



King County
recycledwater

the right water for the right use

Reclaimed Water: New Water, New Solutions for Washington

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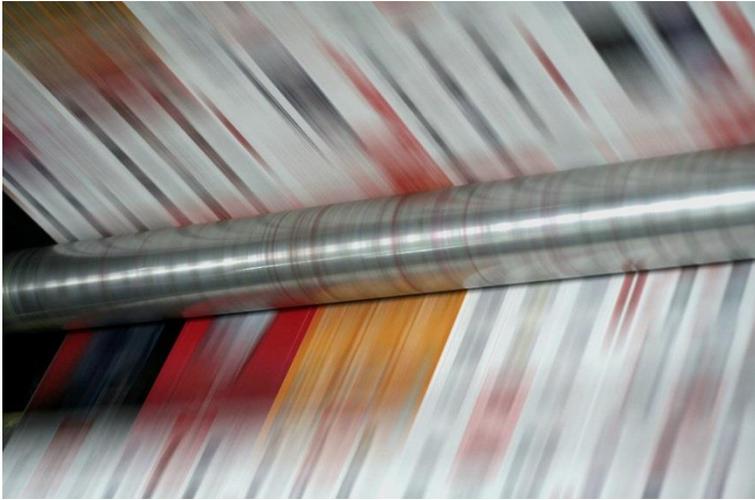
1. Current state of reclaimed/recycled water use
2. Washington State regulations and uses
3. Innovative water resource projects using water reuse
4. Future of water reuse



Reclaimed Water is:

Also known as “Recycled Water” or “Reuse Water”

The many uses of recycled water...



Industrial process water



Irrigation



Environmental Enhancement



Even for potable water



Direct and Indirect potable reuse projects (as of April 2017)

From 2017 Potable Reuse Compendium, EPA

RECYCLED WATER COAST-TO-COAST

6.5 Billion

Gallons of Recycled Water Used for Idaho Agriculture

92% of the recycled water Idaho produces is used to irrigate crops, a beneficial use that keeps **2000 tons of nitrogen** and **500 tons of phosphorus** out of Idaho rivers and streams.



GM Saves \$2 Million with Stormwater Reuse

General Motors captures and reuses stormwater for cooling towers at its Detroit-Hamtramck assembly plant, saving **\$2 million** a year.



It's Patriotic to Generate \$4 Million in Massachusetts

But for on-site, decentralized water recycling, Foxboro could not meet water demands for Gillette Stadium, home to the New England Patriots. This NFL team generates **\$4 million annually** for the local economy.



850,000 Taps Served Daily in California

Orange County annually recycles enough to supply drinking water for **one-third** of its homes and businesses.



Driving 20,000 Jobs in Nevada's Desert

A planned 13-mile pipeline will provide **1.3 billion gallons** of recycled water annually to Tahoe Reno Industrial Center, home of Tesla, Switch, and Google...and **20,000 new jobs**.



Supporting 70% of Global Internet Traffic through Virginia

Recycled water cools Loudoun County's "Data Center Alley" which processes more than **two-thirds** of the world's Internet traffic.



\$35 Million for Ski Slopes in Arizona

The Snowbowl, a ski resort in Arizona's San Francisco Peaks, uses recycled water for its slopes—sustaining a **\$35 million** tourism industry.



2,000 Acres of Wetlands and Reuse in Texas

Recycled water replenishes the Upper Trinity River and man-made wetlands—restoring a natural habitat for migratory birds and **supplying drinking water for the Dallas/Ft. Worth area**.



\$600 Million Hole-In-One in South Carolina

Hilton Head recycles water to irrigate eleven destination golf courses—sustaining **\$600 million annually** in recreational tourism.



100,000 Homes Powered in Florida

Tampa Electric uses recycled water to cool a power plant and generate electricity for **100,000 homes**.



