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Washington Regulatory Considerations for Reclaimed Water Use

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Reclaimed Water Use

Reclaim The Water

- Wastewater origin
- Treatment processes



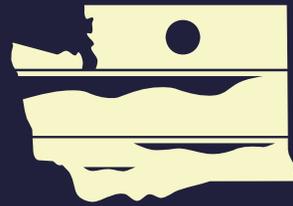
Use The Water

- A class of water
- A “new” supply



Properties of reclaimed water

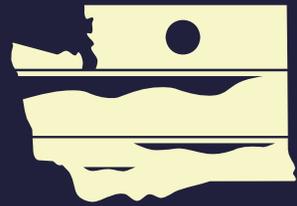
- Derived (in part) from sewage
- Adequately and reliably treated.
- Must meet water quality at all times.
- Exclusive right to use and distribution.
- Put to beneficial uses.
- No longer considered waste water



Our Challenge

The challenge for government is to continue making the regulatory process more transparent and consistent.

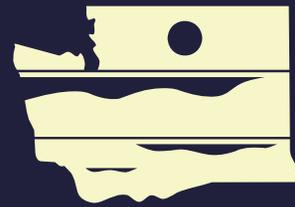
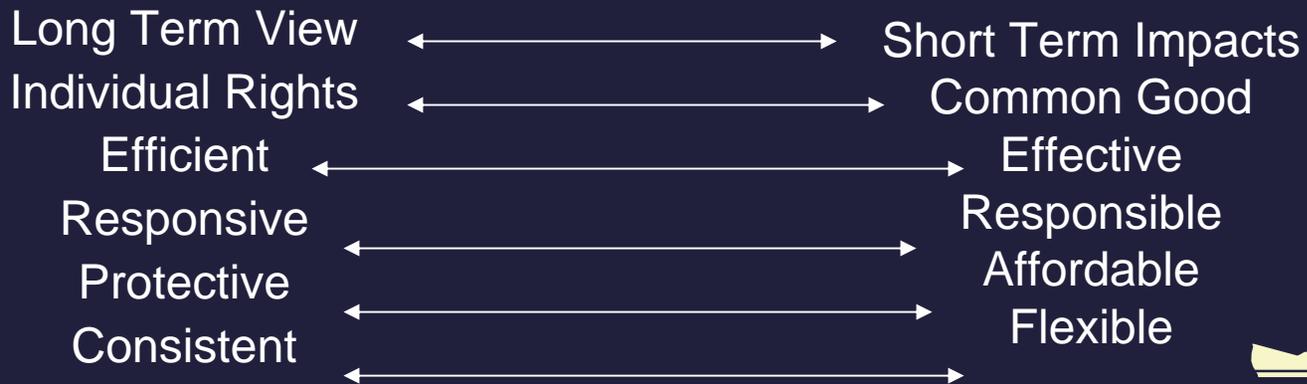
We must build in flexibility to encourage innovation, without ever lowering our standards on the environment, health, safety, and protection.



