

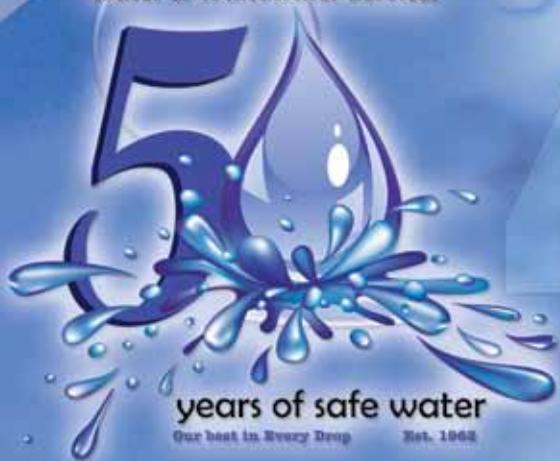


2011

Water Quality Report

Water and Wastewater Services

Broward County
Water & Wastewater Services



years of safe water

Our best in Every Drop

Est. 1962

BROWARD
COUNTY
FLORIDA

WATER AND WASTEWATER SERVICES

2555 West Copans Road,
Pompano Beach, FL 33069

broward.org/waterservices

GENERAL INFORMATION:

Customer Service

Phone: **954-831-3250**

PROJECT INFORMATION:

Project & Community Coordination

Phone: **954-831-0706**

Water and Wastewater Engineering Division

Phone: **954-831-0745**

WATER CONSERVATION

broward.org/watermatters

EMPLOYMENT INFORMATION:

Phone: **954-357-JOBS**

broward.org/careers

ADDITIONAL INFORMATION:

Environmental Protection Agency

Safe Drinking Water Hotline

Phone: **800-426-4791**

epa.gov/safewater

National Center for Disease Control

Phone: **800-232-4636**

cdc.gov

American Water Works Association

Phone: **800-926-7337**

awwa.org

South Florida Water Management District (SFWMD)

Phone: **800-662-8876**

sfwmd.gov

FOR ADDITIONAL COPIES OF THIS REPORT, CONTACT:

Water and Wastewater Operations Division

Phone: **954-831-0810**

Fax: **954-831-0842**



BOARD OF COUNTY COMMISSIONERS

Sue Gunzburger • Dale V.C. Holness • Kristin Jacobs • Chip LaMarca • Ilene Lieberman
Stacy Ritter • John E. Rodstrom, Jr. • Barbara Sharief • Lois Wexler

An equal opportunity employer and provider of services.

This public document was promulgated at a cost of \$20,560.00, or \$0.419 cents per copy, including postage to provide public information about Broward County's drinking water quality during 2011. If you pay the water bill for a condominium or rental property (residential or commercial) please advise your residents/tenants that this report is available. WW201248102 6/12

Our Best In Every Drop

Mission Statement

Water and Wastewater Services is committed to being a benchmark comprehensive utility providing exceptional retail and regional water and wastewater management services and programs to its customers; supporting continuous improvement while maintaining the quality of life in Broward County through sound environmental practices.



Dear Customers,



In 2012, Broward County Water and Wastewater Services celebrates 50 years of providing safe drinking water and wastewater treatment services to our customers. Our water meets or exceeds all standards of the federal Safe Drinking Water Act.

On January 31, 1962, the then-named Broward County Utility Department came into existence. In the beginning, there was a staff of 12, an annual budget of \$110,000 and water service was provided to 2,500 residents and sewer service to another 2,500 residents in the unincorporated areas of Broward County.

Today, Water and Wastewater Services, in addition to providing safe drinking water and wastewater treatment, also provides regional storm water and canal services that support aquifer recharge and flood management. WWS employs approximately 375 people with an annual budget of \$186 million. We provide water service to around 230,000 residents and wastewater collection and treatment to more than 600,000 residents and business owners throughout Broward County.

