

H₂Oregon

Fall 2018
Vol. 40, No. 4

Highlights from the 24th Annual
Summer Classic in Seaside PAGES 5-7

MARK YOUR CALENDAR:
Conferences in Grande Ronde,
Hood River, and Sunriver PAGE 19

A publication of Oregon Association of Water Utilities
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H₂Oregon

Fall 2018
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Your photos and articles for inclusion in H₂Oregon. OAWU requests your best photos of Oregon water scenery for our magazine covers and artwork!

Please mail your photo to our office. If we use your photo on the cover you will receive an official OAWU shirt and hat.

We are also seeking articles, clean jokes, Oregon trivia, letters and interesting stories. Please send submissions (no more than two pages in length) to:

Oregon Association of Water Utilities

935 N. Main St.
Independence, OR 97351
(503) 837-1212
Fax (503) 837-1213

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Independence, OR 97351
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Send your articles with full color photographs, in digital format if possible, to the address listed above.

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135 N. Main St., Mt. Angel, OR 97362
503-845-9499 fax: 503-845-9202
www.mtangelpub.com

OAWU Staff Members

Jason Green, Executive Director
jgreen@oawu.net

Mike Collier, Deputy Director
Sourcewater Specialist
mcollier@oawu.net

Mark Russell, Office Manager
mrussell@oawu.net

Donna Bernt,
Administrative/Financial Assistant
dbernt@oawu.net

Heather Davis, Administrative Assistant
hdavis@oawu.net

Tim Tice, Projects Manager
ttice@oawu.net

Scott Berry, Operations Manager
sberry@oawu.net

Heath Cokeley,
Programs Manager, Circuit Rider
hcokeley@oawu.net

Hans Schroeder, Circuit Rider
hschroeder@oawu.net

Jeff Crowther,
Wastewater Technician
jcrowther@oawu.net

For advertising information,
contact the OAWU office:

935 N. Main St., Independence, OR 97351
(503) 837-1212
office@oawu.net • www.oawu.net

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OAWU Officers & Board Members

PRESIDENT

Edson Pugh

Deschutes Valley Water
881 SW Culver Hwy.
Madras, OR 97741
Phone: (541) 475-3849
Fax: (541) 475-6013
edson@dvwd.org
Rep. Reg. 3, exp. 2020

VICE PRESIDENT

Mike Edwards

City of Bend
62975 Boyd Acres Rd
Bend, OR 97701
Phone: (541) 317-3050
Cell: (541) 480-6530
medwards@bendoregon.gov
Rep. Reg. 1, exp. 2021

Board of Directors

Ed Butts

Project Delivery Group
3772 Portland Road NE
Salem, OR 97301
Phone: (503) 364-4004
epbpe@juno.com
Assoc. Mbr. Rep. exp. 2021

Craig Sheldon

City of Sherwood
15527 SW Willamette St.
Sherwood, OR 97140
Phone: (503) 925-2310
sheldonc@sherwoodoregon.gov
Rep. Reg. 2, exp. 2020

TREASURER

Micah Olson

City of Columbia City
700 N. College St.
Newberg, OR 97132
Phone: (971) 563-3128
micah@olsonllc.com
Rep. Reg. 1, exp. 2019

SECRETARY

Matt Johnson

City of Monmouth
151 W. Main Street
Monmouth, OR 97361
Phone: (503) 838-2173
Fax: (503) 838-0201
mjohnson@ci.monmouth.or.us
Rep. Reg. 5, exp. 2020

Tim Lyda

City of Tillamook
210 Laurel Ave
Tillamook, OR 97141
Phone: (503) 842-2343
tlyda@tillamookor.gov
Rep. Reg. 3, exp. 2021

Phil Davis

Odell Water Company
P.O. Box 166
Odell, OR 97044
Phone: (541) 354-1393
pkdavis@hrecn.net
Rep. Reg. 2, exp. 2020

NRWA DIRECTOR

Mark Kerns

Avion Water Co.
935 N. Main Street
Independence, OR 97351
Phone: (503) 837-1212
bigkahuna1949@icloud.com
Rep. Reg. 3, exp. 2021

PAST PRESIDENT

Mark Beam

Ice Fountain Water District
1185 Tucker Road
Hood River, OR 97031
Phone: (541) 386-4299
Fax: (541) 386-7228
mbeamifwater@hrecn.net
Rep. Reg. 2, exp. 2019

Don Chandler

Nantucket Shores Water Co.
PO Box 236
Cloverdale, OR 97112
Phone: (541) 490-1419
lochsadon@yahoo.com
Rep. Reg. 1, exp. 2019

Craig Smith

City of Lake Oswego
17601 Pilkington Rd
Lake Oswego OR. 97034
csmith@ci.oswego.or.us
Phone: 503-260-7519.
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OAWU's mission is to provide service, support and solutions for Oregon water & wastewater utilities to meet the challenges of today & tomorrow.

