GENERATIONS OF GREAT WATER

YOUR 2011 DRINKING WATER TEST RESULTS FROM THE MASSACHUSETTS WATER RESOURCES AUTHORITY

This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.

Si usted desea obtener una copia de este reporte en español, llamenos al telefono 617-788-1190.

La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durlo o parlarne con un amico che lo comprenda.

O relatório contém informações importantes sobre a qualidade da água da comunidade. Tra-duza-o ou peça a alguém que o ajude a entendê-lo melhor.

Sprawozdanie zawlera ważne informacje na temat jakości wody w Twojej miejscowści. Poproś kogoś o przellumaczenie go lub porozmawiaj z osobą która je dobrze rozumie.

يحتوي هذا التقرير على معلومات هامة عن نوعية ماء الشرب في منطقتك. يرجى ترجمته أو ابحث التقرير مع صديق لك يفهم هذه المعلومات جيداً.

Η κατωθεν αναφορα παρουσιαζη σπουδαιες πληροφορειες για το ποσιμο νερο σας. Πρακτικλω να το μεταφρασετε η να το σξολειασετε με καποιον που το καταλαβαινη απολητως.

Im Bericht steht wichtige Information über die Qualität des Wassers Ihrer Gemeinschaft. Der Bericht soll übersetzt werden, oder sprechen Sie mit einem Freund, der ihn gut aversteht.

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

इस रिपोर्ट में 'पीने के पानी' के विषय पर बहुत जरुरी जानकारी दी गई है। कृपया इसका अनुवाद कीजिये, या किसी जानकार से इस बारे में पूछिये।

របាយការណ៍នេះមានតតិមានសំខាន់អំពីទឹកបរិភោគ។ សូមបកប្រែឬពិគ្រោះជាមួយអ្នកដែលមើលយល់របាយការណ៍នេះ។

이 보고서에는 귀하가 주-주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이하하시는 친구와 상의하십시오.

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

Massachusetts Water Resources Authority
and Your Local Water Department

This report is required under the Federal Safe Drinking Water Act MWRA PWS ID# 6000000

Where To Go For Further Information

Massachusetts Water Resources Authority (MWRA)	www.mwra.com	617-242-5323
Massachusetts Dept. of Environmental Protection	www.mass.gov/dep	617-292-5500
Department of Conservation and Recreation	www.mass.gov/dcr/watersupply.htm	617-626-1250
Massachusetts Dept. of Public Health (DPH)	www.mass.gov/dph	617-624-6000
US Centers for Disease Control & Prevention (CDC)	www.cdc.gov	800-232-4636
List of State Certified Water Quality Testing Labs	www.mwra.com/04water/html/testinglabs.html	617-242-5323
Source Water Assessment and Protection Reports	www.mwra.com/sourcewater.htm	617-242-5323
Information on Water Conservation	www.mwra.com/conservation.html	617-242-SAVE

Public Meetings

MWRA Board of Directors	www.mwra.com/02org/html/boardofdirectors.htm	617-788-1117
MWRA Advisory Board	www.mwraadvisoryboard.com	617-788-2050
Water Supply Citizens Advisory Committee	www.mwra.com/02org/html/wscac.htm	413-213-0454

For a large print version of this report, call 617-242-5323.

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Dear Customer,

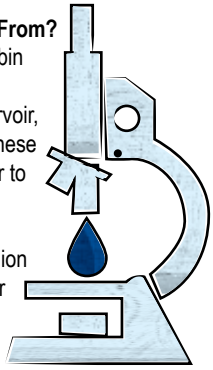
Each year, we take hundreds of thousands of water quality tests. I am pleased to share with you that for 2011, MWRA again met every federal and state drinking water standard. System-wide, we have been below the Lead Action Level for the past eight years. Please read the letter on page 4 for more information on your local water system.

We are fortunate to have inherited one of the country's great water systems. And MWRA continues its work to make the water system even better, with construction of new water storage tanks and pipeline projects to improve redundancy - to ensure we can still deliver water if there is a major break. We are also adding ultra-violet light disinfection at our water treatment plant.

This report is essentially a nutrition label for your water. We hope that you take a moment to read it and to learn about your water system. We want you to share our confidence in your drinking water.

