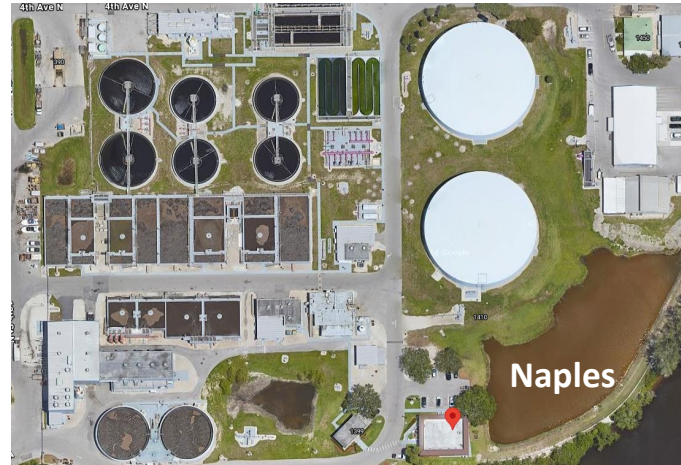
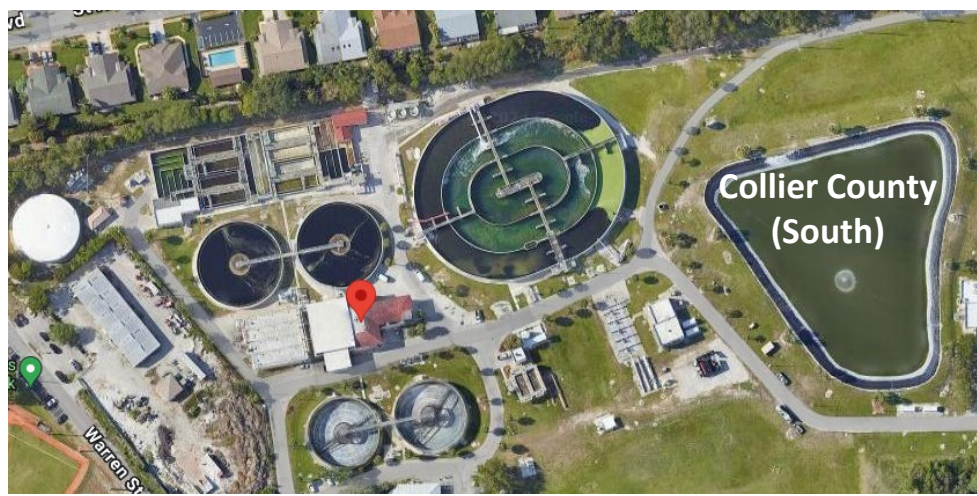


Water Reuse

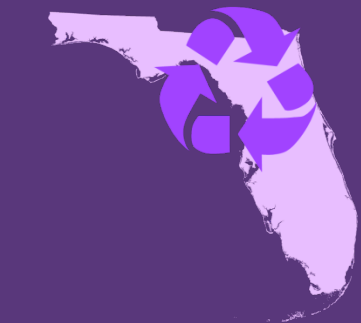


Marco Island

MARCO ISLAND CITY COUNCIL

May 6, 2024

Robert Wanvestraut
Alternative Water Supply-Reuse Coordinator
Water Supply Bureau
South Florida Water Management District



REGIONAL WATER SUPPLY PLANNING

Regional water supply plans -

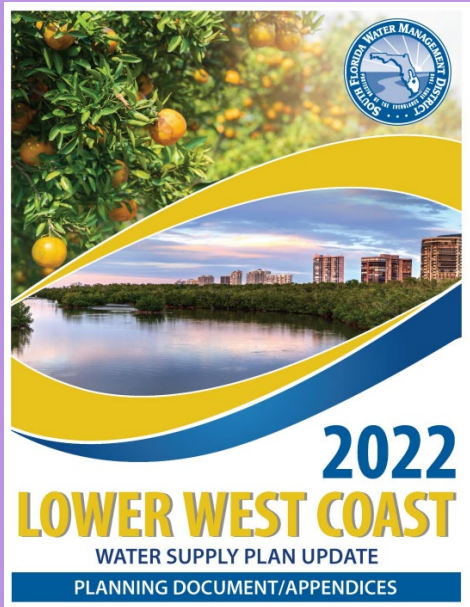
- Provides a road map to meet future water needs while protecting water resources and natural systems
 - ❖ Conducts a 20-year planning-level approach
 - ❖ Projects future water demands
 - ❖ Identifies and evaluates water source options (including **reclaimed water** as an alternative source)
 - ❖ Updated every 5 years