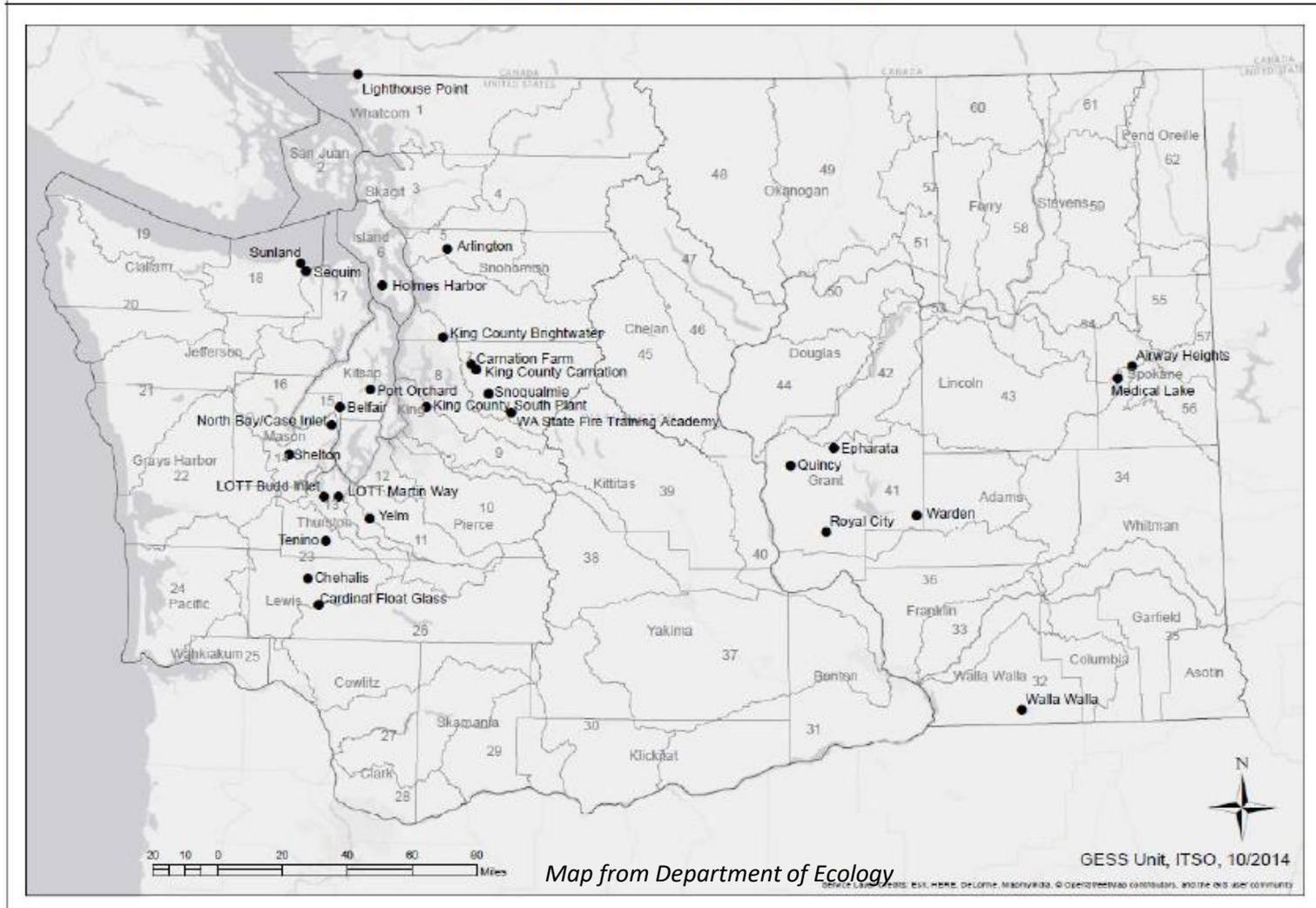
Reclaimed Water in Washington

- Authorized in 1992 in Washington, codified in RCW 90.46.
- Regulated jointly by Department of Ecology and Department of Health.



There are 29 permitted recycled water facilities in Washington.

RECLAIMED WATER FACILITIES - 2014



Map from Department of Ecology

CESS Unit, ITSO, 10/2014

How can reclaimed water address water resource challenges?



Healthy aquifers and streams

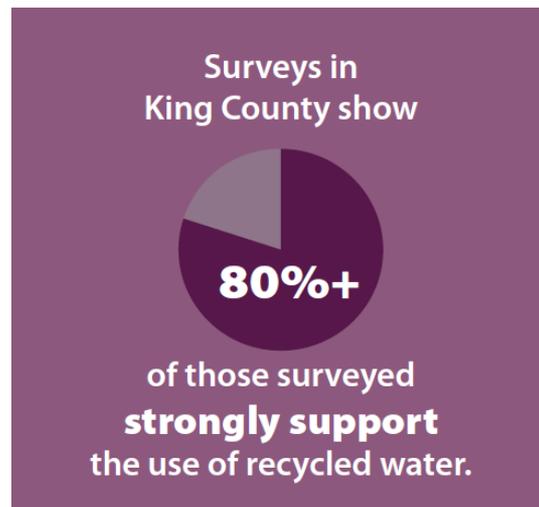
Water supplies for agriculture and municipalities



