

2008 water quality

2008
report

drinking water quality



Tualatin, Oregon



Questions?

If you have questions about this report, please contact Mick Wilson at **503-691-3095**. You may also wish to visit the City's website at www.ci.tualatin.or.us or call the Oregon Department of Human Services Drinking Water Program at **503-731-4317** or visit their website at:

www.ohd.hr.state.or.us/dwp/index.cfm



City of Tualatin
Operations Department

18880 SW Martinazzi Avenue
Tualatin, OR 97062

www.ci.tualatin.or.us



your 2008 drinking water REPORT

Providing residents and businesses in the Tualatin water service area with safe, dependable, high-quality water at a reasonable cost is a top priority. The City of Tualatin delivers water to more than 26,040 people every day and we think it is important for our customers to understand where their water comes from, how safe it is, and what actions we take to ensure its continuing high quality.

Tualatin's Water Sources

The Bull Run Watershed is a surface water supply located in the Mt. Hood National Forest. A geological ridge separates the watershed from Mt. Hood. Current regulations allow Portland to meet federal drinking water standards without filtering this high-quality water supply. The watershed has an area of 102 square miles and typically receives 80-170 inches of rainfall each year. The heaviest rains occur from late fall through spring. Two reservoirs store water for use year-round, particularly during the dry summer months.

The watershed is reserved solely for producing drinking water. Federal laws restrict human entry. No recreational, residential, or industrial uses occur within its boundaries. The Portland Water Bureau carefully monitors water quality and quantity. The Oregon Department of Human Services - Drinking Water Program regularly inspects the watershed and related treatment and distribution facilities.

The Portland Water Bureau has completed a Source Water Assessment for the Bull Run water supply to comply with the 1996 Safe Drinking Water Act Amendments. The only

known contaminants of concern for the Bull Run water supply are naturally occurring microbial contaminants such as *Giardia lamblia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and are present in the Bull Run supply at very low levels. The Bull Run supply complies with all applicable state and federal regulations for surface water, including the 1989 Surface Water Treatment Rule filtration avoidance criteria. The Source Water Assessment report is available at www.portlandonline.com/water and by calling 503-823-7404.

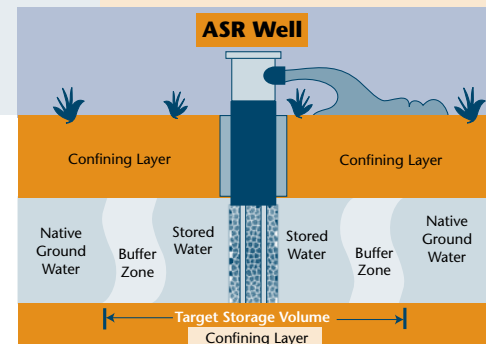
Columbia South Shore Well Field is a groundwater source of drinking water that provides high-quality water from production wells located in four different aquifers. In 2008, the City of Portland supplemented the Bull Run drinking water supply with approximately 30 million gallons of groundwater over a six-day period, beginning on August 18. This was done as part of a groundwater maintenance exercise. Additionally, the City of Portland used 648 million gallons of groundwater over a nine-day period, beginning November 13, due to a storm that caused turbidity in the Bull Run Watershed.

Portland has a long history of groundwater protection. The wellhead protection area encompasses portions of Portland, Gresham, and Fairview. Together, these cities regulate businesses in the wellhead protection area to prevent hazardous materials spills that could seep into the ground.

Tualatin's Aquifer Storage and Recovery Program

The City of Tualatin first began studying the use of ASR almost ten years ago when drilling and testing work began. The well is drilled through the many basalt rock layers under the city and is so deep that it penetrates the ancient sea beds beneath the basalt layers.

The ASR Program injects water into an aquifer through wells or by surface spreading and infiltration and then pumps it out when water is needed. The aquifer essentially functions as a water bank. Deposits are made in times of surplus, typically during the rainy season, and withdrawals occur when available water falls short of demand. We will start injecting water in May 2009.



