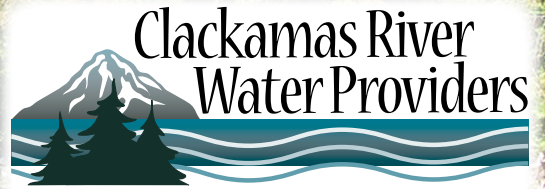




Facebook@CRWP



CRWP YouTube Channel



Working together to protect and conserve our drinking water.

Winter 2025 News

NEW Oregon Health Authority (OHA)

Drinking Water Source Protection Award

Drinking water source protection refers to actions that protect raw water sources (such as rivers, streams, lakes, reservoirs, springs, and groundwater) that provide water to public water system wells, springs, and intakes. By addressing potential and current concerns at the source, water systems can reduce the risk of exposing consumers to contaminated water, as well as reduce treatment costs. Implementing source protection might also help avoid or defer the need for complex treatment in the future. In Oregon source water protection efforts are voluntary.

To acknowledge excellence in drinking water source protection efforts, OHA's new program awards a certificate of recognition to water systems that have made substantial progress in implementing measures to protect their drinking water sources from contamination. *continued on page 3*

What's Inside:

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Water Systems	P9
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Activity Book	P11



CHRISTINE HOLLENBECK, Public Education and Conservation Program Coordinator, (503) 723-3511 • christine@clackamasproviders.org
KIM SWAN, Water Resource Manager, (503) 723-3510 • kims@clackamasproviders.org

CRWP's Source Water Protection Efforts



The CRWP developed a Drinking Water Protection Plan in 2010 for the Clackamas River to provide its members with a long-term source water protection strategy. This was updated in 2021. The purpose of this Plan is to provide the CRWP with a road map of potential strategies and programs to continue to implement over the next decade to preserve the Clackamas River as a high-quality drinking water source and to minimize future drinking water treatment costs.

The primary goals of this Plan are to:

- 1. Identify, prevent, minimize and mitigate** activities that have known or potentially harmful impacts on drinking water quality so that the Clackamas River can be preserved as a high-quality drinking water source to meet the needs of an increasing human population into the future.
- 2. Identify climate mitigation and adaption** strategies that will help ensure a more resilient watershed and drinking water source.
- 3. Promote public awareness and stewardship** of healthy watershed ecology in collaboration with other stakeholders.

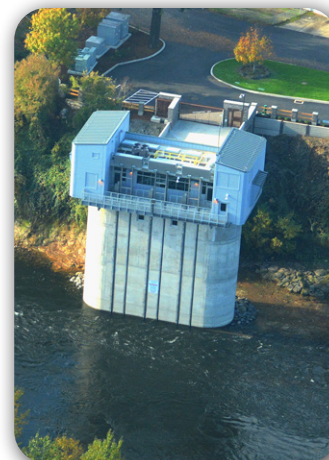
What Management Strategies Does the Plan Recommend?

The drinking water protection plan includes nine elements which outline management measures, programs, and strategies to accomplish the goal of addressing the various threats to water quality and to ensure the long-term viability of the Clackamas River

as a drinking water source.

They include:

- 1. Basin Analysis: Studies, GIS, Modeling and Water Quality Monitoring Subprogram.**
- 2. Climate Change/Water Supply Subprogram.**
- 3. Education and Research Assistance Subprogram.**
- 4. Point Source Evaluation and Mitigation Subprogram.**
- 5. Nonpoint Source Evaluation and Mitigation Subprogram.**
- 6. Disaster Preparedness and Response Subprogram.**
- 7. Public Outreach and Information Sharing Subprogram.**
- 8. Watershed Land Use Tracking and Management Subprogram.**
- 9. Land Acquisition Subprogram.**



Each year the Clackamas River Water Providers implement a variety of ongoing programs and individual projects that benefit the watershed and promote source water protection efforts in the first seven management strategies areas. We are very excited about receiving the State's new Drinking Water Source Protection Award for recognition of all the work we have been doing in the Clackamas River watershed. To learn more about the water supply and programs we are implementing go to <https://www.clackamasproviders.org/watershed-protection> or see what we accomplished this past year by checking out our [CRWP Annual Report FY 2023-24](#).

How to Protect Water Pipes From Freezing

Did You Know?

When water freezes, it expands about 9%. So, if the temperature of your pipes drops below 32 degrees, even for a short period, you're more likely to have a pipe fracture or worse.

