DEPARTMENT OF
ECOLOGY
State of Washington

Concise Explanatory Statement
Chapter 173-219 WAC
Reclaimed Water

Summary of rulemaking and response to comments

January 2018

Publication no. 18-10-003

Publication and Contact Information

This publication is available on the Department of Ecology's website at https://fortress.wa.gov/ecy/publications/SummaryPages/1810003.html

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Concise Explanatory Statement

Chapter 173-219 WAC
Reclaimed Water

Water Quality Program
Washington State Department of Ecology
Olympia, Washington 98504-7600

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Acknowledgements

The Department of Ecology would like to thank the Department of Health for their partnership in developing this chapter and for their dedication to protecting public health.

The Department of Ecology and Health would like to thank all of the members of the Reclaimed Water Rule Advisory Committee (RW-RAC) for their commitment and dedication to the development of this chapter over the years.

Ecology would like to acknowledge the contributions of the following in the development and adoption of this chapter:

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Introduction

The purpose of a Concise Explanatory Statement is to:

- Meet the Administrative Procedure Act (APA) requirements for agencies to prepare a Concise Explanatory Statement (RCW 34.05.325).
- Provide reasons for adopting the rule.
- Describe any differences between the proposed rule and the adopted rule.
- Provide Ecology's response to public comments.

This Concise Explanatory Statement provides information on The Washington State Department of Ecology's (Ecology) rule adoption for:

Title:	Reclaimed Water
WAC Chapter(s):	173-219
Adopted date:	January, 23, 2018
Effective date:	February 23, 2018

To see more information related to this rulemaking or other Ecology rulemakings please visit our web site: https://ecology.wa.gov/About-us/How-we-operate/Our-rulemaking-process.

Reasons for Adopting the Rule

Chapter 90.46 RCW - expressly directs the Department of Ecology (Ecology) and the Department of Health (Health) to adopt rules governing reclaimed water.

The goal of the chapter is to provide a clear regulatory framework for encouraging and permitting the generation, distribution, and beneficial use of reclaimed water. This includes the following objectives:

- Clear roles and responsibilities
    - Streamline agency designation, roles, and responsibility in rule language
    - Establish bright line for lead agency designation
    - Establish coordinated approach to reviewing and issuing necessary permits
- Clear and predictable compliance, planning, permitting, and reporting requirements
    - Consolidate planning, reporting, and permitting requirements
    - Provide additional details in guidance documents
    - Provide clarity on Reclaimed Water permit relationship to other Ecology and Health permits

- Scientifically and legally sound standards and practices that protect human health and the environment
    - Meet both Health and Ecology legal obligations to protect human health and the environment
    - Communicate clearly
    - Allow for advances in treatment technology

Differences between the Proposed Rule and Adopted Rule

RCW 34.05.325(6)(a)(ii) requires Ecology to describe the differences between the text of the proposed rule as published in the *Washington State Register* and the text of the rule as adopted, other than editing changes, stating the reasons for the differences.

There are some differences between the proposed rule filed on August 23, 2017 and the adopted rule filed on January 23, 2018. Ecology made these changes for all or some of the following reasons:

- In response to comments we received.
- To ensure clarity and consistency.
- To meet the intent of the authorizing statute.

The following content describes the changes and Ecology's reasons for making them. If no changes were made to a section that section is not included below.

WAC 173-219-010 Definitions, abbreviations, and acronyms

- Deleted definition of "ART" because not used in this chapter.
- Deleted reference to "reclaimed" irrigation uses in this section.
- Added definition of "Constructed Treatment Wetland"
- Clarified definition of "Distributor."
- Revised definition of "Domestic wastewater" to align with statutory (90.46 RCW) definition.
- Clarified definition of "Generator."
- Clarified definition of "Nonpotable reuse system."
- Added definition of "Recovery Period."
- Added definition of "T10."

WAC 173-219-030 Applicability.

- Revised (2)(a) to match revised definition of nonpotable reuse system.
- Revised (2)(b) to correct incorrect citation.

WAC 173-219-060 Agency requirements and responsibilities.

Revised (1)(e) and (d) to include references to Departments of Ecology and Health's relevant fee regulations.

WAC 173-219-080 Applying for a reclaimed water permit.

Revised this section to include a new (3) regarding permit application and review fees that describes the permit application and review fee charges for both Ecology and Health.

WAC 173-219-090 Water rights protection.

Revised (3) to clarify that an existing water right does not include "claims" but instead "vested water rights asserted by a water right claim."

WAC 173-219-130 Public hearing request.

Revised the section heading and the content of the section to remove the references to "public meetings."

WAC 173-219-150 Regulatory action for noncompliance.

- Revised (1) to clarify that the order or directive is intended to inform the person(s) responsible "to take immediate action," as well as the process for requesting an adjudicative proceeding.
- Revised (2)(a) and (c) and (3)(c) to align and make consistent with formatting and language in other subsections in this section.

WAC 173-219-180 Feasibility analysis.

- Revised (1)(a) to clarify that entities proposing reclaimed water projects must notify the lead agency early in the project planning to determine scope of the required feasibility analysis.
- Revised (1)(c)(vii) to clarify early identification and coordination planning and clarified the connection between this requirement and the requirement in chapter 173-210(2)(f).
- Revised (1)(c)(x) to clarify that the "identification of existing or proposed interlocal or interagency agreements" were specific to those related to reclaimed water and not all of these types of agreements in existence.
- Revised (2) to allow for "a list and summary of recommendations" from relevant planning documents produced under other planning requirements in state or local law to be

submitted as part of feasibility analysis—when appropriate and approved by the lead agency as fulfilling the requirements of this section.

- Revised (2) by removing the not all-inclusive list in (a) – (g) and instead referencing 90.48.112 and RCW 90.46.120.
- Revised (3)(a) reference to now deleted text.

WAC 173-219-190 Timing and signature requirements.

Revised (2)(a) to align the signature requirement with signature requirements in other water quality permitting regulations.

WAC 173-219-200 Plan review and review standards.

- Revised (2) to clarify that these review materials are Ecology and Health guidance documents.
- Revised to move (2)(d) as it was deemed to be ambiguous and unclear.

WAC 173-219-210 Engineering report.

- Moved the text from (2)(g) to (2)(s)(iii) as it applies only when surface water augmentation is the beneficial use.
- Renumbered (h) through (w) and internal references as needed.
- Revised (2)(s)(i)-new (h) to clarify that design information for pressurized distribution system was only necessary "if applicable."
- Revised (2)(s)(iv) to remove this subsection and the subsequent requirement for a mitigation plan for the beneficial use of instream flow per chapter 90.22 RCW.
- Revised (2)(t)(ii)(E) to clarified the mitigation plan is required only as needed by the lead agency.
- Revised (2)(x) – new (w) to remove reference to a conveyance report and instead require that the engineering report include the technical basis for the proposal.

WAC 173-219-220 Plans and specifications.

Revised (2)(b) to remove reference to the most recent edition of Ecology and Health's Reclaimed Water Facilities Manual (purple book).

WAC 173-219-250 Certified operators.

Revised (2)(a)-(c) to clarify which certification are necessary and allowable for generators and distributors.

WAC 173-219-270 Reclaimed water permit terms and conditions.

- Revision made to correct a missing subsection number following (7)(e). Numbered paragraph (f).
- Revision made to (11) to remove language regarding determination of adequacy of compensation or mitigation to align with the intent of 90.46 RCW.

WAC 173-219-280 Fact sheet.

Revised (2)(f) into a new subsection (g) and renumbered subsequent subsections.

WAC 173-219-290 Use agreements.

- Revised to clarify that (2)(b) and (d) are only required in use agreements when applicable.
- Revised this section to include a new (3) and (4) regarding template use agreements and adding new users.

WAC 173-219-310 Cross-connection control.

- Revisions made throughout this section to clarify roles and responsibilities.
- Revision made to (8)(a)(ii) to ensure assemblies will not become submerged "due to equipment failure or" weather related conditions such as flooding.

WAC 173-219-320 Class A and B reclaimed water.

- Revisions made to (2)(a), (b), and (c) to clarify the minimum 4-log virus removal or inactivation standard applies across the treatment train following biological oxidation.

WAC 173-219-330 Performance standards.

- Revision made to clarify that the reclaimed water permits issued pursuant to this chapter may specify alternative monitoring locations and limits to ensure compliance with "performance standards, and" any additional use based requirements as listed in Table 3.
- Revision made to footnote 3 in Table 2 Class A and B Performance Standards to correct an error to the applicability of the Total Nitrogen standard.

WAC 173-219-340 Disinfection process standards.

- Revisions to (1) to clarify the disinfection process must, "in combination with treatment processes following biological oxidation" result in a minimum of 4-log virus removal or inactivation.

- Revision to (1)(a) to clarify minimum chlorine standard as "total chlorine residual of at least 1 mg/L, after a T_{10} contact time of at least thirty minutes, based on a peak day design flow" and that the lead agency may require a tracer study to determine contact times.
- Revisions to (2) to clarify the necessity to document the performance of the combined treatment processes following biological oxidation.
- Revisions to (2)(c) to clarify when existing facilities must demonstrate compliance with the validation requirements, to include when a disinfection system is modified, replaced or the facility expects an increase in hydraulic capacity—or with the application for permit renewals, unless the lead agency issues an extension under WAC 173-219-040.
- Revisions to clarify requirements for Class B reclaimed water, adding new (3) that describes the disinfection process.

WAC 173-219-360 Storage and distribution system requirements.

- Revision to remove (2) in the section because these facilities should be identified and communicated through the feasibility analysis and engineering report and this was a redundant, unnecessary, and confusing requirement.
- Revisions to (10)(c) to clarify that vehicles used to deliver potable water for potable use are never used to transport reclaimed water, unless they stop transporting potable water for potable purposes.

WAC 173-219-390 Specific use-based requirements.

- Revisions were made to the table to consolidate repetitive requirements that were better combined, for example, (5) was deleted and "public water features" were included in (2). Subsequent renumbering of sub-sections was done.
- Revision to (10) Irrigation of orchards or vineyards, to add the restriction that Class B irrigation water must not come in contact with the fruit within 15 days of harvest.
- Revision made to remove (19) – revised to (18), Depressional Wetlands and instead to include a footnote that applies to (16) and (17). This revisions is to more clearly express the proper categorization application related to "depressional wetlands."
- Revision to (21) - revised to (19) to more expressly include "treatment" wetlands to this beneficial use, as well as to include the additional requirement information necessary for this use.

List of Commenters and Response to Comments

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
Individual			
	Austreng, Andrew	Water Rights	I-6-1
	Austreng, Andrew	Purple Book (Reclaimed Water Facilities Manual – Guidance)	I-8-1
	Batts, David	Other	I-7-1
		Monitoring Recording & Reporting	I-7-2
	Davis, Nickie	Other	I-1-1
	Hemingway, Scott	Cross-Connection Control	I-2-1
	Hemingway, Scott	Operator Certification	I-3-1
		Purple Book (Reclaimed Water Facilities Manual – Guidance)	I-3-2
	Kimball, James	Water Rights	I-4-1
	Le Vee, Ilene	General Support	I-5-1
Agency			
Department of Health	Halvorson, Clark	General Support	A-1-1
King County Department of Natural Resources and Parks Wastewater Treatment Division	Klug, Jacque	Other	A-2-17
		General Support	A-2-23
		Disinfection	A-2-2
		Water Rights	A-2-1 , A-2-9 , A-2-13
		Aquifer Storage & Recovery	A-2-10
		Groundwater	A-2-24
		Cross-Connection Control	A-2-15
		Purple Book (Reclaimed Water Facilities Manual – Guidance)	A-2-11 , A-2-19 , A-2-21 , A-2-22 , A-2-25
		Orange Book (Criteria for Sewage Works Design)	A-2-20

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
		Engineering Documents	A-2-7 , A-2-8 , A-2-12 , A-2-26 , A-2-27
		Treatment Requirements	A-2-16
		Use Agreements	A-2-14
		Preliminary Regulatory Analysis	A-2-18
		Definitions	A-2-3
		Editorial	A-2-4 , A-2-5
		Preplanning and Project Application	A-2-6
LOTT Clean Water Alliance	Dennis-Perez, Lisa	Other	A-4-9
		Disinfection	A-4-2
		Water Rights	A-4-3
		Aquifer Storage & Recovery	A-4-10 , A-4-11
		Cross-Connection Control	A-4-16
		Operator Certification	A-4-12
		Purple Book (Reclaimed Water Facilities Manual – Guidance)	A-4-1 , A-4-17 , A-4-18
		Engineering Documents	A-4-8
		Treatment Requirements	A-4-19
		Use Agreements	A-4-15
		Storage and Distribution	A-4-20
		Permit Conditions	A-4-13
		Use Standards	A-4-21
		Definitions	A-4-4
		Editorial	A-4-5 , A-4-6 , A-4-7 , A-4-14
		Groundwater	A-3-1

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
Northeast Sammamish Sewer and Water District		Support for other comments submitted	A-3-2
Sammamish Plateau Water	Krauss, John C.	Groundwater	A-5-2
		Support for other comments submitted	A-5-1
		Coordination with Potable Water Suppliers	A-5-3
Organization			
City of Arlington Public Works	Kelly, James	Water Rights	O-7-2 , O-7-3 , O-7-5 , O-7-6
		Support for other comments submitted	O-7-1
		Use Standards	O-7-4
Coalition for Clean Water	Zukoski, Robin	Other	O-12-4
		General Support	O-12-1
		Disinfection	O-12-3
		Water Rights	O-12-2
		Cross-Connection Control	O-12-5
Gray & Osborne, Inc.	Alexander, Kenneth	General Support	O-3-4
		Disinfection	O-3-2
		Cross-Connection Control	O-3-6
		Treatment Requirements	O-3-1
		Use Standards	O-3-3
		Editorial	O-3-5
Gray and Osborne	Swift, Jay	Disinfection	O-8-1
		Purple Book (Reclaimed Water Facilities Manual – Guidance)	O-8-2
IDEXX Water	Root, Patsy	General Support	O-9-1
	Schanfald, Darlene	Other	O-10-1