Member Benefits and Services

Jason Green, Executive Director

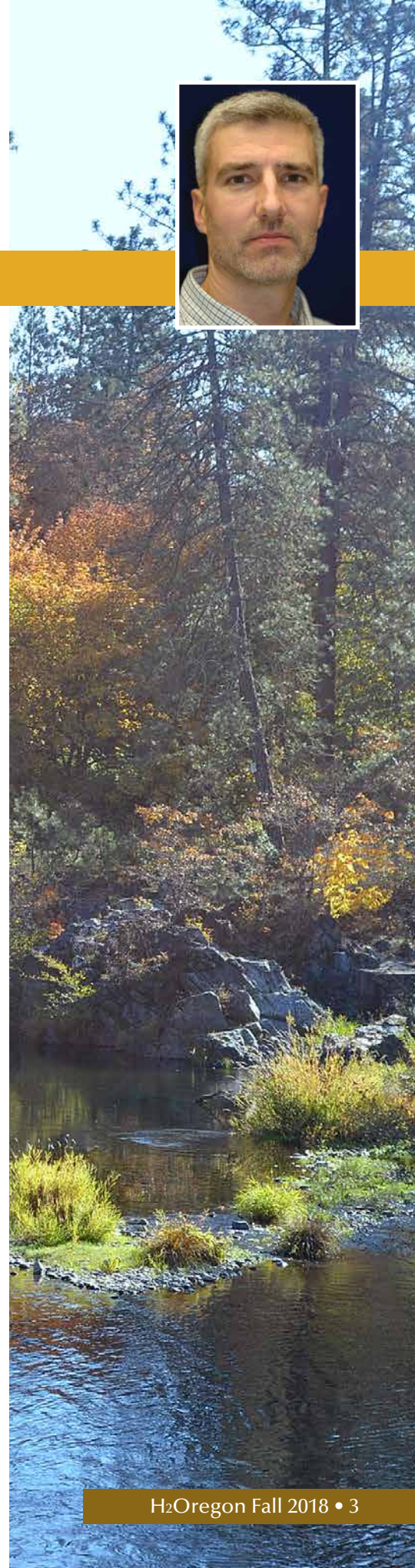


OAWU does not have much employee turnover. We discuss extending retirement dates an additional ten or twenty years or “dying in the harness” as the only options. When an opening does occur, we have to update all of our templates and files regarding this process, refresh our HR knowledge and review our new employee training process.

We have recently advertised and accepted applications for an additional, and needed, Wastewater Circuit Rider/Technician position. I am excited about this and also in adding a new face, personality, abilities and expertise to the Association family. In preparing for this process and orientation a review of a short list of benefits, services and who OAWU is, was in order and sharing this, likely a good reminder for our readers and membership.

OAWU is a membership association working as a conduit between Regular utility and city members and Associate members that provide services and products in our industry and working with the National Rural Water Association (NRWA) as our parent affiliate organization. Within this structure, the primary four areas are technical assistance, training, legislative representation and additional services. Technical assistance at a utility, by email, phone or otherwise is provided by the following programs and positions: Circuit Riders, Wastewater Technicians, Source Water Specialist, Training Specialists and the Energy Efficiency Circuit Rider. These valued services and technical assistance is free to all water and wastewater utilities in Oregon, membership is not required—program funding making these core and reputable services available is through RUS Rural Development and EPA. Because OAWU is so involved assisting medium to small, we often hear that we only assist small utilities. There are many more small systems and the need and requests regularly do come from smaller systems, but we also assist larger utilities, especially regarding training and conferences or other services such as rate studies, WMCP plans, O&M manuals, etc.

These key personnel are experienced and knowledgeable experts in the drinking water and wastewater utility profession and work directly with utility specialists and operators, managers and boards and councils along with the various regulators, engineers, attorneys, parts and materials companies and service suppliers in our industry. The OAWU field staff are on-call 24/7 for emergencies, must intimately know the various treatment techniques and technology, equipment, appurtenances, collections and distribution, pumps and motors, chemicals and lab, etc., regulations—OARs and ORS rules, trouble shooting, material and installation standards, policies, gaseous and chemical feed systems, tapping, service connections, meters, cross-connection



rules, written plans required by OHA-DWS and DEQ, discharge permits, water rights, wells, surface sources and reservoirs. They must be mechanically inclined and knowledgeable in materials, parts and how to operate and repair under various conditions and circumstances. They also must be discerning, to only provide good solid advice, information and training and know when to refer to another source for answers. Their backgrounds, experiences and expertise are varied and rounded with the constant research of rules, specs, materials, system tours and trouble shooting. They are as happy to step in front of fifty people and teach a class as jump into a wet ditch to assist with a repair, run the backhoe or excavator or a shovel. It is a pleasure and privilege to work with these folks. I am constantly reminded of their servant attitude, abilities, knowledge and general pleasant personalities that never say no to someone in need.

In addition, your Association provides an annual training schedule wall calendar, quarterly magazine, web page, job announcements, specific research and assistance in various specs and equipment, four annual conferences and many free and fee classes throughout the year. We recently purchased a vac-trailer to assist members. We have an assortment of tools needed in the field, from hand and power tools to emergency response and confined space equipment. Drones for aerial inspections or studies, FLIR (infrared), high end leak detectors and a correlator for locating leaks, metal detectors and line tracers, smoke blowers and sludge judges. Several of the services provided are: leak detection and water



loss studies, rate studies, plant and system efficiencies, reservoir and lagoon tracer studies, lagoon profiles and reports, O&M manual writing, CCR reports, backflow inspection and device testing, WMCP written plans, DRC and operator of record services, general operations, repairs, maintenance and installations, hydrant rebuilds and meter installations, long range planning, I&I and smoke testing, board training and plan review from an operations view point.

The many resources, services, technical assistance and training through your association opportunities continue to grow. Call upon us, use your association and the many members as a resource—the membership is what makes OAWU.

Not a member yet—why not?

My best to you! 💧

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OAWU's Annual Golf Scramble

Seaside, Oregon • Gearhart Links Golf Course • August 22, 2018



The sun was hiding from us all day. The day started off with a chill and a little wind. As the day progressed it was pleasantly warm; it was a perfect day to hit the links for this year's scramble. The staff at the Gearhart Links Golf Course were accommodating, friendly, and professional, helping to make the day even more enjoyable.

Twelve teams challenged the course this year, making for a great competition. No one was safe from the errant drive, misjudged chip shot, or the mocking one received when their shot landed two fairways over; we must also admit that there were many great players and many awesome shots on the course again this year. The day was very pleasant, and the banter helped build camaraderie throughout the scramble.

Special thanks to – Neptune Technologies our Tournament Sponsor this year; to Lakeside Industries, The Ford Meter Box, Mueller Co., and Ditch Witch NW for being this year's hole sponsors and for their support of the attendees and the Association.

Congratulations to all the teams who played this year, but especially to the teams that placed.

