



CITY OF
FLORENCE

2023

WATER QUALITY REPORT

CITY OF FLORENCE, OREGON

WATER TESTING

WATER SOURCES

WATER TREATMENT



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 EPA and 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 1-800-426-4791.



WELCOME

We are pleased to present you with our 2023 Water Quality Report (also known as a Consumer Confidence Report). This report, required by the Environmental Protection Agency (EPA) is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually to provide outstanding service while protecting our water resources. 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.

It is our privilege and honor to continue to be an outstanding performer as designated by the Oregon Health Authority, Drinking Water Services. The outstanding performer designation is a result of the hard work and dedication of the water staff who strive to provide high quality water to residents, businesses, and visitors to the City. To be recognized as an outstanding performer, a water system must not have any contamination violations in the last five years; no more than one monitoring or reporting violations in the past three years (we had none); no significant deficiencies or rule violations during the water survey; and no waterborne disease outbreak to the water system in the last five years.

Not only is our water system an outstanding performer, but the entire Florence Public Works Department is outstanding. Public Works is more than just water production, treatment, distribution, and delivery. Our department provides water, wastewater, stormwater, streets, parks, airport, and facility maintenance to the community. It is my honor to serve as a leader of this multi-faceted department which provides the bulk of the day-to-day services for the City.

We know the water we deliver to your home or business is a major driver of the health and economic development of our region, and we take that very seriously. We appreciate the opportunity to provide these integral services and look forward to continuing our pursuit of providing you high-quality potable water while preserving our natural resources.

This edition contains information concerning the City of Florence Water System, Identification (WSID) #4100299, and covers all testing completed from January through December 2023.

