

2024 Water Use Efficiency Report

In 2003 the State legislature passed the Municipal Water Law directing the State Department of Health to adopt a rule establishing water use efficiency requirements for all municipal water suppliers. The goal of the rule is to conserve water for future generations and the environment. This will help ensure enough water remains available regionally to meet your needs and the needs of our community as well as those of wildlife and the environment.



The Washington State Department of Health requires municipal water suppliers to establish a water conservation goal and report on its progress annually. The City of Fircrest believes water conservation should be an everyday practice and the prevention of unnecessary leakage as well as the minimization of wasteful, inefficient water usage or practices are goals that all water users should be aware of and should improve upon whenever possible.

Protecting Your Water Quality with Cross-Connection Control

We work hard to provide you with clean, reliable drinking water. One VERY important part of protecting water quality involves you and cross-connection control.

What is a "Cross-Connection"?

A cross connection is any actual or potential connection between a potable water supply and any source of non-potable liquid, solid, or gas (i.e. pipe, tank, plumbing fixture, or device) through which it is possible for used, polluted, or contaminated water or any other substance to enter the public water system.

Protection of the Water Distribution System

In general, the installation of plumbing in compliance with the plumbing code will provide adequate protection for your plumbing system from contamination.

To help determine if a backflow prevention assembly is required, the city will send out Cross Connection Control Survey Questionnaires. We appreciate your help in keeping our water system safe!

Where can I learn more about:

- ✓ The quality of my water?
- ✓ Getting answers to my questions?
- ✓ Additional conservation tips?
- ✓ Volunteering with the Pierce County Conservation District?

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US Environmental Protection Agency Safe Drinking Water Hotline

800-426-4791 • www.epa.gov/safewater

Washington State Department of Health Northwest Regional Office

253-395-6750 • www.doh.wa.gov/ehp/dw



THE CITY OF FIRCREST



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2024 ANNUAL WATER QUALITY & WATER USE EFFICIENCY REPORT

The City of Fircrest is
protecting Your Water

Providing our customers with safe and reliable drinking water, as well as educating and informing them about the importance of using water efficiently for future generations and the environment, is a primary mission of the City of Fircrest Water Utility.

The City of Fircrest Public Works Department proudly presents this 2024 Water Quality and Water Use Efficiency Report, based on our 2023 data.

These annual reports are intended to provide current, factual, and educational information about your drinking water and the importance of conservation. This report also includes details about where your water comes from, what it contains, and how it compares to the stringent standards set by regulatory agencies and information on why we should conserve and how the city promotes conservation and our efforts to minimize water loss.

All public water systems are required by the Environmental Protection Agency (EPA), the State of Washington and the Department of Health to provide all their water customers with annual reports on the quality of the drinking water provided and the City's efforts on promoting and educating our water conservation efforts.



Where does the water come from? The City owns and operates the water system which consists of five ground wells and three reservoir tanks with a capacity of 1.8 million gallons. The water comes from two underground aquifers called the Vashon Advance Outwash and the Colvos Sand. All water that is provided by the City of Fircrest is chlorinated and fluoridated.



Wellhead Protection Plan Preventing pollution is the first priority in protecting our groundwater supply. The objective is to reduce the risks of water supply contaminations by chemicals or other materials that might make the water supply unusable. Fircrest is completely dependent on groundwater. To protect the City's many wellheads, the focus is on human activity on the land above the water-bearing zones called aquifers. The city has developed a Wellhead Protection Plan that has been approved by the State Department of Health.



Do I need to take special precautions? Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

Contaminants 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, oil and gas production, mining or farming.

Pesticides and Herbicides, which may come from a variety of sources such as agriculture and residential uses.

Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Common Household Hazards:

Chemical Spray Applicators The chemicals used on your lawn and garden can be toxic or fatal if ingested. These chemicals include pesticides, herbicides, and fertilizers. Even strong cleaning chemicals sprayed on cars, house siding, etc., may cause health problems if ingested.

Submerged Hoses Water held in pools, ponds or other vats open to the air and exposed to humans or animals may contain microbiological contaminants. Hoses submerged in buckets or containers can act as a conduit for contaminants under backflow conditions.

Underground Lawn Irrigation Systems Underground irrigation systems often have puddles of standing water around the ground level sprinkler heads. The sprinkler heads are not designed to be drip-tight under backflow conditions. The puddles of water may contain microbiological contaminants.



