

## Essential water INFORMATION

The sources for all 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 can pick up substances resulting from the presence of animals or human activity.

In the Tolt and Cedar water supplies, these potential contaminants may include:

- Microbial contaminants, such as viruses and bacteria, from wildlife
- Inorganic contaminants, such as salts and metals, which are naturally occurring
- Organic contaminants that are by-products of disinfection processes
- Radioactive contaminants that can be naturally occurring

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminant. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained

by calling the EPA Hotline at 1.800.426.4791.

Cryptosporidium parvum (Crypto) is a disease-causing organism commonly found in the natural environment. Most rivers and streams across the country have detectable concentrations. Crypto sources include deer, elk, and voles in the watersheds. There have been no disease outbreaks associated with Seattle's drinking water. Chlorination is ineffective against Crypto; however, Seattle uses ozonation to disinfect water from the Tolt and Cedar supply. Ozonation is very effective at destroying Crypto and other microbes.

Source water monitoring in 2011 detected Cryptosporidium in none of the samples collected from the Cedar supply and 1 out of 4 water samples collected from the Tolt supply.



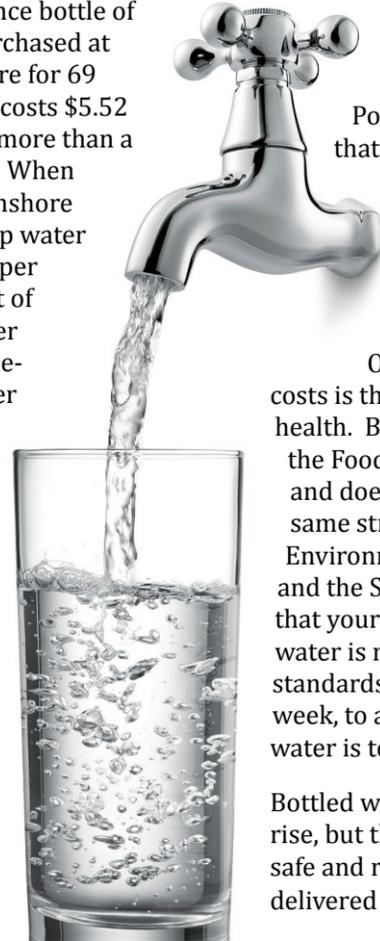
## Quality water DELIVERED RIGHT TO YOUR HOME

### The True Cost of Bottled Water

Since the late 1980s, commercial sales of bottled water have exploded globally. According to beverage trade publications, global bottled water consumption has more than quadrupled since 1990. Today Americans consume over 30 billion liters of water out of some 50 billion (mostly plastic) bottles every year. The trend in consumption is clear but in many cases the real cost of the trend is not.

Take a 16 fluid ounce bottle of water recently purchased at a local grocery store for 69 cents. That water costs \$5.52 per gallon; that is more than a gallon of gasoline. When compared to Northshore Utility District's tap water base rate of \$2.75 per hundred cubic feet of water or \$.0037 per gallon (around one-third of a penny per gallon) it is easy to see why there are hundreds of different brands of bottled water in the marketplace.

The cost of bottled water doesn't end at the register. According to Food and Water Watch, bottled



water produces up to 1.5 million tons of plastic waste every year.

Even the most optimistic numbers show that 86% of all plastic water bottles end up as garbage or litter. Additionally, there is the cost of manufacturing the bottles in the first place. Millions of tons of petroleum-derived plastics are needed to keep up with the demand for bottled water. The Earth Policy Institute has estimated that plastic bottles produced in the United States require over a million barrels of oil annually; that's enough to fuel nearly 100,000 cars for a year.

One of the most overlooked costs is the potential cost to your health. Bottled water is regulated by the Food and Drug Administration and does not have to meet the same stringent requirements of the Environmental Protection Agency and the State Department of Health that your tap water does. Your tap water is monitored for water quality standards 24 hours a day, 7 days a week, to assure its quality. Bottled water is tested far less frequently.

Bottled water usage may be on the rise, but the most cost effective, safe and reliable choice is the water delivered to your tap.

*Bottled water costs \$5.52 per gallon.*

*That is more than a gallon of gasoline.*

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Northshore Utility District is pleased to provide the 2012 Water Quality Report to you, our valued customer. This report contains information about the overall condition of our drinking water. We encourage you to take a few minutes to review the material in this report. At Northshore, we are committed to providing the highest quality drinking water possible. If you have any questions, comments or suggestions about the information contained within this report, please contact us at 425.398.4419.

