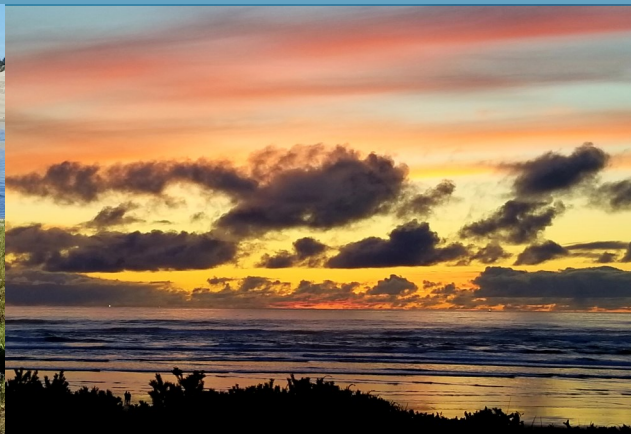


2019 Water Quality Report

April 2020 Edition ♦ City of Florence



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Mike Miller
Public Works Director

Water Quality Testing

Ongoing water quality testing continues to be one of the highest priorities for the City's drinking water program in its commitment to providing premium safe drinking water to residents.

The City collects nine microbiological samples per month in addition to samples required by the Oregon Health Authority (OHA) and the EPA to ensure that the City's drinking water meets state and federal standards.

Message From the Director

We are pleased to present you with our 2019 Water Quality Report (also known as a Consumer Confidence Report). This report, required by the Environmental Protection Agency, provides you with detailed information about your drinking water quality, any detected contaminants, and compliance with drinking water rules. It is also an opportunity for the City to provide you, the consumer, with educational information on where your water comes from, how it is treated, and what you can do to ensure that your water remains the clean, fresh and safe commodity that it has always been.

With that said, on September 12, 2019 there was a single exceedance of disinfection levels dropping below 0.2 mg/l for more than four (4) hours. Once discovered it was immediately corrected and no untreated water was ever introduced into the water system. A full explanation of the event is on page 8 of this report.

Many communities, including Florence, are fortunate to have reliable access to safe water when we turn on the tap. In large part this stems from the regular testing that we are subject to ensure that regulatory standards for water quality are met. We recognize the vital role tap water plays in daily life, the infrastructure that is required to carry it to and from homes and businesses, and the important work of water professionals "behind the scenes".

This edition contains information concerning the City of Florence Water System, Identification (WSID) #4100299, and covers all testing completed from January through December 2019.

If you would like any additional information regarding what is in your water or have suggestions on how we can better serve you, please contact us at 541-997-4106.

Special Notice For Immuno-Compromised Persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons 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 lesson the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

