DEPARTMENT OF
ECOLOGY
State of Washington

Implementation of Reclaimed Water Use

2008 Report to the Governor and State Legislature

Submitted in fulfillment of the January 1, 2009 reporting requirements of the Reclaimed Water Use Act, Ch. 90.46 RCW

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Submitted in fulfillment of the January 1, 2009 reporting requirements
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by

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Acknowledgements

Ecology wants to acknowledge the hard work of our four stakeholder advisory committees. We could not have accomplished as much without their interest, support, and willingness to contribute.

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- Reclaimed Water Rule Advisory Committee (RW-RAC)
- Technical Advisory Panel (TAP)
- Removing Barriers Subtask Force (subtask force)
- Reclaimed Water and Water Rights Advisory Committee (RW-WR)

Advisory Committees and Members

Reclaimed Water Rule Advisory Committee

In 2006, the Legislature directed Ecology, in coordination with the Washington Department of Health, to convene an advisory committee to assist in reclaimed water rule development. The members of the RW-RAC include state and local government, public utilities, business associations, private sector environmental professionals, and environmental groups.

Table 1. Reclaimed Water Rule Advisory Committee

Table 1. Reclaimed Water Rule Advisory Committee	
Katharine Cupps Agency Lead, Reclaimed Water, Department of Ecology, WQP Tim Gaffney, Rule Analyst, Department of Ecology, Water Quality Program Dave Lenning, Department of Health Manager, Office of Shellfish and Water Protection	
Representative	**Organization**
Michael Barber	Washington Water Research Center, WSU
Walt Canter	WA Association of Water & Sewer Districts
Ginger Desy	Sno-King Water District Coalition
Keith Folkerts	Kitsap County
Karla Fowler	LOTT Alliance
Tom Fox,	Seattle Public Utilities
James Hagstrom	Pacific NW Clean Water Association
Sue Kaufman-Una	King County
John Kounts	Washington Public Utility District
Chris McCabe	Association of Washington Business
Bill Peacock,	City of Spokane
Clint Perry	Evergreen Valley Utilities
Don Perry	Lakehaven Utility District
Bruce Rawls	Spokane County
Douglas Raines	Washington Dept. of Corrections
John Stuhlmiller	Washington Farm Bureau
Jade Sullivan	Covington Water District
Pete Tjemsland	City of Sequim
Heather Trim	People for Puget Sound
Ann Wick	Department of Agriculture
Tim Wilson	City of Lacey
Other Participants	
Donna Freier	City of Olympia
Tom Martin	Clallam Public Utility District
Frank Needham	City of Sequim
Paul Schuler	Pacific NW Clean Water Association
Hal Schlomann	WA Association of Water & Sewer Districts.
Angie Thomson	Facilitator, EnviroIssues
Diann Strom	Notetaker, EnviroIssues
Lynn Coleman	Water Resources Program, Ecology
Kathleen Emmett	Water Quality Program, Ecology
Craig Riley	Office of Shellfish and Water Protection, DOH

Technical Advisory Panel

For 2008, the RW-RAC formed a smaller panel of technical experts to address issues with technical standards for public health and environmental protection and bring recommendations back to the larger RW-RAC for consideration.

Table 2. Rule Development - Technical Advisory Panel

Jim McCauley, P.E.,Panel Chair, Department of Ecology, Water Quality Program	
Name	**Organization**
William Backous, P.E.	CH2M Hill
Ron Brown, P.E.	HDR
Larry A. Esvelt, PH.D., P.E.	Esvelt Engineering
James P. Hagstrom, P.E.	Carollo Engineering
Frank Loge, Ph.D., P.E.	University of California - Davis
Bill Persich, P.E.	Brown and Caldwell
Dale Richwine, P.E.	MWH
Paul J. Schuler, P.E.	GE Water & Process Technologies
Jay Swift, P.E.	Gray and Osborne, Inc
Ken Butti	The LOTT Alliance
John Malady, P.E.	Kennedy-Jenks
Invited Guests	
Walt Jakubowski	Microbiologist, USEPA (retired)
Agency Staff	
Angie Thomson	Facilitator, EnviroIssues
Emily Neff	Notetaker, EnviroIssues
Tim Gaffney	Rule Writer, Water Quality Program, Ecology
Katharine Cupps, P.E.	Water Quality Program, Ecology
Melanie Redding, P.H.	Environmental Assessment Program, Ecology
Lynn Coleman, P.E.	Water Resources Program, Ecology
Dave Nazy, P.H.	Water Resources Program, Ecology
Denise Lahmann, P.E.	Office of Shellfish and Water Protection, DOH
Craig Riley, P.E.	Office of Shellfish and Water Protection, DOH
Ginny Stern, P.H.	DOH, Office of Drinking Water

Removing Barriers Subtask Force

In 2007, the Legislature directed Ecology to create this subtask force of the RW-RAC to further identify and recommend actions to increase the promotion of reclaimed water as a water supply and water resource management option.

Table 3. Removing Barriers Subtask Force Members

Kathleen Emmett, Committee Chair, Ecology, Water Quality Program	
Name	**Organization**
Walt Canter	WA Association of Water and Sewer Districts
Bill Clarke	Association of Washington Businesses
Tom Fox, P.E.	Seattle Public Utilities
Peggy Leonard	King County Department of Natural Resources
Sarah Mack	WA Water Policy Alliance
Bill Peacock, P.E.	City of Spokane Wastewater Management
Clint Perry	Evergreen Valley Utilities
Tim Wilson	City of Lacey
	Other Participants
Dave Monthie	King County Dept. of Natural Resources
Agency Staff	
Penny Mabie	Facilitator, EnviroIssues
Jennifer Busselle	Notetaker, Water Quality Program, Ecology
Katharine Cupps	Water Quality Program, Ecology
Jim McCauley	Water Quality Program, Ecology
Jocelyn Winz	Water Quality Program, Ecology
Bill Zachmann	SEA Program, Ecology
Lynn Coleman	Water Resources Program, Ecology
Craig Riley	Office of Shellfish and Water Protection, DOH
Dave Lenning	Office of Shellfish and Water Protection, DOH
Mike Dexel	Office of Drinking Water, DOH
Tim Gates	CTED

Reclaimed Water and Water Rights Advisory Committee

Ecology convened the RW-WR committee in 2007 to advise the agency on water right issues related to reclaimed water.

Table 4. Reclaimed Water & Water Rights Advisory Committee Members

Lynn Coleman, Committee Chair, Department of Ecology Water Resources Program	
Name	**Organization**
Walt Canter	Association of Water and Sewer Districts
Carla Carlson	Muckleshoot Tribe
Kathleen Collins	Washington Water Policy Alliance
Chris McCabe	Association of Washington Business
Michael Mayer	Washington Environmental Council
Dave Monthie	King County Department of Natural Resources
Tom Mortimer	Snohomish River Regional Water Authority
Bill Peacock	City of Spokane
Clint Perry	Evergreen Valley Utilities
Don Perry	Lakehaven Utility District
Doug Raines	Department of Corrections
Tom Ring	Yakama Nation
Carl Samuelson	Washington State Department of Fish and Wildlife
Mike Schwisow	Washington State Water Resources Association
John Stuhlmiller	Washington Farm Bureau
Patrick Williams	Center for Environmental Law and Policy
Dawn Vyvyan	Yakama Nation and Puyallup Tribe
	Other Participants
Michael Barber	Washington State University, Water Research Center
Scott Clark	Thurston County
Gupta Rashi	Washington State Association of Washington Counties
	Agency Staff
Angie Thomson	EnviroIssues - Facilitator
Barb Anderson	Water Resources Program, Ecology- notetaker
Barbara Markham	Office of the Attorney General
Jim McCauley	Water Quality Program, Ecology
Kelly Susewind	Water Quality Program, Ecology
Bob Barwin	Water Resources Program, Ecology
Craig Riley	Department of Health
Ginny Stern	Department of Health
	Legislative Staff
Karen Epps	Senate Water, Energy and Telecommunications Committee
Jaclyn Ford	House Committee on Agriculture and Natural Resources

Executive Summary

The Legislature directed Ecology to submit progress reports on January 1, 2008, and January 1, 2009, regarding implementation of the reclaimed water program. The first report, *Implementation of Reclaimed Water Use: 2007 Report to the Governor and State Legislature,* contains ten required reports related to rule development and other aspects of reclaimed water program implementation.

This follow-up report consists of four chapters that describe the status of rule development, provide external subtask force recommendations for removing barriers to reclaimed water, update information on project implementation and funding, and provide external advisory committee recommendations for the protection of water rights through law and rule.

Rule Development – Major Accomplishments in 2008

Ecology created a baseline rule for economic and administrative comparisons and to help guide development of the draft rule with the Reclaimed Water Rule Advisory Committee (RW-RAC). Rule development remains on track for adoption by December 2010; however, continuing budget constraints and the inability to fill vacancies supporting this work may delay rule adoption. Ecology and Health are leveraging existing resources to offset these deficiencies and plan to complete rule development even if delays occur.

Under advisement of the RW-RAC, Ecology formed a technical expert panel to expedite standards development. The panel will continue in 2009 to complete their recommendations.

Ecology and the RW-RAC crafted agency-request legislation to establish reclaimed water and specify lead agency regulatory authorities. Once drafted, the RW-RAC affirmed the Removing Barriers Sub-Task Committee recommendations to (1) remove the Growth Management Act from RCW 90.46.120 and (2) amend it to authorize the use of permit fees to fund reclaimed water permitting. The RW-RAC also affirmed the Water Right Committee recommendation to retain the existing statutory impairment provision at this time. Ecology remains neutral on these proposed amendments to the initial draft of RCW 90.46 that were subsequently affirmed by the RW-RAC.

Removing Implementation Barriers - Subtask Force Recommendations

As directed by RCW 90.46.015, the Removing Barriers Subtask Force considered certain barriers to the use of reclaimed water and made the following recommendations to the RW-RAC and the Legislature:

- Continue funding current program administration and use permit fees to fund expansion.
- Establish a lead state agency for the regulatory oversight and permitting of each facility.
- Consider broader organizational changes for closer coordination between water and wastewater management.
- Use tax incentives and financial assistance to encourage construction of capital facilities.
- Expand the state's role in public involvement, education, and outreach in phases.

- Require inter-local agreements between purveyors of potable water and reclaimed water.
- Address coordinated planning through rule development and guidance documents.

The Subtask Force completed its assignment and disbanded on September 25, 2008.

Note: The recommendations of the Subtask Force do not necessarily express the views of Ecology. Due to current budget constraints and the economic downturn, Ecology cannot support new fees and cost recovery, broad organizational changes, or the use of tax incentives to encourage construction of capital facilities.

Implementation Status and Funding Needs for Reclaimed Water Projects

In 2007 the Legislature directed Ecology to establish a subtask force charged with recommending a long-term funding program for reclaimed water infrastructure.

Currently there are 20 projects in operation, 7 projects under construction, and 41 in planning or design. Projections indicate the number of projects will double by 2020.

Additional financial assistance is essential to move this program forward. Financial information for future projects is explained in further detail in Chapter 3 of this report.

Resolving Water Rights Issues – Committee Recommendations

Governor Gregoire vetoed legislation proposed in 2007 that would have changed requirements related to the water right impairment provisions in RCW 90.46.130. To avoid the potential for unintended consequences, she directed Ecology to work with legislative leadership to address this and other issues involving water rights associated with reclaimed water use. Ecology formed the Reclaimed Water and Water Rights Advisory committee in 2007 and the following are the committee's recommendations to the 2009 Legislature:

- Retain the existing statutory impairment provision at this time. Committee members agree that a provision is necessary to protect existing water rights. They continue to have widely differing opinions as to what that provision should include and believe more work is needed.
- Complete remaining tasks identified by the committee to significantly improve existing processes. These include updating existing impairment guidance, developing rule language, and training agency staff on the updated procedures.
- Remain open to future consideration of statutory changes to the impairment provision that could improve program implementation.

Brief History - Reclaimed Water Legislation

1992–The Washington State Legislature passed the Reclaimed Water Act of 1992. This legislation directed the Department of Health (DOH) and Ecology to jointly develop reclaimed water standards for commercial and industrial uses and land application uses (irrigation) of highly treated municipal wastewater.

1995–The Legislature amended the Reclaimed Water Act (SB 5606) by adding requirements to include standards for environmental uses including wetlands, streamflow augmentation, and groundwater recharge. Ecology and DOH developed a memorandum of agreement to accomplish the work.

1997–The Legislature amended the Reclaimed Water Act (SB 5725) to address water rights, fund demonstration projects, and require DOH, in coordination with Ecology, to develop standards for greywater use. In September 1997, Ecology and DOH completed the Water Reclamation and Reuse Standards (http://www.ecy.wa.gov/biblio/97023.html).

1999–The Legislature funded positions at DOH and Ecology to expedite implementation and technical assistance.

2001–The Legislature amended the Reclaimed Water Act (SB 5925) to add agricultural industrial process water as a new reuse category (90.46.150 RCW).

2002–The Legislature amended the Reclaimed Water Act (HB 2993) to add another new category–industrial reuse water (90.46.160 RCW).

2005–The Legislature amended the Reclaimed Water Act (SHB 1891) to allow state regulatory agencies to issue permits to private utilities for direct uses of reclaimed water. It also gave state regulatory agencies authority to require evidence of financial, technical, and managerial viability before issuing a permit (RCW 90.46.030 and 040).

2006– The Legislature amended the Reclaimed Water Act (ESHB 2884) and directed Ecology, in coordination with DOH, and an external stakeholder advisory committee to adopt reclaimed water rules no later than December 31, 2010. The rules must address all aspects of reclaimed water use, including technical standards, administrative processes and delineating state agency permitting and regulatory roles and responsibilities.

2007–Amendments to Reclaimed Water Act (E2SSB 6117) re-emphasized on the importance of reclaimed water and expanded the scope of work for both Ecology and DOH. It required a number of progress reports on implementation of the program and created two additional subtask forces to recommend how to:

- Provide adequate agency staffing.
- Optimize the state organizational structure.
- Remove or reduce implementation barriers.
- Implement a dedicated long-term funding program.

- Identify and resolve other unresolved legal issues.
- Incorporate requirements for recovery of reclaimed water from aquifer storage under a reclaimed water permit.
- Assure coordinated water and wastewater planning.

Governor Gregoire vetoed Section 4 of the 2007 legislation that would have revised RCW 90.46.130 water right impairment provisions. She directed Ecology to work with legislative leadership to address this issue and also to find ways to harmonize various statutes dealing with water and wastewater planning for more effective implementation.

The 2007 Capital Budget also provided an additional $5.4 million dollars to support implementation of the highest priority reclaimed water projects in Puget Sound.

Chapter 1 - Reclaimed Water Rule Development

Introduction

In 2006, the Legislature directed Ecology, in coordination with Department of Health (DOH) and an external stakeholder advisory committee, to adopt rules for reclaimed water use by December 31, 2010. This chapter provides the second annual update on rule development, summarizing the steps taken in 2008 towards the final rule making required by RCW 90.46.015.

The members of the Reclaimed Water Rule Advisory Committee (RW-RAC) include state and local government, public utilities, business associations, private sector environmental professionals, and environmental groups. **Table 1** in the front of this report lists the members of the RW RAC, the Ecology staff charged with rule development, and the DOH staff coordinating in this effort. The first half of this chapter summarizes the work accomplished at the RW-RAC meetings.

In October 2007, Ecology began focusing rule development on updating the technical standards. The RW-RAC recommended that Ecology convene a smaller group of technical advisors focused on this task. **Table 2** in the front of this report lists the members of the Technical Advisory Panel (TAP). The TAP began meeting in February 2008 with the goal of completing technical standards recommendations by the end of 2008. The second half of this chapter summarizes the work accomplished at the TAP meetings.

Rule Advisory Committee accomplishments

The RW-RAC met eight times between December 2007 and November 2008. Key topics considered at the meetings included development of a baseline rule for comparison, formation of a technical advisory panel, participation in agency request legislation, and consideration of recommendations from the three subgroups assigned particular aspects of reclaimed water. These topics are summarized below. Detailed notes from each of the meetings are available at www.ecy.wa.gov/programs/wq/reclaim/ruledevelpmnt.html.

Development of a baseline rule for economic and administrative comparisons.

Beginning in February 2008, Ecology presented the concept of a baseline rule using existing practices. This default rule reflects the standards and guidance in current reclaimed water practices. The baseline rule:

- Ensures that major topics are not omitted in the final rule.
- Identifies key areas needing more development.
- Provides information for cost-benefit analysis and small business economic impact statements.
- Provides a no action default position to existing practices.

The RW-RAC supported the concept and worked with Ecology throughout 2008 to develop the framework for a baseline rule. Ecology staff developed this baseline rule in segments over 2008 and will review it with the RW-RAC in segments during 2009. The baseline rule will expedite writing of the new rule language during 2009. This will help meet the December 31, 2010 deadline for rule adoption.

Formation of a technical advisory panel

The RW-RAC recommended that Ecology form a smaller panel of technical experts to address technical standards for public health and environmental protection. Ecology formed this panel in January 2008. Topics addressed in 2008 include source control, pathogen removal, treatment technology and its reliability, microconstituents (pharmaceuticals, personal care products and endocrine active compounds), urban and agricultural uses, groundwater recharge, wetlands, surface water augmentation and best management practices for all types of reclaimed water use. More detail on their meetings is included in a separate section later in this chapter.

Development of agency request legislation

Since reclaimed water is no longer considered a wastewater, the RW-RAC recommended that Ch 90.46 RCW should stand on its own authority. Currently, the statute references waste authority under the Water Pollution Control Act (Ch 90.48 RCW) for wastewater discharge permits. Specific authority under Ch 90.46 RCW would resolve issues regarding the lead permitting and regulatory authorities between Ecology and DOH. This approach is important to continue with rule development. Ecology agreed to propose agency request legislation, explained the internal process, and presented a timeline. Any request from a state agency must be ready by August 2008 for the Governor's office to consider for the 2009 legislative session.

Both agencies worked with the Office of the Attorney General (OAG) to specify specific permitting, regulatory oversight, enforcement, and appeal authorities within the reclaimed water statute. The Assistant Attorneys General (AAGs) from both Ecology and DOH suggested using the proposed language referenced from the Water Pollution Control Act, Ch. 90.48 RCW as a starting point. Then modify it, as needed, to apply to reclaimed water.

Since existing statutory definitions emphasize the wastewater origin of reclaimed water, the RW-RAC expressed concerns about public acceptance of reclaimed water use. The RW-RAC reviewed definitions and proposed statutory changes to reduce this concern. The RW-RAC also recommended removing several definitions that were not essential to the statute and continuing to refine them within the rule.