Some of the highlights of WWS's first half century of service to the Broward County community include:

- In 1975, WWS began to provide wholesale wastewater treatment services through the North Regional Wastewater Treatment Plant (NRWWTP). Today, we provide wastewater collection to over 600,000 residents, or more than 40 percent of Broward County's population. The plant's treatment capacity has had three major expansions with the last increasing capacity from 84 million gallons per day to 100 million gallons per day.
- In 1994, major expansions to water treatment plants in Deerfield Beach and Lauderdale Lakes were completed. These plants currently provide potable (drinking) water to 14 percent of the County's population.
- In 1996, WWS embarked on an unprecedented set of public works improvement projects in eight major communities in then mostly unincorporated Broward County. More than \$577 million has already been invested in 53 Neighborhood Improvement Program (NIP) projects; 11 more are underway. By the time the program is completed in 2018, it will result in 295 miles of new roadways, 428 miles of new sidewalks, 623 miles of new pipeline and the elimination of 10,607 septic tanks. It will cover over 9,355 acres, with an impact on 92,500 residents and 28,555 homes.
- In 2004, Broward County purchased the Broadview Park Water Company, adding 2,000 water service customers. The Broadview neighborhood is also a NIP project site for new water and sewer mains, drainage facilities and sidewalks.
- In 2008, WWS received a 20-year water supply permit from the South Florida Water Management District (SFWMD), allowing for the implementation of alternative water supply projects to reduce

the community's reliance on the Everglades during periods of drought.

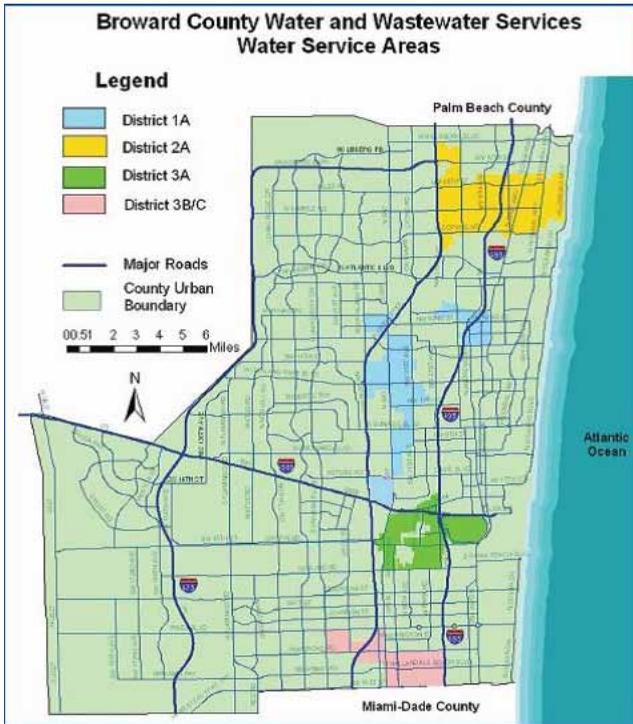
- In 2009, WWS received an American Society of Civil Engineer's Broward Branch "Project of the Year" Award, for the installation of a reclaimed water line providing service to the City of Coconut Creek.
- In 2011, the "NO FROG. NO CLOG." campaign to educate the public on the proper disposal of Fats, Rags, Oil and Grease (FROG) resulted in a 17 percent reduction in the time and labor spent on "deragging" master pump stations, saving money and enhancing the quality of service from the water utility.

WWS offers programs that encourage conservation, such as a rebate program for homeowners installing low flow, high efficiency toilets; and, is an active participant in community outreach and education activities such as 'Water Matters Day', 'Earth Day' and 'National Drinking Water Week'. Guest speakers are available to address homeowner association groups and to conduct plant tours.

We are very grateful to have been able to serve our customers for 50 years now. Our success is due to the loyalty of our customers and the hard work of our employees.

We thank you for your continued support and are looking forward to the next 50 years!

