2022 ANNUAL WATER QUALITY REPORT

CITY OF Tigard KNOW H2O

SUMMER 2023 EDITION

The City of Tigard provides clean, safe, dependable drinking water to the residents of Durham, King City, two-thirds of Tigard, and Tigard Water District.

Inside:

Questions?

Your Water Bill?
Utility Billing 503-718-2460

Water Quality?
Jennifer Joe.....503-718-2599
jennifer@tigard-or.gov

Water Conservation?
Jennifer Joe.....503-718-2599
jennifer@tigard-or.gov

Backflow Prevention?
Hung Nguyen 503-718-2603
hung@tigard-or.gov

Water Emergencies?
Public Works.....503-718-2591

After-Hours Water Emergencies?
On-Call Service.....503-639-1554

General Inquiries?
Public Works.....503-718-2591

Drinking Water BY the Numbers

A snapshot of what it takes to bring drinking water from its source to your home or business in Tigard, Oregon.

1 water provider
Lake Oswego · Tigard Water Partnership
sharing water · connecting communities

13.7 sq. miles in the TWSA

3 primary water sources
Clackamas River, ASR and Ground Water Wells

11 staff members

1950
Year the oldest section of the water system in Tigard was installed

6 pump stations

14 reservoirs
LARGEST **10 MILLION GALLONS**
SMALLEST **200,000 GALLONS**

27 million gallons storage capacity

269.29 miles of pipe
SMALLEST DIAMETER **4 INCHES**
LARGEST DIAMETER **36 INCHES**

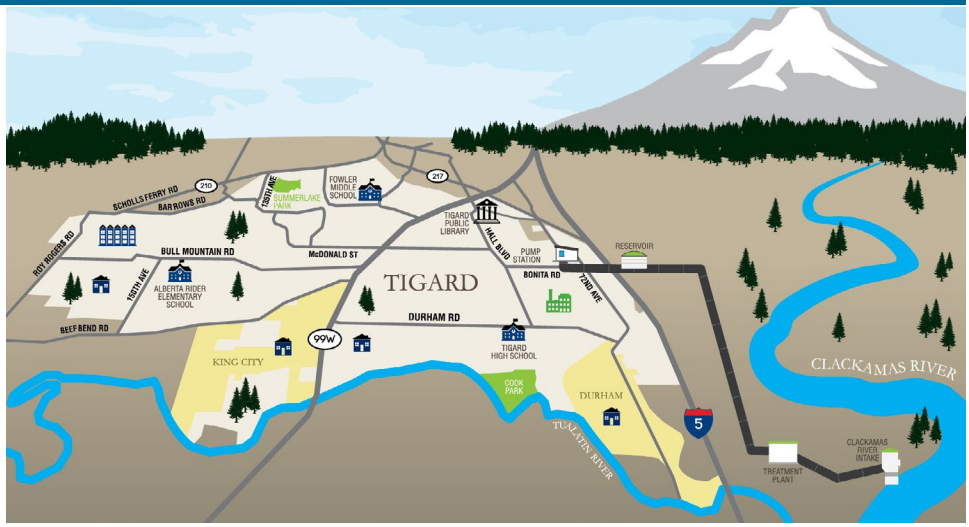
2,259 fire hydrants

20,500
homes & businesses served

For more information visit www.tigard-or.gov/water

Where Does Tigard's Water Come From?

In 2022, Tigard's drinking water system delivered water from the Lake Oswego-Tigard Water Treatment Plant with a supplemental supply from groundwater wells.



Lake Oswego-Tigard Water Treatment Plant

The Lake Oswego–Tigard Treatment Plant withdraws water from the Clackamas River Basin which encompasses nearly 940 square miles. Drawn from the Clackamas River, the pumped water moves through a pipeline buried beneath the Willamette River to the Lake Oswego – Tigard Water Treatment Plant located in West Linn.

How is your drinking water treated?

The Lake Oswego-Tigard Treatment Plant uses a conventional treatment process which includes ballasted flocculation, intermediate ozone, and biological filtration.

- **Ballasted Flocculation** uses micro-sand and a coagulant to settle dirt, sediment and contaminants out of the water.
- **Ozone** is then added to remove unpleasant taste and odor compounds and to provide advanced treatment.
- **Biological Filtration** through a deep bed of granular activated carbon and silica sand removes any remaining tiny microbes and contaminants, such as cryptosporidium. Beneficial biological activity removes organic molecules that can produce disinfection byproducts.
- **Filtered water** is then disinfected using small amounts of chlorine and the pH is adjusted with caustic soda to prevent corrosion of household plumbing.