The RW-RAC discussed the regional planning requirements under RCW 90.46.120. Several members believed that their organizations would oppose the draft bill unless the references to the Growth Management Act (GMA) were deleted from the statute.

Stakeholders provided the following reasons for their request to remove GMA:

- Local governments expressed concerns that the inclusion of GMA would increase review times and costs and create potential for legal challenges that could delay approval of comprehensive plans and local permits.

- Water and sewer districts expressed concern regarding their ability to challenge provisions in plans developed under GMA. They noted potential for overlap and conflict whenever service areas extend across GMA boundaries.
- Adding GMA to the coordinating requirements seemed unnecessary for coordination of reclaimed water planning. Reclaimed water must already be addressed in both water supply plans and general sewerage plans. Adding Ch 90.48 RCW to the list of plans requiring coordination is a better way to resolve any disputes.

A majority of RW-RAC members in attendance at the September 2008 committee meeting (including subtask force members who had worked on the planning process) agreed to delete the requirements for consideration of reclaimed water under GMA. They recommended replacing it with a reference to Ch 90.48 RCW to assure coordination between water, wastewater, and reclaimed water planning. Deleting this requirement would not change existing authorities under Ch 36.70A RCW.

Consideration of subcommittee work

As part of each meeting, the RW-RAC reviewed the work of three ancillary groups:

- The TAP presented recommendations on source control, treating source water and reliability of that treatment, pathogen reduction, commercial and industrial uses, and irrigation uses. The TAP also began discussions on groundwater recharge. Additional information on the TAP is included in Chapter 1.
- The Removing Barriers Subtask Force provided recommendations on staffing, budgets and permit fees, terminology, planning, proposed incentives, public awareness and outreach, and other legal issues. Chapter 2 reports on the work of this subtask force.
- The RW-WR committee provided recommendations on water right issues and noted the complexity of the issues involved. Several RW-RAC members voiced concern that reclaimed water utilities were not adequately represented at the RW-WR committee meetings. Ecology requested more direct involvement from utilities and recommended that utilities consider water right impairments early in the planning stages of reclaimed water projects. Chapter 4 reports on the work of this committee.

Technical Advisory Panel (TAP) accomplishments

In November 2007, the RW-RAC advised Ecology to form a technical subgroup to review the existing standards and recommend technical standards for the rule for the RW-RAC to consider. The TAP met monthly in 2008 with the goal of completing either conceptual language for technical standards or technical recommendations by the end of 2008. This work is summarized below. For detailed meeting notes: www.ecy.wa.gov/programs/wq/reclaim/ruledevelpmnt.html.

TAP work plan

The TAP first met in February 2008 to organize, discuss, and develop a work plan. Ecology staff briefed the group as to the mission, goals, and the rule-making process for reclaimed water and explained the role of the TAP. Next, the group brainstormed various means to assist Ecology and DOH with the technical rule making process. Key points included meeting legislative intent,

investigating other state rules while keeping in mind Washington's unique values, separating rules from guidance, protecting public health and the environment, and developing a use-based approach to the rule.

After gaining an understanding of the scope of work, the group considered various tools and methods of completing the assignment by October 2008. The TAP suggested that Ecology staff prepare a work plan for review and approval by the group at its next scheduled meeting. The group agreed to meet monthly and to attempt to communicate between meetings using email or an equivalent communication tool. The group wanted a work plan that would break down the topics into bite-size chunks that it could discuss on a monthly basis. The group agreed that it would provide a regular briefing to the RW-RAC on its progress. Ecology was tasked with surveying members to determine a routine monthly meeting date and time, assembling background technical materials, and providing links to other state regulations.

The TAP decided during the May 2008 meeting to break into smaller work groups to speed up progress on multiple deliverables simultaneously. The rule topics provided in the work plan were reorganized into a matrix and members voted on which ones they had more expertise or interest in.

Pretreatment and source variations

The committee discussed the variability of sources suitable for reclaimed water during the March 2008 TAP meeting. The statute currently defines reclaimed water, agricultural industrial reuse water, industrial reuse water, and greywater. The question put forward to the group was whether the same treatment or water quality standard—necessary for a specific end use—should be applied regardless of source type. Some members expressed the opinion that reclaimed water from an industrial source may need case-by-case treatment methods, not easily captured in rule.

The TAP agreed that the permitting process for industrial, agricultural, municipal, and greywater should be the same independent of source water variations, acknowledging that greywater processes will be developed under a separate rule adopted by DOH in coordination with Ecology. The TAP agreed to table this topic until later.

The group developed specific recommendations for pretreatment requirements for reclaimed water projects consistent with federal regulation 40 CFR 403 and state administrative code. Ecology staff presented conceptual rule language to the TAP in April and the group accepted this with a few modifications. The RW-RAC also accepted the revised language at its meeting later the same month.

Reduction of pathogens in reclaimed water

The TAP approached the issue of pathogen reduction on a broad classification basis. The key question was framed as to what the bacterial, virus, and protozoa reduction requirements should be for various uses of water:

1. Source water (wastewater effluent).
2. No (or limited) human contact water
3. Restricted human contact water.

4. Unrestricted human contact water.
5. Potable source water.

The TAP subgroup recommended including the potable source water category within the rule. It is a potential use of highly treated reclaimed water. However, TAP members cautioned that there is no current demand for direct potable use, and the public is not ready to consider direct potable use at this time. The TAP recommended deferring development of regulatory standards for direct potable use until there is a clear need. Most TAP members believe that the state will have to address this issue at a future time.

The TAP subgroup considered the following elements for establishing pathogen standards:

1. Cost of achieving the specified level of treatment.
2. Ability to measure parameters with current technology.
3. Reliabilty and accuracy as indicators of pathogen reduction.
4. Ability to obtain timely results.
5. Consistency between standards and beneficial uses.
6 Consistency with other Washington State regulations for surface water and groundwater protection practices in neighboring states, and indicators used for other purposes.

Ecology staff summarized regulations from other states related to the pathogen reduction. TAP members discussed four different regulatory options. They voiced concerns regarding uncertainties with some of the options proposed, the lack of peer reviewed scientific data on this subject, and an inability to measure many water quality parameters in an efficient and timely manner. Noting that California's Pomona Virus study was several decades old, one recommendation was to conduct a more current scientific research study regarding pathogen reduction. Securing a source of funding is a barrier to this approach.

TAP member, Dr. Frank Loge, presented preliminary research information that removing solids particles down to the 10 micron[1] size resulted in more effective disinfection.

Most TAP subgroup members favored a log-reduction[2] approach to measuring pathogen reduction. When presenting its preliminary recommendations to the entire TAP, the subgroup suggested that a microbiological expert such as retired EPA microbiologist, Walt Jakubowski, was needed to validate these approaches. Although recently published Water Environment Research Foundation studies may support a portion of these log reductions for some specific pathogens, Mr. Jakubowski told the TAP that he thinks additional research is necessary to defend all of them.

In July, after reviewing additional information, the TAP made treatment system recommendations for virus reduction in reclaimed water with unrestricted human contact. The treatment system must demonstrate one of the following:

[1] One micron (μm) = 1 / 1,000,000th of a meter, or 4 / 10,000th of an inch

[2] Log reduction refers to reduction of the original number of microbes by factors of 10. l-log reduction is equivalent to 10% remaining or 90% reduction; 2-log reduction refers to 1% remaining and 99% reduction. The simple conversion is that the number of logs of reduction is equal to the number of "9's". Therefore 1-log is the same as 90% reduction, 2-log is 99% and 3-log is 99.9% reduction.

- A 4-log virus removal/inactivation after secondary treatment followed by coagulation/flocculation, and filtration and disinfection.
- A 4-log virus removal/inactivation after membrane bioreactor treatment and disinfection.
- A 5-log virus removal/inactivation after un-disinfected secondary treatment with at least two additional treatment barriers. Ecology and DOH should establish criteria for pre-approved treatment trains that meet this requirement in guidance).

Ecology and DOH staff agreed to further consider these suggestions.

Irrigation uses

Beginning in May 2008, the TAP developed minimum water quality standards for urban and agricultural irrigation practices. The TAP recommended using USEPA guidance (2004), the Food and Agricultural Organization (FAO Paper 29), and Table 17.5 (Asano, 2008)[3] as guidance for agricultural best management practices for an irrigation use.

In June 2008, the TAP responded to issues raised by the RW-RAC, including:

1. Guidance documents do not conflict with each other.
2. Salinity limits should coincide with standards from FAO or Asano.
3. Limit chlorine to ≤ 1 mg/L of total chlorine to protect plants.
4. Nitrogen concentrations should be ≤ 10 mg/L unless Ecology or DOH approves a variance.
5. Stock water standards should be based on the Department of Agriculture requirements.
6. Frost control should be treated the same as for consumable food crops.
7. Algal growth was determined to be a management issue. The quality of the water will depend on the customer or application using the water. Guidance will be needed so users know if they need additional treatment to protect the providing utility against liabilities regarding the quality of the water.

In August 2008, Ecology presented conceptual draft language to the TAP for review. The TAP recommended to *not* include a limit for total nitrogen of ≤ 10 mg/L for all irrigation projects. This requirement may be overly restrictive for some applications. However, the TAP recommended Ecology still consider the need for nitrogen reduction as part of the engineering review process.

Commercial and industrial uses

The TAP developed recommendations at the June 2008 meeting and in August 2008, agreed upon conceptual draft language to include in the new rule. The suggested language incorporated many provisions found in the existing Water Reclamation and Reuse Standards. The recommendations were broken into five sections:

[3] Asano, Burton, Leverenz, Tsuchihashi and Tchoblonogous, **WATER REUSE, Issues Technologies and Applications**, McGraw Hill, 2008

1. Prohibited uses
2. Exceptions to standards
3. Minimum water quality for controlled access
4. Minimum water quality for unrestricted access
5. Best management practices

The TAP agreed that additional water quality requirements might be necessary to provide reclaimed water suitable for a specified commercial or industrial use. The TAP recommended that engineering reports submitted under the new rule for commercial/industrial uses of reclaimed water were the best place to address these needs and spell out the responsibilities of the water provider and the user for common water quality issues such as control of corrosion, scaling and deposition, temperature, biological fouling, odors and potential for interference with industrial processes. The TAP recommended that reclaimed water quality should be consistent with standard engineering practices such as those found in Asano, 2008 (pages 1111 and 1112).

The TAP decided in August to *not* recommend generic limits in rule for total dissolved solids and nitrogen concentrations. However, these parameters may be added as permit conditions where needed to protect a specific use or the environment.

Ground water recharge

Beginning in June 2008, a subgroup of the TAP reviewed how the reclaimed water statute defined "groundwater recharge criteria." The group had a broad discussion on the merits of using drinking water standards versus the state's ground water quality standards. The subgroup agreed that surface and vadose zone percolation should be considered under the same standard since both involved additional treatment in the soil column before recharging the ground water. The subgroup also discussed the new provisions under RCW 90.46.120 allowing recovery of reclaimed water from aquifer storage. The subgroup agreed that it needed more information from the pathogen subgroup about aquifer residence time requirements before proceeding with the issue.

In July 2008, the TAP made initial recommendations for surface and vadose zone percolation requirements.

- A specific chemical contaminant must meet the state groundwater quality standards (per Ch 173-200 WAC) or drinking water standards, Ch 246-290 WAC), whichever is more stringent.
- The point of compliance established in the rule should recognize that percolation provides additional soil treatment and residence time.
- Appropriate points of compliance would be in the groundwater immediately down gradient from the percolation site and at the point of ground water withdrawal, depending upon the use. Different parameters may need to be monitored at the two locations.
- Where the background level of a contaminant in the ground water already exceeds the state groundwater or drinking water standards, the TAP supported establishing a mechanism to allow for the lesser water quality at the point of compliance.

In the fall of 2008, the TAP began discussion regarding water quality standards and points of compliance for recharge directly into the aquifer. Since there is no treatment or residence time through percolation for this method, they noted that the initial compliance point must be the final reclaimed water quality before recharge (end of the treatment pipe).

Reliability and redundancy requirements

Beginning in August 2008, the TAP met to discuss draft language for reliability requirements based on the current 1997 standards. The TAP noted that rule language regarding engineering reports should address general design considerations such as operation and maintenance efficiencies, evaluate odor and vector control, and contain an overall reliability assessment.

The TAP agreed on the following concepts:

- No bypass of untreated or partially treated sewage around an approved facility to the point of use.
- All reliability requirements specified or an equivalent level of protection is met.
- Alarms for loss of primary power, are provided, warnings to operators, and transfer of alarms to a responsible party if the treatment facility is not attended.
- The requirement to provide short-term (24-hour) retention, long-term retention (20 days), or diversion/discharge to an alternate permitted location is dependent on the type of reclaimed water facility. Zero discharge facilities should have the most stringent standby power, automatic diversion, and long-term storage of off-spec water. A facility with National Pollutant Discharge Elimination System (NPDES) discharge as a backup option must meet current Clean Water Act requirements for that option. Satellite reclamation facilities that can be shut down will not need excess reliability features.

The TAP decided to investigate existing Ecology guidance for wastewater treatment plant reliability before proceeding with standards for the number of treatment units for key processes. In September 2008, the TAP revisited this subject and agreed to conceptual rule language presented by Ecology.

Storage of reclaimed water

After reviewing existing practices for storage and distribution of reclaimed water, the TAP members recommended to:

- Include existing standards for storage of diverted wastewater and for seasonal storage related to reliability in the new rule.
- Place requirements for restricted and non-restricted impoundments under the appropriate use.
- Keep design and construction standards for pond liners and materials in a guidance manual. Consider the type of reclaimed water stored.
- Consider how the water will be used after storage and the potential for degradation while in storage.

Distribution of reclaimed water

A primary consideration for reclaimed water distribution systems is pipe separation from potable water, sanitary sewers, and other utilities. The TAP reviewed the recently prepared Ecology and DOH guidance on this subject, and thought it sufficient.

In 2009, The American Water Works Association (AWWA) plans to update manual #24 containing standards for pipe materials, pressure testing, operating pressure, and valves. The Water Reuse Foundation is conducting research regarding microbial re-growth in distribution and storage. TAP members suggested that Ecology review this manual when revising these guidance documents. The TAP thought that residential in-house use of reclaimed water should be regulated under local codes or the latest Uniform Plumbing Code adopted.

There was general agreement that a single reclaimed water-operating permit should be issued to the generator, with responsibility for distribution and use covered under legally binding user agreements. These agreements should continue to be reviewed and approved by Ecology and DOH.

Microconstituents

The term microconstituents describes a wide variety of substances that can now be detected at very low levels in water. This term includes, but is not limited to, pharmaceuticals, personal care products, and trace organic compounds.

In September 2008, Ecology's expert, Melanie Redding talked with the TAP about microconstituents. The TAP then developed preliminary recommendations on this topic. TAP members noted the ability of current wastewater treatment methodologies to remove 98 to 99 percent of identified microconstituents. The TAP also noted that when substances are removed from the water they might not be destroyed but rather become concentrated in the solids removed. The consensus of the TAP was that there is not enough research data and scientific study to develop numeric reclaimed water quality standards for microconstituents at this time.

The majority thought the best approach is to request voluntary monitoring from existing reclaimed water treatment facilities to continue to build a database. However, the TAP also expressed caution regarding the potential for environmental impacts from some microconstituents and suggested watching for future information that could be the basis for water quality standards. The TAP recommended that the new rule provide enough flexibility to add standards for microconstituents at a future date. They also stated an overall need for more education and public information on this topic.

Next steps for rule development

Ecology recently filled its vacant rule writer position and is in the process of developing a plan to expedite rule development during 2009. The creation of the TAP allowed the technical standards to continue to move forward and the TAP will continue to work through early 2009 to complete recommendations.

Over the next year, Ecology and DOH will work closely together to make decisions on rule content based on the advice received. At the same time, the RW-RAC will be working closely

with the Ecology rule writer to assemble the pieces of the Reclaimed Water Rule (Ch 173-219 WAC). The RW-RAC will review proposed language for the rule at each step of its progress.

The anticipated date for rule adoption remains December 31, 2010. However, Ecology is concerned that continuing budget constraints may delay rule adoption. Ecology is currently unable to refill critical staff vacancies or continue consultant contracts for facilitation and note taking services.

Chapter 2 - Removing Barriers Subtask Force

Summary

This chapter provides the second set and final recommendations from the Removing Barriers Subtask Force. This subtask force was created by the 2007 legislation amending RCW 90.46.015. Subtask force members are listed as **Table 3** at the front of this report.

RCW 90.46.015 directs the subtask force to consider staffing levels, resources and roles within state agencies, optimizing organizational structure, unresolved legal issues specific to reclaimed water use, and a more appropriate name to describe reclaimed water.

In 2007, the new subtask force proposed and evaluated several alternative names for reclaimed water. The subtask force recommended keeping the name 'reclaimed water' since it is descriptive and the public is comfortable with it. The 2007 report is available at http://www.ecy.wa.gov/pubs/0710098.pdf

Ecology met with the subtask force six times in 2008. The subtask force made recommendations to the rule advisory committee (RW-RAC) and the Legislature regarding:

1. Staffing, resources, and roles needed to support the Reclaimed Water Program shared by Ecology and DOH.
2. Organizational opportunities to increase efficiencies in agency structures.
3. Incentives to expand reclaimed water use.
4. Unresolved legal issues specific to reclaimed water use.
5. Implementation of new planning requirements and language in RCW 90.46.120.

These topics are summarized below. Detailed notes from each of the subtask force meetings are available at www.ecy.wa.gov/programs/wq/reclaim/ruledevelpmnt.html. The subtask force completed its assignment and disbanded on September 25, 2008. Members agreed that the rule advisory committee and other advisory groups are best suited to address any additional issues arising during rule development and project implementation.

Summary of subtask force work and accomplishments

Staffing, Resources, and Roles

The subtask force considered staffing needs in Ecology's Water Quality Program (WQP), Water Resources Program (WRP) and at the Department of Health (DOH).

Based on the following assumptions, the number of reclaimed water facilities is projected to double by the year 2020.

- Twenty facilities are currently regulated under Ecology permits.
- Seven facilities are under construction.
- Twelve facilities are under design.
- Twenty nine projects are in active planning stage.

- The rate of facility completion is likely to increase from 1+ per year to as many as 2 to 4 facilities per year.

If we continue to permit facilities at the current pace, a minimum of 40 will be permitted in 2020.

The graph on page 24 of this report gives more information about the projected number of reclaimed water facilities.