Wastewater discharge limits

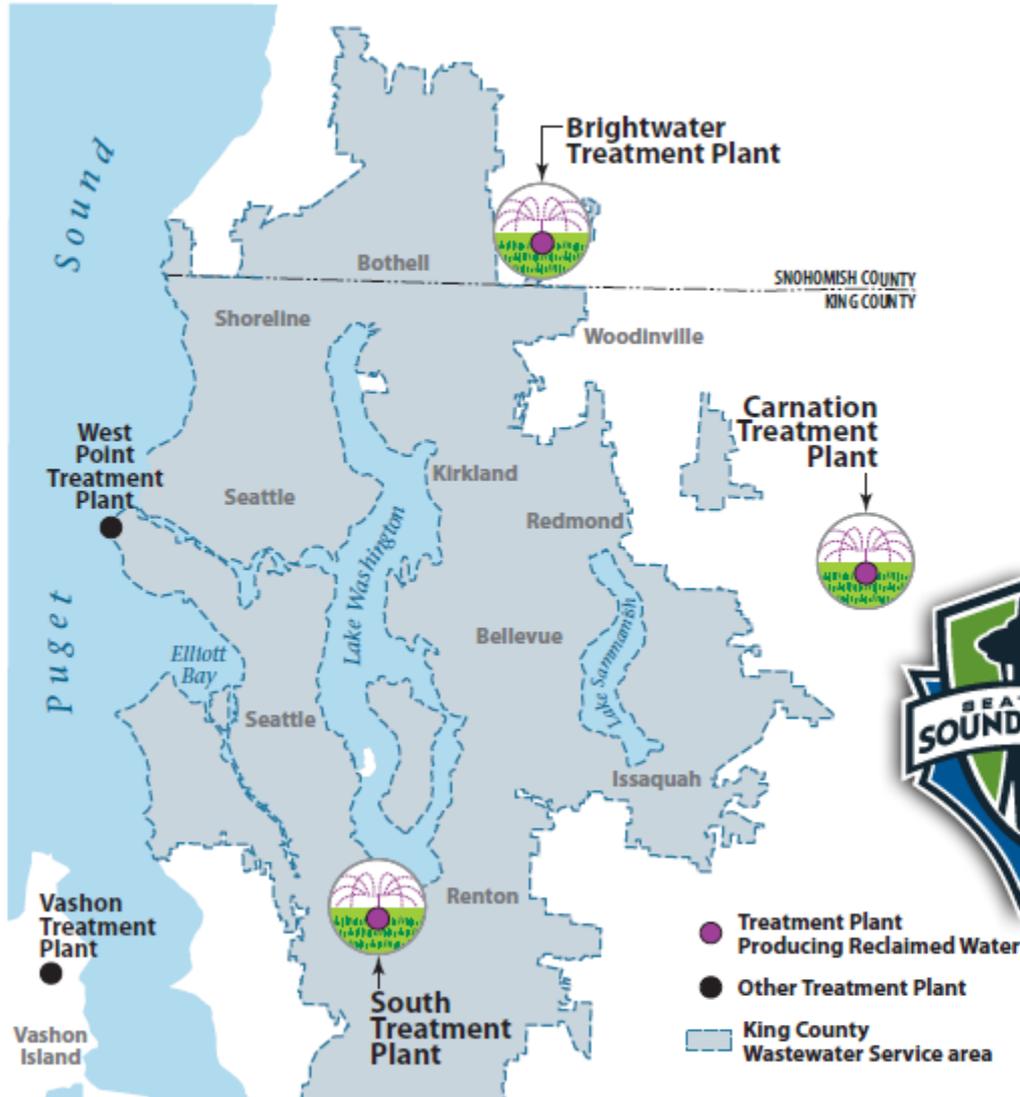
Why does King County make Recycled Water?