Alan W. Garcia, P.E. Director
Broward County Water and
Wastewater Services



Our Water Quality Meets or Exceeds EPA Regulations

A review of the following WWS 2011 water quality data shows that your drinking water quality meets all primary standards set by the United States Environmental Protection Agency (EPA). The following tables list the parameters set by the Safe Drinking Water Act and the levels detected in potable water for Districts 1A, 2A, 3A and 3B/C. This report includes the results of our monitoring for the period of January 1 to December 31, 2011. Data obtained before January 1, 2011, and presented in this report are from the most recent testing done in accordance with drinking water laws, rules, and regulations.



DEFINITIONS FOR THE TABLES

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

D/DBP: Disinfectant/Disinfectant By-product

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

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

Maximum Residual Disinfectant Level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal or MRDLG: 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.

N/A: Not applicable.

ppb: Parts per billion, or micrograms per liter ($\mu\text{g/l}$).

ppm: Parts per million, or milligrams per liter (mg/l).

TTHM: Total Tri-halomethanes.

2011 TEST RESULTS

3A and 3BC water supplied by the City of Hollywood

MICROBIOLOGICAL CONTAMINANTS									
Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A Highest Monthly % Positive	2A Highest Monthly % Positive	3A Highest Monthly # Positive	3BC Highest Monthly % Positive	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	01/11 - 12/11	N	2.3%	0.0%	NA	4.3%	0.0%	> 5%	Naturally present in the environment
		N	NA	NA	1	NA	0	> 1	

INORGANIC CONTAMINANTS

Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A	2A	3A	3BC	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	01/11 - 12/11	N	ND	ND	0.65	0.65	0	10	Erosion of natural deposits
Barium (ppm)		N	0.004	0.006	0.004	0.004	2	2	Erosion of natural deposits
Fluoride (ppm)		N	0.939	0.904	0.772	0.772	4	4	Additive to promote strong teeth when 0.7-1.3 ppm.
Mercury (ppb)		N	ND	ND	0.086	0.086	2	2	Erosion of natural deposits; runoff from cropland
Nitrate (ppm)		N	0.037	0.054	0.071	0.071	10	10	Runoff from fertilizer use; erosion of natural deposits
Nitrite (ppm)		N	ND	0.312	ND	ND	1	1	Runoff from fertilizer use; erosion of natural deposits
Sodium (ppm)		N	40.4	19.4	28.1	28.1	NA	160	Leaching from soil

STAGE 1 DISINFECTANTS & DISINFECTION BY-PRODUCTS

Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A (range)	2A (range)	3A (range)	3BC (range)	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Chlorine (ppm)	01/10 - 12/11	N	3.3 (0.5-6.0)	3.3 (2.1-3.6)	3.0 (0.7-3.5)	2.9 (0.6-3.5)	4.0	4.0	Water additive used to control microbes
HAA5-haloacetic acids (ppb)		N	42 (16.3-51.7)	34 (18.3-54.5)	16 (13.3-17.7)	18 (8.1-43.3)	NA	60	By-product of drinking water disinfection
TTHM-total trihalomethanes(ppb)		N	29 (10.2-68.4)	26 (21.1-39.4)	12 (10.8-13.4)	23 (8.0-19.5)	NA	80	By-product of drinking water disinfection

LEAD & COPPER (Tap Water)

Contaminant (90th Percentile Value)	Date of Sampling (mo/yr)	AL Violation Y/N	1A	2A	3A	3BC	MCLG	Action Level (AL)	Likely Source of Contamination
Copper (Tap Water) (ppm)	01/10 - 12/10	N	0.020	0.034	0.085	0.042	1.3	1.3	Corrosion of household plumbing systems, erosion of natural deposits
# of Sites exceeding the AL			0	0	0	0			
Lead (Tap Water) (ppb)		N	2.3	2.0	1.48	0	0	15	
# of Sites exceeding the AL			0	0	0	0			

SECONDARY CONTAMINANTS

Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A	2A	3A	3BC	MCLG	MCL	Likely Source of Contamination
Color (color units)	01/11 - 12/11	Y	N/A	N/A	20	20		15	Naturally occurring organics

The City of Hollywood monitors Color daily and on 7/25/2011 had a MCL violation for Color. All previous and subsequent samples throughout the year were well below the MCL of 15. To ensure Color is below the MCL, the City of Hollywood will continue to monitor daily and make any treatment adjustments that may be needed in a timely manner.

