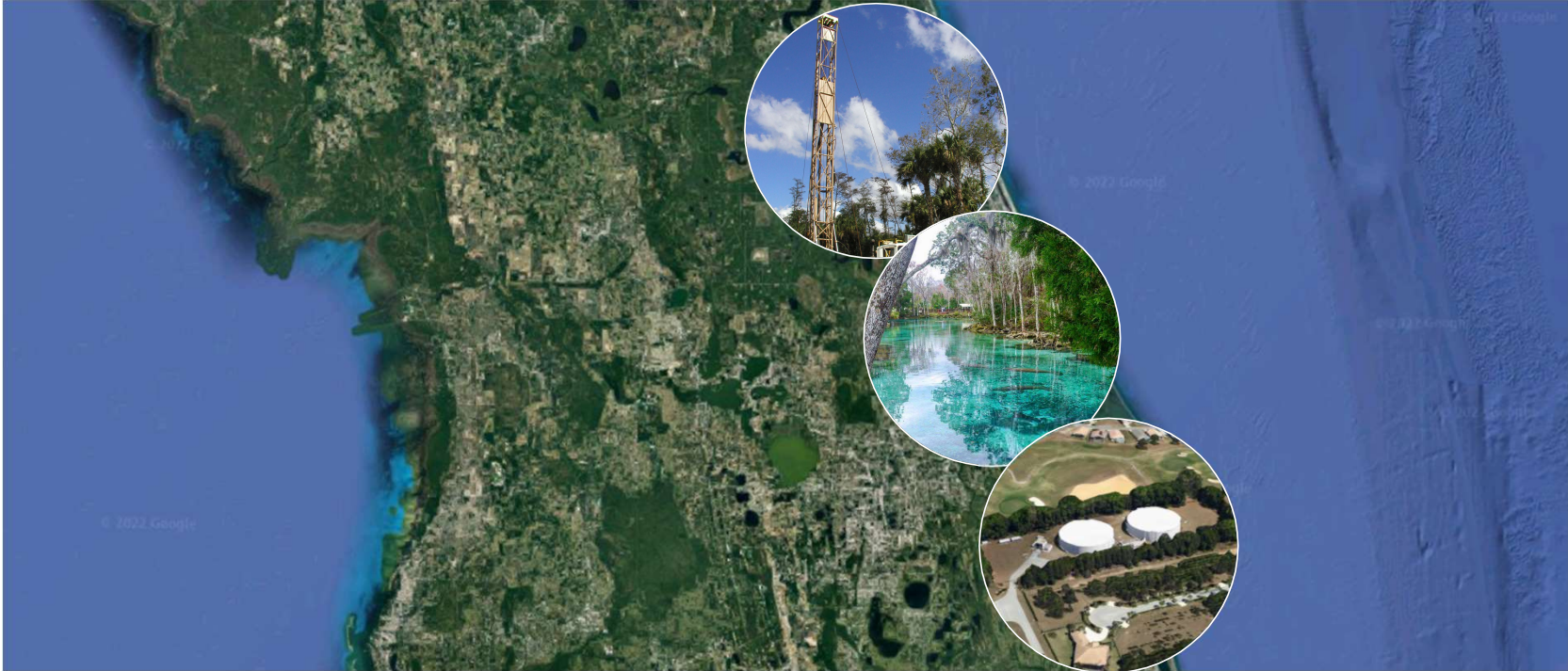


# Hazen



**WITHLACOOCHEE  
REGIONAL  
WATER  
SUPPLY  
AUTHORITY**

## 2024 Regional Water Supply Plan Update Status Report

November 20, 2024

## Project Goals and Objectives

- **Goal**
  - Assist public utilities by identifying implementable water supply options and strategies to meet future demand.
- **Objectives**
  - Quantify public water supply demand
  - Assess water conservation and reuse potential
  - Identify water resources availability to meet demand
  - Evaluate economic constraints
- **Plan cooperatively funded by SWFWMD**
  - In support of 2025 RWSP for Northern Region



