Growing Recycled Water Use in Oregon: Part of the Path to Oregon's Sustainable Water Future

House Interim Committee on Agriculture, Land Use, and Water

Presenters:

Oregon Association of Clean Water Agencies (ACWA)

Department of Environmental Quality (DEQ)

Clean Water Services (CWS)

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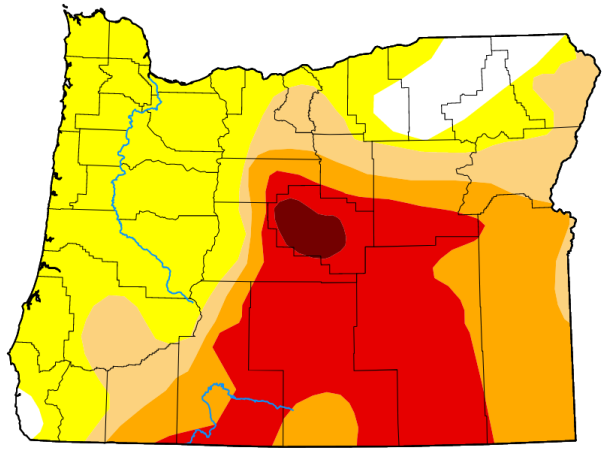
Growing Recycled Water Use in Oregon

- Oregon's increasing water resource challenges
  - Higher temperatures; more severe droughts
  - Stressed surface and groundwater supplies
  - Increased demand for water
  - Fish and wildlife needs
  - Water quality impairments
  - Water infrastructure affordability
- State is investing in regional water supply planning efforts
- Recycled water projects developed by public wastewater utilities and other entities can be part of the solution



Picture above of US Drought Monitor Map as of 12/1/2022: [Oregon | U.S. Drought Monitor (unl.edu)]

Beneficial Reuse of Recycled Water Should be Expanded

- Why?
  - A resource for domestic, agricultural, industrial, recreational, and habitat needs
- What are the benefits?
  - Reliable source & leaves fresh water in place
  - Tool to address drought, fire risk, & resilience in a changing climate
  - Good solution to water quality challenges like temperature and nutrients
  - Sustains urban greenscapes, natural infrastructure, & fish/wildlife habitats
  - Matching treatment to end use saves money, chemicals, and energy
  - Can support increased water demands from growth

How will we tap the recycled water resource in Oregon?

- Many successful projects operate in Oregon
- The potential for other projects great, but some struggle or are abandoned
- ACWA and DEQ have been working to identify challenges and solutions; we can look to other states to inform and build on Oregon's program
- Additional resources are needed to help state agencies and local communities unleash the potential for good recycled water projects in Oregon

Oregon DEQ's Water Reuse Program

Rian vanden Hooff
WQ Programs Sr. Legislative Analyst
rian.hooff@deq.oregon.gov
503-229-5988

Program Contact:
Pat Heins
Biosolids & Recycled Water Coordinator
pat.heins@deq.oregon.gov
503-229-5749

History of Oregon's Reuse Policy

- 1990 – Reuse policy first enacted
  (ORS 468B.015)

- 2003 – SB 820
  - Executive Order 05-04 (2005)
  - EQC adoption of Recycle Water regulations (2008)
  - EQC adoption of Graywater regulations (2011)

Oregon Reuse Program

Domestic Recycled Water

- 142 permitted WWTPs
- 3.7 billion gallons annually

Staff photo

Industrial Reuse

- 53 permitted facilities
- 6.9 billion gallons annually

Image courtesy of Instructables.com

Graywater

- 54 permit holders (residential)
- 81,000 gallons annually

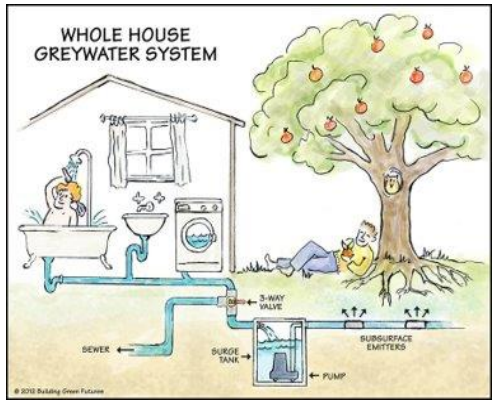


Image courtesy of Instructables.com

Oregon Reuse Program

- Support reuse applications in coordination with partner agencies - where appropriate and as resources allow.
- Ensure safe utilization including protecting public health and ecosystem function.
- Facilitate uses with multiple benefits, including those that support climate resiliency and IWRS objectives.