WATER QUALITY

Source of Water

Your tap water originates from the Biscayne Aquifer, which lies 50-200 feet underground. The Aquifer is comprised primarily of limestone and sand. Recharge is received from rainwater and surface canals. As a groundwater source, the Aquifer is naturally protected from undesirable microbial pathogens that are common in surface water supplies. This is due to the natural filtration that occurs in the Aquifer and the amount of time the water resides in the ground prior to being withdrawn.

Source Water Assessment

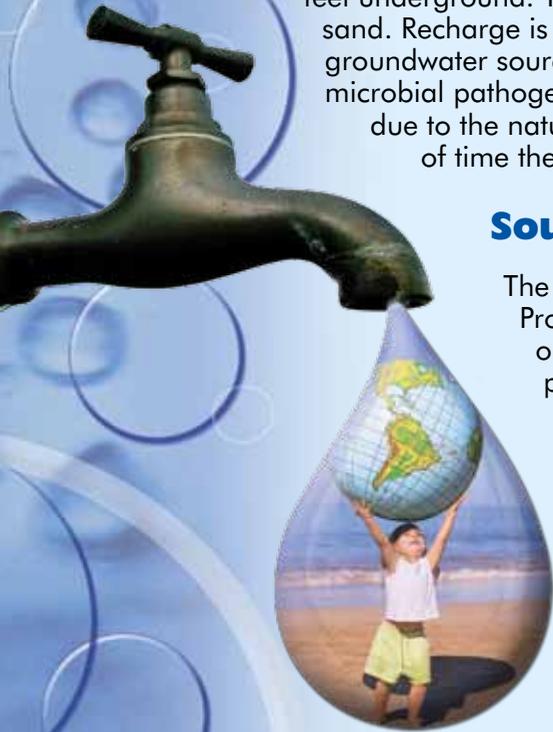
The State of Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment on our systems in 2011. The report(s) indicated 5 unique potential contaminant sources in District 1A and 15 unique potential contaminant sources in District 2A. Potential contaminant sources include gas stations, dry cleaners, and other businesses that operate in the service areas. All potential sources are considered to be of moderate or low concern based on FDEP scoring results. In 2011 the Florida Department of Environmental Protection performed a Source Water Assessment for the City of Hollywood which provides water for the 3A and 3BC systems. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at dep.state.fl.us/swapp.

Softening

At the water treatment plant, the ground water is initially treated with lime and ferric chloride to reduce hardness and color. During this step of the treatment process, chemicals are added so that most of the hardness and particles in the water can be easily removed.

Fluoridation

Following softening, fluoride is added for enhanced protection against tooth decay.



Filtration

Filtration is used following softening to further purify the softened water by removing the remaining particulate matter from the treated water.

Disinfection

Disinfection, which is the final treatment step, is accomplished by the addition of chlorine and ammonia, otherwise known as chloramines. A small amount (residual levels) of chloramines disinfectant is maintained throughout the distribution system in order to control microbial regrowth.

