

Preserving and Protecting our Water Resources through
Stormwater Management



Jupiter is blessed with many environmentally pristine marine environments, including the freshwater tributaries feeding the nationally designated “wild and scenic” Loxahatchee River and its Atlantic coastal beaches. To protect these natural assets, the Town created a stormwater utility in 1994 to dedicate resources to manage stormwater runoff and mitigate the potential for flooding.

Rain causes potential flooding, runs off streets, parking lots and concrete driveways, and carries pollutants into the waterways. Storm water is often polluted with oils, heavy metals, fertilizers, pesticides and other wastes. Much of this runoff goes directly into our canals, creeks, the Loxahatchee River and the Intracoastal Waterway, threatening the area’s water quality.

Stormwater management systems are often a combination of natural and man-made components and structures. Sloughs, rivers, wetlands naturally clean and control runoff. In some instances, man made structures such as swales, canals, pump stations, water treatment lakes and retention ponds combine with the natural components to control and regulate the quality and quantity of stormwater runoff. By slowing the flow of water and allowing settling, filtration and percolation, Jupiter’s stormwater management system reduces flooding and reduces the amount of pollutants in local waters.

For over a decade, Jupiter has worked hand-in-hand creating and assisting the Loxahatchee River Preservation Initiative (LRPI), a consortium of local entities dedicated to the improvement and protection of the river. LRPI has been instrumental in kick starting over \$34 million dollars in regional water resource quality enhancement projects. LRPI and the Town of Jupiter’s water utilities are partners in appreciating, preserving and protecting the region’s environmental assets. For more information on the LRPI, please visit www.lrpi.us.

Town of Jupiter Water Utilities
17403 Central Boulevard, Jupiter, Florida 33458

Customer Service: (561) 741-2300
Utilities Administration: (561) 741-2270
Water & Stormwater Field Operations Office: (561) 748-2705
Water Plant Office: (561) 741-2601
After-hours Emergency: (561) 741-2609

We welcome individuals and groups interested in touring our facility. Should you wish to arrange a visit, please call the water plant phone number listed above.

www.jupiter.fl.us/water



www.lrpi.us

Giving You Our Best

Did you know that residents of Jupiter have the best drinking water in the Southeast United States? Jupiter Utilities has received the Safe Drinking Water Act Excellence Award from the United States Environmental Protection Agency (EPA) in 1999, 2001, and 2008. This award named Jupiter as the top drinking water plant in the southeast section of the United States. In 2007, 2008 and 2009, the Florida Section of the American Water Works Association named Jupiter’s Facility as the “Best Class A Water Treatment Plant relative to Excellence in Operation and Maintenance”. In fact, over the past three decades, Jupiter’s Water Utility has been honored by more than 40 awards for excellence by industry associations and the agencies which regulate its operation.



Town of Jupiter Water Utility Plant, 17403 Central Boulevard, Jupiter, Florida



TOWN OF JUPITER
WATER UTILITIES

Our Vision

The Town of Jupiter’s Water Utility is an established industry leader committed to maintaining standards of excellence while preserving the environment. The water system strives to provide a cost effective, reliable potable water supply to customers, and has been recognized time and again by the industry and regulatory community for excellence in operations. The water system employs advanced drinking water treatment technologies to produce a product exceeding regulatory standards. The system has been developed to be dependable and worthy of our customer’s confidence in the service provided. The Stormwater Utility strives to minimize the risk of flooding while working to enhance runoff water quality to restore, protect and enhance local water resources. Both utilities carry out their mission with the long-term goal of sustainability of our community.

Managing Growth while Ensuring Reliability

In 1978, the Town of Jupiter purchased its water system from Tri-Southern Utilities. At the time, the system’s average daily demand was only 2.5 million gallons per day and served a population of approximately 15,000 people.

Today, the utility is capable of producing 30 million gallons a day of drinking water, which is enough to ultimately accommodate more than 120,000 people. Its service area encompasses over 45 square miles including Jupiter, Juno Beach and many unincorporated areas of Palm Beach and Martin Counties.

To ensure reliability of service, over 27 million gallons of treated water storage is available and nearly all facilities have back up emergency power generation to help weather emergencies, including hurricanes.