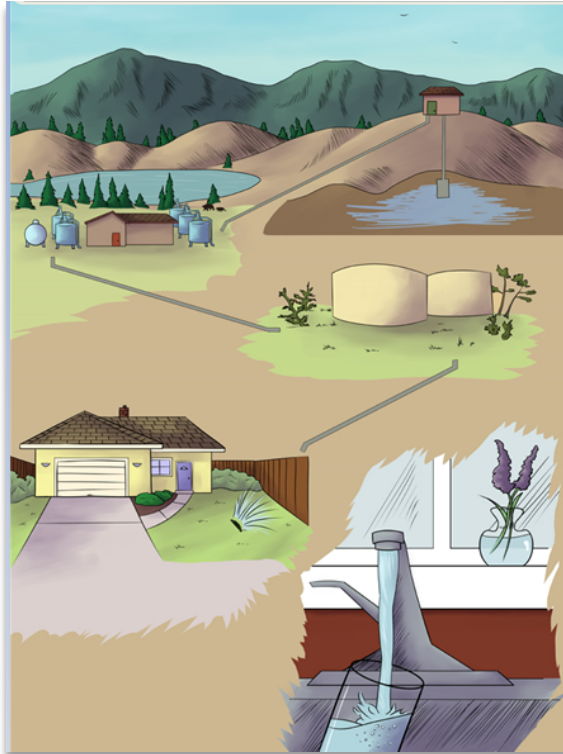


View online at
ci.florence.or.us/publicworks/2019-water-quality-report

Your Drinking Water

In 2019 the City of Florence supplied approximately 8,850 consumers within the City's water service area. The water these customers received came from 13 dunal wells located just north of the City's water treatment plant at 2500 Willow Street. The well field is City-owned and consists of approximately 80 acres of carefully managed land as recommended in the City's well head protection plan. The source water assessment and aquifer protection plan is available for customer review. Please contact Public Works at 541-997-4106 for more information.

The City of Florence water system uses two filter systems in a series to remove the iron from the raw groundwater. Three biological filters and six greensand filters comprise our filter system and these filters can treat up to three (3) million gallons of water per day (mgd). The City's supply of raw groundwater contains dissolved iron in the range of 6-9 parts per million (ppm) before treatment. The water treatment plant oxidizes and removes all but 0.01 ppm through the treatment process.



As water flows through the treatment plant, 90% of the iron is removed through the use of biological oxidation and filtration. Air is injected into the water to increase the level of dissolved oxygen, and the naturally occurring iron bacteria assist in oxidation through various metabolic processes. The sand filters then separate the oxidized iron and bacteria from the water. The filtered water is then chlorinated to chemically oxidize the water and deactivate any residue bacteria. Potassium permanganate is added to the chlorinated water to provide additional oxidation before final filtration with greensand and anthracite coal. The color and odor of the water is removed with the iron and the final product is cool, wet, colorless, odorless and tastes great!

Source of Supply

We receive our water supply from the North Florence Sole Source Dunal Aquifer, designated as a "sole source" aquifer by the EPA in 1987.

It continues to be the only "sole source" aquifer in the State of Oregon. The EPA defines a sole source aquifer as "an underground water source that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend upon the aquifer for drinking water." All streams, creeks, lakes and wetlands (surface waters) in the aquifer boundary are "hydrologically connected" with the groundwater system.



Get a paper copy by calling (541) 997-4106



Improving the High Quality Drinking Water in Your Home



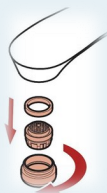
Flush cold water faucets before using for cooking, drinking or making baby formula.

Do not use hot tap water for cooking, drinking or making baby formula. Hot water can help dissolve metals such as lead into your drinking water.



Maintain household water filtration devices. Unmaintained water filters can harbor bacteria and/or release contaminants

Clean faucet screens and replace them as needed. Twist off to remove. You may need a wrench to loosen the aerator.



Lead in Drinking Water

The City of Florence is responsible for providing high quality drinking water, but cannot control the variety of materials used in household plumbing components. 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. 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 your water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to request a free lead-in-water test from the LeadLine by calling 503-988-4000 or go to www.leadline.org. They can provide more information on testing methods and steps you can take to minimize exposure.

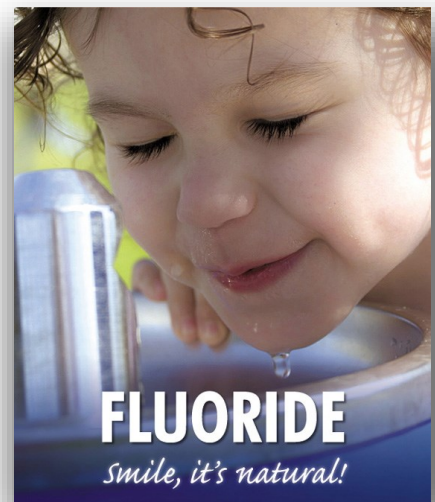


Hardness in Water

The City of Florence water source is considered to be very soft. "Hard Water" is caused by higher than ordinary levels of dissolved minerals, such as magnesium and calcium, often enhanced by carbon dioxide. Hard water does not dissolve soap readily, so making a lather for washing and cleaning is difficult. Conversely, water containing little calcium or magnesium is considered soft. The City of Florence's water has a hardness of 19 ppm or 1.1 grains of hardness per gallon.