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
Olympic Environmental Council		Water Rights	O-10-13
		Groundwater	O-10-5 , O-10-9
		Surface water	O-10-17
		Treatment Requirements	O-10-3 , O-10-14
		Preliminary Regulatory Analysis	O-10-6 , O-10-16
		Use Standards	O-10-12
		Legislative Intent	O-10-18
		Class A+	O-10-2 , O-10-4 , O-10-11
		Monitoring Recording & Reporting	O-10-7 , O-10-10 , O-10-15
		Permits permit applications renewals modifications	O-10-8
PNW Section WateReuse	Stoll, Christopher	Other	O-1-2 , O-1-3 , O-1-6 , O-1-7 , O-1-14
		General Support	O-1-4 , O-1-17
		Aquifer Storage & Recovery	O-1-8
		Cross Connection Control	O-1-12
		Engineering Documents	O-1-5 , O-1-9
		Treatment Requirements	O-1-13
		Use Agreements	O-1-11
		Storage and Distribution	O-1-15
		Use Standards	O-1-16
		Definitions	O-1-1
		Monitoring Recording & Reporting	O-1-10
PUD #1 of Clallam County	Martin, Tom	Other	O-6-2
		Support for other comments submitted	O-6-1

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
		Coordination with Potable Water Suppliers	O-6-3
Van Ness Feldman LLP	Tomlinson, Cara	Water Rights	O-4-1
Van Ness Feldman LLP	Tomlinson, Cara	Other	O-5-3
		Groundwater	O-5-7
		Support for other comments submitted	O-5-1
		Coordination with Potable Water Suppliers	O-5-4 , O-5-9
		Preliminary Regulatory Analysis	O-5-8
		Legislative Intent	O-5-5
		Revenue impacts Potable Water Suppliers	O-5-2 , O-5-6
WA State Chapter Sierra Club	Packard, Elaine	Other	O-11-2 , O-11-3
		Use Standards	O-11-1
		Class A+	O-11-4
Washington Association of Sewer & Water Districts	Kuntz, James	Other	O-2-6
		Groundwater	O-2-1
		Engineering Documents	O-2-5 , O-2-8
		Storage and Distribution	O-2-7
		Support for other comments submitted	O-2-4
		Coordination with Potable Water Suppliers	O-2-2
		Revenue impacts Potable Water Suppliers	O-2-3
Tribal Government/Agency			
Muckleshoot Indian Tribe	Carlson, Carla	Other	T-1-4
		Water Rights	T-1-3 , T-1-7

Affiliation	Commenter Name	Topics where comments were assigned	Associated Comment numbers
		Aquifer Storage & Recovery	T-1-1
		Groundwater	T-1-5
		Permit Conditions	T-1-6
		Use Standards	T-1-2

Comments and Responses

Comments and Responses are grouped together and organized by topic. Under each topic heading you can see all the comments the Washington State Department of Ecology received for that topic.

In some instances you will see a direct response following the comment, in other instances you will find a single summary response to all the comments on that topic. Bookmarks and hyperlinks have been used when needed for quick referencing.

The Washington State Department of Ecology used the following topics to group comments together:

Comments on General Support

Commenter: Ilene Le Vee - Comment I-5-1

I think a significant contributing factor to groundwater/in-stream flow loss is directly attributable to the amount and degree to which individuals/families choose to build/live in unincorporated areas adjacent to timber/forested lands. Additionally, as our weather/climate continues evolving, naturally and through human activity, we'll see increasing need for reclaimed water to address wildfires and agricultural/concentrated uses i.e., large feedlots/dairies.

It is my personal preference, as a ranch/farmland owner in Klickitat and Clark Counties, that development of any RCW/WAC on this subject be as directive as possible and as quickly as politically feasible. I offer the following article as a supporting argument in this vein. http://www.factcheck.org/2017/10/warming-blame-western-wildfires/.

Commenter: Robin Zukoski - Comment O-12-1

Reclaimed water has helped many CCW communities manage water in an integrated manner, providing cost-effective solutions to discharge limits and developing needed water supplies for our communities. Current and future challenges such as population growth, droughts, and changes to hydrology and water demand due to climate change will continue to drive the need for reclaimed water to play a role in the water resource management across the State.

CCW strongly encourages Ecology to facilitate the regulation of reclaimed water in a way that ensures it is a valuable and available asset to our communities tomorrow and well into the future. We appreciate the work done by Department of Ecology and Department Health over the many years the agencies have been working on the reclaimed water rule, and we are grateful that the rule-making process is anticipated to be complete within the next year.

This draft rule does much a better job at recognizing that reclaimed water is a resource.

We appreciate the work in streamlining reporting requirements and reducing some of the barriers and administrative costs of using reclaimed water.

The draft rule encourages coordination by requiring early engagement with drinking water systems, coordination with local and state water plans and documenting concerns of potable drinking water systems as projects move from conceptual planning to design and implementation. This establishes early and continued dialogue between wastewater and drinking water systems on the role of reclaimed water as a regional water supply.

This draft reclaimed water rule is much closer to achieving the goal of eliminating barriers to use reclaimed water.

We appreciate the opportunity to review the draft rule and offer input at many steps along the way and hope the resulting rule will serve to facilitate the use of this important water resource for the benefit of Washington's future.

Commenter: Clark Halvorson - Comment A-1-1

The Washington State Department of Health fully supports the proposed reclaimed water rule, chapter 173-219 WAC.

We appreciate the long-standing public health protection partnership we've established with the Department Of Ecology (Ecology). As two entities concerned with the human impacts and demands on the environment and how that affects the health, safety, and welfare of the people of Washington State, we share many common goals.

Reclaimed water can extend water supplies for drinking water where aquifers are declining faster than being recharged, and where additional population growth is occurring. It also enables business such as for technology projects and agriculture in eastern Washington. It may reduce wastewater effluent discharge to marine waters where we need to protect shellfish as a food product and other ecosystems.

We have worked with Ecology staff throughout the rule-making process as directed in chapter 90.46 RCW, and have focused our public health protection efforts on ensuring safe and reliable production and use of reclaimed water in the following areas:

Production facilities

- Treatment process details for coagulation, filtration, disinfection
- Control systems
- Redundancy of key equipment and controls
- Diversion or retreatment for off-spec water
- Reliability of the specified water quality and continuous delivery to customers
- Employment of qualified and state-certified operators.

Use area protections

- Matching the right water quality for each type of beneficial use in order to account for possible human contact, and for protection of future drinking water supply.

Distribution and use areas

- Maintaining required water quality from generation point to use site
- Cross-connection control to protect higher quality water from lower quality water
- Setbacks from water bodies and other features
- Public and utility notices and warnings

Department of Health role as permitting agency

- Identifying when we will be lead agency
- Ensuring we provide public health consultations when asked
- Ensuring we consult with Ecology on environmental issues, all water rights impairment analyses, and permit requirements
- Ensuring the reclaimed water rule works with other department regulatory obligations, including permitting, compliance, and enforcement

We support the changes made to the rule drafts over the lengthy time we've worked together and with the rule advisory committee, and other interested parties, resulting in the proposed rule language. It's now concise, logical, and much more complete. It includes multiple public health protections and spells out both of our (and the generator's) responsibilities in the review, approval, and permitting of reclaimed water facilities and uses, and our roles as we work together.

Commenter: Kenneth Alexander - Comment O-3-4

We feel this rule is needed to provide clear standards and procedures for implementing water reuse projects in the State of Washington. Our experience has been that without consistent state-wide rules and technical guidance that inconsistent practices and enforcement standards are applied, which is both confusing and unfair to the regulated community as well as consultants who assist them in the planning and design of water reclamation and reuse facilities. We have found that such inconsistency is particularly prevalent around the issues of filtration and disinfection system design and groundwater recharge standards.

Commenter: Patsy Root - Comment O-9-1

I've read through the proposed language for Chapter 173-219 WAC. I wanted to let you know that this is probably the best set of rules I've read on this topic and I've read recycled rules in many, many states. Nice job. This will be a great foundation for recycled water use and safety in Washington.

Commenter: Jacque Klug - Comment A-2-23

We are excited about the possibility of Washington State creating a regulatory system that encourages and incentives reclaimed water use as a key part of a solution to address complex water resource challenges. Overall this draft rule is much closer to achieving these goals...

Overall, we are pleased to see that reclaimed water is treated much more like a water resource than a waste product in the draft rule. We want to highlight three of the elements of the rule that deserve recognition:

Reclaimed water reporting for irrigation uses: we appreciate that reclaimed water regulation is focused on water quality compliance at the end of the pipe rather than the existing practice of submitting yearly agronomic calculations for each irrigation site. This will reduce burden on reclaimed water utilities and customers while keeping public health protections in place.

Coordination with drinking water utilities: the rule directs early and consistent engagement between drinking water systems and wastewater systems throughout the planning, design and implementation of reclaimed water projects. Existing water planning processes already require consideration of reclaimed water. We agree with the State's approach that no new plans or processes are needed to implement reclaimed water projects.

Creates a pathway for advanced reuse options: We think creating an approval pathway for future advanced reuse projects, such as potable reuse, is forward-thinking for communities that might need to pursue such a project in the future.

Despite the improvements, the draft rule does not address several barriers to reclaimed water use

King County is committed to working with Ecology to develop a successful reclaimed water rule. Accordingly, we are offering comments and suggested revisions to rule text that create a workable rule for utilities and users while maintaining public health protections.

Commenter: Christopher Stoll - Comment O-1-4

We are excited to see Washington State and the Department of Ecology (Ecology) continuing with the development of the Reclaimed Water Rule and support the rework of the rule after the significant public comment on the previous version.

Commenter: Christopher Stoll - Comment O-1-17

We will continue to be supportive during this process to establish a Reclaimed Water Rule that promotes the use of reclaimed water in Washington State.

Summary Response to General Support

The Department of Ecology thanks you for your comments and support for the reclaimed water rulemaking and the chapter as adopted. It is the result of countless combined efforts over many years.

We very much appreciate the continued partnership with the Department of Health and stakeholders and look forward to working together in the near future on updating the reclaimed water guidance materials—as well as on future permitting of reclaimed water facilities across the state of Washington.

Comments on Disinfection

Commenter: Robin Zukoski - Comment O-12-3

The proposed chlorine disinfection standards in the draft rule are confusing. The draft rule does not specify if systems using chlorine for disinfection need to meet a free chlorine or total chlorine residual. The draft purple Book does not provide any clarity on this issue. We request that Ecology clarify that the measurement refers to total chlorine and that the draft rule and Purple Book be updated accordingly.

Commenter: Kenneth Alexander - Comment O-3-2

WAC-173-219-340 Disinfection Process Standards:

a. Under (1) subtitle: Remove the words Class B. This entire section applies only to Class A reclaimed water. Perhaps include in new subsection with general requirements for Class B disinfection, such as less stringent disinfection dose and residual requirements for chlorine disinfection.

b. Under (1a) - Change this section to say: "Where chlorine is used as the disinfectant in the treatment process a minimum chlorine residual of at least 1 mg/L, measured as free chlorine, after a T10 contact time of at least thirty (30) minutes at design peak day flow is required." The basis of the contact time needs to be defined. For example, in the Orange Book, for secondary effluent disinfection a contact time of 20 minutes at peak day flow is required. We recommend that a 30 minute contact time be required at the design peak day flow for reclaimed water disinfection. c. We also recommend that the T10 time be defined in the rule as the time at which at least 90% of the water flowing through the reactor are kept in contact with the disinfectant residual. T10 is determined as the time at which 10% of the volume of the slug of tracer passes the basin exit.

Commenter: Jay Swift - Comment O-8-1

Under WAC-173-219-340 Disinfection Process Standards, Section (1a) be changed to reflect free chlorine disinfection and adequate detention time for 4-log virus removal. In addition, the section should note that these requirements could potentially be relaxed on a case by case basis by Ecology when adequate virus removal is thoroughly documented, and adequate safeguards are provided, upstream of the disinfection process, for instance, through a membrane bioreactor. See Disinfection Guidance for Reclaimed Water in Washington State's New "Purple Book"

Commenter: Jacque Klug - Comment A-2-2

The form of chlorine (total or free chlorine) concentration is not specified in the rule, which can have major impacts to systems if free chlorine is implemented under permit requirements.

The proposed rule disinfection requirements are unclear and could increase the costs to produce reclaimed water with no reported benefit.

The language in the draft rule regarding disinfection standards for Class A water is unclear and conflicting.

The draft rule states that the disinfection treatment step must meet a 4-log virus removal/inactivation. Contains several references requiring 4-log virus removal/inactivation. It is unclear what the basis is for this requirement.

Many reclaimed water systems may not have the financial means to fund a study and for those that do, it may be impractical to perform since seeding the source water with an indicator virus would likely be needed to determine virus removal.

Additionally, virus testing is not typically performed by in house laboratories. Does Ecology intend to provide credits for conventional treatment processes so that systems can determine compliance with the virus requirement? To do so would likely require significant effort. Requiring 4-log virus removal/inactivation will have a major impact to existing systems and the benefit of imposing the requirement is unclear.

