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quick facts on...

Rain Harvesting

MARCH 2010

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.*

Rainwater harvesting involves the collection, storage and distribution of rainwater from a roof or a runoff-supplied system for use inside and/or outside a home or business. This practice can be traced back more than 3,000 years and has been employed continuously in many parts of the world, including parts of Florida, as a supplemental water source. Rain harvesting has recently begun a widespread renaissance in drought-prone areas of the United States. Currently, the most common use of rain-harvested water in Florida is irrigation. Considering the state's average rainfall of 52 inches, rain harvesting in Florida holds significant potential for water savings.

Cisterns – as opposed to rain barrels, which are often much smaller – can be used for rain storage. They can vary in size from a few hundred gallons at a residential home to more than 10,000 gallons at a commercial facility to several hundred thousand gallons if the rain is diverted to a large retention area. A half-inch of rain falling on a 2,000-square-foot single family home will produce 500 gallons of water for rain harvesting. The same half-inch of rain on a city of 10,000 such homes would capture 5 million gallons of water! Multi-family and commercial structures could fill a 10,000-gallon tank during the same rain event.

Cisterns for rain-harvesting projects can be categorized as follows:

- Residential homes – tanks are usually less than 5,000 gallons, but can be larger
- Residential septic tank conversions – tank size can vary (~1,500 gallons)
- Commercial, Industrial & Institutional – tanks are usually greater than 5,000 gallons
- Retention/catchment areas – can be up to several acres in area

Additional distinctions can be applied according to tank location:

- Aboveground – tanks located on site, not buried
- Belowground – tanks buried on site

Water Savings

Water savings will primarily depend on four variables: catchment area (typically measured in square feet), tank size, demand, and rainfall. One 30,000-gallon system now operating in North Miami Beach is able to supply between 30,000 and 40,000 gallons of water per month to meet the city's irrigation and bulk water truck needs.

Intial and Maintenance Costs

Costs for both residential and commercial systems will vary greatly according to site conditions and system design. Many aboveground systems can be designed to run on gravity alone.

North Miami Beach's aboveground 30,000-gallon system was installed for $30,000. It does not run on gravity and utilizes an ultraviolet sterilization system. Project managers of that system believe construction and maintenance costs could have been lower if the system had been built as a gravity-fed system and used chemicals for disinfection. In this existing system, maintenance costs are reported to be negligible, outside of those associated with periodic back-flushing of filters.

How the South Florida Water Management District Can Help

Through the Water Savings Incentive Program (WaterSIP), the South Florida Water Management District provides matching funds up to $50,000 to water providers and users for installing water-saving technologies, such as high-efficiency plumbing fixtures, rain and soil moisture sensors and fire hydrant flushing devices. Potential applicants include cities, public utilities and water providers, homeowners associations, schools, hospitals and industrial/commercial facilities. Individual residences are not eligible.

Since its inception in 2003, WaterSIP has allocated more than $3.8 million to dozens of public and private entities across the District's 16 counties, resulting in an estimated water savings of more than 2.3 billion gallons per year. The program is based on cost-sharing. Entities seeking funding must be able to match at least 50 percent of the total costs for the project, either with matching funds or in-kind services. Up to 100 percent funding is available to Rural Economic Development Initiative communities.

Applications for WaterSIP are posted annually in February. Check the WaterSIP Web site for details on the program and application process. To learn more about WaterSIP, please contact Robert Wanvestraut, SFWMD Senior Conservation Officer, at rwanvest@sfwmd.gov or 561-682-2054. You may also visit us online at www.sfwmd.gov/watersip.

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