Is my water treated by filtration?

No, Bull Run water is currently not filtered. The Bull Run source meets the filtration avoidance criteria of the Surface Water Treatment Rule. The state approved Portland's compliance with these criteria in 1992.

Does Tualatin add fluoride to drinking water?

Tualatin does not add fluoride to the water. No fluoride is detected in Bull Run water, but it is a naturally occurring trace element in groundwater. The US Public Health Service and the Centers for Disease Control and Prevention (CDC) consider the fluoride levels in Tualatin's water sources to be lower than optimal for helping to prevent dental decay. You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

Is Tualatin's water soft or hard?

Tualatin's water is very soft. Hardness of Bull Run water is typically 6-11 parts per million (approximately ½ a grain of hardness per gallon). The groundwater hardness is approximately 86 parts per million (about 5 grains per gallon), which is considered moderately hard.

What is the pH of Tualatin's water?

In the distribution system, pH typically ranges from 7.2 to 8.2.

Who can I call about water quality or pressure concerns?

The Operations Department, 503-691-3091, can answer your questions and concerns about water quality or pressure. Someone is available Monday-Friday from 8am-5pm. If you have an emergency after these hours, please

contact the after-hours number at 503-629-0111. This is Washington County Dispatch. They will notify the on-call person.

How can I get my water tested?

Call the LeadLine at 503-988-4000 for information about free lead-in-water testing. For more extensive testing, private laboratories can test your tap water for a fee. Not all labs are accredited to test for all contaminants. For information about accredited labs, call the Oregon Department of Human Services, Oregon Environmental Laboratory Accreditation Program, at **503-229-5505**.

The Portland Water Bureau treats drinking water with chloramines. This process starts with chlorine to disinfect the water. Next, Portland adds ammonia to ensure that disinfection remains adequate throughout the distribution system.

Portland also adds sodium hydroxide to increase the pH of the water to reduce corrosion of plumbing systems. This treatment helps control lead and copper levels at customers' taps, should these metals be present in the customers' home plumbing.

Water Testing

The Portland Water Bureau monitors for approximately 200 regulated and unregulated contaminants in drinking water, including pesticides and radioactive contaminants. All monitoring data in this report are from 2008. If a health-related contaminant is not listed in this report, the Portland Water Bureau did not detect it in drinking water.

The EPA's Views on Drinking Water Contaminants

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater/.

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

- Microbial contaminants, such as viruses and bacteria, which may come from wildlife or septic systems.
- Inorganic contaminants, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming.





- Pesticides and herbicides, which may come from a variety of sources such as farming, urban stormwater runoff, and home or business use.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can occur naturally.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Notes on Unregulated Contaminants

Unregulated contaminant monitoring helps the EPA determine where certain contaminants occur and whether it needs to regulate those contaminants in the future.

Radon - Radon is a naturally occurring radioactive gas that you cannot see, taste, or smell. Radon has never been detected in the Bull Run supply. It is detected at varying levels in the City's wells. For information about radon, call the EPA's Radon Hotline (800-SOS-RADON) or www.epa.gov/safewater/radon.html.

Total Trihalomethanes and Haloacetic Acids - These results are from the Initial Distribution System Evaluation (IDSE), as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) that requires drinking water providers to perform an analysis to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). These results will be used to select compliance monitoring locations for compliance with the Stage 2 DBPR.

Definitions

- **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 Contaminant Level or MCL** - 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.



- **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.
- **Maximum Residual Disinfectant Level or MRDL** - 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.
- **Treatment Technique** - A required process intended to reduce the level of a contaminant in drinking water.
- **Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Part Per Million** - One ppm corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1000 parts per billion.
- **Part Per Billion** - One ppb corresponds to one penny in \$10,000,000 or approximately one minute in 2000 years.