Ecology's Water Quality Program (WQP)

Before the 2007-09 Biennium, the WQP had two permanent FTEs (an EE6 and an EE3) supporting reclaimed water work. For the 2007-09 Biennium, the WQP had six full-time equivalent (FTE) positions. The Legislature authorized $249,000 General Fund-State (GF-S) for FY 2008 and $176,000 GF-S for FY 2009 to support rule making, the legislative committees, report writing, and reclaimed water project implementation. Additionally, the Water Quality Program was authorized to increase its appropriation from the Water Quality Account for $121,080 FY 2008 and $123,372 FY 2009 to support these activities. Two positions (an Office Assistant 3 and an Environmental Specialist 4) that work on reports and administrative support tasks will end on June 30, 2009. Both of the positions are currently unfilled vacancies. The authorized appropriation from the Water Quality Account for two positions (an Environmental Planner 4 and an Environmental Engineer 5) dedicated to rule development will end on June 30, 2011. These positions are currently filled. By July 1, 2011, only two FTEs (an Environmental Engineer 6 and an Environmental Engineer 3) supported by $220,000 state dedicated funding will remain to support *all* reclaimed water work done by the WQP.

For the WQP, facility support is ongoing. It includes technical assistance, education, coordination, engineering review, permitting, and regulatory oversight based on Ecology workload models. The subtask force estimated that a reasonable number of facilities for one FTE to manage is ten per year.

To meet this need, the subtask force recommends that Ecology pursue permit fees, set though Ecology's permit fee rule process, to fund the five to seven FTEs the WQP will need to manage reclaimed water projects. As the rule is completed, it may be possible to redirect these FTEs to the new work.

Ecology's Water Resources Program (WRP)

The WRP works on program development for reclaimed water and review of one or two reclaimed water projects (with water right issues) per year. The WRP received $36,250 GF-S for FY 08 and $36,250 GF-S for FY 09. One existing FTE, an Engineer 5, works on program development related to the new rule. Existing WRP regional permit writers complete the project review. Maintaining the current level of effort on reclaimed water should address this need assuming the current estimate of one or two new projects with water rights-related issues each year. Details on how to best fund this staff time are under consideration by the WRP. The Reclaimed Water and Water Rights Committee (RW-WR committee) may also choose to make specific recommendations to the WRP on staffing.

If the number of permitted facilities increases as estimated, WRP will need an additional, new FTE funded through permit fees for reclaimed water use.

Department of Health (DOH)

DOH has .75 FTE (Engineer 5) supported by $102,000 GF-S for FY 08 and .75 FTE supported by $102,000 GF-S for FY09. GF-S proviso from ESSB 6117 supports 0.08 project FTE in FY08 with $147,000 and.03 project FTE in FY09 with $32,000. The proviso money was only for the 07-09 biennium. Local fees support 0.25 FTE for the 08 and 09 FYs. One Engineer 5 in the Office of Shellfish and Water Protection supports reclaimed water activities. These activities include project development, project document review, permit review and development, permit compliance and operations review, legislative activities, rule making, and program management. Over the last decade, DOH review has averaged 13 project documents/year. However, indicative of the program's growth, this year DOH approved over 30 project documents. Based on agency workload models, an additional FTE is needed to meet the increasing workload. DOH will need to develop fee schedules and a permit issuance and tracking system.

DOH does not have specific staffing needs estimated for the Office of Drinking Water at this time. Continued growth in the number of reclaimed water projects will increase the workload and demands in a number of areas; policy development, water system planning, and coordination. Although not quantified in this report, the Office of Drinking Water will need additional staff resources in the future to address reclaimed water issues.

Subtask Force Recommendations

- Maintain funding levels for existing permanent positions at both agencies.
- Provide full cost recovery through permit fees to fund additional staffing needs. Assure that the permit fees are integrated with wastewater management permit fees and do not create a disincentive to pursuing reclaimed water.
    - Ecology's Water Quality Program pursue permit fees, set though Ecology's permit fee rule process, to cover the cost of the five to seven permanent FTEs needed to manage reclaimed water facilities.
    - Ecology's Water Resources Program to maintain current staffing levels. If the Water Resources Program elects to recoup costs of staff time through reclaimed water fees, the subtask force would support one additional FTE.
    - DOH to maintain the current FTE and add one additional FTE to cover the expected increase in project workload.

Optimizing organizational structure

The subtask force recommended and the RW-RAC concurred that the state needs to foster closer coordination between the water and wastewater programs in both Ecology and DOH. One agency should serve as lead for seamless coordination of projects. Based on current regulatory authority, Ecology takes the lead for most tasks and the WQP carries the largest responsibility for on-going workload. The subtask force recommended and the RW-RAC concurred that Ecology should elevate the lead position in the WQP to an organizational level with sufficient authority to prioritize and coordinate resources across *all* Ecology programs. Elevating this position should also improve coordination with DOH and other state agencies involved in various aspects of reclaimed water use.

Looking to the future, the subtask force further recommends that the state seriously consider modifying existing organizational structures to better address growing water and wastewater management needs. Suggestions that merit further consideration include:

Create an overall state coordinator with sufficient authority to expedite reclaimed water program implementation across the various state agencies.

Develop a new program to administer all of the emerging alternative water strategies including reclaimed water, industrial and storm water reuse, greywater use, desalination, rainwater harvesting, and artificial storage and recovery.

Consider a new state agency focused on water and wastewater management.

Incentives to expand the use of reclaimed water

The subtask force reviewed a number of potential incentives that local governments, utilities, or the state might adopt to encourage the use of reclaimed water. They agreed not to review the technical, financial assistance or water right issues under consideration by other advisory groups.

The subtask force used a report from the Environmental Law Institute, Appendix A, and *Ecology's 2003 Planning for Water Reuse* (http://www.ecy.wa.gov/biblio/0310061.html) to develop a list of potential incentives. Incentives proposed included both mandates and voluntary incentives. At the state level, the subtask force recommended promoting voluntary incentives such as planning tools, improved agency coordination, cost subsidies, education, outreach, and social marketing. Mandatory incentives requiring the use of reclaimed water under appropriate circumstances should be used only as conditions require. The subtask force agreed that any mandatory use of reclaimed water would be best addressed in locally adopted ordinances and plans. The state should use mandates only when other incentives fail.

The subtask force identified two general categories where the state should focus incentives to remove barriers to reclaimed water:

- Cost subsidies.
- Outreach and education tools.

Incentives addressing the cost barrier

The subtask force recommended that the state or local governments provide some form of subsidies to businesses that relocate or build near reclaimed water infrastructure to use reclaimed water. Potential incentives are economic incentives and tax reductions or exemptions to business and occupation (B&O) taxes, utility taxes, or other applicable taxes.

The subtask force also identified the benefit of continuing the reclaimed water grants program established in 2007 for the Puget Sound area and expanding it statewide. The 2007 legislation also established another subtask force to develop a long-term funding strategy for reclaimed water. The 2007 report includes their findings. www.ecy.wa.gov/pubs/0710098.pdf

This subtask force supports the development of a long-term funding strategy. Without financial assistance most communities would find it difficult to afford water reclamation facilities.

Subtask Force Recommendations

- Continue and expand Ecology's Reclaimed Water Grants Program.

- Implement the statewide financial assistance program as proposed by the long-term funding committee in the 2007 report. www.ecy.wa.gov/pubs/0710098.pdf.
- Provide tax exemptions or other subsidies for businesses that relocate or build near reclaimed water infrastructure in order to use reclaimed water.

Outreach and education tools

Public support is important to the successful implementation of reclaimed water. The public must understand the need for reclaimed water and feel confident in the safeguards established for its use. The subtask force considered several options, including social marketing techniques, a statewide education and awareness campaign, and focusing on local public involvement, education, and awareness to remove barriers to the use of reclaimed water and expand its use.

DOH reminded the subtask force that one of its assignments for the January 2008 report to the Legislature was a description of a basic outreach program and suggested that the subtask force review that section within the Chapter 8 report titled *Report from Department of Health on Related Public Health Issues* at www.ecy.wa.gov/programs/wq/reclaim/advisorycommittee/Schedule/Final%20Ch%208.pdf. DOH also suggested that Ecology and DOH work in partnership to more effectively use the budgets and public information and media capabilities of both agencies.

The subtask force identified *negative public perception* as a key barrier to using reclaimed water in Washington. Three likely reasons for negative public perception are:

> *Lack of awareness*—the public may have a lack of knowledge and awareness about where their water comes from and how it is treated. Also, they may not have a clear understanding of water supply and demand issues.
>
> *Lack of environmental knowledge*—the public may lack an understanding that all water is recycled and that reclaiming water is just speeding up the natural process. They also may not know how water is currently treated and discharged.
>
> *Mistaken belief*—the public may not know what reclaimed water is, how it is used, or how it is regulated. What is unknown is often not trusted.

Research into other states has shown public involvement, education and outreach are some of the most important factors in the success or failure of reclaimed water projects and programs.

Recognizing this, the subtask force considered how the state could use a community-based social marketing (CBSM) model to identify the different barriers to using reclaimed water. CBSM stresses the importance of identifying the audiences such as local governments, water purveyors, potential users, the general public, and other groups of interest.

For each specific audience, identify the barriers it faces to taking the desired action and ways to reduce or remove those barriers. The goal is for the desired action to eventually become a "norm." An example of using this approach is the success of solid waste recycling.

To properly use CBSM at a statewide level, the state would need to conduct regional focus groups and surveys to find out the different audience's existing perceptions, about what barriers exist and what it would take for them to accept and even invest in reclaimed water.

Given the realities of state funding and resources constraints, the subtask force decided that a three-phased approach could be used.

- The first phase is public involvement, with stakeholder input, for the duration of the project. Print materials, web site information, and statewide reclaimed water workshops may be used. Public hearings on the rule will be held.
- The second phase enlists local public involvement by providing local government officials with information about reclaimed water. Fact sheets, hosting focus groups, and having local workshops are examples of this effort.
- A statewide campaign, phase three, will be conducted simultaneously with the other two phases. It would include development and presentation of multimedia information, print, audio and visual materials. Booths with flyers and information packets would be set up at venues across Washington State.

Additional information on all phases of the outreach and education plan is included as Appendix B.

Subtask Force Recommendations

- Ecology, in collaboration with DOH, expands and leverages the public involvement process through completion of the rule.
- A community-based social marketing approach is phased in that provides a statewide education and awareness campaign and support for local government reclaimed water projects.
- Local governments provide public involvement, education, and outreach support for their reclaimed water projects.

Legal issues

The subtask force identified and discussed four legal questions as potential barriers to the use of reclaimed water.

1. *What potential liability do wholesalers, retailers, end users, regulatory agencies, and operators have when using reclaimed water?*

   Ecology's 2007 Report to the Governor and state Legislature included a memorandum from the Environmental Law Institute (ELI) that addressed the potential liability of using reclaimed water from the perspective of the wholesaler, retailer, end user, regulatory agencies, and operators. To view this memo go to http://www.ecy.wa.gov/programs/wq/reclaim/removingbarriers.html and click on the Environmental Law Institute Memorandum under Independent Reports. The memorandum concluded that reclaimed water facilities must operate under a body of regulatory, contract, and tort law similar to water treatment and supply law and that risks can be anticipated, managed, and minimized with careful planning.

   Ultimately, the most certain guarantee against liability and the item most under a reclaimed water producer's control will be the quality of the water itself. Without recommending a specific course of action for Washington, the ELI memorandum provides insight into practices in other states not easy to summarize here. Ecology refers the Legislature directly to the memorandum cited above.

The subtask force expressed the opinion that a lack of available liability insurance is one of the barriers for small systems that plan to use reclaimed water. Public education materials may play a role in convincing insurers that Class A reclaimed water is not a "polluted source". A better understanding of water quality parameters and beneficial uses may encourage private insurers to provide coverage.

2. *If a reclaimed water facility meets reclaimed water standards, are they entitled to use the water?*

   No, meeting reclaimed water standards is only one of the requirements. There are other requirements including the planned intent to use the water for a beneficial purpose, designating the location and rate of use, assuring non-impairment of any downstream freshwater rights without compensation or mitigation acceptable to the holder of the affected water right, and for facilities owned by a private utility, proof of long-term operating viability. State law, RCW 90.46.120(1), provides that the owner of a wastewater treatment facility that is reclaiming water with a permit issued under this chapter has the exclusive right to any reclaimed water generated by the wastewater treatment facility.

3. *Should water utilities be protected from new reclaimed water providers within their service area? How are service area boundaries for reclaimed water determined?*

   The subtask force emphasized the importance of interlocal agreements to resolve disputes. The majority recommended requiring that agreements be developed wherever reclaimed water will replace any portion, or significant portion of a service area's potable water supply. The stated reason for this recommendation is concern about stranded infrastructure investment costs. If reclaimed water takes away existing or planned customers, the water purveyor could lose projected revenue needed to pay off their debt. The minority opinion expressed concern that requiring interlocal agreements might allow a water purveyor to block the sale of reclaimed water to a willing buyer.

   One suggestion was to allow for a 'retailer of last resort' to provide the reclaimed water if other options were not available. Interlocal agreements are area specific and can quickly become complex. Ecology recommends resolution at the local level and does not propose a state mandate in either the 2009 session bill or the rule.

4. *What is the relationship of Chapter 90.48 RCW to Chapter 90.46 RCW?*

   Currently, Ecology is using Chapter 90.48 RCW authority to issue reclaimed water permits. If proposed agency legislation is passed, the relationship between the laws will be clarified so that Ch 90.46 RCW stands on its own. Many reclaimed water facilities will be subject to both statutes because they also discharge wastewater effluent.

   Since reclaimed water must be adequately and reliably treated at all times, effluent that does not meet the standards, is not put to a beneficial use, or is improperly used would be subject to Ch 90.48 RCW requirements. Under federal law, any point source discharge to waters of the United States requires an NPDES permit issued under Ch 90.48 RCW authority.

Subtask Force Recommendations

- Address liability and indemnification issues at the local level.
- The facility does not receive the exclusive right to distribute and use the water until it receives a permit issued by the lead state agency.
- Require interlocal agreements wherever reclaimed water will replace a portion of a service area's potable water supply.
- Adequate and reliable treatment is the standard to use for reclaimed water and should be defined in the new rule.
- Support statutory amendments so that Ch. 90.46 RCW stands on its own authority.

  Note: Water rights issues are being addressed in the reclaimed water and water rights advisory committee.

Coordinated planning requirements

When Governor Gregoire signed E2SSB 6117 (2007) into law, she noted that section 3 of the bill had new planning requirements referenced in RCW 90.46.120 that would eventually need to be harmonized with other statutes to ensure effective implementation. See Appendix D. The Governor directed Ecology to work with legislative leadership to assure harmonization of statutes for effective implementation of the 2007 planning requirements added to RCW 90.46.120. Statutes to address include:

- Water Code (RCW 90.03)
- Water Pollution Control (RCW 90.48.112)
- Public Water System Coordination Act of 1977 (RCW 70.116.060)
- Regulation of Public Ground Waters (RCW 90.44.430)
- State Board of Health (RCW 43.20.230)
- Water Resources Act of 1971 (RCW 90.54.020)
- Watershed Planning (RCW 90.82)
- Growth Management Act (RCW 36.70.A)

Legal counsel (AAG) advised Ecology that the amendments in the 2007 legislation did not improperly amend the substantive planning requirements under each of these chapters or sections of the law. The AAG suggested two methods to clarify and harmonize the planning statutes to address use of reclaimed water:

1. Revise each statute referenced in RCW 90.46.120.
2. Revise RCW 90.46.120 to clarify intent.

Ecology requested assistance from the subtask force to consider AAG recommendations and recommend how best to address this issue. The subtask force discussed these two options with representatives from Ecology, DOH, and the Washington State Community Trade and Economic Development Department (CTED). The majority agreed that the second approach would be

effective and that updating agency guidance and regulations as they came up for revision would facilitate implementation. Several subtask force members suggested an executive order as a way to expedite the development of guidance and regulations on this issue.

The subtask force agreed that the intent of RCW 90.46.120 was coordinated planning. The language in the statute:

- Does not require an update or a new plan.
- Does not change established regional water supply boundaries.
- Intends that reclaimed water be considered as a new water supply whenever plans are developed or updated.
- References the types of plans that should consider reclaimed water use.

The subtask force also suggested Ecology, DOH, and CTED develop a single, combined planning checklist for use by all agencies and programs. Agencies, consultants, and planners could all benefit from the checklist. The subtask force recommended items to include in the checklist.

Subtask Force Recommendations

- Revise language only in RCW 90.46.120 and do not revise other statutes.
- Ecology, DOH, and CTED should develop a single, combined planning checklist for use by all agencies and programs.
- As applicable Ecology, DOH and (CTED) rules and guidance come up for review and updates, the appropriate agency should add the reclaimed water coordinated planning requirements to these documents.

At the September 2008 meeting, the subtask force supported the recommendation from the RW-RAC to delete the requirement to coordinate with GMA from RCW 90.46.120 and add a reference to include Ch 90.48 RCW.

Next steps

- Ecology convened a work group from the various agencies to further develop the checklist for water use planning.
- The subtask force completed its assignment and disbanded on September 25, 2008.

Chapter 3 - Project Implementation and Funding Needs

Summary

This report provides an update on the status of implementation of reclaimed water use throughout the state. There are currently 20 projects in operation, 7 projects under construction, and 41 in planning or design. At the current rate, the number of operating reclaimed water projects could double from 20 to 40 by 2020. Ecology provided a conservative analysis projecting an estimate of over $294 million in potential reclaimed water planning, design, and construction needed to fund projects between 2010 and 2016. This estimate is independent of any projected funding needs generated by the Puget Sound Partnership.

Background

In 2007, the Legislature directed Ecology to establish a subtask force charged with recommending a long-term funding program for reclaimed water infrastructure. Ecology staff conducted a quick needs survey of proposed reclaimed water projects shortly after the subtask force convened in July 2007. This conservative analysis projected an estimate of over $294 million in potential reclaimed water planning, design, and construction projects between 2010 and 2016.

