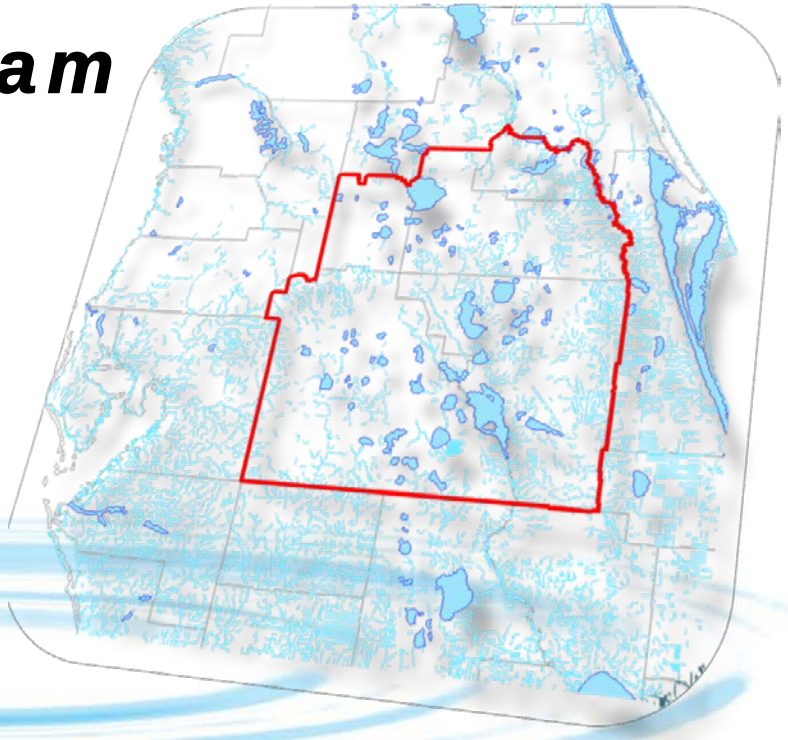
# Steering Committee Meeting

## June 26, 2015

## CFWI Draft Plan review progress

***Solutions Planning Team***
***Mark Hammond, P.E.***



# CFWI Plan Schedule

**May/June/July**

- May 8 Steering Committee Meeting
  - Approve Draft CFWI Document Series for Public Review
- Public review period
  - Post to website May 8
  - Extended Review Period - ~82 days
  - Ends July 31