The winners of the golfing competition games were:

- Longest Putt #1 – Don Miller
- Longest Putt #2 – Dave Seifert
- KP Men's #1 – Bill Van Ek
- KP #2 – Kevin Brown
- KP Women's #1 – Tammy Mason
- Longest Drive Men's #1 – John Koch
- Longest Drive Women's #1 – Tammy Mason
- Longest Drive #2 – John Koch

Special thanks go out to Jeff Crowther (Circuit Rider), Heath Cokeley (Circuit Rider), and Mike Collier (Deputy Director) who helped make sure the scramble went off without a hitch.

Mark your calendars for OAWU's next Summer Classic at Seaside, August 19–22, 2019. It is a great location to enjoy while you earn CEUs and network with the Associate Members and your peers. ♦



OAWU's Summer Classic 2018

The weather this year was fantastic, and the activities were great. Monday's pre-conference provided great classes and a few extra CEUs to those who attended.

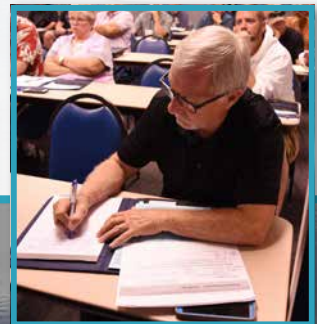
The conference was kicked off by an opening session given by OAWU's Executive Director, Jason Green, and a legislative update by Mark Landauer. Tuesday held the evening barbecue with a meet and greet social, exhibitor prize give-away, followed by a fun time at the beach. Wednesday continued with a full day of classes; some took the afternoon off to participate in the annual OAWU Golf Scramble at Gearhart Links. Thursday concluded the conference at noon with some final words and the highly anticipated raffle drawings and cash prizes.



Thank you to this year's Gold Sponsor – EJ and Lakeside Industries; Silver sponsor – H.D. Fowler; and to our Bronze sponsors – BergerABAM and CoBank.

- Beach beverages sponsored, again this year, by Ferguson Waterworks
- Annual golf scramble at Gearhart Links which hosted 12 full teams
- At closing session, Thursday, OAWU gave away over \$1,500 in merchandise and \$200 in cash prizes
- This year's WaterPac raffle winner was William Seeker from Youngs River Lewis and Clark Water taking home a Remington 700 BDL with Leupold 3-9 Freedom XV Duplex Scope
- The Jeff Swanson Memorial Scholarship raffle for a 49" LG UHD 4K TV, went to Tony Biamont from the City of Seaside
- The winner of a full registration to the OAWU Sunriver Conference in March 2019 was won by Mike Conway from the City of Newberg

Mark your calendars for next year's **OAWU Summer Classic in Seaside, Oregon, August 19–22, 2019.**
See you there! 💧



in Seaside, Oregon





Personal ERP Situation

by Hans Schroeder, Circuit Rider

I sat down to finish an article that I had started a few weeks ago.

I looked out my office window and decided to put *that* article on hold for another time.

The smoke has filled the canyon I live in and many fire crews are using my road to access a fire that has grown to be over 15,000 acres. The power has been lost multiple times over the last few days.

The fire spread to within 2 miles from my house. It got me thinking as I started to plan how to evacuate 5 horses, 4 calves, goats, chickens, cats, our dogs, oh and most importantly our grand daughters' pony ("Half Day"). My horse trailer could only hold a total of 4 horses. I called our closest neighbor (9 miles away) to see if I could use his livestock trailer if needed. He was more than willing to have it hooked up and ready on a moment's notice.

Not to mention I have to get my reports finalized and sent off being it's the end of the month for work. I catch myself glancing out the window to see what kind of vehicle is driving by. Granted, we only have about 3 rigs that use this road on any normal day. Overhead I spot a smaller type water transport airplane and also a helicopter with water basket attached dumping water the next canyon over. I assume they are dipping out of the Columbia River.

I go outside every few hours and check my sprinklers I have strategically set around my house. A Forest Service vehicle comes into my driveway to discuss the fire as other local rural volunteer fireman tankers drive by.

From my house, I never could see the fire itself only the effects of it. The smoke sometimes made it feel very humid, like a morning coastal fog.

Back to my original thought: How is your Emergency Response Plan (ERP)? I wasn't even aware at the time that I was practicing it on a personal level. I contacted local neighbors to see if they needed any assistance or if they could be of any assistance to me with certain equipment, supplies or the fact that power may be out for an extended period of time and that there may be no water being it takes power to operate the pumps for the wells.

An updated ERP is valuable for any sort of unexpected situation. Phone numbers of contractors, neighboring communities, list of possible equipment needed, and generators exercised, fueled and ready to perform.

Please remember the purpose of the ERP is to establish an organized structure for procedures in response to any major emergency. In the plan assign the roles, responsibilities, and needs depending on if it's a water break, bad samples, a threatening fire, or...? So please remember at those all-important monthly safety meetings to update and review your ERP at least once a year or when a significant member of the team is no longer available. ♦

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Deadlines

Heath Cokeley, Programs Manager/Circuit Rider

My article below was published in *H2Oregon* back in 2010. I am including it in the magazine again as I see it as an important topic that can probably be reviewed again. I find it funny as I read through the article, as life over the last 8 years has changed some of my thoughts and opinions on how to deal with deadlines.

Ultimately, a busy schedule requires you to put some things off to address more pressing matters. I hope you can find something useful to help you deal with looming deadlines in your day to day life. Even if you disagree with me on ways to deal with them, as I disagree some with my younger self, at least you are thinking about it and maybe coming up with new ways to address deadlines.

It's funny to me that I am writing this article about deadlines. Funny mostly because I myself am under a deadline. You see, I woke up this morning and realized this magazine article is due. Now I can actually visualize OAWU's executive director Jason Green reading this and shaking his head laughing about his employee's ability to procrastinate. It makes me wonder why I waited 'til the last minute to write this. I have had this deadline for months now and have had several opportunities to do the task at hand, but it has just not gotten done. Does anyone else have this problem?