Sincerely,

Frederick A. Laskey
Executive Director



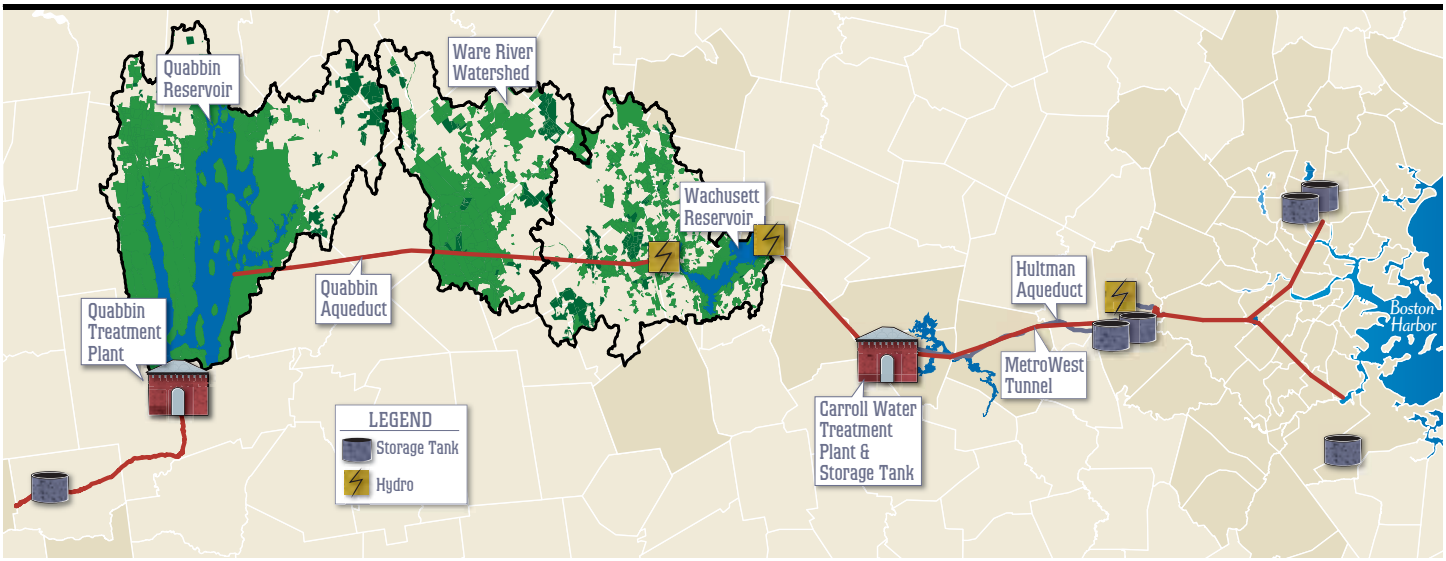
Where Does Your Water Come From?
Your water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. These reservoirs supply wholesale water to local water departments in 51 communities. The two reservoirs combined supplied about 200 million gallons a day of high quality water to consumers in 2011.

The Quabbin and Wachusett watersheds are protected naturally with over 85% of the watersheds covered in forest and wetlands. To ensure safety, the streams and reservoirs are tested often and patrolled daily by the Department of Conservation and Recreation (DCR).

Rain and snow falling on watersheds – protected land around the reservoirs – turn into streams that flow to the reservoirs. This water comes in contact with soil, rock, plants, and other material as it follows its natural path to the reservoirs.

While this process helps to clean the water, it can also dissolve and carry very small amounts of material into the reservoirs. Minerals from soil and rock do not typically cause problems in the water. But water can also transport contaminants from human and animal activity. These can include bacteria, viruses, and fertilizers – some of which can cause illness. The test data in this report show that these contaminants are not a problem in your reservoirs' watersheds.

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program report for the Quabbin and Wachusett Reservoirs. The DEP report commends DCR and MWRA on the existing source protection plans, and states that our "watershed protection programs are very successful and greatly reduce the actual risk of contamination." The report recommends that we maintain present watershed plans and continue to work with residents, farmers, and other interested parties to maintain the pristine watershed areas.