- Reduce reliance on Puget Sound for discharge
- Keeps more water in streams and aquifers
- Recycle nutrients and reduce fertilizer use
- Supports conservation and recycling values of our community



King County Recycled Water Facilities

KING COUNTY TREATMENT PLANTS PRODUCING RECYCLED WATER





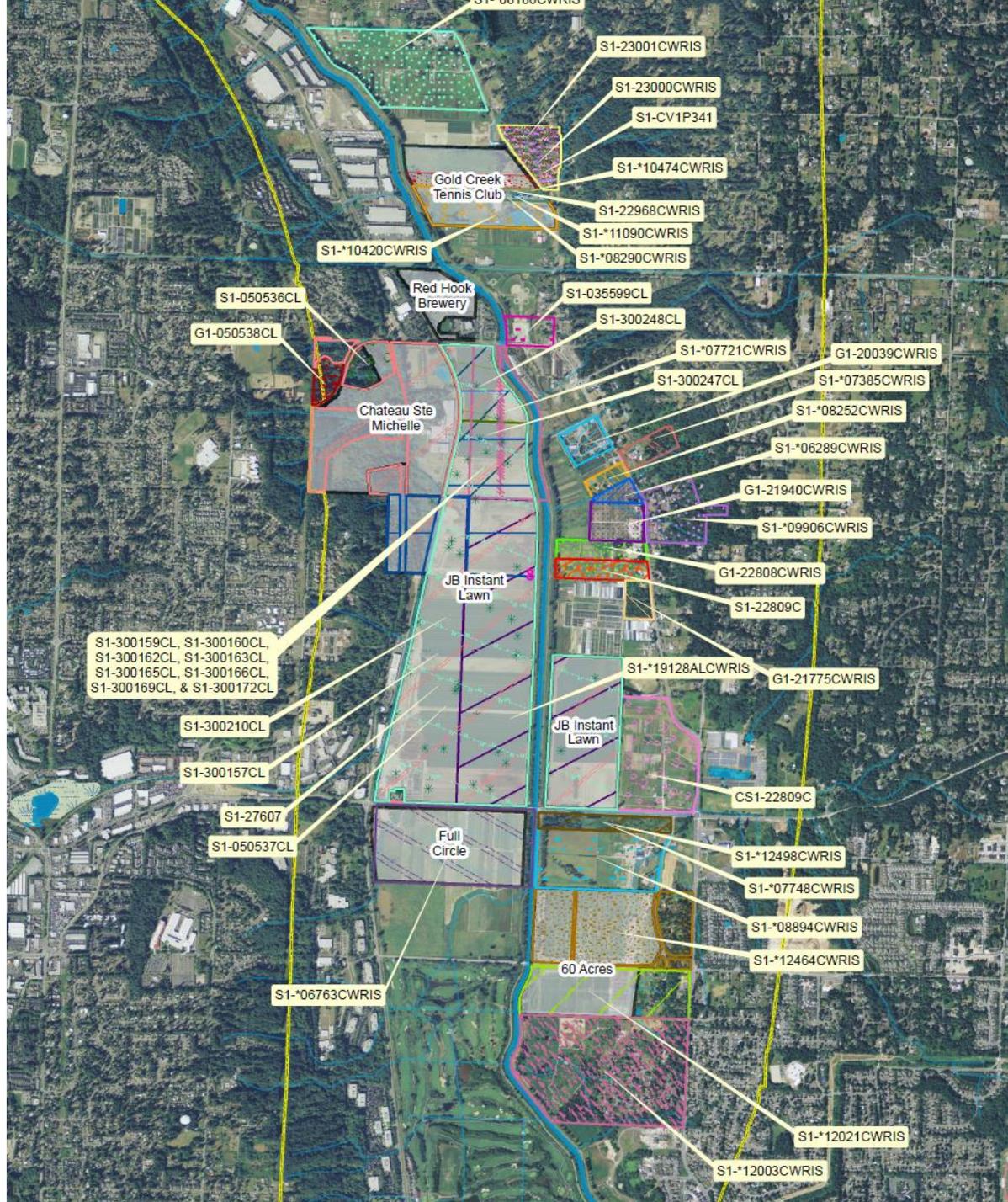
King County Chinook Bend

- Reclaimed water enhances wetland
- Habitat and ecological restoration



King County Brightwater Treatment Plant Woodinville, WA

- Produces Class A reclaimed water distributed to the Sammamish Valley
- Capacity of 11 MGD (7,639 gallons per minute)
- Used for irrigation of landscape crops, turf, food and commercial/industrial uses



Sammamish Valley Irrigators & Water Rights

Source:
Department of Ecology



Sammamish Valley Recycled Water Project

- Keep water in the Sammamish River
- Enhances parks, golf courses and local agriculture
- Creates opportunities for water markets/trading water rights
- Drought-resistant water supply

Willows Run Golf Course keeps about 40-50 million gallons of water in the Sammamish basin each summer by using recycled water.