Water Quality Data

UNREGULATED CONTAMINANTS

Contaminant	Minimum Detected	Average Detected	Maximum Detected	Typical Source
Radon	264 picocuries per liter	264 picocuries per liter	293 picocuries per liter	Erosion nat.deposits groundwater aquifer
Sodium	2.6 ppm	7.97 ppm	18 ppm	Added in treatment Erosion nat. deposits
Total Trihalomethanes	24 ppb	35 ppb (IDSE monitoring)	39 ppb	Byproduct of water disinfection
Haloacetic Acids	0 ppb	24 ppb	28 ppb	Byproduct of water disinfection

The Oregon Department of Human Services - Drinking Water Program allows water utilities to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some results, though representative, are more than one year old.



Water Quality Data

REGULATED CONTAMINANTS

SOURCE WATER FROM BULL RUN WATERSHED

Regulated Contaminant	Minimum Detected	Maximum Detected	MCL or Treatment Technique	MCLG	Typical Source
Turbidity	0.2 NTU	5 NTU	Can't exceed 5 NTU more than 2x per year	N/A	Erosion of natural deposits
Giardia	Not Detected	One sample of 50 liters had 5 Giardia cysts	Treatment Required: Disinfection to 99% of cysts	N/A	Animal wastes
Fecal Coliform Bacteria	Not Detected	One sample had 10 colonies* per 100ml water * 100% of samples had 20 or fewer bacterial colonies	90% of samples/last 6 months/20 or fewer colonies per 100ml water	N/A	Animal wastes

NUTRIENTS

ENTRY POINTS TO DISTRIBUTION SYSTEM - BULL RUN/GROUNDWATER WELL FIELD

Nitrate Nitrogen	<0.01 ppm	0.2 ppm	10 ppm	10 ppm	Natural aquifer deposits; animal wastes
------------------	-----------	---------	--------	--------	---

METALS & MINERALS

ENTRY POINTS TO DISTRIBUTION SYSTEM - BULL RUN/GROUNDWATER WELL FIELD

Arsenic	<1 ppb	2 ppb	10 ppb	0 ppb	Natural aquifer deposits
Barium	<0.005 ppm	0.030 ppm	2 ppm	2 ppm	Natural aquifer deposits
Flouride	<0.05 ppm	0.22 ppm	4 ppm	4 ppm	Natural aquifer deposits

ORGANIC CONTAMINANTS

ENTRY POINTS TO DISTRIBUTION SYSTEM - BULL RUN/GROUNDWATER WELL FIELD

P-Dichlorobenzene	<0.05 ppb	1 ppb	75 ppb	75 ppb	Used in dyes, agrochemicals pharmaceuticals, plastics
-------------------	-----------	-------	--------	--------	---

RADIONUCLIDES

ENTRY POINTS TO DISTRIBUTION SYSTEM - BULL RUN/GROUNDWATER WELL FIELD

Radium 226	1.67 picocuries per liter	1.67 picocuries per liter	5 picocuries per liter combined Radium 226 and 228	0 picocuries per liter	Natural aquifer deposits
------------	---------------------------	---------------------------	--	------------------------	--------------------------

DISINFECTION BYPRODUCTS

TUALATIN DISTRIBUTION SYSTEM - RESERVOIRS/TANKS/MAINS

Total Trihalomethanes Annual Average (All)	23 ppb	24 ppb	80 ppb	N/A	Byproduct of drinking water disinfection
Single result (one site)	15 ppb	28 ppb	N/A	N/A	
Haloacetic Acids Annual Average (All)	21 ppb	24 ppb	60 ppb	N/A	Byproduct of drinking water disinfection
Single result (one site)	14 ppb	26 ppb	N/A	N/A	

REGULATED CONTAMINANTS

TUALATIN DISTRIBUTION SYSTEM - RESERVOIRS/TANKS/MAINS

Regulated Contaminant	Minimum Detected	Maximum Detected	MRDL	MRDLG	Typical Source
Total Chlorine Residual	.01 ppm	1.78 ppm	4 ppm	4 ppm	Chlorine and ammonia disinfection

