



Conserving Water with Local and Regional Programs

During 2017, North City Water District purchased 596 million gallons of water, with a distribution leakage rate of 4.7% throughout our system. The District is proud of this rate and will continue to keep it as low as possible through proactive monitoring and maintenance.

The Saving Water Partnership (SWP)—which is made up of North City Water District and 18 other water utility partners—is still on target with its six-year conservation goal to reduce per capita use to less than 105 mgd average annually from 2013 through 2018, once again meeting the goal with 96.6 mgd in 2017, slightly higher than last year, attributed primarily to the hot summer, according to SPU Economist Bruce Flory. Our District's customers helped achieve this through the following events and programs:

- Over 3,350 people visited our Water Education Booths at the Lake Forest Park Green Fair, Lake Forest Park Picnic in the Park, Shoreline Science (STEM) Festival, Ridgecrest's Ice Cream Social, Celebrate Shoreline Festival, and YMCA's Healthy Kids Day;
- 123 people learned about water-wise gardening tips at our free Savvy Gardener classes;
- 37 classroom presentations were made about water;
- 8 households within our District boundaries took advantage of the single family toilet rebate program; and
- 2 single family households received a rebate for installing an irrigation timer.

Upcoming Community Events:

We LOVE to connect with our customers! Come visit us at:

- June 2: Million Step Challenge Closing Event at Paramount Park
- August 14: North City Jazz Walk (the District is a venue)
- August 18: Shoreline Days at Cromwell Park

More About Water Quality

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 Seattle's surface water supplies, the potential sources of contamination include:

- Microbial contaminants, such as viruses, bacteria, and protozoa from wildlife;
- Inorganic contaminants, such as salts and metals, which are naturally occurring; and
- Organic contaminants, which result from chlorine combining with the naturally occurring organic matter.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency and/or the Washington state board of health prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration and/or the Washington state department of agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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 Environmental Protection Agency's Safe Drinking Water Hotline at 800.426.4791.

We at North City Water District encourage public interest and participation in the decisions that affect our drinking water. If you would like to learn more about our water, have questions about its quality, or would like to know what you can do to help keep our water supply clean, safe and abundant, please don't hesitate to contact us at 206.362.8100, or visit one of our Board of Commissioners meetings (every first and third Tuesday of each month at 3:00 pm) at our District office, or you can contact any one of the following organizations:

Seattle Public Utilities
Phone: 206.684.3000
Website: http://www.seattle.gov/util/MyServices/Water/Water_Quality

United States Environmental Protection Agency (EPA) and the Safe Drinking Water Hotline
Phone: 800.426.4791
Website: <http://www.epa.gov/safewater>

Washington State Department of Health (DOH):
Phone: 800.521.0323
Website: <http://www.doh.wa.gov/ehp/dw/>

Ongoing Water System Planning



1 Overview
Purpose, Policies, Rules and Regulations, Conservation, Customer Service, and long term water supply contract with SPU



2 Basic Planning Data



3 Existing Water System
Supply, Emergency, Facilities, Equipment, System, and Water Treatment



4 Minimum Design Criteria
For All System Components



5 System Analysis
Source, Storage, Pumping, Distribution, and Monitoring



6 Capital Improvement Planning



7 Operations & Maintenance
Personnel, Processes, Records, Water Quality, Safety, Emergency, Public Notification, and Preventive Maintenance



8 Financials
Water Supply, Cost of Service, Connection Charges, Funding, Capital Improvement Financing, Developer Policies, Standard Details and Specs, and Multi-Year Rate Study

Hydraulic Computer Modeling: a critical planning function

For over ten years, we have used the same hydraulic computer model to help us to optimize the operation of our water system—a key aspect of updating our Water System Plan.



Hydraulic computer modeling lets us estimate the water flow in the system for different customer types as well as different locations. The computer model performs extensive analysis to calculate water pressures and usage; then we follow up with field testing to confirm the model's accuracy.