Drinking Water Fluoridation

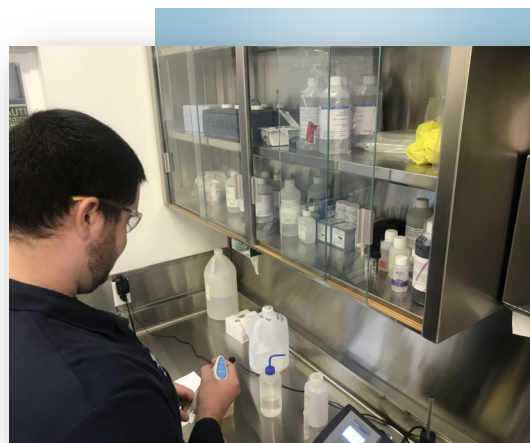
The City of Florence has been adding fluoride to its water service since the early 1960s. Currently, fluoride is added at the EPA recommended rate of 0.7 mg/l (milligrams per liter). According to the U.S. Center for Disease Control (CDC) and the U.S. Department of Health and Human Services, widespread use of fluoride has been a major factor in the decline of the prevalence and severity of tooth decay in the United States. When used appropriately, fluoride is both safe and effective in preventing tooth decay.



Test Findings

The City of Florence routinely checks for 42 Volatile Organic Compounds, 42 Synthetic Organic Chemicals and 16 Inorganic Chemicals, as required by the EPA. The City also takes nine Bacterial Samples at multiple locations through the City every month. The Water Quality Data Chart on page 7, shows the results of our most recent testing.

In addition, in 2017, the City tested 20 homes in representative areas throughout the City for lead and copper (testing is only completed once every three years). We are pleased to report that none of the homes exceeded the Action Levels as determined by the EPA. For those citizens concerned about sodium mg/L levels, currently the sodium level in our water is 30.5 mg/L.



If a known health-related contaminate is not listed in this report, it was not detected in the drinking water

What the EPA Says About Drinking Water Contaminates

Drinking water, including bottled water, may be reasonably 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 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. Contaminates 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 or farming.

Pesticides and herbicides, which may come from a variety of sources such as farming, urban stormwater runoff and septic systems.

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 the water provided by public water systems and requires 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.

Definitions

ND: None Detected.

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

Maximum Contaminant Level (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 Contaminant Level Goal (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.

Parts per Million (ppm) or Milligrams per Liter (mg/L): A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one million parts by weight of the water sample. One part per million corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1,000 parts per billion.

Parts per Billion (ppb) or Micrograms per Liter ($\mu\text{g/L}$): A unit measurement describing the level of detected contaminants that is one part by

weight of analyte to one billion parts by weight of the water sample. One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

Picocuries per Liter (pCi/L): A standard measurement of radioactivity in water.

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

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements.

Unregulated Contaminants: Water quality standards for unregulated contaminants are established as guidelines to assist public water systems in managing drinking water for aesthetic considerations such as taste, color, and odor. These contaminants do not present a risk to human health.



The City of Florence Public Works Department installs and maintains the water pipes that bring water to your home.



Water Distribution Crews flush hydrants on an annual basis to make sure they are working correctly.