Mike Miller, Public Works Director

CONTACT US

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541-997-4106

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OPERATORS

Mark Asghari

Matthew Hiatt

UTILITY WORKERS

Rob Opitz

Larry Jensen

Josh Severy

HOW TO VIEW THIS REPORT

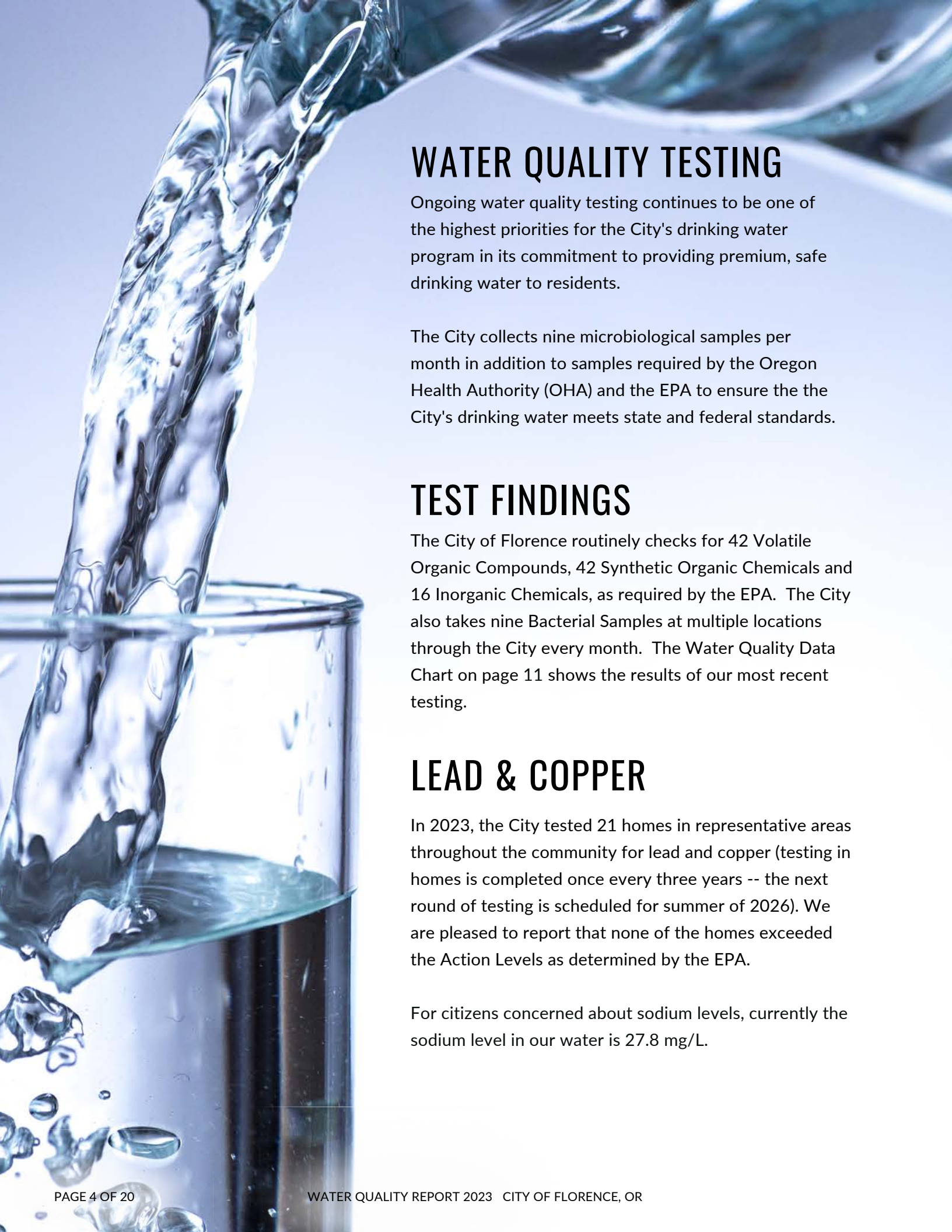
ONLINE

bit.ly/FlorenceWQR

PAPER COPY

541-997-4106



A close-up, high-speed photograph of water being poured from a glass pitcher into a clear glass. The water is captured mid-pour, creating a dynamic, splashing effect with visible droplets and ripples. The background is a soft, out-of-focus light blue.

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 the the City's drinking water meets state and federal standards.

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 11 shows the results of our most recent testing.

LEAD & COPPER

In 2023, the City tested 21 homes in representative areas throughout the community for lead and copper (testing in homes is completed once every three years -- the next round of testing is scheduled for summer of 2026). We are pleased to report that none of the homes exceeded the Action Levels as determined by the EPA.

For citizens concerned about sodium levels, currently the sodium level in our water is 27.8 mg/L.



YOUR DRINKING WATER

In 2023, the City of Florence supplied water to approximately 9,800 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.

WATER FILTRATION

The City of Florence water system uses two (2) filter systems in a series to remove the iron from the raw groundwater. Three (3) biological filters and six (6) 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 ground water 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.



WATER FLOW

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 the 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 from 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% 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.

The source water assessment & aquifer protection plan is available for customer review by calling Public Works at 541-997-4106.



DRINKING WATER FLUORIDATION

Does the City add Fluoride?

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.

HARDNESS IN WATER

The City of Florence water source is considered to be very soft.

Hard Water

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.

Soft Water

On the other hand, 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.



MISSION STATEMENT

The Public Works Department is dedicated to professionally maintaining and improving the current infrastructure of water, sewer, storm, street, airport, parks and city facilities, to the highest possible standards for our community.

We will continually look ahead to plan for and provide services that will allow the City of Florence to meet its future goals.

Our core values are professionalism, respect, integrity, dedication and enthusiasm. We proudly provide stewardship and professional management in maintaining and improving our systems and facilities.

OUR COMMITMENT TO SUSTAINABILITY

The Mission of the City of Florence is to meet community expectations for municipal services, provide a vision for civic improvements, maintain a quality environment and position Florence to have an economically viable and sustainable future.

DEFINITIONS

ND: None Detected

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

Maximum contamination 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 of 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 (ug/l): A unit of 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.

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.

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	0.683 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	10	10	ND	No	Erosion of natural deposits
Total Coliform	No units			0	No	Naturally present in the environment

Disinfection By-Products

Total Trihalomethanes	ppb	n/a	80	18.8	No	By-product of Chlorination
Haloacetic Acids	ppb	n/a	60	3.17	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	0.171	No	Corrosion of household plumbing
Lead	ppb	0	15.0	4.8	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 2023.