SFWMD Water Supply
Planning Areas

LOWER WEST COAST (LWC) WATER SUPPLY PLAN HIGHLIGHTS

- Traditional freshwater sources in the LWC Planning Area are not sufficient to meet current and future water use demands
- Regulatory water resource protection measures are in place in parts of the LWC
- Most LWC utilities have already tapped deeper, brackish water sources to meet portions of their current needs
- Climate change and sea level rise could impact the availability of freshwater resources
- Most of the increased water supply demands will be met with AWS projects, including brackish groundwater and **reclaimed water**, and water conservation

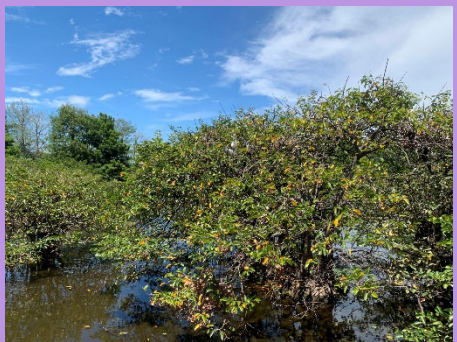




MARCO ISLAND: A LEADER IN WATER SUPPLY DIVERSITY

Water Supply Sources for Marco Island include:

- **Surface water/stormwater** from Marco Lakes and Henderson Creek canal (drinking water source)
 - ❖ Treated with membrane softening and lime softening
- **Brackish groundwater** [from Mid-Hawthorn Aquifer (drinking water source)]
 - ❖ Treated via reverse osmosis
- **Aquifer Storage and Recovery** (for drinking water source)
 - ❖ Excess surface water stored in the Upper Floridan Aquifer
- **Reclaimed Water** (alternative source for irrigation)
 - ❖ Treated with membrane bio-reactor technology



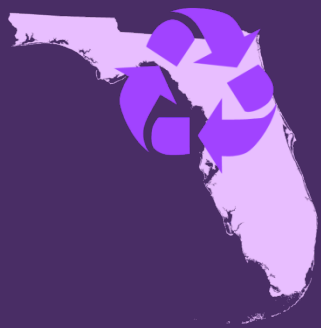


WHAT IS RECLAIMED WATER?

Domestic wastewater that has received *at least* secondary treatment and basic disinfection and is reused for a beneficial purpose

Reclaimed water is treated to the level appropriate for the intended use





USES OF RECLAIMED WATER

Uses of Reclaimed Water include:

- ❖ Landscape Irrigation
- ❖ Agricultural Irrigation
- ❖ Groundwater Recharge
- ❖ Industrial Processes
- ❖ Environmental Enhancement
- ❖ Potable Reuse (coming soon...)



sfwmd.gov



Photo: NASA

Astronaut Samantha Cristoforetti enjoying a cup of espresso on the International Space Station – made from recycled water.



ALTERNATIVE WATER SUPPLIES AND RECLAIMED WATER

- **Reuse of Reclaimed Water** supports current and future water needs by:
 - ❖ Helping reduce stress on traditional sources of drinking water
 - ❖ Reducing the disposal of treated wastewater
 - ❖ Replenishing local groundwater resources
 - ❖ Supporting economic growth in fresh water limited areas



ROLES IN RECLAIMED WATER & WATER REUSE

➤ **Florida Department of Environmental Protection (FDEP) permits:**

- ❖ Wastewater treatment facilities
- ❖ Water reuse
- ❖ Disposal options

North Ft. Myers

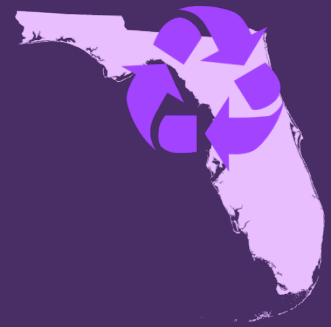
➤ FDEP does not restrict the use of reclaimed water

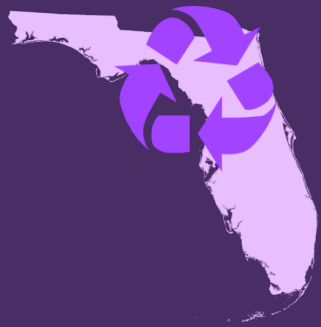
➤ The wastewater utility determines how and where the permitted reclaimed water will be reused

➤ **Water management districts** do not regulate the use of reclaimed water

➤ Water management districts:

- ❖ Promote and encourage the use of reclaimed water
- ❖ Require water users to consider the use of reclaimed water over traditional sources
- ❖ May incentivize water reuse through cooperative funding for construction and credits in water use permits





