CITY OF BEAVERTON

2003 Water Quality Report

Your Water Quality Is Our First Priority

The City of Beaverton is pleased to provide you with this 2003 Water Quality Report. The purpose of the report is:

- To provide you with information about your drinking water.
- To comply with U.S. Environmental Protection Agency (EPA) reporting requirements.

Using data collected during 2003, we have summarized information about your water supply sources, the water facilities that deliver water to your tap, and the quality of your drinking water. As we have done in the past, we are taking this opportunity to present additional information about other programs underway that are helping to ensure you have safe and dependable drinking water.

The City of Beaverton is proud of the high quality of our water supply, which meets or exceeds all state and federal water quality requirements. If you have any questions regarding your water quality or about information presented in this report, please call us at (503) 350-4017.

Si Habla Español: Este informe contiene información muy importante. Tradúscalo ó hable con un amigo quien lo entienda bien.

This information is available in alternative formats. Alternative formats can be provided upon request. To request alternative formats, please call **(503) 350-4017.**

How Does Water Get To Your Faucet?

Water released from Barney Reservoir is diverted through a short pipeline across the Coast Range divide into the headwaters of the Tualatin River.

Water released from Henry Hagg Lake travels by way of Scoggins Creek to the Tualatin River.

Water is then withdrawn from the Tualatin River and pumped to the JWC water treatment plant.

Treated water is pumped about one-half mile to Fern Hill Reservoir, a 20-million-gallon storage reservoir.

From Fern Hill Reservoir, water travels approximately 18 miles by gravity through a large-diameter transmission line into the City water distribution systems.

Beaverton's Water System at a Glance

In 2003, the City of Beaverton supplied water to approximately 62,870 or 80 percent of the 79,010 residents who live within the City limits. The remaining 20 percent, or approximately 16,140 residents, receive their water from the Tualatin Valley Water District, West Slope Water District, and Raleigh Water District.

The City of Beaverton is a member of the Joint Water Commission (JWC), an intergovernmental water supply group whose owner-members include the cities of Beaverton, Hillsboro, and Forest Grove, and the Tualatin Valley Water District. The JWC was formed to store, manage, and treat water for its owner-members. The City has a 25 percent ownership right in the water treatment plant operated by the JWC.

As a resident of Beaverton within the City's water service area, the primary source of your water is from the JWC water treatment plant located south of Forest Grove. The water treatment plant filters raw (untreated) water pumped from the nearby Tualatin River and has a peak capacity of 70 million gallons of drinking water per day. As a JWC owner-member, the City is entitled to up to 15 million gallons per day (mgd) of treated drinking water that meets state and federal drinking water standards.

In the winter and spring when ample streamflow is available, the City uses its in-stream water rights to obtain water from the Tualatin River. The City's winter water rights on the Tualatin River (usually available from November to late May) allow daily use of up to 16.2 mgd.

The City of Beaverton also owns water rights to 1.3 billion gallons (4,000 acre-feet) of water in Henry Hagg Lake (Scoggins Reservoir) and 1.4 billion gallons (4,300 acre-feet) of water in Barney Reservoir (a dam on the Trask River in the Coast Range). During the summer, when streamflow is low in the Tualatin River, water is released from Henry Hagg Lake and Barney Reservoir to compensate for the amount removed from the river for Beaverton's summer use. Henry Hagg Lake and Barney Reservoir supply most of Beaverton's raw water during the summer. Release of this stored water increases summertime streamflow in the Tualatin River, which helps to sustain a healthy river ecosystem.

Water released from Henry Hagg Lake travels by way of Scoggins Creek to the Tualatin River. Stored Trask River water released from Barney Reservoir is diverted through a short pipeline across a narrow Coast Range divide into the headwaters of the Tualatin River. Downstream, water is withdrawn from the Tualatin River and pumped to the JWC water treatment plant (see figure above).

Drinking water from the JWC water treatment plant is pumped about one-half mile to Fern Hill Reservoir No. 1, a 20-million-gallon, aboveground storage reservoir. During 2003, a planned second JWC reservoir (Fern Hill Reservoir No. 2) with a capacity of 20 million gallons was under design. From Fern Hill Reservoir No. 1, water travels approximately 18 miles by gravity through a large-diameter transmission pipe to Beaverton and the City's two terminal storage reservoirs. The terminal storage reservoirs hold a combined total of 20 million gallons and are owned and operated by the City. Water reaches Beaverton water customers through a network of distribution pipes and valves. The City maintains five in-town water storage reservoirs, which have a total capacity of more than 28.25 million gallons. These in-town storage reservoirs hold more than a three-day supply of drinking water. Sufficient in-town water storage is important to meet high summer demands, emergencies, large fires, or interruptions in supply from the JWC.