Groundwater

During periods of high water demand, Tigard supplements its supply with water from two city-owned aquifer storage and recovery wells, and a native groundwater well. All groundwater sources are disinfected using small amounts of chlorine.

Who are our other partners?

In addition to our partnership with Lake Oswego, Tigard is also a member of the Regional Water Providers Consortium and the Clackamas River Water Providers.

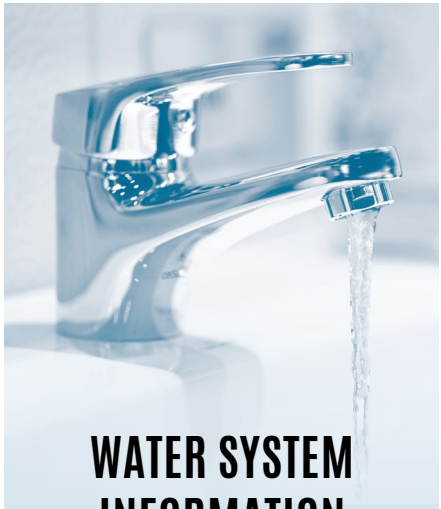
The Regional Water Providers Consortium provides leadership in the planning, management, stewardship, and resiliency of drinking water in the Portland, Oregon metropolitan region. They are comprised of 25 members which are located in the Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties. This year, the Consortium and its members are celebrating 25 years of service. Find out more about the Consortium and its work in water conservation, emergency preparedness, and regional coordination at regionalh2o.org.

The Clackamas River Water Providers is a coalition of the municipal water providers that get their drinking water from the Clackamas River who are working together on water resource issues. The purpose of the organization is to fund and coordinate efforts regarding source water protection and public outreach and education around watershed issues, drinking water, and water conservation, so that we can preserve the Clackamas River as a high-quality drinking water source and minimize future drinking water treatment costs while being good stewards of the river. For more information, visit clackamasproviders.org.

Want to learn more about your water?

If so, you have a couple of ways to participate. The Water Advisory Board (WAB) invites you to attend their meetings. They are held on the second Wednesday of evenly numbered months. Email jennifer@tigard-or.gov for more information about when and where you can attend.

The Partnership Committee is a four-person advisory group with members from the City of Tigard and City of Lake Oswego City Councils. The Committee provides oversight on issues and topics of Partnership water operations, budgets and requests. Individual members will deliver information and recommendations to their respective City Councils as necessary. Meetings are held every quarter, on Mondays at 5:30 p.m. Visit lotigardwater.org for more information.



WATER SYSTEM INFORMATION

The Purpose of This Report

The City of Tigard is responsible for providing a clean, safe, dependable supply of drinking water to over 60,000 residents in the Tigard Water Service Area (TWSA). This service area includes the cities of Durham, King City, two-thirds of Tigard and the Tigard Water District. Each entity has representation on the Water Advisory Board. The board offers expert guidance to the Tigard City Council on water-related matters.

This report summarizes **Tigard's 2022 water quality data**. Additional information is included to inform, educate and update consumers on water issues affecting the community.

Have a question about this report?

- Contact Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.
- **Habla Espanol?** Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Information on Detected Substances

In 2022, water delivered to the TWSA met all regulatory requirements. More than 90 contaminants are regularly sampled, both before and after the water is treated, to ensure it meets the more than 120 water quality standards for drinking water set by the Environmental Protection Agency (EPA) and the State of Oregon. **If a known health-related contaminant is not listed in this report, it was not detected in the drinking water.**

What Else Do We Look For In Our Water?

The following list of chemicals and compounds are what we test for on a regular basis. Most chemicals are measured in parts per billion (ppb) or parts per million (ppm).

- **Volatile Organic Compound:** (21 compounds) manmade chemical compounds such as cleaning fluids, degreasers and plastics.
- **Synthetic Organic Compounds:** (30 compounds) manmade chemicals, including insecticides and herbicides.
- **Inorganic Compounds:** (16 compounds) naturally occurring minerals and chemicals that are released into water through erosion and leaching of mineral deposits.

