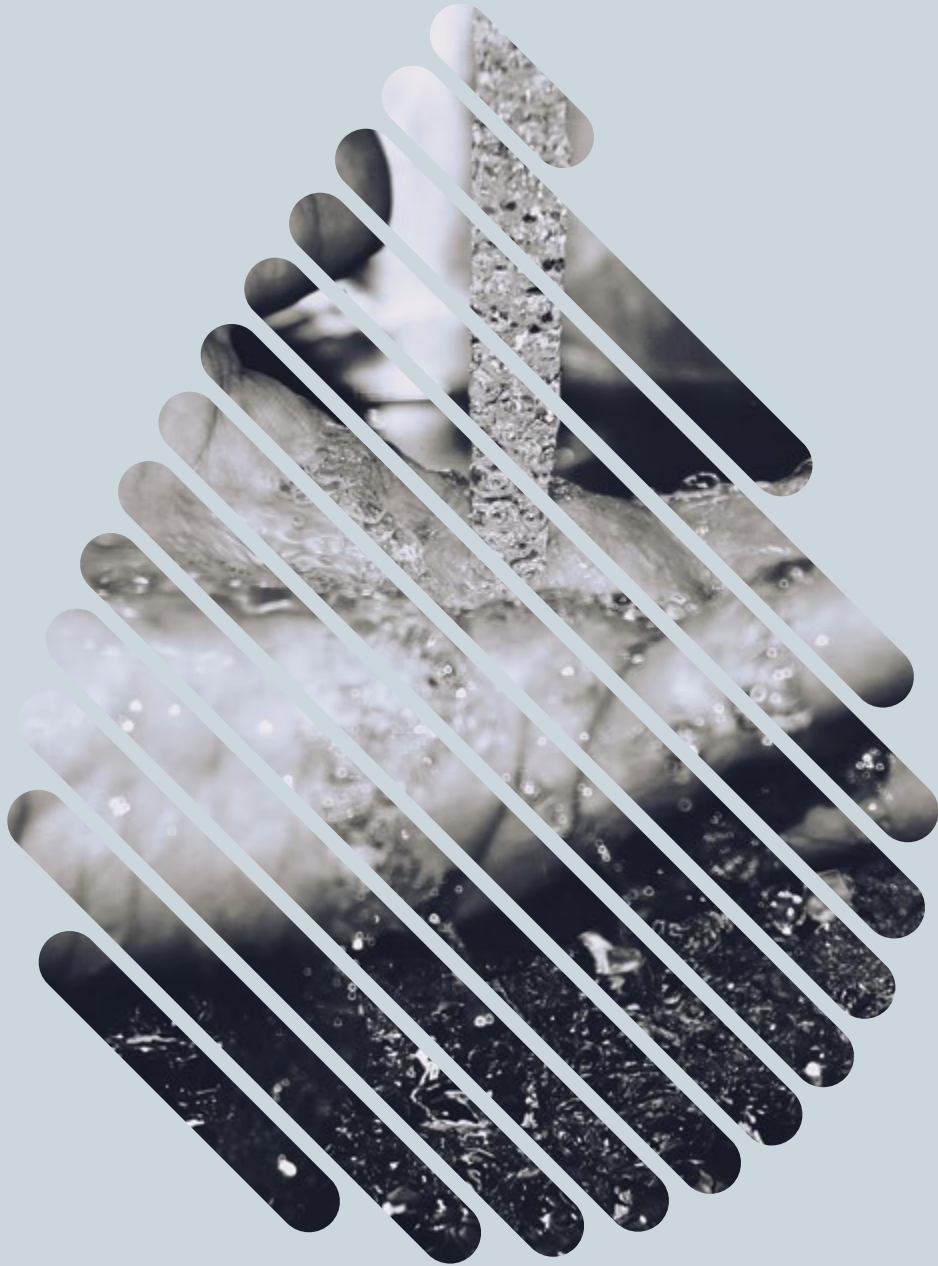




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TESTED & TRUSTED.
Your drinking water is pure & safe.

City of Lake Oswego Water Quality Report
Drinking water quality data from 2017

 LOOREGON  @CITYOFLAKEOSWEGO  @LAKEOSWEGOINFO

TESTED & TRUSTED. YOUR WATER IS PURE AND SAFE.