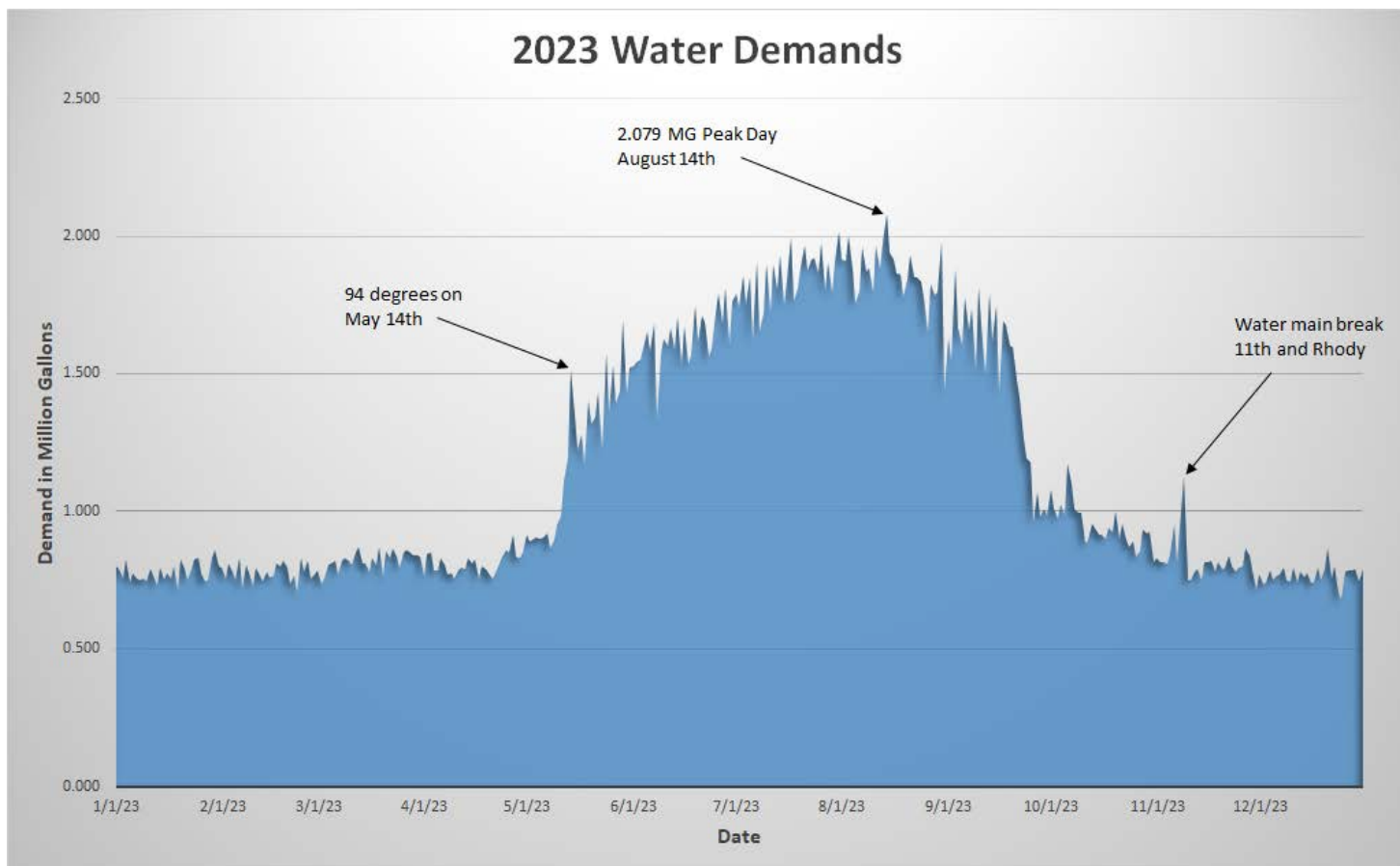
Unregulated and Secondary** (regulations provide advisory limits only) Tested in 2021

