementation Strategies**

### **Appendices**