The USEPA's 2012 Guidelines for Water Reuse state "there have been no documented cases based on limited epidemiological studies of viral disease resulting from water reuse operations in the United States." (https://nepis.epa.gov/Adobe/PDF/P100FS7K.pdf)

Suggestion: remove 4-log virus removal/inactivation requirement for 2 a-c. We agree that adding more protective virus removal/inactivation for Class A + reclaimed water would be more appropriate. Section 330 Remove reference to virus removal for reasons stated previously

The section also lists several field verification tests and studies that don't align with the kind of disinfection system that it is supposedly verifying.

Ecology's technical guidance manuals, the draft Reclaimed Water Facilities Manual (the Purple Book) and the Sewage Design Criteria Manual (the Orange Book) list different chlorine concentration disinfection requirements than those in the draft rule.

173-219-340 The statement "All Class A reclaimed water generation disinfection processes must result in a minimum of 4-log virus removal or inactivation" implies that 4-log removal/ inactivation must be achieved in the disinfection process only. Is this the intent? Recommend clarifying.

Commenter: Lisa Dennis-Perez - Comment A-4-2

173-219-340 – (1a) ...a minimum chlorine residual of at least 1 mg/L – Add "measured in total chlorine" to clarify it is acceptable to meet this requirement with total chlorine, rather than free chlorine.

Summary Response to Disinfection

Thank you for your comments on the disinfection standards.

Ecology updated the rule language text to clarify the intent that 4-log virus removal or inactivation only applies to Class A reclaimed water, but we did not remove the requirement. The disinfection processes covered in 173-219-340(1) provide minimum requirements towards meeting the 4-log virus removal or inactivation standard as part of the unit processes following biological oxidation. Individual facilities must work with the lead agency to demonstrate compliance with the 4-log removal or inactivation requirement.

Health believes that research conducted and published since the Technical Advisory Panel was convened early in our rule development process, and since EPA published its 2012 Reclaimed Water Guidance Manual, indicates the need for increased virus removal and inactivation for certain Class A end uses. Most studies refer to virus removal and inactivation requirements for the entire treatment process – from raw sewage to reclaimed water.

California has a 12-log virus reduction standard from raw sewage to reclaimed water. Texas recently adopted an 8-log reduction target from secondary effluent to reclaimed, subject to collection of additional data.

Historically, Washington has looked at the virus treatment requirement only from secondary effluent source water to reclaimed water, and assigned it to the disinfection process only. We now recognize that some treatment processes, such as coagulation and membrane filtration, may be credited as removing virus. The “multiple barrier” concept for treatment that drinking water regulations use is very relevant to wastewater and reclaimed water. Disinfection is the final barrier and is always important in protecting public health.

Research now points out several factors that should change our thinking about the actual log removal/reduction targets, including higher viral loads in wastewater caused by human actions (water-conserving appliances) and new analytical techniques that reveal higher viral concentrations than older methods do.

Ecology and Health will continue to discuss virus log removal targets, review research results as they are published, and work with technical experts. The information should inform how we develop and amend the reclaimed water guidance on the topic. Health urges generators to design facilities to maximize virus removal and inactivation, and to exceed the standard in chapter 173-219 WAC. There will be a robust discussion of this topic in the rule’s guidance manual (“Purple Book”).

Additional rule language edits were made to reflect a minimum concentration of total chlorine required for generation of reclaimed water. A minimum contact time is also specified. Total chlorine is specified as the minimum standard now, rather than free chlorine or unspecified as shown in earlier drafts. Ecology and Health are following a drinking water treatment model in setting a minimum standard of 4-

log virus removal or inactivation for Class A reclaimed water. However, since surface water (source water for potable supplies) ordinarily contains fewer human virus than reclaimed water source water, 99.99% removal requirements don't result in equivalent remaining viral loads. Ecology and Health recognize that while the Class A reclaimed water product is not wastewater, it is also not drinking water.

Our rule defines reclaimed water source water as secondary treated effluent. Characteristics of that source water vary based on the conditions and processes at each individual treatment facility. Ecology and Health believe the specification of total chlorine as a minimum is appropriate for this source water in providing disinfection levels protective of public health while also minimizing excess chlorine discharge to the environment and the production of disinfection byproducts.

Rule language now better reflects the intent to credit unit treatment processes used in reclaimed water generation for virus removal or inactivation from all unit processes following biological oxidation, through disinfection. Specifics of these credits will be provided in guidance materials, which with be further developed outside of this rule making. While this approach is similar to that used in surface water treatment rules and guidance, a significant body of research on effectiveness of reclaimed water treatment technologies in removing viruses is available, and research is ongoing. Ecology and Health expect to rely on demonstrated performance of reclaimed water treatment technologies available from research and case studies in developing guidance for evaluating technologies.

Rule language was also changed to clarify that existing reclaimed water facilities must demonstrate compliance with disinfection requirements, along with the broader demonstration of 4-log virus removal or inactivation, when modifying or replacing the existing process or with the application for a permit renewal—unless an extension is granted.

Rule language was also added to clarify a minimum chlorination requirement for Class B reclaimed water. While the requirements parallel those for Class A (human contact), Class B does not include the 4-log virus removal or inactivation requirement.

Ecology believes the requirements and processes in the rule now provide clear, consistent, and attainable performance standards for both Class A and B reclaimed water while retaining flexibility on crediting for virus removal. Reclaimed water treatment technologies are still evolving and our understanding of their effectiveness at virus removal and inactivation will continue to evolve. This is why the detail on demonstration of virus removal or inactivation will be in guidance. This balanced approach will ensure public and environmental health protections while remaining adaptive to new technologies.

Comments on Water Rights

Commenter: Andrew Austreng - Comment I-6-1

The rule's intent to authorize recovery of reclaimed water stored in a geologic reservoir (i.e., through aquifer storage and recovery [ASR]) is unclear. If the intent of the rule is to permit only the recovery of recharged water molecules (e.g., through chemical fingerprinting and "breakthrough curves"), most ASR projects that would incorporate reclaimed source water will be rendered economically nonviable due to simple commingling of recharged water and native groundwater. Further, using water quality to determine recoverable quantities would not allow recharge and recovery to occur at separate locations. Provisions for recoverable quantities should be based on water budget impacts and on impairment to existing rights, as is the case for other water rights permitting decisions. The draft rule should explicitly require that the water budget impact of a proposed project be evaluated from water levels and hydrogeologic modeling when the storage duration (recovery period) is determined, as described in sections 173-219-210(2)(v) and 173-219-270(7) of the draft rule. Water quality impacts should not be a consideration for determining recoverable quantities, since criteria are established in Chapters 172-200 and 172-219 WAC to preserve groundwater quality for the highest beneficial use, which apply regardless of whether any recharged water is ever recovered.

The Purple Book should be modified to clarify that the recoverable quantity will be based on analysis of water budget impacts. The draft language in Section 12.3 of the Purple Book currently states "Recovery of reclaimed water stored in an aquifer (aquifer recovery) is exactly that, recovery of the reclaimed water that has been stored in an aquifer." As written, this statement is ambiguous and could apply to either a recharged volume of water, or on a chemical fingerprint of recharged water. If the Department adopts the position that chemical fingerprinting (e.g., "breakthrough curves") will determine recoverable quantities, few ASR projects will ever come to fruition using reclaimed water.

Response: I-6-1

Thank you for your comment. Ecology does not agree that calculating the recoverable quantity for an ASR project should always be based on water budget impacts. Ecology calculates recoverable quantities for ASR projects in a number of different ways, depending on the specific situation. Ecology has found that flexibility is more desirable that relying on a set method for calculating the recoverable quantity. Ecology relies on the method to calculate the recoverable quantity that provides the most certainty for a specific situation.

Commenter: James Kimball - Comment I-4-1

As a member of the Advisory committee I want to thank DOE for their efforts to consider all sides of the Reclamation issue. I would like to expand on the comment in the October 10, 2017 DOH letter "Reclaimed Water can extend water supplies for drinking water where aquifers are declining faster than being recharged".

The current Water Right mitigation program does not provide any special recognition of public water supplies that derive their water from declining aquifers. A recent example of an attempt to mitigate water rights that depended on the recent increase in flow of a river from a WWTP discharge. The increase in flow is derived from a declining aquifer. It appears that many of the significant water rights have not been used for over 10 years. Ecology should take the lead in vacating the water rights that have not been utilized for over 5 years.

Response: I-4-1

Thank you for your comment, however, the concern you raised about the current water right mitigation program is an issue outside the scope of this rulemaking. We share your concern about declining aquifers, and the challenge of enforcing the relinquishment provisions of the water code.

Commenter: James Kelly - Comment O-7-2

Comment #1- The Rule, as written for implementation under Ecology policy, does not meet the full intent of the Legislature.

Response: O-7-2

Ecology agrees that the legislature clearly expressed its intent to encourage and streamline permitting for reclaimed water facilities. However, in Section 130 in the reclaimed water statute the legislature expressly prohibits impairment of any existing water right downstream from any freshwater discharge points. Requiring reclaimed water permit applicants to demonstrate compliance with RCW 90.46.130 meets the full intent of the legislature.

Commenter: James Kelly - Comment O-7-3

Comment #2- The Rule, as written for implementation under Ecology policy, is not consistent with the Stillaguamish Instream Flow Rule (IFR) (WAC 173-505).

Ecology has in the past allowed compensatory mitigation in the form of out-of-kind aquatic habitat improvements which are deemed to provide a net habitat benefit that is greater than or equal to the impact of a quantitative water loss. Steve Hirschey is a former Ecology-staff member who led the development of the Stillaguamish IFR. At that time Steve, who knew the City and its vision well, assuaged the City's voiced concerns over the IFR with his expertise that the City's water management and aquatic habitat projects (such as the construction of the stormwater treatment wetland) would more than offset the impacts of a City faced with developing long-term water supplies in a basin with minimum instream flows that is closed to new water appropriations. Of course Steve could not foresee the effects of the recent court decision in the Foster case. But the Reclaimed Water rule now has a chance to assure that many cities in a similar position can operate in a similar setting by using reclaimed water to reduce the overall demand for new water, or increasing the water available for mitigation.

Response: O-7-3

Ecology agrees that WAC 173-505-120 recognizes the need for continued development and use of alternative sources of water including reclaimed water. However, this rule is advisory language and does not amount to authorization of specific projects. As pointed out in the comment, since adoption of the instream flow rule for the Stillaguamish basin, the State Supreme Court decision in *Foster* strictly prohibits the use of out-of-kind mitigation as mitigation for impairment to instream flows. It is not legally possible to overturn or alter the application of a court decision through rulemaking.

Commenter: James Kelly - Comment O-7-5

Comment #4 - An underlying issue appears to regard application of Ecology Policy No. 1020, its definitions of consumption of water, and its interpretation within the proposed rule.

With technological improvements in water treatment in the 26 years since this policy was written, and in the 21 years since it has had any revision, the policy ignores any application of all known, available, and reasonable methods of prevention, control, and treatment (AKART), or Best Available Science (BAS). For convenience, a copy of Ecology Policy 1020 is attached to this letter as Exhibit D. Policy No. 1020 continues to provide examples of what constitutes non-consumptive use and why.

As an example in Policy No. 1020, a run of the river hydroelectric facility is considered nonconsumptive even though there are minor changes in elevation and channel hydraulics which affect rates of flow, the placement of habitat features, and water quality changes such as percent saturation of dissolved gases. We contend municipal operations which create minor variations within the same reach that provides the water source and the receiving water likewise should also be considered nonconsumptive.

Similarly, a fish hatchery holds water rights for nonconsumptive use, but it still may hold an NPDES permit for waste discharge back to the river. If a hatchery can be quantitatively nonconsumptive regarding flows, and still diminish water quality to the point of requiring an NPDES permit, it should not be unreasonable that a WRF employing advanced technology be allowed to do the same.

Finally, it can be argued that no municipal system which draws water and generates effluent can be completely nonconsumptive. We do not argue this in situations where one source pipe out and one return pipe in to the same reach. However an equitable approach to quantifying consumption should allow a net consumption as the difference between withdrawals from and return flows to the same basin. This is a straightforward approach that even Ecology uses under the Stillaguamish IFR when calculating the net effect of exempt well withdrawals and return flows via septic systems under its specific reservation [WAC 173-505-090(6)(a)]. It is also consistent with Policy 1020 (4) regarding concurrent use of ground and surface waters.

Here, in or with the Reclaimed Water Rule update, is the perfect opportunity for Ecology to align all of its definitions and applications of impairment and diminishment and consumption, and even the playing field, especially for municipal utilities.

Response: O-7-5

Decisions regarding a new water right permit are outside the scope of this rulemaking. Decisions on whether mitigation is adequate to offset impacts must be made in accordance with the state water code and relevant case law, and not the reclaimed water statute.

Commenter: James Kelly - Comment O-7-6

Recommendation #1a — WAC 173-219-090, Water rights protection, should be modified in order to respond to the Legislature with a Reclaimed Water Rule that provides realistic reclaimed water and re-use opportunities to all municipalities, not only marine dischargers. In particular, the Rule's impairment section (4) and/or corresponding procedures in the draft Reclaimed Water Facilities Manual ("Purple Book") are too restrictive.

Recommendation #1b — Ecology Water Resources Policy 1020, Consumptive and Nonconsumptive Use, and similar concepts within other water right and reclaimed water policies and procedures need to be brought into the 21st century. Incorporate technology considerations into performance criteria that can be used within impairment analyses to evaluate whether definitions of consumptive, nonconsumptive, and diminishment of the quantity, quality, rate of flow, or availability of water are met (e.g., AKART, all known, available, and reasonable methods of prevention, control, and treatment).