The way I look at it is, if I have a deadline then I must have that thing done, no matter what, by that target date. But why do I wait and do it just before the deadline? Mark Twain once said, "why put off for tomorrow what can be put off for the day after tomorrow?" While I see the humor in this I don't know why I continue to follow that advice. For if I continue to practice this, then at some point, I will not make a deadline and where will that get me.

While we are on quotes I will share one with you I found the other day.

"There is nothing so fatal to character as half finished tasks."

—David Lloyd George

Think of the truth in that statement. How many times have we disregarded someone in our lives because they could not be counted on? Whether it is the contractor that does good work but cannot be relied on to meet a schedule or a family member who is in a certain trade, but you don't want to have them do the work because it will never get done.

Several people throughout my life, whose opinions I greatly respect, have instructed me to take an inventory of myself. To recognize the things about myself I like and keep those traits, but to change the attributes that are more recognizable as bad habits. To me, my perceived inability to accomplish a task till shortly before a deadline is a character flaw that I do not like and need to

change. Are there character flaws that you may have that you do not like, but have not been able to find a good way to change? What's stopping you? As for myself, I am going to reorganize my calendar. Move due dates on things up by a week and that way they will not only be done early, but I will have time to go back and change things or re-word things as needed.

There are a multitude of steps we can take to curtail a bad habit that we may have. I think the first step is to own up to the bad habit. My habit of going right up to a deadline is mine and mine alone for no one else forces me to do that. Sure, there are things in my day that may stop me from getting to the task. The bottom line is that I am the one responsible for my schedule and I am the one that must make the schedule work.

Too many things on your plate to make everything fit? Then start taking some off your to-do list. I know I am



probably oversimplifying this a bit, but you must start somewhere. So humor me and try this.

Pick up a pen and a piece of scrap paper and start making a list of the things that need to be done. Put them in order from biggest fire to littlest and then start doing them one by one. Before you know it that list may look a little less intimidating.

I'll see you all down the road. 💧

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OAWU Services

by Scott Berry, Operations Manager

There is an ongoing discussion around our office regarding the topic of leak detection. Specifically whether it is the technology that finds the leaks or the process undertaken that finds the leaks.

Is it the correlators and the sensitive digital acoustic leak detection units that we use or is it the systematic process of using data provided by the water utility to narrow down an area of interest and then putting eyes on each part of system infrastructure that finds leaks? In reality, the answer is both of those things employed in an experienced and well thought out manner find even difficult sources of unmetered loss.



OAWU is proudly offering leak detection/full system leak survey services as well as some other services that we would like to provide to our members.

Vac trailer services

We recently purchased a Vac-Tron PMD series vac trailer that would be suitable for valve box clean-outs, catch basin cleaning, potholing, and smaller excavations for service installs, leak repairs, fire hydrant replacement and many other projects.

We can serve our membership in several ways with this unit. We can rent it out, rent it and provide an operator, or bid on and complete projects for those that may not have the time or resources to complete them in-house.



Drone services

We currently have 2 drones that we can use for external tank inspections as well as inspections of lagoons and other infrastructure. Drones are also being successfully utilized in leak location and easement assessments.

For more information on these as well as any of the other services we provide, both free and for fee, call the OAWU office.

How can we help? 💧



Aerial image taken by drone.



Rex Lesueur,
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Aging Infrastructure

by Jeff Crowther, Wastewater Technician

The world we live in is constantly changing, and the infrastructure we work with on a day to day basis is not immune to this. In most aspects of our life, updating to meet these changes in philosophy and replacing outdated parts is fairly simple. The built environment we all work with is not this simple.

The infrastructure we work with has typically been built up over the past 100 years. This means that although the facilities we rely on may work for now, but they may not meet new requirements, and even have the potential to be unsafe. As stewards of this public infrastructure, it is our obligation to review these aging facilities and determine the areas in which they are functioning properly, areas where updates are needed, and where the infrastructure should be completely replaced.

Many factors go into making these determinations. The first, and most important, is the safety of the public. If the infrastructure presents a safety issue, such as an outdated sanitary system releasing contaminants to public waters or a bridge which is no longer structurally sound, we need to look into how to resolve these issues. The second item that needs to be taken into account is the budgetary constraints of our jurisdiction or the project. This may determine whether we replace this system in full or find a way to make repairs that will bring the system into compliance with current standards. Although we may save money up front by repairing the infrastructure instead of replacing it, we may actually end up paying more in the long run as the serviceable life may not be as long as if we had replaced it in full. Another item that should be reviewed is the other systems tied to the area we are updating. This means that if we are reconstructing a roadway, we may want to look at water, wastewater, and storm utility updates in the area so that we do not immediately have to trench in our new asphalt.

Assistance may be available for updating much of this aging infrastructure, particularly in the form of loans and grants from organizations such as the federal government, USDA, or other agencies. This is especially applicable if the infrastructure presents a safety concern or may not be meeting compliance standards. If you need guidance regarding reaching out to your funding partners please contact the OAWU office and request assistance from one of our Circuit Riders. 💧



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Water Delivery – A Three

by Tim Tice, Projects Manager

Electricity and water have gone hand in hand for a long time. In 1881 water turned an alternator that supplied electricity to the streets of Surrey Town of Godalming in the United Kingdom.¹ At the same time, Charles Brush connected a generator to produce electricity for nighttime tourists that visited Niagara Falls.² With the invention of and progress towards the use of electric motors, and their supported peripheral components, water is now delivered to places unimaginable 100 years ago. Seldom reviewed from an operational perspective is the cost paid for keeping our motors powered. With the number of households increasing by 45 percent in the past 30 years, someone may think energy consumption paralleled the same increase. Yet, contrary to thought, the energy consumption has only increased by ten percent. The energy consumption has lessened due to better efficiency of processes and apparatuses.