Water Supply for the Future

During the summer, water demand increases as water customers irrigate gardens and lawns, wash cars, fill swimming pools, and use water for other outdoor purposes. Currently, Beaverton residents have enough water for summer demand and, with continued careful management and planning by the City engineering staff, we will have sufficient summer water supplies in the future.

To give you some perspective of what water demand is today: the City's average daily water consumption in 2003 was 8.8 mgd, with the highest summer day demand in 2003 of 16.8 million gallons. Drinking water provided by the City for the entire year of 2003 amounted to 3.21 billion gallons. Demand for water is increasing as the City grows. By the year 2020, even with the effects of conservation reducing peak demand over time,

Looking for Information About Water Conservation?

Tips for conserving water indoors and outdoors are on the City's Web site and include suggestions about when to water your lawn and gardens, planting tips to conserve water, and much more. Please check out this information at **www.ci.beaverton.or.us** and **www.conserveh2o.org.**

the City's average daily demand is estimated to rise to almost 12 mgd with a peak day demand in that year expected to reach nearly 24 mgd.

To help meet the increasing demand for safe, dependable water service, Beaverton and other interested west-side cities and public agencies in Washington County, including the JWC, have formed a partnership to pursue options that will increase the water supply for various uses in the Tualatin River basin.

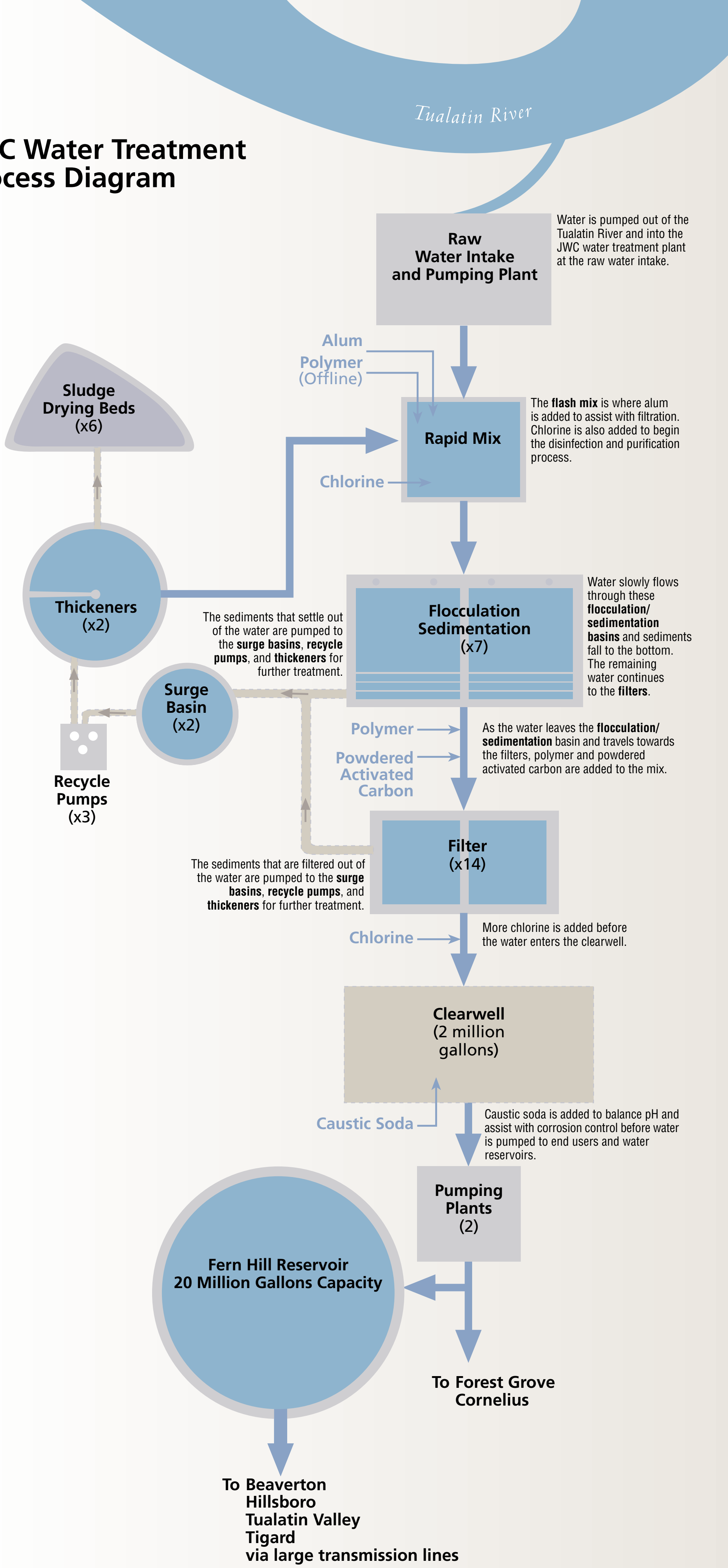
Tualatin Water Supply Project. In 2003, Clean Water Services of Washington County managed the Water Supply Feasibility Study, which developed and evaluated potential projects to provide more useable water to the year 2050 for drinking, industry, irrigation, and more in-stream flow to improve water quality in the Tualatin River basin. The final report for the Water Supply Feasibility Study was completed in early 2004. The most likely alternative appears to be increasing the storage capacity of Henry Hagg Lake to nearly double its present volume. The 40-foot-high Scoggins Dam raise alternative would increase the volume of Henry Hagg Lake from 53,640 acre-feet (17.5 billion gallons) to a new total of 106,540 acre-feet (34.7 billion gallons). A 40-foot raise of Scoggins Dam, which forms Henry Hagg Lake, is estimated to cost $125 million dollars and would be shared by 12 participating public agencies. During 2004, an environmental impact statement will be undertaken to prepare the way for a major water storage project on the Tualatin River. Construction of a project, such as a dam raise of Scoggins Dam, expanding Henry Hagg Lake, may begin by 2008. For more information about the Tualatin Water Supply Project, visit the Clean Water Services Web site at http://www.usa-cleanwater.org, click on "I want to learn…more", then click on "Tualatin River Basin", and "Water Supply Feasibility Study".

