



ANNUAL Water Quality Report 2010

Sustainability IS HERE to Stay Making Every Drop Count!



Nearly 14% of the water a typical homeowner pays for is never even used – it's wasted down the drain.



CITY OF BOYNTON BEACH
100 E. Boynton Beach Blvd.
Boynton Beach, FL 33435

Mayor, Jose Rodriguez
District I, Vice Mayor William "Bill" Orlove
District II, Commissioner Woodrow Hay
District III, Commissioner Steven Holzman
District IV, Commissioner Marlene Ross
City Manager, Kurt Bressner

CITY COMMISSION MEETINGS
1st and 3rd Tuesdays of the month
6:30 p.m. at City Hall
100 E. Boynton Beach Blvd.

Water Quality Division (561) 742-6964
City Hall Customer Service.....(561) 742-6300
Utilities Department (561) 742-6400
After Hours/Emergency(561) 742-6430
Information Line.....(561) 742-6467

VISIT THE CITY'S WEBSITE, www.boynton-beach.org and tune in to BBTv, Comcast channel 95
Follow Boynton Beach on Twitter: @cityofboynton; Blogger: boyntoncityvisions.blogspot.com;
Flicker: www.flicker.com/cityofboynton and YouTube: www.YouTube.com/cityofboynton



DIRECTOR'S MESSAGE

Our customers continue to spark excellence in our workforce. This is reflected in the reported quality of our drinking water, the service we provide, and our delivery cost, all of which continue to stand out in the region. Water is a precious commodity, the community's most valued asset, and a critical natural resource for the planet. Unfortunately, population growth and unbridled water use threaten it, and brings us closer to the brink of a world-wide water crisis.

Sustainability is the key. Conserving water saves money and other resources. Using less hot water, for instance, reduces the carbon foot-print of the community by promoting less energy and electricity consumption, and lowers utility bills. As stewards of your drinking water, we have embraced these edicts and are leading the way to secure the future of your water supplies – we are integrating sustainability in our operations and capital projects.

The Raw Water Main Interconnect and associated projects are slated to double our drinking water capacity. When completed, in about 2013, the projects will come with major water and energy savings ready to meet the needs of our customers through 2025. They will allow us to move about 20 million gallons of raw water each day from our West Plant well fields, for treatment at the East Plant. These projects will be fitted with advanced treatment techniques and smart pumping technology to reap significant sustainable savings.

Our new disinfection process, the Onsite Chlorine Generation (OSG), is no different. When commissioned early this summer, the OSG will present a friendlier disinfection alternative to the environment. It allows liquid chlorine to be generated and applied at the treatment plant. The previous alternative of transporting chlorine gas to the plant for this purpose, posed a grave danger to the environment and public, of accidental rupture and spill of chlorine gas.

The first phase of the reclaimed water service pipe network has been completed. The current and future phases offer cheaper and more sustainable irrigation options to our customers. The reclaimed water pipeline system is extended on Seacrest Boulevard beyond north of Boynton Beach Boulevard to include the City Hall block. The inclusion of several facilities in the City Hall block demonstrates the City's commitment to its sustainable goals. Further demonstration of this commitment is the completion of the Rolling Green project and other neighborhood water and storm water projects. As well, these latter projects will conserve water by eliminating leaks, minimizing nuisance flooding, and allowing storm water to percolate the soil and replenish our ground water aquifer supplies.

Finally, the Utility is contemplating smart meters to further curtail water losses and leaks. Also known as the Advanced Meter Infrastructure (AMI), the new smart meters, if and when



Kofi Boateng,
UTILITIES DIRECTOR

implemented, will greatly compliment our already established state of the art remote operating capabilities. It will enable customers to manage their water use and billing, while equipping the Utility to minimize leaks in the water distribution system. With only 2.1 percent of "unaccounted for" water losses, one of the lowest in the area, this will make the City's Utility a leading steward of water conservation in the region.

The Utility is minding the store on your behalf. We have embraced the sustainable trend in a major way and integrating its edicts where it counts the most: in expanding our service capacity, enhancing treatment processes with environment-friendly disinfection, improving our neighborhood delivery, providing cheaper irrigation options, and leveraging smart metering technology and remote operation. With a keen eye on the budget, we are making every dollar count to ease the burden on the customer's pocket.