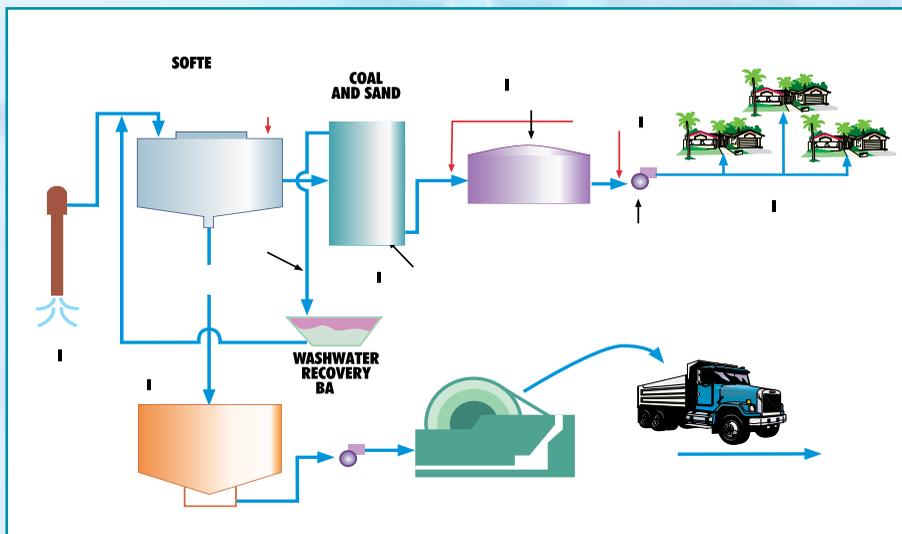
Dewatering

Solids that settle out during the treatment process are collected and pumped to a settling basin, where they are thickened. The thickened solids are pumped to a vacuum filter, which removes excess water. Dewatered solids are finally hauled away for land application.

Monitoring

More than 23,000 tests are performed each year to comply with national standards in WWS' NELAP* certified drinking water laboratory.

WWS also employs certified water treatment operators who conduct more than 317,000 process control tests annually. These tests ensure that the water treated and delivered to Broward County customers meets or exceeds all federal requirements for safe drinking water under the Safe Drinking Water Act.