## Key Project Tasks

### Population and Demand Projections

- Update water demand projections through 2045

### Water Conservation and Reuse Evaluation

- Estimate conservation potential, reclaimed availability, potential offsets

### Source Water Assessments

- Evaluate and identify water resources available to meet demand

### Water Supply and Treatment Options

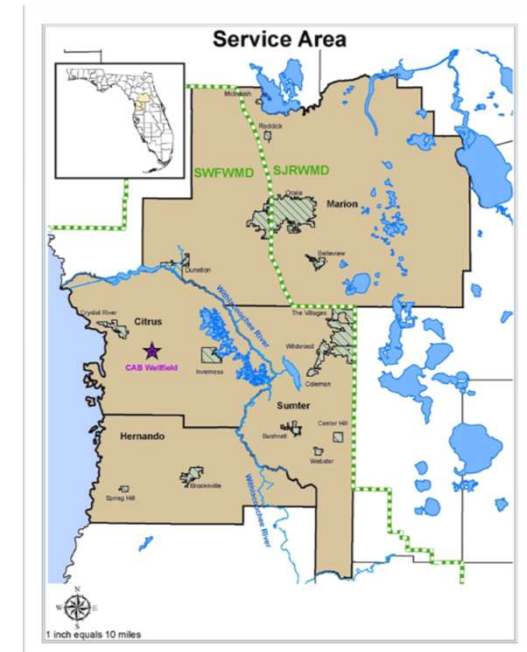
- Identify traditional/alternative supply availability and project options

### Organization, Funding, & Governance Recommendations

- Recommend Regional Governance Framework for WRWSA

### Regional Water Supply Plan

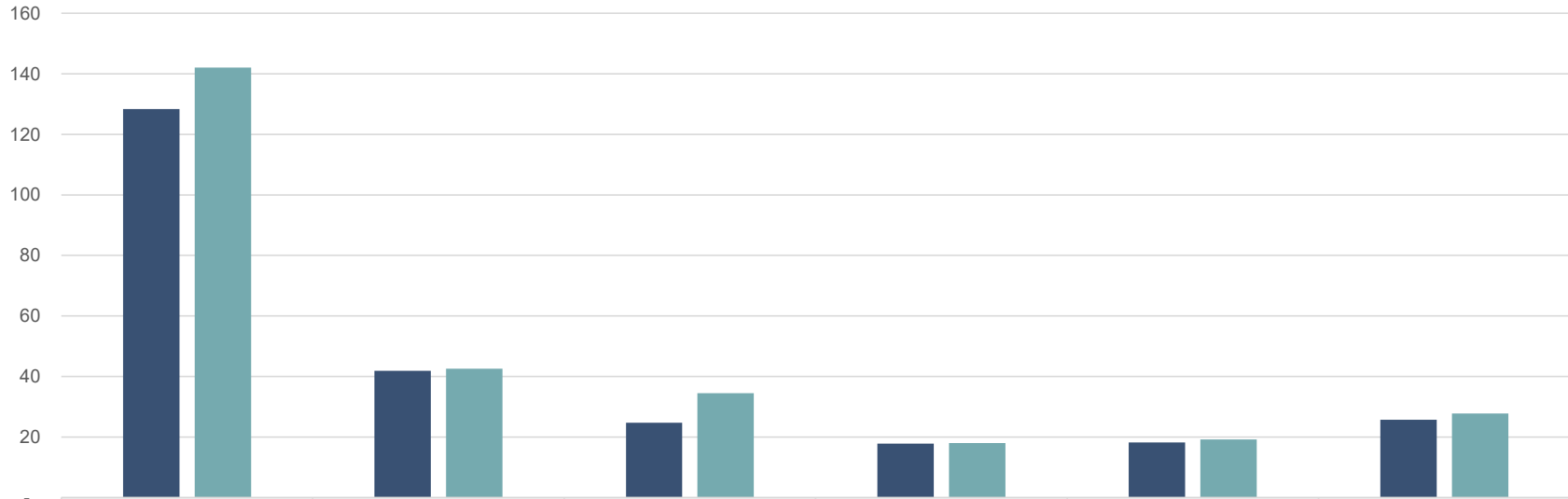
- Provides description of technical analyses and recommendations.



# Water Demand Projection Scenarios by County (2045)

2045 Public Supply Water Demand Projections

■ Demand - District Based    ■ Demand - Utility Based



|                           | WRWSA | Sumter | Hernando | Marion (SWFWMD) | Citrus | Marion (SJRWMD) |
|---------------------------|-------|--------|----------|-----------------|--------|-----------------|
| ■ Demand - District Based | 128   | 42     | 25       | 18              | 18     | 26              |
| ■ Demand - Utility Based  | 142   | 43     | 34       | 18              | 19     | 28              |

# Conservation Plan Framework

## Objectives

- Build on regional success
- Extend existing supplies
- Maximize water use offsets

## Conservation Planning Committee (CPC)

- Citrus County
- Marion County
- Hernando County
- City of Ocala
- The Villages

### Regional Water Demand Profile

- Establish distribution of fixture age/efficiency
- Estimate baseline and future passive savings