Sain Creek Tunnel. This project is an important and closely related project to the Tualatin Water Supply Project. It is a proposed tunnel three to four miles long that would capture and transfer water from the upper Tualatin River basin directly into Henry Hagg Lake. The completed tunnel would help ensure annual reliability for filling of Henry Hagg Lake, if it

Important Health Information:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as those with cancer undergoing chemotherapy, those 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).**

JWC Water Treatment Process Diagram



Aquifer Storage and Recovery (ASR) Project Update

What is ASR? Essentially, it is storing drinking water underground, then pumping it out when it is needed. During the winter and spring Beaverton's ASR injects treated drinking water from the JWC water treatment plant into natural underground basalt formations (aquifers), displacing native groundwater. Stored water is pumped out of the aquifer during the summer when demand increases as customers drink more water and use it for outdoor activities: irrigation for landscaping, lawns and gardens, washing cars, and other outdoor uses.

A basalt aquifer consists of volcanic rock with porous cavities. Typically, aquifers have much larger storage capacity than municipal water storage tanks. For example, 150 million gallons of storage per well is the goal for ASR, while the typical capacity of a municipal storage tank is 1 to 20 million gallons.

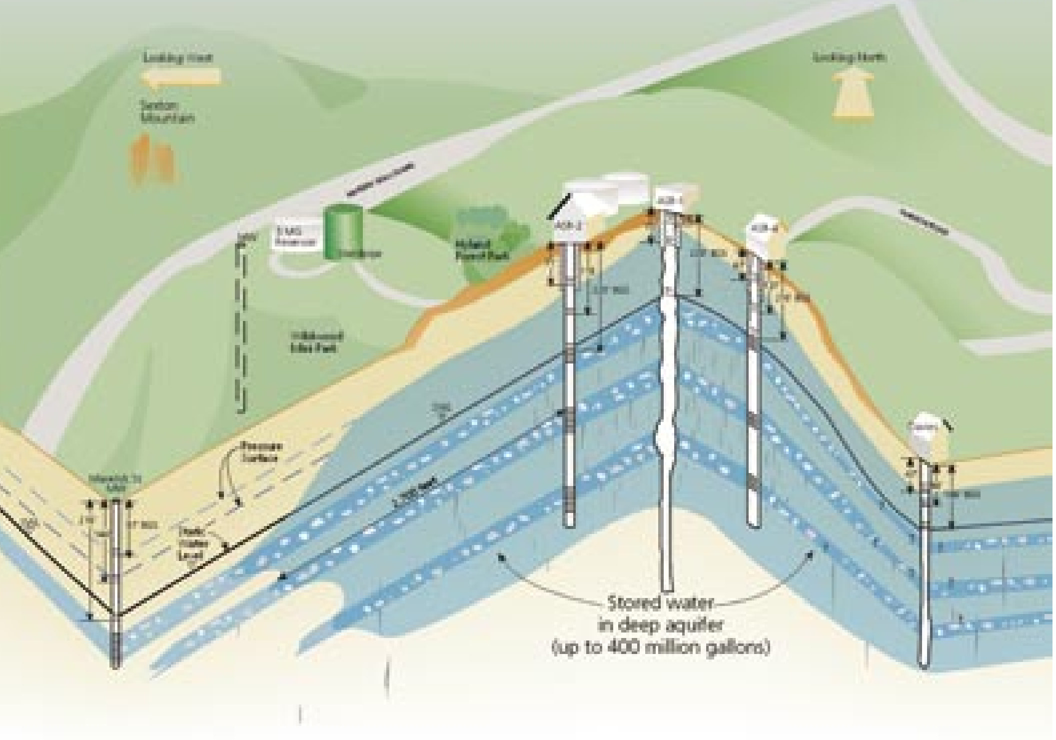
The aquifer at Beaverton's Sorrento Water Works facility, located on Hanson Road, consists of horizontal fractured rock and rubble zones between individual basalt flows. Drinking water from the JWC water treatment plant is injected into the horizontal zones for storage. After it is pumped out of the aquifer, the water looks and tastes aesthetically pleasing. In contrast, native groundwater contains minerals that may affect the taste of the water. Using its water wells, the City can pump native groundwater after the ASR stored water has been used. Normally, harder native groundwater is blended with softer JWC-treated water.

ASR has been part of Beaverton's water supply system since 1999, when the City began using ASR at its Sorrento Water Works facility. The City has two operational ASR wells at the site: ASR Wells No. 1 and No. 2. Construction of a third well (ASR Well No. 4) near the Sorrento facility will begin in fall 2004 and is expected to be completed by spring 2005. ASR Well No. 4, once in operation, will add 2 mgd for a total of 5 mgd in groundwater flow capacity from City wells. The City owns a fourth ASR well site (future ASR Well No. 3) at Sterling Park. Depending on need, ASR Well No. 3 likely will be brought online in 2006 or 2007.