* National Environmental Laboratory Accreditation Program (NELAP Institute/TNI)

POSSIBLE CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, aquifers, and wells. 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:

- (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) 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 activities.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- (D) 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.
- (E) 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 which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

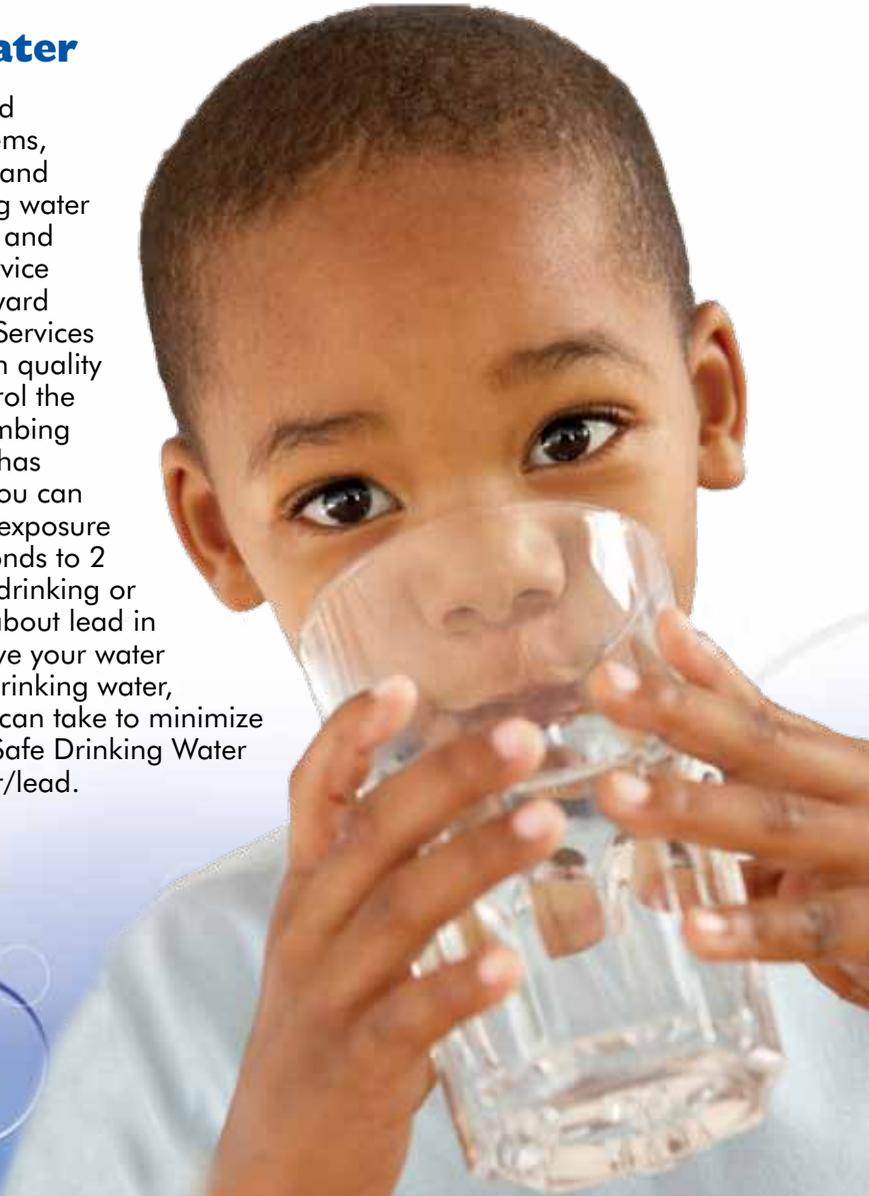
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by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