Why are there contaminants in my water? The sources of drinking water (both tap 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 can pick up substances resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791. To assure the water system remains free of coliform bacteria, the city has implemented a disinfection system to the water system. This will provide an extra layer of protection to the miles of pipes that we have in our system and our storage facilities.

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 Fircrest 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 1-800-426-4791 or at www.epa.gov/safewater/lead.

How Contamination Occurs:

Water normally flows in one direction, from the public water system through the customer's cold or hot water plumbing to a sink tap or another plumbing fixture. The plumbing fixture is the end of the potable water system and the start of the waste disposal system.

Under certain conditions water can flow in the reverse direction. This is known as backflow. Backflow occurs when a backsiphonage or backpressure condition is created in a water line.

Backsiphonage may occur due to a loss of pressure in the water distribution system during a high withdrawal of water for fire protection, a water main or plumbing system break, or a shutdown of a water main or plumbing system for repair. A reduction of pressure below atmospheric pressure creates a vacuum in the piping.

Backpressure may be created when a source of pressure, such as a pump, creates a pressure greater than that supplied from the distribution system.

The City of Fircrest routinely monitors contaminants in your drinking water as required by Federal and State laws. Most of the City of Fircrest's current monitoring and sampling frequencies are shown below in table 1. The city is currently in compliance with all existing water quality monitoring requirements. Table 2, below, shows the results of most of our sampling results for the period of January 1 to December 31, 2023, or from the last set when sampling occurred. It is important to remember that the presence of these contaminants does not necessarily pose a health risk.

TABLE 1 – Regulated Monitoring and Sampling Frequencies:

Substance	Sample Requirement	Frequency	Next Sample Due
Fluoride	Almost Daily Samples at Entry Point to Distribution Center Locations	Nearly Daily ea. month	Continuous
Chlorine Residual	Almost Daily Samples at Entry Point to Distribution Center Locations	Nearly Daily ea. month	Continuous
Nitrate	1 Sample after treatment and before distribution system	Annually	2024
Complete Inorganic (IOC)	1 Sample after treatment and before distribution system	Waiver – Standard Once every 9-years	2027
Volatile Organics (VOC)	1 Sample after treatment and before distribution system	Waiver – Standard Once every 6-years	2026
Herbicides	1 Sample after treatment and before distribution system	Waiver – Standard Once every 9-years	2025
Pesticides	1 Sample after treatment and before distribution system	Waiver – Standard Once every 9-years	2025
Gross Alpha	1 Sample after treatment and before distribution system	Once every 3-years	2025
Radium 228	1 Sample after treatment and before distribution system	Once every 3-years	2025
Lead and Copper	20 Samples from Residential Faucets	Once every 3-years	2025
Asbestos	1 Sample from coliform sampling site	Once every 9-years	2032
Total Trihalomethane (THM)	1 Sample as identified in Fircrest's Disinfection Byproducts Monitoring plan	Annually	2024
Holo-Acetic Acids (HAA5)	1 Sample as identified in Fircrest's Disinfection Byproducts monitoring plan	Annually	2024
Coliform	8 to 9 Samples from points throughout distribution system	Monthly	Continuous

TABLE 2 – Sampling Results:

MONITORING RESULTS

Substance	MCL	Highest Level Detected	Range of Level Detection	Violation?	Potential Source
REGULATED AT GROUNDWATER SOURCES					
Fluoride	4 ppm	1.11 ppm	0.24 - 1.11	No	Treatment Additive
Nitrates	10 ppm	4.18 ppm	1.8 - 4.18	No	Erosion of Natural Deposits, Agricultural uses
REGULATED IN DISTRIBUTION SYSTEM					
Chlorine Residual	4 ppm	1.40 ppm	0.00-1.40	No	Treatment Additive to control microbes
Coliform	5%	None	None	Yes	Naturally Present in the Environment
REGULATED AT YOUR TAP					
Lead (Tested in 2022)	0.015 mg/L	0.0075 mg/L	<0.0010 - 0.0075 mg/L	No	Household Plumbing
Copper (Tested in 2022)	1.3 mg/L	0.686 mg/L	<0.020 - 0.686 mg/L	No	Household Plumbing
REGULATED AT DISTRIBUTION SYSTEM					
Total Trihalomethane (THM)	80 ppb	1.57 ppb	ND - 1.57	No	Disinfection interaction
Halo-Acetic Acids (HAA5)	60 ppb	ND	ND	No	Disinfection interaction
Total Coliform					

Other Required Test Results

	Highest running annual average allowed	Our average running average	Regulation Met?
Gross Alpha	15	3	Yes
Radium 228	5	1	Yes
Inorganic Chemicals (IOC's)			
22 Tests were performed in Augut 2022 on inorganic chemicals for which none exceeded the MCL			
Volatile Organic Chemicals (VOC's)			
59 Tests were performed in August 2022 on Volatile Organic Compounds for which none were detected or exceeded the MCL.			