To meet the projected need, the funding subtask force recommended grant-funding levels beginning with $50 million ramping up to $100 million within six years. The funding subtask force also evaluated a variety of options to fund the program. The short list includes a bottled water tax, a soft drink tax, and a public utility tax increase, a public utility tax diversion away from the general fund, and sales tax exemptions as an incentive to help communities complete water reclamation facilities. For example, a tax rate of four cents on a 20-ounce bottle of water could generate $50 million per year in revenue. Chapter 3 of the *2007 Report to the Governor and state Legislature* provides details of the work completed by this subtask force located at www.ecy.wa.gov/programs/wq/reclaim/advisorycommittee/Schedule/Final%20Ch%203.pdf

The 2007 Legislature also designated $5.4 million to be spent only for grants to local governments in the Puget Sound region for the completion of reclaimed water projects. The Legislature directed Ecology to give priority to projects in water-short areas and areas where reclaimed water will restore important ecosystem functions in Puget Sound. Chapter 9 of the "2007 Report to the Governor and state Legislature" provides details regarding development of the grants program. This information is located at www.ecy.wa.gov/programs/wq/reclaim/advisorycommittee/Schedule/Final%20Ch%209.pdf

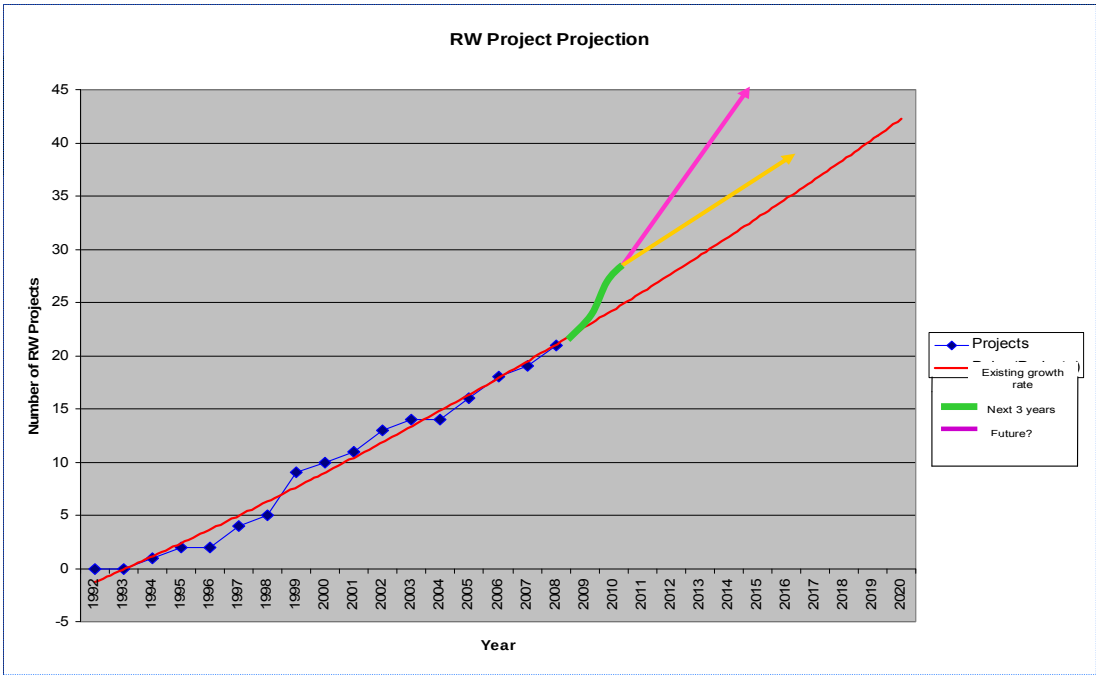
Project implementation

Ecology received 23 applications with a request for $17.5 million of water reclamation projects. A ranked list of applicant requests and extensive information regarding the FY 2008 Reclaimed Water Grants Program is provided in Appendix C. All of Ecology's offers of grants were

accepted and projects were underway by mid-year 2008. Ecology anticipates that all of the feasibility projects will be completed within one year of the final offer and that design and construction projects will be completed within three years.

Future needs

The growth rate of reclaimed water projects has gone up significantly. The graph below shows the growth of permitted projects as 1 to 2 per year for the past 16 years. However, in 2008, we currently have seven projects under construction. The number of projects in planning and design (currently 41) could result in significant construction and permitting needs over the next five years. An important aspect for some of these projects is securing the necessary funds for construction. There are fundamental indications that statewide funding assistance would secure the construction of a number of these potential projects.



Recommendation for funding assistance in 2009

To continue to move the program forward in tight budget times, a minimum of $10 million statewide grant funding should be provided to assist the highest priority reclaimed water projects for 2009. Projects would compete for the funding using the eligibility process developed by the funding subtask force in 2007.

Eligible reclaimed water projects must satisfy a beneficial purpose and these dedicated grant funds should be limited to reclaimed water needs beyond traditional wastewater treatment or advanced wastewater treatment projects. In order for a public body to accept financial assistance offers under this program, it must be ready to proceed when money becomes available. Priority

for funding will be provided to reclaimed water projects that address one or more of the following:

1. Restore and protect water quality.
2. Restore and protect important ecosystem functions.
3. Provide a new or enhanced source of water where reclaimed water is used to replace other water sources.
4. Address flow needs in water-short areas via various methods.
5. Provide critical recharge of ground water and wetland areas.

Chapter 4 - Reclaimed Water and Water Rights

Summary

Chapter 4 provides an update addressing issues related to the water right impairment provisions in RCW 90.46.130. To avoid the potential for unintended consequences, Governor Gregoire vetoed legislation proposed in 2007 that would have changed these requirements. She directed Ecology to work with legislative leadership to address this and other issues involving water rights associated with reclaimed water use. Her letter regarding the veto is Appendix D of this report.

In 2007, Ecology formed the Reclaimed Water and Water Rights Advisory Committee (RW-WR committee) to address these issues. See **Table 4** for a list of members.

This report summarizes the work from eight meetings occurring between January and October 2008.

The statutory provision on potential impairment of existing water rights has been the primary issue addressed to date. In this context, impairment addresses the rights of reclaimed water facilities versus the rights of existing water right holders when water availability is limited.

The scope of the RW-WR committee's work includes defining impairment, the process for addressing potential impairment, and the application of the law to different water rights. Those rights could include out-of-stream water rights, tribal rights, and instream flows established by Ecology by rule, which have the status of water rights.

Committee Recommendations to the Legislature

> **Impairment standard**: "…facilities that reclaim water under this chapter shall not impair any existing water right downstream from any freshwater discharge points of such facilities unless compensation or mitigation for such impairment is agreed to by the holder of the affected water right." (Reclaimed Water Use, Chapter 90.46.130(1) RCW)

The RW-WR committee does not recommend any statutory changes in 2009 to the existing language in RCW 90.46.130. While some committee members would like changes to address several issues, there was no consensus among the RW-WR committee on what type of changes should be made. Most of the issues and questions raised by stakeholders can be addressed by updating the existing draft guidance and through developing a new rule to be completed by December 31, 2010. Statutory changes can be considered again later, if necessary for effective implementation.

Rationale for recommendation:

The RW-WR committee concluded that, in general, keeping an impairment standard that protects existing water rights makes sense. In this context, existing water rights include not only individual holders but also tribal treaty and other federally reserved rights and state instream flows set by rule.

However, the lack of clarity around the existing impairment provisions creates an obstacle to developing reclaimed water projects and needs to be addressed. Existing guidance for impairment analyses, which was completed in 2005, is based on early and very limited experience with reclaimed water issues/scenarios and can be improved. In addition, our understanding of the possibilities of reclaimed water is continually expanding, as well as our understanding of how existing law, policy, and regulation can affect different types of reclaimed water projects.

It will therefore be beneficial to allow time for more experience with additional facilities and a thorough investigation of issues with stakeholders to understand whether the impairment issue would better be addressed through statutory change. Improvements to the impairment review process will still be occurring through updated guidance, reclaimed water rule development, and staff training. This is preferable to proposing a piecemeal change at this time.

Issue description and stakeholder position(s)

The RW-WR committee met eight times between January 2008 (date of the last report to the Legislature) and October 2008 to address issues related to reclaimed water and water rights. In this section, we summarize areas of agreement, disagreement, and issues still under discussion.

The RW-WR committee agreed on the following issues:

- An impairment analysis should be completed for each reclaimed water facility. The analysis should be case-by-case, considering the particular facts of each situation. A basic description of the review and analysis process should be in the new reclaimed water rule. Details should be in guidance.
- The reclaimed water project review process and related impairment analysis should include notifying and involving Tribes, Department of Fish and Wildlife, and other water right holders that might be affected. This should occur early in the planning process to avoid delays and litigation.
- Ecology should complete the impairment analysis unless the project proponent chooses to complete it following Ecology protocols. Previously, Ecology's guidance directed the proponent to complete the analysis. Ecology will review the analysis and have final decision-making authority. Protocols need to be developed through stakeholder process.
- The definition of impairment in Ecology's draft Reclaimed Water Impairment Analysis Guidance should be corrected and clarified. The RW-WR committee agreed on changing some aspects of the definition. Other parts of the definition are still under discussion.

Areas of RW-WR committee disagreement and possible approaches:

> While members agreed generally that existing water rights should be protected against impairment, there were various opinions about how the statute should be clarified or changed. Below is information on each issue addressed to date.

Issue #1 – What are "existing water rights"?

The statute reads *"…..facilities that reclaim water under this chapter shall not impair any existing water right downstream from any freshwater discharge points of such facilities unless*

compensation or mitigation for such impairment is agreed to by the holder of the affected water right." [Emphasis added]

The question raised was what water rights are included in the impairment analyses, i.e., what does "existing" water rights mean? Does it refer to:

- Water rights existing when the reclaimed water application is submitted?
- Water rights existing when the reclaimed water permit is issued?

Rationale for including water rights existing at the time of application:

Members agree that the impairment analysis should be done early in the reclaimed water facility planning process to avoid delays and create projects that will meet state policy and project objectives. There are typically several years between this early stage of planning (e.g., wastewater facility plans) and the time that the reclaimed water permit is issued (after the project has been constructed).

Reclaimed water proponents desire:

- As much certainty as possible in knowing what water rights may potentially be impaired.
- That there are no surprises between the impairment analysis and final permitting decision, because there are significant financial expenditures made during this period.
- That the facility is not unfairly disadvantaged by water rights that are issued between the time they apply for the permit and when the reclaimed water permit is issued.

For these reasons, the analysis should include only those water rights existing at the time the application is submitted.

Rationale for including water rights at the time of issuing the reclaimed water facility permit:

In the context of water right applications, there is an evaluation that includes potential impairment of existing rights. "Existing water rights" generally means those rights existing at the time a new water right is granted (i.e., permitted) or existing at the time a change is approved. See RCW 90.03.010. "Subject to existing rights all waters within the state belong to the public, and any right thereto, or to the use thereof, shall be hereafter acquired only by appropriation for a beneficial use and in the manner provided and not otherwise; and, as between appropriations, the first in time shall be the first in right." That is, when a permit to appropriate is granted, (i.e., the permit is issued and a water right is established), other water rights existing at that time are entitled to protection.

In the case of instream flows, RCW 90.03.247 states "Whenever an application for a permit to make beneficial use of public waters is approved relating to a stream or other water body for which minimum flows or levels have been adopted and are in effect at the time of approval, the permit shall be conditioned to protect the levels or flows."

These two provisions indicate that water rights existing at the time the permit is issued should be protected from impairment.

Issue #2 – Consider impairment of downstream water rights only?

The statute reads *"…facilities that reclaim water under this chapter shall not impair any existing water right downstream from any freshwater discharge points of such facilities unless compensation or mitigation for such impairment is agreed to by the holder of the affected water right." [Emphasis added]*

The current impairment standard addresses only downstream water rights in an impairment analysis. Upstream water rights that might be impaired are not included. See Appendix E for an example of how upstream water rights can be impaired.

In response, the RW-WR committee has developed three options to date:

1. **Leave the law as is.**

   The language can stand because some of the implications of changing it are not completely understood. It would be better to more fully explore those implications before making any statutory changes. Many, but not all, of the RW-WR committee members recommended Option 1 at this time.

2. **Add exemptions for the Yakima Basin and potentially other situations.**

   The members agreed that the downstream limitation does not make sense for the Yakima Basin because a federal court decree governs decisions there. Staff from the Yakama Nation submitted detailed information supporting this position. See Appendix E. Water right holders are regulated by priority date, and relative position upstream or downstream does not come into play.

   In actual practice, the federal decree and water rights transfer process in the Yakima Basin may override the language in Chapter 90.46 RCW and therefore, a change in the statute is not critical at this time.

   Again, the RW-WR committee has not completed discussion about other situations that should be exempt.

3. **Remove the language completely.**

   The third option would be to remove the language completely because it conflicts with the doctrine of prior appropriation in all parts of the state, not just the Yakima Basin. Appendix E also includes information supporting this position. A second reason to remove the "downstream" language is to clarify that the impairment standard applies to both surface water and ground water since the two are connected.

Issue #3 – Should there be a statutory requirement that Ecology complete an impairment analysis?

The reclaimed water statute is silent on any appropriate process for ensuring that facilities that reclaim water do not impair existing rights. It is also silent on Ecology's role in the process.

Ecology Water Resources Program management reviewed the provision in 2003 and made a decision that while the statute does not explicitly require an analysis, one should be completed to ensure protection of existing rights. The RW-WR committee discussed this and agreed that an analysis should be completed. They also recommended Ecology complete the analysis unless the project proponent chooses to complete it following Ecology protocols, review, and final decision-making. Ecology agreed.

There was disagreement on how those decisions should be formalized.

- Include a statutory requirement that Ecology complete the analysis.
- Include it in rule or guidance.

Rationale for a statutory requirement:

This would provide clear authority for completing and approving the analysis. It would provide greater certainty that Ecology will complete an analysis when the agency has limited resources.

Rationale for rule or guidance:

Draft impairment water guidance "requires" an analysis. For more certainty and emphasis, this requirement could be put in rule and would still ensure the analysis is completed.

Items in process or still to be addressed "next steps"

There are still issues to discuss and policy decisions to make. Ecology and the RW-WR committee will continue to work together. Remaining issues include, but are not limited to:

1. Additional examples in the guidance of simple and difficult impairment situations that might arise and how to address them.
2. Process flowchart for addressing instream flows and out-of-stream rights that might be impaired.
3. Whether or not a reclaimed water facility can legally "impair" water rights within a basin closure.
4. Some aspects of the definition of impairment and the definition of existing water rights.
5. Best approaches to ensure that agency staff are available and trained to provide the "intermittent" assistance needed on the water rights aspects of reclaimed water.
6. Best approaches to fund Ecology staff time spent on impairment analyses.
7. Use of reclaimed water as mitigation for new water rights.

Appendix A - Report on Incentives for Reclaimed Water

Report on Incentives for Reclaimed Water

December, 2007

Langdon Marsh for the Environmental Law Institute

I. Introduction

The "Removing Barriers Sub-Task Force (sub-task force)" of the Department of Ecology's (Department) Reclaimed Water Use Rule Advisory Committee was created by direction of the 2007 Washington Legislature to identify barriers to expanded use of reclaimed water that may not be addressed within the rules to be adopted by the Department for water reclamation facilities.[1] As part of the process for addressing the Legislature's direction, the sub-task force is interested in learning how other states provide incentives for reclaimed water ("RCW") facilities, and what other innovative incentives might be adopted by the state, municipalities, or utility districts to encourage the use of reclaimed water.

This report reviews different tools that are in used in Washington and other states for a variety of environmental purposes that might be adapted by Washington to encourage the use of reclaimed water and installation of reclaimed water facilities. A separate report for the "Long-Term Funding Sub-Task Force" examines potential financing and funding mechanisms that have been used elsewhere for RCW and similar purposes.[2]

This report does not purport to cover all existing Washington programs that might be used or to analyze Washington law. If there is interest in any of the options discussed, a separate review of Washington programs, law, and practices would be needed.

II. Mandates

One way that states can "incentivize" the use of RCW is to require it in appropriate circumstances. California does this indirectly by declaring that failure to use reclaimed water for landscaping when it is available is considered waste or an unreasonable use under the State Constitution.[3] The same law requires that any local entity that produces recycled water and has determined that it will provide it within ten years within the boundaries of a locality, must notify the locality, which then has six months to adopt a recycled water ordinance to require the use of recycled water within its jurisdiction.[4] Another method used is to mandate planning for RCW. Florida's Water

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[1] Washington Senate Bill 6117, Section 5.

[2] L. Marsh for the Environmental Law Institute, *Report on Funding and Financing for Reclaimed Water Facilities,* November, 2007, prepared for the Long-Term Funding Sub-Task Force of the Reclaimed Water Use Rule Advisory Committee of the Washington Department of Ecology

[3] California Senate Bill No. 2095, Article 10.9, Water Recycling in Landscaping Act, Sec. 65603.

[4] Id.

Protection and Sustainability Act, enacted in 2005, requires the regional water supply planning function of water management districts to promote alternative water supply projects to accommodate growth and to reduce the use of traditional ground and surface water supplies.[5]

The state legislature, a municipality, or a utility could potentially require new developments to include purple pipe for landscaping or other purposes for public health and safety or conservation reasons, similar to the requirements related to the provision of water for fire protection in a new development or the requirement in California that developments of a certain scale demonstrate that there will be adequate water. Such a requirement would be strengthened if an analysis showed that RCW is currently available or assured in the reasonable future.

IV. Development planning and regulatory tools

A. Planning

Subject to State constitutional provisions, states have considerable flexibility to require municipalities to adopt comprehensive planning and zoning schemes and to have them include provisions to further state policy objectives. A state could require that all locally adopted plans include consideration of RCW zones or to favor RCW where it is or reasonably will be available. Municipalities are generally free to adopt such provisions on their own, in the absence of a state mandate.

A more radical approach is to adopt a regional agency with growth management, transportation, air quality, water, and potentially other planning, environmental management, and financing authority. Such an agency might coordinate planning across a number of sectors, including energy, mobility, water, wastewater, and land use. In doing so it could assure that RCW and other alternative water sources are included in Federal, state, and local mandated planning.

One example that partially achieves some of this integration is Metro, a directly elected regional government that serves more than 1.4 million residents in three counties, and 25 cities in the Portland, Oregon, metropolitan area.[6] Its responsibilities include urban growth boundary management, long-range planning, transportation planning, waste disposal planning, preservation of natural areas, and habitat restoration.

A rural example of a comprehensive approach to planning is New York's Adirondack Park Agency, created in 1971 by the states to develop long-range land use plans for both public and private lands within the six million acres of the Park.[7] The APA is responsible for maintaining the protection of state lands, and overseeing development proposals of privately owned lands within the twelve counties with territory in the Park all parcels and lots of land, in both the private and public sectors, are

[5] Florida Senate Bill sb0444er.
[6] http://www.metro-region.org/index.cfm/go/by.web/id=24270
[7] http://www.apa.state.ny.us/index.html

classified in a land use and development plan and state land master plan. The purpose of the plans is to prescribe the density of development of lands in different categories. The APA also promotes smart growth within the various communities by funding planning initiatives that link environmental protection, economic development, and community livability within the special conditions of the Adirondack Park.[8]

The Northeastern Ohio Area Coordinating Agency[9] (NOACA) is another possible model for collaborative agreements among different agencies that would integrate planning in a watershed or region so that maximum efficiencies and mutually supportive outcomes could be realized among environmental and other utilities, agencies, and jurisdictions. NOACA is the federally designated metropolitan planning organization (MPO) for five counties of Northeast Ohio in the Greater Cleveland area. Among its functions is area wide water quality management planning.