There are many things you can do inside and outside to protect your water pipes from freezing and make sure your home and family are prepared for the cold winter months.

Close Crawl Spaces and Vents

Anywhere cold air blows on a pipe, it creates the potential for freezing. To make sure your pipes are protected from the cold close crawl space vents and stuff insulation over the openings. Even a tiny hole can let in a lot of cold.

Protect outside pipes and faucets

In some homes, the outside faucets and hose bibs have a separate shut-off, if this is the case shut off the outside water. Then go outside, disconnect the garden hose and if the outside water has been shut off, turn on the faucets to drain water from the line. Leaving the faucets in the open position, wrap or cover all outside faucets and hose bibs to protect them from the cold.



Winterize Irrigation Systems

Turn off and drain automatic sprinkler systems and backflow assembly devices. Wrap backflow devices with insulating material.

continued on page 3

Protect Your Pipes continued



Open the cupboard doors beneath your sinks

Opening the cupboard doors beneath your sinks will allow warm air to circulate around the pipes and will help keep them from freezing. If you're anticipating a deep freeze, consider using a fan to help circulate the air near the pipes, or purchase a small space heater for some extra temporary heat.

Allow water to trickle from faucets

In extreme or long-term cold spells, allow the water to trickle from your inside faucets to prevent freezing. Over a 24-hour period this will cost less than 15 cents per faucet.

Emergency Shut-Off Valve

Teach everyone in your household where your emergency water shut-off valve is and how to use it. In residential homes, most shut-off valves are in the crawl space, basement, garage, or outside near the foundation. If a pipe bursts inside your home, this valve will turn the water off.



Never turn off the heat when you leave home

During the winter set the temperature to at least 55-60F degrees, and if you have multiple heat zones, be sure to adjust all thermostats appropriately.

Leaving for the winter?

If you plan to be gone for an extended amount of time this winter call your water provider and have them shut off and lock your water meter. This can prevent excessive water damage if a pipe burst while you are away.

Have emergency telephone numbers handy

Despite all best precautions water pipes may still freeze. Keep the number to your local water provider and your plumber posted in a location where everyone can see it in case of an emergency.

OHA Awards continued

All [CRWP members](#) received this new award for our source water protection efforts in the Clackamas River watershed ensuring that we can preserve the River as a high-quality drinking water source and minimize future drinking water treatment costs while being good stewards of the River.

Certificates go to: City of Estacada, City of Gladstone, City of Lake Oswego (Lake Oswego Municipal Water), City of Oregon City, City of Tigard, City of West Linn, Clackamas River Water, North Clackamas County Water Commission, Oak Lodge Water Services, South Fork Water Board, and Sunrise Water Authority.

Winter Quiz:

1. Source water protection can reduce the need for additional treatment to meet water quality standards.

- A. True
- B. False

2. To winterize irrigation systems, you'll need to:

- A. Drain sprinkler systems
- B. Turn off backflow assembly
- C. Wrap backflow devices
- D. All of the above

3. Water meters are most often made of bronze or brass and plastic.

- A. True
- B. False

4. Drinking water source protection refers to actions that protect sources such as:

- A. Reservoirs & Springs
- B. Rivers, Streams & Lakes
- C. Groundwater
- D. All of the above

Answers - Can be found on page 9

Be Prepared for Winter Weather Before the Storm

The following information provided by, [PublicAlerts](#):

Charge Devices & Gather Supplies

Charge all of your communication devices – cell phones, tablets, laptops, etc. Make sure you have [emergency supplies](#), such as medication, [water](#), shelf-stable food, flashlights, and batteries. Do your shopping before the storm arrives. Try not to buy more than you need so we can avoid supply shortages.

Make a Plan

Have a [power outage plan](#). How will you care for [children](#), [pets](#), and anyone with [additional needs](#)? Can you stay warm with what you have? Can you safely get to a friend's house? Should you plan to go to a local library or warming center to warm up?

Sign UP for Alerts

[Sign up](#) for the PublicAlerts so you can get life-safety information by phone, text and email. And explore other ways to [stay informed](#).

Monitor Weather, Closures & Delays

The [National Weather Service](#) provides up-to-date information. Following warning information if there is a weather watch, advisory, or warning and [know the difference](#). Check local news and school or business website for info about closures. Sign up for [FlashAlerts](#) to receive info about many closures.

Check on Others

Ask friends, family, and [neighbors](#) if they need help getting ready or want you to check on them during the storm. This is especially important if they are experiencing physical or Mental challenges. If you need help, please ask.