Regulated Contaminants

- **Barium** is a naturally occurring element that can dissolve in the groundwater supply.
- **Chlorine** is added to maintain disinfection requirements throughout the water distribution system.
- **Disinfection Byproducts - Haloacetic Acids (HAA)** and **Total Trihalomethanes (THM)** form through chemical reactions between chlorine and naturally occurring organic matter in the water. The careful control of the disinfection process keeps byproduct levels to a minimum, while maintaining the required levels of chlorine.
- **Nitrate** and **Nitrite** form through the erosion of natural deposits, agricultural activity and leaching of septic tanks.
- **Total Coliform Bacteria** are naturally present in the environment and may indicate other potentially harmful bacteria may be present. Chlorine is added to the drinking water supply to kill these bacteria.
- **Turbidity** is a measure of the amount of sediment suspended in the water. This sediment can interfere with disinfection and provide a medium for microbial growth. Large storm events can result in increased turbidity.

Detected Unregulated Contaminants

Unregulated water quality standards 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.

- **Chloride, Potassium, Silica, Sodium** and **Sulfate** are formed through the erosion of natural deposits and may be added to water during treatment.
- **Dichlorodifluoromethane** is a human-made chemical, commonly known as Freon-12, that has been phased out of common use because it damages the ozone layer in the atmosphere.
- **Radon** is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Radon can be detected at very low levels in the groundwater supply. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, it is unlikely to have negative health effects from radon in the water. Find more information about radon from the EPA at epa.gov/radon.

To learn about the health effects of contaminants, visit the Oregon Health Authority website at: bit.ly/DrinkingWaterContaminants

2022 WATER QUALITY ANALYSIS RESULTS

Federal standards regulate contaminants to protect drinking water quality.
Tigard and its water supply partners test for more than 200 regulated and unregulated contaminants.

Contaminant	MCL	MCLG	TWSA Results LOW ← Range →HIGH		Violation? Yes / No	Major Sources in Drinking Water
MICROBIOLOGICAL CONTAMINANTS						
Fecal Coliform and E.Coli Bacteria	A routine sample and a repeat sample are total coliform positive and one is also E. coli positive	0	0% of samples with detectable E. coli or fecal coliform bacteria		No	Human and animal fecal waste
Total Coliform Bacteria	Must not detect coliform bacteria in more than 5% of samples per month	0	0% of samples with detectable total coliform bacteria		No	Naturally present in the environment
Turbidity (NTU)	Cannot exceed 5 NTU more than 2 times in 12 months	TT 0.3 in 95% of samples	Highest single measurement: 0.0132		No	Soil runoff
DISINFECTION RESIDUAL						
Total Chlorine Residual Running Annual Average (ppm)	4	4	0.85	1.00	No	Additive used to disinfect water
Total Chlorine Residual at Any One Site (ppm)	NA	NA	0.41	1.19	No	
DISINFECTION BYPRODUCTS - HALOACETIC ACIDS						
Haloacetic Acids Running Annual Average (ppm)	0.060	NA	0.0049	0.0063	No	Byproduct of drinking water disinfection
Haloacetic Acids at Any One Site (ppm)	NA	NA	0.0027	0.0310	No	
DISINFECTION BYPRODUCTS - TOTAL TRIHALOMETHANES						
Total Trihalomethanes Running Annual Average (ppm)	0.080	NA	0.0150	0.0108	No	Byproduct of drinking water disinfection
Total Trihalomethanes at Any One Site (ppm)	NA	NA	0.0053	0.0310	No	

The definitions for the vocabulary listed above are available on page 6.

2022 WATER QUALITY ANALYSIS RESULTS

Contaminant	MCL	MCLG	TWSA Results LOW ← Range → HIGH		Violation? Yes / No	Major Sources in Drinking Water
INORGANICS CONTAMINANTS						
Barium (ppb)	2,000	2,000	3.15	4.35	No	Erosion of natural deposits
Nitrate as Nitrogen (ppm)	10	10	0.16	0.51	No	
Nitrite as Nitrogen (ppm)	1	1	0.138	0.139	No	
RADIONUCLIDES						
Radon (pCi/L)	No Standard	No Standard	167	198	No	Erosion of natural deposits
UNREGULATED AND SECONDARY (REGULATIONS PROVIDE ADVISORY LIMITS ONLY)						
Chloride (ppm)	250	250	3.0	5.1	No	Erosion of natural deposits
Dichlorodifluoromethane (ppm)	No Standard	No Standard	0.0029	0.0094	No	Industrial waste deposits
Potassium (ppm)	No Standard	No Standard	0.7	1.4	No	Erosion of natural deposits
Silica (ppm)	No Standard	No Standard	12	19	No	
Sodium (ppm)	No Standard	No Standard	4.8	6.0	No	
Sulfate (ppm)	250	250	3.0	8.0	No	