Sincerely,

Robert Peterson, President  
Board of Commissioners

## 2012 Northshore Utility District Annual Water Quality Report

Published Data for 2011



Northshore Utility District is committed to providing the necessary services to the community in a safe, reliable, economical, and ecologically responsible manner

# Partners in conservation

## HOW MUCH WATER ARE WE USING?

In 2011, Northshore Utility District purchased just over 1.8 billion gallons of water. This is an increase of almost 50 million gallons in usage from the previous year. To help put this number into perspective, the increase when divided equally among all of the District's customers, is equivalent to each resident using 6.5 more gallons of water per day than the previous year.

Of the 1.8 billion gallons of water purchased, the District experienced approximately 6.5% of unaccountable water loss in 2011. All water that is not specifically accounted for is considered to be distribution system leakage. Some examples of unaccounted for water include: theft of water, metering inaccuracies, distribution system breaks, and errors in data collection or calculations. To reduce leakage, Northshore Utility District routinely

inspects older sections of the distribution system and replaces pipes that are prone to leakage and breaks.

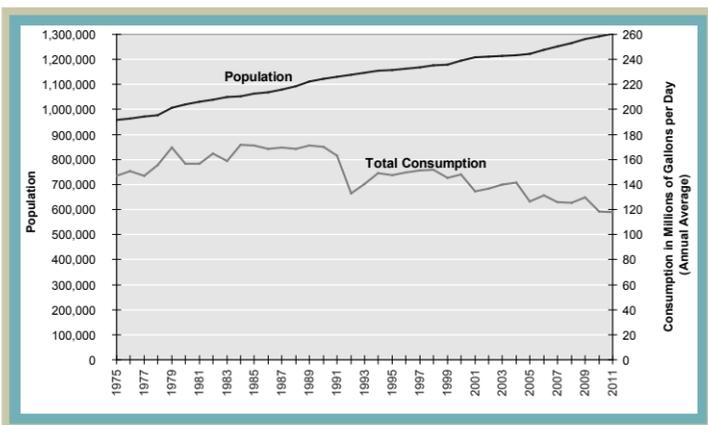
To promote water conservation, Northshore Utility District participates with 18 other local utilities in the *Saving Water Partnership*. In 2011, we saved an estimated 1.4 mgd (million gallons per day) as part of the Saving Water Partnership. In the past five years, we have collectively saved about 4.6 mgd toward our 2012 goal of nearly 6 mgd.

Since the beginning of the regional program in 2000, the program has achieved an estimated 11 mgd of savings.

For all the latest information on what you can do to conserve water, visit the District's website at [www.nud.net](http://www.nud.net).

Thank you for all you are doing to conserve water. It makes a difference!

### Growth in Population and Water Consumption Seattle Regional Water System: 1975- 2011



# 2011 WATER QUALITY MONITORING RESULTS

Northshore Utility District provides safe, reliable, and affordable drinking water to approximately 69,000 people. Northshore's water system encompasses nearly 17 square miles within King County, extending from Lake Forest Park to the City of Woodinville, all of Kenmore and parts of Kirkland and Bothell.

In accordance with State and Federal standards, we continually monitor and test our drinking water. The following table lists the compounds that were detected in 2011. Out of the detected compounds, none were above EPA allowable limits.

Detected Compounds	Units	EPA's Allowable Limits		Cedar Water Levels		Tolt Water Levels		Meet USEPA Standards?	Typical Sources
		MCLG	MCL	Average	Range	Average	Range		
<b>RAW WATER</b>									
Cryptosporidium	#100L	NA	NA	ND	ND	ND	ND to 2	✓	Naturally present in the environment
Total Organic Carbon	ppm	NA	TT	0.7	0.3 - 1.2	1.3	1.2 - 1.6	✓	Naturally present in the environment
<b>FINISHED WATER</b>									
Turbidity	NTU	NA	TT	0.4	0.2 - 2.9	0.06	0.04 - 0.15	✓	Soil runoff
Fluoride	ppm	4	4	0.8	0.6 - 1.0	.08	0.4 - 1.1	✓	Water additive, which promotes strong teeth
Barium	ppb	2000	2000	1.4	one sample	1.2	one sample	✓	Erosion of natural deposits
Nitrate	ppm	10	10	0.09	one sample	0.11	one sample	✓	Erosion of natural deposits
Cadmium	ppb	5	5	ND	one sample	0.8	one sample	✓	Erosion of natural deposits
Chromium	ppb	100	100	0.2	one sample	0.2	one sample	✓	Erosion of natural deposits
Haloacetic Acids (5)	ppb	NA	60	23	8 to 44	27	18 to 37	✓	By-product of drinking water chlorination
Chlorine	ppm	MRDLG=4	MRDL=4	Average = 0.89		Range = 0 to 1.9		✓	Water additive used to control microbes
Total Trihalomethanes	ppb	NA	80	34	18 to 51	38	21 to 70	✓	By-products of drinking water chlorination