B. Development approval

States can generally condition permission to develop new areas on constructing adequate facilities, including water, sewer, streets, and sidewalks if related to public health, and welfare. California in 2001 passed some "show me the water" laws that require the demonstration of adequate long-term water supply before approval of large development projects.[10] According to the Public Policy Institute of California,

> "These new laws have already made their mark. Developers are being sent back to the drawing board to come up with more secure supply options, and many projects are being designed to incorporate recycling and conservation."[11]

A state or municipality might go one-step further and require the installation of facilities or piping, if an analysis showed that reclaimed water was available or would be within a reasonable time.

C. Zoning and related tools

There are a wide variety of zoning tools that might be adapted to encourage or require RCW use in appropriate circumstances. An area of a municipality might be set aside for development of RCW compatible housing, or industrial and commercial uses. Tools that might be adaptable for this purpose include incentive, inclusionary, cluster, environmental, overlay, floating, mixed use or performance zoning or planned unit development provisions.[12] Other land use tools that may be adapted to require or

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[8] http://www.apa.state.ny.us/Current_Activities.htm

[9] http://www.noaca.org/aboutus.html

[10] Senate bill 610, c. 643, 2001; Senate Bill 221, c. 642, 2001.

[11] Public Policy Institute of California, Research Brief, Issue No. 102, July, 2005 http://www.ppic.org/content/pubs/rb/RB_705EHRB.pdf

[12] For a brief discussion of each of these tools, see *Getting to Smart Growth* (2002) and *Getting to Smart Growth II* (2003), International City/County Management Association and Smart Growth Network, available from www.icma.org or www.smartgrowth.org. Each has 100 policies for implementation and examples. See also *Protecting Water Resources with Higher Density Development*, USEPA pub., Jan. 2006, at http://www.epa.gov

encourage RCW use include rezoning for higher density, density bonuses, exemptions from impact fees or special assessments, minimum lot sizes, infill development, adaptive reuse, historic preservation grants and tax credits, special use districts as for transit oriented development, tax abatements, credits or waivers and grants of public land.[13]

Transfer of development rights (TDR) is a tool that could be used to provide incentives for RCW. It is used in many states and has been adopted in Washington. As adopted in King County, it is a voluntary land use incentive program that allows private "sending site" landowners to achieve an economic return through the sale of development rights to "receiving site" landowners.[14] TDR programs offer many advantages to local governments that want to control land use but also compensate landowners for restrictions on the development potential of their properties. TDR programs can be easier to implement than typical zoning programs; they make development more predictable and use the market to compensate landowners for lost property value. TDR programs are also more permanent than traditional zoning regulations.[15] Conditions could be placed on the receiving zone parcels that favored RCW.

D. Facility planning and siting

States have control over planning and siting major infrastructure, including water, wastewater, and transportation. California and Florida have enacted statutes encouraging or requiring provision be made for RCW in planning for expanding water supply capacity. California law provides that

> "It is hereby declared that the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of reclaimed water in the satisfaction of requirements for beneficial uses of water."[16]

Florida's Water Protection and Sustainability Program, enacted in 2005, requires its five water management districts to promote alternative water supply projects.[17] Incorporation of preferences for considering alternative water sources, including reclaimed water could also be included in facility planning requirements.

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[13] Id.

[14] See http://dnr.metrokc.gov/wlr/tdr/

[15] For a thorough discussion of TDR programs, see Hanly-Forde, et al., *Transfer of Development Rights Programs, Using the Market for Compensation and Preservation* at http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm

[16] California Water Code, Sec. 461.

[17] Florida Senate bill 444, 2005. For a discussion, see South Florida Water Management District Quick Facts 2006 https://my.sfwmd.gov/pls/portal/docs/PAGE/PG_GRP_SFWMD_WATERSUPPLY/PORTLET%20-%20ALTERNATIVE%20WATER%20SUPPLY/TAB13062095/ALTWATERSUPPLYWITHBACKGROUND_906.PDF

E. Building and Health Codes

While outside the scope of research for this paper, it is clear that there are apparent or real barriers to greater use for RCW in health and building codes. These barriers include both traditional protections against cross connection and other possible avenues for contamination and extra protective measures to assure a wary public about the safety of RCW. A recent Metro Vancouver, Canada discussion of barriers to sustainability in building codes, including barriers to RCW, suggests better agency coordination and training, use of performance codes, and changes in legal liability among possible incentives.[18]

V. Fees and taxes

Financing tools, including fees and taxes, are discussed in a companion paper.[19] Fees and taxes are also useful as incentives as suggested in that paper. The discussion on *Allocation among Ratepayers and Affordability Issues* is particularly relevant.[20] The analysis of allocation, paying particular attention to economic and affordability issues, can provide potential avenues for providing incentives to both users and ratepayers generally.

Fees and taxes can be used more generally to promote smart growth conditions, like denser development, that could facilitate RCW use.[21]

The means used can vary, but generally will take the form of lower rates, exemptions, or credits for favored actions, such as RCW compatible new construction or renovation or higher rates for ones not favored, such as failure to use RCW when available.

VI. Insurance

Since developers might balk at pre-installing RCW compatible facilities if it is not required or will not be for a considerable period, the State or a community might create an insurance program to reduce the risks associated with developers' investment in these facilities. A source of capital for an insurance fund might be the State Revolving Funds, which have broad authorization for conduit financing by municipalities for a broad array of facilities, including RCW.[22]

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[18] http://www.gvrd.bc.ca/buildsmart/pdfs/gvrdgreenbldgcodesandpoliciesjun2007wshopsummary.pdf
[19] L. Marsh, *supra*.
[20] Id. P.4.
[21] See *Getting to Smart Growth* and *Getting to Smart Growth II*, *supra*.

[22] *The Clean Water State Revolving Fund Program: Tapping its Untapped Potential. EPA Draft*, 2007.

VII. Regulatory Simplification

As recognized by the Rule Advisory Committee, states may also simplify requirements that apply to RCW. For example, the California Water Code was amended to authorize regional boards to issue master reclamation permits to a producer and/or distributor of recycled water in lieu of prescribing individual water reuse requirements for a user of recycled water. The amendment also removed several reporting requirements.[23]

VIII. Watershed-based ecosystem service districts

More holistic, ecosystem based, utility financed, multisector, integrated approaches to achieving sustainable water systems, including RCW, are beginning to be discussed. Some academicians and sustainability professionals argue that we as consumers need to pay or trade for ecosystem values as part of our ordinary transactions. In these systems the now unmeasured and unpaid for values of providing water in a sustainable way would be incorporated into rates and other transactions within a watershed or service territory and paid for as part of our utility bill or to providers of other services.

Some of these unmeasured but measurable values include the avoidance of the need for new, expensive, and environmentally damaging new sources, the ecological and human benefits of the use of natural systems for treatment, the future cost and price stability of providing RCW, the value of sustainable jobs in a community served by a sustainable water system, etc. Incorporating the values of benefits and avoided externalities into an integrated water system will make costly and damaging projects with long-term adverse or unpredictable consequences too expensive to pursue. To avoid undue increases in rates, maximum efficiencies would be sought through expanding the boundaries of what is traditionally considered water resources to include all other sectors, such as energy, food, economic and community development, people and goods movement, exchange of goods and services, ecosystem restoration, recreation, culture, health, and education.

While there are no current examples of such a system, suggestions of using integrated, ecosystem based approaches to create multi-sectoral values can be found in diverse places. New York City's pioneering watershed agreement both avoided hugely expensive conventional treatment of the water from its upstate reservoirs and created or preserved long term watershed values. Among the measures agreed upon were updating watershed sewerage systems and roads and increasing the protection of watershed forest and agricultural lands through a combination of acquisition of lands and easements, regulation of agricultural and other activities and incentive payments to landowners.[24] Similarly, projects in Colombia, Costa Rica and elsewhere have brought together

[23] California Water Code Section 13523.1. For more information, see http://www.swrcb.ca.gov/rwqcb2/download/orderno96-011.doc

[24] For a brief description, see http://www.epa.gov/owow/watershed/ny/nycityfi.html

municipal water suppliers, businesses that rely on clean water and forest landowners, who receive payments to protect their forests rather than exploiting them in ways that damage water quality or availability.

Geoffrey Heal of Columbia University and others have proposed to create ecosystem service districts to improve the efficient provision of watershed services necessary for human welfare, financed by government programs or local taxes.[25]

Amory Lovins of the Rocky Mountain Institute, Hank Patton of World Steward and others are developing a comprehensive intergenerational finance approach intended to take advantage of these values in a region or watershed through long-term financing of integrated, multi-sectoral beneficial outcomes.[26] A watershed-based utility would issue long-term bonds to finance infrastructure and other services via the integrated design of a full range of environmental and other services needed by both present and future generations. Investments contracted for by the utility using the bond proceeds would be measured by life cycle assessment based standards adopted by the state to assure that the services are fully sustainable over the long term. Teams of bidders would compete to come up with an integrated set of services that best fit the standards and the particular needs of the watershed or region. Debt service and profit for the winning team would come from fees paid by the recipients of the services provided.

In order for any multi-sectoral, multi-jurisdictional approach to work, there will need to be some collaborative mechanism to bring together, in a neutral forum, the various private and public entities to reach agreements on how it should be structured, financed, and implemented. Unimpeachable scientific and technological knowledge will need to be made available. Such a mechanism could build on existing watershed councils or groups, but will need to incorporate many other actors than typically belong to them. Utilities will play an especially crucial role. A governor or county executive appointed convener and neutral facilitator/process manager could help assure that parties stay together and focused on solutions.[27]

Conclusion

There are many avenues for providing incentives for RCW and other elements of sustainable water. This brief survey only skims the surface of the possible approaches and is designed to provoke discussion about the merits and problems of applying them in a Washington context.

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[25] Heal, et al., Protecting Natural Capital through Ecosystem Service Districts http://papers.ssrn.com/sol3/papers.cfm?abstract_id=279114

[26] Suggestions of this approach are found in A. Lovins, P. Hawken, & H. Lovins, *Natural Capitalism,* Little Brown,1999. A book on the subject by Patton and others is expected in 2008-9.

[27] For a discussion of a possible collaborative governance mechanism and other matters discussed here, see *EFAB Sustainable Watershed Finance Repotr*, 2007, at http://www.epa.gov/efinpage/efabsusfinwatershedrpt_07.pdf

Appendix B - Reclaimed Water Removing Barriers Subtask Force Recommendations

Three phases of community-based social marketing (CBSM)

Phase 1: Public involvement

First-rate public involvement during the rule making process ensures that public issues and concerns are consistently understood and considered when developing the rule. This leads to decisions with broad-based support that can withstand intense public scrutiny.

Ecology has already begun a robust public involvement process by creating and collaborating with the four external stakeholder advisory groups. The input from these groups is guiding the rule development process. Ecology is due to adopt the new reclaimed water rule by December 31, 2010. The subtask force supports continuation and expansion of our systematic public involvement process through completion of the rule.

Public involvement activities supported by the subtask force include, but are not limited to, the following:

- Creating or updating print materials.
    - Ecology and DOH should provide a fact sheet or brochure, on the safety of reclaimed water.
- Updating the Reclaimed Water website.
    - Provide pictures of different classes of water with typical standards listed below each.
    - Include more links to access additional information:
        - National and local reclaimed water success stories.
        - Local examples of education and outreach materials, possibly for use by new or planned facilities in Washington.
        - Contacts to submit questions or comments on reclaimed water.
- Provide statewide reclaimed water workshops.
- Target high-need communities and communities already planning reclaimed water facilities.
    - Co-sponsor workshops with local municipalities or public utilities.

Include reclaimed water information within other Ecology and DOH outreach efforts already taking place. Provide information at the statewide public hearings on the proposed rule.

Phase 2: Local public involvement, education, and outreach

Although the state should play an important role in promoting reclaimed water, local jurisdictions must make every effort to bring their stakeholders into the process — early and often. The subtask force supports public involvement, education, and outreach during the

feasibility study step of reclaimed water use. Public involvement and outreach in the feasibility study phase increases the likelihood that the community supports the use of reclaimed water before costly infrastructure investments are made.

Efforts that could be implemented include:

- Identifying and interviewing key stakeholders.
- Hosting focus groups and conducting public opinion surveys.
- Reaching out to elected officials.
- Developing fact sheets, bill inserts, or newsletters.
- Holding public meetings and workshops.
- Touring successful reclaimed water facilities.

The state's role would be supporting this effort by being available for guidance and assistance. However, limited resources will decrease the state's availability to provide such assistance.

Phase 3: Statewide education and awareness campaign

People often do not trust what they do not understand. A statewide awareness campaign around reclaimed water must strive to raise the public's awareness and understanding about water in general and reclaimed water in particular. A statewide awareness campaign could be done at the same time as Phase 1 and 2, or separately.

The United States Environmental Protection Agency (EPA) states that, "At least intellectually 'the public' is receptive to use of reclaimed water in a well thought out program. EPA stresses that this initial acceptance hinges in large measure on:

- The public's awareness of local water supply problems and perceptions of reclaimed water as having a place in the overall water supply allocation scheme.
- Public understanding of the quality of reclaimed water and how it would be used.
- Confidence in local management of the public utility and in local application of modern technology.
- Assurance that the reuse applications being considered involve minimal risk of "accidental personal exposure."

EPA and others recommend that the state establish a dedicated outreach coordinator position to ensure there is one accurate source of information. Currently neither DOH nor Ecology has such a position.

The statewide campaign would include, but would not be limited to activities such as the following:

- Regional focus groups.
- Regional surveys.
- Development of print, audio, and visual materials, including brochure, utility bill inserts, videos, billboards, and TV and radio ads.

- Booths at state and county fairs, farmers markets, and other public events.
- Creation of online toolbox for use by local governments.

Note: If Phase 3 were implemented, the state would be conducting regional surveys and focus groups and providing that data along with any print, video, or audio materials in an online toolbox that local jurisdictions could use thereby reducing the time, effort, and money they need to do effective outreach to their stakeholders.

Appendix C - Reclaimed Water Grants Program

Reclaimed Water Grants Program
Fiscal Year 2008

Final Offer and Applicant List

January 2008

Publication Number 08-10-019

Reclaimed Water Grants Program
Fiscal Year 2008

Final Offer and Applicant List

Prepared by the Water Quality Program's
Financial Management Section staff

January 2008

Publication Number 08-10-019

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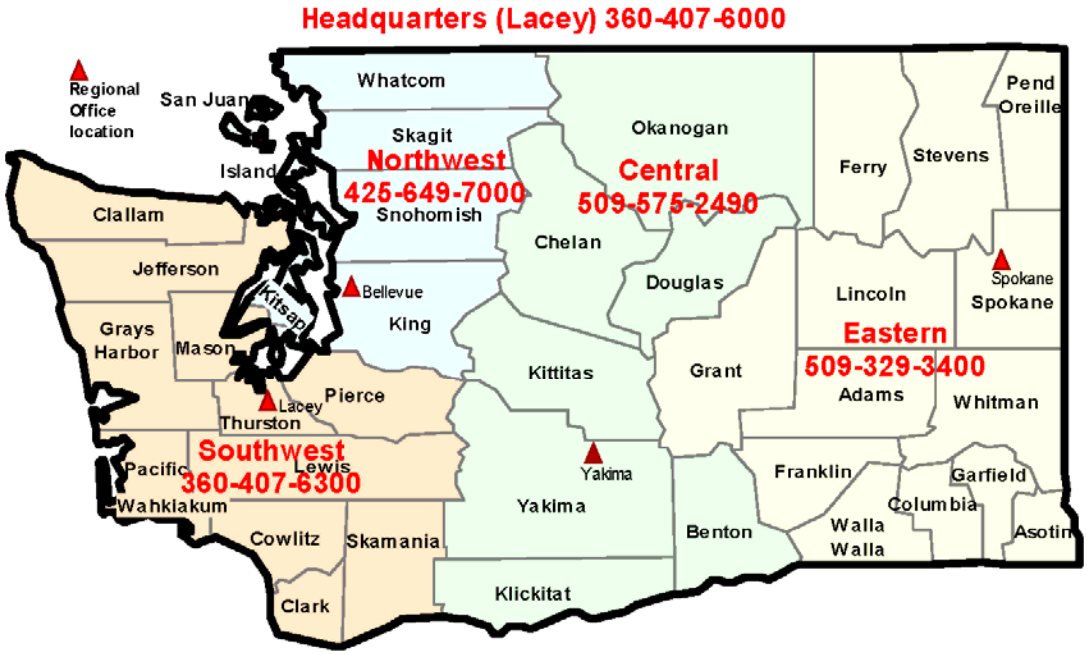

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FY 2008 Reclaimed Water Grants Program

Background

The 2007 Washington State Legislature passed the Capital Budget for the 2007-09 biennium, which includes grant funds to assist local governments with reclaimed water needs. The Legislature designated $5,455,000 for grants to local governments in the Puget Sound region to complete reclaimed water projects. The Department of Ecology (Ecology) refers to this new funding program as the *FY 2008, Reclaimed Water Grants Program*

Ecology recognized the program will need considerable administrative support for program development, grant preparation and management, and technical review of planning, design, and construction. Ecology will reserve $455,000 for these administrative costs. Ecology is offering $5,000,000 to local governments with highest priority water reclamation project proposals in the Puget Sound basin.

The Legislature directed that priority be given to projects:

1. In water short areas (defined by Ecology and others on the program development taskforces as areas where available freshwater cannot meet demands of intended uses), and
2. Areas where reclaimed water will restore important ecosystem functions in the Sound.

The purpose of this Final Offer and Applicant List for the *FY 2008, Reclaimed Water Grants Program* is to show projects offered funding and report on applicant and general public comments on the Draft Offer and Applicant List.

- The Draft Offer and Applicant List was issued on December 21, 2007.
- A three week comment period opened the issue date of the draft list and closed on January 11, 2008.
- Letters were written to all applicants explaining eligibility and evaluation issues.
- A record of rating points assigned and evaluation comments provided by the evaluators was available.

Final Offer and Applicant Summary

During the application period between August 8, 2007, and September 28, 2007, a total of 23 applicants requested approximately $17.5 million in grants for the completion of water reclamation projects.

Of these:

- 9 applicants requested $14.4 million for capital facilities (design and construction), and
- 14 applicants requested $3.1 million for feasibility assessment projects.

Ecology is offering grant funds to:

- 5 applicants totaling $4 million for capital facilities (design and construction), and
- 6 applicants totaling $1 million for feasibility assessment projects.