Immuno-Compromised Persons

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. The Environmental Protection Agency and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium* and other microbiological contaminants are available from EPA's Safe Drinking Water Hotline at 800-426-4791.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Broward County Water and Wastewater Services 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 epa.gov/safewater/lead.



BROWARD COUNTY'S COMMITMENT TO CONSERVATION

Conservation is central to maintaining an adequate supply of drinking water for the present and the future. Broward County has developed a water conservation program that includes the following components:

Regulations

- Ultra-low volume plumbing fixtures are required for all new construction
- Lawn watering and car washing restrictions, broward.org/waterservices
- Rain Sensor devices must be installed in all new irrigation systems
- Two-day per week, year-round landscape watering restrictions are mandatory for County, city and private water customers



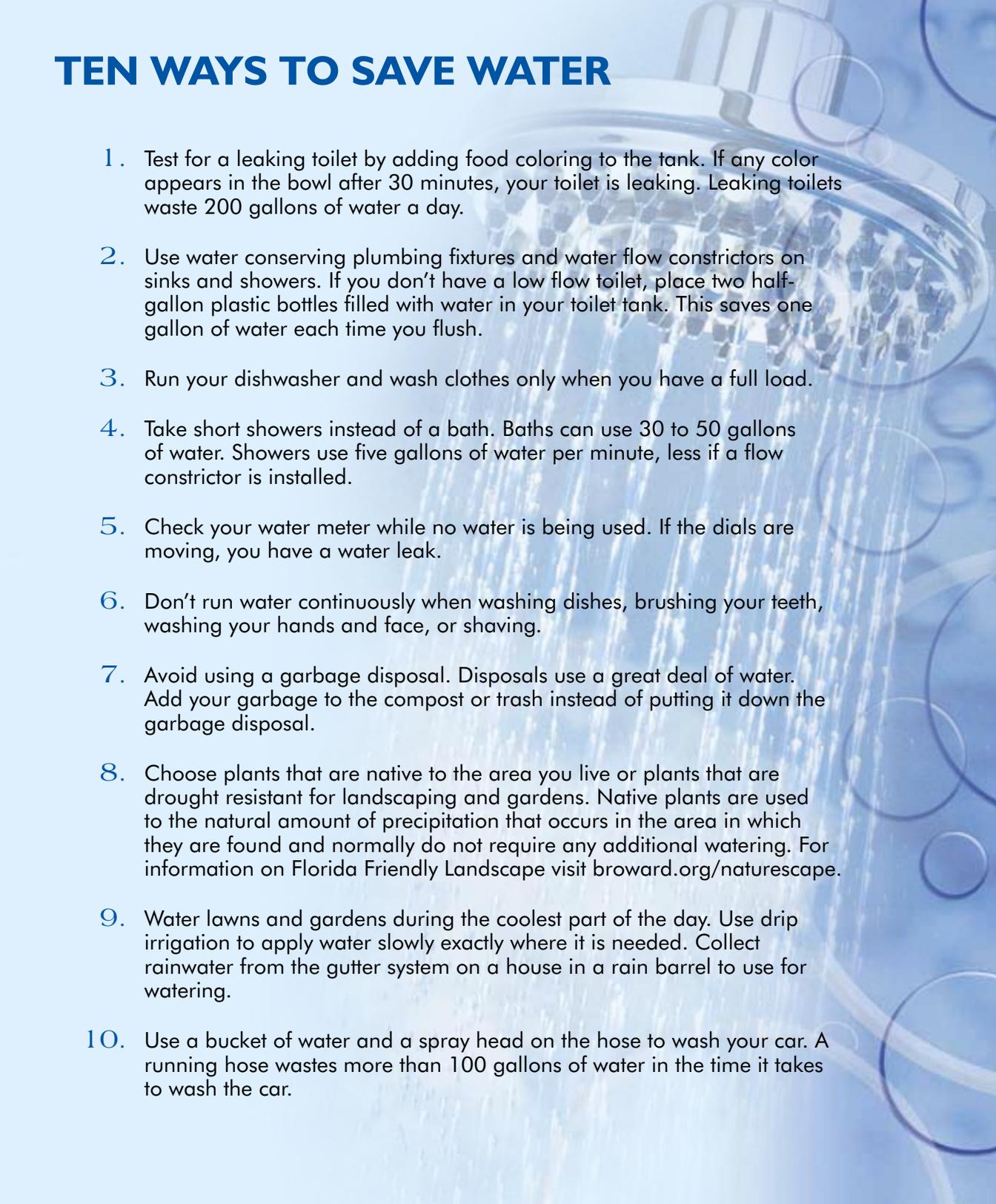
Programs

- WWS offers credits of up to \$200 per home to customers who replace their high water use toilets with new, high-efficiency model toilets. WWS is partnering with the U.S. Environmental Protection Agency (USEPA) to promote their WaterSense® Labeled Toilet Program.

For more information on WWS's Toilet Credit Program, visit broward.org/waterservices.

- WWS maintains an aggressive leak detection program to minimize water losses.
- WWS sponsors a low-income assistance leak repair program.
- WWS's 10-mgd wastewater reuse facility supplies water for the North Resource Recovery Facility and for lawn irrigation.
- WWS uses increasing block water rates, which means the more water you use, the higher rate per 1,000 gallons you pay.