NEED MORE INFORMATION?

We want you to be informed about your water utility and the high-quality drinking water delivered to your homes and businesses. We also encourage community participation and feedback.

If you have any questions about this report, or if you would like a copy of our water system's complete source water assessment, call (561) 742-6400. For additional information about water quality, call the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Sa-a se yon mesaj ki pale de kalite dlo nan Boynton Beach. Si ou genyen kesyon tanpri telefone (561) 742-6300.

Este es el Informe Anual De Calidad De Agua Potable de la Ciudad de Boynton Beach. Para información en español por favor llame al teléfono (561) 742-6960.

For Customers with Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

WATER QUALITY TEST RESULTS 2010

Contaminant and Unit of Measurement	Dates of Sampling Mo/Yr	MCL/AL Violation Y/N	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Likely Source of Contamination
INORGANIC CONTAMINANTS							
Antimony, ppb	Jan 10	No	1.0	ND - 1.0	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic, ppb	Jan 10	No	2.0	NA	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium, ppm	Jan 10	No	0.008	0.005-0.008	2	2	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride, ppm	Sept 10	No	1.01	0.08 - 1.16	4.0	4.0	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm.
Nitrate, ppm as nitrogen	Jan 10	No	0.293	0.093 - 0.293	10.0	10.0	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium, ppm	Jan 10	No	25.4	21.2 - 25.4	NA	160	Salt water intrusion; leaching from soil.
Thallium, ppb	Jan 10	No	1.0	NA	0.5	2.0	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
LEAD AND COPPER (TAP WATER)							
Contaminant and Unit of Measurement	Dates of sampling Mo/Yr	AL Exceeded Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water), ppm	Sept 10	No	0.096	No samples exceeded AL	1.3	AL = 1.3	Corrosion of household plumbing system; erosion of natural deposit; leaching from wood preservatives.
Lead (tap water), ppb	Sept 10	No	3.13	1 sample exceeded AL	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits.
STAGE 1 DISINFECTANTS AND DISINFECTION BY PRODUCTS							
Disinfectant or Contaminant and Unit of Measurement	Dates of sampling Mo/Yr	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Chloramines ppm	Jan, Apr, Jul, Oct 2010	No	3.54 ¹	0.6 - 4.3	4.0	4.0	Water additive used to control microbes.
Haloacetic Acids (HAA 5), ppb, Running Annual Average (RAA)	Mar, May, Sept, '2010	No	14.9 ¹	7.2 - 29.6	NA	60	By-product of drinking water chlorination.
Total Trihalomethanes (TTHM), ppb, Running Annual Average (RAA)	Mar, May, Sept, '2010	No	18.0 ¹	5.7 - 40.3	NA	80	By-product of drinking water chlorination.
SYNTHETIC ORGANIC CONTAMINANTS							
Contaminant and Unit of Measurement	Dates of Sampling Mo/Yr	MCL or MRDL Violation Y/N	Level Detected	Range of Levels Detected	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
2,4 D, ppb	Jan 10	No	0.199	NA	70	70	Runoff from herbicide used on row crops
Di (2-ethylhexyl) phthalate, ppb	Jan 10	No	4.45	NA	0	6	Discharge from chemical factories
MICROBIOLOGICAL CONTAMINANTS							
Contaminant and Unit of Measurement	Dates of Sampling Mo/Yr	MCL/AL Violation Y/N	High Monthly Percentage	MCLG	MCL	Likely Source of Contamination	
Total Coliform Bacteria, Monthly sampling	Jan - Dec	No	0.81	0	Presence of coliform bacteria in 5.0% of monthly samples	Naturally present in the environment.	
E Coli Bacteria	July 2010	No	³ One positive sample	0	0	Human or animal fecal waste	

NOTES:

¹ Denotes running annual average of 4 consecutive quarterly results, individual results may be higher.