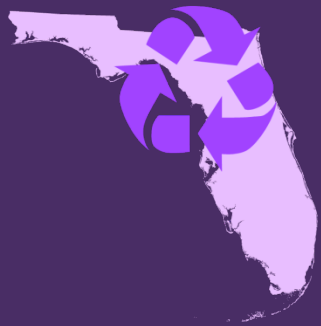
FLORIDA POTABLE REUSE COMMISSION

Framework for the Implementation of Potable Reuse in Florida

Prepared for
Florida Potable Reuse Commission

Collaborative Partners
WaterReuse Florida
Florida Section of the American Water Works Association Water Utility Council
Florida Water Environment Association Utility Council
Water Research Foundation
WaterReuse Association

- Potable Reuse Commission (PRC) established in February 2018 as a consensus-based body of stakeholders
- 11-member partnership: utilities, environment, agriculture, Department of Health, public health/medical state university, industry
- Water management districts and FDEP are ex-officio members
- Developed a policy and regulatory framework for the implementation of potable reuse as a water supply alternative to meet Florida's future water needs
- Framework completed in January 2020
- FDEP initiated rulemaking on potable reuse in January 2021



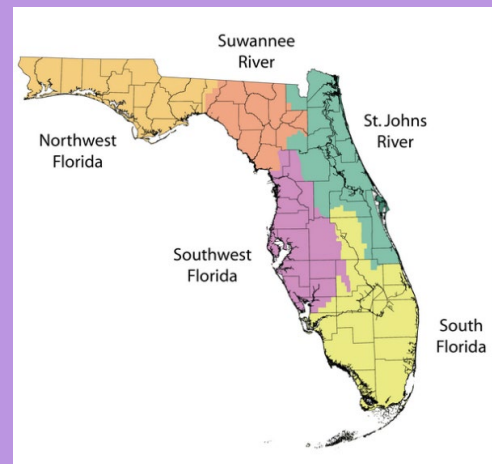
REUSE IN FLORIDA

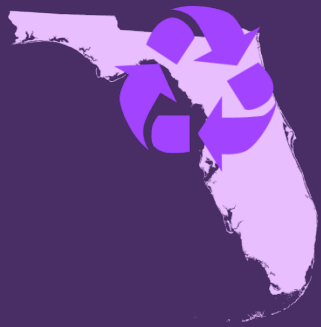
Approximately 51% of all wastewater generated in the State is treated and reused!

Florida Statewide Reuse Profile

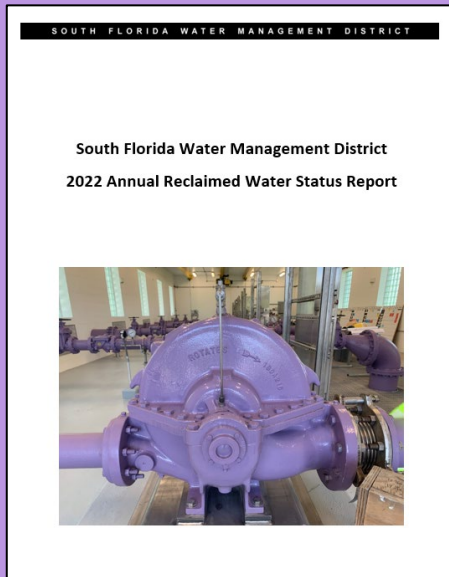
Agricultural Irrigation	60 mgd
Golf Course Irrigation	124 mgd
Other Public Access Areas	110 mgd
Residential Irrigation	282 mgd
Groundwater Recharge	71 mgd
Industrial and Other	170 mgd
Surface Water Augmentation	3 mgd
Wetland Hydration	71 mgd
State Total	891 mgd