Recommendation #1c — Develop uniform definitions and evaluation procedures for determining net quantitative impacts to municipalities operating both water and water reclamation facilities, similar to Ecology's assumptions for exempt well withdrawals and septic system return flows. Provide credit to systems that can demonstrate return flows effectively offset the impacts of withdrawals.

Recommendation #2 — For municipalities with both water and water reclamation facilities, recognize a City's right to consumptively use its water up to the point of compliance for WRF effluent—the entrance to the outfall pipe. This would allow traditional POTWs, particularly those which utilize the same location for source and receiving waters, to meet the Legislature's objectives for reclaimed water.

Recommendation #3 — Include Constructed Treatment Wetlands (CTW) as an authorized re-use in WAC 173-219-390, and in other locations as appropriate.

Recommendation #4 — Recognize the beneficial use of reclaimed water in instream and riparian applications (mitigation) as one solution to the in-kind mitigation requirement created in the court ruling in the *Foster* case. The quantities remain the same, and with demonstrated hydraulic connectivity, only the location is slightly different.

Response: O-7-6

Recommendation #1a – Ecology is not able to resolve statutory policy issues through rulemaking. We will continue to work with the legislature to develop tools to protect instream flows in a manner that does not preclude out-of-stream water use.

Recommendation #1b – Thank you for your comment, however, comments recommending changes to Ecology Water Resources Policy 1020 are outside the scope of this rulemaking.

Recommendation #1c – Thank you for your comment, however, comments recommending standardized consumptive use assumptions for municipalities are outside the scope of this rulemaking.

Recommendation #2 – This recommendation regarding an individual water right permitting decision is outside the scope of this rulemaking.

Recommendation #3 – Thank you for your comments. Ecology did not intend to disallow Constructed Treatment Wetlands in the proposed rule language. Ecology has clarified this as an allowable use in the final rule language by doing the following:

- Revised WAC 173-219-010 to include the statutory definition of Constructed Treatment Wetland.
- Revised WAC 173-219-390 Specific use-based requirements – Table 3, to include this beneficial use.
- In addition, Ecology will update guidance manuals outside of rulemaking process to ensure this use has adequate guidance available.

Recommendation #4 – Decisions on whether mitigation for an individual water right permitting decision is adequate to offset impacts must be made in accordance with the state water code and relevant case law, and not the reclaimed water statute; and are outside the scope of this rulemaking.

Commenter: Robin Zukoski - Comment O-12-2

By not addressing water rights impairment issues, the state is not increasing availability of reclaimed water to much of Washington State. While it is not likely feasible to resolve these issues as part of this rulemaking process, we request that Ecology not lose sight of reclaimed water in broader policy discussions on impairment and that efforts are made to balance out of stream water uses and instream flow protection in water law. We need a path forward for considering tradeoffs between water quality improvement and stream flow protections.

Response: O-12-2

Thank you for recognizing that Ecology is not able to resolve statutory policy issues through rulemaking. We will continue to work with the legislature to develop tools to protect instream flows in a manner that does not preclude out-of-stream water use.

Commenter: Jacque Klug - Comment A-2-9

173-219-210(2)(t)(iv) **-** The proposed rule states, "(iv) If the intended beneficial use is for an instream flow per chapter 90.22 RCW, a draft or final mitigation plan is required."

We recommend citing chapter 90.54 RCW as additional statutory basis for instream flow rules.

Second, a mitigation plan is only required if the reclaimed water is being used to mitigate for new consumptive out-of-stream uses.

It is conceivable that an entity wants to use the reclaimed water for surface water augmentation or instream flow enhancement just to improve flows.

Also, there will likely be a need for other mitigation plan documentation needed for water right permits that are subsequently issued using the surface water augmentation water as mitigation source water. We recommend these changes to the last sentence to capture these thoughts:

"If the intended beneficial use is to mitigate for flow impairments to instream flows established under 90.54 and 90.22 RCW, a draft mitigation plan is required to be submitted with the Engineering Plan. A final mitigation plan must be submitted with the reclaimed water permit application. Additional mitigation plan documentation may be required as part of the water rights application process for new water right applications that will use the surface water augmentation for mitigation water. "

Response: A-2-9

Ecology agrees that a mitigation plan is not always necessary if the intended beneficial use is for an instream flow. Ecology further agrees that a proposal to rely on a discharge of reclaimed water as mitigation for a new water right will require mitigation documentation for the water right permit application. Decisions on whether mitigation is adequate to offset impacts must be made in accordance with the state water code and relevant case law, and not the reclaimed water statute. The language referenced in the comment, WAC 173-219-210(2)(t)(iv), will be deleted from the rule.

Commenter: Jacque Klug - Comment A-2-13

173-219-270(11) - This subsection provides, "Water rights impairment. The permit must require proof of continuing compliance with RCW 90.46.130, including the ecology final determination of impairment and adequacy of compensation or mitigation and, if necessary, enforceable provisions to ensure compensation or mitigation is implemented by the permittee." We question whether or not Ecology has an interest and or authority to determine the adequacy of any compensation offered by a generator of reclaimed water to any private water right holder. RCW 90.46.130 does not provide authority to Ecology with regard to private water rights. This idea of determining adequacy of compensation for State held rights is reasonable, but not reasonable for private transactions. If compensation or mitigation for any impairment is agreed to by the holder of the affected private water right, then Ecology should not be involved nor determine if the compensation is adequate.

Response: A-2-13

Ecology agrees with the commenter and has deleted the rule language calling for Ecology to determine the adequacy of compensation with regard to privately held water rights.

Commenter: Jacque Klug - Comment A-2-1

By not addressing water rights impairment issues, the state is not increasing availability of reclaimed water to much of Washington State. Reclaimed water can stretch water supplies and help communities deal with challenging discharge limits. The draft rule does not articulate a pathway for resolving complex watershed needs of water quality improvement actions and stream flow protection. While it is not feasible to resolve these issues as part of this rule-making process, we request that Ecology not lose sight of reclaimed water in the broader policy discussions on balancing out-of- stream uses and instream flow protection. We are seeking a path forward for considering tradeoffs between water quality improvement and stream flow protections. These tensions will only grow as water supplies become more stressed and impaired in the future.

Subsection 3 states, "Existing water rights include any permits, claims, certificates, instream flows established by rule pursuant to chapters 90.22 and 90.54 RCW,...." A water right claim is not a water right. A claim under chapter 90.14 RCW is an assertion of a right.

We suggest rule language that might say "vested rights asserted by a water right claim". Many basins have numerous water right claims in the Claims Register that ultimately will not become adjudicated rights. We should ensure that potential uses of reclaimed water are not precluded because of claims to a water right that are specious. And that any investigation of asserted claimed rights is limited to those that a tentative determination of validity might show a water right exists.

(4) If a mitigation plan is being submitted to mitigate for impairment to a senior water right holder, shouldn't there be documentation that the water right holder accepts the mitigation? This seems especially important if the mitigation is being accepted by a private water holder rather than a state-owned water right (e.g., instream flow rule).

(5) This subsection requires that a permit renewals must demonstrate compliance with RCW 90.46.130. We suggest this requirement be limited to the first permit renewal after a final rule is in place. It seems like a lot of extra work and not necessary for compliance with the code, to repeatedly demonstrate compliance with RCW 90.46.130.

If the assessment is done for the initial permit and perhaps the first renewal for those permits issued prior to this rule-making, that should be sufficient. Given how slowly new water rights are created and that any new right created downstream of a permitted reclamation facility after it is generating reclaimed water is not going to be impaired, this additional analysis for each renewal is redundant.

Response: A-2-1

Thank you for your comment. Ecology agrees the rule does not articulate a pathway for resolving complex watershed needs of water quality improvement actions and stream flow protection. Thank you for recognizing Ecology is not able to resolve statutory policy issues through rulemaking. We will continue to work with the legislature to develop tools to protect instream flows in a manner that does not preclude out-of-stream water use.

Commenter: Lisa Dennis-Perez - Comment A-4-3

Notification and consultation. Ecology and the applicant will jointly notify and consult with affected tribes and the Washington State Department of Fish and Wildlife (WDFW) before Ecology makes its final determination of compliance with RCW 90.46.130. Capitalization of agency names is suggested.

Response: A-4-3

Thank you for your comment. Notification in this section applies only to determining whether the permit applicant is in compliance with RCW 90.46.130, not notification in relation to a spill.

Regarding capitalization, the Office of the Code Reviser provides state agencies rules for the format and style used when writing rule language. Under their rules, agency (departments) names are not capitalized. Therefore we can't make the change you requested. To see the style guide please see

(pg. 9): http://leg.wa.gov/CodeReviser/Documents/InstructionsOnStyle.pdf.

Commenter: Carla Carlson - Comment T-1-3

WAC 173-219-090 Water rights protection - Subsection (6) specifies that Ecology and the applicant will jointly notify and consult with affected tribes and WDFW before a final determination is made.

However, the Muckleshoot Tribe desires to meet and consult solely with Ecology and/or WDFW on a government-to-government basis. A joint meeting with the applicant could occur later or if the Tribe agrees, could be invited to the first meeting. Also, tribal staff would like to be notified early and be involved early on in the permit review process, especially for the impairment analysis.

Response: T-1-3

Thank you for your comment. Ecology appreciates that the Muckleshoot Tribe prefers to meet only with Ecology or Washington Fish and Wildlife (WDFW) on a government-to-government basis, and that tribal staff would like to be involved early on in the permit review process. Ecology will work to accommodate those requests.

Commenter: Carla Carlson - Comment T-1-7

We are opposed to the use of reclaimed water as mitigation to meet an instream flow rule that would otherwise be impaired. Use of reclaimed water to augment streamflow's may have significant adverse environmental impacts on fishery and water resources that have not been properly evaluated. Even with the high quality of water that can be achieved with reclaimed water, it still cannot substitute for clean, cold ground or surface waters that fish need.

Response: T-1-7

Thank you for your comment. Decisions regarding a new water right permit are outside the scope of this rulemaking. Decisions on whether mitigation is adequate to offset impacts must be made in accordance with the state water code and relevant case law, and not the reclaimed water statute.

Commenter: Darlene Schanfald - Comment O-10-13

Please expand on "instream flow rights" and Ecology's position on protecting them.

Response: O-10-13

Thank you for your comment. Ecology will add the sentence below to 3.2.2 Impairment analysis in the Preliminary Regulatory Analysis: "The analysis must demonstrate compliance with RCW 90.46.130, ensuring no impairment of existing downstream water rights unless compensation or mitigation for such impairment is agreed to by the holder of the affected water right." Instream flows set by rule must be protected from impairment. Under the State Supreme Court decision in *Foster*, any impairment to instream flows must be completely offset in-kind, in-time, and in-place. Such a situation could incur significant administrative, legal, and mitigation costs.

Commenter: Cara Tomlinson - Comment O-4-1

This comment pertains to WAC 173-219-100 entitled "Water rights protection." As proposed, the "Water rights protection" section is merely an abridged version of past attempts that appears to remove all substance regarding impairment assessment and determination proposed in prior versions of the rule. In past iterations or phases of this rulemaking, Ecology received several comments from the water utility perspective and other stakeholders regarding issues and concerns with proposed water right impairment regulations.

Because the proposed rule does not appear to have addressed them, we reference and call to Ecology's attention past comments rather than restating them here. Accordingly, the WWUC offers the following summary comments on the August 23, 2017 version of the water rights impairment regulation, proposed WAC 173-219-100.

1. Presumption of impairment. Prior rule proposals presumed that any reduction in wastewater discharge to a freshwater body equaled impairment of downstream water rights. This approach had viewed any wastewater discharge reduction as a water right change. Unfortunately, the proposed regulation appears to be merely a shorter and more general restatement of prior versions that were withdrawn or rejected. For example, the details are contained in them Reclaimed Water Facilities Manual ("Purple Book" dated August 2017, p. 37), which still relies on the 2009 stakeholder report for the "recommended" impairment approach. Many prior comments in Ecology's file detail problems with this approach.

2. Inconsistency of water resources and water quality requirements. Clean Water Act discharge permits (NPDES) or clean-up plans (TMDL) that require removal or reduction of discharge to a freshwater body contrast or conflict with prior versions of the impairment regulation. Prior comments in Ecology's file call out the inconsistency between water quality regulatory directives and water resources requirements.

3. Unique reclaimed water impairment law. Ecology's past "impairment" approach relied on the unique reclaimed water law, RCW 90.46.130, not on water rights law. The WWUC incorporates by reference its prior comment letter (dated September 21, 2015) urging Ecology to rely solely on RCW 90.46.130 as legal authority for its impairment regulation.

4. Ecology stretches to create its role. In WAC 173-219-100, Ecology proposes to make impairment determinations and determine compensation or mitigation to downstream water rights holders. Unlike other sections of the Reclaimed Water Act, there is no mention of Ecology or its role in RCW 90.46.130.

Also, RCW 90.46.130 provides that any "compensation or mitigation for such impairment is agreed to by the holder of the affected water right." As a result, Ecology goes beyond the plain wording of the statute to craft a decisional process designed to improve the functioning of the reclaimed water permitting process. This approach is inconsistent with Ecology's strict interpretation of its own authority to make rules to implement the statute.

Response: O-4-1

Thank you for your comments.

Response to 1: Neither this rule or the guidance in the Purple Book prescribe a specific approach to determining impairment of senior downstream water rights. The rule states that it is the applicant's responsibility to demonstrate compliance with RCW 90.46.130.

Response to 2: Ecology notes your comments.

Response to 3: Ecology does not agree that it is possible to rely solely on the "unique reclaimed water law," RCW 90.46.130, with respect to impairment of instream flows resulting from reclaimed water facilities. The number and clarity of recent Washington State Supreme Court decisions (*Postema, Swinomish, Foster, and Hirst*) firmly establish Ecology's obligation to protect instream flows from all impairment. Ecology agrees that the impairment provision in chapter 90.46 RCW is unique with respect to mitigation and compensation of privately held existing water rights, and this rule allows for such unique agreements.