Overview

Program Development

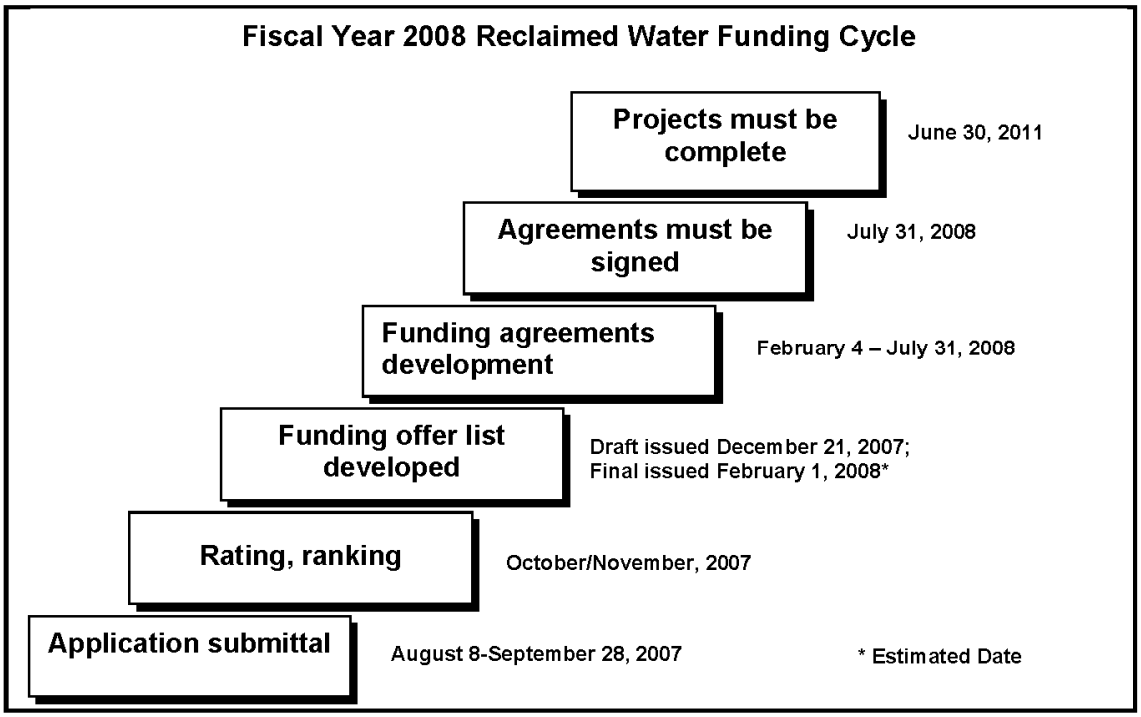
- Staff used two taskforces and the Water Quality Program's Financial Assistance Council to help develop the *FY 2008, Reclaimed Water Grants Program.*
- Staff introduced this preliminary program to attendees at the Pacific Northwest Regional conference: *Reclaimed Water: Tapping the New Resource,* on June 12, 2007.
- In mid July 2007 Ecology also provided an introduction to the preliminary program to attendees at two workshops held in Tacoma and Lynnwood, Washington.
- Staff posted the final application and funding guidelines on August 8, 2007, and provided other funding information on *Ecology's Water Reclamation Funding website*: http://www.ecy.wa.gov/programs/wq/funding/ReclaimedWaterGrants.htm

Program Implementation

- As directed by the Legislature, priority was given to projects in water short areas (defined by Ecology and others as areas where available freshwater cannot meet demands of intended uses) and areas where reclaimed water will restore important ecosystem functions in the Puget Sound.
- Evaluators completed the scoring and ranking process of projects in late November 2007.
- Ecology posted the Draft Offer and Applicant List on December 21, 2007.
- The three-week comment period, ended January 11, 2008.
- Ecology posted the Final Offer and Applicant List on January 31, 2008.
- Ecology's Project Management Team will use information found in the funding proposal as the basis for developing the funding agreement.
- Ecology anticipates all funded projects will begin by mid-year 2008.
- Feasibility assessments should be completed within one year, and construction projects finished within three years.

Funding Amounts

- Feasibility Assessment Grant Award: Up to 100 percent of eligible project costs ($250,000 maximum)
- Design and Construction Grant Awards: Up to 75 percent of eligible project costs



Evaluation Criteria

Feasibility studies were evaluated based on the ecological benefits and other criteria, but were only evaluated against other feasibility studies.

The following is a summary of the application evaluation criteria used in the Reclaimed Water Grants Program:

A. **Overall quality of project proposed and likelihood of success (up to 200 points)**

1. Scope of work (up to 150 points)
2. Budget (up to 50 points)

B. **Actions required or recommended (up to 450 points)**

1. Ecological benefit (up to 300 points):

a. Water short areas had equal priority with restoration of ecosystem functions in Puget Sound. Proposed projects were evaluated for their contributions to the bio-hydrology with up to 300 points available.

b. Eligible project activities in water short areas or which address ecosystem functions stood on their own or complement activities in the other category for up to 300 points.

2. State and federal requirements (up to 100 points):

a. Actions required under Total Maximum Daily Load (TMDL) criteria such as minimum flows and dissolved oxygen, maximum temperature; federal and state water rights; and National Pollutant Discharge Elimination System (NPDES) permits and compliance orders.

b. Actions recommended by watershed planning groups in approved Watershed Planning Act Plans.

C. **Local interest and commitment (up to 200 points):**

1. Project development process (up to 150 points)
2. Project team (up to 50 points)

D. **Readiness to proceed (up to 150 points):**

1. Capital facilities projects

Applicants were asked to explain their status of compliance with the Growth Management Act compliance, whether all match, land needed, environmental permits, etc., had been acquired. Applicants were also asked to estimate how long prerequisite steps will take to complete.

2. Feasibility assessments

Proposed projects must be ready to proceed soon after the Final Offer and Applicant List is distributed. Efforts such as public information and collaboration with other cities can be used to demonstrate readiness. Feasibility assessments were evaluated independently of capital facilities projects.

Prior Authorization

The recipient can begin incurring project costs on the date that the funding agreement is effective. Ecology recognizes the funded projects are managed under time-sensitive schedules. In some instances, eligible costs can be incurred before the effective date of an agreement with prior authorization.

Prior authorization is written authorization that allows the recipient to incur eligible project costs after the publication of the Final Offer and Applicant List and before the funding agreement is effective. Prior authorization does not guarantee funding, and Ecology cannot release funds before the effective date of the agreement.

In order to receive prior authorization, a formal written request must be sent to Ecology's Water Quality Program Manager, stating the critical reasons for the request. The recipient will be notified in writing of the approval for prior authorization of incurred costs.

Response to Comments

During the three-week comment and review period, December 21, 2007, through January 11, 2008, Ecology received four external comment letters on the Draft Offer and Applicant List. In addition, at Ecology's request, applicants proposed for partial funding confirmed they would proceed with the entire project evaluated. These external comments, Ecology's response, and letters of acceptance to proceed with partial funding follow:

Comments from external parties

Blaine, City of, Gary Tomsic, City Manager, RW08018/Lighthouse Point Water Reclamation Facility.

Comment: Mr. Tomsic asked that the city of Blaine project proposal receive a grant offer for $1,000,000 as staff noted in the application instead of the $750,000 proposed in the Draft Offer and Applicant List. He

believed the total eligible project cost was $38.45 million, and cited the cost of membrane bioreactor equipment as costing $3.4 million alone.

Response: Ecology staff reviewed the request from the staff of city of Blaine and adjusted the grant amount to be offered from $750,000 to $1,000,000. Grants for design and construction projects are based on up to 75 percent of eligible project costs. Only the cost of the membrane bioreactor technology attributed to the water reclamation can be considered eligible. However, the $3.4 million amount provided by the City's staff is a conservative estimate of the total eligible project cost of the reclaimed water portion of the larger $38.4 million wastewater treatment/reclaimed water facility. This estimated total eligible project cost more than exceeds that required to substantiate the $1,000,000 grant amount requested.

Thomas W. Holz, Private Citizen, Re: RW08015/Kitsap Sustainable Energy and Economic Development (SEED).

Comment: Mr. Holz asked that Ecology reconsider its decision not to propose funding for the above-referenced project.

Response: Staff reviewed the evaluation and comment sheet provided by the evaluation team and the project proposal. Staff found the project proposal was evaluated based on its merits and relative to other proposals. Staff found no basis for reconsideration in Mr. Holz's letter or in their assessment.

Orting, City of, The Honorable Cheryl Temple, Mayor, RW08014/Orting Reclaimed Water Feasibility Assessment.

Comment: Mayor Temple noted that the scope of work for the project was submitted but was not assessed during the evaluation of the project proposal. She asked that Ecology reevaluate the complete project proposal.

Response: Although the hard copies of the project proposal did not contain the scope of work, the electronic version submitted included the project scope of work as an attachment. Therefore, evaluators reassessed the complete project proposal with the scope of work, and they assigned the project proposal 640 points.

This point assignment moves the project to the 16th position on the Final Offer and Applicant List. However, we at Ecology encourage all public bodies to move forward with such projects, regardless of potential funding.

Tacoma Public Utilities, John C. Kirner, Water Superintendent, RW08023/ City of Tacoma and Pierce County Reclaimed Water Feasibility Assessment.

Comment: Mr. Kirner wrote that although the project was not proposed for funding, the City's staff would work with partners to proceed with the project.

Response: Ecology staff are pleased the city of Tacoma will proceed with this important project.

Acceptance of Proposed Partial Funding

All project proposals were evaluated on the merits of the entire project proposed. Therefore, for projects proposed to receive partial funding, applicants were asked to commit to completing the project, as proposed. The following applicants wrote that they would accept partial funding if it was offered:

Jefferson County, Frank Gifford, Public Works Director, RW08016/Port Hadlock UGA Sewer Design Development

Karcher Creek Sewer District, Laurence J. Curles, General Manager, RW08010/Reclaimed Water Distribution System (believes the Sewer District Board will proceed)

PUD # 1 of Clallam County, Hugh Haffner, W.E. Purser, Hugh E. Simpson, Jr., Board of Commissioners, RW08004/Carlsburg Reclaimed Water Reuse System

Sequim, City of, James E. Bay, Director of Public Works, RW08012/City of Sequim Water Reclamation and Distribution System Expansion

Final List of Projects In Ranked Order

Application Number	Applicant Name	Project Title	Rank	Score	Project Type	Total Eligible Cost	Grant Funds Requested	Capital Funding Offered	Feasibility Funding Offered	Foot notes
RW08018	Blaine, City of	Lighthouse Point Water Reclamation Facility (LPWRF)	1	1000	Construction	$3,400,000	$1,000,000	$1,000,000		1
RW08021	Mason County	Belfair / Lower Hood Canal Reclaimed Water Distribution	2	925	Design & Construction	$3,179,260	$1,500,000	$1,500,000		2
RW08003	Coupeville Town of	Coupeville Reclaimed Water Feasibility Assessment	3	925	Feasibility Assessment	$173,000	$173,000		$173,000	
RW08012	Sequim, City of	City of Sequim Water Reclamation Facility and Distribution Expansion	4	875	Design & Construction	$1,103,270	$5,000,000	$827,453		3
RW08002	Penn Cove Water and Sewer District	Penn Cove Water and Sewer District Reclaimed Water Reuse Feasibility Study	5	875	Feasibility Assessment	$47,503	$47,503		$47,503	
RW08011	Skagit County	Big Lake Water Reclamation Facility	6	865	Feasibility Assessment	$250,000	$250,000		$250,000	
RW08010	Karcher Creek Sewer District	Reclaimed Water Distribution System	7	825	Design & Construction	$633,000	$633,000	$474,750		
RW08005	Kitsap County	Kingston Wastewater Reclamation Final Feasibility	8	810	Feasibility Assessment	$205,000	$250,000		$205,000	4
RW08016	Jefferson County	Pt. Hadlock UGA Sewer Design Development	9	800	Design	$957,900	$718,425	$197,797		5
RW08013	Silverdale Water District	West Dyes Inlet Water Reclamation Facility Feasibility Study	10	780	Feasibility Assessment	$250,000	$250,000		$250,000	
RW08004	Clallam County PUD#1	Carlsborg Reclaimed Water Reuse System	11	730	Feasibility Assessment	$250,000	$625,000		$74,497	6

Application Number	Applicant Name	Project Title	Rank	Score	Project Type	Total Eligible Cost	Grant Funds Requested	Capital Funding Offered	Feasibility Funding Offered	Foot notes
RW08007	Lacey, City of	Woodland Creek Reclaimed Water Infiltration and Instream Flow Recharge Facility	12	700	Site Planning & Design	$471,000	$471,000	$0	$0	
Application Number	**Applicant Name**	**Project Title**	**Rank**	**Score**	**Project Type**	**Total Eligible Cost**	**Grant Funds Requested**	**Capital Funding Offered**	**Feasibility Funding Offered**	**Foot notes**
RW08023	Tacoma, City of	City of Tacoma and Pierce County Reclaimed Water Feasibility Assessment	13	675	Feasibility Assessment	$222,500	$222,500	$0	$0	
RW08006	Shelton, City of	Johns Prairie Water Feasibility Study	14	665	Feasibility Assessment	$199,500	$199,500	$0	$0	
RW08017	Stanwood, City of	City of Stanwood Wastewater Treatment Plant Reclaimed Water Feasibility Study	15	650	Feasibility Assessment	$184,034	$184,034	$0	$0	
RW08014	Orting, City of	Orting Reclaimed Water Feasibility Assessment	16	640	Feasibility Assessment	$250,000	$250,000	$0	$0	
RW08022	Buckley, City of	City of Buckley Effluent Treatment for Reuse Feasibility Project	17	600	Feasibility Assessment	$250,000	$250,000	$0	$0	
RW08008	Bothell, City of	Bothell Reclaimed Water Project	18	515	Feasibility Assessment	$190,000	$190,000	$0	$0	
RW08009	Tukwila, City of	Foster Links Joint Reclaimed Water Project, City of Tukwila and King County Wastewater Treatment Division	19	510	Construction	$243,000	$182,250	$0	$0	
RW08020	Covington Water District	Sports Park for Amateur Recreation in King County	20	475	Feasibility Assessment	$177,040	$177,040	$0	$0	
RW08015	Bremerton, Port of	Kitsap Sustainable Energy & Economic Development (SEED)	21	375	Site Planning & Design	$250,000	$250,000	$0	$0	
RW08019	Arlington, City of	City of Arlington Wastewater Treatment Plant Upgrade and Expansion	22	350	Design & Construction	$4,689,500	$4,689,500	$0	$0	
RW08001	Jefferson County PUD#1	Chimacum Creek Reclaimed Water Feasibility Study	23	145	Feasibility Assessment	$52,200	$52,200	$0	$0	
					Totals:	$17,627,707	$17,564,952	$4,000,000	$1,000,000	7

Footnotes:

1. Grants for design and construction projects are based on up to 75 percent of eligible project costs. The $3.4 million estimated total eligible project cost more than exceeds that required to substantiate the $1,000,000 grant amount requested.

2. Grants for design and construction projects are based on up to 75 percent of eligible project costs. The $3,179,260 estimated total eligible project cost more than exceeds that required to substantiate the $1,500,000 grant amount requested.

3. The city of Sequim requested funds for design and construction but does not, as yet, have an approved engineering report. Under the Program Guidelines, the City can only request funding for the design portion. The total eligible cost (TEC) for design is $1,103,270. The grant amount proposed is $827,453. This amount represents a 75 percent grant based on the TEC for design.

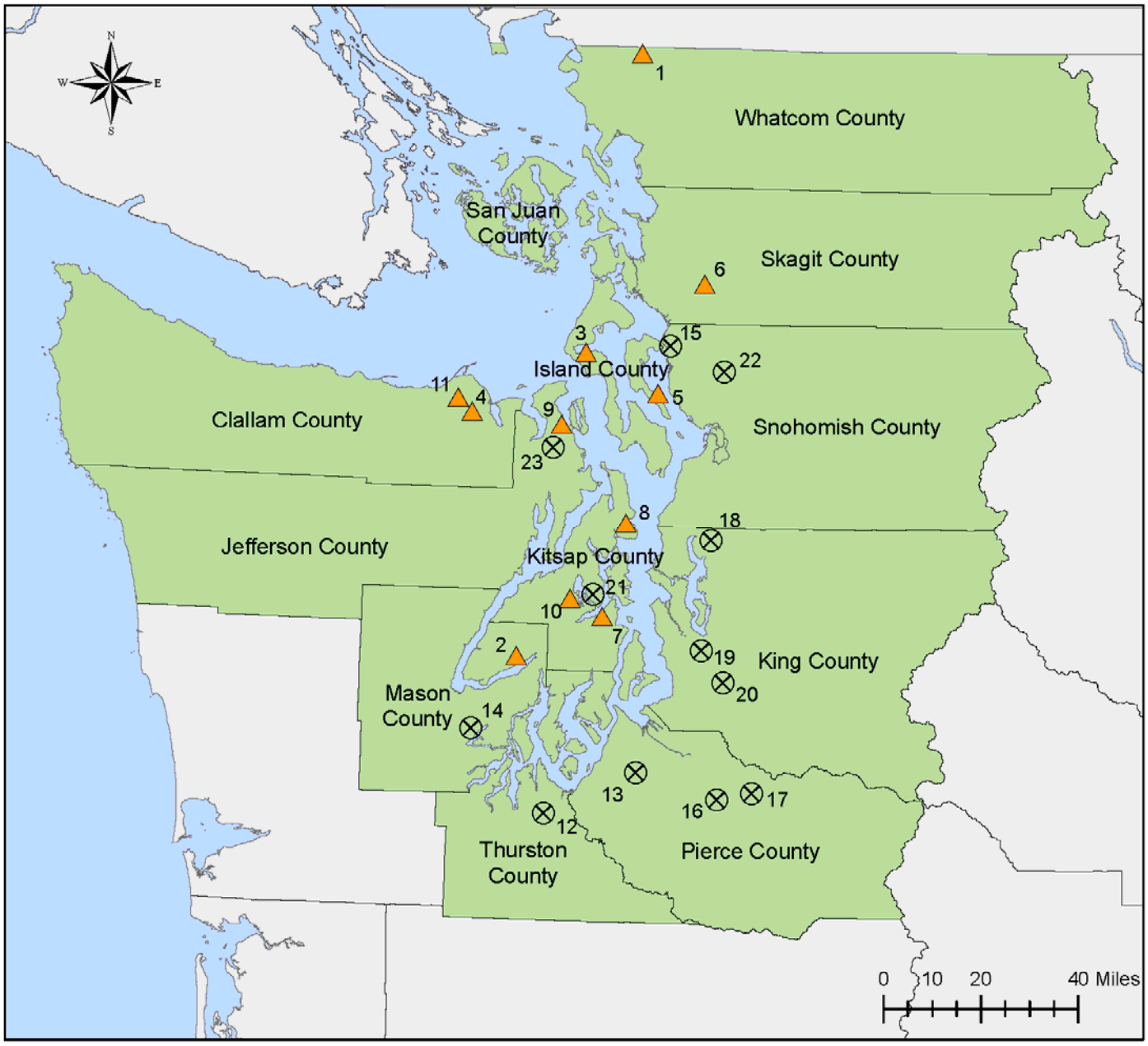
4. The Kitsap County Feasibility Project for Kingston included some ineligible work. The cost of a regional recreation park well water right for $45,000 is not eligible under this funding program. $45,000 was subtracted from the amount requested to equal $205,000. Therefore, the County is eligible to receive a 100 percent grant for the eligible portion of $205,000.

