CLACKAMAS
WATER
ENVIRONMENT
SERVICES

2020 **ANNUAL REPORT**

A message from Clackamas Water Environment Services Director Greg Geist

2020 was a year like no other.

Two historic crises changed the daily lives of Clackamas Water Environment Services (WES) employees and our customers. And it is not over. We will all be dealing with the effects of the pandemic into 2021.

Our hearts go out to everyone affected by the ongoing COVID-19 crisis and the destructive wildfires.

WES employees were immediately up and running, working through these unprecedented challenges to ensure that 190,000 WES customers receive the services they depend on every day.

While ensuring that services continue uninterrupted during the pandemic, WES staff members learned to use new personal protective equipment (PPE) and practice physical distancing while performing their essential duties.

The crises resulted in challenging work conditions and longer hours for WES employees, who remain committed to preventing service disruptions for our customers.

WES quickly became aware of financial hardships for customers created by COVID-19, so we waived late fees for unpaid wastewater or surface water bills for the duration of the crisis. We also offer a low-income discount for those in need.

Despite these challenges, WES reached major milestones in projects that will strengthen our ability to serve you. It is our pleasure to share these updates with you in this report.

We value you as a customer, and look forward to serving you in 2021 and beyond.

Sincerely,

Greg Geist
Director, Clackamas Water Environment Services

About Us

Clackamas Water Environment Services produces clean water and protects water quality for more than 190,000 people living and working in Clackamas County. We provide innovative water resource recovery services, stormwater management and environmental education.

We operate and maintain five water resource recovery facilities, 23 pumping stations and more than 360 miles of pipes. Each year, we clean more than seven billion gallons of water. In the process, we convert materials that have long been considered "waste" into electricity and natural fertilizer.

We also help reduce pollution in local rivers, streams, and wetlands caused by stormwater runoff, the number one source of water pollution in Oregon.

We educate and assist community members from all walks of life, from developers, property managers and homeowners to government agencies, local businesses, teachers and students.

It's our job to ensure that our families and neighbors enjoy the benefits of safe, healthy water for generations to come.

Protecting the Environment - Surface Water Management

Urban stormwater runoff is a leading source of water pollution in our state, carrying harmful chemicals and debris to our waterways.

In 2019-20, we awarded $300,000 in RiverHealth Stewardship Program grants to 14 organizations dedicated to improving the health of our watersheds.

WES also partnered with the City of Happy Valley and artist Sarah Miller to bring awareness about the impacts of stormwater on stream health through art in Happy Valley Park.

440+

More than 440 volunteers assisted WES at watershed restoration projects this year.

Pavement was removed at ClackaCraft Drift Boats to create a new stormwater infiltration facility.

Johnson Creek Watershed Council worked with Mad Science to present Science in the Park for children.

Keeping our Waterways clean with SOLVE

For the third consecutive year, Clackamas Water Environment Services partnered with SOLVE, one of Oregon's preeminent non-profit organizations working to improve our environment, for a series of Summer Waterway Cleanups to keep area waterways and natural areas clean and healthy.

Volunteers learned firsthand how trash on the ground can harm our streams and rivers if not removed.

After a delay due to the pandemic and wildfires, volunteers removed hundreds of pounds of trash from rivers, parks and natural areas.

20k

More than 20,000 trees and shrubs were planted at WES-sponsored projects.

SOLVE Chief Executive Officer Kris Carico and WES Director Greg Geist assisted at the cleanup at Happy Valley Park.

WES Advisory Committee member Michael Morrow helped at a SOLVE cleanup

Nearly 30 volunteers removed 300 pounds of litter at 3 Creeks Natural Area in Milwaukie.

Upgrades at the **Tri-City Water Resource Recovery Facility**

In 2020, WES marked a significant milestone in the Tri-City Solids Project, which will ensure that the wastewater treatment needs of more than 190,000 people are met for decades to come.