During the summer when water demand is high, Beaverton's water is a mixture of surface water (Tualatin River) and groundwater (ASR and native groundwater). Using ASR Wells No. 1 and No. 2, the City stored approximately 395 million gallons of drinking water during the winter and spring of 2002/2003. From May through November 2003, 365 million gallons of stored water were pumped out to help meet the high summer demand. ASR Wells No. 1 and No. 2 are capable of recovering up to 3 mgd, which represents about 19 percent of the City's current summer peak demand of 16 mgd.

Rigorous water quality testing and data collection are performed on water from the ASR wells to ensure that water quality meets high state and federal standards.

ASR is not the only groundwater used by the City. In fall 2003, more than 49 million gallons of native groundwater were pumped out of ASR Wells No. 1 and No. 2. A total of 414 million gallons of groundwater (ASR and native groundwater) were withdrawn to supplement surface water supplies for the summer and fall of 2003. ASR and native groundwater make up more than 13 percent of the City's total annual drinking water distribution to customers.



is expanded. Without the Sain Creek Tunnel, there would be more years when Henry Hagg Lake may not fill during times of lower rainfall. An early cost estimate to complete the tunnel project is $25 million, which would be paid by the JWC and other project partners. A consultant study is underway by the JWC and other public agency partners to verify feasibility and cost of the project.

Raw Water Pipeline. The JWC is working on a new water-supply-related project: the Raw Water Pipeline. This project involves the development of a large-diameter pipeline system that will carry water directly from Henry Hagg Lake to the JWC water treatment plant. A feasibility and route location alternatives study was completed in 2003 by a consultant working for the JWC and several other interested public agencies. The estimated project cost to be split among participating agencies is $52 million. The proposed seven-mile-long pipeline will serve the following functions:

- Enhance the JWC's system operations and efficiency.
- Help conserve water.
- Reduce the risk of streambank erosion that results from large water releases from Henry Hagg Lake in the summer.
- Increase streamflow during the summer, which helps river water quality. Part of the water carried by the pipeline will be released downstream into the Tualatin River near the JWC water treatment plant.
- Help protect the quality of water to be treated by the JWC because water will be transported from Henry Hagg Lake to the water treatment plant.