5. Ecology can only partially fund the project because the project is at the funding cutoff line for capital (facilities) projects.

6. Clallam County PUD #1 requested funds for planning and design, but the project appears to be a feasibility assessment (limited to a grant of $250,000). The $250,000 amount requested exceeds the amount of funds remaining for feasibility assessment projects. Ecology can only partially fund the project at $74,497 because the project is at the funding cutoff line.

7. The 2007 Legislature appropriated $5,455,000 to the Department of Ecology (Ecology) to develop the Reclaimed Water Grants Program for the Puget Sound basin, manage grants issued to local governments, and provide technical assistance and review of planning, design, and construction. Ecology will issue a total of $5,000,000 in grants to local governments with the highest priority reclaimed water project proposals.

Fiscal Year 2008 Reclaimed Water Grants Program
Final Offer and Applicant List



Funded Projects

Unfunded Projects

Projects are identified by their ranking number

Fiscal Year 2008 Reclaimed Water Grants Program
Final Offer and Applicant List
Project Descriptions

Rank	Application Number	Applicant Name	Project Title
1	RW08018	Blaine, City of	Lighthouse Point Water Reclaimation Facility (LPWRF)
A water reclamation facility using membrane bioreactor technology to produce Class A reclaimed water for seasonal irrigation of Semiahmoo Golf Course and off-season discharge into Puget Sound, complying with legal requirements to abandon the current plant and relocate treatment, achieving NPDES permit compliance, providing beneficial reuse, and re-opening shellfish beds.			
2	RW08021	Mason County	Belfair/Lower Hood Canal Reclaimed Water Distribution
This project involves distribution of Class A reclaimed water for irrigation and other uses in and around the Belfair UGA. An 18.5 million gallon equalizing storage facility will be constructed to support planned reuse more efficiently.			
3	RW08003	Coupeville, Town of	Coupeville Reclaimed Water Feasibility Assesment
The Town of Coupeville and partners will assess the feasibility of reclaiming stormwater and wastewater effluent for the purpose of protecting Penn Cove, a 303(d)- listed water body, and related endangered salmon and shellfish habitat, as well as for reclaimed water re-use for irrigation of farmlands and groundwater recharge.			
4	RW08012	Sequim, City of	City of Sequim Water Reclaimation Facility and Distribution Expansion
The Water Reclamation Facility Expansion more than doubles the volume and improves the reliability of the City's reclaimed water production for beneficial use in the water-short Dungeness watershed including flow augmentation in small streams, substitution of Dungeness River irrigation diversions, recharge to the shallow aquifer system, and recreational uses.			
5	RW08002	Penn Cove Water and Sewer District	Penn Cove Water and Sewer District Reclaimed Water Reuse Feasibility Study
Feasibility study to determine the costs, infrastructure requirements, environmental impacts, and end user acceptance of using reclaimed water from Penn Cove Water and Sewer District's wastewater treatment plant for agricultural irrigation and aquifer recharge by limiting outfall discharge of treated sewage into Penn Cove except for emergencies and special circumstances.			
6	RW08011	Skagit County	Big Lake Water Reclaimation Facility
Conduct feasibility study and preliminary design of enhanced treatment of municipal wastewater from Skagit County Sewer District #2 to allow discharge of reclaimed water to Nookachamps Creek to augment insufficient instream flows in Nookachamps Creek and the Lower Skagit River and to help alleviate high temperature in Nookachamps Creek.			
7	RW08010	Karcher Creek Sewer	Reclaimed Water Distribution System
The Reclaimed Water Distribution System project will construct the purple pipe system to provide Class A reclaimed water for stream flow augmentation of Karcher Creek to improve salmonoid habitat. Other available reclaimed water will be used for irrigation of a public park, public buildings, and school sports fields.			
8	RW08005	Kitsap County	Kingston Wastewater Reclaimation Final Feasibility
Identify modifications required to the existing Kingston WWTP and discharge to (1) improve low stream flow for Grovers Creek salmon, (2) eliminate a Puget Sound outfall, (3) create wetland habitat, and (4) help provide needed water for a regional park by accomplishing the final feasibility tasks needed to move into subsequent design, permitting, and construction phases.			
9	RW08016	Jefferson County	Pt. Hadlock UGA Sewer Design Development
Preliminary design of wastewater collection, water reclamation, and groundwater infiltration systems in the Irondale/Port Hadlock UGA in Jefferson County. Class A reclaimed water will augment flows in Chimacum Creek, and a reclamation facility will replace aging, unreliable, septic systems on Port Townsend Bay. The project will protect threatened chum salmon and harvestable shellfish habitat.			

Fiscal Year 2008 Reclaimed Water Grants Program
Final Offer and Applicant List
Project Descriptions

Rank	Application Number	Applicant Name	Project Title
10	RW08013	Silverdale Water District	West Dyes Inlet Water Reclaimation Facility Feasibilty Study
Evaluate feasibility of operating a membrane wastewater treatment facility within the SWD service area. Potential locations will be identified and screened based on ability to service homes currently on older septic systems and the subsequent use of the reclaimed water to alleviate low flows in the Chico Watershed salmon creeks.			
11	RW08004	PUD#1 of Clallam Co.	Carlsborg Reclaimed Water Reuse System
Reclaimed water reuse in Carlsborg would augment instream flow in this water short area, protect groundwater, and reduce pollution loading to surface waters and Puget Sound. This grant would fund: Engineering reports per WAC 173-240-060, SEPA review and determination, Archeological and cultural review, and other required tasks.			
12	RW08007	Lacy, City of	Woodland Creek Reclaimed Water Infiltration and Instream Flow Recharge Facility
Engineering design and supporting studies for a reclaimed water infiltration facility to be located on City owned property. The proposed project will provide the groundwork for construction of a regionally accepted facility that will provide enhancement of instream flow and address water quality issues in a salmon bearing stream.			
13	RW08023	Tacoma, City of	City of Tacoma and Pierce County Reclaimed Water Feasibility Assessment
The City of Tacoma and Pierce County will jointly investigate the feasibility of implementing a water reuse program in pierce County. Existing studies, including the Water Reuse Feasibility Study, 1994, will be the basis for an updated evaluation. The technical, economic, and environmental feasibility of producing reclaimed water from within the service areas of three wastewater treatment plants located in urban Pierce County will be investigated. Potential markets for reclaimed water will be investigated and stakeholder outreach will occur.			
14	RW08006	Shelton, City of	Johns Prairie Water Feasibility Study
The project entails the preparation of a feasibility study to evaluate potential uses for reclaimed water and the associated costs, benefits, and risks to the City related to producing and providing reclaimed water for those purposes throughout the Shelton UGA, and in particular to the Johns Prairie area.			
15	RW08017	Stanwood, City of	City of Stanwood Wastewater Treatment Plant Reclaimed Water Feasibility Study
This study will asses the feasibility of treating a portion of the City of Stanwood's wastewater treatment plant effluent to high grade reclaimed water for reuse. This water would be used to directly and indirectly augment threatened wildlife habitats such as Church Creek, the Old Stillaguamish River, and Port Susan Bay.			
16	RW08014	Orting, City of	Orting Reclaimed Water Feasibility Assesment
Preparation of a Reclaimed Water Feasibility Study outlining the steps necessary for the City of Orting to produce Class A Reclaimed Water for the purposes of providing a reliable, non-potable water supply for non-potable uses while improving the quality and reducing the quantity of treated wastewater discharges to Puget Sound.			
17	RW08022	Buckley, City of	City of Buckley Effluent Treatment for Reuse Feasibility Project
The City of Buckley would like to reclaim and further treat to class A reuse standards a portion, initially up to 500,000 gpd, of the effluent from the upgraded wastewater treatment facility for irrigation of parks, schools, open spaces, and agricultural areas. The purpose of this proposal is to seek funds to determine feasibility of reclamation, especially public acceptance.			

Fiscal Year 2008 Reclaimed Water Grants Program
Final Offer and Applicant List
Project Descriptions

Rank	Application Number	Applicant Name	Project Title
18	RW08008	Bothell, City of	Bothell Reclaimed Water Project
Conduct feasibility study to supply reclaimed water for irrigation of two business parks, industrial use at the Seattle Times production facility, dual plumbing system conversions in service areas, wetlands irrigation, and cooling and dual plumbing uses by University of Washington and portions of a business park.			
19	RW08009	Tukwila, City of	Foster Links Joint Reclaimed Water Project. City of Tukwila and King County WWT Division
Permit and construct 500 feet of reclaimed waterline from and existing trunkline to an existing impoundment at Foster Links Golf Course. Project includes wiring, telemetry, and appurtenances. Included is a program of soil and water monitoring and public outreach/education. This project will, over time, eliminate withdrawals from the Green River.			
20	RW08020	Covington Water District	Sports Park for Amateur Recreation in King County
An enhanced Facilities Plan for the Sports Park for Amateur Recreation in King County (SPARKS) project's wastewater treatment and disposal. The SPARKS project will use a membrane bioreactor wastewater treatment system to produce Class A reclaimed water, to be used for landscape and rain garden irrigation as well as maintenance of basin hydrology.			
21	RW08015	Bremerton, Port of	Kitsap Sustainable Energy & Econmic Development (SEED)
Final engineering of Kitsap SEED's water re-use component, using advanced bio-reactor/membrane filtration technologies which recycle and clean waters infiltrating (no piped or overland flow) from project site to groundwater into the Union River Basin. By mimicking natural hydrology, it provides a model for addressing existing problems and resource sustainability.			
22	RW08019	Arlington, City of	City of Arlington Wastewater Treatment Plant Upgrade and Expansion
The City of Arlington is upgrading its wastewater treatment plant to produce effluent of reclaimed water quality. This will enable the plant's discharge to meet the Stillaguamish River TMDL requirements, improve Puget Sound water quality, support Port Susan's shellfish bed restoration, and expand water management opportunities in the Stillaguamish basin.			
23	RW08001	PUD #1 of Jefferson County	Chimacum Creek Reclaimed Water Feasibility Study
A feasibility study for the collection, treatment, and reclaiming of septic effluent for the Port Hadlock/ Irondale area of Jefferson County. The study will address the removal and reclaiming of septic effluent potentially polluting Port Townsend, Port Hadlock, and Chimacum Creek. Cost, financing, and public support will be stressed in the study.			

Appendix D - Governor's Explanation for Partial Veto

"I am returning, without my approval as to Section 4, Engrossed

Second Substitute Senate Bill 6117 entitled: "AN ACT Relating to reclaimed water."

Section 4 of this bill would establish procedures for determining when a water reuse project would impair existing water rights, and would change the standard for mitigating any such impairment. Based on legal advice, I believe this section could have unintended consequences to existing water rights. The remainder of Section 4 of the bill would also create a new task force to address the state's water reuse program, including water right impairment issues. I have vetoed Section 4 of Engrossed Second Substitute Senate Bill 6117 because of that portion of it that changes the standard for mitigating impairment of existing water rights.

Section 3 of the bill establishes new requirements for considering reclaimed water during watershed planning and land use decisions, which will eventually need to be harmonized with other statutes in order to ensure effective implementation. I believe this work is still needed and important to accomplish.

Accordingly, I am directing the Department of Ecology to work with legislative leadership to address water right impairment from water reuse projects, reclaimed water planning and other issues raised in Sections 3 and 4 of the bill and to provide a report and recommendations to the Governor and appropriate standing committees of the Legislature by December 31, 2007.With the exception of Section 4, Engrossed Second Substitute Senate Bill 6117 is approved."

Appendix E - Upstream Impairment Scenarios

Upstream Impairment Scenarios

Tom Ring

Staff hydrologist, Yakama Nation

The existing reclaimed water statute bars impairment of downstream water rights (90.46.130). In fact, reduction of flow resulting from a reclaimed water facility could just as likely impair upstream water rights. This is because regulation of water rights is based on seniority, not position within the stream. Below are short examples of different circumstances in which impairment of upstream rights that could occur if water currently discharged to a point in a stream were captured and put to new consumptive use.

Obligatory Disclaimers

This is a staff level and does not constitute legal or policy positions. It is not at the discretion of any branch of State Government to impair Treaty and Federally Reserved water rights, for either instream or out of stream uses.

General Concept

The initial physical effect of putting effluent to new consumptive use would be to reduce flows downstream of the existing discharge point or area. The initial impact is felt at a downstream "trigger point", but the impairment may not be felt at that point. Because rivers are regulated based on priority, the impairment would be experienced by the most junior user or users upstream of the trigger point regardless of whether they were upstream or downstream of the reclaimed water facility. Below are a few different physical and regulatory frameworks and the different scenarios for impairment.

Yakima Basin

In the Yakima Basin, water rights are administered in accordance with a regularly calculated estimate of water supply called Total Water Supply Available (TWSA). TWSA essentially equals the amount of water expected to enter the Yakima River system from snowmelt and other sources above the Parker stream gage (the current control point for the river, and a point at which target instream flows are defined). TWSA is shared proportionally among a large class of water rights with a May 10th, 1905 priority date (proratable rights). When TWSA is insufficient to meet all proratable rights, the remaining supply is divided proportionally (prorated) among proratables. A reclaimed water project that resulted in less water reaching the Parker gage would reduce TWSA. As a result, each proratable user would receive proportionally less water

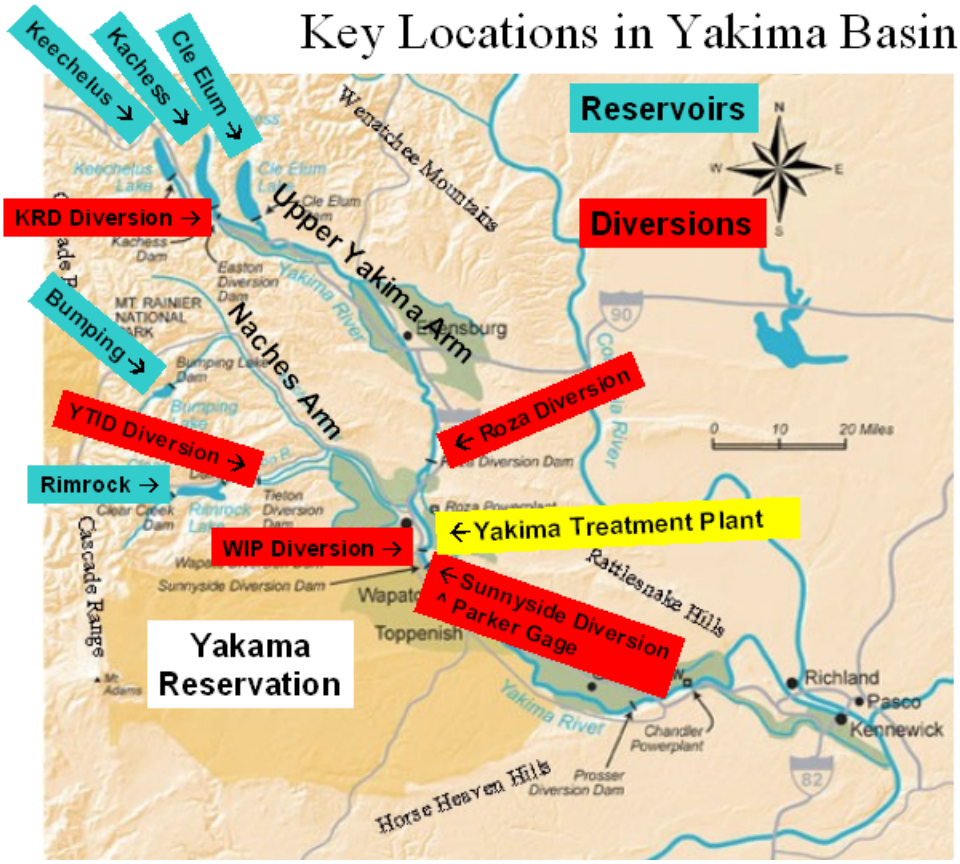
regardless of whether their diversion was located upstream or downstream of the reclaimed water facility.

Using the example of the Yakima Regional Treatment Plant (just for discussion purposes), if the approximately 20 cfs from the plant were put to new consumptive uses, TWSA would be reduced accordingly (because the plant is upstream of the Parker gage). In order to maintain the target instream flow at the Parker gage, Reclamation would release more water from the reservoirs. In a proratable year, all May 10th, 1905 users would suffer a reduced supply. Users such as the Kittitas Reclamation District and Roza Irrigation District, whose diversions are upstream of the plant, along with Sunnyside Division, which diverts below the plant, and even the Yakima Tieton, which is on a separate tributary, would have their proratable supply cut proportionally, regardless of upstream or downstream location.

In a non-proratable year, an increase in consumptive use above Parker would cause a reduction in carry over storage, increasing the likelihood of prorationing the next year, which again would reduce supply to proratables regardless of their upstream-downstream location.

In addition, a recent court ruling requires that all post-May10, 1905 water rights be curtailed any time when the proratables are being prorated. This curtailment applies to all post-1905 water rights above Parker.

A map showing relative locations of diversions, the treatment plant, the Parker gage, and the reservoirs is below.

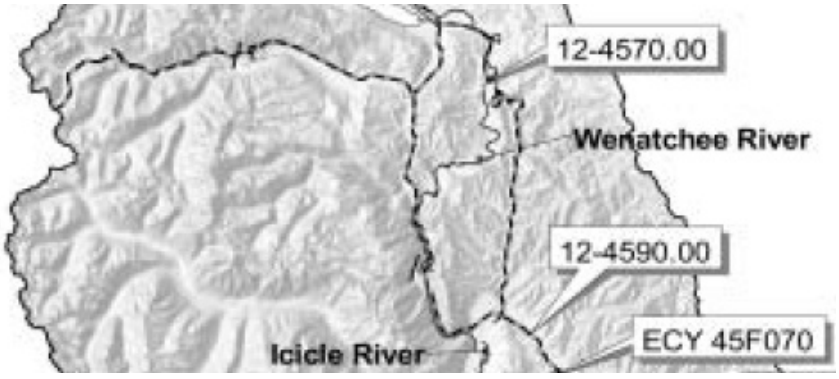


Basin with Instream Flows Set by WAC (or other means)

Water rights conditioned on instream flows are curtailed when flow at a particular stream gage (Control Station) falls below a prescribed level. Any reduction of flow reaching that Control Station caused by a reclaimed water project would cause earlier and longer lasting curtailment of all water rights conditioned on flows at that Control Station whether their diversion was upstream or downstream of the reclaimed water facility.