Parameter	Units	Max Detected in City's Water	Major Sources
Sodium	ppm	27.8	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



2023 WATER DEMANDS

The chart above represents our system water demands for the 2023 calendar year. Our peak demand day was on August 14th with 2.079 million gallons of water used. This is slightly more than 2022, where we saw a peak day of 1.903 million gallons in July. The greatest demand for water occurs during the summer months each year (typically June to September) as can be seen on the Daily Water Demand Graph. Note that weather patterns play a large role in water consumption. May 14th we had an unseasonably warm 94 degree day which resulted in a significant increase in water demand as compared to the first few days of May. 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.

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.

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.



#CLEANWATER

TIPS TO IMPROVE YOUR HOME'S DRINKING WATER



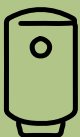
Flush cold water faucets before using for cooking, drinking, or making baby formula.



Don't use hot tap water for cooking, drinking, or making baby formula.



Routinely replace filter cartridges. Bacteria and metals can build up.



Drain your water heater annually. Sediment, bacteria, and metals can build up and impact water quality and pressure.

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.

Free Lead Testing

If you are concerned about lead in your drinking water, you may request a free lead-in-water test from the Lead Line at 1-503-988-4000 or go to www.leadline.org. They can provide more information on testing methods and steps you can take to minimize exposure.

FROM THE EPA

Contaminates that may be present in water include:

Microbial Contaminates: Viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic Contaminates: Salts and metals which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges or farming.

Pesticides & Herbicides: Come from a variety of sources such as farming, urban stormwater runoff and septic systems.

Organic chemical contaminants: Includes 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: Occur through erosion of natural deposits.

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. 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.

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 requires monitoring for these contaminants. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protections for public health.



CALL THE EPA'S SAFE DRINKING WATER HOTLINE
AT 1-800-426-4791 OR GO TO
WWW.EPA.GOV/SAFEWATER FOR MORE INFORMATION
ABOUT CONTAMINANTS AND THEIR POTENTIAL HEALTH EFFECTS.



Florence water staff (left to right): Rob Opitz, Josh Severy, Matt Hiatt, Larry Jensen, and Mark Asghari

PUBLIC WATER SYSTEMS

Providing safe drinking water is a partnership that involves EPA, the states, tribes, water systems, and water system operators. The public drinking water systems regulated by EPA and delegated states and tribes provide drinking water to 90 percent of Americans.

A public water system provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year. A public water system may be publicly or privately owned.

There are over 148,000 public water systems in the United States. EPA classifies these water systems according to the number of people they serve, the source of their water, and whether they serve the same customers year round or on an occasional basis.





How the City deals with all that Iron

The City's supply of raw ground water contains dissolved iron in the range of 6-9 parts per million before treatment. Since our groundwater has such a high natural occurring iron content which also flows into Munsel Creek, the creek has a slight odor to it. This is also why the cyclone fencing and structures at Miller Park might look a little red/brown because we use raw ground water to irrigate the park. The good news is the water treatment plant is well equipped to remove all that iron. Our Water Treatment Plant oxidizes and removes all but 0.01 ppm of iron through the treatment process.

The City's Water Treatment Plant uses two filter systems in a series to remove the iron from the raw groundwater. Three biological filters and six greensand filters comprise our filtration system. These filters can treat up to three million gallons of water per day (mgd). To remove all the iron from the filters we need to backwash them. The backwash water from both the biological and the greensand filters is discharged into one of the two settling ponds in Munsel Park Greenway.

The backwash ponds are the two reddish ponds that are fenced in when you first come into the Muncel Greenway Park. We only utilize one pond at a time. Pond 2 has been offline almost 10 years to allow for the backwash water to infiltrate and the resulting deposits to dry before they are removed. During those interceding years, we had volunteer willows starting to grow that needed to be removed. With the help of local contractor, Ray Well, Inc., the vegetation was removed and the excavator operator began the process of digging out the iron deposits in the pond. Typically, the ponds are placed into service for a 10-year period and then switched. In Pond 2's ten years of service, we deposited approximately 240 cubic yards of iron material that we had filtered out of the City's drinking water supply.