A new 1.3 million-gallon anaerobic digester at WES' Tri-City Water Resource Recovery Facility was successfully brought online in September. The new digester expands the facility's capacity to treat solids, a byproduct of waste from homes and businesses.

Along with the facility's two existing digesters, the new digester will turn waste into methane gas that is converted to heat and power, which provides nearly half of all electricity used at the Tri-City facility. The digester process also converts solid waste into natural fertilizer.

The new digester will help us serve a population that doubled over the past 30 years. In addition to protecting public health and the environment, the added digester capacity will protect future economic growth in our region.

WES Advisory Committee members tour the digester complex.

Inspecting the new Digester: Operators look through the new digester view port to verify mixing.

This artist rendering shows what the project will look like when completed in 2021.

Upgrades at the **Kellogg Water Resource Recovery Facility**

In 2020, several upgrades and refurbishments began to wind down at our Kellogg Water Resource Recovery Facility in Milwaukie and more repairs and refurbishments are planned for 2021 and beyond.

Built in 1974, the facility was in dire need of upgrades. Since 2017, nearly a dozen improvement projects have been completed.

Dedicated to being a good neighbor, we made odor control improvement a top priority. This upgrade was accomplished by placing covers on the aeration basins, which play a key role in breaking down pollutants.

"It's just like maintaining your house. If you don't take care of things, the problems get more expensive," said Lynne Chicoine, WES Capital Program Manager.

WES works with the Kellogg Good Neighbor Committee, which helps WES limit the impact of the facility on the surrounding area.

WES Operator Perry Wesby leads a tour of the Kellogg facility.

Kellogg Facility Operations Supervisor Joshua Clark inspects a new blower.

The Process – **The Cycle of Wastewater**

Curious how the wastewater treatment plant works?

During the preliminary and primary stages, wastewater flows through screens that removes large objects like rags or sticks. The sewage then passes into a grit chamber, where heavier materials like rocks, silt and sand are removed.

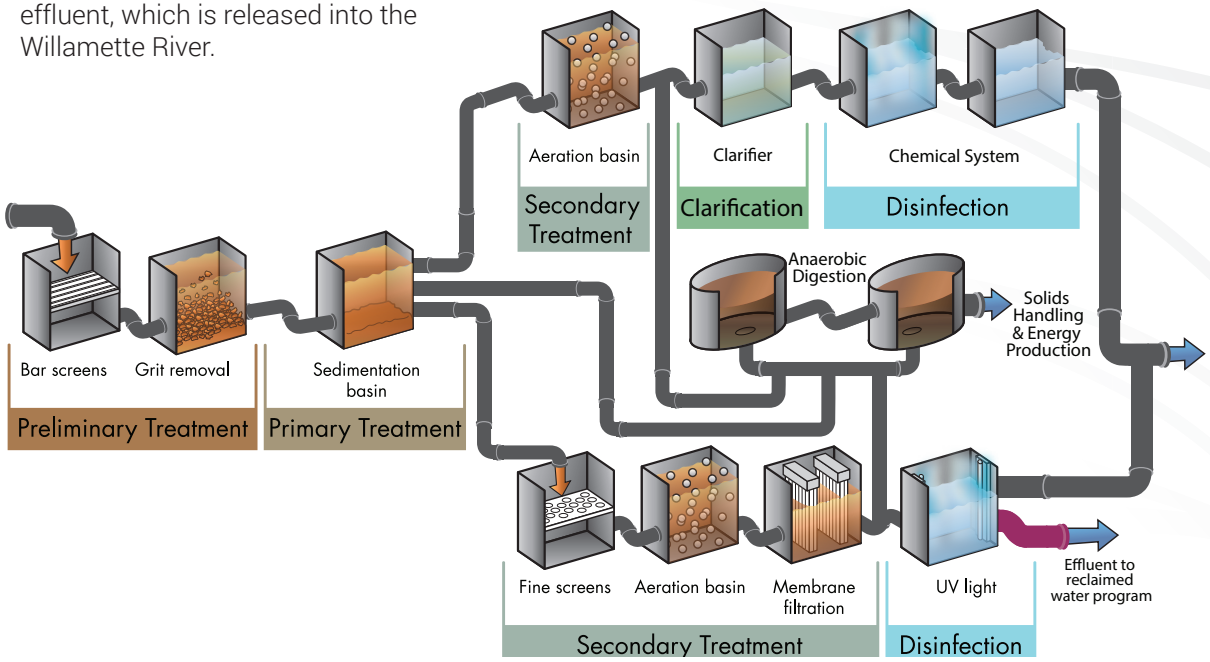
The secondary stage of treatment allows solids (a byproduct of waste) to settle before disinfection begins. Beneficial bacteria and air are pumped into an aeration basin to clean the wastewater as it flows to the secondary clarifiers.