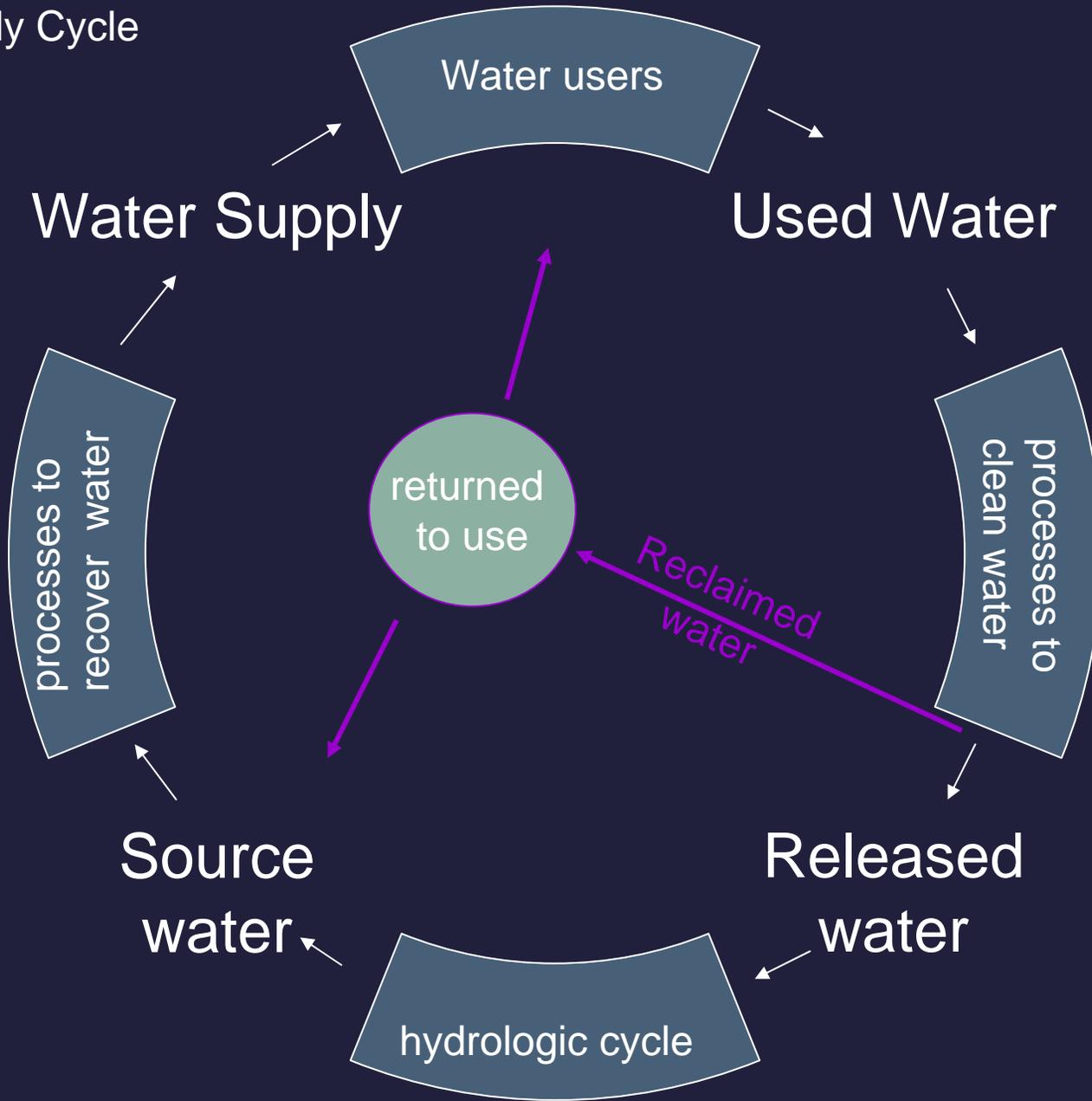
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Regulatory Challenges

It's not just Quality vs Quantity
Or even People vs Fish



Water Supply Cycle



Washington State Standards

Three sections.



Traditional uses:

- irrigation, impoundments, commercial, industrial.
- ground water recharge surface percolation.
- streamflow augmentation.



Wetlands.



Direct groundwater recharge.

“Adequate and Reliable”

- Source control, pretreatment
- Treatment processes
- Process control systems
- Alarms
- Emergency storage and diversion
- On-line monitoring



“Adequate and Reliable”

- Storage
- Chlorine residuals in distribution
 - Purple pipes
- Cross connection controls
- Signs
- Management practices