Response to 4: The language in WAC 173-219-090(1) clearly states that it is up to the applicant to demonstrate compliance with RCW 90.46.130. This includes determining adequate compensation or mitigation if agreed to by downstream water right holders. Ecology's role is to determine whether the applicant has sufficiently demonstrated compliance. Ecology will not be determining the amount or type of compensation or mitigation for impairment to water rights held by private entities. Ecology is responsible for determining the adequacy of compensation or mitigation for impairment to instream flows, and any other state-held water rights, including trust water rights.

Comments on Aquifer Storage & Recovery

Commenter: Jacque Klug - Comment A-2-10

WAC 173-219-210(2)(v) - Shouldn't the Engineering Report also require documentation on the anticipated volume of recovered water and the feasibility of recovering the water? Additionally, does a reclaimed water ASR project also require project proponents to file and obtain an ASR permit? Or does the reclaimed water permit suffice for authorization from the state? The ASR WAC (173-157) should be referenced and the relationship between ASR permit and reclaimed water permit should be discussed in the rule and Purple Book.

Commenter: Lisa Dennis-Perez - Comment A-4-10

In the engineering report section...Please clarify what is meant by "legal framework."

Commenter: Lisa Dennis-Perez - Comment A-4-11

Engineering report section on ASR - 2u) G. The Purple Book notes that a pilot study should be completed for ASR projects but it does not appear that the intention is to require pilot projects for all other recharge projects. Consequently, (u)(G) should be deleted to be consistent with the Purple Book.

2u) E. Neither the draft Rule nor the Purple Book are clear about the contents for the mitigation plan required in (u)(E). The Purple Book states that the mitigation plan should include "actions to be taken to prevent adverse impacts to the environment," but the need for a plan would be determined by the outcome of the assessment and analysis required in (u)(D).

In other words, requiring a mitigation plan should be at the discretion of Ecology, but does not necessarily need to be required for all projects. Suggest revising (u) (E) to, "Project mitigation plan, if needed." If the engineering report is thorough, and the permit adequately addresses potential environmental impacts, then it is not clear what would be addressed by a separate mitigation plan.

Commenter: Carla Carlson - Comment T-1-1

RCW 90.46.120 requires that a permit for recovery of reclaimed water from aquifer storage must be reviewed under the standards established under RCW 90.03.370(2) for aquifer storage and recovery projects.

The standards established under RCW 90.03.370(2) for aquifer storage and recovery projects are described in Chapter 173-157 WAC. The reclaimed water rule and the Reclaimed Water Facility Manual (purple book) do not contain standards or guidance that are equivalent to those described in Chapter 173-157.

Commenter: Christopher Stoll - Comment O-1-8

In ASR and Engineering Documents Topic comments Section 173-219-210 (2) (u) and (v) list the engineering report requirements for groundwater/aquifer recharge and recovery of water stored in an aquifer, respectively. Each section lists different reporting requirements; however, all of the requirements listed under (v) should also be considered or required under (u), with the exception of (v)(v) recovery treatment

procedures. Ecology should consider merging these sections for consistency.

In section 173-219-210, the Draft Rule makes note of a mitigation plan in relation to groundwater and aquifer recharge. Ecology should provide additional information as to what the mitigation plan is.

Summary Response to Aquifer Storage and Recovery (ASR)

Thank you for your comments on ASR in the reclaimed water rule. Ecology focused its efforts in this chapter on meeting the legislative intent that Aquifer Storage and Recovery be an allowable beneficial use of reclaimed water. As such, chapter 173-219 WAC contains the necessary standards and requirements that must be met for aquifer recharge, storage, and recovery of reclaimed water to be permitted under RCW 90.46.

The standards in WAC 173-219-210(2)(u) are equally protective as those established under RCW 90.03.370, without relying on the authority in RCW 90.03 to regulate the beneficial use of reclaimed water recovered from an underground reservoir. Ecology included these standards in the rule to ensure the review process for development of reclaimed water permits under chapter 173-219 WAC meets the exemption provisions in RCW 90.46.120(1) for aquifer storage and recovery projects using reclaimed water.

A reclaimed water permit issued under chapter 172-219 WAC is the only water quality permit required for ASR projects using reclaimed water. A separate ASR permit (under chapter 173-157 WAC) is not required for a reclaimed water project that stores or recovers reclaimed water.

WAC 173-219-210(2)(u) provides that the evaluation is based on the information required in WAC 173-219-210 (2)(t). Both groundwater recharge and recovery projects must submit the information required by both (t) and (u).

Ecology has included all the necessary requirements for using reclaimed water in ASR projects in this chapter. The information that requires an ASR application in WAC 173-157-110 is found in the reclaimed water chapter at 173-219-210 (2)(t) and (u). The information required in WAC 173-157-120 through 170 describing the details of WAC 173-157-110 is located in the Purple Book, under the section titled Engineering Report, Chapter 5.

This chapter authorizes recovery of reclaimed water injected into an aquifer, and cites existing regulations and rules in establishing the criteria to be used in defining the permissible volume of water to be recovered. WAC 173-219-210(2)(u) lists the criteria to be used in making the determination of that permissible volume that can be recovered.

The chapter does not mandate a method by which the volume of recovery of injected water is to be determined, rather it relies on technical information developed by a licensed hydrogeologist for use in that site-specific determination.

Language was added to require a mitigation plan only “if required by the lead agency” and language will be added to the Reclaimed Water Facilities Manual (Purple Book) outside of this rulemaking to better explain what is required for a mitigation plan when it is needed. A mitigation plan for reclaimed water projects for both aquifer recharge and or recovery of reclaimed water would address:

- Negative impacts to surrounding water wells, such as water level draw-down of neighboring wells during the recovery period of an aquifer recharge and recovery.
- Increase to surficial slope instability.
- Groundwater sampling results that exceed the permit standards.

The use of pilot studies will remain in the chapter as pilot studies provide valuable information on the hydrogeologic system and the operations of the Aquifer Recharge on the hydrogeologic system. Additional information can be derived from pilot studies with which to evaluate the conceptual model of an aquifer recharge and/or recovery system.

The Reclaimed Water Facilities Manual (Purple Book) will be updated outside of the rulemaking and if additional information is needed in guidance on ASR it will be considered at that time. In meantime this chapter and the available guidance provide the necessary standards and requirements.

For information about the legal framework, please see Chapter 5, section titled Engineering Report in the Reclaimed Water Facilities Manual (Purple Book) which includes the following:

Project water rights documentation.

- Other water rights in ASR project area.
- Instream flows or stream closures within ASR project area.
- Ownership and control of project facilities.

Comments on Groundwater

Commenter: Jacque Klug - Comment A-2-24

Unclear standards for groundwater recharge projects. We appreciate the flexibility in establishing the point of compliance for groundwater recharge projects to best suit project-specific conditions. However, we don't believe Ecology has clarified the process for determining what water quality parameters would apply for groundwater recharge projects. We believe there is a disconnect between RCW 90.46.005, which indicates state drinking water standards meet the anti-degradation standard and the language and guidance in the draft rule and guidance document which indicate groundwater standards must be met to comply with the anti-degradation standards for reclaimed water groundwater recharge. The draft rule and guidance document needs additional work to clarify the standards and assessment criteria for groundwater recharge projects.

Commenter: Carla Carlson - Comment T-1-5

Groundwater/aquifer recharge - Indirect augmentation of surface water via groundwater should be held to the combined requirements of both direct streamflow augmentation and groundwater recharge, including all NPDES permit requirements. The lead agency should ensure that all NPDES permit requirements are required if indirect augmentation is used. Additional guidance on defining when indirect augmentation of surface water occurs should be provided. This term could be defined in terms of an expected travel time or a travel distance between the recharge location and the surface water feature. Requirements should also utilize the best available science on emerging contaminant and impacts on aquatic life. We also suggest that the approach used in stormwater infiltration should be considered for reclaimed water. Under this approach, a minimum separation distance is required between the recharge elevation and the water table. For systems that do not meet this minimum separation, additional treatment (i.e., reverse osmosis) should be required.

Commenter: Northeast Sammamish Sewer and Water District - Comment A-3-1

The Northeast Sammamish Sewer and Water District provided a comment earlier in this rulemaking that stressed the importance of protecting groundwater sources used for drinking water from the negative effects of reclaimed water.

The District's water supply comes from groundwater wells and like many water supplies in Washington its water is not disinfected. Its water is very high quality in part because it does not contain chemicals such as chlorine. It has serious concerns that that its water will be contaminated or degraded by reclaimed water.

The District respectfully requests that Ecology reconsider… and recognize the legitimate concerns of the District and other water utilities that their groundwater supplies need to be protected from degradation — whether health related or aesthetic — by reclaimed water positions…

The District offers the following for consideration: Drinking water is a core human need essential for the public health. People cannot live without drinking water, and hundreds of government and nongovernment entities have spent millions of dollars developing drinking water supplies to serve the public and protecting these supplies from contamination. Reclaimed Water is important and has many uses and potential uses, but it cannot be given precedence over protecting groundwater supplies used to provide the public with drinking water and must not be permitted to pollute or contaminate these supplies or degrade existing drinking water quality. There are numerous Washington statutes protecting water.

For example: RCW 36.36.010 Purpose. The protection of subterranean water from pollution or degradation is of great concern. The depletion of subterranean water is of great concern. The purpose of this chapter is to allow the creation of aquifer protection areas to finance the protection, preservation, and rehabilitation of subterranean water, and to reduce special assessments imposed upon households to finance facilities for such purposes. Pollution and degradation of subterranean drinking water supplies, and the depletion of subterranean drinking water supplies, pose immediate threats to the safety and welfare of the citizens of this state. RCW 90.48.010 policy enunciated.

It is declared to be the public policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington. 90.48.020 Definitions.

Whenever the word "pollution" is used in this chapter, it shall be construed to mean such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state. Including change in temperature, taste, color, turbidity, or odor of the waters.

This definition is repeated in Chapter 173-200 WAC WATER QUALITY STANDARDS FOR GROUNDWATERS OF THE STATE OF WASHINGTON which also contains the following definitions:

(7) "Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in groundwater or that occurs at concentrations greater than those in the natural levels. WAC 173-200-020(7) (17) "Natural groundwater quality" means groundwater quality that was present before any human-caused pollution.

WAC 173-200-020(17) WAC 173-200 is an Ecology regulation which also contains the Antidegradation Policy of the state: 173-200-030 Antidegradation policy. (l) The antidegradation policy of the state of Washington, is generally guided by chapter 90.48 RCW, the Water Pollution Control Act, and chapter 90.54 RCW, the Water Resources Act of 1971.

The goal of this policy is to ensure the purity of the state's groundwaters and to protect the natural environment.

(2) The antidegtadation policy is as follows:

(a) Existing and future beneficial uses shall be maintained and protected and degradation of groundwater quality that would interfere with or become injurious to beneficial uses shall not be allowed.

(b) Degradation shall not be allowed of high quality groundwaters constituting an outstanding national or state resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance. (c) Whenever groundwaters are of a higher quality than the criteria assigned for said waters, (he existing water quality shall be protected and contaminants that will reduce the ex:sting quality thereof shall not be allowed to enter such waters, except in those instances where i/ Can be demonstrated to the department's satisfaction that:

(i) An overriding consideration of the public interest will be served; and

(ii) All contaminants proposed for entry into said groundwaters shall be provided with all known, available, and reasonable methods of prevention, control, and treatment prior to entry.

This policy must be read in its entirety and one part cannot be ignored in favor of another. This policy does not grant Ecology the unlimited discretion to disregard or ignore Wellhead Protections areas where reclaimed

water is involved. The so called OCPI provisions in Section 2(c) applies only in the limited circumstances stated, and must be read in together with Section 2(a).

The express intent of Section 2(a) is to protect existing uses such as drinking water from degradation or elements that would be "injurious to the beneficial use". Ecology's quotation copied above from RCW 90.46.005 to support the position that reclaimed Water somehow takes precedence over wellhead protections statutes (RCW 36.36) is just one sentence found in the 8th paragraph of Section 005. Section 005 clearly intends that that RCW 90.46 be harmonized with other water protection statutes.

The first sentence of that section states: The legislature finds that by encouraging the use of reclaimed water while assuring the health and safely of all Washington citizens and the protection of its environment. The word "while" means that reclaimed water does not override health and safety.

Protecting the existing quality of groundwater used for drinking by limiting the use of reclaimed water in Wellhead Protection Areas is not inconsistent with the goals and objectives of the statute (RCW 90.46.005) that encourages the production and use of reclaimed water. Rather, it carries out that statute's intent by protecting drinking water sources which are essential for the health and safety of citizens.

Commenter: Darlene Schanfald - Comment O-10-5

Injecting reclaimed water into aquifers has a high probability of contaminating public drinking water systems.

Commenter: Darlene Schanfald - Comment O-10-9

Why is there an option to demonstrate why groundwater should be degraded?

AKART isn't met. This should include current science, but this Draft rule doesn't address.

Based on the lack of knowledge or the wastewater, "enhancing groundwater" with wastewater could result in polluted groundwater. "Enhancing, etc." wetlands could also result in increasing their pollution and that of dependent wildlife. Adding this pollutant source to fish streams, too, risks the quality of the habitat and the salmon.

If public safety is a consideration, then Ecology should take into account the request for Wellhead Protection Area and Critical Aquifer Recharge Areas.

"Adequate protection of public and environmental health" is insufficient protection.