YOUR WATER SYSTEM

From the Reservoir to Your Home

The water you drink is treated at the John J. Carroll Water Treatment Plant in Marlborough. The first treatment step is disinfection of reservoir water. MWRA's licensed treatment operators carefully add measured doses of ozone gas bubbles, produced from pure oxygen gas, to the water to kill any pathogens (germs) that may be present in the water. Fluoride is then added to reduce cavities. Next, the water chemistry is adjusted to reduce corrosion of lead and copper from home plumbing. Last, we add mono-chloramine, a mild and long-lasting disinfectant combining chlorine and ammonia, which protects the water while it is in the local pipelines.

History of Boston Area's Water

From Jamaica Pond and Lake Cochituate to the Wachusett and Quabbin Reservoirs, from brick aqueducts in the Roman style to the deep rock MetroWest Tunnel, and from simple disinfection to some of the most advanced disinfection techniques available, the Boston area has long been at the forefront of water and wastewater engineering. MWRA has continued to build on this legacy.

MetroWest Tunnel

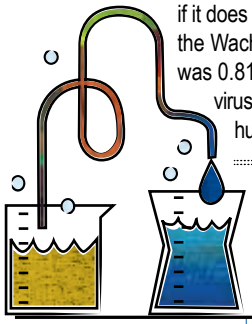
Wachusett Aqueduct 1897

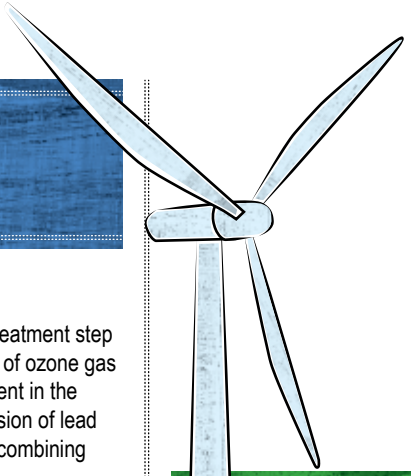
MWRA's Improvements to the Water Supply

Since its start in 1985, MWRA and our community partners have made improvements to the entire water system: from the watersheds, to the aqueducts and tunnels, to treatment plants and MWRA and local pipelines. These are the largest investments in the water system since the 1930s. MWRA and our community partners continue to make the necessary investments to maintain and upgrade our facilities including improved disinfection and new storage tanks.

Testing Your Water – Every Step of the Way

Test results show few contaminants are found in the reservoir water. The few that are found are in very small amounts, well below EPA's standards. Turbidity (or cloudiness of the water) is one measure of overall water quality. There are two standards for turbidity: all water must be below 5 NTU (Nephelometric Turbidity Units), and only can be above 1 NTU if it does not interfere with effective disinfection. MWRA met both of these standards. Typical levels at the Wachusett Reservoir are 0.4 NTU and were below 1 NTU 100% of the time. The highest level was 0.81. MWRA also tests reservoir water for pathogens such as fecal coliform, bacteria, viruses, and the parasites *Cryptosporidium* and *Giardia*. They can enter the water from animal or human waste. All test results were well within state and federal testing and treatment standards.



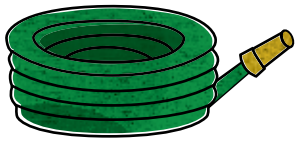


The Green Choice

As water travels eastward directly to your faucet, clean hydro-energy is produced. MWRA also has wind turbines, solar panels and hydro at our Deer Island Plant and solar panels at our Carroll Treatment Plant. Tap water is delivered straight to your home without trucking or plastic waste. Drink tap water and be green!

Information About Cross Connections

Massachusetts DEP recommends the installation of backflow prevention devices for inside and outside hose connections to help protect the water in your home as well as the drinking water system in your town. For more information on cross connections, please call 617-242-5323 or visit www.mwra.com/crosscon.html.



Test Results – After Treatment

EPA and state regulations require many water quality tests after treatment to check the water you are drinking. MWRA conducts hundreds of thousands of tests per year on over 120 contaminants (a complete list is available on www.mwra.com.). Details about 2011 test results are in the table below. The bottom line is that the water quality is excellent.