The USEPA has determined that 40 percent of a water or wastewater utility's operating cost can be linked to energy.³ With so many industries looking for practical ways of providing the same service at a lower rate, automation seems to become the go to answer. In the mid-1990s, an 8-megabit hard-drive would cost approximately \$400 dollars. Today, a 500 Gb (1gb = 1,000 megabits) will cost \$50.00. The efficiency in which components are manufactured and obtained (partially through increased availability and competition) has driven the price down.

What is the single component a water or wastewater utility sells? It is usually a measurement and cost associated with said unit. The average Oregon household uses approximately 6,000 gallons per month, with the average monthly water bill at \$42.00, the cost per gallon is \$0.007 cents.



The proverbial comparative argument is the cost associated with a gallon of water purchased in 16-ounce bottles. The answer is approximately \$8.00 to \$16.00 dollars per gallon. While at the grocery store, a couple was filling their 5-gallon plastic bottles (4 total) from the machine for \$0.25 per bottle or \$0.05 per gallon. Did you see the connection? \$0.007 versus \$0.05 at the store. The \$0.007 cost is at your tap, in your kitchen, more than likely 15 paces from your living room. Where's the justification?

If a water utility could charge a simple rate at \$0.01 per gallon, then 6,000 gallons per month would equate to \$60.00 dollars. Would this figure allow both water and wastewater utilities to stay ahead of the expense curve?

Two methods cure the growing fatigue to balance a budget for the utilities. Charging more for the services rendered or reduce operating expenses. When we want to charge more for water, the headwinds of resistance gust with reluctance and many factors play into the decision. Method two, the other side of the coin is reduced operating expenses in the form of better efficiency,

-Sided Drop

but efficiency can cost money to implement initially, particularly in the form of equipment and automation. Let's look at one expense to determine savings and return on investment, energy!

A breakdown and review of utility expenses will show how energy is usually one of the three highest annual expenses for a utility. Energy efficiency, measured in percentages, is obtained by both a review of current costs, existing equipment, and rates, as well as, a possible change in operational procedures. Can any given motor used in production or processes be operated during the off-peak hours? Can operating peripherals (sensors) increase efficiency when applied to these motors.

Without going into detail on how to calculate energy savings, a theoretical example will be presented.

A 40 HP submersible motor is placed in a well and set at a depth of 450 feet and has a required production capacity set at 150-200 gallons per minute. Normal daily water production is approximately 42-48K gallons. This piece of equipment has a duty cycle of approximately 4.0-4.5 hours per day. Looking at total electrical costs, hours of operation, system design, the question is: can a smaller motor have been put into service? A variable frequency drive would certainly reduce the high amperage required to start the motor, but run-times may prove unnecessary, and a soft start application can be more cost efficient. A 30 HP motor in its place, with all the operating parameters the same, may save \$1,588 dollars annually.⁴

To deliver water to the customer at any given time takes more from an operator today than ever before, due to varied fields of knowledge someone must be familiar with. We can go about the multiple tasks on our own, hire someone, consult, or charge enough for the service and commodity provided to pay for it all.

The third side (method) may perhaps be our inability to market our product and services. Stated jokingly, "Turn the water off for three days, when people get thirsty and stink, water becomes more appreciated." With the Association participating at many public meetings, a common misunderstanding of customers is the cost of water delivery.

Challenges for a utility today are ever-shifting but can be related to the three-sided drop on its point. Forging, shaping, inverting the drop can be an arduous task, but assistance. Teamwork can lower the height of the hurdles.




At OAWU, two aspects in our mission statement is support and solutions. Our approach to marketing, rates and efficiency is not unique, but the effort towards positive change is exceptional. Continue to call on us, our support is for your success.

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Living the American Dream

by Mike Collier, Deputy Director/Sourcewater Specialist

This day and age there seems to be two pictures of the American Dream that get played out. The picture that anyone from anywhere, with any background can work hard enough to make something of themselves. We don't have to be born into an elite group to get a job that makes money, we just need a little bit of brains and the motivation (sometimes a little luck) to do so. Then the second is the result of this work, the picture they show is of a family with two kids (of course one boy and one girl) with a dog, smiling in front of a nice house with a green lawn and a white picket fence.

This American Dream is of course an awesome thing that is available in the United States, but is this really the best thing for the longevity of America. Looking outside of ourselves and to others, putting others' needs in front of our own and loving our neighbor, are all things that are at least as important, if not more important, than working ourselves into a wealthy, easy, life. I do understand that these things don't necessarily have to be mutually exclusive; some can have their cake and offer their neighbor a piece of it too.

If we look back to when America was settled by the Europeans and the people demanded their own governance, this was done so that we would not be suppressed and would have freedom to decide our future. This was not everyman for himself, this was a collective group that self-sacrificed (even if they were forced into it), to improve the quality of life for everyone and for the future generations.

If the picture of The American Dream has been manipulated to mean that we should be in comfort and happy all our days, is there something that is being missed? Are children not being taught to stand up for those that cannot stand up for themselves, but to rather look out for themselves and their own happiness?

How many children and how many relationships have suffered because of this misconception? Are we missing out on something by choosing this mindset? The early years of a child's life are the years that mold them into who they will be as adults more than any other stage in life.

Relationships, spouse, family, friends, and neighbors – are we investing time to get to know and work to nourish these relationships to provide something deep and meaningful beyond the pleasantries when we see them at the holidays or at the mailbox?