Notes on Regulated Contaminants

Turbidity - Bull Run is an unfiltered surface water supply. Rules for public water systems have strict standards for unfiltered surface water supplies. Turbidity levels in unfiltered water must not exceed 5 NTU (Nephelometric Turbidity Units). The typical cause of turbidity is tiny particles of sediment in the water which can interfere with disinfection and provide a medium for microbial growth. Large storm events can result in increased turbidity, causing the Portland Water Bureau to shut down the Bull Run system and serve water from the Columbia South Shore Well Field.

Disinfection Byproducts - During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in the water. These byproducts can have negative health effects. The disinfection process is carefully controlled to remain effective, while keeping byproduct levels low. Monitoring in Portland's system detected trihalomethanes and haloacetic acids, regulated disinfection byproducts.

Total Chlorine Residual - Chlorine residual is necessary to maintain disinfection throughout the distribution system. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts. Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in our distribution system.

Cryptosporidium - Cryptosporidium is a microorganism (protozoan) naturally present in bodies of surface water throughout the world. Symptoms of Cryptosporidium infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water.

Surface water supplies are particularly vulnerable if they receive runoff or are exposed to human or animal wastes. Since wildlife inhabit the Bull Run watershed, the Portland Water Bureau regularly monitors for Cryptosporidium and has done so for more than ten years. Occasionally, the Portland Water Bureau finds Cryptosporidium at low levels. No Cryptosporidium oocysts were detected in water samples in 2008.

In January 2006, the Federal Environmental Protection Agency (EPA) issued a drinking water rule establishing new national standards to further reduce the risks of illness from Cryptosporidium. These standards, as written, require additional treatment processes for unfiltered water systems such as Portland's by 2012. Because of the protected status of Portland's Bull Run source and the very low incidence of Cryptosporidium in Bull Run source water, the City filed a legal challenge to the new federal rule, seeking to establish alternative and less expensive methods of compliance. On November 6, 2007, a three-judge panel of

the Washington, DC, District Court of Appeals issued a unanimous decision in rejecting the City of Portland's challenge to the rule.

In response to the court ruling, Portland is pursuing parallel compliance strategies. Commissioner Randy Leonard has directed the Water Bureau to begin planning and budgeting to achieve compliance with the LT2 rule, as written. This includes the evaluation, selection, and development of one of the treatment approaches prescribed in the rule. In addition, Commissioner Leonard has directed the bureau to attempt to obtain a variance to the rule from the Federal EPA. A variance could conceivably enable the bureau to avoid the expenses associated with building new treatment facilities if the City can demonstrate to the EPA that, due to the nature of the Bull Run source, such action is unnecessary. www.epa.gov/safewater/crypto.html



Backflow Prevention Device Test Due June 1st

Residential properties with any of the following items are required to have an approved backflow prevention device installed and tested by June 1 of each year: (1) in-ground irrigation system; (2) active well; (3) in-ground swimming pool/spa; (4) ornamental fountain; (5) fish pond; (6) solar heating system; or (7) residential fire sprinkler system. A passing test report must be submitted by you or your testing agency to the City of Tualatin Operations Department, Attn: E. Castro, 18880 SW Martinazzi Avenue, Tualatin, Oregon 97062.

We appreciate your ongoing cooperation regarding this program. By working together, we can be sure our drinking water remains safe to drink and free of contaminants. If your system is no longer in use and the backflow assembly has been disconnected, an inspection by the City is required. If you would like to schedule an appointment for an inspection or have any other questions, please contact Ernie Castro, Operations Department, at 503-691-3098.

