



WATER UTILITIES
INFORMATIONAL
BROCHURE

OUR VISION

The Town of Jupiter's Water Utilities are an established industry leader committed to maintaining its standard of excellence in concert with the environment. The Water System strives to provide a cost effective, reliable potable water supply to the region. Recognized repeatedly by the industry and regulatory community for excellence in operations, the system employs advanced drinking water treatment technologies to produce a product exceeding all regulatory standards. The system has been developed to be dependable and worthy of our customer's confidence in the service provided. Meanwhile, the Stormwater Utility strives to minimize the risk of flooding while working to improve runoff water quality in an effort to restore, protect and enhance local water resources. Both utilities carry out their mission with the long-term goal of sustainability.

GIVING YOU OUR BEST

AWARD WINNING SERVICE FOR OVER 30 YEARS



Did you know that residents of Jupiter have the best drinking water in the Southeastern United States? Jupiter Utilities was awarded the Safe Drinking Water Act Excellence Award by the United States Environmental Protection Agency (EPA) in 1999, 2001, and 2008. This award proclaimed Jupiter as the top drinking water plant in the entire southeastern portion of the United States. They were also awarded with the Department of Environmental Protection (DEP) Operations Excellence Award in 2008, 2009, 2010, and 2013. In fact, over the past three decades, your water utility has been honored to receive more than 40 awards for excellence in operations, treatment and drinking water.

ACHIEVING SUSTAINABILITY THROUGH INNOVATION



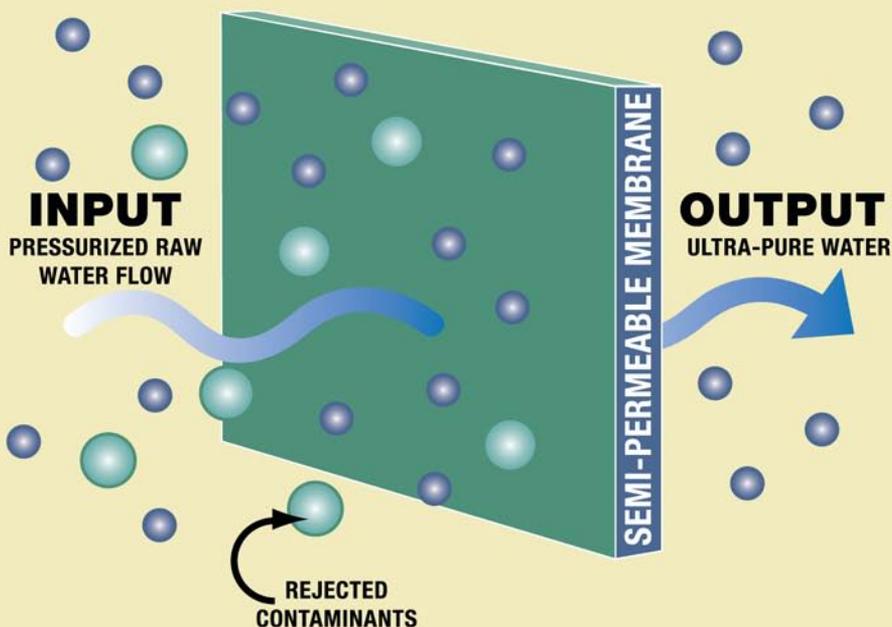
In 1978, the Town of Jupiter purchased its water system from Tri-Southern Utilities. At the time, the system's average daily flow was only 2.5 million gallons per day and served a population of approximately 15,000 people.

Today, your utility is capable of producing 30 million gallons a day of drinking water accommodating more than 80,000 people living in Jupiter, Juno Beach and unincorporated areas of Palm Beach and Martin Counties.

Over the past two decades, the Town of Jupiter has acted to become one of the first large communities in the United States to fully employ state of the art membrane water treatment technologies to provide a water supply which is of the highest quality and achieves environmental sustainability of its precious water resources. Jupiter residents desire the best possible water quality while at the same time are environmentally conscious. Membrane treatment processes have provided the region a drinking water which surpasses all existing and anticipated quality standards while also providing a means of producing ultra pure water from alternative water supplies that are drought resistant. Jupiter is bisected by the nationally designated "wild and scenic" Loxahatchee River plus its shallow surficial fresh water aquifer can be impacted by salt water intrusion from the adjacent Atlantic Ocean should withdrawals from the surficial aquifer be over taxed. Two membrane treatment processes are employed in Jupiter; brackish water desalination through reverse osmosis (RO) and nanofiltration (NF) treatment of the limited fresh water supply. These two product waters are then combined and distributed to the Jupiter region and illustrate how a coastal South Florida community can effectively accomplish water resource and supply sustainability.