The 2018 Water Quality Report is based on data collected during the 2017 calendar year. The City prepares this report in accordance with Federal and State regulations to bring our citizens the best available information about the water they drink.



KNOW YOUR WATER:

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Welcome to the City of Lake Oswego's 2018 Water Quality Report.

The past three years have brought major upgrades and changes to our water system infrastructure and water treatment process through the Lake Oswego Tigard Water Partnership Project. I want to thank you for supporting these much needed investments.

I am happy to announce that these changes have resulted in significant measurable improvements in the drinking water quality that we provide to you, and in our water system resiliency. Important water quality parameters, such as disinfection by-products, have been reduced by over 55% due to the system upgrades and are now less than half of the Maximum Contaminant Level (MCL) set by State and Federal Safe Drinking Water requirements. State licensed drinking water operators work around the clock to make sure that the water is there every time you turn on the tap, and is the highest quality.

I am very proud to state that *your tap water is safe to drink and better than ever!* Please review this report and find out why the drinking water that is delivered to your tap every day - for less than a penny per gallon - is indeed tested and trusted.

Kari Duncan
Water Supply and Treatment Manager



Sourced from the Clackamas River

Your drinking water originates in the Clackamas River watershed, which is one of the highest quality in the state.

This watershed encompasses 940 square miles and begins in the Mount Hood National Forest. Water is withdrawn from the Clackamas River, then pumped through a pipeline buried beneath the Willamette River to the Lake Oswego-Tigard Water Treatment Plant located in West Linn.

A Clackamas River Watershed Source Water Assessment was completed in 2003. The report is available at www.deq.state.or.us/wq/dwp/swrpts.asp.



How is your drinking water treated?

The new treatment process is conventional treatment using ballasted flocculation and filtration, plus ozone:

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.

Filtration through a deep bed of granular activated carbon and silica sand removes any remaining tiny microbes and contaminants, such as cryptosporidium.

Disinfection is accomplished using a small amount of chlorine. pH is adjusted to prevent corrosion of household plumbing.

◀ Top to bottom: Water Treatment Plant Manager, Kari Duncan, showing the LO Junior High Robotics Class the micro-sand used during the ballasted flocculation process; one of two ozone generators that uses electrical energy to transform oxygen into ozone gas; residents touring the new granular activated carbon filters at the water treatment plant, guided by Operator, Cole Trusty.

For more information on how your drinking water is treated, visit www.lotigardwater.org

YOUR LO WATER BY THE NUMBERS

Your Drinking Water Meets or Exceeds Every State and Federal Standard

Your drinking water is tested every day. 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.

The accompanying table shows the results of water quality testing for 2017. Every regulated substance detected in Lake Oswego's drinking water is listed. All of the substances were either not detected or were detected at levels well below limits set by the EPA and State of Oregon for safe drinking water.

For a complete listing of all test results, go to the Oregon Drinking Water Service website: <https://yourwater.oregon.gov/inventory.php?pwsno=00457>.

| Contaminants (Units) | MCLG or MRDLG | MCL, TT, or MRDL | Your Water | Range | | Sample Date | Violation | Typical Source |
|---|---------------|--------------------------|--|----------------------------------|------|-------------|--|---|
| | | | | Low | High | | | |
| Disinfectants & Disinfection By-Products | | | | | | | | |
| Chlorine (CL ²) (ppm) | 4 | 4 | 0.83 (average) | 0.55 | 1.03 | 2017 | No | Water additive used to control microbes |
| Haloacetic Acids (HAA5) (ppb) | NA | 60 | 13.3 (highest quarterly average) | 1.4 | 8.0 | 2017 | No | By-product of drinking water chlorination |
| Total Trihalomethanes/ (TTHMs) (ppb) | NA | 80 | 20.2 (highest quarterly average) | 5.5 | 21.0 | 2017 | No | By-product of drinking water disinfection |
| Bromate (ppb) | 0 | 10 | Not Detected (ND) | ND | ND | 2017 | No | By-product of drinking water treatment with Ozone |
| <p><i>"Since the introduction of the new treatment process, disinfection by-products have decreased over 55%. This and other water quality parameters demonstrate that the improved treatment process has resulted in better water quality for our residents!"</i></p> <p>— Kari Duncan, Water Supply and Treatment Manager</p> | | | | | | | | |
| Microbiological | | | | | | | | |
| Fecal Coliform/E. Coli (positive samples) | 0 | 0 | 0 | Not Detected | | 2017 | No | Human and animal waste |
| Total Coliform (% positive samples/month) | 0 | 5 | 0 | Not Detected | | 2017 | No | Naturally present in the environment |
| Turbidity (NTU) | NA | TT 0.3 in 95% of samples | 100% of samples meet turbidity standards | Highest single measurement: 0.16 | | 2017 | No | Soil runoff |
| Inorganic Contaminants | | | | | | | | |
| Copper - action level at consumer taps (ppm) | 1.3 | AL=1.3 | 90 th percentile: .039 Homes exceeding AL: 0 | | 2017 | No | Corrosion of household plumbing systems; erosion of natural deposits | |
| Lead - action level at consumer taps (ppb) | 0 | AL=15 | 90 th percentile: 3 Homes exceeding AL: 2 | | 2017 | No | Corrosion of household plumbing systems; erosion of natural deposits | |
| Nitrate (ppm) | 10 | 10 | 0.10 | | 2017 | No | Runoff into river from fertilizer use; erosion of natural deposits | |
| Barium (ppm) | 2 | 2 | 0.004 | | 2015 | No | Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries | |

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.

Cryptosporidium in Untreated Clackamas River Water

Cryptosporidium is a harmful micro-organism found in surface water throughout the U.S. Two years of monthly *Cryptosporidium* monitoring of raw, untreated Clackamas River water, started in October 2016.

- **2017:** 12 samples, 0 had detectable *Cryptosporidium*.
- **2016:** 3 samples, 1 had detectable *Cryptosporidium* Oocysts at 0.1 Oocysts/Liter of water.

Comparable with historical results, the samples from recent testing indicate very low occurrence of *Cryptosporidium*. The water treatment process used includes coagulation, settling, ozonation, and filtration processes optimized for *Cryptosporidium* removal.

Sources of Contaminants

In order to ensure that tap water is safe to drink, the EPA sets regulatory limits on the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration sets limits for 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 earth's surface or through the ground it dissolves naturally occurring minerals and, in some cases, radioactive material. Drinking water can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water throughout the United States include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems e.g. coliform and Giardia.
- **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, e.g. radon.

Glossary: EPA Water Quality Definitions

Action Level (AL): the concentration of a contaminant which, if exceeded, triggers a treatment or other requirements 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 technology.

Maximum Contaminant Level Goal (MCLG): the level of a contaminant in drinking water below which there is no known 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.

Maximum Residual Disinfectant Level Goal (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 contamination.

Nephelometric Turbidity Units (NTU): the standard unit of measurement used in water analysis to measure turbidity in a water sample. Turbidity is a measure of how clear the water looks.

Parts per Million (ppm): one part per million is equivalent to half of an aspirin tablet dissolved in a full bathtub of water (approximately 50 gallons).

Parts per Billion (ppb): one part per billion is equivalent to half of an aspirin tablet dissolved in 1,000 bathtubs of water (approximately 50,000 gallons).

pH: a scale that measures how acidic or basic drinking water (or another substance) is.

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

Frequently Asked Questions

Q: Why is my water pressure too high/too low? What should my water pressure be?

A: Water pressure varies through the City but pressure at your home should be between 30-100 psi. If you have a question about your home water pressure please call Public Works at 503-635-0280 or visit www.lakeoswego.city/publicworks/water.

Q: Is there fluoride in my water?

A: Lake Oswego does not add fluoride to the water and there is no detectable natural fluoride in the Clackamas River source. Please consult your dentist or pediatrician to determine if fluoride supplements are needed for dental health.

Q: My water is discolored and/or tastes bad, what should I do?

A: We do not recommend that you drink the water if it is discolored, please flush the lines until the water runs clear. If it does not clear up after a few minutes of flushing, call 503-635-0280. Water taste changes may be due to a variety of factors in the home or in the water system. It is best to consult our water quality experts at the Water Treatment Plant on 503-635-0394 for advice or check our website for tips: www.lakeoswego.city/publicworks/water.

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 persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline** 1-800-426-4791 or visiting www.epa.gov/safewater.

Drinking and Bottled Water Notice

Drinking water, including bottled water, may be reasonably expected to contain small amounts of some contaminants. However, 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's **Safe Drinking Water Hotline** at 1-800-426-4791.

Lake Oswego offers FREE lead testing to its water customers.