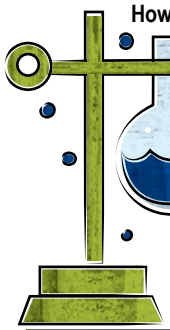
Compound	Units	(MCL) Highest Level Allowed	(We found) Detected Level-Average	Range of Detections	(MCLG) Ideal Goal	Violation	How it gets in the water
Barium	ppm	2	0.009	0.008-0.01	2	No	Common mineral in nature
Mono-chloramine	ppm	4-MRDL	1.8	0-3.4	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	1.02	0.76-1.15	4	No	Additive for dental health
Nitrate^	ppm	10	0.12	0.04-0.12	10	No	Atmospheric deposition
Nitrite^	ppm	1	0.01	0-0.01	1	No	Byproduct of water disinfection
Perchlorate	ppb	2	0.07	0.07	ns	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	8.7	1.8-14.4	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	8.7	1.0-20.4	ns	No	Byproduct of water disinfection

KEY: MCL=Maximum Contaminant Level. The highest level of a contaminant allowed in water. MCLs are set as close to the MCLGs as feasible using the best available technology. **MCLG**=Maximum Contaminant Level Goal. The level of contaminant in drinking water 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 a 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 health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. **ppm**=parts per million **ppb**=parts per billion **ns**=no standard **^**As required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

COMMUNITY PIPES

Tests in Community Pipes

MWRA and local water departments test 300 to 500 water samples each week for total coliform bacteria. Total coliform bacteria can come from the intestines of warm-blooded animals, or can be found in soil, plants, or other places. Most of the time, they are not harmful. However, their presence could signal that harmful bacteria from fecal waste may be there as well. The EPA requires that no more than 5% of the samples in a month may be positive. If a water sample does test positive, we run more specific tests for *E.coli*, which is a bacteria found in human and animal fecal waste and may cause illness.



How Did We Do In 2011?

The table reports test results from communities that receive all of their water from MWRA. Total coliforms were found at least once in 12 of 30 communities. No *E. coli* was found in follow up samples in 2011. *Residents of Winthrop should read their community letter for more information.

Community	Highest % of positive samples and month	Violation of EPA's 5% limit
Boston	0.7% (March)	No
Chelsea	1.8% (June)	No
Everett	4.4% (July)	No
Framingham	1.3% (June)	No
Melrose	2.5% (July)	No
Revere	3.0% (July)	No
Saugus	2.3% (Nov)	No
Somerville	0.8% (Aug)	No
Swampscott	1 of 20 (Nov)	No
Waltham	2.6% (June)	No
Watertown	2.3% (Aug)	No
Winthrop	6.5% (April)	**Yes***
MWRA	1.0% (Sept)	No

Ongoing Research for New Regulations

To better understand the drinking water and to help define new national drinking water standards, MWRA has been working with EPA and other researchers by testing for unregulated contaminants. For more information visit www.mwra.com.

Test	Measurement Units	Average
Cryptosporidium	oocysts per 100L	0.15
Giardia	cysts per 100L	1.08
Hexavalent Chromium	parts per billion	0.03
NDMA	parts per trillion	0.54*

*The result is from 2009. The DEP guidance value is 10 ppt.

Contaminants in Bottled Water and Tap Water

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791) or MWRA. In order to ensure that tap water is safe to drink, the Massachusetts DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Facts About Sodium

Sodium in water contributes only a small fraction of a person's overall sodium intake (less than 10%). MWRA tests for sodium monthly and the highest level found was 35.9 ppm (about 9 mg per 8 oz. glass.) This would be considered very low sodium by the Food and Drug Administration.

Drinking Water and People with Weakened Immune Systems

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 microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Award Winning Water

In 2011, the New England Water Works Association named MWRA's water "New England's Best" in a regional taste test. MWRA also received Mass DEP's Public Water System award for outstanding performance. And MWRA received its second "Leading by Example" award from the Commonwealth for its renewable energy programs.

Tap Water – The Smart Choice!

Although tap water and bottled water have to meet the same standards, tap water must meet the more intensive EPA testing requirements. Yet, tap water costs less than a penny per gallon delivered straight to your home, while bottled water costs from $1 to $8 a gallon.