**August/September**

- Finalize CFWI Document Series

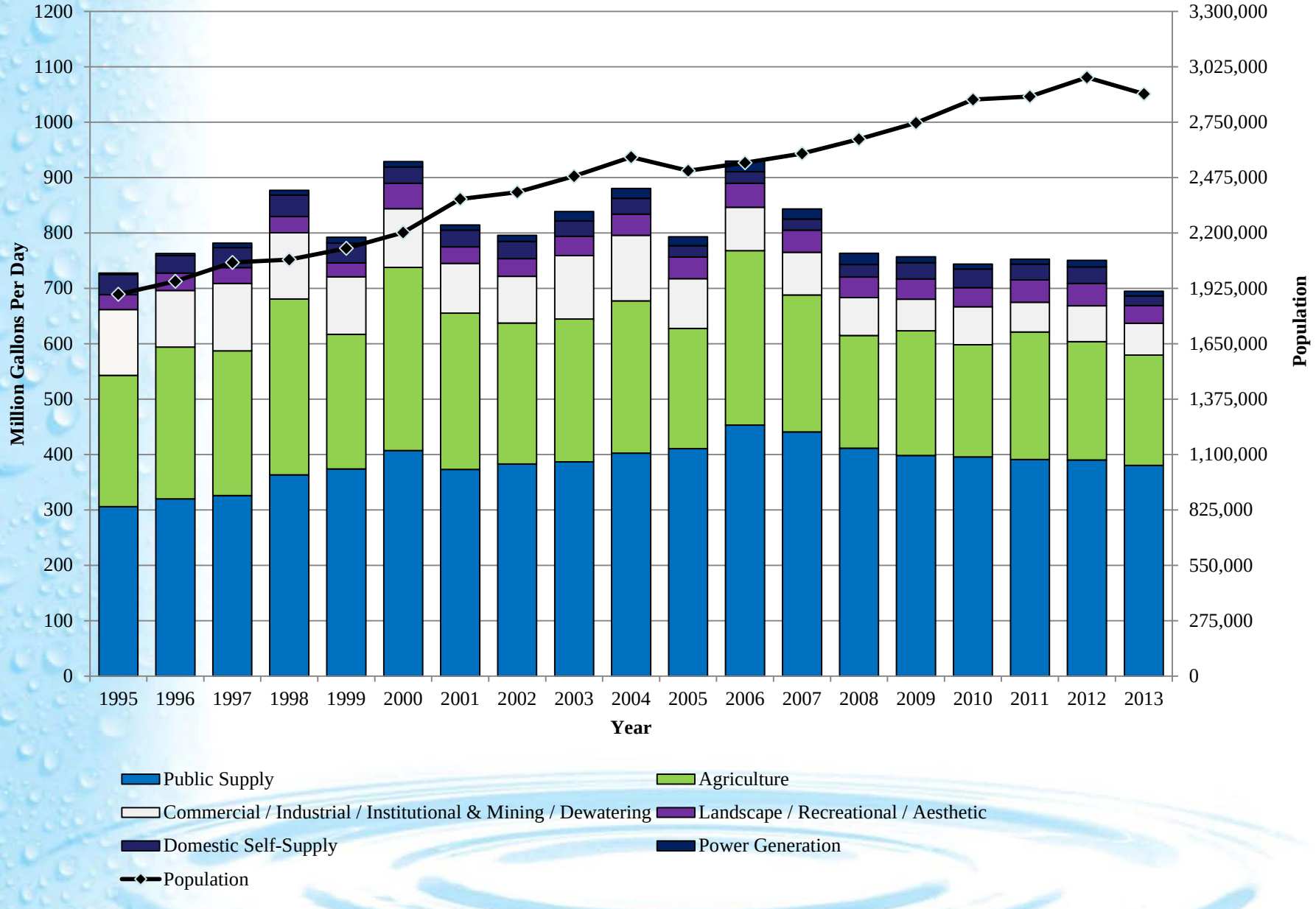
**October**

- Steering Committee Meeting
  - Approve CFWI Document Series for Board Approval

**November**

- District Governing Board Meetings
  - Approve CFWI Document Series

# Historic Water Use -vs- Population in the CFWI



# Residential Conservation

- Calculated for residential public supply
- Took into account offset for residential irrigation reuse
- Estimated water saved through conservation from 1995 – 2012 = 159.15 mgd

# "STOPR+2" Utilities Water Conservation Programs Surveyed

STOPR+2 Utilities treat and deliver about 57% of the public water supply in the CFWI area

- **S**t. Cloud
- **T**oho Water Authority
- **O**range County Utilities
- **P**olk County Utilities
- **R**eedy Creek Improvement District (serving Disney)*, and
- Orlando Utilities Commission
- Seminole County Environmental Services

**Reedy Creek was omitted in this survey as not representative of a typical public utility*

# Water Conservation Programs Surveyed Include:

- Rates
- Public Education/Awareness
- Irrigation
- Water Loss Reduction
- Automated Metering Infrastructure
- Standards Adoption
- Promotions
- Rebates

# Rates

- Inclining block rates
- Water budget rates

- 6 out of 6 utilities have fully implemented inclining block rates
- 1 out of 6 utilities has partially implemented water budget rates

# Water Loss Reduction

- Advanced leak detection technology
- Annual water loss reduction reporting (leaks, water main repair and replacement)
- Adjusting system pressure

- 6 out of 6 utilities are reporting water loss annually
- 4 out of 6 utilities have fully implemented advanced leak detection technology
- 3 out of 6 utilities have fully implemented adjusting system pressure to lower water loss
- 2 out of 6 utilities have partially implemented adjusting system pressure to lower water loss