If You Must Travel, Be Prepared

If you must travel during winter weather, make sure you're prepared. Keep supplies in your car and know what to do if you get stuck. Print a winter driving guide and keep it in your vehicle.

[Oregon Winter Driving Guide](#) (ODOT)

[Washington Winter Driving Guide](#) (WSDOT)



Take 5 minutes to be more prepared
[PublicAlerts.org/signup](#)

#ResolveToBeReady

Sign-up for Public Alerts

By signing up you can receive emergency notifications for your home or other address (such as business). You will only be contacted when the associated address is affected by an emergency.

If the call is picked up by an answering machine, it will leave a message and not call back. If the number is busy or there is no answer, the system will try contacting your

other contact methods. Once you have acknowledged receipt of a message on one device, the system will stop trying to contact your other devices.

By providing your contact information as a county resident you can opt-in to receive critical emergency messaging via email, phone call and text during times of disaster. Important messages that could be relayed include notices to evacuate, shelter-in-place, shelter locations and other extremely important information. To learn more and sign-up [CLICK HERE](#).

Basin Partner

Protect our most precious resource



with a Water and Environmental Technology Degree

Water is not just a resource, it's the lifeblood of our planet, essential for all living things. Water sustains ecosystems, communities and individual lives. The ever-growing demand for clean water and responsible environmental practices creates a high demand for skilled professionals in the water and environmental sector.

Clackamas Community College's **Water Environmental Technology (WET) Program** is training our future drinking water and wastewater operators, empowering students to become one of these crucial professionals. Through a comprehensive curriculum and hands-on experiences, students gain a deep understanding of water treatment and distribution, wastewater collection and treatment, environmental regulations and laboratory analysis techniques.

The WET program has two certificate programs, a Water and Environmental Technology Certificate and the High Purity Water Certificate, both of which can be completed in about one year, as well as a two-year Water and Environmental Technology

Associate Degree. These certificates can boost a resume and qualify students for jobs, even before graduation due to the high need in this field.

Working in Water is more than just a job, a career in water and environmental technology offers personal satisfaction, while directly contributing to ensuring clean water for communities and protecting our environment for future generations.

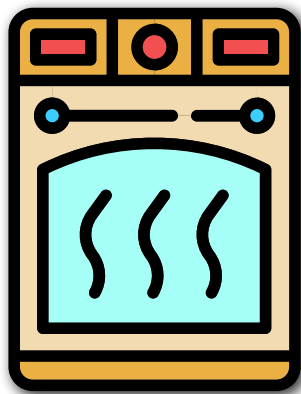
Learn more about the **Water and Environmental Technology** program in this [video](#).

For a detailed description and learning outcomes for this program, view the [course catalog](#) and click on the following links to learn more about the WET [Associates Degree](#) and the [Certification](#) programs.

Ready to make a difference? Contact [Clackamas Community College](#) today to take the first step toward a rewarding career in water and environmental technology.

6 Water Saving Tips

- Done with your holiday baking? Use your leftover food coloring to [check your toilet for leaks](#).
- Let your dishwasher do the work. Energy Star certified dishwashers include several innovations that reduce energy and water consumption.



- Thawing food? Use the microwave, a bowl of water, or place it in fridge overnight instead of running the tap. You'll save about two gallons of water for each minute the faucet does not run.
- Freeze the grease instead of pouring it down the drain and letting the water run. Keep your

kitchen sink draining well by pouring all cooking grease into a can, freezing it, and then tossing the frozen contents into the trash.

- Using one glass all day will mean fewer dishes to do. Especially if everyone joins in!
- Scrape instead of pre-rinsing. Save yourself up to 20 gallons of water by scraping food off your dishes instead of pre-rinsing them.

Visit our [website](#) for more indoor water saving tips.



CRWP Careers in Water - Highlights

Like most industries, the water industry is in need of employees and our CRWP members are no exception. It takes many different professionals in many different positions to deliver clean, safe drinking water to our communities 24/7, 365 days a year.

A career in the field of public drinking water is rewarding, secure, well-paid, has good benefits, and a great way to contribute to your community. Right now, our members need a number of qualified people to fill a number of positions. Some of the career opportunities include working in Customer Service, Finance, Engineering, Human Resources & Payroll, Information Technology, and Communications, as well as positions in the field such as Water Quality, Distribution, Conservation, and Water Treatment Operators.