Both RO and NF processes operate by forcing raw water under pressure through a semi-permeable membrane that is capable of separating contaminants from the flow stream as a function of the membrane's chemical and physical properties. Advanced membrane treatment technologies such as these facilities remove undesirable dissolved constituents from the groundwater. Membrane treatment provides the ultimate barrier against viruses, bacteria and numerous other harmful contaminants found in raw water. The NF process uses the shallow (150 foot deep) fresh surficial aquifer as its supply while the reverse osmosis process uses brackish water from the deep (1,500+ foot) Floridan Aquifer. Jupiter is now one of the first utilities in the country to fully employ these best available treatment technologies to achieve all of its water supply and quality goals.

How Membrane Technology Works



The Jupiter RO facility was originally commissioned in December 1990 and has been expanded three times since then. The RO plant is coupled with its companion ion exchange treatment unit which produces water that helps stabilize the highly pure RO product for distribution. The net result is a facility capable of producing 15.5 million gallons per day of supply or 75% of our community's total water demand in times of drought. By having a facility capable of desalinating so much of its water demand in times of drought, the Town is able to preserve limited fresh water supplies for the environment and ensure that its water demand does not lead to any long-term environmental harm.

The Town's new NF system is similar to its RO desalination facility whereby its membrane process separates contaminants from raw water to yield a product which greatly exceeds all drinking water standards and is aesthetically pleasing with little to no color. Jupiter's nanofiltration process design, the first of its kind in the world, employ an innovative approach to reduce treatment energy consumption. Jupiter's "split-feed" nanofiltration process design has resulted in a 15% reduction in energy requirements compared to conventional designs. This exemplifies the Utility's commitment and respect for the environment. The NF plant was commissioned in August 2010.