Special Notice for Immuno-Compromised Persons

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

Water Quality Data

LEAD AND COPPER

SAMPLING AT RESIDENTIAL WATER TAPS

90th Percentile Values	Number of Sites Over AL	Exceeding Lead & Copper Rule	MCLG	Typical Source
Copper 0.34 ppm	0 samples exceeded AL (1.3 ppm)	Over 10% of homes tested had levels < 1.3 ppm	1.3 ppm	Corrosion of household and commercial plumbing systems
Lead 10 ppb	6 samples exceeded AL (15 ppb)	Over 10% of homes tested had levels < 15 ppb	0 ppb	Corrosion of household and commercial plumbing systems

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

Lead in Drinking Water and Household Plumbing

IMPORTANT INFORMATION ABOUT LEAD

Lead was not detected in Tualatin’s water sources. The City of Tualatin has removed all known lead service connections from its distribution system.

Exposure to lead through drinking water is possible if materials in a building’s plumbing contain lead. The level of lead in water can increase when water stands in contact with lead-based solder and brass faucets containing 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 City of Tualatin, along with the Portland Water Bureau, 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 drinking 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 LeadLine, 503-988-4000, www.leadline.org or the Safe Drinking Water Hotline 800-426-4791, www.epa.gov/safewater/lead.

People are exposed to lead in many other ways. Dust from paint in homes built before 1978 is the most common source of exposure to lead. Other sources include soil, pottery, traditional folk medicines or cosmetics, some sports equipment such as fishing weights and ammunition, and some occupations and hobbies.

Reduce Your Exposure To Lead

To reduce your exposure to lead from plumbing, the City of Tualatin encourages you to follow these easy steps:

- 1. RUN YOUR WATER TO FLUSH OUT LEAD.** Before drinking or cooking, run water for 30 seconds to 2 minutes (or until colder) when the tap has not been used for several hours.
- 2. USE COLD, FRESH WATER FOR COOKING AND PREPARING BABY FORMULA.** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water.
- 3. DO NOT BOIL WATER TO REMOVE LEAD.** Boiling water will not reduce lead.
- 4. CONSIDER USING A FILTER.** One that reduces lead – not all filters do. Contact NSF International at 800-NSF-8010 or www.nsf.org for more information on filters.
- 5. TEST YOUR WATER FOR LEAD.** Call the LeadLine at 503-988-4000 to find out how to get a FREE lead-in-water test.
- 6. TEST YOUR CHILD FOR LEAD.** Ask your physician. A blood lead-level test is the only way to know if your child is being exposed to lead. Or call the Leadline.
- 7. CONSIDER BUYING LOW-LEAD FIXTURES.** New brass faucets, fittings, and valves may contribute to lead in your drinking water. Federal law currently allows end-use brass fixtures, such as faucets, to contain up to 8% lead. These fixtures are labeled as “lead free.” When buying new fixtures, seek out those with the lowest lead content. Visit www.nsf.org to learn more about lead content in plumbing fixtures.

Corrosion Treatment The Portland Water Bureau’s corrosion control treatment reduces corrosion in plumbing by increasing the pH of the water. Comparison of monitoring results with and without pH adjustment shows over 50 percent reduction in lead at the tap with pH adjustment.

Water Testing Twice each year, the City of Tualatin, along with all other wholesale water users and the Portland Water Bureau, monitors for lead in tap water from a sample group of more than 100 homes. These are homes in our service area where the plumbing is known to contain lead solder, which is more likely to contribute to elevated lead levels. Samples are collected after the water has been standing in the household plumbing for more than 6 hours. These houses represent a worst-case scenario for lead in water. A Lead and Copper Rule exceedance for lead is when more than 10 percent of these homes exceed the lead action level of 15 parts per billion. In the most recent



round of testing, less than 10 percent of homes exceeded the lead action level. If you are concerned that your home tap water may have lead, call the LeadLine for a free lead-in-water test kit and to learn ways to reduce your exposure to all sources of lead. This program targets testing the water in households most at risk from lead in water. These are homes built between 1970 and 1985, where pregnant women or children age six or younger live.

