



IWA PIPELINE



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IWA NEEDS YOU!



It's election time at IWA again, and next year two seats on our Board of Directors will be up for election. The two seats are currently held by Board President Jack Cunningham, and Board Vice President Ralph Sloan. Mr. Sloan is running for his first two-year term after serving the last year of Tim Gardner's first term. Mr. Cunningham is completing his second two-year term.

IWA is governed by a five member Board of Directors who all serve without pay. Directors must be residents of Sanibel or Captiva, so that they can attend all Board meetings, and must be IWA Members or an official representative of a condominium or other IWA Corporate Member. Directors must have no conflict of interest, including, but not limited to, active involvement in an enterprise which could potentially do business with IWA or which could benefit from involvement with the Association.

Meetings are normally held on the fourth Tues-

day of every month. Directors are elected by the Membership at IWA's Annual Meeting which is held on the second Monday of every April. Anyone who would like to run for one of the open seats should contact our Board Recording Secretary, Beau Stanley, at (239) 472-2113 (extension 114) or by e-mail at beau@islandwater.com **no later than January 10th, 2014.** A background check will be run on all Board candidates in our post-911 world.

GET WITH THE PROGRAM

Tired of mailing us your payment every month? Join many of your fellow IWA Members and enroll in our direct debit program. We will automatically debit your bank account each month, after you have had a chance to review your bill. You will save a stamp, envelope, and aggravation. IWA will save the cost of opening your payment and inputting it into our computer, keeping our costs and your water rates as low as possible. Contact our Membership Coordinator, Kathy, at (239) 472-1502, or email kathy@islandwater.com, to enroll or fill out an online application. She will be happy to discuss the program with you and to answer whatever questions you may have. To us, it seems like a real win-win proposition!



IT'S BUDGET TIME AT IWA



The Island Water Association was incorporated 48 years ago, in 1965, and franchised by Lee County as a member-owned, not-for-profit association. Our fiscal year is synonymous with the calendar year, which means it is now budget time at IWA. Our Department Managers are currently analyzing their needs for the up-coming year. The Revenues, Operations/Maintenance and Capital Budgets are being compiled in order to present them to the IWA Board of Directors for their approval.

Budgeting has always been a bit of an art for a water utility business on a resort island due to variables beyond our control, such as rainfall and seasonal visitors. Revenues should remain fairly steady at about \$7.3M, with O&M and Capital expenses estimated close to \$7.2M, as one would expect from a not-for-profit organization.

Included in the budgeting process is estimating the cost of 2014 Capital Projects. Capital spending involves projects that maintain or upgrade IWA's infrastructure. Past examples of Capital spending include the recently completed upgrade of the piping in our yard that runs from our high service pumps in the plant to the distribution system at the street. Also during 2013, we completed the cleaning and painting of all booster stations and the 2MG Periwinkle Station storage tank, finished the upgrade of our 17-year-old web site (which was built and hosted in-house), and finished the conversion of all our water meters to radio read meters. The meters are read by a laptop containing the Orion radio read software. The laptop is connected to an antenna that sits on the roof of the meter reading Jeep, allowing Scott, our meter reader, to drive through a neighborhood without having to exit the Jeep. The software will tell Scott if a particular meter is having issues, such as a high or low read, or a consistent spin which would indicate a leak.

Other Capital expenditures for 2013 included replacing our 18-year-old phone system, replacing the filter membranes for trains A through D (featured in this newsletter), replacing our mid frame IBM business applications server, and evaluating our well field for the rehabilitation of some wells and the drilling of a new Suwannee well to cover future demands.

Capital projects for 2014 include the construction of an addition to the RO Plant to house the new High Service Pumping Station, our five year Mechanical Integrity Test of our Deep Injection Well, and the drilling of a new Suwannee well on the site of Hawthorne 13. We also have our annual recurring capital accounts for the maintenance of our RO Plant and Distribution System.

In this day and age, budgeting has become even more challenging due to the increased volatility of the cost of energy, chemicals, employee medical insurance, and the overall state of the economy. It would be nice if we could predict the future; however, if that was the case, we would probably all be retired drinking cool glasses of vintage 2012 IWA tap water on the beach! ☺

RO FILTER "MEMBRANES"



Cutaway of RO element showing spiral wound membranes

As our members are probably aware, IWA uses a process called "Reverse Osmosis" to purify the salty well water we pump from our production wells. It has been a few years since we've talked about the process in this newsletter, and we just happen to have completed the replacement of membranes in four of six trains in our plant, so it is time for a short primer on the reverse osmosis process. Our process uses a series of membranes to remove impurities from the well water. The best definition we could find for membrane comes from the *Free Online Dictionary*:

mem-brane *n. Chemistry* - A thin sheet of natural or synthetic material that is permeable to substances in solution.

