

below
the
surface
an in-depth
look at...



Water Reuse:

A safe and effective way to save water

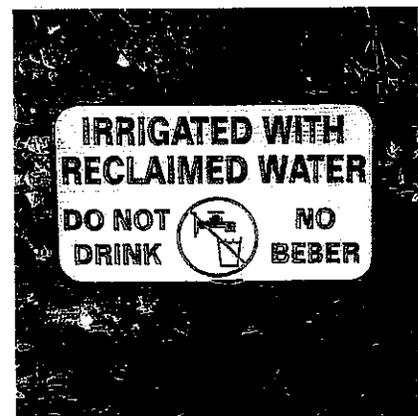
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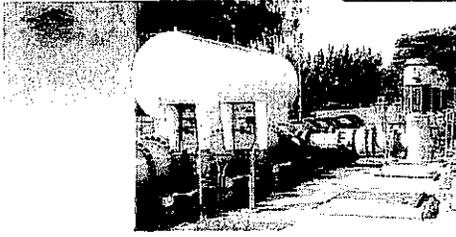
The demand for water by urban populations, agricultural operations and the environment is projected to increase over the long term in South Florida. Fresh ground water and surface water will not be sufficient to satisfy all future demands. Meeting this growing thirst hinges on our efforts to develop alternative water sources. This brochure looks at one of the ways to conserve our water resources — reclaiming water for reuse.

Consider what happens to the water we use inside the home. Once down the drain, this water is piped to the local wastewater treatment plant where it undergoes treatment to meet state standards for disposal. Historically, most of the water was disposed by injecting the water deep underground or by discharging to surrounding waters or to the ocean. This is a wasteful way to treat such a valuable resource.

More and more communities are finding that wastewater need not be wasted at all. They are reclaiming this water for irrigation of residential lots, golf courses, sports fields and orange groves; industrial cooling; car washing; fire protection and groundwater recharge.



Reclaimed water sign in Collier County.



The color purple is used to identify pumps, tanks and pipes carrying reclaimed water for reuse. The photo above and on the cover shows a reuse facility in Pompano Beach.

Reuse is also beneficial to the environment. During times of drought, reclaimed water is a dependable source of water because its availability is not dependent on rainfall. The use of reclaimed water is currently exempt from year-round landscape irrigation conservation measures and emergency water shortage restrictions.

What Is Reclaimed Water and Water Reuse?

Water use with reclaimed water is the use of highly treated domestic wastewater for beneficial purposes, such as: irrigation of yards, agriculture, golf courses, parks and other green space; industrial purposes such as cooling water and process water; groundwater recharge; toilet flushing; dust control; and environmental restoration. Reuse reduces the reliance on ground water, surface water and potable water for these uses.

Is It Safe to Use Reclaimed Water?

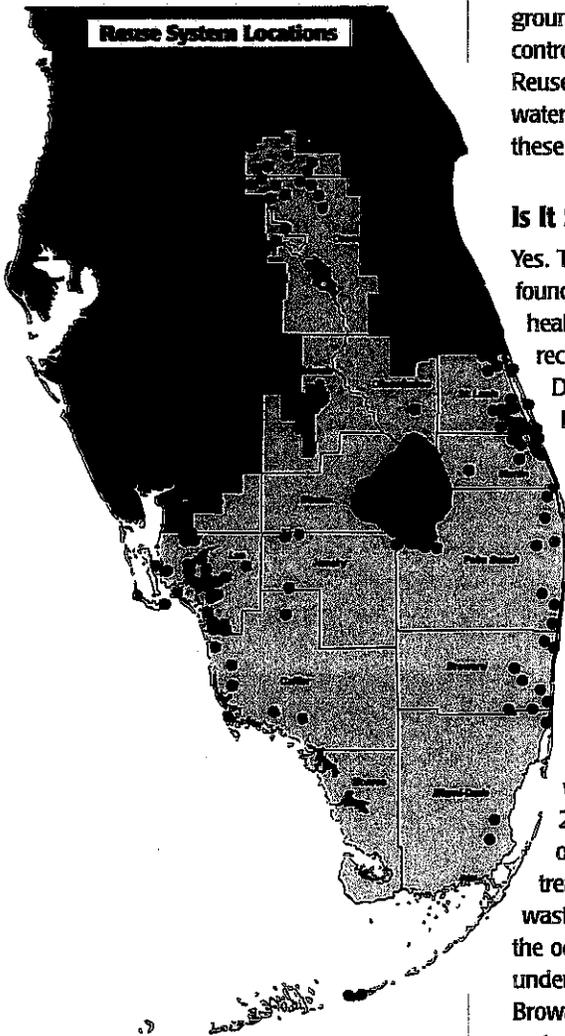
Yes. The Florida Department of Health has found that reuse poses no threat to public health. Continuous monitoring of reclaimed water, required by the Florida Department of Environmental Protection, ensures excellent water quality for protection of the public and the environment.