# Standards Adoption

- Florida Water Star
- Leadership in Energy and Environmental Design (LEED) Certification

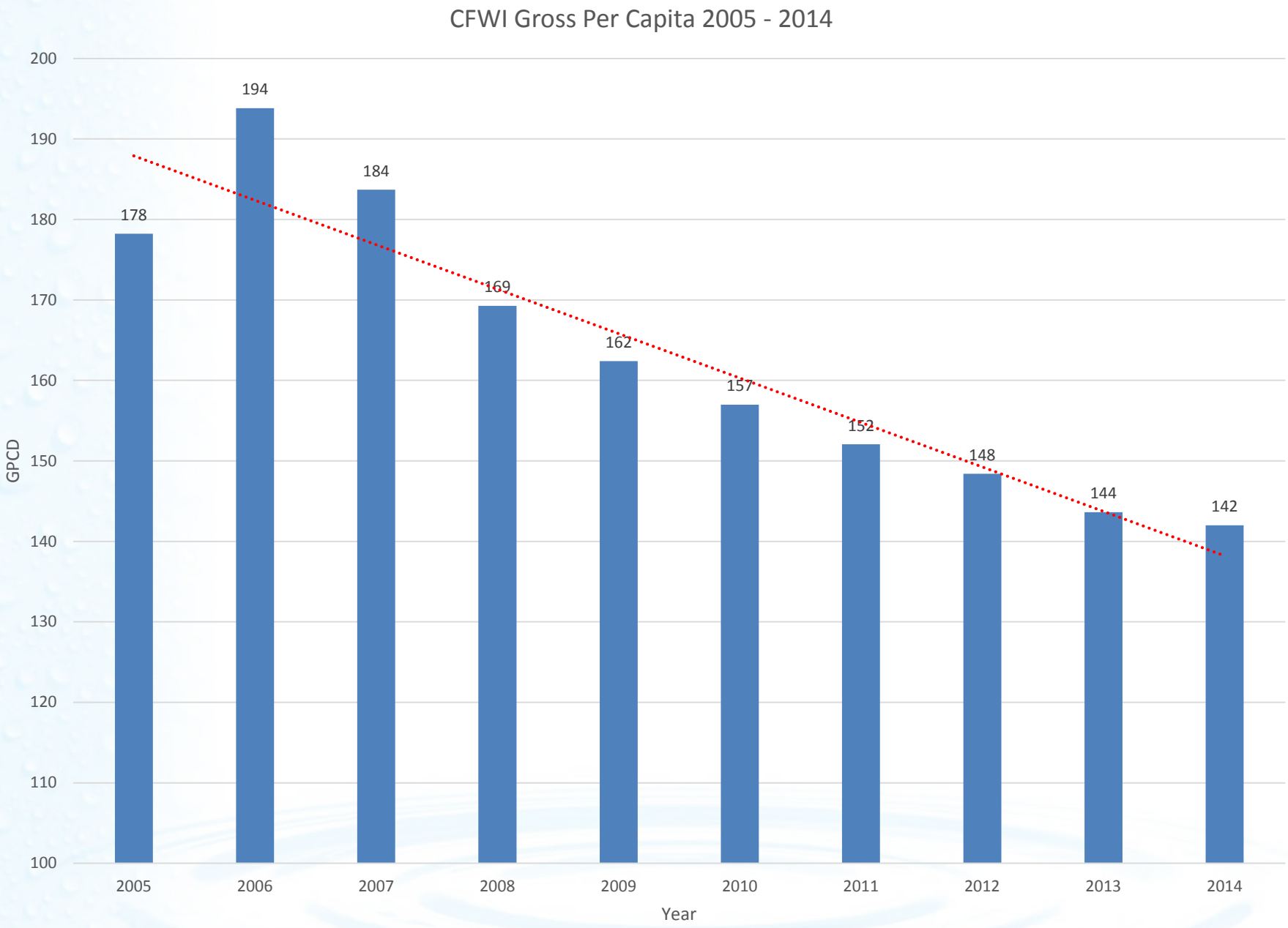
- 1 out of 6 utilities has fully implemented Florida Water Star for new development
- 1 out of 6 utilities has partially implemented Florida Water Star for new development
- 2 out of 6 utilities have partially implemented LEED standards for their own facilities