### Identify Alternatives

- Evaluate market for conservation technologies
- Assess water savings potential

### Evaluate Alternatives

- Conduct cost-benefit analysis
- Avoided capital/operational cost

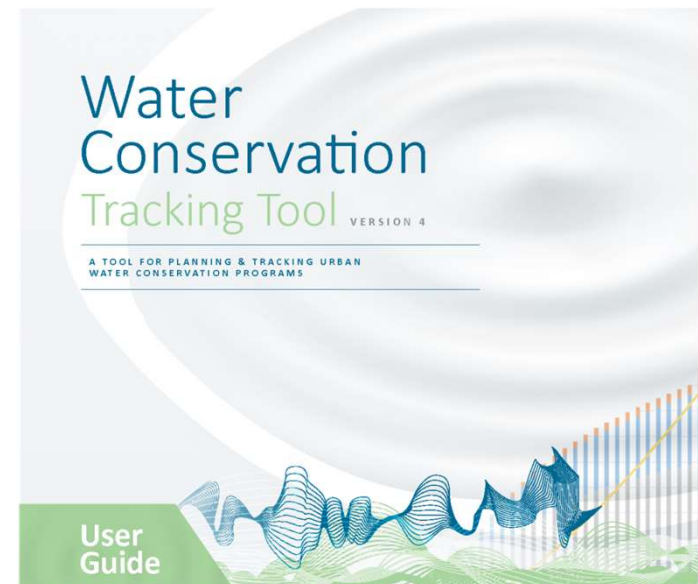
### Program Recommendations

- Rank and recommend program packages
- Based on evaluation of water savings and financial benefits



# Alliance for Water Efficiency Water Conservation Tracking Tool

- Alliance for Water Efficiency (AWE) is a national authority on Water Conservation
  - Membership based organization
- Water Conservation Tracking Tool
  - **Standardized methodology**
    - *Benefit-cost analysis of passive and active conservation*
    - *Conservation measure screening and portfolio development*
    - *Standard and customizable program element development*
    - *Programs can be applied to multiple sectors*
  - **Includes library of pre-defined conservation activities**
    - *Can be tailored to meet local planning needs*
  - **Requires utility-based inputs**



# Conservation Plan Development (2025-2045)

- Worked closely w/utilities to establish program elements, assumptions and tiers

- Tier 1: Passive Conservation

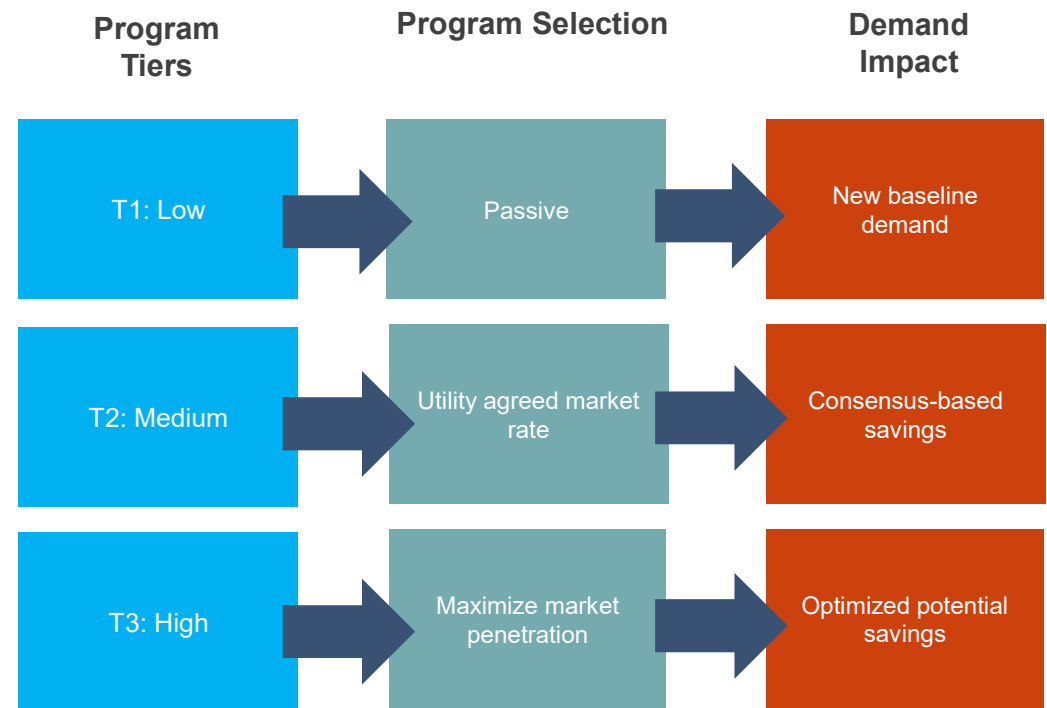
- EPA Energy Policy Act (EPACT)
- Market changes (e.g. WaterSense)

- Tier 2: Existing and Proposed Conservation

- Planned conservation elements for CPC utilities

- Tier 3: Regional Conservation by County

- Tier 2 planned conservation elements w/increased penetration regionwide.