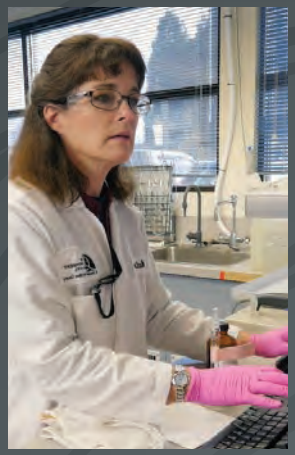
The membrane bioreactor uses fine screens, microbiology and filtration to remove environmentally-harmful materials. Anaerobic digestion uses microorganisms to break down organic materials, which generate biogas (mostly methane and carbon dioxide) in the absence of air.

The methane gas is then converted to heat and power, which provides electricity that is used at WES' Tri-City facility. The digestion process also converts waste into a natural fertilizer.

Ultraviolet or chemical disinfection (we use both methods) neutralizes microorganisms, preventing them from replicating.

The treated and cleaned water is called effluent, which is released into the Willamette River.





Testing water quality for safety

The Tri-City Water Quality Lab performs nearly 30,000 analyses per year from each of our facilities to check the health of the water at every step of the wastewater treatment process, making sure the discharge to the Willamette River complies with our permits.

Preparing the Future Workforce

In early 2020, WES partnered with the Clackamas Academy of Industrial Sciences (CAIS) in Oregon City to give CAIS students an opportunity to learn about a real-life WES engineering project.

WES' contractors Fowler Construction and Jacobs Engineering also took part in the partnership, which gave students a chance to learn about the construction of a third anaerobic digester at WES' Tri-City Water Resource Recovery Facility in Oregon City.

Students toured the construction site, gathered information for a class project, and then put together presentations for their CAIS classes.

CAIS students tour WES' Tri-City facility to gather information for their class projects.

1,277

students participated in WES-funded education programs during school hours.

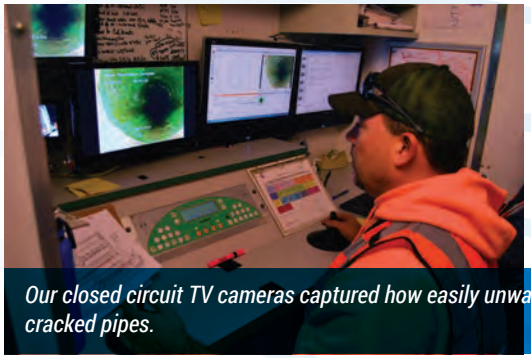
CAIS students give their presentations to a panel of judges comprised of teachers, WES staff and project contractors.

Maintaining Our Vital Infrastructure

Inflow and Infiltration (I&I) is water from rain or naturally-occurring groundwater that can seep into cracked or broken sewer pipes, adding to the flow of water into our wastewater treatment facilities.

Keeping this extra rainwater and groundwater out of pipes results in significant savings in sewer operations and maintenance costs. Reducing I&I is one of our highest priorities.

In 2020, WES supported initiatives by the cities of Gladstone and Oregon City to reduce I&I in their city-maintained sewer systems, which deliver water to WES' Tri-City Water Resource Recovery Facility.