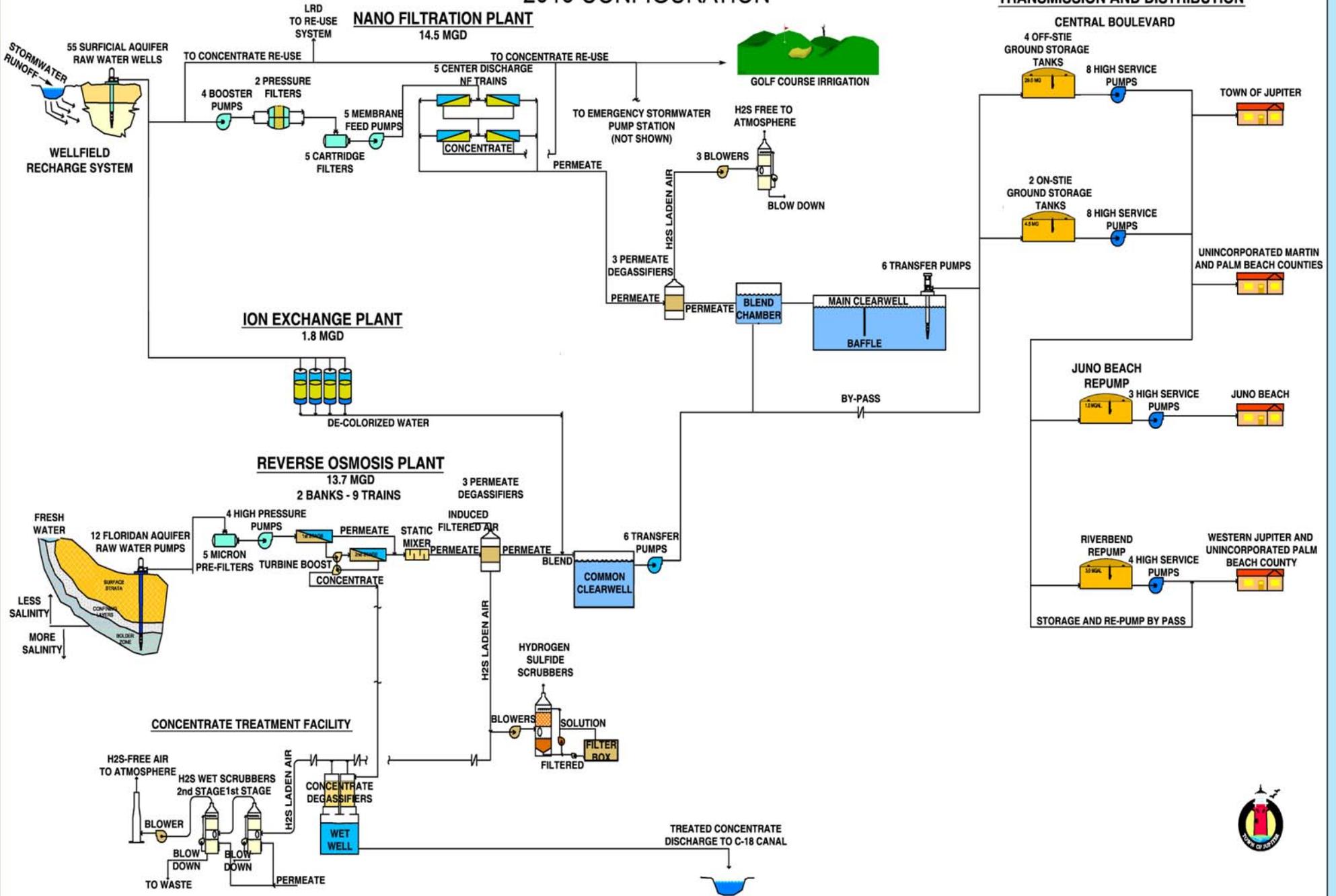
The Town of Jupiter has also received accolades from industry leaders for its research related to the reuse of the byproduct water produced from the membrane treatment process, commonly known as concentrate. The Town's work has benefited the industry as a whole and greatly improved the financial feasibility of membrane water treatment technology. When Jupiter formulated an effective means of further treating its RO concentrate and both the Florida Department of Environmental Protection and the United States Environmental Protection Agency blessed the approach, it set a regulatory precedent. Jupiter's RO concentrate is now treated then discharged into a mixing zone in a canal before it ultimately flows into the Loxahatchee River, an Outstanding Florida Water. This process satisfies Florida's anti-degradation policy and allows Jupiter to recycle the plant's brackish by product by returning the water to the ecosystem. The concentrate from the Nanofiltration facility is also recycled for use as an irrigation-quality water. While common industry practice is normally to treat membrane treatment concentrates as a waste that must be disposed of without environmental beneficial use, Jupiter's "out-of-the-box" strategies have converted them to a reusable water supply of over 3 million gallons per day.



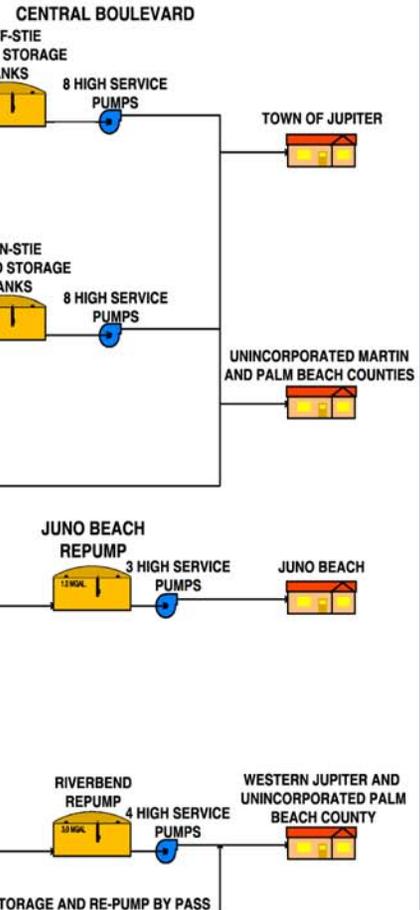
By design, Jupiter's Water System is non-intrusive to the environment and serves to preserve water resources. What has set Jupiter apart is its planning. For the last several decades, Jupiter Utilities staff looked into the future. They studied anticipated growth, reviewed the impact of that growth on natural resources, and researched the most advanced water systems in the country to formulate a safer, more environmentally friendly water utility. Jupiter's water supply strategy now demonstrates the growing mainstream acceptance of large scale membrane treatment facilities to enhance water supplies and water quality. Furthermore, the plans implemented allows the Town of Jupiter to obtain sustainability with a conservation-oriented use of water resources. To further this goal, the Town is committed to the continued pursuit of innovative approaches to water supply and treatment.