Reuse System Locations

The map to the left shows locations where reclaimed water is being utilized within the 16-county area of the South Florida Water Management District. The dots represent more than 100 wastewater facilities that are reusing 235+ million gallons per day (mgd), or 29 percent of the total wastewater treated. For now, the rest of the wastewater (586 mgd) is being sent to the ocean or injected 3,000 feet underground, primarily in Palm Beach, Broward and Miami-Dade counties. This is water that could be reclaimed for reuse.

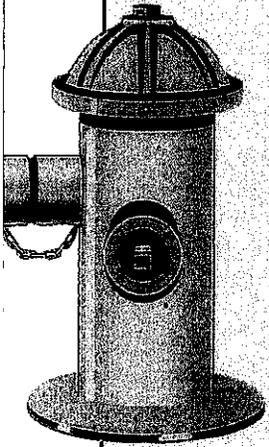
Success Stories

- **Pompano Beach** – The city takes wastewater being piped to the ocean, treats it to a higher standard and reuses it locally for irrigating residential lawns, parks and golf courses.
- **Cape Coral** – Reclaimed water irrigation system serves more than 41,000 residences as part of the city's Water Independence for Cape Coral (WICC) campaign. Canal water is used to supplement reclaimed water to meet the 23 mgd system demand.
- **Collier County** – More than 12 mgd of reclaimed water is provided by two facilities. The water is reused at almost 4,000 residences, 19 golf courses and several parks and schools.
- **Orlando and Orange County** – The Conserv I and Conserv II reuse systems provide reclaimed water to about 7,000 residences, 80 parks, 10 schools, 13 golf courses and 5,600 acres of agriculture – in addition to recharging the aquifer through rapid infiltration basins.
- **Loxahatchee River District** – This award-winning system in Jupiter reuses more than 6 mgd of reclaimed water to irrigate 14 golf courses, 14 parks and 4,400 residential lawns.
- **Palm Beach County** – The Southern Region Water Reclamation facility is reusing approximately 14 mgd of reclaimed water to irrigate 6,000 residential lawns, 9 golf courses and 2 parks, and for environmental enhancement at the Wakodahatchee and Green Cay wetlands.
- **Reedy Creek Improvement District** – This utility provides reclaimed water for irrigation of the landscaped areas in the Walt Disney World Resort Complex. Five golf courses, hotels, highway medians and parks are irrigated with reclaimed water. A network of rapid infiltration basins is used for groundwater



OTHER SUCCESSFUL REUSE UTILITIES IN OUR DISTRICT

Ave Maria	Miramar
Boca Raton	Naples
Bonita Springs	North Fort Myers
Broward County	Okeechobee
Clewiston	Port LaBelle
East Central Regional (West Palm Beach)	Port St. Lucie
Everglades City	St. Cloud
Fort Myers	St. Lucie County
Hollywood	St. Lucie West
Homestead	Sanibel
Indiantown	Seacoast
LaBelle	South Central Regional (Boynton Beach/Delray Beach)
Lee County	South Martin Regional (Hobe Sound/Jupiter Island)
Lehigh Acres	Toho Water Authority
Marco Island	Wellington
Martin County	
Miami-Dade County	



recharge. More than 6 mgd of reclaimed water is used for groundwater recharge and another 6 mgd is used for irrigation.

Does the SFWMD Help Fund Reuse Projects?

The District has provided financial assistance through the Alternative Water Supply (AWS) grant program to local entities in developing local reuse initiatives. The District has contributed more than \$94 million to 245 reclaimed water projects through its annual grants program.

Reuse on a Regional Level

The District is working with local utilities on regional applications of reclaimed water pursuant to its regional water supply plans to meet future water needs:

Kissimmee/Orlando Area - This area has historically had a high percentage of water reuse. The District is working with utilities in Orange, Osceola and Polk counties to optimize the use of reclaimed water to offset withdrawals from the Floridan aquifer and avoid potential harm to the groundwater resources.

Collier, Lee, Martin Counties/ Northern Palm Beach County -

These areas have a high percentage of reuse. The demand, especially for irrigation, has grown beyond what can reasonably be supplied by traditional groundwater sources and reclaimed water sources. There is a waiting list of users for reclaimed water. Utilities and the District are working together to maximize the use of reclaimed water. This includes interconnecting reclaimed water systems, developing supplemental sources of water and storage.