Click on the links below to connect with our CRWP members and learn more about careers in drinking water and positions that are currently available.

• City of Lake Oswego

Water Treatment Plant Manager – Water
Salary, \$121,060.56 - \$148,642.56 Annually
Job Type, Full Time
[To Learn More and Apply](#)

• Clackamas River Water

Engineering Associate
Clackamas, OR
\$85,379 - \$112,353 Hourly
[To Learn More and Apply](#)



• Oak Lodge Water Services

Finance Director
Oak Grove, OR
Full Time - \$130,000.00 - \$170,000.00 Annually
Category: Accounting and Finance / Management / Professional / Executive Management
Department: Administrative Services
[To Learn More and Apply](#)



• Sunrise Water Authority

Accounting Specialist
Happy Valley, OR
Full-Time - \$60,320.00 - \$66,560.00 Annually
Category: Clerical & Data Entry / Accounting and Finance
Department: Business Operations
[To Learn More and Apply](#)

Some of our CRWP members may also have Internships, Summer Help, and Apprenticeship programs available, contact chrisitne@clackamasproviders.org for more information.

Interested in training, experience, and education in the water industry? Visit Clackamas Community College: [Water and Environmental Technology Certificate](#). For more information, check out our 'Partner' article on page 5.

Scholarships Opportunities:

- [Pacific Northwest Clean Water Association Scholarship Program](#)
- [American Water Works Association Pacific Northwest Section Scholarships](#)



For more information about career opportunities in drinking water visit the following websites:

- [Clackamas River Water Providers Careers in Water](#)
- [Regional Water Providers Consortium Careers in Water](#)
- [Water Environment Federation Careers in Water](#)
- [American Water Works Association Career Center](#)
- [Pacific Northwest Section American Water Work Association Careers](#)
- [Work for Water](#) – Jobs in Oregon
- [Government Jobs](#) – Water Treatment

Faces of Drinking Water

by [Christine Hollenbeck](#)

For our Winter 2025 interview article we interviewed Christina Irish, Chief Financial Officer for [Clackamas River Water](#). We want to remind people that public drinking water is a business which has many people holding many different positions ensuring the delivery of clean safe drinking water 24/7, 365 days a year.

CRWP: Christina, how long have you been working for Clackamas River Water (CRW)?

CHRISTINA: I'm fairly new, I started here at CRW the end of June '24.

CRWP: Can you tell us about your position as CFO at CRW?

CHRISTINA: As the Chief Financial Officer (CFO) at Clackamas River Water, I am responsible for overseeing the finance, accounting, and customer service departments, ensuring smooth and efficient operations across these areas. I manage the district's budget, ensuring financial resources are allocated effectively to meet operational and capital needs. Additionally, I lead the audit process, ensuring compliance with financial regulations and transparency in reporting. I collaborate closely with other department managers, particularly on Construction Improvement Projects (CIP), to ensure proper financial planning, budgeting, and oversight for the successful completion of district projects. My role involves a strategic focus on financial stability, operational efficiency, and the long-term growth of the district.

CRWP: How is your position important to the function of CRW?

CHRISTINA: My position as CFO for Clackamas River Water (CRW) is vital to ensuring the financial health and sustainability of the district. As the steward of the district's finances, I am responsible for managing budgets, financial reporting, and audits, which are critical for maintaining transparency, accountability, and compliance with regulations. By overseeing the finance, accounting, and customer service teams, I help optimize resources, improve operational efficiency, and ensure that customer needs are met. Additionally, my collaboration with other department managers on Construction Improvement Projects ensures that CRW can effectively manage capital investments, contributing to the district's growth and infrastructure development. Ultimately, my role supports CRW's mission to provide reliable, cost-effective water services to the community while maintaining fiscal responsibility.

CRWP: How did you acquire your position at CRW?

CHRISTINA: I held a position in the school district sector for most of my career and became interested in this position when I was contacted by a recruiter.

CRWP: What is your background prior to working in drinking water?

CHRISTINA: Prior to Clackamas River Water, I had spent 16 years working in finance for schools. I was most recently the Director of Finance for the Estacada School District for 3 years.



Christina Irish
Chief Financial Officer
Clackamas River Water



CRWP: What is your favorite/least favorite part of your position?

CHRISTINA: I really enjoy working on the financial audit. I am not sure that I have a least favorite part.

CRWP: Do you plan on retiring from Clackamas River Water?

CHRISTINA: That would be amazing.

CRWP: What accomplishments are you most proud of in your career?