WATER QUALITY DATA

Inorganics and Bacteria

Parameter	Units	Goal MCLG	Allowed MCL	Max Detected in City's Water	Violation? Yes/No	Major Sources
Fluoride	ppm	4	4	0.80 mg/L	No	Water additive which promotes strong teeth; erosion of natural deposits
Nitrate	ppm	10	10	ND	No	Erosion of natural deposits
Nitrite	ppm	1	1	ND	No	Erosion of natural deposits
Total Coliform	No units	0	0	0	No	Naturally present in the environment

Disinfection By-Products

Total Trihalomethanes	ppb	n/a	80	19.0	No	By-product of Chlorination
Haloacetic Acids	ppb	n/a	60	6.1	No	By-product of Chlorination

Lead and Copper Sampling*

Parameter	Units	Goal MCLG	Allowed MCL — or Action Level	90th Percentile	Violation? Yes/No	Major Sources
Copper	ppm	1.3	1.3	0.148	No	Corrosion of household plumbing
Lead	ppb	0	15.0	3.5	No	Corrosion of household plumbing

**Based on 90% of homes tested being at or lower than the reporting limit. For lead and copper, a water supply is in compliance with the drinking water standards if 90% of the samples are less than or equal to the Action Level. This is a 3-year testing cycle. Last test was in 2017.*

Unregulated and Secondary** (regulations provide advisory limits only) Tested in 2014

Parameter	Units	Max Detected in City's Water	Major Sources
Sodium	ppm	30.5	Erosion of natural deposits, water treatment additive

***Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation. There is currently no drinking water standard for sodium. At the levels found in drinking water, they are unlikely to contribute to adverse health effects.*

Radioactive Contaminants*** Tested in 2014

Parameter	Units	Goal MCLG	Highest Level Detected in City's Water	Violation? Yes/No	Major Sources
Gross Alpha	pCi/L	15	4.0	No	Erosion of natural deposits
Radium Combined (226 and 228)	pCi/L	5	1.2	No	Erosion of natural deposits

Violation Table

Ground Water Rule			
The Ground Water Rule (GWR) seeks to improve drinking water quality; provide protection from disease-causing microorganisms; and to reduce disease incidence associated with harmful microorganisms in drinking water.			
Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to Maintain 4-log Treatment	September 12, 2019	September 12, 2019	We had a <u>single exceedance</u> of disinfection levels dropping below 0.2mg/l for more than 4 hours at the entry point to the distribution system. The situation was corrected the same day of the occurrence.

What happened? There was a single exceedance of disinfection levels dropping below 0.2mg/l for more than 4 hours. On the morning of September 12, 2019 at 12:01a.m., an error in the computer software system caused the water treatment plant to shut down without notifying our after-hours staff. The result of the shut-down was that the continuous monitoring equipment that analyzes chlorine residual levels did not accurately measure system conditions. This failure also did not alert staff that the plant was in a shut-down condition. Once staff arrived for their regular work shift, the situation was discovered and staff promptly closed an isolation valve to prevent non-chlorinated water from leaving the water treatment plant.

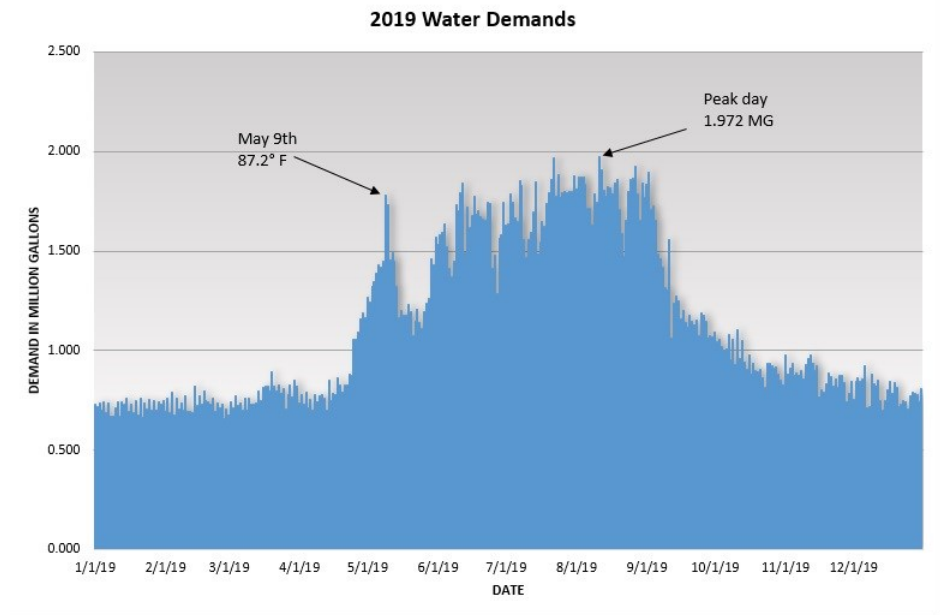
This situation did not require our customers to take immediate action. If it had, you would have been notified immediately. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

