

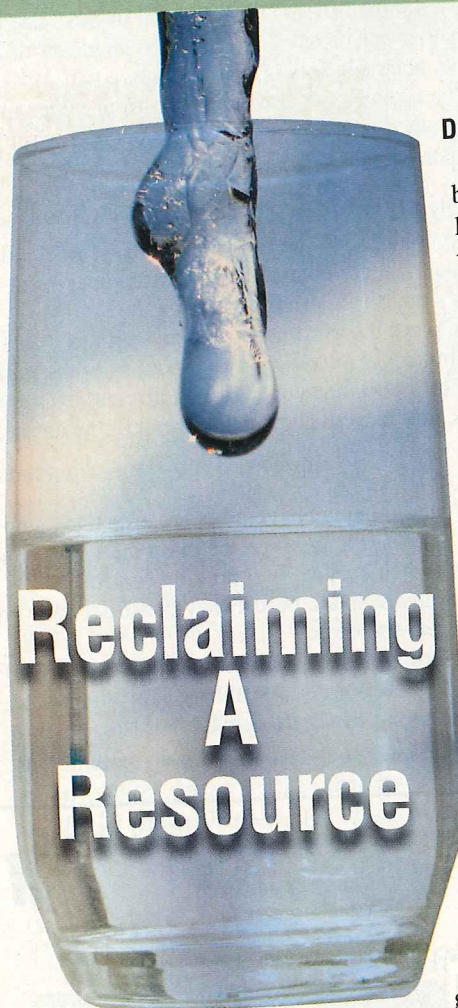


**O**n average, each person in Florida generates about 100 gallons of wastewater every day. Florida's population continues to grow at nearly 1,000 people per day. This means that every day, 100,000 new gallons of wastewater have to be dealt with. Most cities clean up this water at wastewater treatment plants that provide primary and secondary treatment along with basic disinfection (often using chlorine). Thirty years ago, disposal was the primary consideration. Before 1980, wastewater after treatment was commonly disposed of in the cheapest and most convenient manner. Usually, this meant discharging the water into a nearby river or lake, spraying it onto a field, or loading it into a percolation pond.

### Thorough Cleaning

Treated wastewater has a certain amount of nitrogen and other nutrients. When wastewater is discharged into lakes, the nutrients can encourage growth of algae or other plants and cause the lakes to turn green. Because of concerns about population growth and potential surface-water contamination, state agencies started to require additional treatment to allow discharge to surface waters. Some cities — including Orlando, Tampa, and Palmetto — operate advanced treatment facilities for surface-water discharge. On the other hand, several cities in southeastern Florida dump treated wastewater several miles out into the Atlantic Ocean because that is the most economical disposal method.

Before 1985, Orlando and Orange County discharged treated wastewater into Shingle Creek, which flows into Lake Tohopekaliga, a lake with high recreational value. Because concerns were raised that the lake might turn green, the EPA required Orlando and Orange County to develop an alternative plan for their wastewater disposal. After considering several options, the city and county decided to treat the wastewater to a higher level to meet reclaimed water or water-reuse standards. Reclaimed water is highly treated wastewater that can be used for irrigation and other beneficial purposes. The reclaimed water was offered to citrus growers for irrigation at no cost.



### Developing A Plan

Initially, growers rejected the plan because of concerns about possible heavy metal contamination, potential virus or disease problems, flooding, and lack of flexibility in water application during periods of high rainfall. Eventually, a cooperative water-reclamation program — known as Water Conserv II — was developed. Water-quality standards were established, and Conserv II water meets nearly all drinking-water standards. It is chlorinated, colorless, and odorless. Water Conserv II has become the largest reclaimed water agricultural irrigation project of its type in the world, and was the first project in Florida to receive a permit to irrigate crops for human consumption with reclaimed water. The water meets Florida Department of Environmental Protection (FDEP) public-access reuse standards, and is permitted for use on public areas and food crops. The project currently delivers 31 million gallons/day (mgd) and provides irrigation for more than 4,300 acres of crops (primarily citrus). The water is also used

to irrigate two golf courses at the Orange County National Golf Center, 12 nurseries, and several residential areas. Reclaimed water has been successfully used for citrus irrigation for 20 years, and is some of the most tested irrigation water in the nation.

Even though it normally receives more than 50 inches of rain per year, Florida has surprisingly become one of the leading generators and users of reclaimed water in the U.S. Because of FDEP regulations, reclaimed water has an excellent safety record. Population growth, particularly along the coasts, has generated great demand for water, and reclaimed water acts as a good alternative source for irrigation and some industrial uses. Cities have recognized that reclaimed water is no longer a disposal problem, but a resource that has value.

Agricultural irrigation with reclaimed water increased 73% to 38,040 acres between 1992 and 2005. During the same time period, overall reclaimed water flow in Florida increased 128% to 660 mgd. Given Florida's increasing thirst, water reuse will continue to increase. **FL**