Relationships with Other Water Provider Agencies

The City of Beaverton has drinking water supply relationships with the Tualatin Valley Water District, the City of Portland, and the City of Tigard. These public water providers can supply water to Beaverton through interties (pipeline connections), when needed.

On the north side of the City's water system there are two large interties with the Tualatin Valley Water District. The City of Beaverton has a large intertie on the east end of its water system with the City of Portland. In addition, the City of Beaverton has three interties with the City of Tigard (Tigard Water District) located along Beaverton's southern border – Scholls Ferry Road and Barrows Road.

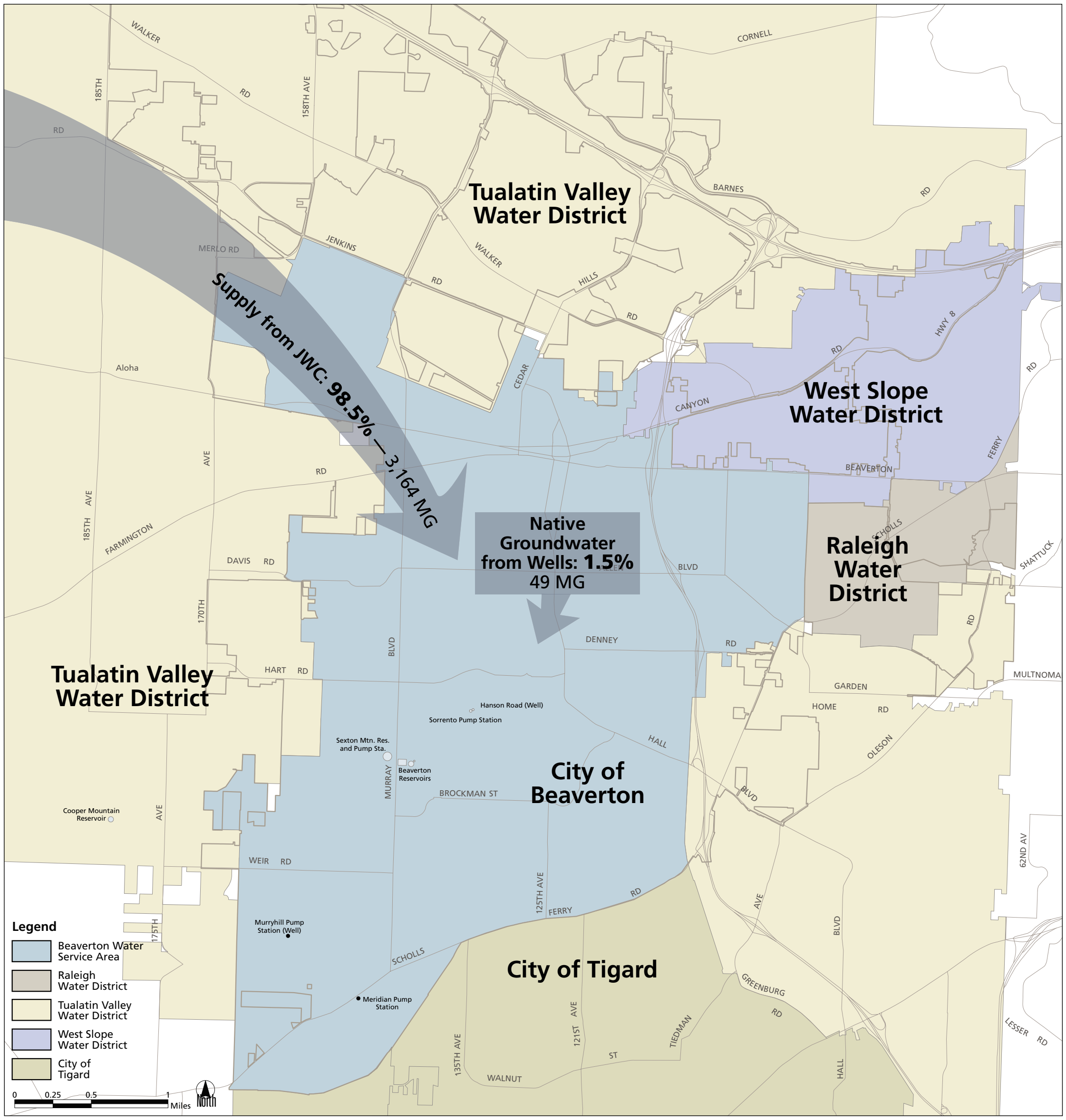
During 2003, the City of Beaverton did not purchase water from either the City of Portland or the Tualatin Valley Water District, largely because of the City's ability to meet peak summer demands using its ASR facilities. [See the adjacent article about ASR.] In 2003, the JWC supplied 3.16 billion gallons of water to the City of Beaverton.