# Tier 3 Elements

- # of Programs: 18
  - ✓ Domestic End Uses (Toilets, Showerheads, Faucets)
  - ✓ Water Efficient Landscape Practices and Technologies
  - ✓ Public Outreach
- Tier 2 utility defined participation.
- Tier 3 assumes utility participation in all programs w/increased penetration rates.

| End Use                         | User Type       | Program                                     | Units           | Tier 3 Penetration Rates   |
|---------------------------------|-----------------|---|-----------------|----------------------------|
| Indoors                         | All Users       | HET Replacement                             | Toilets         | Pre-ULFT to HET+           |
|                                 |                 | Showerhead (<=1.8 gpm)                      | Showerheads     | Maintain Tier 2 rate       |
|                                 |                 | Faucet Aerator Replacement                  | Faucets         |                            |
|                                 |                 | Clothes Washer Rebate                       | Washer          | 5% Post Market Penetration |
| Outdoors                        | High Irrigators | Irrigation Evaluation                       | Household       | 15% of High Irrigators     |
|                                 |                 | Irrigation Evaluation w/Enhancement         | Household       |                            |
|                                 |                 | Irrigation Evaluation Irrigation Controller | Household       |                            |
|                                 |                 | Irrigation Controller                       | Household       |                            |
|                                 | All Irrigators  | Irrigation Controller                       | Household       | 25% of All Irrigators      |
|                                 |                 | Irrigation Nozzle Replacement               | Sprinkler Head  |                            |
|                                 |                 | Rain Sensor                                 | Controller      | 5% of All Irrigators       |
|                                 |                 | Rain Barrel                                 | Household       | 1 % All Accounts           |
| Florida Friendly Yard Incentive | Household       | 1% Irrigators                               |                 |                            |
| Public Outreach                 | All Users       | Workshops                                   | Households (10) | Maintain Tier 2 rate       |
|                                 |                 | PSA   | # Airings       |                            |
|                                 |                 | Exhibits                                    | # Exhibits      |                            |
|                                 |                 | Web page                                    | # Hits          |                            |
|                                 |                 | In-School Education                         | # Students      |                            |

## Slide 8

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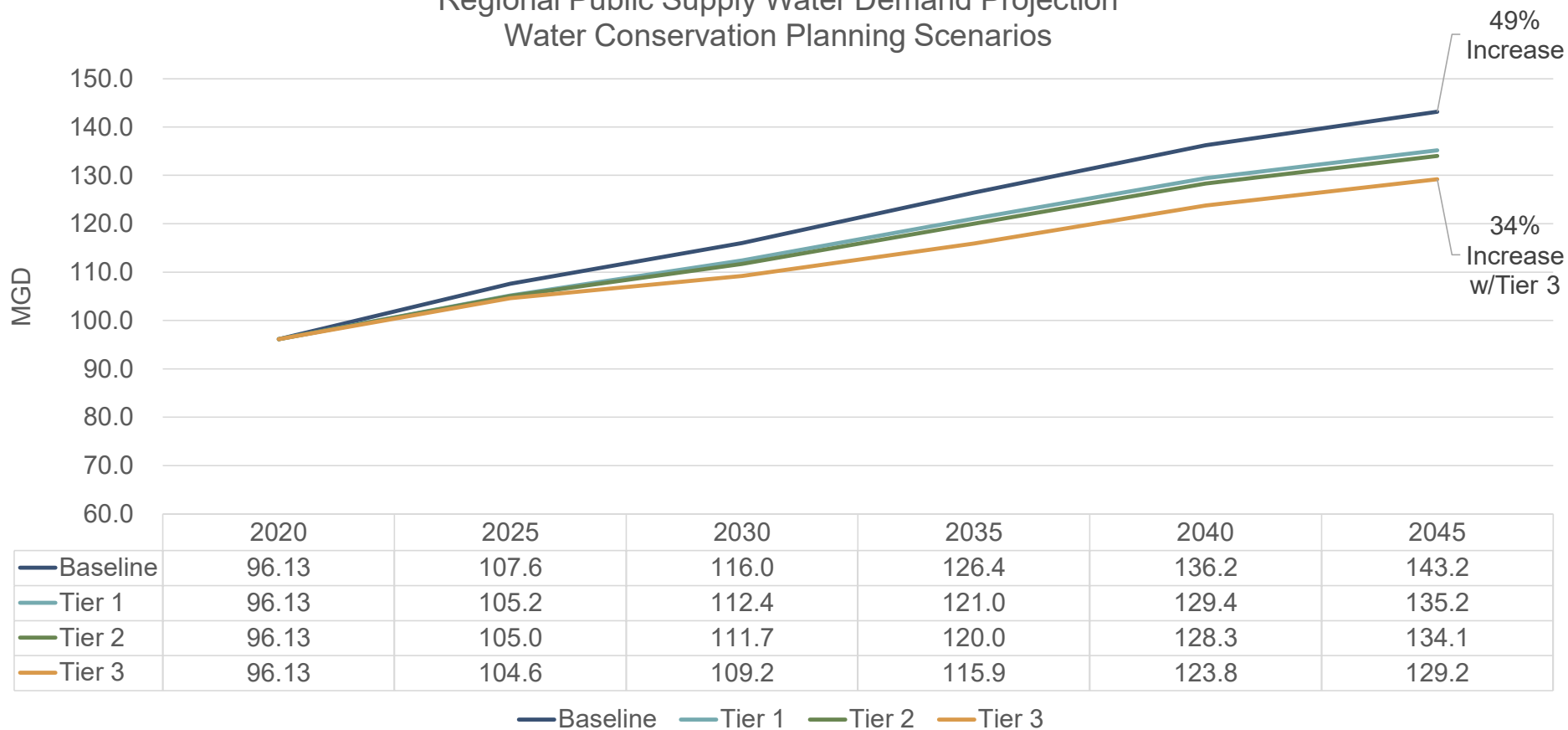
**0** < or > ? Looks like Excel unit references say > 1.8 showerhead  
Crosby, Marie, 2024-11-14T13:36:57.233