Commenter: John C. Krauss - Comment A-5-2

The proposed rules fail to recognize potential adverse impact to groundwater sources presented by introduction of reclaimed water in the environment.

The proposed rules fail to balance the interests of groundwater and aquifer protection with the interests of the

generators and users of reclaimed water.

The current rulemaking initiative has serious shortcomings. The predisposition to facilitate the use of reclaimed water should ensure the interests of groundwater and water purveyors are balanced with the intent and convenience of the rules proposed for the generation and use of reclaimed water.

Commenter: Cara Tomlinson - Comment O-5-7

Protection of Drinking Water Sources - Water utilities need to be part of the decision-making process related to reclaimed water use that could affect drinking water sources, especially groundwater sources.

The Proposed Rule uses an arbitrary set-back distance on the land surface with the intent to protect groundwater sources from reclaimed water facilities and end uses. (Footnote 13: WAC 173-219-210)

The Proposed Rule should use a hydrologically-based approach consistent with the wellhead protection program.

Currently, there are numerous groundwater supplies in the State that do not require treatment, or even disinfection. Given the chlorination required for reclaimed water, any evidence of chlorine showing up in the water supply would inevitably lead to a requirement to provide continuous disinfection for a source previously served without the need for chlorination. This adds to the cost of serving customers and impacts the aesthetics of existing supplies, such as taste and odor that are also important to protect. It is possible to reconcile reclaimed water use with wellhead protection.

In the Proposed Rule, however, Ecology does not "coordinate efforts" with DOH's rule and public water systems that have designated wellhead protection areas in their service areas.

Facilities and use sites for reclaimed water should not be allowed within a reasonably protective distance (delineated by the 5-year (or equivalent) capture area of the well) from a water supply well, unless there is a written agreement with the public water system owner/operator of the well.

The protective area should be at least the Wellhead Protection Area designated under WAC 246-290-135.

As a practical matter, regulating reclaimed water proximity to underground drinking water sources through an agreement is unlikely to reduce reclaimed water sales. Further, we note that Ecology proposes that reclaimed water generally not be allowed for use to supplement Category I and II wetlands. Drinking water deserves at least the same level of protection, if not greater, as that proposed for wetlands.

Commenter: James Kuntz - Comment O-2-1

Our review of the newly revised proposed rule, and the accompanying document, Preliminary Regulatory Analyses for Chapter 173-219 WAC, Reclaimed Water, has shown that our previous comments regarding prohibiting the use of reclaimed water in Wellhead Protection Areas and Critical Aquifer Recharge Areas were summarily dismissed with the statement, "This alternative does not meet the goals and objectives of the

statute of encouraging the production and use of reclaimed water."

To our member water districts, this statement makes it appear that reclaimed water use is a more important activity than the provision of safe, clean, economical drinking water to urban and rural communities in Washington state.

We do not believe the Legislature intended to allow reclaimed water to be used at any cost, including the potential contamination of pristine groundwater aquifers used for drinking water. This contamination would not have to be in the form of exotic, carcinogenic chemicals. Just the presence of chlorine disinfectant in the reclaimed water appearing in a previously pristine groundwater source could compel a water purveyor to then institute chlorination as that water is distributed, incurring a permanent increase in cost of the water, and a sense in the customers that they have lost something wonderful.

Summary Response to Groundwater

Thank you for your comments on protecting groundwater and drinking water. Ecology and Health agree with the commenters that the integrity and protection of our groundwater and drinking water resources are of the utmost importance and require the highest levels of protection.

Ecology and Health worked together to provide concise, protective standards, while allowing flexibility to address project and site-specific conditions during the permit development and issuance process.

Ecology does not agree that there is “a disconnect” between RCW 90.46.005 and the application of groundwater standards to reclaimed water for groundwater recharge. Although the statute provides that the "use of reclaimed water is not inconsistent with the policy of antidegradation of state waters," the provision does not do away with the state's policy of maintaining state waters to their highest quality as provided in RCW 90.48.010 and RCW 90.54.020(3).

Ecology does not believe that there is a conflict between chapter 90.46 and 90.54 RCW. Given the broad mandates of RCW 90.48.010 and RCW 90.54.020(3), Ecology believes we are required to use groundwater standards.

Ecology is directed to achieve the goal of “preserving existing water quality of state waters”, in part, by ensuring that wastes and other materials will not be allowed to enter state waters that will reduce the existing quality thereof, even where there is no violation of water quality standards.

All relevant provisions of chapter 90.46 and 90.54 RCW can and should be read to give effect to each—we have done our best to reconcile and give effect to each of our statutory obligations to protect groundwater.

It is important to note that while chapter 173-219 WAC sets important standards and requirements, it is also creating the regulatory framework for reclaimed water generation, distribution, and use—around which individual permits will be developed and issued.

The lead agency will develop permit conditions on an individual project basis taking into account local conditions, including compliance with local laws as well as the proposed beneficial use(s) and use area(s). In all cases, permit conditions must ensure compliance with applicable groundwater and surface water quality standards.

Each and every reclaimed water individual permit is subject to public review and comment. Design documents and permits will contain site and project specific details like treatment methods, performance standards, and applicable water quality standards. This will include distribution system information, such as pipeline separation distances and use-site specifics, set back distances, certified operator requirements, and cross-connection control requirements.

Permits will include enforceable water quality limits protective of applicable groundwater and surface water quality standards. The permits will establish specific points of compliance, monitoring and record keeping requirements, as well as requirements to provide notices of violation of permitted conditions—should they occur. In addition, every permit must be renewed—meaning every 5 years they are reviewed, updated, and subjected again to public review and comment.

Application of "additional requirements" when more than one beneficial use

During a permitting process for any beneficial use that would impact both ground and surface water, the permit would set permit conditions to protect both. If, for example, a release of reclaimed water to groundwater is demonstrated to influence surface water, the more restrictive of surface or groundwater standards would apply. This rule establishes the permitting process that allows consideration of the unique situations of each beneficial use of reclaimed water.

Restricting or banning use of reclaimed water in wellhead protection areas.

Ecology considered the request from multiple commenters to ban the use of reclaimed water in wellhead protection areas. Neither Ecology nor Health believe it is appropriate for this chapter to create an outright ban on the use of reclaimed water in these or other areas. The necessity for such a restriction can best be assessed locally during land-use planning, or on a case-by-case basis during the permit development process.

We believe the rule provides a well-balanced approach that is precisely in line with the legislative intent to remove barriers to reclaimed water use while meeting the multiple statutory obligations to protect public health and the environment.

Comments on Surface water

Commenter: Darlene Schanfald - Comment O-10-17

A purpose for RW is to keep it out of the marine system. Yet your intent is to allow it to be put back in the marine system after some, yet minimally studied treatment results. This doesn't make sense. This section is about streamlining requirements and "harmonizing" RCWs, but the point we are making is that the goals conflict.

Again, reconveyance of RW to surface waters seems counterintuitive in that you want to minimize sewage effluent to these waters and treated RW will still be contaminated.

Response: 0-10-17

Ecology disagrees with the statement that the purpose of reclaimed water is to keep it out of the marine system. While *one* purpose of reclaimed water is to minimize wastewater discharges to waters of the state—reclaimed water is not a wastewater.

The legislature's intended reclaimed water to be a highly treated and regulated resource that is suitable for beneficial use. One of those uses is surface water augmentation. This use and any conveyance of reclaimed water in surface waters of the state must meet surface water quality standards in addition to the treatment requirements and performance standards for Class A and B reclaimed water.

Comments on Cross-Connection Control

Commenter: Scott Hemingway - Comment I-2-1

WAC173-219-310 6(ii) States "Ensure that the assembly will not become submerged due to weather-related conditions such as flooding."

This does not ensure that backflow assemblies will not become submerged by sewage. My experience is that many assemblies are currently installed in basements or indoors below ground. This would protect the assembly from "weather-related conditions", but does not protect them from being submerged by sewage. If recent events at the West Point and Bellingham wastewater treatment have shown, basements are flooded by sewage when there are equipment failures at the plant.

One suggestion is to change the language to "assemblies may not be installed below ground, or below 100 year flood level."

Response: I-2-1

Thank you for your comment. We have edited the language for clarity that the assembly must be protected from becoming submerged from both weather related flooding and submersion as a result of equipment failure.

Commenter: Robin Zukoski - Comment O-12-5

Cross-connection control responsibilities are not clear between reclaimed water generators, distributors and drinking water utilities in the draft rule.

Commenter: Kenneth Alexander - Comment O-3-6

WAC 173-219-310 Cross-Connection Control: We suggest paring back the level of detail in WAC 173-219-320 and relying more on references to other WAC rules and cross-connection control manuals.

Commenter: Jacque Klug - Comment A-2-15

Cross-connection control responsibilities are unclear. We appreciate that cross-connection requirements have been organized into one section or the rule. It will be valuable for utilities, reclaimed water users and potable water suppliers to be able to quickly find applicable requirements.
However, language in the draft rule is unclear on the division of responsibilities between the various utilities. Furthermore, it also applies requirements directly from drinking water protection to non-potable reclaimed water quality protection which is not aligned with the level of risk associated with using non-potable water.

We're not clear what compliance with the requirements in this section would mean for our existing reclaimed water program. We are submitting several comments and suggestions on creating a workable program for addressing cross-connection that are better aligned with legal responsibilities of potable and reclaimed water systems and public health protection.

WAC 173-219-310(d) -We recommend that this requirement for notice to a potable water purveyor be limited to connections within the water service area of potable water systems: "Reclaimed water distributors must provide the local water purveyor written notification prior to providing reclaimed water service to any property within the potable water service area to ensure compliance with the Drinking Water Rules (WAC 246-290-490)." (2)(a)i-iv We recommend moving these reference documents to the Purple Book. See also revised comment in the supplemental suggested revisions to 173-219-310 document.

WAC 173-219-320(3) - We don't feel that a developing a cross-connection program to protect reclaimed water from lower quality water needs to follow all the cited elements from the drinking water cross-connection control requirements. We question whether all elements are applicable to the level of risk of contamination to reclaimed water in comparison to drinking water.

Additionally, we question whether a CCS or associated drinking water cross-connection control guidance is appropriate for reclaimed water applications as cross-connection of a potable water source is a much higher risk that protecting non-potable sources. Following all of the recommend elements we may overly cautious compared to public health risk. Therefore, we recommend deleting this subsection and tasking the RAC to work specific reclaimed water protection guidance in the refinement of the Purple Book.

Commenter: Lisa Dennis-Perez - Comment A-4-16

This section looks good. We appreciate our previous comments were incorporated, especially in 1 f) and ask that you consider also adding that information to the Purple Book (it's not specifically mentioned in the guidance).

Commenter: Christopher Stoll - Comment O-1-12

In section 173-219-310 f, the Draft Rule requires that potable water purveyors must verify that the approved cross-connection control devices have been installed. Ecology should consider adding a requirement that the potable water purveyor is to do this within 30 days' notice from the reclaimed water generator or distributor.

Ecology should consider revising section 173-219-310 2 b to require potable water purveyors and reclaimed water generators to work together to ensure cross-control protection and not put the full responsibility on the reclaimed water generator. Language to this effect should be added to other parts of the rule as well.

Summary Response to Cross-Connection Control

Thank you for your comments and language change suggestions on cross-connection control in this chapter. Several commenters were concerned that the language in this section was not clear, including when delineating responsibilities between reclaimed water generators, distributors, users, and potable water suppliers (PWS). To address these concerns we have made some of the suggested rule language edits to clarify this section, while other suggestions we did not accept.

We considered moving some of the content of this section to the Reclaimed Water Facilities Manual (Purple Book) to reduce the length and complexity of this section. However, our intent is to have enforceable cross connection requirements that apply to reclaimed water generators & distributors. Reference to WAC 246-290-490, as one or more commenters suggested, is inappropriate since it specifically applies to potable water systems and doesn't include requirements for reclaimed water generators.

The basis for the requirements do have similarities to drinking water cross-connection programs—which have been in place and working well for years. The revised language says the Cross-connection control program and Cross Connection Specialist must assess risks, aligned with guidance.

It is important to note that this chapter does not require additional requirements for PWS. They must protect the potable supply through WAC 246-290-390. Chapter 173-219 WAC, Reclaimed water, establishes cross-connection requirements to protect public health—for both potable water supplies and reclaimed water supplies—treating both as valuable resources.

Both generators and distributors are listed in several places because they may be different entities or they may be the same entity performing both roles. Edits made will help clarify whom is responsible for the different aspects of a cross-connection control program. Updates to guidance materials outside of this rulemaking will provide additional details on the requirements.

Comments on Operator Certification

Commenter: Scott Hemingway - Comment I-3-1

If you are going to require Distributors have a BAT you should also require that Generators have a BAT also. Generators are going to have a number of backflow assemblies within their facility to protect the reclaimed water from lower quality water and to protect the potable water system from reclaimed water. The level of protection at the source of the reclaimed water (Generator) should be equal to the distribution system.

Response: I-3-1

Thank you for your comment. Ecology and Health agree. Generators must also employ Cross-Connection Control Specialist and Backflow Assembly Tester. We have revised the language of the section 250(2) of this chapter accordingly and will update guidance outside of this rulemaking as well.

Commenter: Lisa Dennis-Perez - Comment A-4-12

The list of "allowable" certifications could be clearer about which certifications would be allowed for a distributor vs. a generator (as opposed to highlighting who issues them). According to the Purple Book, the certifications listed in section 2a) would be allowed for distributors, those allowed for generators are listed in section 2b), and a combination of both could be required for generator/distributors.

Response: A-4-12

Thank you for your comment. Ecology has made language edits to clarify these requirements in WAC 173-219-250(2).