Miami-Dade, Broward, Palm Beach Counties - Miami-Dade, Broward and Palm Beach counties make up the Lower East Coast urban corridor. During the dry season, these counties traditionally depend on water from the Everglades and Lake Okeechobee system. Since 2007, any increase in future water supply needs cannot increase reliance on this system and will primarily be met through alternative sources. These counties have large requirements for water reuse due to the Ocean Outfall Act that could offset these regional demands. This would reduce the demand on the regional system and improve Everglades/Lake Okeechobee restoration efforts.



Groundwater recharge basins in Orlando.



Fort Myers city nursery using reclaimed water.



Wetland created with reclaimed water in south Palm Beach County.

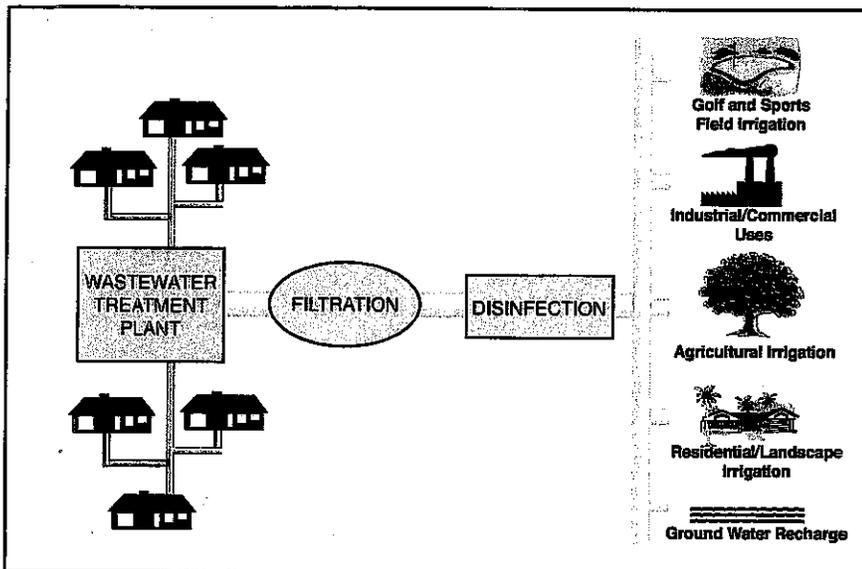


Freeze-proofing plants with reclaimed water in Orlando.



Reclaimed water irrigation source for irrigation in Palm Beach Gardens.

Palm Beach County has taken great strides with water reuse, doubling its reuse over the last 10 years to 42 mgd in 2010, or 34 percent of its wastewater flow.



This diagram follows the process of turning residential wastewater into reclaimed water for reuse. Separate pipes carry wastewater to the treatment plant where it undergoes treatment, including filtration and disinfection, before it can be distributed. Reuse eliminates the dependence on potable water, surface water or ground water for these uses.

– FOR MORE INFORMATION ON WATER REUSE –
Rick Nevulis (561) 682-6242 or rnevul@sfwmd.gov

– FOR MORE INFORMATION ON WATER CONSERVATION –
www.savewaterfl.com

The South Florida Water Management District is a regional, governmental agency that oversees the water resources in the southern half of the state. It is the oldest and largest of the state's five water management districts.

Our Mission is to manage and protect water resources of the region by balancing and improving water quality, flood control, natural systems and water supply.

This "Below the Surface" publication on Water Reuse directly supports our mission of water supply.



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DID YOU KNOW?

More than 100,000 residences, 189 golf courses, 210 parks and 70 schools are using reclaimed water for irrigation within the boundaries of the South Florida Water Management District.

Reclaimed water doesn't smell or stain sidewalks and driveways like well water or canal water.

Nature is the ultimate reuser of water. Through what is called the "hydrologic cycle," today's rainfall is the same water recycled over millions and millions of years.

An average of 658 mgd of reclaimed water is reused every day in Florida. About 235 mgd of this reuse occurs within the 16-county area of the South Florida Water Management District.

Most of the reclaimed water (63%) is used for irrigation of public areas like residences, parks, schools, medians, golf courses, etc.

Users of reclaimed water are currently exempt from year-round irrigation measures and restrictions imposed during water shortages.

Wastewater flows within the District's boundaries are projected to increase to more than one billion gallons a day by 2020.

Sixty-two percent of wastewater treated in the District is in Broward and Miami-Dade counties. Of that, only about 6 percent is reused.

Putting reclaimed water to beneficial use is "Recycling at its Best."

mgd = million gallons per day