**LKO 0** Yes, I think you are right. This is what will be replace. <1.8 is what they will need to install.  
Krentz, Lisa R, 2024-11-19T15:23:38.486

## Regional Demand Projection Scenarios

| WRWSA         |          |       |       |       |       |       |       |                  |                    |
|---------------|----------|-------|-------|-------|-------|-------|-------|------------------|--------------------|
| Unit          | Variable | 2020  | 2025  | 2030  | 2035  | 2040  | 2045  | 2020-2045 Change | 2020-2045 % Change |
| Demand (MGD)  | Baseline | 96.13 | 107.6 | 116.0 | 126.4 | 136.2 | 143.2 | 47.04            | 49%                |
|               | Tier 1   | 96.13 | 105.2 | 112.4 | 121.0 | 129.4 | 135.2 | 39.1             | 41%                |
|               | Tier 2   | 96.13 | 105.0 | 111.7 | 120.0 | 128.3 | 134.1 | 37.9             | 39%                |
|               | Tier 3   | 96.13 | 104.6 | 109.2 | 115.9 | 123.8 | 129.2 | 33.1             | 34%                |
| Savings (MGD) | Tier 1   | 0     | 2.47  | 3.58  | 5.42  | 6.81  | 7.97  | 7.97             |                    |
|               | Tier 2   | 0     | 2.59  | 4.28  | 6.43  | 7.89  | 9.11  | 9.11             |                    |
|               | Tier 3   | 0     | 3.01  | 6.77  | 10.52 | 12.41 | 13.95 | 13.95            |                    |
| % Reduction   | Tier 1   | -     | 2.3%  | 3.1%  | 4.3%  | 5.0%  | 5.6%  |                  |                    |
|               | Tier 2   | -     | 2.4%  | 3.7%  | 5.1%  | 5.8%  | 6.4%  |                  |                    |
|               | Tier 3   | -     | 2.8%  | 5.8%  | 8.3%  | 9.1%  | 9.7%  |                  |                    |