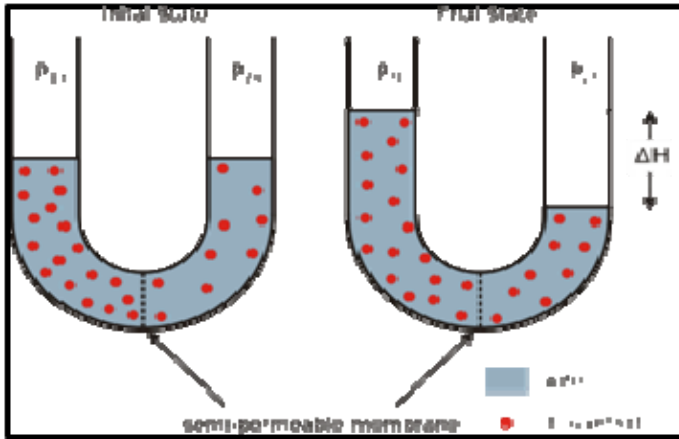


Diagram of the process of Osmosis

Osmosis is the process whereby if two solutions of differing concentrations of any substance, let's say salt and water, are separated by a membrane which will only allow molecules the size of water to pass through (semi-permeable), water will move through the membrane from the solution that is less salty to the solution that is more salty until the two solutions have equal concentrations of salt and water. Using reverse osmosis, external pressure is applied to the salty solution side (well water) of the membrane, forcing pure water molecules through the membrane to provide clean drinking water. We are able to recover 81% of the water pumped through the membranes as clean water. The remaining 19% contains all the impurities of the well water in a much more concentrated solution. This waste stream is pumped down our deep injection well to a depth of around 3,200 feet, well below the aquifers we use for our raw water supply. Monitor wells drilled to about 1,500 feet assure us that the briny solution is not permeating back up to the aquifers.

The membranes are wrapped around a 1-inch tube and are packaged in an "element" that is 8 inches in diameter and 4 feet long. There are 440 square feet of membrane in each element. 6 ele-



Membrane element being installed in a train vessel

ments are put end to end into an 8-inch diameter tube, or "vessel", that is 24 feet long. 20 of these vessels piped together constitute an RO "train." Our plant has 6 trains that can produce about 4.5 million gallons of drinking water per day. If necessary, we could increase our production to about 5.2 million gallons per day, but so far this has not been needed. Each of the 6 trains has a 125 horsepower vertical turbine pump that applies around 180 psi of pressure on the well water that is pumped in from production wells while the plant is up and running. We also have a spare pump that can be connected to any of the trains if a pump or motor needs servicing.

This spare pump has an energy recovery turbine in line with the pump and motor that uses the pressure of the waste, or concentrate, stream to reduce the energy consumption on the spare motor by one-third, or about 25 kilowatts. That adds up to a substantial energy savings over the course of a year. In order to realize this energy savings, the spare pump is always connected to a train when the plant is running.



Energy Recovery Turbine

This year IWA plant operators replaced the membranes in trains A through D, a total of 480 elements. With a lot of TLC, membranes will normally last around ten years. The replaced elements were all installed in 2001, making them close to thirteen years old. Since we were able to get a decent discount by purchasing all the membranes at the same time, and extend the warranty from one year to five years at no charge, and sell the used membranes, thereby bypassing disposal fees, we figured the time was right to change them out before experiencing a membrane failure. Another major savings was the cost of changing out the membranes. By doing the work ourselves, not only did our four newest operators get hands-on experience dismantling and reassembling an entire train, times four, IWA saved about \$40,000 in outside labor costs.

BRIDGE CROSSINGS



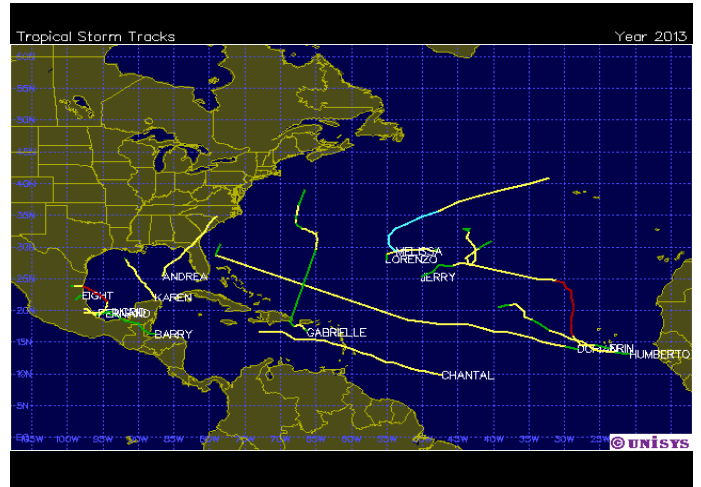
8" Ductile Iron pipe across the East Periwinkle Way bridge

IWA has numerous pipes attached to bridges and box culverts that cross various waterways around the island. The biggest and longest one of these of course is the 12-inch main that is attached to the Blind Pass Bridge. All of these exposed pipes are ductile iron, so IWA periodically inspects these pipes to ensure rust and corrosion does not become a problem. When they look like they need it, we will chip off any rust, corrosion, and old paint and apply a fresh coat of two-part epoxy based coating. We always use a primer coat first, which assures us that it will be a good long time before we need to coat the pipe again. IWA's Distribution crew just finished recoating the 8-inch pipe that runs across the East Periwinkle Way bridge.

HURRICANE SEASON ENDS

The 2013 hurricane season was an extremely mild one for the Atlantic and Caribbean, with only thirteen named storms, including two wimpy hurricanes. Lots of sinking high pressure and wind

shear kept storms that did form from intensifying into powerful storms. The first storm of the season, Tropical Storm Andrea, was the closest threat to Southwest Florida, back in early June. It formed in the central Gulf of Mexico, and as it slowly limped toward the Panhandle with 55 MPH winds, we decided against installing our storm shutters. The shutters remained uninstalled for the duration of the hurricane season. I'm sure the Northeast coast was glad they did not have to deal with any tropical weather this year after last September's Superstorm Sandy devastated the area.



This year's hurricane season was another non-event for not just Southwest Florida, but the entire US.



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