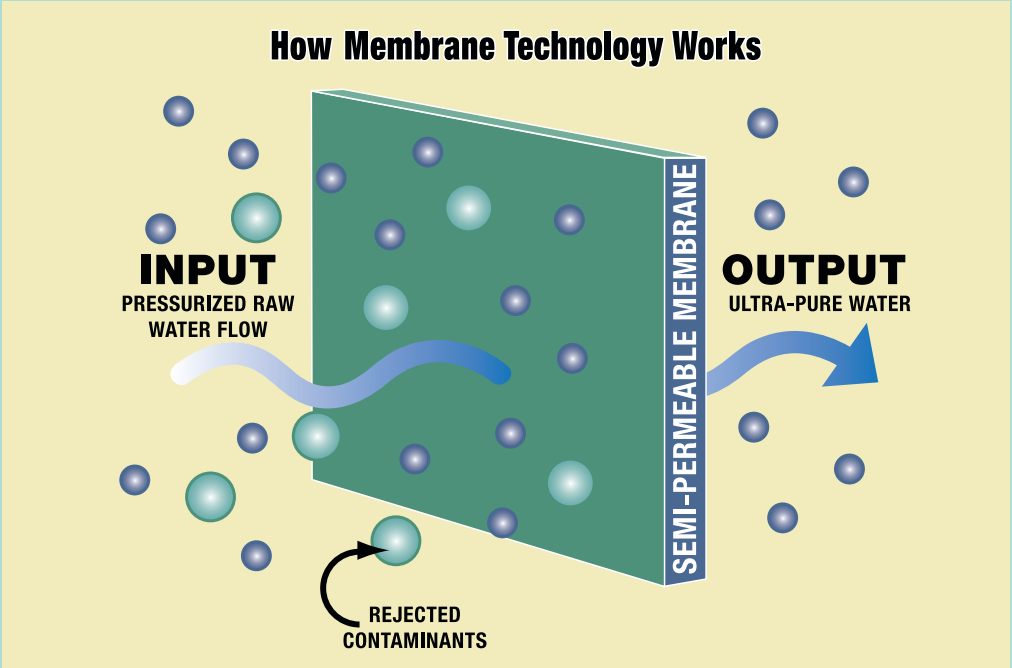
www.jupiter.fl.us/water

Achieving Sustainability through Innovation

Jupiter’s customers demand high water quality and sensitivity to the environment. As a coastal, south Florida community, Jupiter is in a region with limited fresh water supplies, and often experiences drought conditions during the dry season. Jupiter’s nationally designated “wild and scenic” Loxahatchee River, which runs right through the middle of the community, is subject to environmental harm if local freshwater supplies are depleted or damaged. If use of the shallow, fresh water aquifer in the Jupiter area is excessive, it can experience salt water intrusion from the nearby Atlantic Ocean.

To ensure a stable supply of drinking water for the area, Jupiter has become one of the first large communities in the United States to employ state of the art membrane water treatment technologies. Using innovative new processes, Jupiter is able to supply the highest quality drinking water while achieving environmental sustainability of the local water resources.

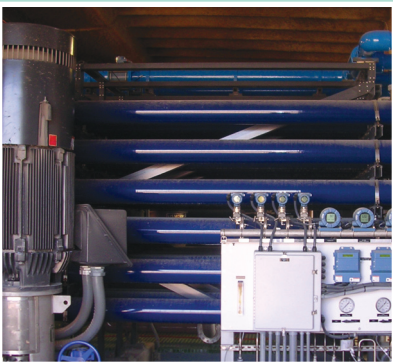
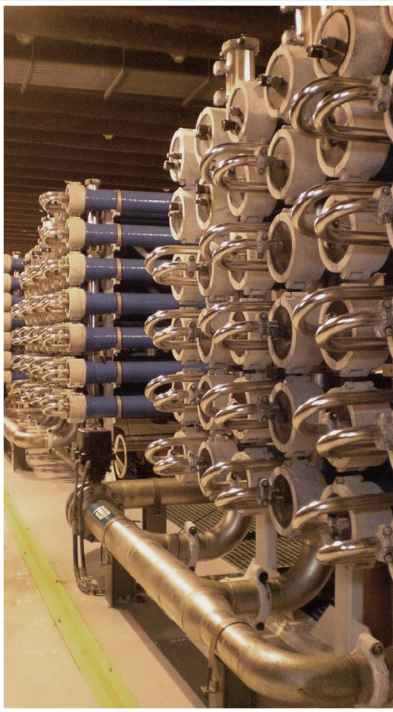
Jupiter uses two membrane treatment processes to treat its water: brackish water desalination through reverse osmosis and nanofiltration treatment of the fresh water supply. The product of these two treatment processes are combined to create high quality finished water that is distributed to the Jupiter region. These membrane water treatment processes produce drinking water that surpasses all existing and many future quality standards. They also provide a way for Jupiter to produce ultra pure water from drought-resistant, alternative water supplies in way that is not harmful to the environment.