² We failed to complete required sampling for tap water Trihalomethanes (THM) and Haloacetic acids (HAA) on time and therefore were in violation of monitoring and reporting requirements. Because we did not take the required number of samples, we did not know whether the contaminants were present in your drinking water, and we are unable to tell you whether your health was at risk during that time. The monitoring period was 10/1/10 through 12/31/10. Two samples were required for each contaminant, and none were taken. Sampling resumed on 01/19/11.

³ Three samples collected the following day, one at the original site, one upstream and one downstream of the site were absent of bacteria.

IMPORTANT DEFINITIONS

AL - Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements, which a water system must follow.

MCL - Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG - Maximum Contaminant Level Goal. The level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL - Maximum residual disinfectant level: The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG - Maximum residual disinfectant level goal: the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ND - means not detected and indicates that the substance was not found by laboratory analysis.

ppb - parts per billion. A unit of measurement equal to one part by weight of a contaminant in 1 billion parts by weight of water. This could be compared to 1 second in 11,500 days or 1 inch in 15,800 miles.

ppm - parts per million. A unit of measurement equal to one part by weight of a contaminant in 1 million parts by weight of water. This could be compared to 1 second in 11.5 days or 1 inch in 15.8 miles.

RAA - Running Annual Average

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

HOW DO CONTAMINANTS GET INTO OUR WATER?

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

SOURCE WATER ASSESSMENT

In 2009, the Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential contamination in the vicinity of our wells. Thirty-five potential sources of contamination were identified ranging from low to moderate risk. We routinely test each raw water well twice annually to check for these contaminants. The assessment results may be found at www.dep.state.fl.us/swapp or may be obtained by calling (561) 742-6964.

INFORMATION ON LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Boynton Beach Utilities Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.



Where does our drinking water come from?

The Boynton Beach Utilities Department uses water drawn from underground aquifers to supply its two treatment plants that produce the purified water you use and enjoy every day. The water is drawn from the aquifer using wells that vary in depth from 50 to 250 feet. The East Water Plant operates 19 wells tapped into the "Surfical Aquifer"; the West Water Plant operates 11 wells tapped into the Turnpike Aquifer. Both of these wellfields are replenished or recharged, directly or indirectly by rainfall through percolation.

Surface water bodies such as canals and lakes also assist to recharge the aquifer. When rainfall is scarce, the water levels in these aquifers can become dangerously low, and the potential for seawater to migrate into the aquifer is increased. This is called saltwater intrusion.

Aquifer Storage and Recovery system (ASR). ASR allows us to store treated water during the rainy season when water is plentiful and use it during the dry season when water is scarce.

These are just some of the tools we use to sustain our fragile water supply. We can not do this alone. We rely on you, our customers, to conserve water where ever you can in order to sustain our water supply for future generations.



Ensuring, Clean, Healthy Water From Every Tap

The City uses two distinctly different treatment processes to purify the water to drinking water standards: Lime Softening and Membrane Softening. The Lime Softening Plant, the East Plant, located at Seacrest Boulevard and Woolbright Road, uses a chemical process to remove minerals, color and iron before the water is filtered, disinfected with chloramine (a combination of chlorine and ammonia) and pumped into the distribution system.



The Membrane Softening Plant, the West Plant, located on Boynton Beach Boulevard, just west of Military Trail, forces water under pressure through a porous membrane or filter that separates the minerals, salts, iron and color from the pure product water. The water is then adjusted for pH, disinfected with chloramine and pumped into the distribution system.



Raw water at the West Water Plant is pretreated by cartridge filters to remove particulates



Membrane Softening



State Certified operators monitor plant processes around the clock



Degasifier



East Plant Sedimentation allows heavy particles formed in the coagulation step to settle to the bottom of the basin. Clear water is drained from the top and sent to the filters.

East Plant Filtration passes water through filters made of sand, gravel and activated carbon and removes smaller particles.

East - Disinfection OSG System

West - Disinfection OSG System

Water quality is checked daily at both Plants for purity and safety in our nationally accredited laboratory

If for any reason you encounter a problem, we will test the quality of your water—free of charge. Please call us at (561) 742-6964 to set up an appointment.