CHRISTINA: Every year of my career we have completed the Annual Comprehensive Financial Report and won awards.

CRWP: What advice would you give to someone starting out in the field of public drinking water (What do you wish you knew your first week working at CRW)?

CHRISTINA: Get to know the other managers and learn how your role and department work together with theirs.

CRWP: How has the industry changed since you began working in the water industry?

CHRISTINA: More regulations and controls. This could be for grant reporting to internal controls.

CRWP: What do you think is most important about your position?

CHRISTINA: Working with the other departments to support them in providing a high-quality product (H2O) and supporting my team in providing great customer service.

CRWP: What can the public do to help make your job easier?

CHRISTINA: Be involved, join the budget committee and learn how governmental accounting is different than public accounting.

CRWP: What is the one thing you can't live without at work?

CHRISTINA: Coffee! My 10-key and spreadsheets.

CRWP: What would you say water is to you?

CHRISTINA: I am so new, but I love that I work at a place that provides an essential service to the community.

CRWP: What's on your to-do list?

CHRISTINA: It has been a busy five months since I started. I am just wrapping up the audit, working on a software transition and learning the difference between school finance and water. My current list is to have a successful software transition and to continue learning so I can be an asset to my team, coworkers, and CRW.

The CRWP wants to welcome Christina to our group. People like you are crucial to making the business of public drinking water run smoothly. Thank you for taking the time for our interview.

Conservation Tools

Winter is the perfect time to look at your indoor water use and see if there are things you can do to make your water use more efficient. The Clackamas River Water Providers have a number of **FREE** conservation tools and devices to help you save water at home.

Water Audit Kits

Performing an audit on your water use will help you understand where you can save the most water. This process is simple and may take an hour to complete. It will help you locate leaks, prioritize fixing them, and help you start saving money and water.

Leak Detection Tablets/Strips

Leak detection tablets/strips are placed in the tank of the toilet to test your toilet for leaks. Learn more about fixing [faucet](#) or [toilet leaks](#).

Toilet Fill Cycle Diverter

When a toilet is flushed, both the tank and the bowl need to be refilled. On many toilet designs, the bowl will fill sooner than the tank. In this case, the water will continue to run into the bowl until the tank water level is high enough to shut off the fill valve. Water that enters the bowl after it is full simply overflows down the drain and is wasted. The fill cycle diverter directs more water to the tank and less to the bowl during refill. The goal is to have both the tank and the bowl finish filling at the same time, or as close to the same time as possible. Estimated savings are ½ gallon per flush (gpf).

1.0 gpm Bathroom Faucet Aerator

An aerator reduces the amount of water that comes from the tap without impacting water pressure. Uses only 1.0 gallons of water per minute (gpm).

1.5 gpm Kitchen Faucet Aerator

This aerator is for your kitchen or utility sink, and flows at 1.5 gallons per minute (gpm).

1.0 gpm Bathroom Shower Head

This shower Head reduces the amount of water that comes from the tap without impacting water pressure and uses only 1.0 gallons of water per minute (gpm).

5-minute Shower Timer

Taking a shorter shower, in combination with using a low-flow showerhead, can result in significant savings. This timer



take a look *Saving Water Makes Cents!*

home water audit kit

For Testing Home Water Use

Clackamas River Water Providers (CRWP)
Encourages you to take a look at your home water system to identify ways you can conserve water and be more efficient with our precious water resource.

FOR MORE INFORMATION: To request free conservation devices for your home or for information on how to participate in our Conservation Rebate Program, please visit us at www.clackamasproviders.org or call 503-723-3511.

PLEASE NOTE: This water audit is for indoor use only.

Members of the Clackamas River Water Providers:
Clackamas River Water, City of Hillsdale, City of Gladstone, City of Lake Oswego, Oak Lodge Water District, South Fork Water Board (Oregon City & West Linn), Sunnyside Water Authority (Happy Valley & Damascus), and City of Tigard.

This kit includes: Toilet leak detection tablets • Flow meter bag • Drip gauge

CRWP Public Education and Outreach Coordinator
14275 S Clackamas River Drive
Clackamas City, OR 97045
503-723-3511
christine@clackamasproviders.org

Clackamas River Water Providers
Working together to protect and conserve our drinking water.

suctions onto your shower wall, and when all the sand has run through, time's up! (Note: This device does not "shut off" the water after 5 minutes, although many parents of teenagers have asked for this feature!)