# Rebates

- Low Flow Toilets
- Water Efficient Urinals
- Energy Star Clothes Washing Machines
- Pre-rinse nozzles
- Air-cooled ice machines
- Florida Friendly Landscaping and Irrigation
- Water Cisterns
- Third party water fixture installations

- 6 out of 6 utilities have fully implemented low flow toilet replacement rebates
- 3 out of 6 utilities have fully implemented at least 3 of these programs
- 1 out of 6 utilities has fully implemented 7 of these programs
- 1 out of 6 utilities has fully implemented third party water fixture installations

# Central Florida Water Initiative



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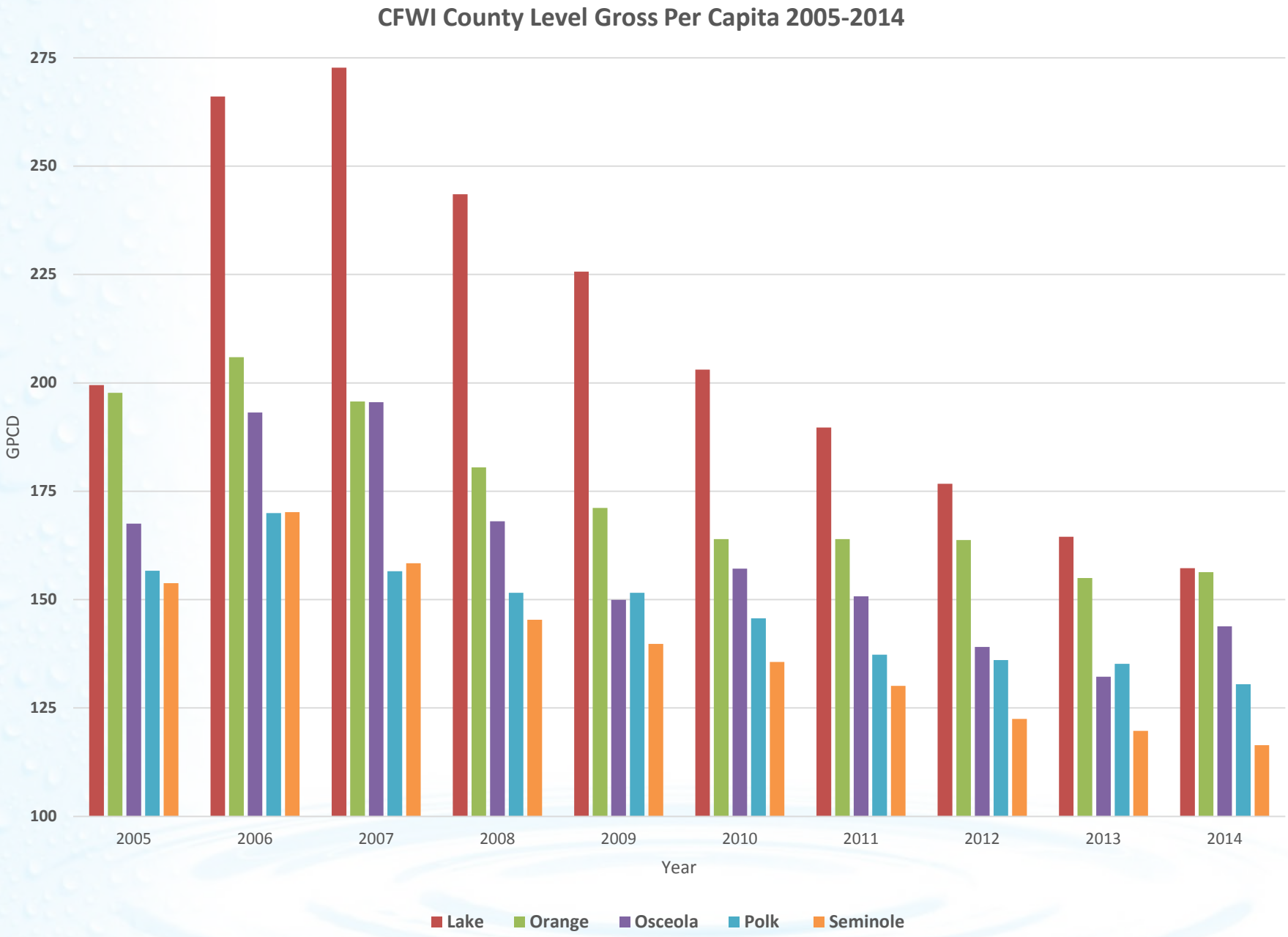
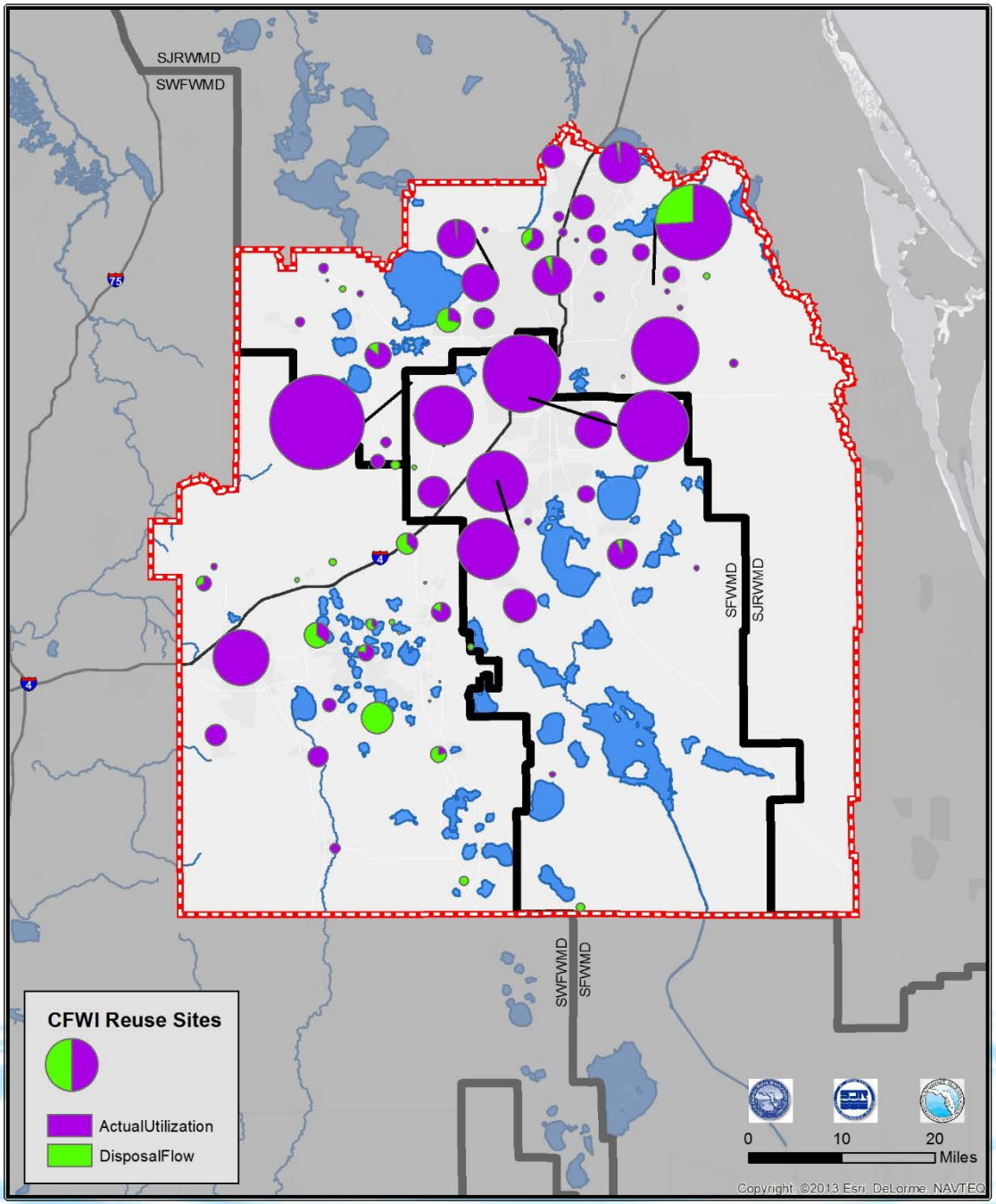