Willows Run Golf Course saves time and money by using Recycled Water.



Willows Run Golf Course became Salmon Safe certified after switching to recycled water. Learn more at salmonsafe.org

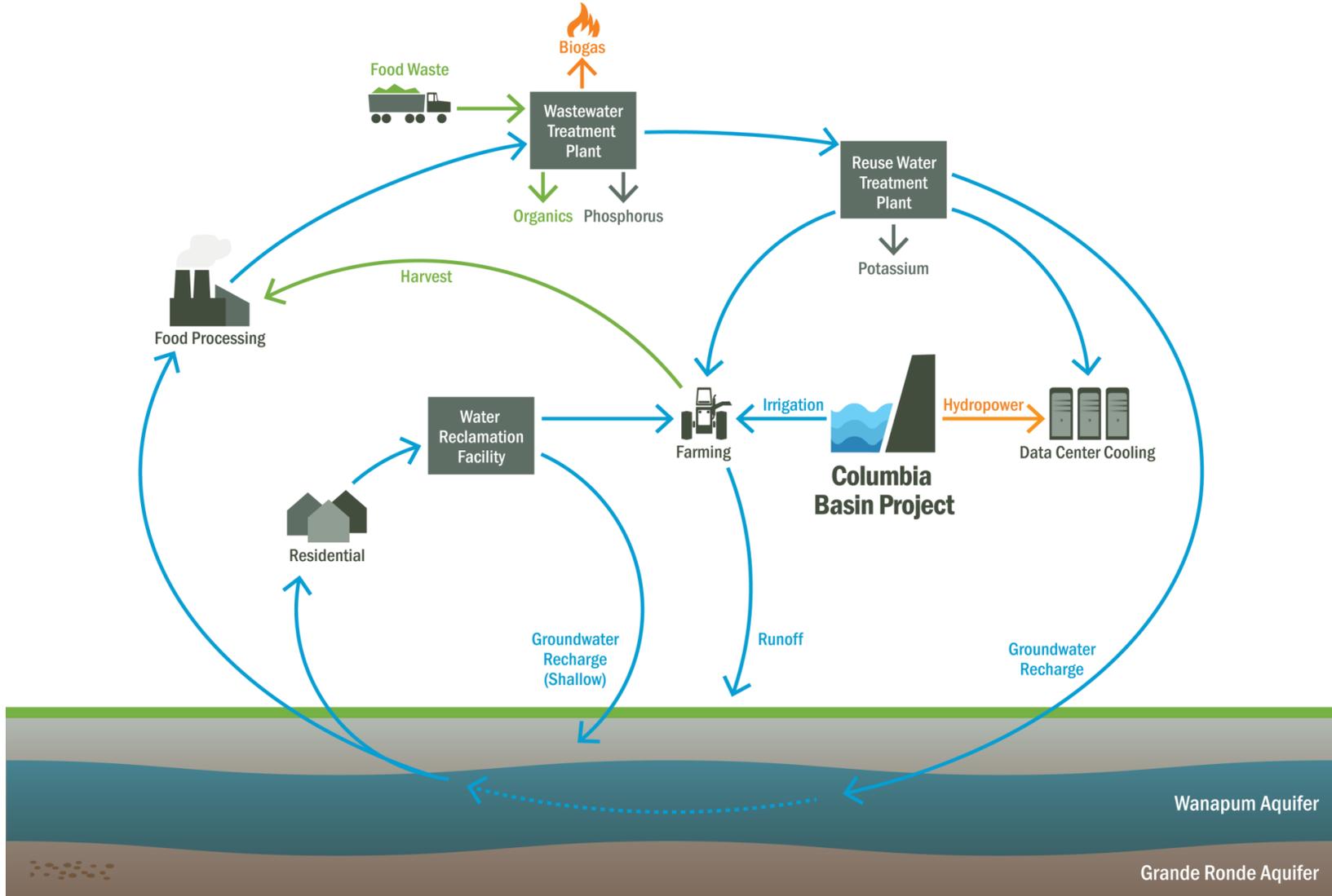


INNOVATIVE RECYCLED WATER PROJECTS



Woodland Creek Groundwater Recharge Facility, Lacey, WA

- Subsurface infiltration beds
- Mitigation for municipal water rights
- Recharge basins is public park