Indoor Water Rebates

This winter take advantage of our indoor rebates.

Clothes Washer Rebate

Receive up to \$75 when you purchase a new Energy Star certified clothes washer.

Toilet Rebate

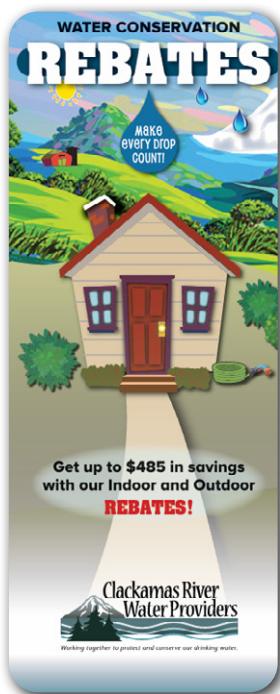
Receive up to \$100 dollars when you replace your old water wasting toilet with a new EPA High-Efficiency toilet and properly dispose of the old toilet.

Home Leak Detection Rebate

You can mitigate or prevent water damage from leaks using a leak detector that sends information to your computer or an app on your phone. Receive up to \$100.

For more information, eligibility requirements, and to apply on line visit our [rebate page](#).

For more information about the water conservation tools and devices the CRWP provides, visit our website [HERE](#). To request any of the devices listed above, email christine@clackamasproviders.org or call 503-723-3511.



WATER CONSERVATION

REBATES

MAKE EVERY DROP COUNT!

Get up to \$485 in savings with our Indoor and Outdoor **REBATES!**

Clackamas River Water Providers
Working together to protect and conserve our drinking water.

How Water Systems Work

Water Meters



Water metering is the process of measuring water use. Water meters use mechanical, magnetic or electronic devices to measure the amount of water being used. An effective metering program allows us to compare measured flows in our systems and metered deliveries to our customers.

Residential and commercial water meters are generally owned, read and maintained by the public water provider. Water meters are read regularly and you receive a bill based

the amount of water used since the meter was last read. Meters are most often made of bronze or brass and plastic, and are often located in front of your property, inside a concrete or plastic meter box that is set flush with the ground.

Water meters not only help utilities collect the revenue they are due, they also help pinpoint leaks, locate pressure problems along their waterways, and identify and study periods of peak and non-peak use among both residential and business consumers.

METER MAINTENANCE PROGRAMS

All CRWP members are required to have Meter Maintenance Programs which facilitate regular calibration and/or replacement of water meters to ensure accuracy. Water meters tend to deteriorate with age, resulting in inaccurate readings. Old meters are often damaged or do not record water use at all. Inaccurate readings result in inaccurate information about water usage which impacts system audits and leak detection efforts.



Meter maintenance programs are designed to test all system meters at regular intervals. This is to ascertain that meters are appropriately sized, and to ensure meters are working properly. In addition, it identifies meters that should be replaced or repaired. Accounting for all water is a number one priority for our water utilities.

Winter Quiz:

Answers

Question 1 - Answer is A
Question 2 - Answer is D

Question 3 - Answer is A
Question 4 - Answer is D

The 50th Anniversary of the Safe Drinking Water Act

In December the **Safe Drinking Water Act (SDWA)** celebrated its 50th Anniversary. Signed into law in 1974 the law was designed to protect public health by authorizing national enforceable standards for water quality.

Over the past 50 years, the SDWA has made significant progress in ensuring access to safe, clean drinking water for millions of Americans. It has established water quality standards, reduced harmful contaminants, and supported water systems of all sizes in delivering safe drinking water to their communities.

The SDWA has kept up with changing times and evolving science. It has been updated several times to address emerging threats to our drinking water, as well as new opportunities to tackle water quality challenges. As we celebrate this milestone, the CRWP invites you to join in reflecting on the importance of safe drinking water and the role everyone plays in safeguarding this essential resource.

There are many continuing and emerging challenges to providing safe drinking water, making it more imperative than our communities value and invest in it.

- Our sources of drinking water (like groundwater, streams, rivers, springs, or lakes) are too often threatened by pollution or development.
- Climate change is bringing warmer temperatures, stronger storms, more droughts, and changes to water chemistry. These pose challenges to protecting source water and drinking water infrastructure.
- Drinking water infrastructure requires regular maintenance, repairs, and replacement. The EPA estimates that the United States has \$600 billion in drinking water infrastructure needs over the next 20 years.