Four Basic Classes

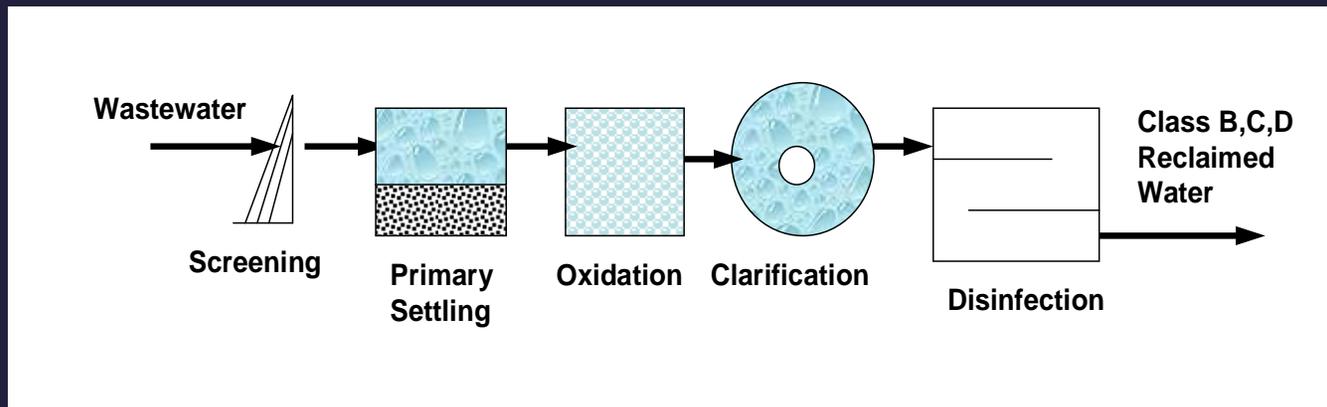
Class Level	Oxidized (Secondary) BOD/TSS mg/L	Coagulated	Filtered Turbidity (NTU)	Disinfection (Total Coliform/ 100 mL)	
				7-Day Median	Single Sample
A	30	YES	2 NTU	≤ 2.2	23
B	30	NO	NO	≤ 2.2	23
C	30	NO	NO	≤ 23	240
D	30	NO	NO	≤ 240	No standard

Increasing level of treatment required
Increasing chance of human exposure



Class B, C or D Reclaimed Water

Minimum of Secondary Treatment

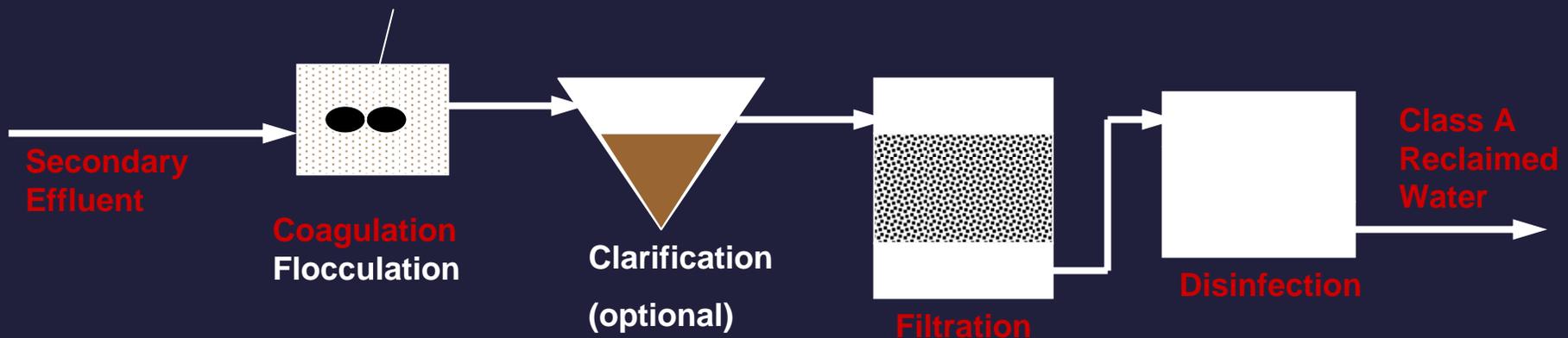


Increasing levels of disinfection



Increasing chances of human exposure

Class A - advanced treatment is required.



Increasing level of treatment required



Increasing chances of human exposure

Required Class for Use	A	B	C	D
Trees and Fodder, Fiber, and Seed Crops Flushing Sanitary Sewers	YES	YES	YES	YES
Pasture Accessed by Milking Cows or Goats Irrigation of freeway landscapes Dust control or making concrete	YES	YES	YES	NO
Surface Irrigation - No Contact With Edible Crop	YES	YES	NO	NO
Spray Irrigation – All food crops Open public areas – parks, schoolyards, homes Fire hydrants and sprinkler systems	YES	NO	NO	NO