### Regional Public Supply Water Demand Projection Water Conservation Planning Scenarios



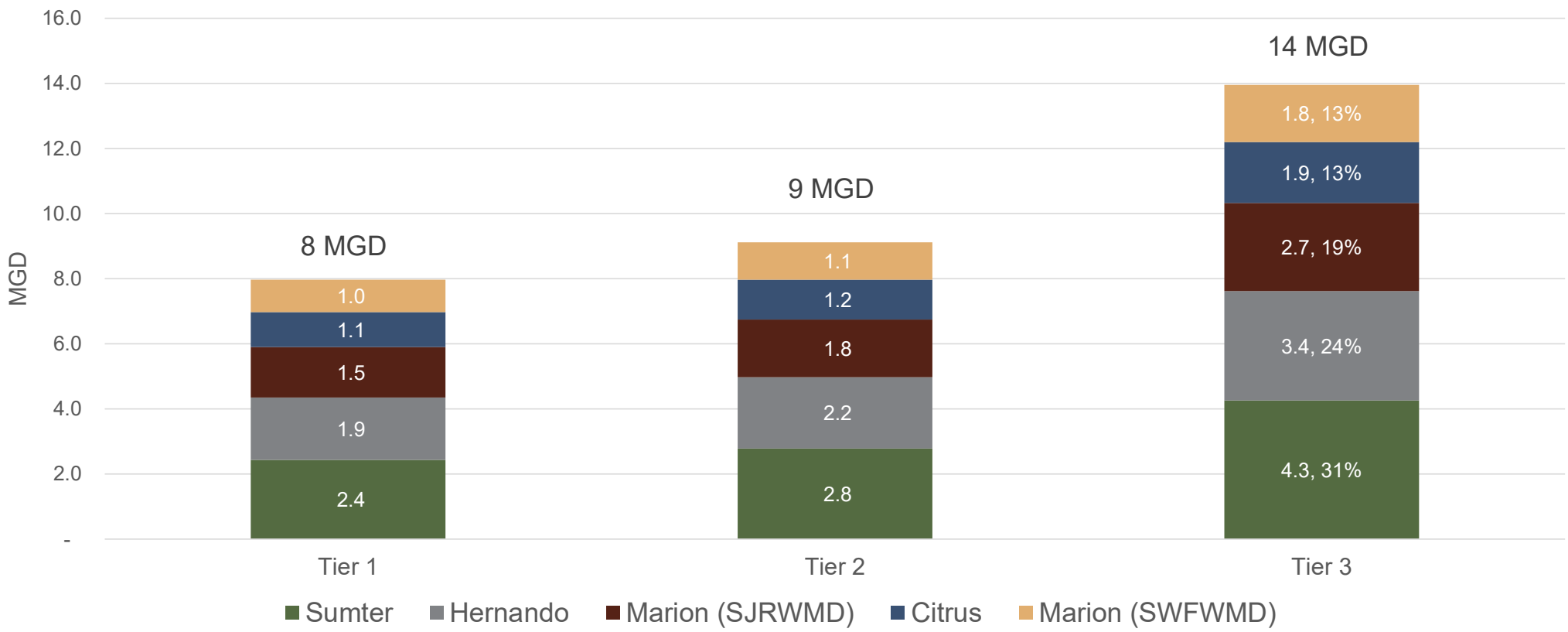
## Slide 10

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**0** 15%?  
Crosby, Marie, 2024-11-18T16:02:11.541

**LK0 0** Great point! I will clarify. Overall increase in demand between 2025 and 2045 was reduced from 43% to 34%.  
2045 demands are 10 percent lower.  
Krentz, Lisa R, 2024-11-19T15:22:48.103