Image courtesy of USDA

Image courtesy of US Golf Assoc.

Clean Water Services

Tracy Rainey,

Clean Water Services/

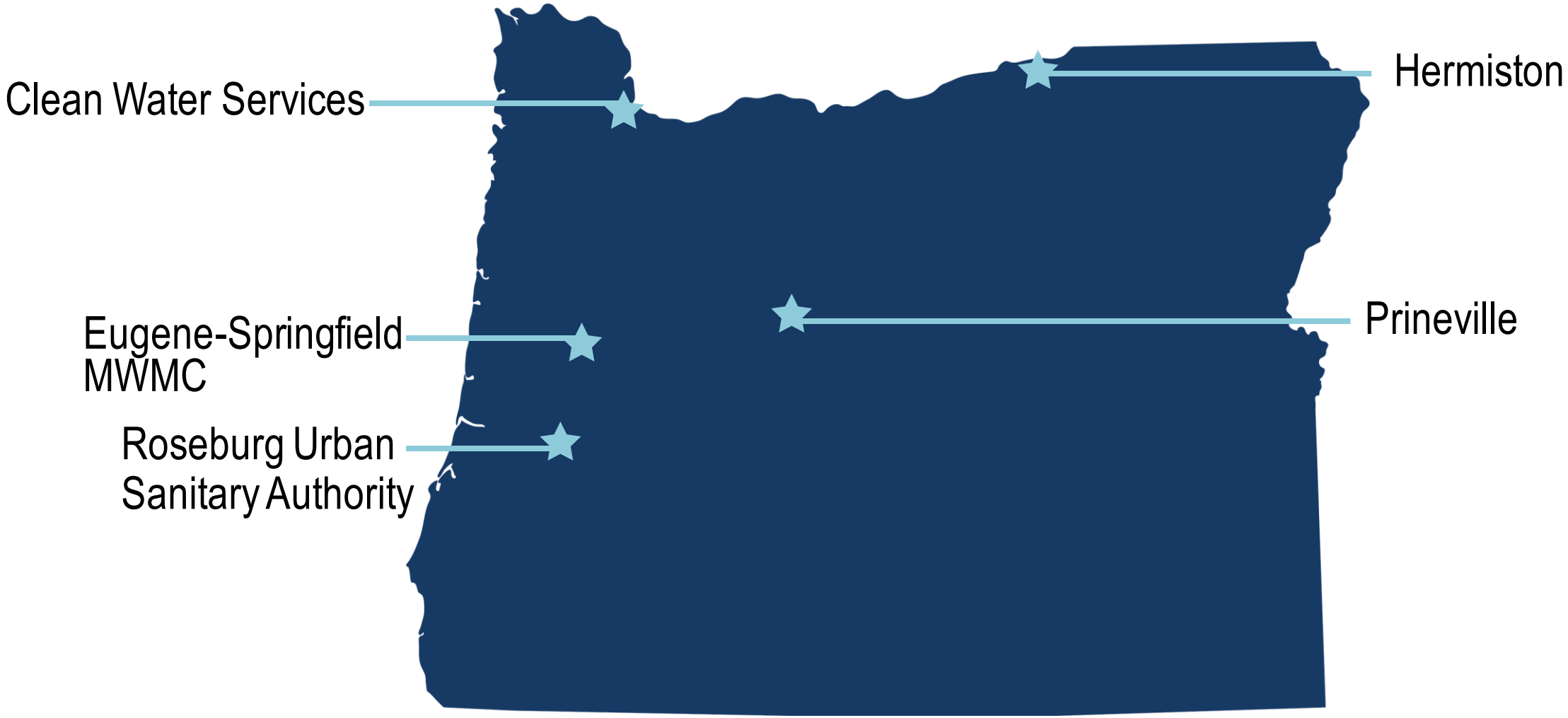
Co-Chair Oregon Association of Clean Water Agencies

Why Expanded Reuse?

- Reuse projects provide an opportunity to address core needs/challenges while providing additional, enhanced outcomes and benefits.