Climate Action Plan helps sustain our limited water supply

In July 2010, the City of Boynton Beach completed a Climate Action Plan (CAP), which provides a strategic plan to achieve a sustainable future for our community. The CAP provides a comprehensive approach to the City's activities, including water use, water conservation, landscape irrigation, and stormwater management. Two main focus areas over the past year have been expansion of the City's reclaimed water system and the continuation of effective stormwater management.

Over the past year, the City's reclaimed water (or reuse water) system has been extended to the eastern part of the City to provide irrigation water for large water users, such as Boynton Beach Memorial Park (City Cemetery), Little League Park, City Hall complex, and the streetscape medians along North Seacrest Boulevard and SE 4th Street. Reclaimed water is highly treated wastewater from the regional wastewater treatment plant, which contains nutrients such as nitrogen and phosphorus. The expanded use of reclaimed water recycles the wastewater generated by the residents of the City and reduces the use of potable drinking water for irrigation.

Efficient grassy swales and underground exfiltration trenches (i.e., French drains) are used by the City to effectively manage stormwater runoff during heavy rain events and allow the water to percolate into the ground and recharge the groundwater aquifer. Cisterns, rain barrels, and other methods of capturing rainwater are encouraged to reduce the irrigation demands on the City.

Did you know: Approximately, 935 gallons of water can be collected from a one inch rainfall by the roof of an average 1500 square foot home! That's almost 50,000 gallons in an average year. Don't let this water go to waste. The collected water can be used many ways: watering plants, topping off ponds or birdbaths, washing the car or boat, you name it. The City has reasonably priced rain barrels for sale. Contact the Customer Relations Department at City Hall for details.

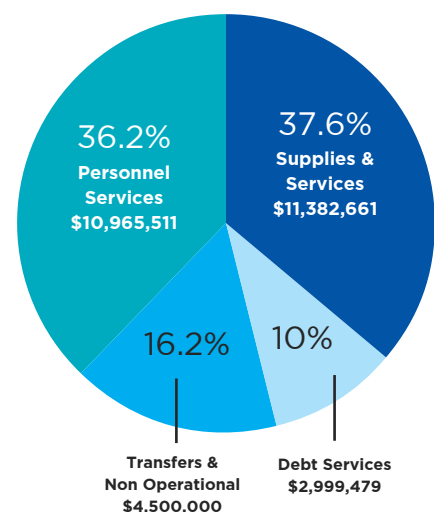
Your water conservation efforts are greatly appreciated. Remember to save a little water for a sunny day!

City of Boynton Beach Utilities Department Expenses SUMMARY FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2010

We believe in stewardship and accountability, therefore since 2008 we decided to include a financial report to keep you informed about our fiscal performance. 2010 was a year that brought many changes to our department; however we were able to meet the required demand for services. The following chart summarizes how the City managed the revenue funds that were collected through Utilities (Water, Storm Water and Sewer).

Compared to the previous fiscal year, the total expenses for FY ended 9/30/10 increased 1.6% or \$474,483. Debt service had an increase of 38% represented by interest payments due on bonds issued during the past eight years. Services and supplies decreased 6%, as opposed to the 2% increase from the prior year. On the other hand, the decrease in personnel costs was caused by job eliminations and an organizational consolidation in some of our divisions. Lastly, the transfer to Vehicle Service Fund went down 5% or \$20,277.

Total Expenses = \$30,260,178



	Expenses 08/09	09/10	% Change	Change (\$)
Personnel Services	11,077,593	10,965,511	-1%	(112,082)
Supplies and Services	12,104,915	11,382,661	-6%	(722,254)
Debt Service Transfers	2,170,383	2,999,479	38%	829,096
General Fund	4,000,000	4,500,000	13%	500,000
Vehicle Service	432,804	412,527	-5%	(20,277)
Total Expenses	29,785,695	30,260,178	1.6%	474,483
Total Revenues	33,324,003	35,812,219	7.5%	2,488,216

*Does not include depreciation

In the spring of '09 new rates went into effect and this is reflected on our revenues. The new rates include a base facility charge that is intended to cover overhead costs. The net revenues are used to fund the capital improvement program (CIP) and future debt service for funds borrowed to accomplish the (CIP) which ensures the utilities sustainability in the future.