# Water Conservation Savings by County



## Benefit-Cost Analysis

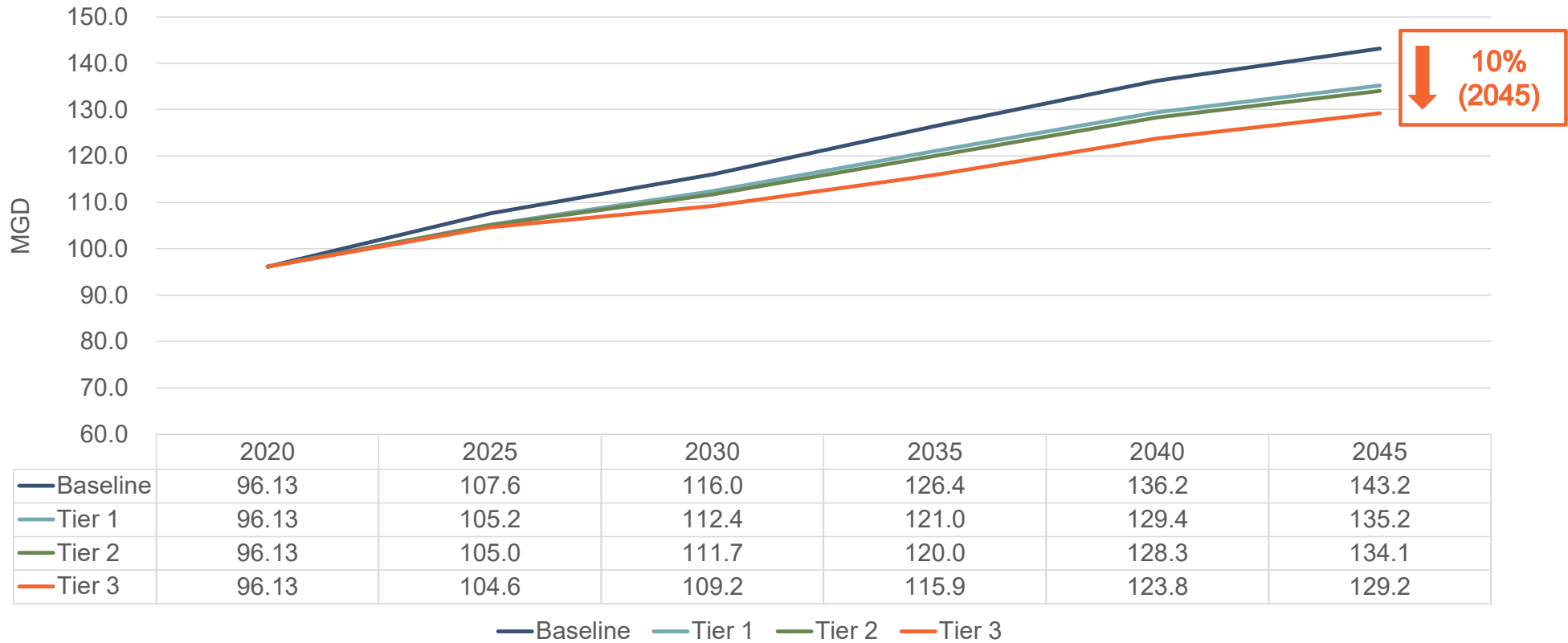
### Regional Benefit-Cost Analysis

- Compares cost of deferring or avoiding new supplies to conservation
- Also considers benefits with avoiding O&M
- Benefit Cost Ratio (BCR) - used to compare financial benefits of programs.
- BCR should generally be >1

High potential for financial benefits and water savings!

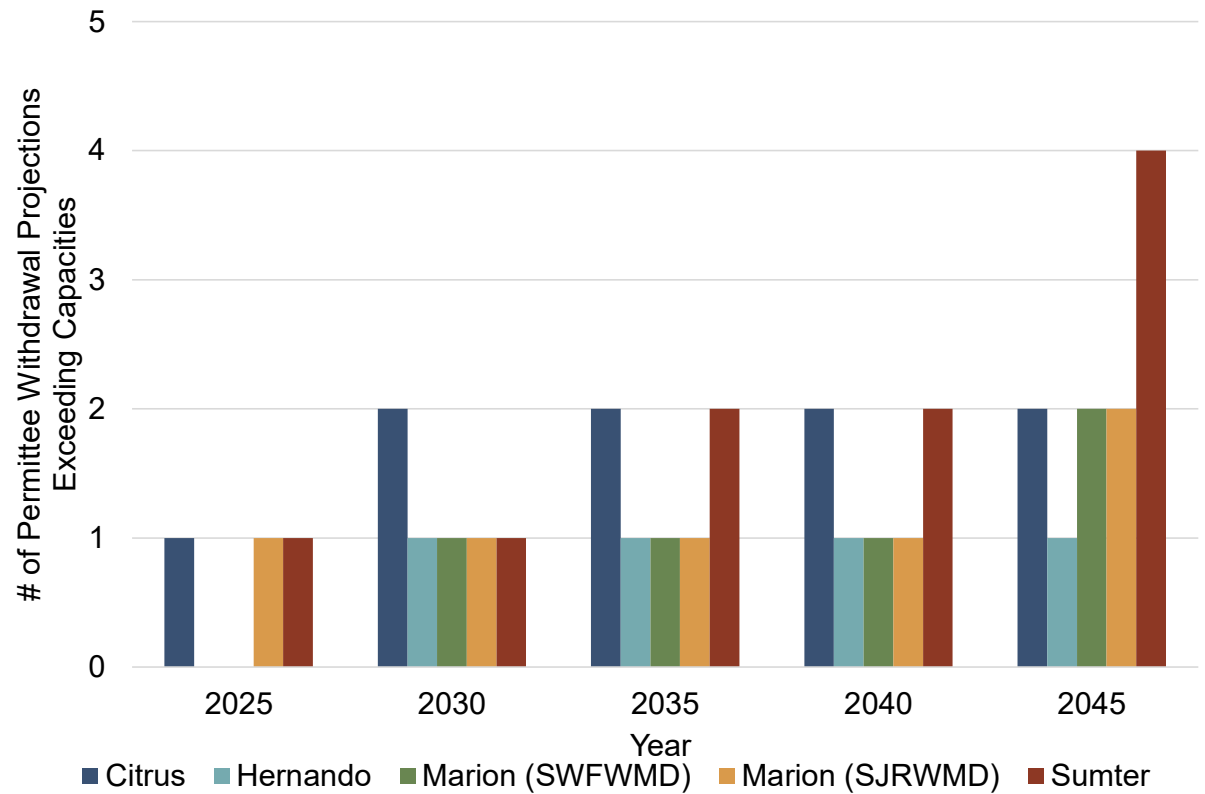
| End Use         | User Type       | 2024 Activity                                 | Cost Effectiveness (\$/1000 gal) | Utility BCR |
|-----------------|-----------------|---|----------------------------------|-------------|
| Indoors         | All Users       | HET Replacement                               | \$ 0.39                          | \$ 10.09    |
|                 |                 | WaterSense Showerhead (<=1.8 gpm)             | \$ 1.14                          | \$ 2.00     |
|                 |                 | Faucet Aerator Replacement                    | \$ 1.13                          | \$ 2.03     |
|                 |                 | Clothes Washer Rebate                         | \$ 1.67                          | \$ 1.37     |
| Outdoors        | High Irrigators | Irrigation Evaluation                         | \$ 1.29                          | \$ 1.78     |
|                 |                 | Irrigation Evaluation w/Enhancement           | \$ 1.25                          | \$ 1.83     |
|                 |                 | Irrigation Evaluation w/WaterSense Controller | \$ 0.58                          | \$ 3.95     |
|                 |                 | WaterSense Controller                         | \$ 0.32                          | \$ 7.09     |
|                 | All Irrigators  | WaterSense Controller (Non-High User)         | \$ 0.23                          | \$ 10.11    |
|                 |                 | SF Irrigation Nozzle Replacement              | \$ 0.86                          | \$ 2.67     |
|                 |                 | Rain Sensor                                   | \$ 1.30                          | \$ 1.75     |
|                 |                 | Rain Barrel                                   | \$ 16.12                         | \$ 0.14     |
|                 |                 | Florida Friendly Yard Certification/Incentive | \$ 0.60                          | \$ 3.83     |
|                 |                 |   |                                  |             |
| Public Outreach | All Users       | Workshops                                     | \$ 5.48                          | \$ 0.42     |
|                 |                 | PSA   | NA                               | NA          |
|                 |                 | Exhibits                                      | NA                               | NA          |
|                 |                 | Web page                                      | NA                               | NA          |
|                 |                 | In-School Education                           | NA                               | NA          |