Is the point of life to get comfortable and then die? We can't take anything with us to the grave, what is the point in that? Or is the point in life to make impacts on others, small impacts to even a few people could have an everlasting ripple effect to society as a whole. I suggest we concentrate on how to foster stronger deeper relationships with others, look out for the interest of others more than our own interests, be compassionate and giving of ourselves, protect those in need, work hard and provide for our family and usually our reputation will be developed through these actions. Realize that in America we don't have to be all consuming and selfish to have our American Dream, maybe revisualize what the American Dream really is to you. 💧

MARK YOUR CALENDAR

Fall Operators Conference

Grande Ronde, Oregon
November 5–8, 2018



Sunrise at Baskett Slough

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UPCOMING CONFERENCES

End of Year
Operators Conference
Hood River
Dec. 3–6, 2018



41st Annual Management &
Technical Conference
Sunriver, March 4–8, 2019



Wastewater System Restart ... or

Road Warrior Series by Rick Allen, Biolyneceus

In the world of Wastewater these days there are many challenges that will occur. Some you may have already seen, and some may appear in the near future. One of these many challenges is how to get your plant activated if it is killed off by known or un-known environmental issues. The reasons can vary from a crystal meth hit to someone dumping diesel in your line or some other caustic in your line. Sometimes these challenges are self-inflicted, by allowing septic or grease haulers to discharge to your system. Be aware that you may have illegal dumping from Septic Haulers, Grease Haulers and other chemicals through your RV dump stations or other access points to your wastewater system. And of course, there is the issue of chemicals that your collection people may be using to clean lines or kill roots.

Some of the more common causes of plant kill off are Industrial Users. Micro-Breweries, Alcohol Distillers, Cannabis Processors and Growers are just a few of many industrial facilities that can kill your plant. Then there are the Significant Industrial Users (SIU's) like meat packing plants and food processors that contribute high volumes and high BOD/COD loading to your plant.

The other scenario could be that you have just finished building that brand-new wastewater plant or addition. After spending millions of dollars to complete the new system, how do you get it started and working at optimal parameters as quickly as possible?

There are several options available to most wastewater systems, no matter what design you have. You can startup or reactivate Activated Sludge Plants, BNR, Anaerobic digesters and Lagoons, using some or all the methods described below.

There are many accepted methods for a startup or re-start. These include just letting the plant biology develop naturally. If this is the method you decide to use, the industry estimates are that the plant will be at maximum efficiency somewhere between 90 to 180 days. If you have a lot of time, this method will work. If you need to meet discharge limits quickly, this may not be the best method for you to use.

Another method is to inoculate the system with activated sludge from a neighboring community. This method will work, and industry estimates are that this can take between 30 and 90 days to reach full efficiency. There are a few things to consider when using this method of startup or restart.

You will be hauling wastewater sludge into or through your community.

The biology in the neighboring community may or may not have all the bacteria that you will need.

Every wastewater system has different inflow, so therefore the biology will be different. And if you have industrial dischargers or Significant Industrial Users (SIU), the odds are your neighbor will not have what you need.

One of the challenges we have seen with using this method is the introduction of unwanted bacteria in your system. We have seen several incidents where a plant has hauled activated sludge for a startup or restart and they have introduced filamentous bacteria, such as *Nocardia* and *Mycrothrix* into their system. This then results in foaming issues if there is FOG (Fats, Oils and Grease) in the system. Anyone interested in a Root Beer Float?

Bio-Augmentation is another method being used to re-start your system or to complete an initial startup of a new plant or system. This process requires purchasing commercially available microbial cultures for your plant. If you purchase a high quality, Species Rich Diversity (SRD) product experts estimate your system may be fully on line in 3 to 30 days. Most of the systems I have seen using this method take about 10 days to populate.

Now you should become aware of some of the differences in the available Bio-Augmentation products on the market, today. You want to look for products that have actual bacteria or microbial counts in them. You want to make sure that the product has large number of colony forming unit (CFU) per milliliter and most importantly a high variety of bacteria Species Richness Diversity (SRD). Some products will only have one, two or three types of bacteria, while others may have dozens. You want to look for products with high SRD's. Remember, your system has lots of different materials in the inflow that need to be bio-degraded, so you will need a variety of species to complete the work. You may, also, see products with millions of microbial per gallon or per milliliter. Make sure you do the math. Products with 100 million per milliliter actually have more bacteria than those that have 1 billion per gallon. We always recommend that you use products that are in liquid form. Many of the states' circuit riders and government agencies are now accepting Bio-Augmentation as a viable solution for startup, restart and also overall plant efficiencies in many areas.

Products that do not have actual bacteria/microbes in them, such as Enzyme products, are considered Bio-Stimulants and will not inoculate your system with new bacteria.

Initial Startup?

One or more of the systems or programs listed above will work for you. You need to decide which will best meet your needs.

If you want a speedy recovery, then Bio-Augmentation with quality products, that meet or exceed the above criteria, could be your best solution. If funding is the most critical issue, then natural recovery may be your best solution, as long as you are not out of compliance. If easy reinoculation of your system is important, the Bio-Augmentation could be the preferred method over hauling activated sludge. If you have easy access to activated sludge, that does not require extensive hauling, then this may be your choice.

Using commercially available Bio-Augmentation products may be the best solution. Recently an industrial plant in the Dakotas used this method to restart their plant and the operator reported saving \$75,000 in hauling fees, by using Bio-Augmentation and his plant was working to acceptable levels in 3 days.

A western municipality chose to activate a new wastewater plant recently by using six 5,000-gallon tanker loads (30,000 gallons total) of activate sludge which was hauled from over 100 miles away. They may have been able to start the new plant very successfully with only a few hundred gallons of the appropriate Bio-Augmentation program.

There have been many successful plant startups using Bio-Augmentation as the only source of material.

If you decide to use commercially available Bio-Augmentation as your startup or restart program, make sure the product has high CFUs and most importantly high SRDs.

In some cases, you may want to utilize a combination of methods. 💧

If you need more information or have any questions, contact Rick Allen (303) 888-2008 or Herb Fancher (970) 481-6626 or email rick@biolynceus.com or herb@biolynceus.com.