# Reuse

- 1995 Public Access Area Reuse = 32.05 mgd
- 2012 Public Access Area Reuse = 72.44 mgd
  - Increase of 40.39 mgd
    - Residential Irrigation increased by 30.75 mgd

- 1995 Other Reuse = 75.46 mgd
- 2012 Other Reuse = 125.29 mgd
  - Increase of 49.84 mgd

# Central Florida Water Initiative



# CFWI WWTP/Reuse Flows (mgd)

| | WWTP | Reuse | |
|---|---|---|---|
| ■ Orange | 87.3 | 87.3 | |
| ■ Seminole | 43.9 | 37.3 | |
| ■ Lake | 8.0 | 8.0 | |
| ■ Osceola | 24.1 | 24.1 | |
| ■ Polk | 29.8 | 17.7 | |
| | 193.2 | 177.4 | (92%) |

# Irrigation System Application Efficiency (Ea) Ranges

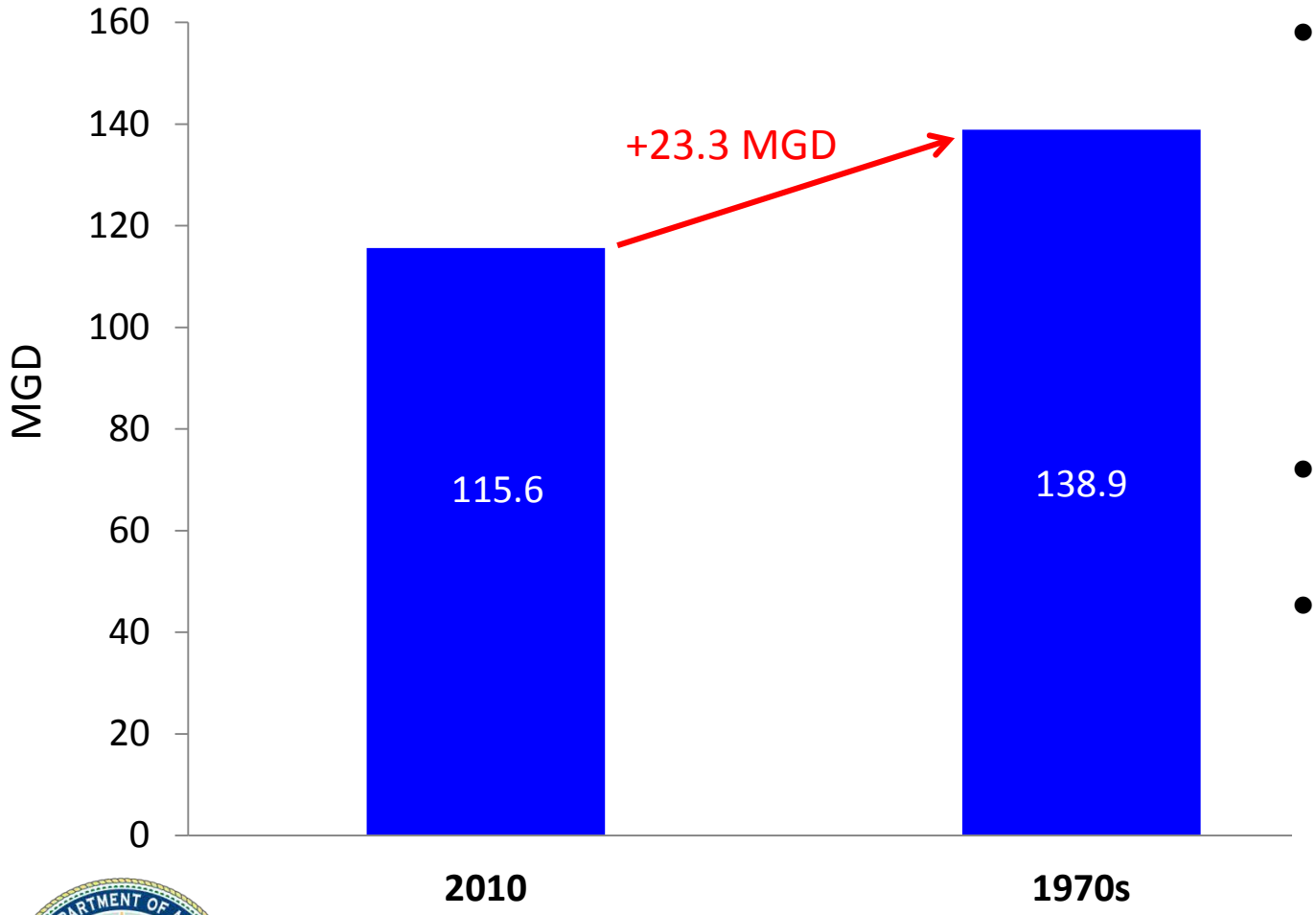
| Irrigation System Type | Range of Application Efficiencies |
|---|---|
| Overhead | 60-80% |
| Seepage [1] | 20-70% |
| Drip [2] | 80-95% |
| Micro Spray and Center Pivots ± | 70-85% |