**100% of the samples from the Tolt Treatment Facility were below 0.3 NTU in 2011**  
**ND - Non-Detected**      **NA - Not Applicable**      **TT -Treatment Technique**

#### 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 that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**NTU: Nephelometric Turbidity Unit**  
Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2011 is 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 2011 were below 0.3 NTU.

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

**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.

**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.

**Water Samples:**  
ppm: 1 part per million, or milligrams per liter = mg/L  
ppb: 1 part per billion, or micrograms per liter = ug/L  
1 ppm = 1000 ppb



## Your water WHERE DOES IT COME FROM?

Seattle Public Utilities (SPU) provides drinking water to over 1.3 million people in the Seattle metropolitan area. The Cedar River Reservoir and the South Fork Tolt River Reservoir supply almost all of SPU's water. These two surface water sources are located in remote, uninhabited areas of the Cascade Mountains. An aggressive watershed protection program is strictly enforced; no agricultural, industrial or recreational activities are allowed.

Northshore Utility District's primary water source comes from the South Fork Tolt River Reservoir. Occasionally, Cedar River water is used, depending

on snow pack accumulations, drought conditions and the availability of water transmission lines. Both water sources receive chlorine disinfection, fluoride addition, pH adjustment and ozone treatment.

SPU provides high quality drinking water. In order to meet new water quality requirements and improve the overall reliability of the systems, significant improvements have been made to the Tolt Filtration Plant and the Cedar Treatment Plant. For more information on these plants and other improvements, visit SPU's web site at [www.ci.seattle.wa.us/util/](http://www.ci.seattle.wa.us/util/).

**Tolt River Watershed Facts:**

- 12,500 acres in size
- Provides up to 100 million gallons of drinking water a day
- Can store up to 18.3 billion gallons of water
- Began operation in 1964
- Ranges from 760 feet in elevation at the regulating basin, to 5,535 feet at McLain Peak
- Receives between 90 and 160 inches of precipitation a year

## Monitoring LEAD, COPPER & RADON

Our source waters **do not** contain lead or copper. However, lead and copper can leach into residential water from building plumbing systems. Lead and copper monitoring, conducted at homes categorized as high risk, was most recently completed in 2011. Compliance is determined on a regional basis.

Homes or buildings that were built or re-plumbed with copper pipes and lead-based solder prior to 1985 are considered "high risk." Lead solder was banned in King County in 1985. "Worst case" conditions are defined as when water has not been used and has been sitting stagnant in the pipes for six hours or longer - such as first thing in the morning. The risk decreases as the plumbing ages. If you do not have copper plumbing, you are at low 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 Northshore Utility 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 or at <http://www.epa.gov/safewater/lead>.

The flushed water should not be consumed as it may contain dissolved metals. However, this water can be used for watering plants and washing dishes. If your home is not "high risk," you may still be at some risk from lead being leached from brass faucets.

Although we are not required to test for radon, Seattle Public Utilities, our water supplier, has tested each of its sources. Continued monitoring shows that radon is not present in either the Cedar or Tolt water supplies.

Parameter & Units	MCLG	Action Level +	2011 Results *	# Homes Exceeding Action Level
Lead, ppb	0	15	6	0 of 53
Copper, ppm	1.3	1.3	0.16	0 of 53

Sources of Contamination: Corrosion of household plumbing systems  
 \* 90th Percentile: i.e. 90 percent of the samples were less than the values shown  
 + The concentration of a contaminant  
 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.  
 ppm: 1 part per million, or milligrams per liter = mg/L  
 ppb: 1 part per billion, or micrograms per liter = ug/L  
 1 ppm = 1000 ppb

Water conservation helps salmon too. The foundation for a healthy salmon run is a healthy habitat, meaning good water quality and flow. Your actions to conserve water, particularly in the summer and early fall when flows are lowest, helps provide the habitat necessary for a healthy salmon population.