These interagency relationships are important and ensure that the City of Beaverton will be able to supply water to its customers: (1)

when the water levels in the Tualatin River limit withdrawal under the City's existing in-stream water rights; (2) when stored raw water is limited in the summer as it was during the 2001 drought; and (3) in the event of a water supply emergency.

Providing Water to Tigard – Now a JWC Member

During 2003, an average of 3.2 mgd of drinking water originating from the JWC water treatment plant flowed through Beaverton's water mains and on to the City of Tigard. Tigard formally joined the JWC as a partner in 2003 and has a water supply lease agreement with the JWC. The City of Beaverton has a large intertie to the City of Tigard (Tigard Water District) located along Beaverton's southern border. Beaverton uses the Beaverton/Tigard interties to assist in supplying up to 4 mgd of JWC water to the City of Tigard. Water flows from the JWC water treatment plant through transmission lines and then through Beaverton's water distribution piping and the intertie to Tigard.



Source
City of Beaverton Community Development Department -
Beaverton City Limits - Current as of March 2004
Beaverton Water District - Current as of April 2004

METRO Regional Land Information System (RLIS) -
Taxlots - Current as of January 2004
Water Districts - Current as of January 2004
Major Arteries - Current as of October 2003

Water Projects

Water Main Replacements

Numerous utility and infrastructure projects are underway in Beaverton. With 226 miles of waterlines, the City maintains an active annual replacement program of underground utilities. The following are water replacement and/or upsizing projects completed in 2003:

- SW Cedar Hills Boulevard Waterline Replacement and Upgrade Phase 1
- SW Hart Road Waterline Replacement and Upgrade
- SW 125th Avenue and Greenway Intersection Waterline Replacement and Upgrade
- SW Lombard Avenue – Farmington to Broadway Waterline Replacement and Upgrade
- SW Canyon Road Waterline Replacement and Upgrade – from 177th Avenue to Hocken Avenue

JWC Fern Hill Reservoir No. 2

A second JWC reservoir, Fern Hill Reservoir No. 2, is being designed. The City's share of construction of this reservoir is 27 percent. The Fern Hill Reservoir No. 2 will be the second 20-million-gallon finished water storage reservoir and will be built next to the existing Fern Hill Reservoir No. 1, a 20-million-gallon aboveground storage reservoir that holds treated drinking water for distribution to water customers. Fern Hill Reservoir No. 2 will be constructed on Fern Hill near the JWC water treatment plant. The new reservoir project will take place during the next two years at a total estimated cost of $27 million, which will be shared by JWC member agencies.

SAFE DRINKING WATER HOTLINE:

*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 **(1-800-426-4791).***

Drinking Water Fluoridation

In 2002, the City Council referred an advisory ballot measure to a vote of the people of Beaverton regarding whether the City should fluoridate its drinking water. The results of the November 2002 vote supported fluoridation.

During 2003, City staff worked with an engineering consultant specializing in fluoridation to design the fluoride feed facility needed to add fluoride to the City's water supply. The facility is equipped with sophisticated continuous-monitoring equipment to ensure the desired fluoride level is maintained in the water supply. On December 15, 2003, the Beaverton City Council awarded a construction contract to a private contractor to build the fluoride feed facility and construction began on February 23, 2004.

The purpose of fluoridating the City's drinking water is to improve dental health for consumers of Beaverton water. According to the U.S. Centers for Disease Control (CDC) and U.S. Department of Health and Human Services, widespread use of fluoride has been a major factor in the decline in the prevalence and severity of tooth decay in the United States. When used appropriately, fluoride is both safe and effective in preventing and controlling tooth decay[1].

Fluoridation of Beaverton's City drinking water did not occur in 2003. The fluoridation feed facility construction was completed in May 2004. Fluoridation got underway, beginning with continuous very low levels of fluoride on May 14, 2004. The fluoride level was ramped up slowly to the target level of 0.9 parts per million (ppm) on May 17, 2004. Beginning in May 2004, Beaverton now adds fluoride to its water after the water leaves the JWC water treatment plant, but before entering the City for distribution. Drinking water travels through more than 226 miles of public distribution water mains operated by the City before reaching all water consumers.