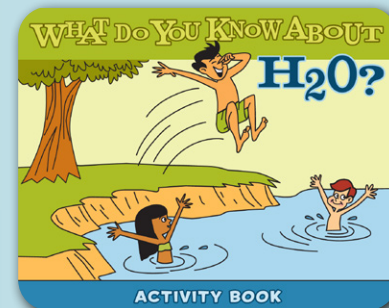
The Safe Drinking Water Act is vital for public health, but it wouldn't be possible without the dedicated water professionals who implement and uphold its standards every day. From source to tap, they work tirelessly to treat, monitor and deliver safe drinking water to our communities.

Happy Anniversary!



Activity from RWPC "What Do You Know About H2O?"

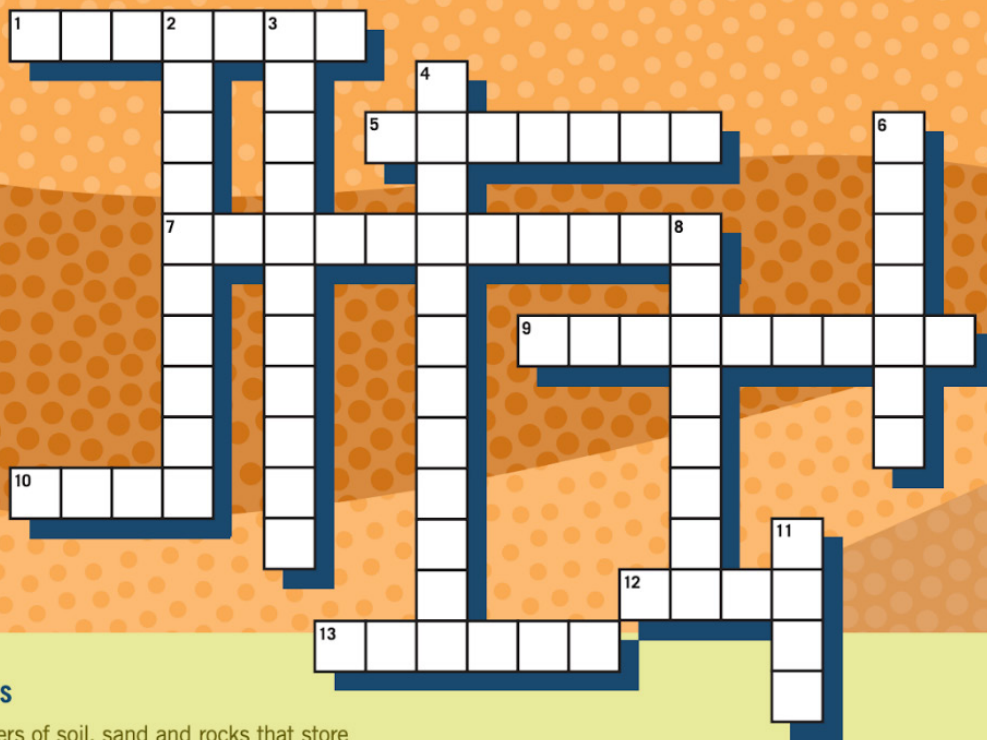
The **Regional Water Providers Consortium** offers an **Activity Book** that teachers can use to help inform students about the importance and value of clean water, and how to protect this precious resource. Many of the Clackamas River Water Provider members are also members of the Regional Water Providers Consortium.



Know More About Water

CROSSWORD H₂O

Crossword puzzle courtesy of The Groundwater Foundation.