Water Capital Projects in 2023
Contra Costa Watermain - Rose St - Dartmouth St
Rose St Watermain

Definitions:

Maximum Contaminant Level of 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 or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk of health. MCLGs allow for a margin of safety.

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

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

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.

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.

ppm: parts per million **ppb:** parts per billion **mg/L:** miligrams per liter

City's Progress Towards Water Efficiency Goal

The City of Fircrest has refined a conservation rate structure that began in 2017, which took our 2-tier rate structure and made it a 3-tier rate structure to further promote water conservation by making the residents of the City of Fircrest more aware of the amount of water they may be using. In 2023 the water tiers were each raised by 2%, and again in 2024 by 4.4% to continue our efforts of helping our consumers become more aware of the amount of water they are consuming/using.

2023 Annual Water Use Efficiency Performance

Total Water Produced 243,733,652 gal.
Authorized Consumption 239,952,116 gal.
Distribution System Leakage 3,781,536 gal.



The City also promotes water conservation, which was established in the Water System Plan's conservation plan in 2020, by offering customers free low flow/water efficiency items and educational materials at the Public Works Building as well as at the City's Fircrest Fun Days event.

Our focus on efficient use of water in homes, schools, and businesses is helping us maintain and exceed our previous goal set on the demand side at 0.2% average annual consumption, and work towards exceeding our current goal of reducing summer water "demand" by a total of 0.5 within 6 years.

Distribution System Leakage 1.6%
3 Year Annual Average 3.0%
(2020, 2021 & 2022)

Additional Conservation Efforts

City of Fircrest employees travel throughout the water systems daily. Any suspicious "wet" areas are investigated for possible water line leaks. Also, all Fircrest lot owners are requested to notify the City of Fircrest of any possible leaks and noticeable problem areas such as unexplained standing water or free flowing water traveling down streets or sidewalks.

The City continues to work on changing out all our single-family residential meters (we are about 58% complete), once completed we will continue with changing out the rest of our meters, from manually read meters to AMI/automatic reads. This meter exchange program will not only ensure accurate meter readings each billing cycle but will also replace old malfunctioning meters. We have found that our manually read meters are beginning to die and are not registering accurate water consumption. The new meters will also allow us to notify you, our customers, of potential leaks in your water service line quicker and with more accuracy assisting our efforts in minimizing water loss, it will also allow us to offer real time analysis that will be available for our water consumers.

Beginning in 2017 we adopted a 3-year water rate structure, which took our 2-tier rate structure and replaced it with a 3-tier rate structure removing all water consumed from the water base (ready to serve) rate, as a means of educating on the importance of water conservation and water use efficiency, and to be in compliance with the Revised Code of Washington (RCW) 70.199A.180 Water Use Efficiency Requirements.

Other methods we are using, and have been for several years, is through education. We offer free water conservation items as well as educational and informational brochures, we include water conservation ideas on our website and occasionally in the Fircrest Town Topics and we offer free water audits where a member of our crew will come out to help determine if and/or to assist you in locating a potential leak.

We also partner with the Pierce County Conservation District who assist us in restoration projects, workshops, they created a "Stream Team", Water Quality monitoring team along Leach Creek, amongst other important water quality and water conservation efforts. Pierce County Conservation District relies on volunteers to help in their efforts.

How can I be **WATER SMART** in the summer and still have green grass?

Water consumption in the average American home, on summer days, can spike causing significantly higher water usage bills, compared to their "off peak" season.

Water your lawn, garden and shrubs only when it needs it. (If it's still moist 1-2 inches under the soil surface, you still have enough water).

How can I tell if my lawn needs water?

- Walk across the grass. If the lawn springs back you don't need to water, but if you leave footprints, water may be needed.
- Use a Moisture Meter • Use a Rain Gauge

How often/much should I water?

Most lawns need about 1" (one inch) of water – including rainfall – to stay healthy. We recommend watering every other day, during the hottest summer weather, for 10-15 minutes per area/zone. During cooler days you could be able to water one day a week for 10-15 minutes per area/zone and still maintain a healthy lawn.

What are some other ways I can conserve water?

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to assist in future generations using water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.