JUPITER UTILITIES WATER SYSTEM PROCESS FLOW DIAGRAM

2015 CONFIGURATION



TRANSMISSION AND DISTRIBUTION



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 08/17/2015
 WATER SYSTEM PROCESS FLOW DIAGRAM
 2015 CONFIGURATION





SAFE DRINKING WATER ACT

This table lists the contaminant monitoring required under the Safe Drinking Water Act (SDWA) to ensure safe drinking water. It also lists the Maximum Contaminant Level (MCL), the units of measurement milligrams per liter (mg/L), micrograms per liter (µg/L), and pico curies per liter (pCi/L). If a contaminant was not found it is listed as ND, not detected.

INORGANIC CONTAMINANTS

Contaminant	MCL	Units	Results
Arsenic	0.010	mg/L	ND
Barium	2	mg/L	0.00150
Cadmium	0.005	mg/L	ND
Chromium	0.1	mg/L	0.0000190
Cyanide (total)	0.2	mg/L	ND
Fluoride	4.0	mg/L	0.0600
Lead	0.015	mg/L	ND
Mercury	0.002	mg/L	ND
Nickel	0.1	mg/L	ND
Nitrate as N	10	mg/L	0.100
Nitrite as N	1	mg/L	ND
Selenium	0.05	mg/L	ND
Sodium	160	mg/L	42.6
Antimony	0.006	mg/L	ND
Beryllium	0.004	mg/L	ND
Thallium	0.002	mg/L	ND

VOLATILE ORGANIC CONTAMINANTS

Contaminant	MCL	Units	Results
1,2,4-Trichlorobenzene	70	µg/L	ND
cis-1,2-Dichloroethene	70	µg/L	ND
Xylenes, total	10000	µg/L	ND
Methylene Chloride	5	µg/L	ND
1,2-Dichlorobenzene	600	µg/L	ND
1,4-Dichlorobenzene	75	µg/L	ND
Vinyl Chloride	1	µg/L	ND
1,1-Dichloroethylene	7	µg/L	ND
trans-1,2-Dichloroethene	100	µg/L	ND
1,2-Dichloroethane	3	µg/L	ND
1,1,1-Trichloroethane	200	µg/L	ND
Carbon Tetrachloride	3	µg/L	ND
1,2-Dichloropropane	5	µg/L	ND
Trichloroethene	3	µg/L	ND
1,1,2-Trichloroethane	5	µg/L	ND
Tetrachloroethene	3	µg/L	ND
Chlorobenzene	100	µg/L	ND
Benzene	1	µg/L	ND
Toluene	1000	µg/L	ND
Ethyl Benzene	700	µg/L	ND
Styrene	100	µg/L	ND

RADIONUCLIDES

Contaminant	MCL	Units	Results
Gross Alpha	15	pCi/L	ND
Combined Uranium	20	pCi/L	ND
Combined Radium	5	pCi/L	0.3

DISINFECTION BY-PRODUCTS

Contaminant	MCL	Units	Results
Total Trihalomethanes	80	µg/L	25
Haloacetic Acids	60	µg/L	9

SYNTHETIC ORGANICS

Contaminant	MCL	Units	Results
Endrin	2	µg/L	ND
gamma-BHC (Lindane)	0.2	µg/L	ND
Methoxychlor	40	µg/L	ND
Toxaphene	3	µg/L	ND
Dalapon	200	µg/L	ND
Diquat	20	µg/L	ND
Endothall	100	µg/L	ND
Glyphosate	700	µg/L	ND
Bis-(2-Ethylhexyl) Adipate	400	µg/L	ND
Oxamyl	200	µg/L	ND
Simazine	4	µg/L	ND
Bis(2-ethylhexyl) phthalate	6	µg/L	ND
Picloram	500	µg/L	ND
Dinoseb	7	µg/L	ND
Hexachlorocyclopentadiene	50	µg/L	ND
Carbofuran	40	µg/L	ND
Atrazine	3	µg/L	ND
Alachlor	2	µg/L	ND
Heptachlor	0.4	µg/L	ND
Heptachlor epoxide	0.2	µg/L	ND
2,4-D	70	µg/L	ND
2,4,5-TP (Silvex)	50	µg/L	ND
Hexachlorobenzene	1	µg/L	ND
Benzo (a) pyrene	0.2	µg/L	ND
Pentachlorophenol	1	µg/L	ND
PCBs	0.5	µg/L	ND
1,2-Dibromo-3-chloropropane	0.2	µg/L	ND
1,2-Dibromoethane	0.02	µg/L	ND
Chlordane	2	µg/L	ND