The best time to do field testing is at night, when there is minimal flow in the water system. We chose to do the testing in different neighborhoods, measuring the water pressure at several hydrants, and at different flow rates. One of our staff members remained at the North City/Denny Clouse Pump Station throughout this testing to monitor the activities "live" via our telemetry system.

As new pipes are added into the system (whether by our own staff, or by developers for specific projects), or as information changes (such as the improvements made to the Ridgecrest area, or the construction of our new Pump Station), the model is updated. Regular, repeated testing not only keeps the model accurate, it provides an important cross check to maintain our confidence that the model is getting better.

Once we are confident that our system can accurately predict current conditions, then we can identify which areas need improvements to meet fire flow pressure and/or water quality.

However, these system improvements are only a portion of the overall system improvements we look at every year during our annual budgeting effort. We must also take into consideration the two cities whose citizens we serve, the two fire districts, and other utilities in the area so that together, we only have to tear up an area once in many years.

Last but not least, we must also balance these improvement options within the full scope of capital improvements and system updates that we expect to accomplish over the next 20 years, based on what we can afford, what the overall construction market is, and how that drives project costs, in order to identify the best return on investment. Much like a homeowner must prioritize their budget to keep their home maintained, we can only do a certain amount of capital improvements each year. You may want to get a new gazebo built in your garden, but your house may need a new roof first.

Keeping our hydraulic model calibrated helps us make the most informed decisions about the future of our water system.

If you have any questions about Hydraulic Computer Modeling or about our Water System Planning process, please don't hesitate to give us a call at 206.362.8100.

The North City Waves Newsletter is brought to you by North City Water District, and its Board of Commissioners: Larry Schoonmaker (President), Charlotte Haines (Vice President), and Ron Ricker (Secretary). Feel free to contact us at PO Box 55367, or 1519 NE 177th Street, Shoreline, WA 98155. 206.362.8100 • www.northcitywater.org • [Facebook](https://www.facebook.com/NorthCityWaterDistrict) / NorthCityWaterDistrict




2017 ANNUAL REPORT OF DRINKING WATER QUALITY

Issue 2: April • May • June 2018

A newsletter for water-related issues and info
Serving the communities of Shoreline and Lake Forest Park since 1931

From Our Board...
by Larry Schoonmaker, President

Ever since North City Water District was formed in 1931, we've regularly updated our Water System Plan to position us for the future—particularly important in an area where growth is a constant. In the mid 1960s, when our system's original pipes began losing water, our Water System Plan illustrated the financial wisdom of proactively replacing 70% of our water mains. Although extremely controversial at the time, the decision proved to be the most financially sound, and a testimony of our commitment to keeping our water system at the forefront. This year we are once again updating our Water System Plan, as introduced in our previous newsletter, with further elaboration in this issue. Meanwhile, we're proud to have been honored by the Pacific Northwest Section of the American Water Works Association with two awards: Excellence in Engineering, and Excellence in Communications. A third award for outstanding Local Civil Engineering on our new Pump Station is forthcoming from the American Society of Civil Engineers. We believe these awards reflect our dedication to proactive, fiscally responsible water system planning and capital improvements.



AWWA's National President Brenda Lennox presenting the awards.

- North City Waves Newsletter ~ a publication by North City Water District
- website at www.northcitywater.org
- 3) Sign up for news, alerts, free classes and more on our
- 2) Follow us on www.facebook.com/NorthCityWaterDistrict
- 1) Join www.nextdoor.com for neighborhood news and notices
- ### Three Ways to Stay in Touch

- Annual Water Quality Report for 2017
- Water Test Results Tables and Definitions
- Annual Customer Survey
- All Sorts of Rebates Available
- Learning About Your Water at the Source
- Project Update: New Maintenance Building
- Conserving Water Locally and Regionally
- More About Water Quality
- Ongoing Water System Planning

Rate reduction available for income persons. 150 eligible for Call us or visit www.northcitywater.org

Inside This Issue

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Annual Water Quality Report for 2017

North City Water District continues to maintain state and federal water quality guidelines that are significantly below EPA maximum levels.