mgd = million gallons per day





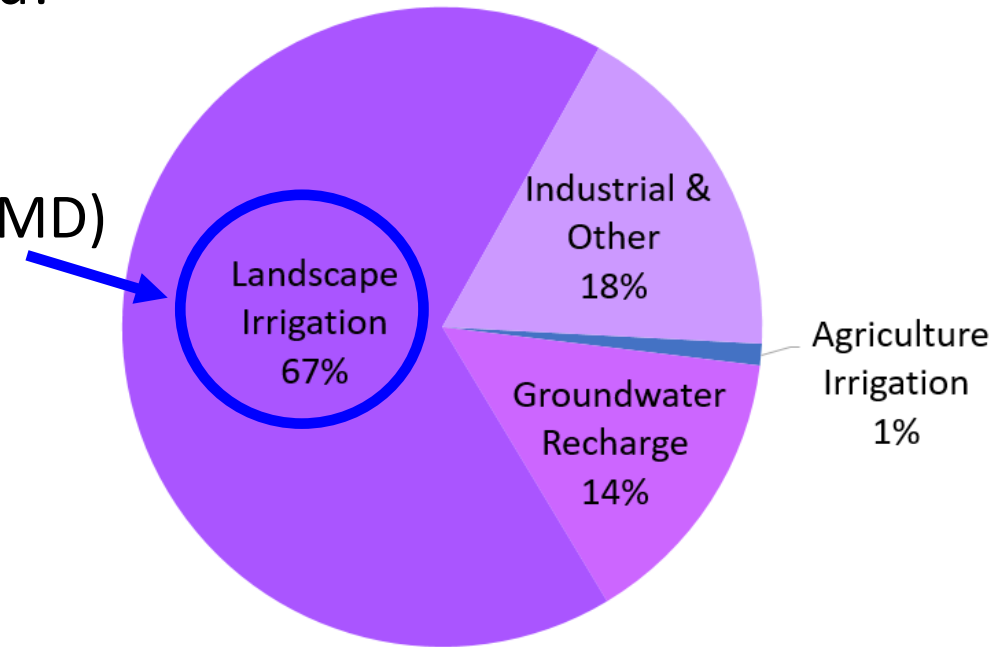
REUSE IN THE SFWMD



➤ Approximately 30% of all wastewater generated (300 mgd) in the SFWMD is treated and reused!

➤ Let's see how:

- ❖ Irrigation (largest use in SFWMD)
- ❖ Industrial use
- ❖ Groundwater recharge



WASTEWATER AND REUSE IN THE LOWER WEST COAST & COLLIER COUNTY



Wastewater and reuse in the Lower West Coast (LWC) & Collier County

	SFWMD	LWC	Collier County
Wastewater Treatment Facilities	128	40	11
Wastewater Treated	892 mgd	94 mgd	32 mgd
Supplemental Source Water	31 mgd	23 mgd	4 mgd
Wastewater Disposed	634 mgd	32 mgd	10 mgd
Total Water Reuse	297 mgd	86 mgd	25 mgd
Percent of Wastewater Reused	30%	67%	66%

mgd = million gallons per day

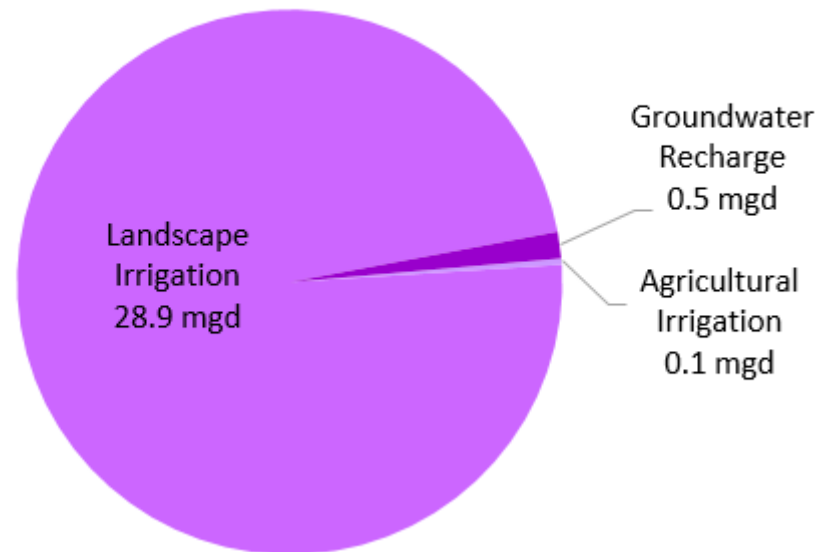


REUSE IN COLLIER COUNTY

In Collier County, 98% of reclaimed water is applied as landscape irrigation



Reuse in Collier County 2023



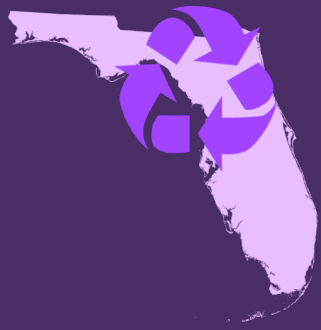
- ❖ >12,000 homes
- ❖ 29 golf courses
- ❖ 21 public parks
- ❖ 10 schools
- ❖ 3 cooling towers
- ❖ Many miles of public right-of-way

MAJOR WASTEWATER UTILITIES IN COLLIER COUNTY

Wastewater and reuse for the Major Utilities in Collier County.

	Collier County Utilities Dept.	Marco Island	Naples
Wastewater Treatment Facilities	4	1	1
Wastewater Treated	22 mgd	2 mgd	4 mgd
Wastewater Disposed	5 mgd	0 mgd	0 mgd
Total Water Reuse	18 mgd	2 mgd	6 mgd
Percent of Wastewater Reused	76%	95%	94%





IN CONCLUSION



- **Marco Island is a leader in Alternative Water Supply Development**
- **Reclaimed water can:**
 - ❖ **Help reduce stress on traditional sources of drinking water**
 - ❖ **Reduce the disposal of treated wastewater**
 - ❖ **Help replenish local groundwater resources**
 - ❖ **Support economic growth in fresh water limited areas**

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