How was the situation resolved? Immediately after isolating the water treatment plant from the water distribution system, City staff took water quality samples from homes in close proximity to the water plant and confirmed that no untreated water had been introduced into the distribution system. As a precaution, staff flushed the fire hydrant at the corner of 24th and Willow streets to ensure that no untreated water entered the water distribution system.

What has been done to prevent this from happening in the future? Since this occurrence, the City's telemetry specialty contractor has identified the programming error and corrected the programming. In addition, the City has installed new components into the telemetry system that will force the automatic alarm dialer to alert staff in the event of a computer system failure in the future.

2019 Water Demands

The chart to the right represents our system water demands for the 2019 calendar year. Our peak demand day occurred on August 11th with 1.972 million gallons of water used. The greatest demand for water occurs during the summer months each year (June to September) as can be seen on the Daily Water Demand Graph. Florence's summer water use increases dramatically due to outdoor watering. The spiking of water use during the summer indicates dry weather patterns and heavy outdoor water use.



*Less than 1% of the water supply on earth can be used as drinking water.
Most of the earth's surface water is permanently frozen or salty.*

Public Water Systems

The Safe Drinking Water Act (SDWA) defines a public water system (PWS) as one that serves piped water to at least 25 persons or 15 service connections for at least 60 days each year. There are approximately 161,000 public water systems in the United States.



What Laws Keep My Drinking Water Safe?

Congress passed the Safe Drinking Water Act (SDWA) in 1974 to protect public health by regulating the nation's public drinking water supply and protecting sources of drinking water. SDWA is administered by the U.S. Environmental Protection Agency (EPA) and its state partners.



Water—Chemical Compound

Water is an inorganic, transparent, tasteless, odorless, and nearly colorless chemical substance, which is the main constituent of Earth's hydrosphere and the fluids of most living organisms. It is vital for all known forms of life, even though it provides no calories or organic nutrients.

Our Bodies Need Water

Without water, the Earth would look like the moon, there wouldn't be any trees, or animals or humans. All life depends on water. Next to the air we breathe, water is our most essential element of life:

- The human body is more than 60% water dependent on your age and sex. (Children 65%, Women 55%, Men 60%)
- Every system in our body uses water
- Water makes up 73% of our brain and heart
- Water makes up 83% of our blood and lungs
- Water transports body waste
- Water lubricates body joints
- Water keeps body temperature stable
- Water aids in digestion



Human beings can live several weeks without food but only four to seven days without water, depending on conditions. We must drink six to eight glasses of water each day to replace the water we lose from normal activity. Some water loss is visible through sweat and excretion.

A person needs to drink enough water each day to replace the water lost through everyday activities and climate conditions. Generally, an adult male needs about 3 liters of water per day while an adult female needs about 2.2 liters per day. Babies' and kids' bodies have a larger percentage of water than adults so they need to drink more water proportionately to be hydrated.

Solve the Problem

Calculate how much water you need to replace each day by answering the following questions:



**“...it really
does a body good.”**

1. What is your weight in pounds?

2. Divide by 2 to determine how many ounces you should be drinking: _____ ounces
3. Add 8 ounces if you are active: _____ ounces
4. Add another 8 ounces if you live in a dry climate: _____ ounces
5. Take this number and divide by 8 to determine how many cups you need to drink: _____ cups.