Our closed circuit TV cameras captured how easily unwanted water can seep into cracked pipes.

WES field operators using video to inspect the pipes.

Working in the Field

We are all partners in keeping our water clean.

Stormwater ponds are bodies of water in commercial and residential developments that collect and clean stormwater runoff. These ponds improve water quality and control water quantity.

Businesses and homeowners are responsible for stormwater systems on their properties. But sometimes, the property owners are unaware of this responsibility or don't know how to properly maintain them. WES worked together with Marriott Hotels and Crystal Greens Landscaping in Clackamas to repair a failing stormwater pond that was overgrown with invasive plants and full of sediment. The pond now functions as it should and helps to reduce pollution.

If you have questions about a stormwater system on your property, please contact us!

Preserving our shared investment

From time to time, you may see crew members in your neighborhood, checking on pipes or other equipment to make sure everything is working properly.

Our crews are your front line of defense in making sure the wastewater gets to our treatment plants, where it can be cleaned.

Our team also works to ensure harmful pollutants carried in stormwater or surface water runoff are removed before it reaches the river or other waterways.

In a typical year, we will inspect and clean more than 2,500 storm structures that capture and treat polluted storm runoff.

The Vactor truck heads out.

Tackling challenges in the field.

A stormwater pond before and after.

Clear Storm Drains to Protect Your Property and Our Water

Regularly clearing your storm drains of leaves and debris helps reduce flooding and property damage while protecting watershed health and the quality of our drinking water.

Building Resiliency

The 82nd Drive Pedestrian Bridge

Popular with joggers, strollers and bicyclists, the 82nd Drive Pedestrian Bridge reopened in April 2020 after upgrades, which included seismically-retrofitting the bridge to withstand a magnitude 9.0 earthquake.

The bridge, owned and maintained by WES, is now capable of providing vital passage for emergency vehicles across the Clackamas River should such a catastrophic earthquake occur.

The bridge connects the cities of Oregon City and Gladstone. Other upgrades included new sanitary sewer pipes and added protections for pipes and utility lines that run across the bridge.

Increasing resiliency is the driving force behind all WES projects. WES is proud to support Clackamas County's priorities, which include building a strong infrastructure and ensuring safe, healthy and secure communities.

The bridge improvement project received a 2020 Achievement Award from The National Association of Counties.

Members from the Grand Ronde Tribal Historic Preservation Office toured the Tri-City Water Resource Recovery Facility to learn about the new outfall project.

Tri-City Water Resource Recovery Facility Outfall Project

WES is preparing to install a new outfall pipeline underneath Jon Storm Park in Oregon City that will be large enough to ensure reliable service for decades to come.

The current outfall was constructed in 1984 and is nearing capacity during peak wet weather events. The new outfall will allow WES to improve water quality in the river and improve operational resiliency.

The project was approved by Oregon City voters on Nov. 3, 2020. Estimated at $21,500,000, the project will be funded as part of WES' Capital Improvement Plan and will not increase taxes.

After construction, WES will restore Jon Storm Park to its original condition and provide for improvements identified by the Oregon City Parks and Recreation Committee.

Construction will adhere to the Oregon Department of Fish and Wildlife's Willamette River rules to minimize potential impacts to fish, Pacific lamprey, wildlife and habitat resources.

WES is also performing an archaeological investigation and working in compliance with the National Historic Preservation Act and the Confederated Tribes of Grand Ronde Tribal Historic Preservation Office.

Financial Stewardship

We take our responsibility as stewards of ratepayer dollars very seriously.

For 26 consecutive years, WES has received Certificates of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association of the United States and Canada (GFOA), which reflects our commitment to fiscal responsibility.

WES is also sensitive to the financial impact the COVID-19 pandemic has had on many of our customers. In response, WES decided to waive late fees for the duration of the COVID-19 crisis, and is working on flexible repayment plans that are sensitive to each customer's situation. We also lowered our annual rate increase from the original 5% to 2.5% as an average for WES customers.