(Source: CAFR FY08/09 & figures obtained from H.T.E system on 4-22-11)



Conservation Corner

What does water conservation mean to you?

Turning the water off when brushing your teeth? Abiding by the twice a week lawn watering restrictions? Taking shorter showers? These are all simple, yet effective ways to save water in your home and improve the sustainability of the water supply.

How much do we know about the world's most precious commodity? Nothing can survive without it, but how often do we really appreciate it?

We often take the most basic and everyday things for granted. Water is no exception. We expect it to be available when we turn the sink on and think nothing of where that water has been or how it's traveled to our faucet. However, there's way more to water than you think. Take some of these facts, for example:

- 60% of the world's fresh water comes from rivers shared by at least two countries
- Water managers in 36 states expect shortages by 2013
- An American family of four uses up to 260 gallons of water in the home per day
- Running tap water for two minutes is equal to 3-5 gallons of water
- A five minute shower is equal to 20-35 gallons of water

- A full bath is equal to approximately 60 gallons of water
- Water efficient fixtures can cut water use by 30%
- One quart of used motor oil can contaminate 250,000 gallons of water
- Putting water in plastic bottles and shipping it just 125 miles uses 1,100 times more energy than producing tap water
- A 1% increase in organic matter allows soil to hold 16,000 more gallons of water per acre
- One ton of paper made completely from recycled scrap saves 7000 gallons of water, 4100 kilowatt-hours of energy, three cubic yards of landfill space, 17 trees and 60 pounds of air emissions

We can really accomplish a lot when we all pull together and recycle! During WWII, salvaging metal straps from corsets saved enough metal to build 2 warships.

These are truly amazing statistics. Water is truly sacred and in dire need of conservation and protection from pollution. There's more than a few things to think about the next time you reach for that faucet!

You can help save water with a few changes around the house.

You're In Control - Try to do one thing each day to save water. Don't worry if the savings are minimal. Every drop counts, and every person can make a difference.

At the Boynton Beach Utilities Department, water conservation means saving every drop of water even before it reaches your tap. We are proud to maintain a water loss ratio of about 2.1%, from the initial withdrawal of water from the ground, through the treatment process and conveyed through the distribution system. Anything less than 10% is considered satisfactory.

So how does water get lost?

Water can become lost or unaccounted for through leaking of pipes, flushing of fire hydrants, or from meters that do not register correctly. The Utilities Department is able to maintain a very low lost water rate by repairing water main leaks promptly, replacing aging water mains, replacing old meters and using automatic hydrant flushing devices when necessary. All these activities help to sustain the water supply for future generations. Help us in this effort! Free indoor water conservation kits, water saving hose nozzles, and our locally famous conservation playing cards are available at City Hall and the Utilities Administration Complex. Rain barrels can also be purchased for a nominal fee.

Doing our part with New Water System Upgrades

Your Utility continues to focus its efforts on improving the use of our water resource through a variety of projects. During the past year there have been two projects with differing strategies that will help

our water environment. The first is a major neighborhood project that has just been completed in the Rolling Green District. This project included two important elements. The first was the replacement of some aging water mains and the associated household connections. The new mains enabled us to move some services from the rear easement to the front of the property. The new lines will reduce water loss through small leaks and improve the flow and quality of the water to you, the customer.

A second element is the repair and improvement to the swales in the area. The citizen might view the swale as an imposition preventing parking and requiring someone to cut the grass. The purpose is twofold, firstly it prevents flooding by providing a place to hold excess rainwater, and secondly the water caught in the swale then percolates into the ground and ultimately recharges the aquifer preventing salt water intrusion into the drinking water supply.

The next project was the extension of our re-use water main along Seacrest Avenue when the road was remodeled. This takes the line from just south of the Library to the C16 canal. All of the new street plantings and some of the parkland along the way will now be irrigated using treated water. This enables water to be recycled rather than be pumped deep underground and saves our drinking water for its primary purpose, a double benefit for us all.