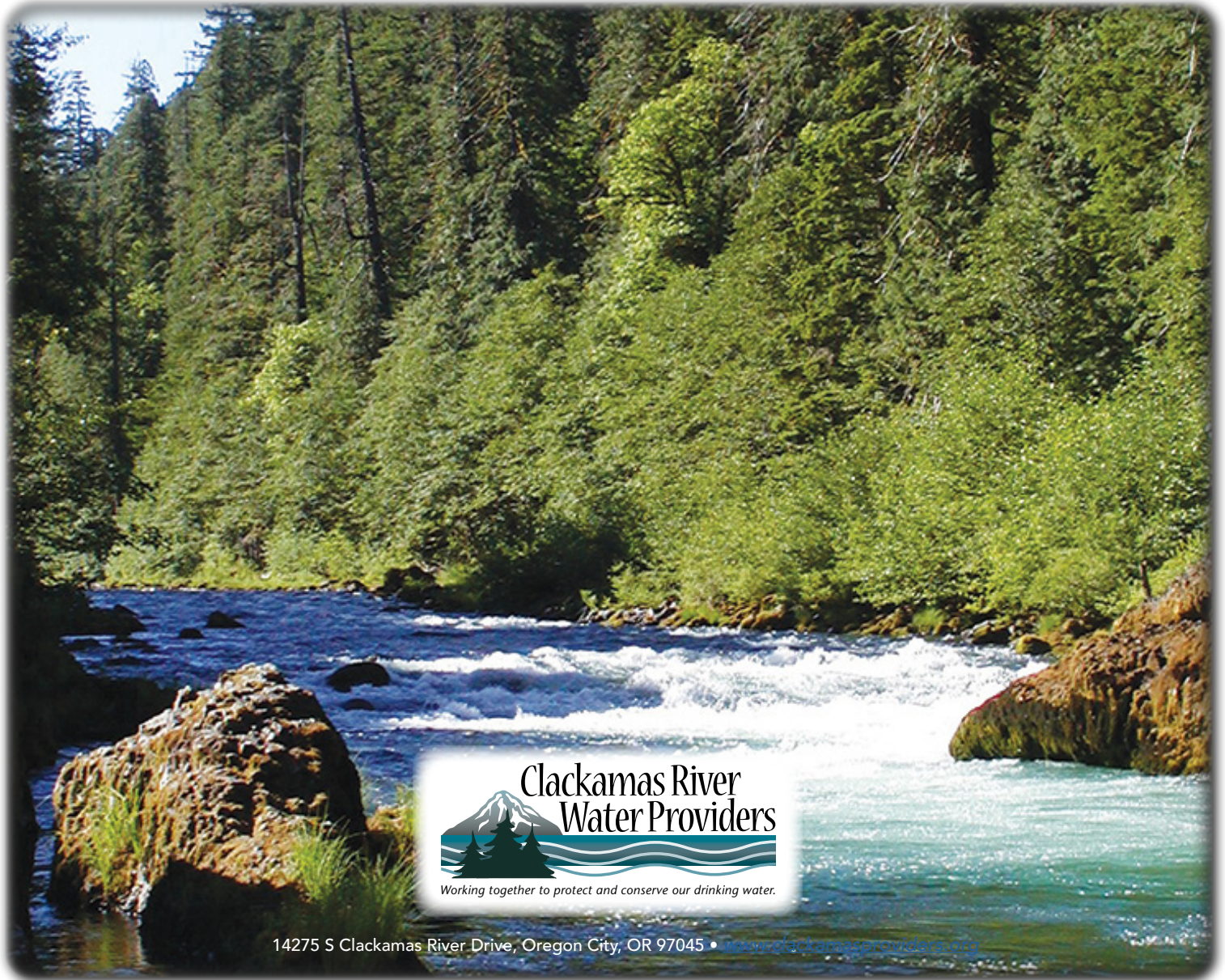
ACROSS

1. Layers of soil, sand and rocks that store groundwater.
5. To contaminate, to become unclean.
7. Water that is found underground in the cracks and spaces in the soil, sand and rocks.
9. Groundwater leaves the ground and enters a lake or stream in a _____ area.
10. An example of precipitation.
12. A pipe in the ground that is used to remove water from an aquifer.
13. Water on the earth's surface which moves into a lake or stream without absorbing into the soil.

DOWN

2. The largest use for groundwater is _____.
3. The stage of the water cycle when water changes from liquid to a vapor.
4. Clouds are an example of this.
6. A long period of dry weather could cause a _____.
8. Part of the water cycle when water soaks into the soil.
11. The movement of water underground is called groundwater _____.

ANSWERS:
ACROSS: 1. AQUIFER, 5. POLLUTE, 7. GROUNDWATER, 9. DISCHARGE, 10. RAIN, 12. WELL, 13. RUNOFF
DOWN: 2. IRRIGATION, 3. EVAPORATION, 4. CONDENSATION, 6. DROUGHT, 8. RECHARGE, 11. FLOW



**Clackamas River
Water Providers**

Working together to protect and conserve our drinking water.

14275 S Clackamas River Drive, Oregon City, OR 97045 • www.clackamasproviders.org

Our Members:



www.crwater.com



www.cityofestacada.org



www.ci.gladstone.or.us



www.ci.oswego.or.us



www.oaklodgewaterservices.org



www.orcity.org



www.sfwb.org



www.sunrisewater.com



www.tigard-or.gov



www.westlinnoregon.gov

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