The City's fluoride feed facility is equipped to ensure that the desired level of fluoride is maintained in the drinking water supply. Online electronic fluoride analyzers installed in various locations around the City monitor fluoride levels in the drinking water 24 hours a day. Data collected from the fluoride analyzers are displayed and stored on a water system master control computer. In addition to fluoride, which began in May 2004, a wide range of water quality data are reported by the City of Beaverton to the Oregon Department of Human Services. Beaverton's test results and water system information can be found on the Oregon Department of Human Services Web site at: http://170.104.158.16/inventory.php3?pwsno=00081.

[1] MMWR published by the Epidemiology Program Office, CDC and U.S. Department of Health and Human Services.

Fluoridated Water in the Tigard Water District

It is important to note that in addition to consumers of City water inside the Beaverton city limits, beginning in May 2004, some consumers of water in the water service area of the Tigard Water District also now receive fluoridated water. To provide water, Tigard purchases 90 percent of the water supply from wholesalers, such as the City of Portland and the JWC. Water from the JWC is delivered to Tigard via the City of Beaverton water distribution system. Using water from multiple sources means the Tigard Water District delivers customers a blended supply of Portland and Beaverton water. The amount of blending depends on the location of a user within the Tigard Water District's water system, the number of water sources in use at the time, water demand, and the time of year. The combination of these factors determines the amount of fluoride that a Tigard Water District customer will receive at the tap.

For more information about fluoride in the Tigard Water District, contact the Tigard Water Division at 503-718-2604 or visit the City of Tigard Web site at:
www.ci.tigard.or.us/city_hall/departments/water/water_quality/fluoride/default.asp

U.S. Environmental Protection Agency (EPA) Mandated Vulnerability Assessment and Emergency Response Plan

On June 12, 2002, President Bush signed the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act) into law (PL 107-188). The Bioterrorism Preparedness and Response Act added a section to the Safe Drinking Water Act (SDWA), instructing the EPA to "provide baseline information to community water systems required to conduct vulnerability assessments regarding which kinds of terrorist attacks or other intentional acts are the probable threats to: (a) substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water; or (b) otherwise present significant public health concerns."

The Bioterrorism Act also amends the SDWA to require every community water system serving a population greater than 3,300 persons to: (1) Section 1433(a) conduct a vulnerability assessment (VA); (2) certify and submit a copy of the VA to the EPA administrator (within the specified schedule); (3) Section 1433(b) prepare or revise an emergency response plan (ERP) that incorporates the results of the VA; and (4) certify to the EPA administrator, within 6 months of completing the VA, that the system has completed an ERP.

For Beaverton's water system, which in 2004 serves a population of 65,000, the Bioterrorism Preparedness and Response Act requires it to certify and submit a VA by December 31, 2003; and to certify to the EPA administrator that the water system has prepared or revised an ERP that incorporates the results of the VA by June 30, 2004.

The City completed and certified a VA of the water system in compliance with federal requirements before December 31, 2003. An ERP is being prepared and will be certified complete to the EPA by June 30, 2004.

As a result of the findings and recommendation in the 2003 VA, various actions have been taken by the City to enhance security and vigilance of the water system. These changes also are being incorporated in the ERP, which will include plans, procedures, and identification of equipment that can be implemented or used in the event of a terrorist or other intentional attack on the public water system. The ERP is intended to obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water.

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 provide premium and safe drinking water to residents. The City collects an average of 120 samples per month for testing to ensure that the City's drinking water meets state and federal standards.

A wide range of water quality data is reported by the City of Beaverton to the Oregon Department of Human Services. Beaverton's test results and water system information can be found on the Oregon Department of Human Services Web site at: http://170.104.158.16/inventory.php3?pwsno=00081.

The following terms are used to summarize the sampling detects:

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.

Maximum residual disinfection 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.

Maximum residual disinfection level goal (MRDLG): The level of a drinking water disinfectant below which there is not known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

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

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

The following units appear throughout the table:

ND: Not detected

N/A: Not applicable

NTU: Nephelometric Turbidity Units

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

pCi/l: picocurries per liter, a standard measurement of beta particles in water

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, flush your tap for 30 seconds to 2 minutes before using tap water. If you want to have your water tested or would like additional information, call the Safe Drinking Water Hotline (800-426-4791).