Increasing level of treatment required
Increasing chance of human exposure



Ground Water Recharge

Surface Percolation

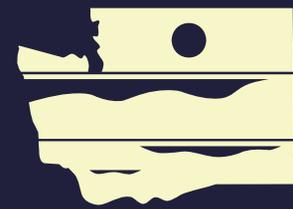


More treatment

- Class A
- Nitrogen removal
> 10 mg/L

Groundwater limits

- Drinking water standards
- Other necessary parameters



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Ground Water Recharge

Direct Aquifer Injection

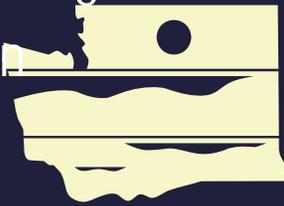


More treatment

- Class A plus
- Reverse osmosis

More stringent limits:

- Ground water standards
- Drinking water MCLs
- Turbidity < 0.1 NTU
- Nitrogen less than 10 mg/L
- Total Organic Carbon
 - <1.0 mg/L



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Wetlands Uses



Constructed, created or natural

- Treatment – Project Specific
 - Reclaimed Water A-D
- Hydrology
- Biological diversity
- Nutrients
- Meet surface water standards
 - (if to surface waters)
 - EPA Clean Water Act



Surface Water Augmentation



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- 💧 Treatment Site Specific
- 💧 Class A-D

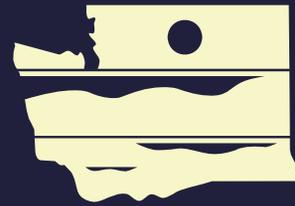
- 💧 Consider:

- 💧 Downstream uses

- 💧 Travel time

- 💧 Surface water standards

- 💧 EPA Clean Water Act

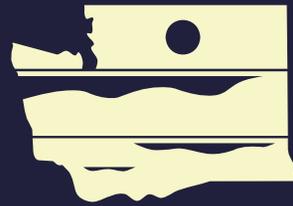


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So Where Are We Today?

PHASE 1

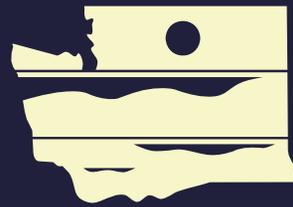
- 1992 - Reclaimed Water Use Act
 - dual agency authority
 - advisory committee and standards (not in rule)
 - permit process from WQ permits – a single permit
 - exclusive right to use
- 1997 - Standards completed
- 1997 - Pilot and fund demonstration projects
- 1998 - Design guidance completed



So Where Are We Today?

PHASE 2

- 2000 – Established internal staff workgroup
- 2001 - Agricultural process water use
- 2002 – Industrial process water use
- 2003 - NWRI facilitated workshop
- 2004 – New federal guidelines
- 2005 - Case Studies
- 2005 - Legislation – private utilities
- 2006 – Legislation – rule-making by 2010



So What's Next?

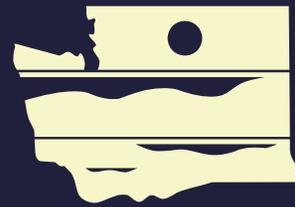
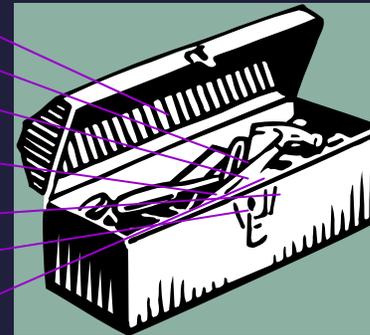
Issues:

1. Affordable - advanced technologies
2. Washington specific requirements
3. Better integration with other regulations/standards
4. Responsive to new issues and ideas.

A Comprehensive Tool

- Helps Support All Uses
- Protects Public Health
- Prevents Pollution
- Cleans Up Pollution
- Streamlines Water Rights
- Can be cost-effective

- Responds to Future Needs
 - Population Growth
 - Climate Changes
 - Demand for Water
 - More Stringent EPA Regulations
 - Public Awareness
 - Sustainability



Things to think about

- Minimal Technical Standards
 - Treatment, Operation, Distribution, Use
- Groundwater recharge (and recovery)
- Plan Evaluation and Feasibility
- Water Rights
- Permitting Process
- Small Systems and Greywater
- Roles of Department of Ecology and Health
- Other