Contaminant	90th Percentile	Number of Sites Exceeding the Action Level	MCLG	Lead and Copper Rule Exceedance	Action Level Reached	Typical Source
Copper (ppm)	0.0	0 samples (out of 34) exceeded the copper action level of 1.3 ppm	1.3*	More than 10% of the homes tested have levels above 1.3 ppm	No	Corrosion of household and commercial plumbing
Lead (ppb)	0.0	0 samples (out of 34) exceeded the lead action level of 15 ppb	15*	More than 10% of the homes tested have levels above 15 ppb	No	

*** Samples were taken in 2020. The City of Tigard is currently under reduced monitoring and are required to sample every three years. This is the most recent data available and was done in compliance set forth by the regulating agencies.**

Lead in the Drinking Water... Are You at Risk?

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 Tigard is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or www.epa.gov/safewater/lead.

TWSA SOURCE WATER ASSESSMENT

In 2005, the Oregon Health Authority and the Department of Environmental Quality conducted a source water assessment for the aquifer storage and recovery wells and the native groundwater well serving the Tigard Waster Service Area (TWSA). The purpose of the assessment was to identify potential sources of direct and indirect contamination in areas surrounding these wells. The assessment identified 50 potential contaminant sources (natural and manmade) that may affect the water quality if managed improperly. To view the assessment, contact Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.

DEFINITIONS

Action Level (AL)
The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that 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 contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (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.

Non-Detected (ND)
Not detected at or above the MDL.

Not Applicable (NA)
Not applicable for the specified contaminant.

Nephelometric Turbidity Units (NTUs)
Turbidity is a measure of how clear the water looks. Turbidity can interfere with disinfection and provide a medium for microbial growth.

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 Mircograms per Liter (µg/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

Picocurie per Liter (pCi/L)
Picocurie is a measurement of radioactivity.

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

What the EPA Says About Drinking Water Contaminants

In order to ensure that tap water is safe to drink, the US Environmental Protection Agency (EPA) sets regulatory limits on the amounts of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) sets limits on contaminants in bottled water, which must provide the same protection for public health.

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.

Because of this natural part of water's cycle, drinking water, including bottled water, may contain small amounts of some contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk.

Contaminants that may be present in source water 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 may come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive Contaminants**, which can occur naturally.

More information about contaminants and potential health effects is available from the EPA's Safe Drinking Water Hotline 800-426-4791.

SPECIAL NOTICE FOR IMMUNO-COMPROMISED PERSONS

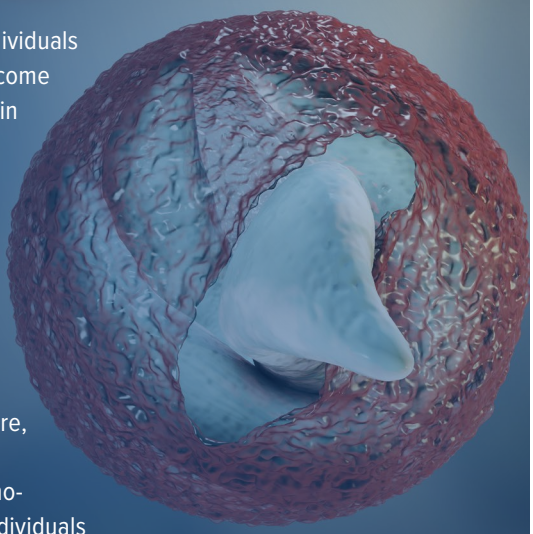
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at-risk from infections. These people should seek advice about drinking water from their health-care providers. Environmental Protection Agency 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 (800-426-4791).

CRYPTOSPORIDIUM

Is a micro-organism (protozoan) naturally present in surface water supplies throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or pollution from human or animal wastes.

Since wildlife inhabit the Clackamas River Watersheds, managing agencies regularly monitor for Cryptosporidium. Occasionally, this monitoring detects low levels of Cryptosporidium.

New national standards further reduce the risks of illness from Cryptosporidium. Symptoms of infection include nausea, abdominal cramps and diarrhea.