In the example below from the Draft Wenatchee Instream Flow WAC, interruptible water rights in the reach from River Mile 21.5 (Control Station 12-4590.00) to River Mile 46.2 (Control Station 12-4570.00) are conditioned based on the gage at R.M. 21.5. Any increased consumptive use within that 25 mile reach that caused the gage at R.M. 21.5 to fall below minimum flow, would trigger curtailment of all interruptibles in the reach, whether upstream or downstream of the reclaimed water facility.

Control Station No. Stream Management Unit Name	Control Station by River Mile and Section, Township, and Range	Affected Stream Reach(es) including Tributaries
12-4570.00 Wenatchee River at Plain	46.2 Sec. 12, T. 26N., R. 17E. W.M.	From Beaver Valley Hwy, R.M. 46.2, to headwaters
12-4585.00 Icicle Cr. near Leavenworth	2.6 Sec. 23, T. 24N., R. 17E. W.M.	Headwaters of Icicle Creek to its mouth
12-4590.00 Wenatchee River at Peshastin	21.5 Sec. 8, T. 24N., R. 18E. W.M.	From confluence of Derby Creek to Beaver Valley Hwy, R.M. 46.2 excluding Derby Creek and Icicle Creek



Fully Appropriated Basin or Subbasin (not pictured)

Some adjudicated basins or subbasins have water rights divided into classes. When flow drops off such that there is insufficient water to meet senior classes and junior classes, the juniors are curtailed without regard to upstream or downstream location. A reclaimed water facility that decreased water supply in the subbasin would lead to earlier curtailment of lower class rights without regard to location relative to the reclaimed water facility.

In fact in any basin where flow is not sufficient to meet all rights, out of stream or instream, and where a senior water user makes a call for water, the first right to be curtailed would be the most junior water user who is in a location such that his curtailment would result in more water being available for the senior. This curtailed junior could be either upstream or downstream of the reclaimed water facility that is reducing supply. In a basin without storage to call upon, this curtailed junior would have to be located upstream of the senior, but could be either upstream or downstream of the reclaimed water facility.

Appendix F

The following position paper on reclaimed water was submitted by the Puyallup Tribe

Puyallup Tribe of Indians

November 4, 2008

Governor Christine Gregoire
Office of the Governor
P.O. Box 40002
Olympia, Washington 98504-0002

Re: Puyallup Tribe of Indian's Position Statement on the Use of Reclaimed Wastewater

Dear Governor Gregoire:

In May 2007, the Puyallup Tribe of Indians' respectfully requested your veto of Engrossed Second Substitute Senate Bill 6117 regarding the use of reclaimed wastewater, due to the unintended consequences that reclaimed wastewater projects may have on the Tribe's ability to regulate water quality, protect treaty fisheries, and protect the health and welfare of tribal families. This letter is a follow-up to our May 2007 letter to you regarding the Tribe's position on the use of reclaimed wastewater. In the spirit of cooperation and governmental coordination, we have participated in the Department of Ecology's Reclaimed Water and Water Rights Advisory Committee for some time. To that end, we have come to the conclusion that providing a statement on our views of reclaimed wastewater would better serve to protect the Tribe's natural resources and help to ensure consistency in our co-management of the fishery and co-regulation of water quality in the Puyallup River basin.

The Tribe supports wastewater reclamation as an alternative to taking water from flow-limited streams, *but* only if reclamation does not cause reduced instream flows in the receiving water. Because we are situated at the mouth of one of the most urbanized watersheds in Washington State with most of the basin's municipal and industrial users upstream, the prospect of transferring the consequences of the use of reclaimed wastewater to us is unacceptable. Allowing wastewater users to apply wastewater to additional uses and consume *more* water, rather than treating and discharging back into the Puyallup River consistent with the National Pollutant Discharge Elimination System will reduce instream flows necessary to support all freshwater life stages of the Tribe's anadromous fisheries, impact water quality and pose additional risk to the health of the tribal membership by reducing assimilative capacities of pollutants, including toxics in the Reservation reach of the Puyallup River, increase risk of harm to ESA-listed fish stocks, and reduce the quantity of water available on the Puyallup Reservation for habitat restoration and economic development.

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Attached for your review is the Tribe's detailed position on the use of reclaimed wastewater in the Puyallup River watershed. We welcome the opportunity to meet with you and/or your staff to discuss this matter further. Thank you for your time and consideration of this matter. I can be reached at (253) 573-7850.

Sincerely,

Bill Sullivan

Bill Sullivan, Director

Natural Resources

Cc: Lynn Coleman, Washington Department of Ecology

3009 E. Portland Ave. • Tacoma, Washington 98404 • (253) 573-7800

PUYALLUP TRIBE OF INDIANS
POSITION STATEMENT ON THE USE OF RECLAIMED WASTEWATER
NOVEMBER 2008

Introduction

The Puyallup Tribe supports wastewater reclamation as an alternative to taking water from flow-limited stream systems, but only if reclamation does not cause reduced instream flows in the receiving waters. The State should provide incentives that restore base flows, rather than reward polluters by giving them the option to consume more water. Dischargers should reclaim wastewater in existing treatment plants, applying Best Available Technology, and discharge that reclaimed water back to the stream under the National Pollutant Discharge Elimination System.

Full Protection for the Tribe's Interests

Although protection of instream flows is listed as one of the State's purposes in encouraging wastewater reclamation, the State appears ready to implement its Water Reclamation and Reuse program in ways which may impair the "chemical, physical, and biological integrity" of Puyallup River System waters. As presently drafted, the State's program allows the Department of Ecology to grant municipal, industrial, and agricultural processors "exclusive rights" to water which is currently being applied to senior instream uses.

The Clean Water Act requires states to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Washington's "Water Reclamation and Reuse" program will interfere with that goal to the extent that the State permits municipal, industrial and agricultural water users to consume water that would otherwise be returned to receiving waters. Allowing these users to consume *more* water, rather than discharging wastewater that meets water quality standards, will impair the receiving waters' chemical, physical, and biological integrity by reducing instream flows. Because State and Federal law already requires dischargers to meet water quality standards at the edge of mixing zones, removing more water from flow-limited stream systems will further compromise a system's physical and biological integrity, not restore it. Dischargers are already required to "reclaim" wastewater before they return it to public waters. They should not be rewarded for doing so by being allowed to further reduce streamflows.

Allowing upstream users to apply wastewater to additional uses, rather than treating and discharging water back into the Puyallup River consistent with the National Pollutant Discharge Elimination System will:

- Reduce the instream flows needed to support the migration, spawning and rearing of the Tribe's anadromous fisheries, thus reducing treaty harvests secured by the Treaty of Medicine Creek and violating Clean Water Act Section 303.

- Reduce the assimilative capacity of waters on and upstream from the Puyallup Reservation and thus reduce the water quality needed to support fisheries and comply with Section 303.
- Increase risk of harm to fish stocks listed as "threatened" under the Endangered Species Act.
- Reduce the quantity of water available on the Puyallup Reservation for habitat restoration, fisheries enhancement, domestic use, and economic development.

The Washington Water Code's Reclaimed Water Use chapter only requires that reclaimed water facilities "not impair any existing water right downstream from any freshwater discharge point," but nothing in Chapter 90.46 *prohibits* the Department of Ecology from reviewing the water quality and other "public interest" effects of a reclaimed water use permit. Because wastewater applied to new consumptive uses would otherwise be returned to stream systems, permits for such uses should be denied unless the State has determined that consumption of additional water will not lower water quality or impair fish habitat throughout the stream system.

Ecology's current approach to impairment, "Based on preliminary analysis, Ecology determines if reclaimed water use will reduce streamflow when flow is at or below levels established by rule," does not provide the necessary protection. The Tribe has senior water rights to both the water quantity *and quality* needed to support the Tribe's treaty fisheries in the Puyallup River, and to meet the purposes of the Tribal Homeland. The "[minimum] flows established by rule" in WRIA 10 do provide some protection for fish habitat and water quality, but they only set *minimum* flows and do not define the full nature and extent of the Tribe's water and fishing rights. Minimum flows, especially those based on historic hydrologic averages (50% exceedance flows), may not prevent water quality degradation and will not realize the system's fisheries production potential.

The State has also suggested that reclaimed wastewater may be used to augment instream flows. This could cause additional harm in a system like the Puyallup, where chemical and thermal loading already threaten endangered fish stocks and public health. For this reason, wastewater reclamation and reuse should only be considered when flows are at least equivalent –in quantity, quality, and point of discharge– to the discharges achievable under the existing NPDES permit using Best Available Technology. If the discharger has the ability to "polish" water using advanced treatment technologies, those technologies should be used to clean up the discharge at the end of the pipe, not provide a public-resources windfall to the polluter.

The Tribe has a second concern with equating the Tribe's rights to the minimum flows the State has set by rule in the Puyallup System. Ecology's *Water Right Impairment Analysis Guidance for Reclaimed Water Facilities* contains this statement:

> It is also within the Ecology Director's authority to determine that a project constitutes an overriding consideration of the public interest (OCPI) and elect to not assert the State's instream flow right in favor of the proposed project.

EPA's antidegradation rule, 40 CFR 131.12 (a) (2), limits those circumstances in which a state may lower water quality in the "public interest"*(emphasis supplied)*:

- "[A]llowing lower water quality is necessary to accommodate important economic or social development *in the area in which the waters are located.*" "Overriding interests" upstream from the Puyallup Reservation, a downstream "state," will not justify a lowering of water quality on the Reservation.
- Both the State and the Tribe are required to "assure water quality adequate to protect existing uses fully." The State's OCPI process assumes that existing uses will be overridden in order to accommodate other "interests."

Procedure

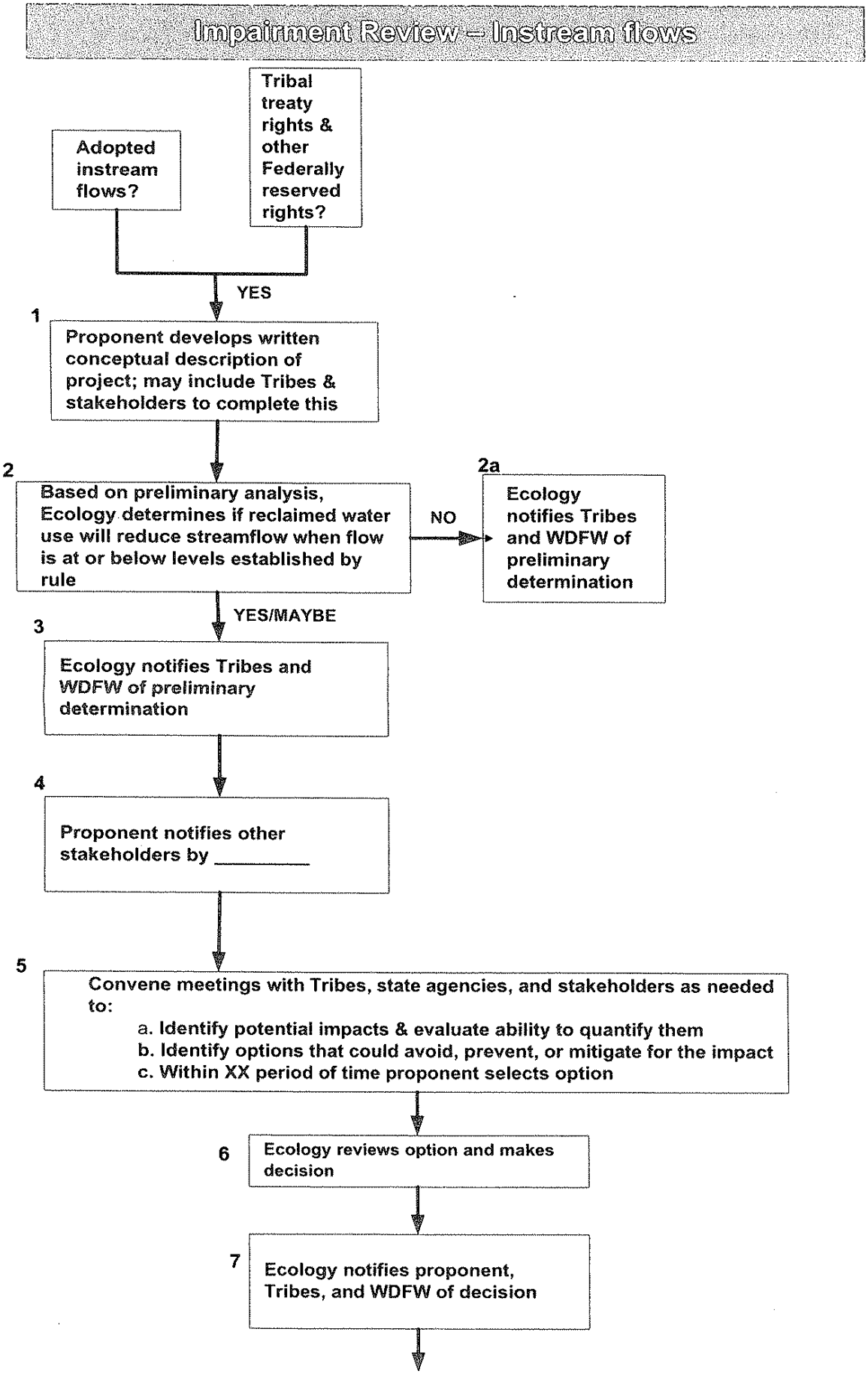
Ecology's "Impairment Review – Instream flows" flow chart raises a number of concerns:

- The initial screening, before Step 1, should include "Risk of Water Quality Impairment" and "Risk to Fisheries and Habitat," should be initiated by Ecology, and should be carried out through government-to-government collaboration between the Tribe, the state and federal fisheries agencies, EPA, and Ecology.
- Step 2, "Based on preliminary analysis, Ecology determines if reclaimed water use will reduce streamflow when flow is at or below levels established by rule," does not provide adequate protection for fisheries habitat. "Levels set by rule" are based on hydrology and do not represent the flow regimes needed to fully protect and restore anadromous fisheries.
- A new step should be inserted in the chart: Tribal, State and Federal fisheries agencies carry out a full inquiry into risk of adverse effects on fisheries and their habitat, including listed species.
- Step 5 assumes, wrongly, that scientific investigations can best be accomplished in "stakeholder" meetings. The process of identifying risks, impacts, and mitigation alternatives should be a collaborative and transparent agency process in which issues are scoped, investigatory methods and data quality standards are agreed upon, benchmarks are negotiated, studies are executed, and the results are fully disclosed and evaluated. Ecology should engage the other agencies-with-expertise, not attempt to mediate between its own constituencies and tribal governments.
- Step 6 should provide for concurrence by the Tribe. If the decision directly affects the Tribe's treaty fisheries or water quality, the State should require consensus by the government that manages the fisheries and water quality. Ecology, which represents the State, should not set itself up as the final arbiter.
- Step 8 should state that "bucket for bucket" mitigation will only be considered

in an alternatives analysis that includes, as the preferred alternative, using all available wastewater-polishing technologies to better-comply with the Clean Water Act at the existing discharge point.

- In addition, the flow chart must address water quality impairment and spell out the NPDES and government-to-government processes required by the Clean Water Act:
  - Diversion of wastewater to reclamation and reuse facilities will require modification, revocation and reissuance, or termination of an NPDES discharge permit under Clean Water Act Section 402 and 40 CFR Part 122, Subpart D.
  - NPDES compliance will in turn require compliance with Clean Water Act Subsection 401 (a) (2) and 40 CFR 122.4, including hearings, assessments, and decisions which are not addressed in the existing flow chart.

  Under the statute and regulations, the NPDES action cannot occur if it will result in a violation of the Tribe's Water Quality Standards. The Tribe is a "downstream state" and changes in upstream NPDES permits will trigger Section 401 and its implementing regulations.


Impairment Review – Instream flows
Adopted instream flows?
Tribal treaty rights & other Federally reserved rights?
YES
1
Proponent develops written conceptual description of project; may include Tribes & stakeholders to complete this
2
Based on preliminary analysis, Ecology determines if reclaimed water use will reduce streamflow when flow is at or below levels established by rule
NO
2a
Ecology notifies Tribes and WDFW of preliminary determination
YES/MAYBE
3
Ecology notifies Tribes and WDFW of preliminary determination
4
Proponent notifies other stakeholders by _____
5
Convene meetings with Tribes, state agencies, and stakeholders as needed to:
a. Identify potential impacts & evaluate ability to quantify them
b. Identify options that could avoid, prevent, or mitigate for the impact
c. Within XX period of time proponent selects option
6
Ecology reviews option and makes decision
7
Ecology notifies proponent, Tribes, and WDFW of decision

Impairment Review – Instream flows (con't.)
8a
No impairment (e.g. low streamflows enhanced, low flow period water stored in ASR)
Project moves ahead
8b
Impairment is mitigated "bucket for bucket"
Project moves ahead
8c
Impairment not mitigated "bucket for bucket"
9a
Other mitigation agreed to by Ecology, Tribes, and stakeholders
10a
Ecology consults with resource co-managers
11a
Ecology conditions project
Project moves ahead
9b
Other mitigation agreed to by Ecology but not Tribes and/or stakeholders
10b
Ecology consults with resource co-managers
11b
Ecology conditions or denies project
9c
No mitigation
10c
Ecology denies project

Appendix G - List of Acronyms

Acronym List

AAG-Assistant Attorney General

AWWA – American Water Works Association

B & O Taxes -Business and Occupation Taxes

CBSM-Community Based Social Marketing

CFR – Code of Federal Regulations

CTED –Community Trade and Economic Development Agency

DOH –Washington State Department of Health

ELI-Environmental Law Institute

EPA- Environmental Protection Agency (see also USEPA)

FAO- food and Agricultural Organization

FTE –Full Time Equivalent (staffing or positions)

GMA- Growth Management Act

NPDES- National Pollutant Discharge Elimination System

OAG-Office of the Attorney General

RCW- Revised Code of Washington (Statute, Act, Authority)

Reclaimed Water Rule Advisory Committee (RW-RAC)

Reclaimed Water and Water Rights Advisory Committee (RW-WR)

Removing Barriers Subtask Force (subtask force)

Technical Advisory Panel (TAP)

USEPA- United States Environmental Protection Agency

WAC- Washington Administrative Code (Regulations, Rules)

WQP-Water Quality Program

WRP- Water Resources Program