All About Your Water

Where Is Your Water From? Tolt and Cedar River Watersheds.

Who Tests Your Water? Your drinking water is regulated by the Environmental Protection Agency (EPA), who sets drinking water quality standards, establishes testing methods and monitoring requirements for water utilities, sets maximum levels for water contaminants, and requires utilities to give public notice whenever a violation occurs. Your drinking water is tested frequently both by North City Water District and Seattle Public Utilities, our supplier, to ensure that high quality water is delivered to your home.

What is Your Water Being Tested For? 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 is available by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline 800.426.4791.

When is Your Water Tested? Continuously—365 days a year.

How is Your Water Tested? Last year your drinking water was tested for over 200 compounds and additional contaminates. Tests are done before and after treatment and while your water is in the distribution system. The Tables presented on the following page list all of the contaminants detected in the most recent required water testing and compare them to the limits and goals set by the EPA and the State of Washington to ensure your tap water is safe. Not shown are more than 200 additional contaminants that were tested for, but not detected, in your drinking water. If you would like to see a list of these other compounds or if you have other water quality questions, do not hesitate to contact us. Please note: asbestos monitoring is not required for our District because all the asbestos pipe in our distribution system was replaced prior to 1991.

How Safe is Your Water? Your water falls safely within state and federal guidelines for each and every contaminant, significantly below the EPA's levels.

Lead and Copper Monitoring Results

Our regional water supply does not contain lead or copper. However 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 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. North City Water District 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 at 1.800.426.4791 or at <http://www.epa.gov/safewater/lead>.

People With Special Concerns

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/Centers for Disease Control (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 at 1.800.426.4791.

If you would like to learn more about your water, or if you have questions about its quality, please don't hesitate to contact North City Water District at 206.362.8100.

Table 1: Water Quality Testing Results for 2017

Compounds that were not detected in 2017 are not included in these charts.

Types of Detected Compounds	Units	Primary Source	Ideal Goal (MCLG)	Max. Allowed (MCL)	Levels in the Cedar River Watershed		Levels in the Tolt Watershed		Meets EPA Stds.?
RAW WATER					Average	Range	Average	Range	
Total Organic Carbon	ppm	Naturally present in the environment	NA	TT	0.8	0.3 to 1.5	1.2	1.1 to 1.3	Yes
Cryptosporidium ¹	#/100L	Naturally present in the environment	NA	NA	ND	ND	ND	ND	Yes
FINISHED WATER SOURCE									
Turbidity	NTU	Soil runoff	NA	TT	0.3	0.2 to 2.5	0.04	0.01 to 0.2	Yes
Arsenic	ppb	Erosion of natural deposits	0	10	0.5	0.4 to 0.6	0.4	0.3 to 0.5	Yes
Barium	ppb	Erosion of natural deposits	2000	2000	1.7	1.4 to 1.9	1.4	1.1 to 1.7	Yes
Bromate	ppb	Byproduct of drinking water disinfection	0	10	0.04	ND to 1	0.25	ND to 2	Yes
Chromium	ppb	Erosion of natural deposits	100	100	0.27	0.25 to 0.33	0.2	ND to 0.24	Yes
Fluoride	ppm	Water additive to promote strong teeth	4	4	0.7	0.3 to 0.9	0.7	0.6 to 0.8	Yes
SPECIFIC SAMPLES FROM NORTH CITY WATER DISTRICT'S DISTRIBUTION SYSTEM									
Total Trihalomethanes	ppb	Byproduct of drinking water disinfection	NA	80	Average: 36 Range: 23 to 39				Yes
Haloacetic Acids (5)	ppb	Byproduct of drinking water disinfection	NA	60	Average: 37 Range: 27 to 41				Yes
Chlorine	ppm	Water additive to control microbes	MRDLG =4	MRDL =4	Highest Monthly Average: 0.92 Range: 0.06 to 1.4				Yes

¹ Cryptosporidium was not detected in any samples from the Tolt or Cedar supplies (3 samples each).