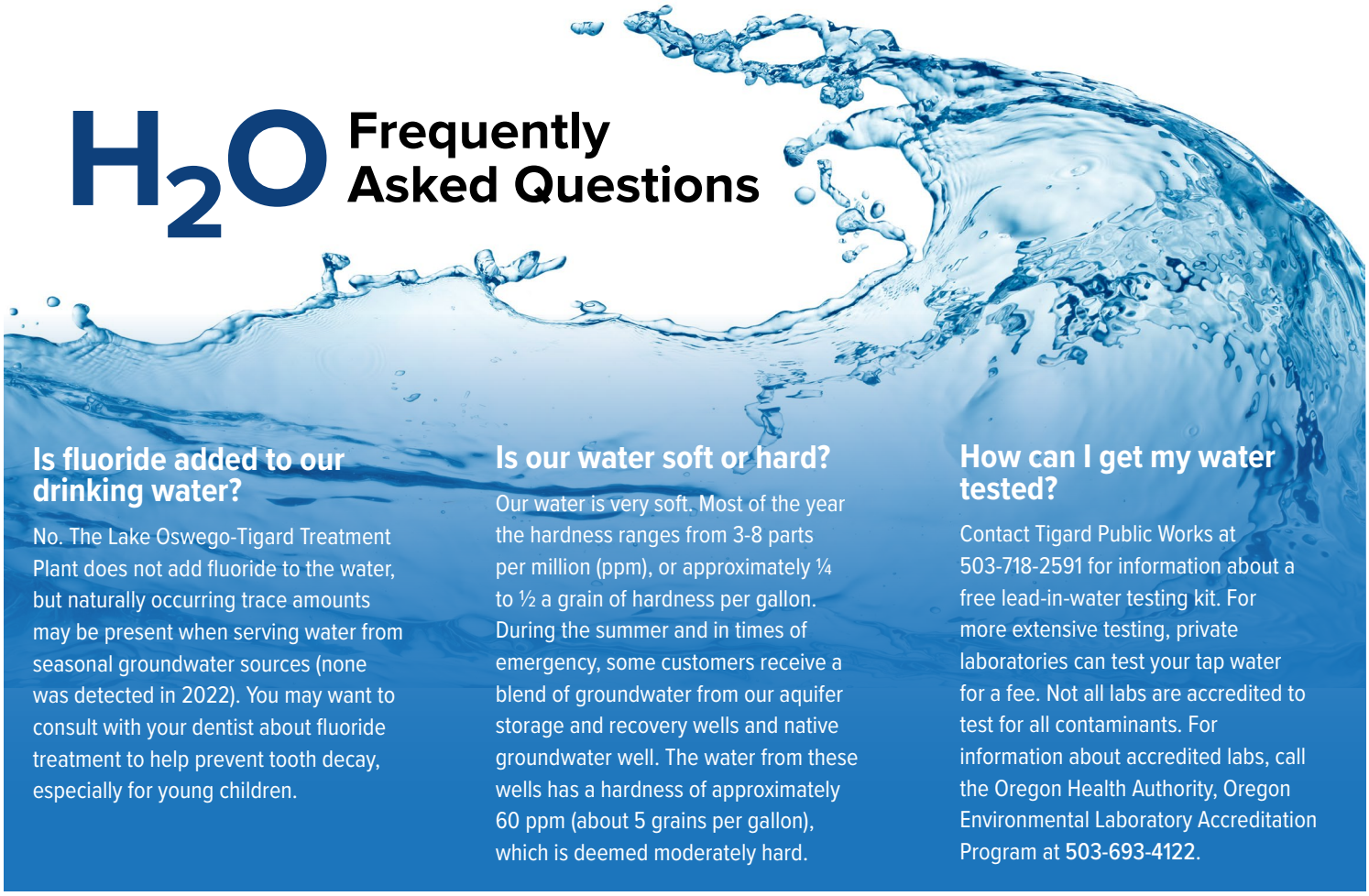


Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life threatening illnesses. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to avoid infection.

Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water.

City of Tigard
PUBLIC WORKS DEPARTMENT
13125 SW Hall Blvd.
Tigard, OR 97223

* * * * * * ECRWSS
POSTAL CUSTOMER



H_2O Frequently Asked Questions

Is fluoride added to our drinking water?

No. The Lake Oswego-Tigard Treatment Plant does not add fluoride to the water, but naturally occurring trace amounts may be present when serving water from seasonal groundwater sources (none was detected in 2022). You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

Is our water soft or hard?

Our water is very soft. Most of the year the hardness ranges from 3-8 parts per million (ppm), or approximately ¼ to ½ a grain of hardness per gallon. During the summer and in times of emergency, some customers receive a blend of groundwater from our aquifer storage and recovery wells and native groundwater well. The water from these wells has a hardness of approximately 60 ppm (about 5 grains per gallon), which is deemed moderately hard.

How can I get my water tested?

Contact Tigard Public Works at 503-718-2591 for information about a free lead-in-water testing kit. 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 Health Authority, Oregon Environmental Laboratory Accreditation Program at 503-693-4122.