Lead Safety

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead is rarely found above detectable levels in the City of Lake Oswego's source water, the Clackamas River.

The main source of lead in drinking water is typically from household plumbing or components associated with water service lines. The City of Lake Oswego is responsible for providing high-quality drinking water, but cannot control the variety of materials used in private 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 two minutes before using water for drinking or cooking.

Free Lead Testing

If you are concerned about lead in your water, you may wish to have your water tested. The City offers FREE lead testing to its water customers— you can pick up a test kit and instructions at the 3rd floor reception desk at City Hall.

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 www.epa.gov/safewater/lead.



BACKFLOW TESTING

It is once again time to think about backflow testing. Backflow assemblies separate potable water from non-potable water sources such as irrigation systems, medical equipment and private pump systems to name a few. These devices help protect the public water system from possible contamination. Backflow devices are required by the City of Lake Oswego and the State of Oregon and must be tested annually.

As of 2017, all backflows must be tested **no later than July 15th** of each calendar year. For more information and a complete list of certified backflow testers, please visit City of Lake Oswego's website at www.lakeoswego.city/backflow or call 503-534-5674.

UNDERSTANDING THE VALUE OF YOUR WATER



1 gal.

\$0.01



16 oz.

\$1.00

A Penny Per Gallon

You pay less than a penny per gallon of high-quality tap water, delivered to your home. By comparison, a 16-ounce container of bottled water costs approximately \$1.00 and is not required to meet the same rigorous testing standards as tap water. The true value of safe tap water cannot be quantified, considering all that customers receive when you turn on the tap.

Keeping You Healthy and Safe

A safe water supply is critical to protecting public health - the first obligation of all water suppliers. Without our modern water systems, diseases such as cholera and dysentery would be a part of everyday life.

90+
Contaminants

120
Standards

In the United States, water utilities monitor for more than 90 contaminants and must meet close to 120 standards for water safety and quality. Those water standards are among the world's most stringent.

USE LESS SAVE MORE

SAVE WITH A WATER AUDIT

Kevin McCaleb, our Water Conservation Specialist, offers home visits to Lake Oswego residents to find ways to help you save water and money.

"[When we moved into our home] we were struggling to get a handle on our water use. We had plenty of interest in using water efficiently and cost-effectively, but we lacked information and expertise.

Kevin had exactly the information and expertise we needed. He spent the time with us to go through our indoor/outdoor water savings priorities, answering all our questions along the way. We were very impressed with his knowledge and his recommendations.

I am really excited to address all the areas where we were previously wasting water. I can't thank you and your team enough for creating this water audit program. I'm looking forward to getting the irrigation system back in shape and cutting out that wasted water from our monthly bill."

*Eliot,
Lake Oswego Resident*

To schedule a **FREE** water audit with Kevin, call **503-675-3747** starting May 1.

OTHER WAYS TO SAVE

From your kitchen to your garden, there are little things you can do to make a big difference on your bill. Get all the tips at: www.lakeoswego.city/publicworks/water

THANK YOU FOR TAKING THE TIME TO KNOW YOUR WATER!

WWW.LAKEOSWEGO.CITY/2018-WATER-REPORT

WIN \$100 TOWARDS YOUR NEXT UTILITY BILL

To enter to win, visit bit.ly/YourLOWater then complete and submit the form by July 31, 2018

Contest Rules:

- Entrants must be a Lake Oswego water customer to win.
- Only one entry is allowed per customer.
- Entrants must complete and submit all the required information on the online form by July 31, 2018.
- One winner will be randomly selected and announced in August 2018.

MORE INFORMATION?

The City of Lake Oswego is here for you!

www.lakeoswego.city/publicworks

Water Quality and Treatment:

503-635-0394 or

WaterTest@ci.oswego.or.us

Utility Billing: 503-635-0265

Water Operations: 503-635-0280

Water Conservation: 503-675-3747

or kmccaleb@ci.oswego.or.us

Lake Oswego Tigard Water Partnership

www.lotigardwater.org

United States Environmental Protection Agency

Safe Drinking Water Hotline

1-800-426-4791

www.epa.gov

Oregon Health Authority

Drinking Water Services

1-503-731-4010

www.public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Pages/index.aspx

Regional Water Providers Consortium

www.regionalh2o.org

Clackamas River Water Providers

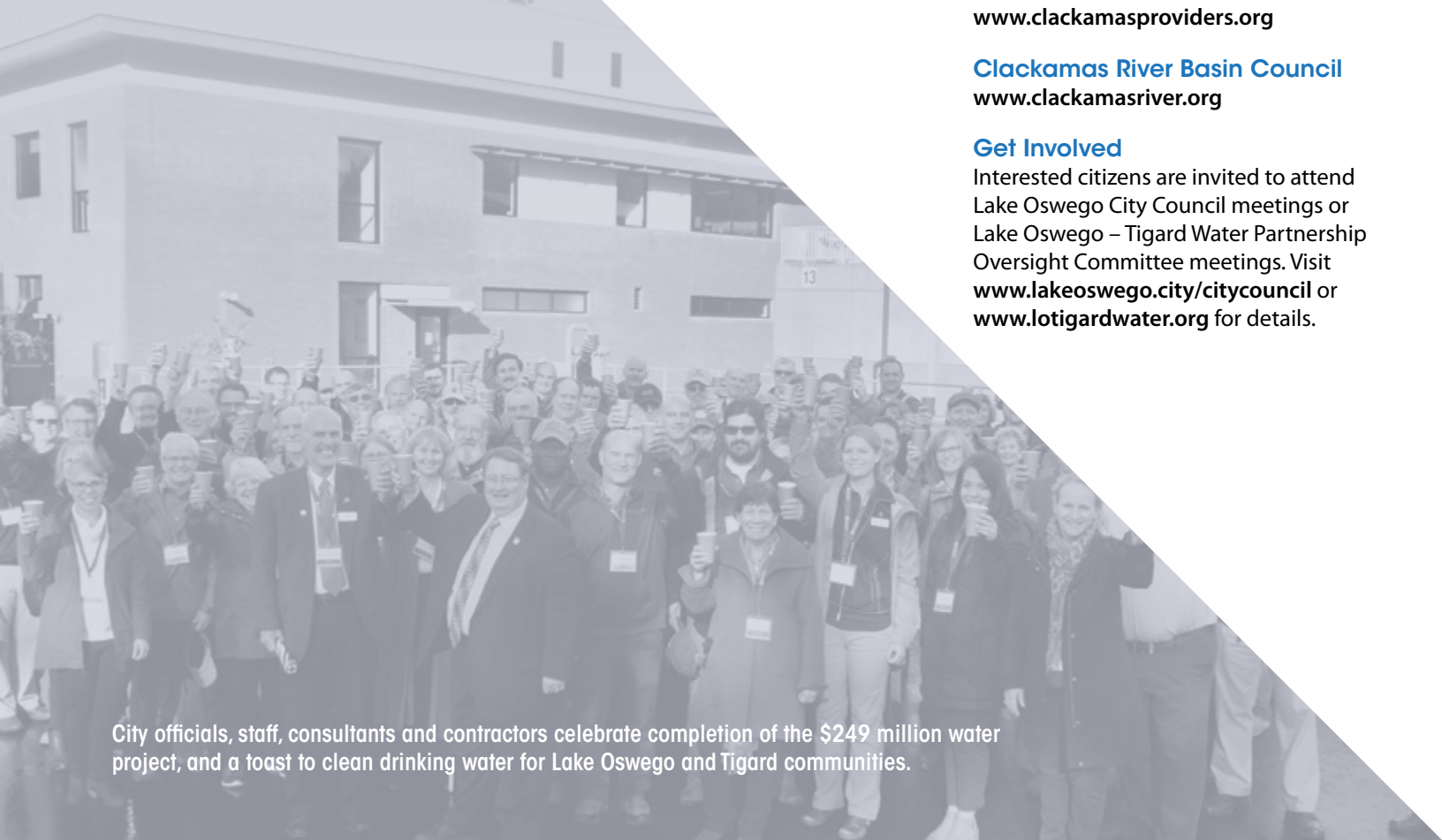
www.clackamasproviders.org

Clackamas River Basin Council

www.clackamasriver.org

Get Involved

Interested citizens are invited to attend Lake Oswego City Council meetings or Lake Oswego – Tigard Water Partnership Oversight Committee meetings. Visit www.lakeoswego.city/citycouncil or www.lotigardwater.org for details.



City officials, staff, consultants and contractors celebrate completion of the \$249 million water project, and a toast to clean drinking water for Lake Oswego and Tigard communities.