TEN WAYS TO SAVE WATER



1. Test for a leaking toilet by adding food coloring to the tank. If any color appears in the bowl after 30 minutes, your toilet is leaking. Leaking toilets waste 200 gallons of water a day.
2. Use water conserving plumbing fixtures and water flow constrictors on sinks and showers. If you don't have a low flow toilet, place two half-gallon plastic bottles filled with water in your toilet tank. This saves one gallon of water each time you flush.
3. Run your dishwasher and wash clothes only when you have a full load.
4. Take short showers instead of a bath. Baths can use 30 to 50 gallons of water. Showers use five gallons of water per minute, less if a flow constrictor is installed.
5. Check your water meter while no water is being used. If the dials are moving, you have a water leak.
6. Don't run water continuously when washing dishes, brushing your teeth, washing your hands and face, or shaving.
7. Avoid using a garbage disposal. Disposals use a great deal of water. Add your garbage to the compost or trash instead of putting it down the garbage disposal.
8. Choose plants that are native to the area you live or plants that are drought resistant for landscaping and gardens. Native plants are used to the natural amount of precipitation that occurs in the area in which they are found and normally do not require any additional watering. For information on Florida Friendly Landscape visit broward.org/naturescape.
9. Water lawns and gardens during the coolest part of the day. Use drip irrigation to apply water slowly exactly where it is needed. Collect rainwater from the gutter system on a house in a rain barrel to use for watering.
10. Use a bucket of water and a spray head on the hose to wash your car. A running hose wastes more than 100 gallons of water in the time it takes to wash the car.

WWS Timeline

1962

Broward County Utilities Division was formed on January 31

1972

Construction began on the North Regional Wastewater Treatment Plant (NRWWTP)

1975



North Regional Wastewater Treatment Plant (NRTWWTP) began providing wholesale wastewater treatment services

1975



Water Treatment Plant 2A was upgraded

1993

The Neighborhood Improvement Program (NIP) was created to upgrade or replace the existing infrastructure



1988

Broward County Utilities Division is reorganized & renamed the Office of Environmental Services

2005

WWS provided training to U.S. Army reservists tasked with infrastructure assessment/repair and water and wastewater plant start-up and operation in Baghdad, Iraq



2005

National Association of Clean Water Agencies (NACWA) "Peak Performance Silver Award" for water treatment

2005

AMWA Platinum Award for Sustained Competitiveness Achievement

2005

U.S. EPA 2nd Place Prize –Utility Compliance & Monitoring Industrial Pretreatment Program

2006



National Association of Clean Water Agencies Public Service Award for assisting in Hurricane Wilma recovery efforts

2008

Lab successfully completed NELAC audit by the FL Department of Health



2009



Water and Wastewater Incident Command Center is operational

2009

Toilet Credit Program offered in partnership with EPA U.S.



2010

Wiles Road Construction Project receives "American Society of Civil Engineers (ASCE) 2009 Project of the Year"

2010

Laboratory receives favorable audit by FL. Dept. of Health

2010



Launched "NO FROG., NO CLOG." Public Awareness Campaign regarding the proper disposal of Fats, Rags, Oil & Grease

1994

Water Treatment Plant 1A & 2A expansion



1995

Water Treatment Plant 3B was closed and decommissioned

1997

North system and south system regional well fields became operational

2001

Water Treatment Plant 3A was closed & converted to a finished water re-pumping station

2001

Association of Metropolitan Water Agencies Gold Award for Competitiveness Achievement

2004



Office of Environmental Services purchased the Broadview Park Water Company (2000 customers added)

2004

Office of Environmental Services was renamed Water and Wastewater Services

2008

SFWM 20-year Water Supply Permit (includes alternative water supply project & Upper Floridian Aquifer)

2008

SFWM approved \$920,000 alternative water supply grant for extension of reclaimed water system in Coconut Creek at Wiles Rd.

2008

Officials from Johannesburg, South Africa toured the North Regional Wastewater Treatment Plant



2008

Russian delegates toured North Regional Wastewater Treatment Plant



2009

Broward County sold over \$175 million in utility revenue bonds despite difficult economy

2009



Completed extension of reclaimed water main between Waste Management landfill site and Wiles Rd.

2011

School Plant Tours resumed post "9/11"



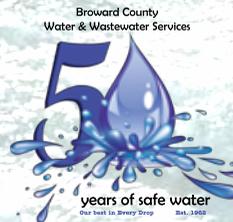
2011



NACo Award for J. Stanley Weedon, P.E., Wetland Enhancement Area

2012

WWS celebrates 50th Year Anniversary



2012

American Water Works Association (AWWA) Demand Management Award for Toilet Credit Program



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