Town of Saugus
Public Works Department
515 Main Street
Saugus, Massachusetts 01906

Telephone 781-231-4145
Fax 781-231-4146

email: jattubato@saugus-ma.gov

Public Water Supply
3262000

Dear Water Customer,

The Town of Saugus uses approximately 3.5 million gallons a day, 100% of which is supplied by the MWRA.

2011 was a good year for installing new water mains through the “No Interest Loan” from the MWRA. New water mains were installed on Staff Rd., Mountain Ave., part of Granite Rd., Raddin Terr., Danforth St. and Wickford St. A total of 3000 feet of ductile pipe, 6 hydrants and 65 new water services were installed. There were several broken hydrants that were replaced and graded to 80 pounds of pressure.

A leak detection program was done again this past year on the water system and 14 leaks were repaired saving the town over $150,000.

Total coliform sampling is still done every week at 14 different locations. All resuts met the standard. Saugus is also involved with the lead and copper sampling that is mandated every year. Saugus was again below the Action Level of 15 ppb with results of 3.5 and 3.1 ppb.

If the homeowners have any questions about the Water System or want information on town meetings, feel free to call the Public Works at (781) 231-4145.

Joseph Attubato
Saugus Public Works Director

FACTS ABOUT LEAD

What You Need to Know About Lead in Tap Water

MWRA water is lead-free when it leaves the reservoirs. MWRA and local pipes that carry the water to your community are made mostly of iron and steel and do not add lead to the water. However, lead can get into tap water through pipes in your home, your lead service line, lead solder used in plumbing, and some brass fixtures. Corrosion or wearing away of lead-based materials can add lead to tap water, especially if water sits for a long time in the pipes before it is used.

In 1996, MWRA began adding sodium carbonate and carbon dioxide to adjust the water's pH and buffering capacity. This change has made the water less corrosive, thereby reducing the leaching of lead into drinking water. Lead levels found in sample tests of tap water have dropped by almost 90 percent since this treatment change.

MWRA Meets Lead Standard in 2011

Under EPA rules, each year MWRA and your local water department must test tap water in a sample of homes that are likely to have high lead levels. These are usually homes with lead service lines or lead solder. The EPA rule requires that 9 out of 10, or 90%, of the sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb).

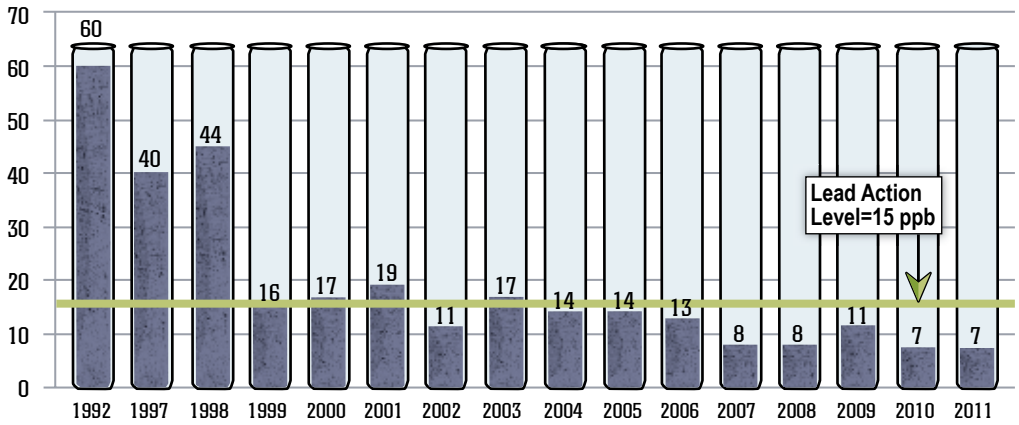
All results over the past eight years have been below the EPA standard. Results for the 454 samples taken in September 2011 are shown in the table. 9 out of 10 houses were below 7 ppb, which is below the Action Level of 15 ppb. Only one community had more than one home test above the Action Level for lead. If you live in this community, your town letter will provide you with more information.