Lead enters drinking water primarily as a result of corrosion, or wearing away, of materials containing lead in household plumbing. These materials include lead-based solder used to join copper pipe and brass and chrome-plated brass faucets. The Portland Water Bureau's corrosion treatment reduces corrosion in plumbing by increasing the pH of the water. In addition to reducing lead exposure in drinking water, the City of Tualatin supports programs to reduce exposure to lead from all sources, especially lead paint. To learn how you can access these programs and ways to reduce your exposure to all sources of lead, contact the **LeadLine 503-988-4000** or visit www.leadline.org for information about lead hazards, free lead-in-water testing, and free childhood blood lead-level testing.

New Projects



Aquifer Storage & Recovery

Pump Station and Reservoir Program in Tualatin

ASR is the underground storage of treated drinking water that is injected into a suitable underground aquifer during the winter months and then pumped back into the water system in the summer, when water demands are high and the supply main approaches its maximum supply capacity. As the system is started and tested, some customers may notice slight variations in taste and odor, which should dissipate over time.

Indian Meadows and Indian Woods *Water Main Replacement Project*

Construction of approximately 11,000 linear feet of 4-inch to 10-inch diameter ductile iron pipe and associated fittings, valves, and water service lines in the Indian Woods and Indian Meadows subdivisions to replace existing aging asbestos cement (AC) piping. The project will also include a complete pavement overlay of all streets within the project limits.

Norwood Pump Station *Up-Grade and Up-Sizing of Pipe Crossing I-5*

We will be replacing the pump station at the Norwood reservoir site and up-sizing pumps. We will also be replacing an 8-inch water line that is attached to the Norwood Road bridge with a 12-inch ductile iron pipe that we plan to have bored under I-5.

The City of Tualatin promotes the efficient, economic, and environmentally sound use of our water. As our community has grown, so have our water needs. We all need to use water wisely to make sure that we have it when we need it, to reduce the cost of developing new supplies, and to leave more water in the rivers for recreation and fish.

Here in the Pacific Northwest, we're used to thinking of water as plentiful and widely available. Well-meaning reports about our abundant snowpack and rainfall serve to perpetuate the myth. Because of dry summers, climate changes, and population growth, it's likely our region will face shortages in the upcoming months and years. Let's work together and conserve our water now. We did it with curbside recycling. It's time we do it with water.



Respecting our environment can take many forms and our region leads the way in recycling. By conserving water, we can delay building storage facilities, transmission lines, and costly new sources. Let's work together and conserve our water before we face a crisis.

The City is working on development of a Water Management and Conservation Plan to assist in meeting these needs. This plan includes water conservation activities for future water supplies. Other elements of the supply plan are aquifer storage and recovery (ASR), the purchase of additional water from Portland, and potential changes in land uses. The City continues to participate within the region with the Regional Water Consortium. You can visit their website to learn about the many ways you can conserve. www.conserveh2o.org also provides easy ways to save water with water smart irrigation, healthy soil, and plant and lawn care.

Indoor

- A leaking toilet can waste up to 2,700 gallons of water a month.
- Save more than 3 gallons of water every time you flush by installing a low-flow toilet.
- Using the dishwasher instead of doing dishes by-hand can save up to 6 gallons per load.
- Running the clothes washer one less time per month could save up to 35 gallons.
- One small leak from a faucet can waste 50 gallons of water a day.
- Re-use the water from washing your vegetables or boiling eggs to water plants.

Outdoor

- By using a shut-off nozzle, you can save up to an average of 10 gallons per minute.
- Sweeping your driveway instead of hosing it down can save up to 150 gallons or more.
- The greatest waste is watering too much, too often. On average, lawns need one inch per week.
- Inspect your irrigation system for leaks, broken lines, or mis-directed heads. A well-maintained system will save you water, time, and money.
- Step on your grass to determine if your lawn needs water. If you leave a "footprint" in the grass, you don't need to water.
- Avoid run-off by splitting your watering time into shorter periods to allow for better absorption.
- Add compost and mulch to your soil to help retain moisture.