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2018 TRAINING & EVENTS

Date	Class Title	Location	CEU Information	ESAC#, Fee/Free
October 11	Confined Space and Jobsite Safety	Canyonville	0.6 Water/Wastewater/OS	3563 Fee
November 5	Effective Utility Management	Grand Ronde	0.6 Water/Wastewater	3780 FREE
November 5-8	2018 Fall Operators Conference	Grand Ronde	2.6 Water/Wastewater	3780 Fee
November 15	Confined Space	Eugene	0.3 Water/Wastewater/OS	3151 Fee
November 15	Hazardous Communication Standard (Global Harmonization)	Eugene	0.3 Water/Wastewater	3459 Fee
November 15	Water & Wastewater Field Operations & Safety	Independence	0.4 Water/Wastewater	3568 Fee
November 15	Leak Detection	Independence	0.2 Water/Wastewater	3709 Fee
December 3	Effective Utility Management	Hood River	0.6 Water/Wastewater	3776 FREE
December 3-6	20th Annual End of Year Operators Conference	Hood River	2.0 Water/Wastewater	3776 Fee

2019 Events at a Glance

Date	Class Title	Location	CEU Information	ESAC#, Fee/Free
March 4-8	41 st Annual Management & Technical Conference	Sunriver	2.6 Water/Wastewater	TBA Fee
May TBD	4 th Annual Expo	Polk County Fair Grounds	0.4 Water/Wastewater	TBA FREE
August 19-22	25 th Annual Summer Classic Conference	Seaside	2.0 Water/Wastewater	TBA Fee
November 4-7	2019 Fall Operator's Conference	Florence	2.0 Water or Wastewater	TBA Fee
December 2-5	21 st Annual End of Year Operator's Conference	Hood River	2.0 Water/Wastewater	TBA Fee

Levels 1-4 Water Operator Exams

Trained and certified operators are necessary to ensure that the systems are managed in a manner that fully protects public health and the environment. The OARs for certification stipulate that the qualifying experience for applicants for certification as a water treatment plant operator must attain at least half the required operating experience at a public water purification plant that uses complex filtration technology and is not more than one classification lower than the level of certification they are seeking. In other words, if you have only worked for a Class 2 treatment plant, we allow you to apply for a Level 3 certification but not a Level 4 certification. If you move on to a Class 3 plant, then you must have ½ the qualifying experience (at the Level 3 plant) before allowing to apply for a Level 4 certification. Reciprocity from state-to-state ensures that the operator have the operating experience for which they are certified.

For additional information, please visit <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/Levels1-4/Pages/exams.aspx>

More Resources

Drinking Water Data Online	https://yourwater.oregon.gov
Center for Health Protection	http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=4
Drinking Water Services	http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=58

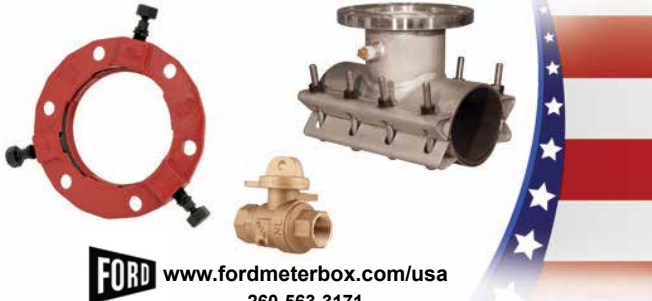
Training class dates, class topic and/or locations may be subject to change as needed.

For more information on any class by OAWU, please contact the office at 503-837-1212, office@oawu.net or visit www.oawu.net.

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- Well Testing/Shocking
- Lagoon Profiles & Sampling
- Treatment Plant Efficiencies
- Drone Inspections for Tanks, Projects, Lagoons, etc.
- On-Call & Emergency Response
- Sewer I&I Testing
- Smoke Blower
- Confined Space Services
- Backflow Device Testing & Inspections
- Conferences & Formal Classroom Training
- Tailored Onsite Training for Larger Utilities
- Board Training
- Certification Reviews & Other Fee Classes

System O&M Manuals Required

Have you completed your state-required Operations & Maintenance Manual?

Oregon Association of Water Utilities has prepared a full day class to assist operators in outlining an operations and maintenance manual per the Oregon Administrative Rule 333-061-0065 which requires each water system to develop an operations and maintenance manual.

This class will assist the water and wastewater system operator in outlining the specific points in developing the draft of the O&M manual. Step by step, each attendee will create their draft as it relates to their utility system during class. The e-file may then be completed back at the system office.

Class cost is \$160, or if you are unable to attend a class you may purchase a thumb drive with e-files for \$160. To sign up for the class, or to have a thumb drive mailed to you, contact your Association for further information. ♦



NRWA Fleet Program

The National Rural Water Association has created partnerships with the Ford Motor Company and the Chrysler Group to offer special fleet discounts to State Rural Water Associations and their utility system members. This partnership combines the buying power of 31,000 individual utilities to provide reduced fleet pricing on utility vehicles.

The Rural Water Fleet Program is a valuable member benefit for water and wastewater utilities. State Rural Water Associations determine eligibility for their members, and provide a fleet code that allows access to substantial vehicle discounts to fill the need for reliable work vehicles.

Contact your State Rural Water Association to access the Rural Water Fleet Program. Vehicles may be purchased at your local dealer or through the national fleet auto group at www.nrwafleet.com. Incentive discount pricing is available on fuel efficient cars, vans, SUVs and trucks. Systems can save up to \$6,750 off factory invoice per vehicle. Happy shopping!



Program Details

- Entities must be current members of State Rural Water Associations to be eligible.
- There is no limit to the number of vehicles that can be purchased under the program.
- Incentive pricing is deducted off the factory invoice.
- Fleet vehicles must be in service for a minimum of 12 months or 20,000 miles.
- Vehicles must be registered and operated in the United States.
- Call OAWU today to get your Fleet Identification Number (FIN).

Need to Review Water or Sewer Rates? OAWU Can Help!

Take advantage of your Association's services – We Do Rates!