Water Plant Staff



Left: Matt Hiatt, Plant Operator. Matt has been with the City of Florence for 3 years and currently holds a Water Treatment 2 Certification and a Water Distribution 1 Certification.

Center: August Murphy, Water/Wastewater Treatment Plant Superintendent. August has been with the City of Florence for 13 years and oversees operations at both the Water Plant and the Wastewater Plant. August's credentials include Cross Connection Specialist, Water Treatment 2 and Water Distribution 2.

Right: Mark Asghari, Plant Operator. Mark has been with the City of Florence for 10 years and currently holds a Water Treatment 1 Certification and a Water Distribution 1 Certification.



Get to Know Your Water Heater

REDUCES EFFICIENCY

SEDIMENT BUILD UP

COULD CAUSE BROWN OR RUSTY COLORED HOT WATER

MAINTAIN IT!

REPLACE ANODE RODS AS NEEDED

EVERY 3 MONTHS 1/4 FLUSH

EVERY 1-3 YEARS FULL FLUSH

CHECK IT!

EVERY 6 MONTHS 120° CHECK TEMP & PRESSURE

IN 10-15 YEARS REPLACE IT! BUY A MORE EFFICIENT WATER HEATER TO REDUCE WATER HEATING BILLS!

Flushing the Tank

Groundwater has naturally occurring minerals. Over time, these minerals build up inside the storage tank of your water heater. As more minerals buildup your water heater has to work harder and use more energy to heat the water. You might notice bad odors or even see brown or rusty-colored water come from the hot water tap. That's why it's important to have your hot water tank flushed every 1-3 years and perform regular maintenance to keep it running in top-top shape. If you are unsure about how to flush your hot water tank, please contact a licensed plumber to assist you.

Regular Maintenance

Regular maintenance can extend the life of your water heater and minimize efficiency loss. If you have a water heater with a storage tank, be sure to flush a quarter of the water from the tank every three months and check the temperature and pressure valve every six months. To extend the life of your water heater, check the owner's manual or go online to the manufacturer's website for other recommended maintenance and replacement parts.

Temperature

Although some manufacturers set water heater thermostats at 140° F, the U.S. Department of Energy recommends that most households set theirs to 120° F. A lower temperature not only reduces the safety hazard of scalding, it also saves you money on heating costs!

[Energy.gov/energysaver](https://www.energy.gov/energysaver)

Replacement

According to the U.S. Department of Energy, an average water heater lasts about 10—15 years and when it fails, it can leave a mess! Water heating is the second largest energy expense in your home (following heating/cooling) and typically accounts for about 18% of your energy bill. Typically, the older your water heater, the more energy it takes to function.

If it's time to replace your water heater, be aware there are many different types and you should choose the kind that's right for you and look for the Energy Star logo to ensure the system you choose is energy efficient.

BLOOPERS

Embarrassing Moments in the Life of a Water Drinker

Waiting to fix a leak

Assume little leaks only waste a little water? You can lose up to 200 gallons of water a day from a leaking toilet. A faucet can drip 604,800 drops in a week while you are waiting to fix it.



Watering the lawn at high noon

Caught with your sprinkler on? The hot sun combined with our winds will evaporate the water your lawn needs. Better water early in the day.

Taking a shortcut and using hot tap water when cooking

That's taboo, and it can shortcut your health. Contaminants can dissolve into hot water from your pipes. Cold water is better. Heat it on the stove when cooking or making baby formula.



Tossing toxics into the trash



Don't do it! You may consider batteries an item to throw away but they contain lead and mercury. Some ordinary household cleaners have other poisons that contaminate water. Here's a tip, drop them off at a special collection site.

Children in the first 6 months of life consume seven times as much water per pound as the average adult.