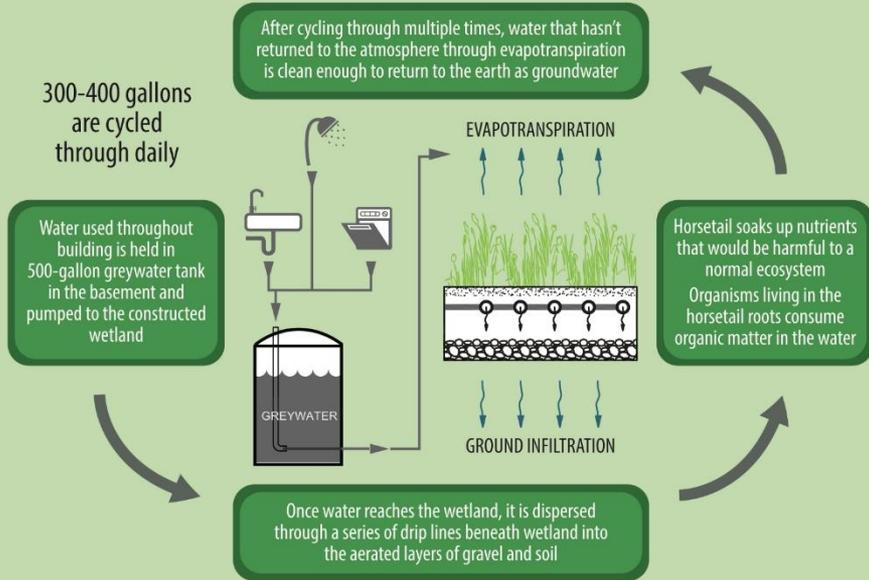


City of Quincy, WA

- Economic development -water supply for data centers, food processors
- Pursuing Aquifer Storage and Recovery

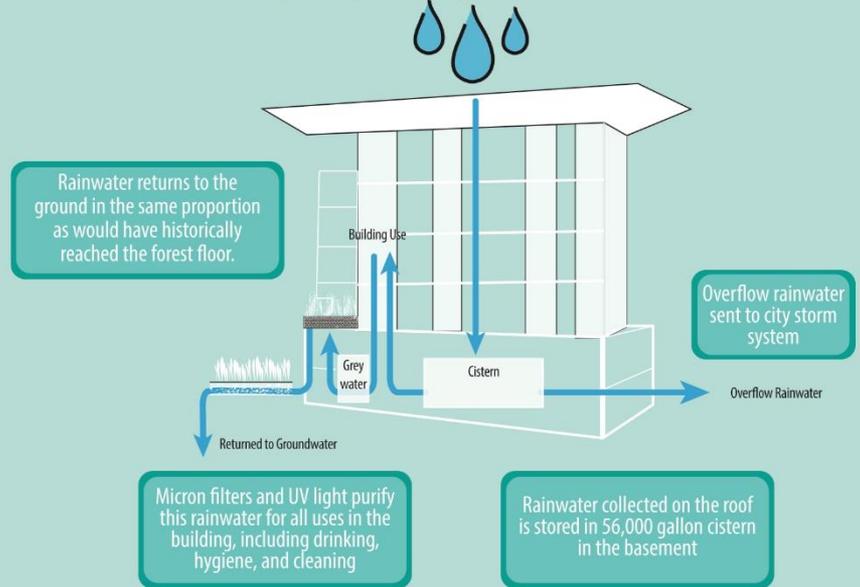
GREYWATER SYSTEM

WASTEWATER CYCLE



RAINWATER HARVESTING

The Bullitt Center's water cycle mimics the natural hydrology of the old-growth Douglas Fir Forest that once stood in its place by collecting rainwater