- Some of the potential benefits include:
  - Drought mitigation, climate adaptation, improved resiliency;
  - Enhanced environmental outcomes (including for wildlife and/or fish habitat);
  - Water exchanges - Reuse water can offset other irrigation sources, providing enhanced natural flows;
  - Helping to address the increasing need for dependent water supply;
  - A "tool in the toolbox" for improved water supply management;
  - Offsetting potable and non-potable water supply usage (especially during droughts);
  - Cost savings – infrastructure and treatment costs

Some of the Success Stories:



Eugene-Springfield MWMC

Project description: Biocycle Farm Poplar Plantation

- Agricultural tree farm operation provides beneficial reuse of biosolids and recycled water
- 400 acres of trees on 600-acre public land open space adjacent to Eugene airport

Additional Benefits to River Water Quality:

- Temperature
- Ammonia
- Nutrients, Nitrogen and phosphorus

Recycled Water Advantages:

- Increased crop production/yield
- Waste-to-commodity economic opportunities
- Increased carbon sequestration
- Maintains historic farmed wetland attributes
- Wildlife habitat is a marginal benefit of poplar trees but not unique to recycled water use

Prineville

Project description: Crooked River Wetland Complex—Natural Treatment System

- 120 acres of constructed wetlands
- 2 miles of Crooked River riparian restoration and fish habitat installations
- Public open space facilities

Problems solved: Crooked River WQ Concerns

- General wastewater treatment plant expansion for community growth

Additional benefits/projects attributes:

- Saved ratepayer costs and reduced cost of new housing
- Steelhead spawning habitat added
- Substantial new bird and wildlife habitat
- 5 miles of running/walking paths
- Educational facilities support school programs
- Community recreational amenity

Photo above: Crooked River Wetland Complex – permitted under NPDES Discharge Permit. Beneficial use of permitted wastewater discharge.

Photo above: Prineville Municipal Golf Course – permitted recycled water irrigation.

Roseburg Urban Sanitary Authority

Project description: WWTP Effluent Natural Treatment System Irrigation

- Restored and constructed wetlands—18 acres
- Native grassland/prairie—282 acres
- Broad community support

Problems solved: South Umpqua River WQ concerns

- Temperature
- Dissolved Oxygen
- Nutrients--phosphorus and nitrogen
- Chlorine

Additional benefits/projects attributes:

- Restored summer flows to Sylman Creek
- New fish and wildlife habitat
- Created cold water refuge for fish in the S. Umpqua
- Saved ratepayers over $90 million in conventional treatment
- Carbon sequestration
- Public open space/educational amenity
- Continuation of historic sheep ranch
- Improved 340 acres of watershed functions

Clean Water Services

Project description: Thomas Dairy Wetland Restoration

- Pilot project located along the Tualatin River (in Tigard, Oregon)
- Provide data and method for approving new beneficial uses
- 26-acre restoration project
- Includes multiple acres of emergent wetland, wet prairie and oak savanna

Water Quality Benefits:

- Temperature
- Oxygen demand
- Nutrients

Additional benefits/projects attributes:

- Ecological habitat creation
- Agricultural commodity for native wetland plants seed for restoration
- Restoration of native habitat
- Urban greenspaces
- Water and streamflow management

Hermiston

(in partnership with West Extension Irrigation District)

Project description:

- 1.5 million gallons/day
- Highly Treated (Class A) water
- WWTP discharge to WEID irrigation canal

Problems solved:

- Umatilla River temperature and nutrients/ammonia levels
- Supported by fish interests, tribes, and ag. community

Additional benefits/projects attributes:

- Provides 140-acre ft/mo. for crop irrigation including organic farms
- Leaves 1.5 mgd instream/offsets pumping requirements
- Economical for ratepayers (wastewater and farmers)

Key Takeaways:

- There is significant, untapped opportunity to expand reuse in Oregon.
- Approaching Beneficial Uses of Treated Wastewater as a Resource…Not a Waste
- Opportunity to address core water quality/supply challenges while providing additional, enhanced outcomes and benefits.
- Innovative solutions are typically more difficult for wastewater utilities to plan, fund, and implement.
  - *Especially true for smaller communities.*
  - *We need additional resources to improve upon existing process to make projects more feasible, attractive and implementable.*

Questions?