Table 2: Lead and Copper Monitoring Results for the Tolt Watershed in 2017

Samples are taken every three years. Five of the 51 samples in the Tolt Watershed were taken in NCWD's service area. None of the samples for the Cedar River Watershed were from NCWD's service area.

Lead and Copper Sampling Program and Units	Ideal Goal MCLG	Action Level ²	Results of 2017 Samplings ³	# Homes Exceeding Action Level	Typical Sources in Drinking Water
Lead, ppb	0	15	4.0	0 of 51	Corrosion of household plumbing systems. Samples collected in homes within the Tolt water service area.
Copper, ppm	1.3	1.3	0.15	0 of 51	

² The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

³ 90th percentile: 90 percent of the samples were less than the values shown.

Annual Customer Survey

Take the Water Conservation Survey on the Saving Water Partnership website and enter to win a free home water and energy-saving kit!

Go to www.savingwater.org and click on the "We're Listening" photo of the Basset Hound.

All Sorts of Rebates Available

Planning to replace or install a new toilet, or upgrade your sprinkler system? How about commercial kitchen equipment, medical equipment, industrial refrigeration units, or commercial laundry machines? SPU's Saving Water Partnership has an abundance of rebates for homeowners, apartment and condo owners, as well as institutions, and ommercial/industrial businesses.

Learn more at www.savingwater.org/rebates

Table Definitions

MCLG: Maximum Contaminant Level Goal

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.

MCL: Maximum Contaminant Level

The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDL: Maximum Residual Disinfectant Level

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.

MRDLG: Maximum Residual Disinfectant Level Goal

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.

TT: Treatment Technique

A required process intended to reduce the level of a contaminant in drinking water.

NTU: Nephelometric Turbidity Unit

Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2017 was 5 NTU, and for the Tolt it was 0.3 NTU for at least 95% of the samples in a month. 100% of the samples from the Tolt in 2017 were below 0.3 NTU.

NA: Not applicable.

ND: Not detected.

ppm: 1 part per million = 1 mg/L = 1 milligram per liter.

ppb: 1 part per billion = 1 ug/L = 1 microgram per liter

1 ppm: = 1000 ppb.



Learning About Your Water at the Source

Did You Know? You and your family can enjoy an affordable, guided adventure to experience your watershed first-hand!

Cedar River Watershed is the source of water for more than 1 million people in and around Seattle. Located 35 miles east of Seattle along the shores of Rattlesnake Lake, the Cedar River Watershed Education Center offers you and your family a unique way to experience the water cycle: test your skill at managing reservoir levels, enjoy the award-winning "Water is Magic" exhibits, and learn about the area's natural and cultural history.

Affordable tours and classes—such as the Family Watershed Tour, the Railroad History Treasure Tour, the Junior Naturalist Class, or the Rain Drum Symphony Class—can be reserved on SPU's website via the "Watershed Tours and Programs" link. Use **PROMO CODE: WATER** for a discount valid July—September 2018.

Rattlesnake Lake Recreation Area Hours: 6am to dusk all year, day-use only.

Center and Exhibit Hours:

April – October:
Tuesday – Sunday | 10AM to 5PM
November – March:
Tuesday – Sunday | 10AM to 4PM
Closed Mondays and on City Holidays

More Information:

206.733.9421 | 425.831.6780
crwprograms@seattle.gov

Project Update: New Maintenance Bldg.

While awaiting final permits for our new Maintenance Facility at 15555 15th Avenue NE, we decided to offer use of the site to Shoreline Fire Department for multiple training exercises. Fire department staff will be practicing everything from commercial fire tactics, to transition into rescue of a down-firefighter, all while using smoke machines to make the environment more realistic.

We're thrilled that these old buildings can serve a final purpose—not only helping our local Shoreline Fire Department with various response and training efforts, but also providing an opportunity for them to practice with neighboring departments, helping all of them better anticipate and support each other in the event of a real emergency.

For status updates on this project, visit our website and click on the project site drawing in the upper right corner of the page.