SECONDARY CONTAMINANTS

Contaminant	MCL	Units	Results
Aluminum	0.2	mg/L	0.0070
Chloride	250	mg/L	81.9
Copper	1	mg/L	0.0006
Fluoride	4.0	mg/L	0.0600
Iron	0.3	mg/L	0.0360
Manganese	0.05	mg/L	0.00200
Silver	0.1	mg/L	ND
Sulfate	250	mg/L	8.50
Zinc	5	mg/L	0.00100
Color	15	Pt-Co	1.00
Threshold Odor Number	3	T.O.N.	1.00
Total Dissolved Solids	500	mg/L	252.00
MBAS (Surfactants)	0.5	mg/L	0.0603
pH	6.5-8.5	units	8.16

STORMWATER UTILITY

In 1987 Congress amended the Clean Water Act to require the Environmental Protection Agency to develop regulations for permitting of stormwater discharged into the waters of the United States. In November 1990, the National Pollutant Discharge Elimination System (NPDES) stormwater permit regulations became effective, requiring that counties and municipalities obtain permits for stormwater systems in order to regulate the quality and quantity of stormwater discharges. The Town is currently cooperating with Palm Beach County and other municipalities in this NPDES permit effort. Federal regulations requiring the clean up our stormwater DO NOT grant the funds to pay for it. Instead, each government entity is required to provide a funding source to comply with the regulations.



In addition to causing flooding, rain runs off streets, parking lots and concrete driveways and carrying pollutants into waterways. Stormwater running off of paved areas tends to be polluted with oils, greases and heavy metals. Stormwater runoff from residential areas contains fertilizers, pesticides and other wastes. Much of this runoff goes directly into the canals, creeks, the Loxahatchee River and the Intracoastal Waterway, thereby raising water quality concerns. The creation of a stormwater utility establishes a dedicated funding source to help tackle these and other stormwater management issues.

Stormwater management systems can consist of naturally occurring components such as sloughs, rivers, wetlands and man made components such as swales, canals, weirs, inlets and retention ponds. Combined these components 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 not only reduces flooding, but it also reduces the amount of pollutants entering local waters.

Since 1968, the Federal Emergency Management Agency (FEMA) has administered the National Flood Insurance Program (NFIP) which offers federally backed insurance money to communities that agree to adopt and enforce minimum standards for flood plain management to reduce future flood damage. In 1991, the NFIP implemented the Community Rating System (CRS) for encouraging and recognizing community flood plain management activities that "exceed" these minimum NFIP standards. Today more than 900 communities across the nation participate in CRS, including Jupiter through the administration of its stormwater utility.

Communities earn points in as many as 18 different creditable activity areas grouped into four areas of emphasis: promoting public awareness, reduction of flood damage, improved mapping and regulations; and enhanced flood preparedness. Based on the number of points earned, each CRS community is ranked in one of ten classes (with 1 being the highest, requiring the most points). In turn, a community's class rating determines the amount of flood premium reduction its residents are eligible to receive. Property owners residing within a Special Flood Hazard Area (SFHA), may qualify for anywhere between a 5% and 45% discount. Residents who have flood insurance and are outside of the SFHA receive a standard 5% discount. Presently, the Town of Jupiter has a 6 rating, this provides the residents within the SFHA with a 20% discount on their premiums. The 8,430 policy holders within the Town presently pay premiums equal to approximately \$2,659,773 annually and save approximately \$438,728 per year. Information available to residents regarding the Town's CRS program can be found at: <http://www.jupiter.fl.us/water>.



Lastly, Jupiter's utility has taken a leadership role in the restoration of local water resources by administering the Loxahatchee River Preservation Initiative (LRPI). Over the past seven years, the LRPI has been instrumental in kick starting over \$34 million dollars in regional water resource quality enhancement projects. The community of Jupiter is proud that this partnership between its water utilities and LRPI strengthens its commitment to appreciate, preserve and protect the region's environmental assets. For more information, please visit www.lrpi.us.



**LOXAHATCHEE RIVER
PRESERVATION
INITIATIVE**

For additional information regarding
Jupiter's Water Utilities, please feel free to contact:

Customer Service: (561) 741-2300

Utilities Administration: (561) 741-2270

Water & Stormwater Field Operations: (561) 748-2705

Water Plant: (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.