## Regional Public Supply Water Demand Projection Water Conservation Planning Scenarios



## Projected PS Withdrawals vs. Permitted Capacities

- Used major water use permits
  - Citrus County – 10
  - Hernando County – 2
  - Marion County (SWFWMD) – 5
  - Marion County (SJRWMD) – 9
  - Sumter County – 9
- About 6 mgd deficit



| County       | Permit Capacity | 2020        | 2025         | 2030         | 2035         | 2040         | 2045         | Supply Need | % of Permit Capacity |
|--------------|-----------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|----------------------|
| Citrus       | 20.1            | 14.5        | 15.9         | 16.6         | 17.2         | 17.8         | 18.3         | +2.74       | 91%                  |
| Hernando     | 26.1            | 20.3        | 23.2         | 26.0         | 29.0         | 31.8         | 34.3         | -5.01       | 132%                 |
| Marion (SWF) | 18.3            | 12.0        | 13.9         | 15.1         | 16.1         | 16.9         | 17.6         | +2.10       | 96%                  |
| Marion (SJR) | 28.9            | 19.4        | 22.3         | 22.9         | 23.4         | 24.0         | 24.6         | +3.86       | 85%                  |
| Sumter       | 38.6            | 25.8        | 27.6         | 30.6         | 35.7         | 40.6         | 43.2         | -0.80       | 112%                 |
| <b>WRWSA</b> | <b>132.1</b>    | <b>92.0</b> | <b>102.8</b> | <b>111.1</b> | <b>121.4</b> | <b>131.1</b> | <b>138.0</b> | -5.9        | 104%                 |

# Indoor Technologies



High Efficiency Toilet (HET) Rebate



WaterSense Showerhead Replacement



Certified by ICC-ES



Clothes Washer Rebate

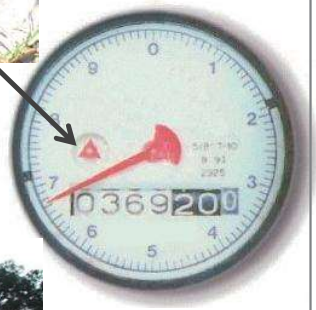


Faucet Aerator Replacement

# Outdoor Technologies

## Irrigation Evaluation

Check Water Meter Leak Detector



Zone Analysis



Nozzle Replacement



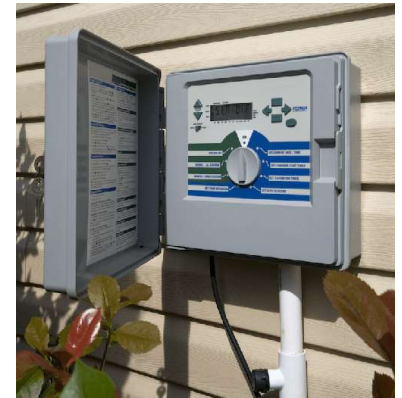
Rain Sensor



Rain Barrel



WaterSense Controller



Florida Friendly Yard Certification/Incentive



## Next Steps

- Water source evaluation
  - Pending information from SWFWMD - finalizing inputs for new central springs model
  - Will evaluate impact of further groundwater withdrawals on MFL's
- Water supply projects
  - Comparing the costs of new supply development to Tier 3 Conservation
  - Use results to inform ranking and selection of supply projects