Bullitt Center

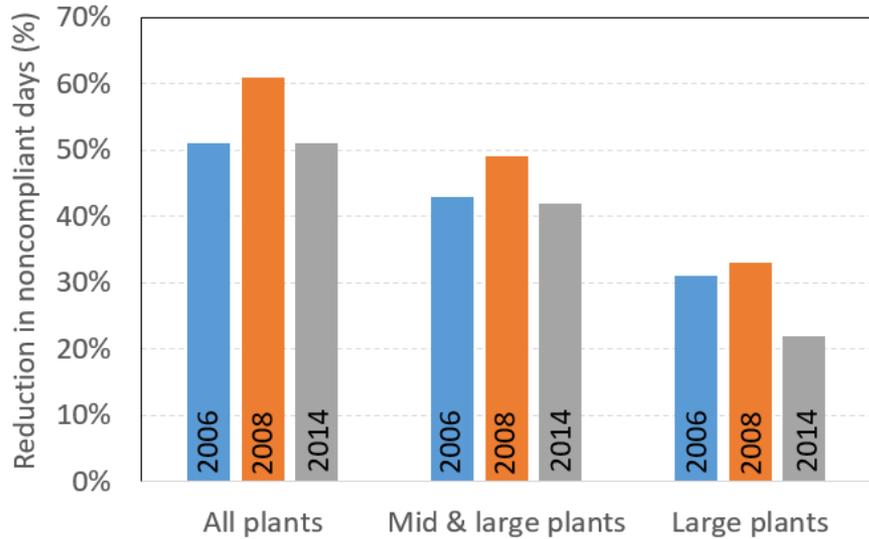
- Decentralized non-potable reuse
- Greywater and rainwater captured and reused onsite for non-potable uses
- Composting toilets treat and reuse human waste



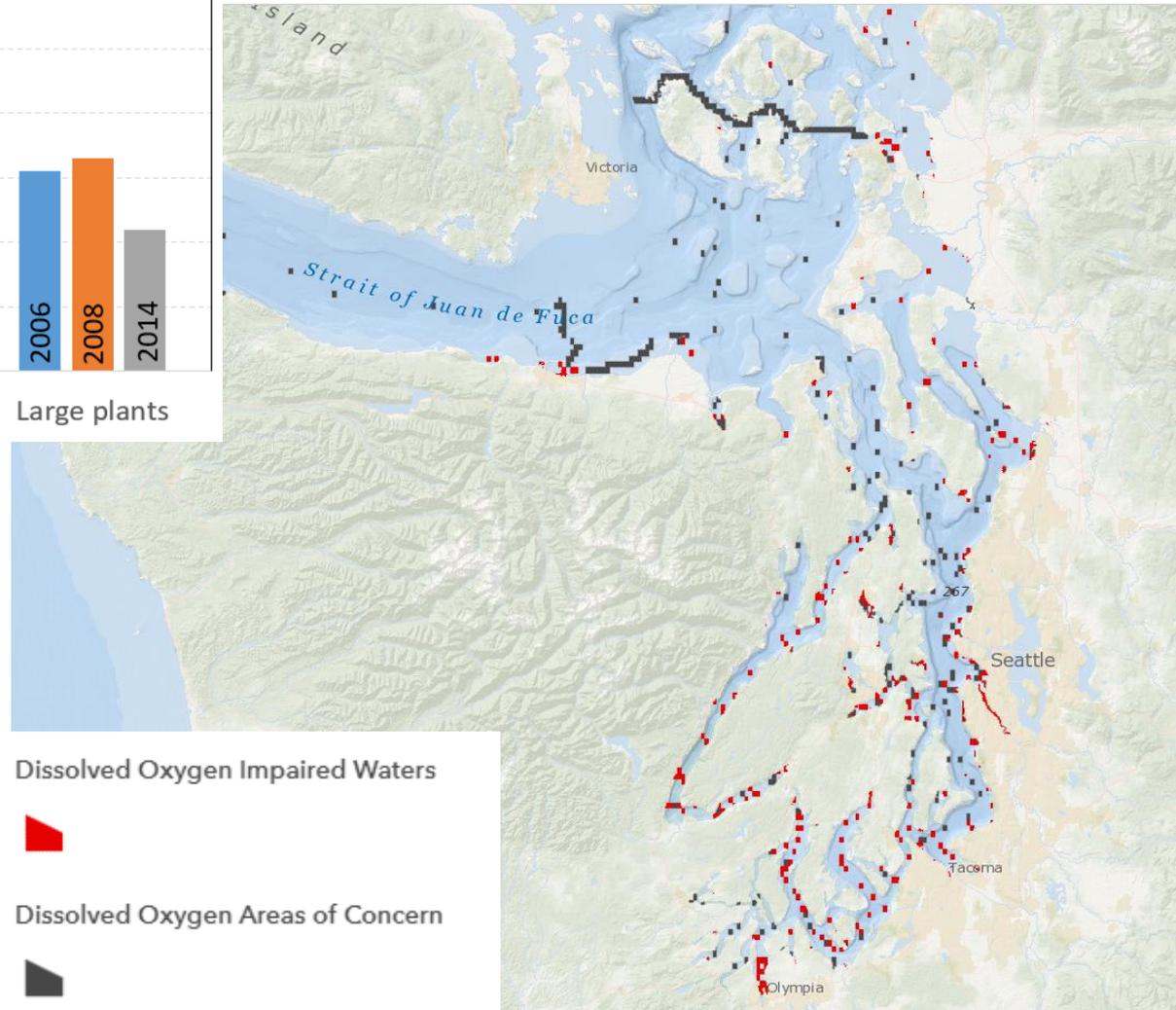
FUTURE DRIVERS FOR WATER REUSE IN THE PACIFIC NORTHWEST