[1] Ea greater than 50% are not expected unless tailwater recovery is used

[2] With or without plastic mulch

Sources: UF/IFAS Publication AE260
± UF/IFAS Publication BUL247

# 1970s Irrigation Demand Estimate




- 5 types of irrigation systems in use within the CFWI area
  - MicroSpray and Drip acreage was recalculated as Overhead irrigation
- No change in overall acreage being irrigated
- 1970s irrigation systems were assumed to be 5% less efficient as compared to 2010 irrigation systems

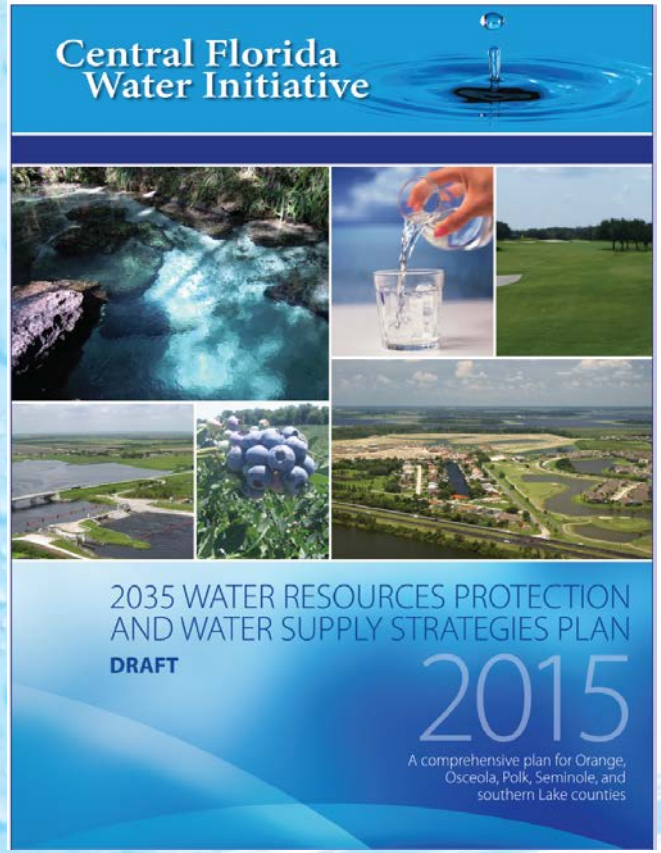
# Water Conservation

- 5-year Plan
  - Public Supply & Other Self Supply
    - 10 BMPs
  - Adopt High-Efficiency Standards
    - Landscape and Irrigation Systems
    - Plumbing Fixtures and Appliances
  - Public Education
  - Clearinghouse/Conservation Planning Tools/Research
  - Agriculture (Programmatic Approach)
    - 7 BMP categories
    - Includes training workshops, on-site demonstrations, mobile labs and support for Extension Services