Once Pond 2 was all cleaned out, our Water Treatment Plant Operators were able to switch operations from Pond 1 to Pond 2. Now, Pond 1 will be allowed to rest, dewater, and then in about 10 years it will be excavated and the iron deposits removed.

There are so many water-related items we see every day. Can you spot the items at the bottom of the page in the picture? The numbers indicate how many times each item appears.



WATER CYCLE

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.

Precipitation is a vital component of how water moves through Earth's water cycle, connecting the ocean, land, and atmosphere. Knowing where it rains, how much it rains and the character of the falling rain, snow or hail allows scientists to better understand precipitation's impact on streams, rivers, surface runoff and groundwater. Frequent and detailed measurements help scientists make models of, and determine changes, in Earth's water cycle.

The water cycle describes how water evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation. The water falling on land collects in rivers and lakes, soil, and porous layers of rock, and much of it flows back into the oceans, where it will once more evaporate. The cycling of water in and out of the atmosphere is a significant aspect of the weather patterns on Earth.

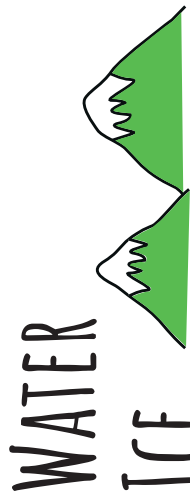


DRINKING WATER WEEK



WATER
VAPOR

Water vapor is invisible in the air



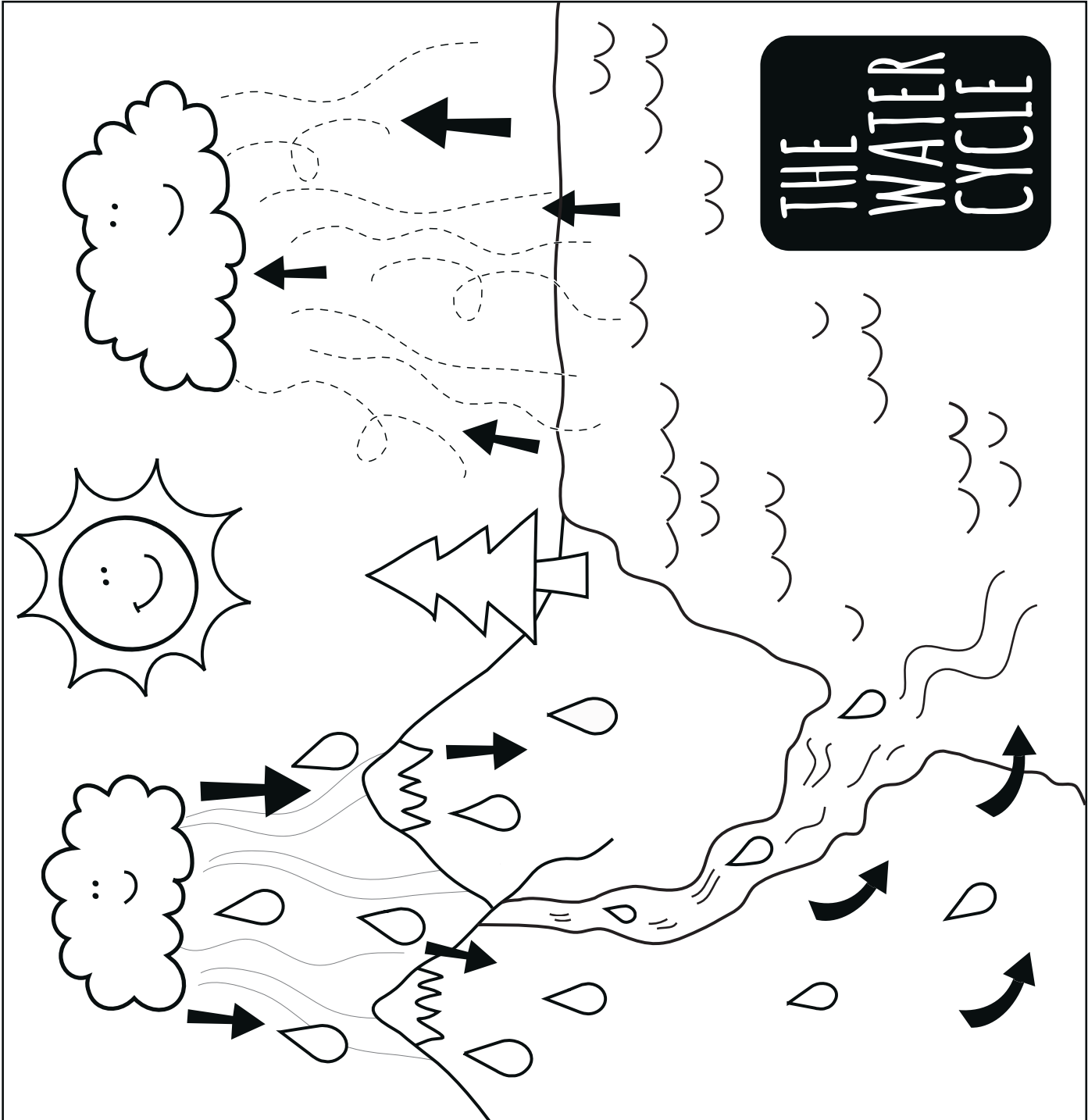
WATER
ICE

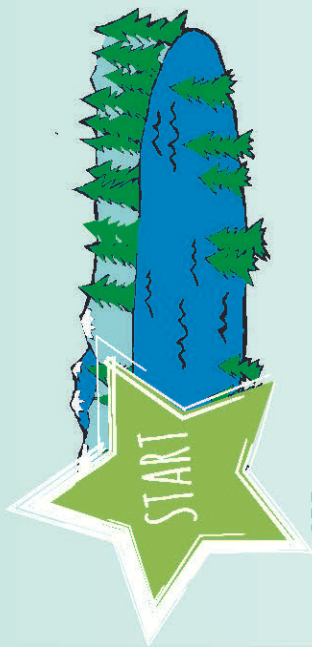
Water freezes into ice and snow on mountains



WATER
LIQUID

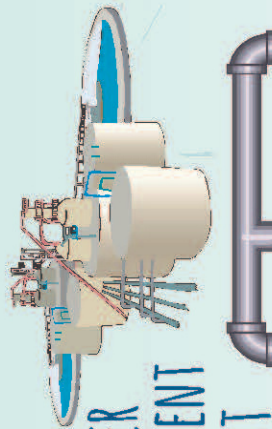
Water liquid can be found in rivers, oceans, and lakes





FOLLOW THE H₂O!

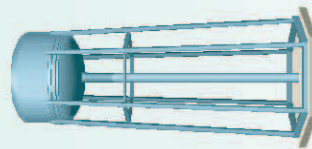
Follow your water as it travels from the lake to your home and back again!



1 LAKE OR RIVER

2 WATER TREATMENT PLANT

3 WATER TANK



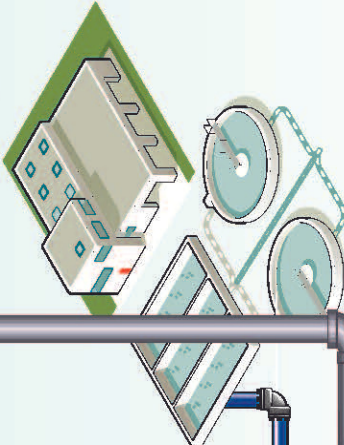
4 WATER DISTRIBUTION MAINS

5 SERVICE LINES



6 USED WATER PIPED TO TREATMENT PLANT

7 TREATMENT PLANT



8 BACK TO RIVER

DRINKING WATER WEEK

2023

WATER QUALITY REPORT



Contact Information

publicworks@ci.florence.or.us

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 high 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 decisions 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.