Puget Sound Nutrient Source Reduction Project

Improvement in non-compliant days with BNR



Department of Ecology is investigating nitrogen limits for wastewater plants to improve water quality in Puget Sound.



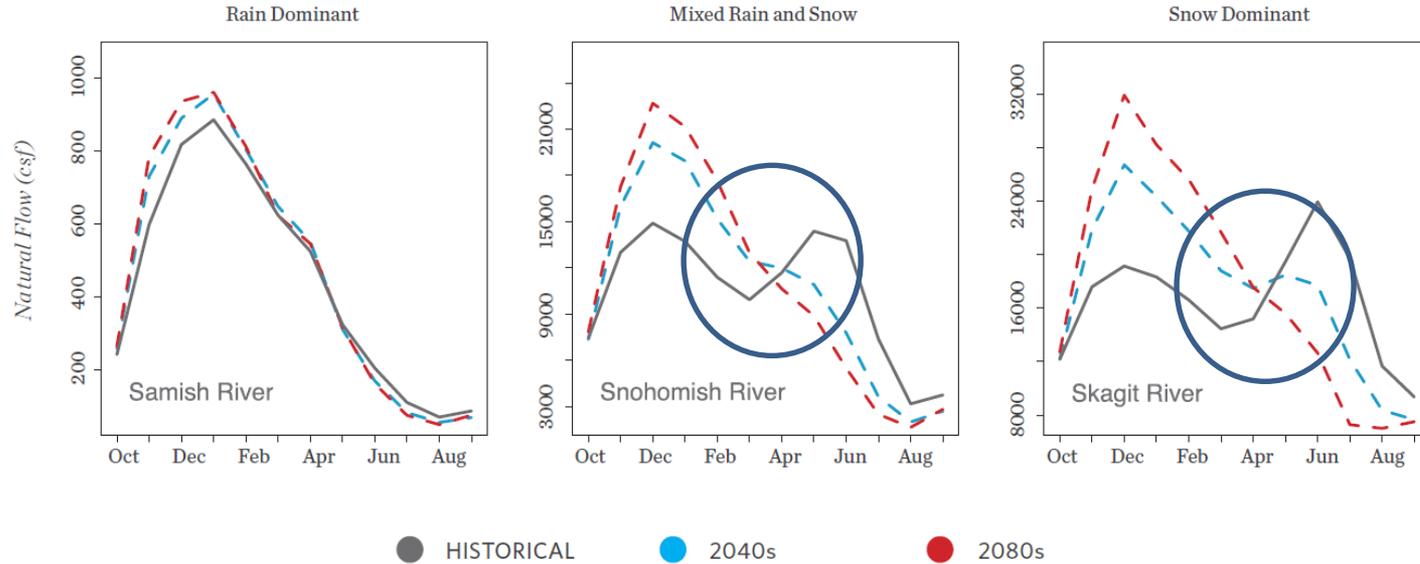
Watershed Restoration and Enhancement Plans



Stream flow restoration could include reclaimed water in some basins to mitigate impacts from domestic wells.

TIMING OF STREAMFLOW

Most Puget Sound watersheds will be rain dominant by the end of the 21st century



2015 State of Knowledge: Climate Change in Puget Sound. Climate Impacts Group

Reclaimed water may help respond to changing watershed hydrology due to climate change.

National Water Reuse Action Plan

EPA is developing development of a National Water Reuse Action Plan that will better integrate federal policy to ensure the effective use of the Nation's water resources. EPA and its partners will evaluate these and other opportunities for reuse to identify the opportunities and challenges in the following areas:

- Technological improvements
- Regulatory/policy analysis at all levels of government
- Financial initiatives
- Performance requirements
- Access to water use and availability data
- Outreach opportunities

Comment on the action agenda through July 1, 2019

<https://www.epa.gov/waterreuse/water-reuse-action-plan>



www.kingcounty.gov/recycledwater



<https://watereuse.org>