# Prevention and Recovery

- $2 million in 2016 and $1.5 million in 2017
  - Evaluate recovery options for 3 waterbodies
  - Options include
    - Conservation
    - Recharge
    - Relocation of withdrawals
    - Development of AWS

# 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**

# QUESTIONS

# Solutions Planning Team Priority 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 |
| **Groundwater Projects** | | | | | |
| 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 |
| **Reclaimed Water Projects** | | | | | |
| 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 |
| **Surface Water Projects** | | | | | |
| 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 |
| **Stormwater Projects** | | | | | |
| 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 |
| **Total Financial Plan** | 224.5 mgd | 32.2 | 73.7 | 496.4 | 2,775.7 |
| **Total Solutions Projects** | 415.4 mgd | | | | 3,737.7 |

# DRAFT Solutions Planning Team Financial Plan

| | Year 1 | | Year 2 | | Year 3-5 | | Year 6-10 | | Year 11-20 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Category/Project** | **Funds (Mil/$)** | **Water (MGD)** | **Funds (Mil/$)** | **Water (MGD)** | **Funds (Mil/$)** | **Water (MGD)** | **Funds (Mil/$)** | **Water (MGD)** | **Funds (Mil/$)** | **Water (MGD)** | **Funds (Mil/$)** | **Water (MGD)** |
| **Conservation** | | | | | | | | | | | | |
| Ag Programmatic Approach | 1.0 | 0.4 | 1.0 | 0.4 | 3.0 | 1.3 | 2.6 | 1.1 | 2.4 | 1.0 | 10 | 4.3 |
| Public Water Supply and Other Self Supply (includes education) | 2.8 | 0.5 | 5.1 | 1.0 | 21.5 | 4.8 | 44.2 | 8.7 | 86.4 | 17.5 | 160 | 32.5 |
| **Environmental Recovery** | | | | | | | | | | | | |
| Recovery Projects | 2 | | 1.5 | | 10 | | 16.5 | | 20 | | 50 | |
| **Research & Investigation** | | | | | | | | | | | | |
| Data, Monitoring and Investigations | 3 | | 7.5 | | 23.1 | | 0.5 | | | | 34.1 | |
| Other Investigation | 1.3 | | 3.3 | | 3.7 | | 0.6 | | | | 8.9 | |
| **Alternative Water Supply Projects** | | | | | | | | | | | | |
| Groundwater Projects | 16.4 | | 28.4 | | 344 | | 211.5 | 32.7 | 175.2 | 40 | 775.5 | 72.7 |
| Reclaimed Projects | 2.2 | | 3 | | 41.9 | 9 | 39 | 5.6 | | | 86.1 | 14.6 |
| Surface Water Projects | 3 | | 5 | | 30 | | 288.5 | 12.4 | 1282.6 | 81.6 | 1609.1 | 94 |
| Stormwater Projects | 0.5 | | 18.9 | | 19.2 | 6.4 | 3.3 | | | | 41.9 | 6.4 |
| | | | | | | | | | | | | |
| ***Sub Total*** | 33.2 | 0.9 | 74.7 | 1.4 | 499.5 | 21.5 | 606.7 | 60.5 | 1566.6 | 140.1 | 2,775.7 | 224.5 |

# Support Additional AWS Projects

Updated Water Supply Project Options:

- 37 brackish/nontraditional groundwater
- 87 reclaimed water
- 17 surface water
- 6 stormwater
- 3 management strategies