September 2011 Lead & Copper Results

	Range	90% Value	(Target) Action Level	(Ideal Goal) MCLG	% Homes Above AL/ # Homes Tested
Lead (ppb)	0.07-57.5	7	15	0	8/454
Copper (ppm)	0.003-0.3	0.1	1.3	0	0/454

KEY: AL= Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Definition of **MCLG** available on page 2.

90th Percentile Lead Levels for MWRA Communities 1992-2011 (ppb)



What can I do to reduce lead exposure from drinking water?

- Run the tap until after the water feels cold. To save water, fill a pitcher with fresh water and place in the refrigerator for future use.
- Never use hot water from the faucet for drinking or cooking, especially when making baby formula or other food for infants.
- Ask your local water department if there is a lead service line leading to your home.
- Check your plumbing fixtures to see if they are lead-free. Read the labels closely.
- Test your tap water. Call the MWRA Drinking Water Hotline (617-242-5323) or visit our website for more tips and a list of DEP certified labs that can test your water.
- Be careful of places where you may find lead in or near your home. Paint, soil, dust and some pottery may contain lead.
- Call the MA Department of Public Health at 1-800-532-9571 or EPA at 1-800-424-LEAD for health information.

Important Lead Information from EPA

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. MWRA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If 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 at 1-800-426-4791 or at www.epa.gov/safewater/lead.

WATER CONSERVATION

Wasting water can add up quickly. On average, each person in the MWRA region uses about 60 gallons of water each day. More efficient water can reduce the impact on the water supply and on your wallet. For ways to make your home and your habits more water efficient, contact the MWRA at 617-242-SAVE or visit www.mwra.com for tips on saving water indoors and in your backyard.

How to Find and Fix Leaks

Dripping, trickling, or leaking faucets, showerheads and toilets can waste up to several hundred gallons of water a week, depending on the size of the leaks. Worn-out washers are the main causes of leaks in faucets and showerheads. A new washer generally costs about 25 cents.

That trickling sound you hear in the bathroom could be a leaky toilet, but sometimes toilets leak silently. TRY THIS: Crush a dye tablet and carefully empty the contents into the center of the toilet tank and allow it to dissolve or use a few drops of food coloring. Wait about 10 minutes. Inspect the toilet bowl for signs of dye indicating a leak. If the dye has appeared in the bowl, your flapper or flush valve may need to be replaced. Parts are inexpensive and fairly easy to replace. If no dye has appeared after 10 minutes, you probably don't have a leak.

Install a Low-flow Showerhead and Faucet Aerator

Some showerheads may still use over 5 gallons per minute. A low-flow showerhead can use up to 50% less and can save you over 20 gallons per 10 minute shower. In one year, that's over 7,000 gallons. Faucets can use 2 to 7 gallons per minute–a low-flow aerator can reduce the flow by about 25%.

For more water saving ideas and devices, call 617-242-SAVE or go to www.mwra.com.

EPA WaterSense Partner

The Inch Rule for Water Saving Outdoors

Most lawns, shrubs, vegetables, and flowers need just one inch of water per week. If there has been an inch of rainfall during the week, you don't have to water at all. Overwatering can actually weaken your lawn by encouraging shallow roots that are less tolerant of dry periods and more likely to be damaged by insects.

Follow Outdoor Water Saving Ground Rules

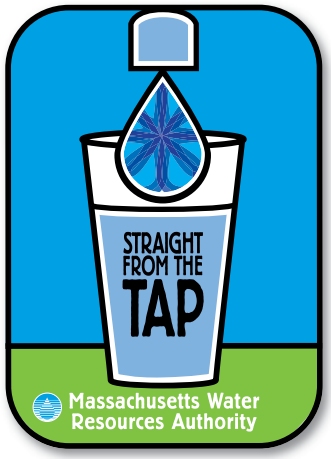
Water your lawn (and other landscaping) in early morning or evening to avoid evaporation.

Be sure sprinklers water only your lawn, not the pavement.

Never water on a windy day.

Never use the hose to clean debris from your driveway or sidewalk. Use a broom.

Apply mulch around plants to reduce evaporation, promote plant growth, and control weeds.



Promote Tap Water!

Let everyone know that you are drinking some of the best water in the world. Put a sticker on your reusable water bottle and fill it with tap water. Contact MWRA if you would like to receive a free sticker.