Comments on Purple Book (Reclaimed Water Facilities Manual)

Commenter: Andrew Austreng - Comment I-8-1

The Purple Book should be modified to clarify that the recoverable quantity will be based on analysis of water budget impacts. The draft language in Section 12.3 of the Purple Book currently states, "Recovery of reclaimed water stored in an aquifer (aquifer recovery) is exactly that, recovery of the reclaimed water that has been stored in an aquifer." As written, this statement is ambiguous and could apply to either a recharged volume of water, or on a chemical fingerprint of recharged water. If the Department adopts the position that chemical fingerprinting (e.g., "breakthrough curves") will determine recoverable quantities, few ASR projects will ever come to fruition using reclaimed water.

Response: I-8-1

Thank you for your comment. See response to comment I-6-1

Commenter: Jacque Klug - Comment A-2-11

Shouldn't the Engineering Report also require documentation on the anticipated volume of recovered water and the feasibility of recovering the water? Additionally, does a reclaimed water ASR project also require project proponents to file and obtain an ASR permit? Or does the reclaimed water permit suffice for authorization from the state?

The ASR WAC (173-157) should be referenced and the relationship between ASR permit and the reclaimed water permit should be discussed in the rule and the Purple Book.

Response: A-2-11

Thank you for your comment. See response to comment A-2-10

Commenter: Jacque Klug - Comment A-2-19

Groundwater Recharge **-** the changes to the groundwater recharge section and highlighting constituents in the table where the groundwater standards would apply is helpful. However, it would be helpful to have reference and guidance on AKART and OCPI process as applied to groundwater standards and monitoring in the Purple Book. It is inevitable that a groundwater recharge project will have certain standards and monitoring requirements that are determined on a project by project basis.

However, the process for evaluating exceptions to certain standards needs to be better defined so project proponents, regional permitting staff and interested stakeholders understand the assessment criteria for determining exceptions for challenging parameters.

Response: A-2-19

Guidance materials on the application of Ground Water Quality Standards will be further developed outside of the rulemaking process to provide more clarity, including referencing the following: *Guidance for Aquifer Storage and Recovery AKART Analysis and Overriding Consideration of the Public Interest Demonstration* for additional information regarding AKART and OCPI.

Commenter: Jacque Klug - Comment A-2-21

Chlorine Residual **-** Recommend more guidance on criteria for when a lower residual could be granted.

Response: A-2-21

Thank you for your comment. Any of the benefits listed in your comment (A-2-17) may support a waiver. Guidance materials will be updated outside of the rulemaking to address this further.

Commenter: Jacque Klug - Comment A-2-22

Cross-Connection **-** The Purple Book would be a good place for guidance on protecting reclaimed water from lower quality water and how to select backflow prevention devices for lower-risk non-potable uses.

Response: A-2-22

Thank you for your comment. Ecology and Health agree and will update guidance materials outside of this rulemaking.

Commenter: Jacque Klug - Comment A-2-25

We welcome working with Ecology and Health to revise the accompanying reclaimed water technical manuals (the Orange and purple Books) to incorporate our experience and expertise as well as new research and advances from other states. It is critical that Ecology complete the technical manual updates and maintain strong staff expertise in the future that can serve as a resource for utilities, the public, and regional permitting staff on reclaimed water.

Response: A-2-25

We appreciate and accept your offer to continue working with Ecology and Health to revise the guidance manuals for reclaimed water treatment, use, and distribution of reclaimed water. Ecology appreciates the support for maintaining strong staff expertise as we strive to be a resource for reclaimed water, both now, and into the future.

Commenter: Jay Swift - Comment O-8-2

For UV Disinfection, it appears that the State is not requiring checkpoint bioassays on-site. It is recommended that, at plants where checkpoint bioassays are not completed, that a field commissioning checklist be completed and signed by both the manufacturer and engineer, at a minimum, to ensure that hydraulics and construction tolerances, etc., are within specification to provide the necessary pathogen inactivation. In lieu of the field commissioning checklist, or as specifically required by Ecology, the checkpoint bioassay could be conducted. See attachments. See Table 3. UV System Commissioning Checklist Proposed in Draft Reclaimed Water Facilities Manual.

Response: O-8-2

Thank you for your comment. Ecology will consider the suggestions for validation of UV disinfection during finalization of supporting guidance documents.

Commenter: Lisa Dennis-Perez - Comment A-4-1

The Purple Book (pg 31) states that the contents of an impairment analysis are provided in this section of the rule, but this draft does not include them. They are listed in chapter 4 of the draft Purple Book. If the intent is to describe the contents of the analysis in the rule, they should be added here to section 4.

Response: A-4-1

Thank you for your comment. Ecology has amended the Purple Book to clarify that the contents of the impairment analysis are in the Purple Book and not in the rule. Suggested additions to the language are in parenthesis in paragraph below.

Proposed Purple Book edit - page 31: When wastewater that has been traditionally discharged to waters of the state is planned to be reclaimed for other uses, the applicant must comply with provisions in RCW 90.46.130. This section of the Reclaimed Water Use Act requires that the reclaimed water project not impair existing water rights downstream from any freshwater discharge point of such facilities unless compensation or mitigation for such impairment is agreed to by the holder of the affected water right. WAC 173-219-090 (4) contains the requirement (to conduct) a water right impairment (analysis). Chapter 4, Water Rights Impairment Analysis, provides more detailed guidance. Ecology's Water Resources Program (WRP) is available to assist the reclaimed water project applicant in assessing the potential to impair existing water rights. WRP also reviews the impairment analysis, provides an adequacy determination on that review to the lead agency for project approval

Commenter: Lisa Dennis-Perez - Comment A-4-17

Cross-connection control comment on rule with suggestion for Purple Book: This section looks good. We appreciate our previous comments were incorporated, especially in 1 f) and ask that you consider also adding that information to the Purple Book (it's not specifically mentioned in the guidance).

Response: A-4-17

Thank you for your comment. Ecology will ensure that all the information in the Rule regarding cross-connection control, including 1 f), will be incorporated in the next edition of the Purple Book.

Commenter: Lisa Dennis-Perez - Comment A-4-18

Performance Standards Section 330 Table 1 **-** Table 6-2 in the Purple Book does not include CBOD5; please ensure that the tables are consistent.

Response: A-4-18

Thank you for your comment. Ecology will modify Table 6-2 in the Purple Book to include the performance standard for CBOD5.

Summary Response to comments on Purple Book

Ecology acknowledges the need to update the guidance in the Purple and Orange Books. We plan to seek feedback from stakeholders, and we intend to convene such a group shortly after rule adoption. Ecology received comments on the following topics during this early review period that will receive careful consideration:

- Guidance on disinfection standards and treatment credits
- Identification and listing of Aquifer Storage and Recovery (ASR) reporting requirements
- Clarifying the relationship between ASR and Reclaimed water permits
- Guidance on AKART and OCPI as related to application of Groundwater Quality Standards
- Identification of situations when chlorine residual could be adjusted or waived, and the necessary submittals to receive a waiver
- Additional guidance on cross connection requirements
- Detail impairment analysis requirements in purple book.
- Relocation of planning documents formally under Feasibility Analysis section
- More explanation of “system facilities” identification requirement in Engineering report
- More explanation of communication planning in Operations and Maintenance
- More discussion on total nitrogen measurement
- Other updates as identified or needed by Ecology, Health, and/or stakeholders

Comments on Orange Book (Criteria for Sewage Works Design)

Commenter: Jacque Klug - Comment A-2-20

Disinfection **-** There should be guidance on disinfection in the Purple Book or the Orange Book on disinfection and particularly the 4-log virus inactivation/removal, if that remains.

Response: A-2-20

Thank you for your comment. Ecology agrees and will be starting a stakeholder process to update guidance outside of the rulemaking shortly after this chapter is effective. We look forward to putting together a group of technical and professional experts to assist with the development of guidance on this and other issues identified by commenters and internal Health or Ecology staff.

Comments on Engineering Documents

Commenter: Jacque Klug - Comment A-2-7

Feasibility Analysis **-** It is unclear what potable distribution facilities mean. Pipes? Pump Stations? If the purpose of identifying potable water suppliers and sources is to identify reclaimed water service issues and cross-connection protection concerns, then it could be stated in plainer language to something to this effect: "List all potable water suppliers that provide water to the reclaimed water generation, storage and distribution facilities in addition to proposed reclaimed water use areas. Describe proposed methods to coordinate with potable water suppliers on reclaimed water service including cross connection prevention actions in design and operation of the reclaimed water system."

Response: A-2-7

Thank you for your comments. Ecology has accepted the suggested rule language edits for clarity.

Commenter: Jacque Klug - Comment A-2-8

WAC 173-219-180 (2)(c)(ii) (sic)
It is unclear what "system facilities" means in this section? Are maps in the engineering report supposed to show all potable water pipelines, pump stations? Or is intent to show only potable sources of supply (e.g., wells, surface water intakes)?

WAC 173-219-180 (2)(i) (sic)
Delete "and consistent with pressurized distribution systems in the most recent edition of health's Water System Design Manual." Not all reclaimed water distribution systems are pressurized (including King County's Brightwater reclaimed water distribution system) and there is no requirement that a reclaimed water system must be pressurized for nonpotable uses.

WAC 173-219-180 (2)(g) (sic)
This provision reads that it applies only to surface water augmentation projects. If so, recommend moving this to fall under 2 (t) so that it aligns with other required elements of an Engineering Plan for surface water augmentation projects.

WAC 173-219-210(2)(t)(x)
Subsection (x) provides, "Conveyance in waters of state. For projects proposing conveyance in waters of the state, ecology must approve the conveyance report portion of the engineering report." However, there is nothing in Section 210 requiring a conveyance report portion of an engineering report. It would be helpful for Ecology to provide any standards or qualifications to using waters of the state for conveyance of reclaimed water and the generator subsequently withdrawing the reclaimed water back out of the water of the state.

Response: A-2-8

Thank you for your comments. Ecology believes that the comments referenced rule sections that were incorrect and are instead intended to be comments on WAC 173-219- 210 and has responded to these comments and made rule language text edits to this section in response.

Response: **A-2-8 for WAC 173-219-210(2)(c)(iii)**
In the case of "system facilities" Ecology and Health mean treatment facilities, distribution system pumps, and reservoirs. Ecology will consider the need to include this additional detail the guidance materials outside of the rulemaking.

Response: A-2-8 for WAC 173-219-210(2)(i)
Thank you for your comment. Ecology has clarified with language edits the design information only has to be consistent with pressurized distribution system "if applicable."

Response: A-2-8 for WAC 173-219-210(2)(g)

Thank you for your comment. Ecology made this suggested language edit.

Response: A-2-8 for WAC 173-219-210(2)(t)(x)

Thank you for your comment. Ecology has removed the reference to a "conveyance report" and instead added language to require the inclusion of the "technical basis for the proposal" and will address the need for additional guidance needs outside of this rulemaking.

Commenter: Jacque Klug - Comment A-2-12

Operations and Maintenance (section 240) - This provision should provide more detail on what notification procedures to potable water systems entails. Is it general communications on the program or does it only relate to permit violations? Will this be specified in the permit? It seems most important to include contact information for all affected agencies including affected potable water suppliers in the O & M manual.

Response: A-2-12

Thank you for your comment. This requirement is about ensuring adequate communication between operators of both systems - reclaimed and drinking - to ensure that both are protected during operations. It should be a comprehensive communications plan or strategy and as such, we agree, it should absolutely include the contact information for the potable water systems or other affected

agencies for the ability to quickly reference. Ecology will provide additional information in guidance materials outside of this rulemaking.

Commenter: Jacque Klug - Comment A-2-26

WAC 246-290-130 has nothing to do with groundwater protection and is a wrong citation. We suggest a citation to RCW 90.44.400 and chapter 173-100 WAC instead. The proposed rule states, " Groundwater and aquifer protection plans, under WAC 246-290-130, chapter 36.70A RCW, and WAC 365-190-100." Is WAC 246-290-130 the right reference? It appears that section of rule has nothing to do with groundwater protection plans or aquifer protection plans. We suggest you reference groundwater protection plans under RCW 90.44.400 and or chapter 173-100 WAC which do relate to and authorize the existing groundwater protection areas and plans.

Response: A-2-26

Thank you for your comment. In response to other comments on this section, WAC 173-219-180, Ecology is making language edits to subsection (2) of this section, as well as removing the list of allowable relevant planning documents from the rule language. Ecology will incorporate these into to the guidance materials outside of this rulemaking.

Commenter: Jacque Klug - Comment A-2-27

As written, copies of all local state plans would need to be included with the feasibility analysis. This could easily be several boxes worth of documents or many dvds of plans that will not be read by the lead agencies. Recommend requiring that the feasibility analysis include a summary of discussion of reclaimed water in existing state and local plans: "Coordination of state and local planning": The use of reclaimed water must be considered and coordinated under other planning requirements in state law, including RCW 90.46.120 as well as other local codes and ordinances. List and briefly summarize recommendations regarding reclaimed water in relevant planning documents. Relevant planning documents include, but are not limited to the following..."

Response: A-2-27

Thank you for your comment. Rule language edits have been made to this section to clarify the use of other relevant planning documents to meet the requirements of the feasibility analysis and the list of those allowed to be used will be moved to guidance materials that will be updated outside of this rulemaking.

Commenter: Lisa Dennis-Perez – Comment A-4-8

Feasibility Analysis (WAC 173-219-180)- WAC 173-219-180 (1)(a) - Entities proposing new reclaimed water projects must contact the lead agency early in the planning process to...This language is vague. Suggest instead "...must notify the lead agency early in the project planning phase to..."