Water Conservation Tips

For Every Room in the House With Plumbing:

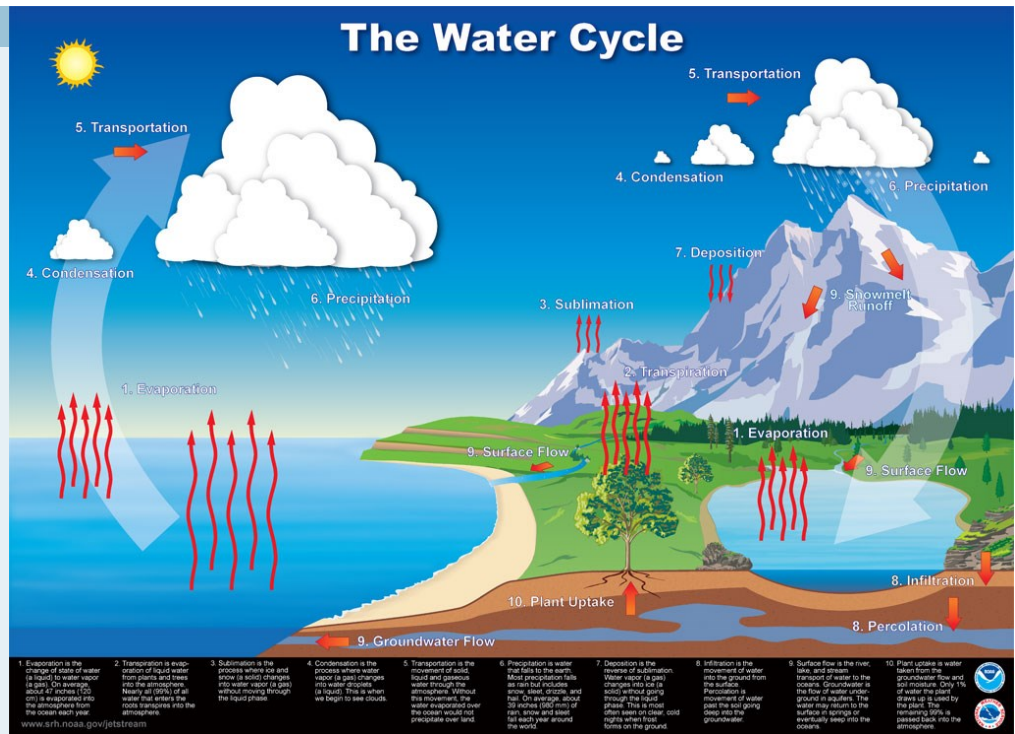
- Repair leaky faucets, indoors and out
- Consider replacing old equipment (like toilet, dishwashers and washing machines)

In the Kitchen:

- When cooking, peel and clean vegies in a large bow of water instead of under running water
- Fill your sink or basin when washing and rinsing dishes
- Only run the dishwasher when full
- Only use the garbage disposal when necessary (composting is a great alternative).
- Install Faucet Aerators



Earth's water is always in movement, and the natural water cycle, also known as the hydrological cycle, describes the continuous movement of water on, above, and below the surface of the Earth. Water is always changing states between liquid, vapor and ice, with these processes happening in the blink of an eye and over millions of years.



Contact Information

City of Florence Public Works
 2675 Kingwood
 Florence, OR 97439
 541-997-4106

Water Treatment Plant
 2500 Willow Street
 Florence, OR 97439
 541-997-7370

The City of Florence is proud of the quality water that is supplied to our citizens daily.

If you have any questions regarding your water quality or about information presented in this report, please call the Water Treatment Plant at 541-997-7370 or the Public Works Department at 541-997-4106. Information is also available online at www.ci.florence.or.us.

We encourage public interest and participation in decision affecting our drinking water. City Council meetings usually occur on the first and third Mondays of each month at 5:30 pm at City Hall. City Hall is located at 250 Hwy 101. For information on meeting schedules and agendas, contact 541-997-3437 or visit the City's website at www.ci.florence.or.us.

This report contains important information about your community's water system. Have it translated or speak to a friend that understands it well.

Este informe contiene información importante sobre el sistema de agua de su comunidad. Haz que lo traduzcan o hable con un amigo que lo entienda bien.