New Online Payment System

In July 2020, WES launched a new and improved online payment system for our customers to pay their bills and have access to their accounts 24/7.

The goal of the upgrade is to make bill payments easier and more secure for our customers.

64%

Operations and Maintenance

- All wastewater treatment services including waste removal, biosolids management and disinfection of water
- Day-to-day plant maintenance
- Regulatory compliance, including laboratory
- Day-to-day collection system maintenance, including pump stations

17%

Infrastructure Financing and Reserves

- Equipment replacement
- Reserves for future project needs
- Building treatment capacity for future growth
- Construction

19%

Debt Payments

- Debt Payments
- Financing capacity expansion projects

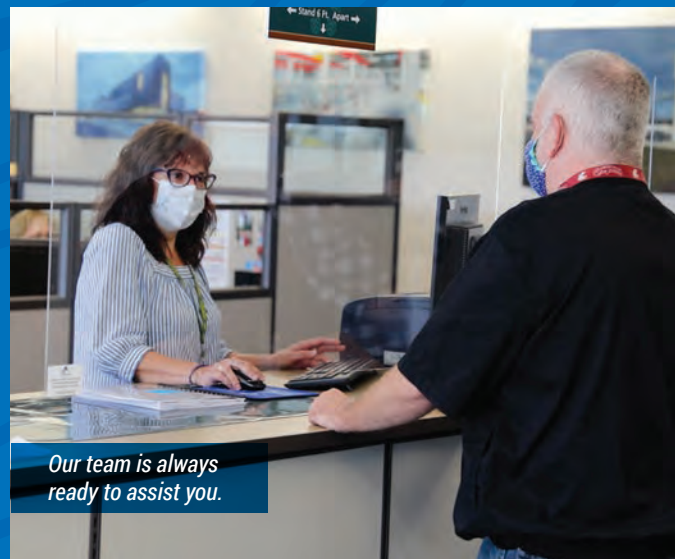
%s apply to each dollar of monthly sanitary sewer service charge revenue

The new system makes it possible to:

- View real time balances, payment amounts and bill due dates
- Make one-time or recurring payments
- Review transaction history

We also added a feature to our new 24/7 automated interactive voice response telephone payment option that allows customers to pay their bills by text.

From the start of the transition to the new system, the WES Customer Service Specialist Team has been ready to help customers who need a little help navigating the new process.



Our team is always ready to assist you.

Commissioners and Advisory Committee

The Clackamas County Board of Commissioners serves as the governing body of WES.

Commissioners receive recommendations from the WES Advisory Committee on a variety of key issues. The WES Advisory Committee includes ratepayers, environmental representatives, business owners, members of the development community and elected officials.

Members have experience in wastewater management, watershed health and restoration, economic development and surface water. The committee provides input and makes recommendations to WES and the Board of County Commissioners.

All WES Advisory Committee Members either live or work within the WES service area.

Russ Axelrod – West Linn Elected Official
Rita Baker – Environmental Representative
Christopher Bowker – Gladstone Representative
Tessah Danel – Development Representative
Greg DiLoreto – West Linn Representative
Angel Falconer – Milwaukie Elected Official
Anthony Fields - Milwaukie Representative
William Gifford – Oregon City Representative
David Golobay – Happy Valley Elected Official
Renee Harber – Environmental Representative
Diana Helm – Business Representative
Brian Johnson – Johnson City Elected Representative
Roseann Johnson - Development Representative
Kathryn Miller – Unincorporated Representative
Michael Morrow - Happy Valley Representative
David Schleef – Business Representative
Rocky Smith – Oregon City Elected Official
Tammy Stempel – Gladstone Elected Official

Members of the WES Advisory Committee tour the Tri-City Water Resource Recovery facility.

Advisory Board Chair Diana Helm and WES Assistant Director Chris Storey assist at a SOLVE cleanup event.

It's our goal to ensure that our families and neighbors enjoy the benefits of safe, healthy water for generations to come.

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