Radon: Radon is a radioactive gas that you can't see, taste, or smell. It is found throughout the United States. Radon can get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. The EPA is in the process of reviewing a new radon rule for drinking water, but has not finalized the rule. EPA is considering a drinking water standard for radon that could range from 300 to 4,000 picocurries per liter (pCi/L).

Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. The radon found in the native groundwater pumped from the Sorrento site does contain radon; however, this water is normally blended with JWC water, which results in lower radon levels at the taps.

For additional information, call the Oregon Health Division or EPA's Radon Hotline (800-SOS-RADON).

Additional Water Quality Information

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.

Primary Supply[1]

Major Water Sources: JWC Water Treatment Plant, Hanson Road Facility Well Water (Recovered ASR Water and Native Groundwater)

Regulated Contaminants	Lowest Concentration	Highest Detection Used for Compliance	Highest Level Allowed (MCL/TT)	Ideal Goals (MCLG)	Major Sources in Drinking Water
Microbiological					
Total Coliform Bacteria	ND	ND	Must not detect coliform bacteria in more than 5 percent of monthly samples	0	Naturally present in the environment
Turbidity	0.03 NTU	0.80 NTU[2]	As of January 1, 2002, turbidity may never exceed 1 NTU, and must not exceed 0.3 NTU in 95% of daily samples in any month.	N/A	Soil runoff
Inorganics					
Barium	ND	3.7 ppb	2000 ppb	2000 ppb	Discharge from metal refineries; refineries; erosion of natural deposits; discharge of certain drilling wastes.
Nitrate (as Nitrogen)	ND	1.1 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium	7.56 ppm	13 ppm	No standard	No standard	Added to water during treatment and erosion of natural deposits.
Fluoride	ND	0.06 ppm	4 ppm	4 ppm	Erosion of natural deposits; discharge from fertilizer and aluminum plants.
Chromium	ND	2 ppb	100 ppb	100 ppb	Erosion of natural deposits; discharge from steel and pulp mills
Copper[3]	90th Percentile = 0.2 ppm	0.37 ppm	AL = 1.3 ppm	1.3 ppm	Erosion of natural deposits; corrosion of household plumbing systems; leaching from wood preservatives
Lead[3]	90th Percentile = 3 ppb	23 ppb (Less than 10 percent of samples exceeded the Action Level)	AL = 15 ppb	0 ppb	Corrosion of household plumbing systems; erosion of natural deposits
Radionuclides					
Radon	48 pCi/L[4]	530 pCi/L[5]	No standard	No standard	Erosion of natural deposits
Gross Alpha	ND[4]	0.999 pCi/L[5]	15 pCi/L	0	Erosion of natural deposits
Gross Beta	ND[4]	1.8 pCi/L[5]	50 pCi/L[6]	0	Decay of natural and man-made deposits
Disinfection Byproducts and Disinfectant Residuals					
	Range	**Average**			
TTHMs (Total trihalomethanes)[7] Annual rolling average All sites	18 - 51 ppb	36 ppb	80 ppb	NA	Byproduct of drinking water chlorination
HAAs (total haloacetic acids)[7] Annual rolling average All sites	0 - 81 ppb	34 ppb	60 ppb	NA	Byproduct of drinking water chlorination
Chlorine Annual rolling average All sites	0.545 - 0.734 ppm	0.673 ppm	4.0 ppm (MRDL)	4.0 ppm (MRDL)	Water additive used to control microbes

[1] Data provided by the Joint Water Commission, City of Beaverton, and Tualatin Valley Water District.

[2] Turbidity from groundwater sample collected at the Hanson Road well on June 23, 2003. This value is considered anomalous because historical groundwater turbidity (2000-2002) from the Hanson Road well ranged from ND to 0.4 NTU with an average value of 0.108 NTU.

[3] Lead and copper data from 2001 sampling of 39 locations across the City of Beaverton.

[4] Radon from sample collected on March 14, 2000, at the JWC treatment plant; sample represents surface water; data provided by JWC

[5] Radon from Hanson Road well. Results represent groundwater concentration.

[6] EPA considers 50 pCi/L to be the level of concern for beta particles.

[7] MCL effective as of January 1, 2002

Contaminants that may be present in the water include:

- Microbial contaminants, such as cryptosporidum, 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 storm 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, urban stormwater runoff, and residential uses.
- 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.
- Radioactive contaminants, which can be naturally occurring or result from oil and gas production and mining activities.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water to provide the same protection for public health.

City of Beaverton
Engineering Department
Water Division
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Beaverton, OR 97076-4755

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