Both the reverse osmosis and nanofiltration processes operate by forcing pressurized, raw water through a semi-permeable membrane that separates contaminants from the water. The chemical and physical properties of the membrane, combined with the pressure, remove unwanted substances from the groundwater. Membrane treatment also provides a barrier against viruses, bacteria and many other harmful contaminants found in raw water.

The nanofiltration process treats the fresh water from the shallow Surficial Aquifer, and the reverse osmosis process treats the brackish water from the deep Floridan Aquifer. The Surficial Aquifer rests about 150 feet below the ground’s surface, and the Floridan Aquifer is a layer of water some 1,500 feet below the ground. Because it is very deep beneath the ground’s surface, the Floridan Aquifer is very drought-resistant, and wells connected to this supply are not at risk of being contaminated by ocean water during severe droughts.

Jupiter’s reverse osmosis facility was originally commissioned in December, 1990 and has been expanded three times since then. The RO plant produces water at such a high level of purity that it is coupled with an ion exchange treatment unit that helps stabilize the water for distribution. The Reverse Osmosis facility can produce 15.5 million gallons per day of supply, or 75% of



the community's total water demand in times of drought. Having a desalination facility that can produce high volumes of drinking water preserves limited fresh water resources from the shallow aquifer. It also ensures that demand for drinking water does not lead to any long-term environmental harm.

The nanofiltration water treatment system is very similar to the reverse osmosis desalination facility. Its membrane process also separates contaminants from the raw water, but it draws from the area’s shallow, Surficial Aquifer and produces even higher-quality water. Nanofiltration produces an ultra pure water that also exceeds drinking water standards.

In addition to producing a very high-quality product, Jupiter’s nanofiltration process is the first of its kind in the world, using an innovative design that reduces the amount of energy used by the plant. Called a “split-feed” nanofiltration process design, Jupiter’s treatment plant has reduced energy requirements by 33% compared to conventional designs. Commissioned in August, 2010, the nanofiltration plant is a perfect example of Jupiter’s commitment to preservation of for the environment.

Jupiter preserves the raw water supply – or the water coming “in” to its treatment plants – by balancing its reverse osmosis and nanofiltration processes. But Jupiter was also concerned with how the waste from its treatment processes could be managed, so it applied some innovative thinking that ultimately protected the environment and broke some regulatory ground.

When membrane treatment processes produce clean water, they also produce a concentrated form of the raw water, or by-product water. Common practice in the industry is to treat this side stream as waste, but Jupiter has found solutions for the management and use of this resource. The concentrate produced by the reverse osmosis process is treated and discharged into a mixing zone in a canal before it is allowed to flow into the Loxahatchee River, which is designated an Out-standing Florida Water. The Florida Department of Environmental Protection and the United States Environmental Protection Agency both approved this process, which recycles the plant’s brackish byproduct by returning the water to the ecosystem. The concentrate from the nanofiltration facility is also recycled, but is used by the community as a source of irrigation-quality water. By recycling water treatment plant by-product water, Jupiter has created a reusable water supply of over 3 million gallons per day.

By design, Jupiter’s water system is non-intrusive to environment and preserves water resources. With careful planning and a watchful eye on anticipated growth, Jupiter has developed one of the most advanced water systems in the country. Jupiter has developed a workable combination of sustainability with a conservation-oriented use of water resources. The Town is committed to the continued pursuit of innovative approaches to the treatment and supply of high-quality drinking water.