OAWU has built a solid reputation for providing water and wastewater systems with factual, user-friendly, and defensible Rate Studies. Our rate studies, once implemented, have allowed many systems to obtain Capitol Improvement funding from various private and government lending agencies. An OAWU rate study can also provide a plan for systems to gain the capital to “pay as you go” by outlining a strategy to maximize and streamline revenue and thereby allow water/wastewater system administrators to forecast projects that may be funded in-house. OAWU will provide you a professionally compiled rate study and supporting documentation that will allow you and your council or board to adopt new rates necessary to meet your system needs. 💧

For bids or estimates, call OAWU: 503-837-1212.



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Historic USDA Funding Available for Rural Water, Waste Disposal Infrastructure

Portland, Oregon, July 26, 2018 — The United States Department of Agriculture (USDA) Rural Development is making available a historic level of funding for water and waste disposal infrastructure in rural communities, announced State Director John Huffman today.

“This is a significant opportunity for Oregon communities, but they will need to act quickly to avail themselves of this financing,” said Huffman. “It can be a struggle for any city to finance a large infrastructure project, but it is especially challenging for small towns. Funding from USDA may help give rural communities the leg up they need to make their infrastructure projects a reality.”

The Water and Waste Disposal Program provides loans and grants to fund the construction, upgrade, or expansion of clean and reliable drinking water systems, sanitary sewage systems, solid waste disposal infrastructure, and storm water drainage in rural areas. With the passage of the 2018 Omnibus spending bill, up to \$65 million in low-interest loans and \$10 million in grants is available in Oregon this federal fiscal year, which ends on September 30.

Most state and local government entities, private nonprofits, and federally-recognized tribes are eligible to apply. Projects must be located in a rural area with a

population of 10,000 or less. Applications are more likely to be processed in time to receive funding this year if they are for the purchase of land or equipment, meters, the upgrade of wells, the upsizing of pipes, or similar activities. Applications that are not approved by September 30 will be considered for funding during the next fiscal year.

Local Rural Development staff members are available to discuss project concepts and help rural communities navigate the application process. Those interested in applying are encouraged to contact a local Community Programs Specialist today to learn more about submitting a successful application.

Congress provided a historic level of funding for water and wastewater infrastructure in fiscal year 2018. The 2018 Omnibus spending bill includes \$5.2 billion for USDA loans and grants nationwide, up from \$1.2 billion in fiscal year 2017.

USDA Rural Development provides loans and grants to help expand economic opportunities and create jobs in rural areas. This assistance supports infrastructure improvements; business development; housing; community services such as schools, public safety, and healthcare; and high-speed internet access in rural areas. For more information, visit www.rd.usda.gov/or. ♦

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QUIZ CORNER

1. Which of the following pH ranges would deposit a thin film of calcium carbonate on the inside surface of a pipe?
 - A. 2.0-3.0
 - B. 4.0-5.0
 - C. 6.0-7.0
 - D. 8.0-9.0
2. Where should sodium hypochlorite (liquid bleach) be stored?
 - A. Away from flammable objects, as it is a fire hazard.
 - B. Away from equipment that is susceptible to corrosion.
 - C. In closed containers at room temperature for no longer than 3 months.
 - D. Near the chemical feed pump day tank, to lessen operator handling risks.
3. What is the most important reason for maintaining a continuous positive pressure throughout the distribution system?
 - A. Prevent damage to water meters.
 - B. Keep pipe joints sealed.
 - C. Prevent contamination from backflow.
 - D. Maintain chlorine residual.
4. A weir should be used to measure water in which of the following locations?
 - A. Above ground storage tanks.
 - B. Household service lines.
 - C. Open channels.
 - D. Water mains.
5. The pumping water level is best defined as the distance from the top of the well to the:
 - A. Intake screen of the pump.
 - B. Location where the main flow of water enters a well.
 - C. Water after the pump has been operating for a period of time.
 - D. Water level from the start of a pump test to the end of the test.
6. The space between the inner or protective casing and the outer casing or drill hole should be filled with cement grout to a minimum of how many feet?
 - A. 10 feet.
 - B. 15 feet.
 - C. 20 feet.
 - D. 35 feet.
7. When bringing community water service to a home with a private well, what is the most important method of preventing a cross connection between the two systems?
 - A. Residential dual check valve.
 - B. Reduced pressure zone backflow preventer.
 - C. Complete isolation between the two systems using an air gap.
 - D. Pressure vacuum breaker in addition to an RPZ.
8. What is the physical connection, direct or indirect, which provides the opportunity for nonpotable water to enter a conduit, pipe or receptacle containing potable water?
 - A. Well Testing.
 - B. Pump injection.
 - C. Bell joint clamp.
 - D. Cross connection.
9. Which of the following causes taste problems and has a rotten egg odor?
 - A. Chlorine.
 - B. Benzene.
 - C. Nitrate.
 - D. Hydrogen sulfide.

ANSWERS: 1-D, 2-B, 3-C, 4-C, 5-C, 6-A, 7-C, 8-D, 9-D

2018 OREGON ASSOCIATION OF WATER UTILITIES

MEMBERSHIP APPLICATION

Name: _____

Address: _____

City/State: _____

County: _____ ZIP: _____

System Email: _____

Phone: _____ Fax: _____

Operator: _____

Contact Person: _____

Number of Hook-ups: _____

Were you referred? By whom _____

Type of System:

☐ Water ☐ Wastewater ☐ Both

Membership Category Amount of Dues

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Regular Member | \$ _____
See schedule below |
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1 to 100	\$75 + 34 cents per hookup
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Independence, OR 97351

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- System performance evaluation and options
- Additional programs and services
- Disaster response assistance and planning



MB18

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To join or for more information,
visit www.oawu.net or call 503-837-1212.

Oregon Association of Water Utilities
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Fax (503) 837-1213 www.oawu.net



OAWU's mission is to provide service, support, and solutions for Oregon water and wastewater utilities to meet the challenges of today and tomorrow.

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