WAC 173-219-180 (1)(c) (vii) -List of all potable water suppliers, potable water sources, storage, and distribution facilities within 1000 feet of all potential reclaimed water generation, reclaimed water storage, and inadequately treated water storage facility areas, as well as any proposed use areas. It is not clear what level of detail would be acceptable. Identifying all distribution facilities in relation to all potential use areas is the part of this requirement that could be challenging, especially because all use areas may not have been identified at this point in the process.

WAC 173-219-180 (1)(c)(x) -Identification of existing or proposed interlocal or interagency agreements, if any, with local governments or local potable water suppliers within the area... Please specify the types of agreements (those related to the generation, distribution, and/or use of reclaimed water) because it currently reads as if all agreements must be provided, and we have many agreements in place with local government partners that are not relevant to reclaimed water and likely not of interest to the lead agency.

Response: A-4-8

Thank you for your comments.

Response to WAC 173-219-180 (1)(a)
Rule language text edits to WAC 173-219-180 (1)(a) as suggested to clarify intent of the provision with "early" meaning as early as possible after the proposal defined enough to have identified support to move forward and prior to the investment of significant funds and commitments to land or infrastructure.

Response to WAC 173-219-180 (1)(c)(vii)

Rule language text edits to provide more information on the level of detail known and/or available at the time.

Response to WAC 173-219-180 (1)(c)(x)

Rule language text edits made to specify that identification of existing or proposed interlocal or interagency agreements are limited to those related to reclaimed water.

Commenter: Christopher Stoll - Comment O-1-5

The Draft Rule requires both a Feasibility Analysis and an Engineering Report. Ecology should consider combining these documents to streamline the process for obtaining a permit. Ecology should also provide clarification that existing documents submitted to Ecology may be used as substitutes for these documents where content fulfills the requirements, such as Facility Plans or Engineering Reports on existing treatment facilities.

In section WAC 173-219-180, the Feasibility Analysis requires a planning horizon of 20 years. Ecology should consider revising this requirement as some projects may plan on using reclaimed water for less than 20 years.

The Feasibility Analysis requires entities to demonstrate how they will maintain qualified and certified operations staff. Ecology should provide clarification on what is required to demonstrate this.

Response: O-1-5

Thank you for your comments. Ecology did not revise the 20-year planning horizon. This is typical in other requirements that include large investments of public money and accordingly, is appropriate to plan for this length of time with reclaimed water as well.

The feasibility analysis and the engineering report can be combined, if preferred by the applicant; however, the feasibility analysis must be approved prior to submitting an application for a reclaimed water permit and the engineering report may be submitted prior to or with an application. The intent of lead agency approval of a feasibility analysis ahead of an engineering report is to ensure a project is feasible before an applicant commits the time and resources necessary to complete an engineering report.

The proposed rule language did provide for existing documents to be used as part of the feasibility analysis. In response to both this comment and others, we are moving references to these documents to guidance and will provide more clarity on the intent to allow for the use of other relevant planning documents to meet some of the planning document requirements of this chapter.

Regarding demonstration on how to maintain qualified staff, we may include something in the Purple Book, such as:

- Demonstration could include maintaining financial capacity to employ one or more certified operators.
- Hiring multiple operators so loss of one doesn't shut the operation down.
- Providing training/allowing time off for certified operators so they can earn the required Continuing Education Units to keep their certifications current.
- Paying annual operator certification fees.
- Emergency shut-down process documented in the Operations & Maintenance manual in case there are no qualified operators available.

Commenter: Christopher Stoll - Comment O-1-9

Section 173-219-210 (2) (u) and (v) list the engineering report requirements for groundwater/aquifer recharge and recovery of water stored in an aquifer, respectively. Each section lists different reporting requirements; however, all of the requirements listed under (v) should also be considered or required under (u), with the exception of (v)(v) recovery treatment procedures. Ecology should consider merging these sections for consistency.

In section 173-219-210, the Draft Rule makes note of a mitigation plan in relation to groundwater and aquifer recharge. Ecology should provide additional information as to what the mitigation plan is.

Response: O-1-9

Thank you for your comments on Groundwater recharge and Recovery of reclaimed water stored in an aquifer in the Engineering report content section. WAC 173-219-210(2)(v)[1] states the evaluation is based on the information required in WAC 173-219-210 (2)(u).

So both the groundwater recharge and the recharge and recovery projects must submit the information provided in both (u) and (v) of this section.

Language will be added to the Reclaimed Water Facilities Manual (Purple Book) to better explain what is required for a mitigation plan. A mitigation plan for reclaimed water projects for both aquifer recharge and or recovery of reclaimed water would address:

- Negative impacts to surrounding water wells, such as water level draw-down of neighboring wells during the recovery period of an aquifer recharge and recovery.
- Increase to surficial slope instability.
- Groundwater sampling results that exceed the permit standards.

Commenter: James Kuntz - Comment O-2-5

173-219-210 Engineering Report **-** At subsection .2.g we find an affirmative duty to protect surface water sources from contamination requiring added treatment.

At .2.s.iv, the proponent must demonstrate that beneficial uses for wetlands must be maintained if reclaimed water is used.

At .2.t.iii, surface water augmentation must show that reclaimed water used must not cause need for intake modifications or additional treatment.

There is no corresponding requirement in .2.u and .2.v to protect groundwater sources. We must provide protection for groundwater drinking water sources that are at least as protective as those regulations applied to surface waters and wetlands.

Response: O-2-5

Thank you for your comment. Ecology disagrees there isn't a corresponding requirement to protect groundwater sources. This chapter applies the groundwater standards to all groundwater recharge—and aquifer storage and recovery.

[1] Please note that with edits to this WAC 173-219-210 made in response to comments subsections (u) and (v) are now (t) and (u) respectively.

Commenter: James Kuntz - Comment O-2-8

WAC 173-219-180 Feasibility Analysis requires identification of water facilities within 1000' of storage and use sites. This is frequently not a large enough area, and this dictates a list only, and not coordination with the owners of those water facilities. We suggest that you apply the approach described above.

Response: O-2-8

Thank you for your comment. The one thousand foot radius is an area within which we intend for the generator and generator's design engineer to accurately map and take into consideration access and any potential conflicts, such as pipe crossings, between the two water systems. It also informs the lead agency during submittal review. It does not define a zone of facilities or reuse prohibition.

Comments on Treatment Requirements

Commenter: Kenneth Alexander - Comment O-3-1

WAC-173-219-320 Class A and B Reclaimed Water - In the previous (2015) draft, there was an option to produce Class A reclaimed water with direct filtration (without coagulant addition) provided a disinfection dose sufficient for 5-log virus removal (instead of 4-log if coagulants are added) is provided downstream. This option should be restored to the Rule.

WAC 173-210-330 - Table 1. Minimum Biological Oxidation Performance Standards - a. Biological Oxidation: Per footnote 1, these parameters must be measured at the end of the unit process. We suggest retaining the exception in previous drafts of the Rule that permittees can request to measure BOD5, CBOD5, and TSS in the final effluent instead of directly after the secondary clarifier, with a limit of 10 mg/L. Otherwise multiple sampling points must be maintained, which may be impractical at small facilities, and in some processes such as MBRs, it is physically impossible to sample effluent between the biological process and filtration.

Response: O-3-1

Thank you for your comments.

Response O-3-1 on WAC 173-210-320

See Disinfection Summary Response to A-2-2.

Response O-3-1 on WAC 173-210-330

WAC 173-219-330[2] provides the necessary flexibility to allow a permittee to measure BOD5, CBOD5, and TSS in the final effluent instead of directly after the secondary clarifier, with a limit of 10 mg/L.

[2] Compliance shall generally be measured at the end of treatment, however, the reclaimed water permit may specify alternative monitoring locations and water quality limits to ensure compliance with performance standards, and any additional use based requirements as listed in Table 3.

Commenter: Jacque Klug - Comment A-2-16

Class A and B Reclaimed Water Class A and Class B requirements should be separated into two sections. It is confusing to have them both in the same section as it implies Class B water must achieve 4-log virus removal.

Furthermore, requiring reclaimed water systems using traditional treatment processes such as those listed in (2) (a), (b), and (c) to demonstrate 4-log virus removal/inactivation places a burden on the recycled water generator to conduct a demonstration study.

Response: A-2-16

See Disinfection Summary Response to A-2-2.

Commenter: Lisa Dennis-Perez - Comment A-4-19

Section 330 Table 2 - Please clarify whether Total Nitrogen means TKN or TN (TKN+NO3 and NO2).

Response: A-4-19

Thank you for your comment. Ecology means TKN+NO3 and NO2. Information will be added to guidance materials outside of this rulemaking to clarify.

Commenter: Darlene Schanfald - Comment O-10-3

Methods for "further treatment" – chlorination, UV light, ultraviolet light – are problematic. For instance, chlorination leaves an unwanted byproduct in the water.

Response: O-10-3

Thank you for your comment. The type of treatment proposed by the generator and approved by the lead agency for permitting will take these considerations into account. It is important to ensure reduction and removal of viruses, and chlorine disinfection can protect the quality of the water while in the piped distribution system, as it does for drinking water. The permitting process will take all of the necessary factors into account to maximize disinfection, while minimizing the use of chlorine so as to reduce the subsequent disinfection by products.

Commenter: Darlene Schanfald - Comment O-10-14

Given the known and unknown contents of this water, the standard of meeting "only water meeting stringent water quality and public health requirements is not possible.

The rules are not the most stringent. Therefore it is not possible to meet at least these goals: Scientifically and legally sound standards and practices that protect human health and the environment and Meets both Health and Ecology legal obligations to protect human health and the environment.

Again, the water cannot be "adequately and reliably treated" when some that are known cannot be treated, such as micro plastics that attract PCBs and ultrafine particulates, and most contents are unknown and will not be accounted for.

Response: O-10-14

Thank you for your comment. This rule provides performance standards and requirements to ensure adequate and reliable treatment of reclaimed water. In addition, the rule requires compliance with all water applicable surface and groundwater quality standards, drinking water standards, and public health protection measures. Requirements are based on best available science and developed for consistency with applicable laws and regulations.

Commenter: Christopher Stoll - Comment O-1-13

In section 173-219-320, the Draft Rule requires technology-based treatment methods. Ecology should consider incorporating performance-based treatment methods as technologies will change and evolve over the life of the rule.

In Table 1, Ecology should consider using a 30-day average and 7-day average instead of monthly or weekly requirements.

Response: O-1-13

Thank you for your comments. This chapter sets minimum performance standards for source water (e.g. secondary effluent). The evolution of treatment technologies will not change these performance standards. Treatment technology selection is up to the individual facility provided the proposed treatment meets basic treatment criteria in WAC 173-219-320(1) and (2).

Average monthly and average weekly are common averaging periods for monitoring parameters. Some months are not 30 days, which is why the chapter specifies monthly—to allow for the average over a specific number of calendar days for months that are less than or more than 30 days.

Comments on Use Agreements

Commenter: Jacque Klug - Comment A-2-14

173-219-290 - Should include provision on adding new users. The language from the 2015 draft rule was good and workable for both regulatory agencies and reclaimed water generators and distributors. Add: "(3) Template Use Agreements. A template use agreement may be submitted to the lead agencies for review and approval. Template Use Agreements must be approved by the agencies prior to implementation. (4) Adding new users. The reclaimed water permit may include conditions authorizing the addition of new users or similar uses without reopening the permit. For adding new users to previously authorized kinds of uses, a copy of the use agreement should be submitted to the regulator agencies prior to use. If the use has not been previously authorized, the permittee must provide a new user agreement for approval by the lead agency before the new use can begin."

Commenter: Lisa Dennis-Perez - Comment A-4-15

2 b), c), and d) Content of use agreements – requirement to include b, c, and d – All three of these bullets should be qualified with "if applicable" as it does not appear that content would be relevant to all users.

Commenter: Christopher Stoll - Comment O-1-11

In section 173-219-290, the Draft Rule defines the use agreements necessary for reclaimed water use. Ecology should consider eliminating these requirements for Class A and A+ water as they can be a disincentive for using reclaimed water and may be an unnecessary burden for some entities (ex. an irrigation district).

Summary Response to Use Agreements

Thank you for your comments. The use agreements are a necessary component to ensuring reclaimed water is distributed and used according to the permit issued to the reclaimed water generator—when the generator is not the distributor or end user. If the generator and the distributor and/or end users are the same entity then no use agreement is necessary.

There are currently reclaimed water generators that use such agreements to ensure the distribution and use of reclaimed water comply with their permit requirements. The generator is ultimately responsible for complying with distribution and use requirements in their permits and need a mechanism to convey requirements and ultimately hold their distributors and end users accountable for ensuring compliance once the reclaimed water is transferred out of the generators direct control.

The definition of a "distributor" clarifies that "[U]sers that distribute reclaimed water to use areas through a gravity conveyance system for agricultural water uses are not distributors" to avoid the unnecessary burden for agricultural water users with gravity conveyance systems.

To improve and streamline the permitting and use of reclaimed water Ecology has added "if applicable" language to the content of use agreements subsections. In addition we've included new language suggested by commenters regarding the use and approval of template use agreements. This new language allows the reclaimed water generator to add new users—for already permitted uses—without reopening their permits. These agreements must still be submitted to the lead agency. If the beneficial use is not an already permitted use, the permittee must submit a new agreement for approval before a new use can begin.

Comments on Storage and Distribution

Commenter: Lisa Dennis-Perez - Comment A-4-20

WAC 173-219-360(2) Notice of facility location(s) - The entity must provide distribution system information as described in the operations and maintenance manual, per WAC 173-219-240. – It is unclear who should receive this information and at what point in the process. Is the distribution system information supposed to be provided to the owners of potable water suppliers? And when in the process is this supposed to happen?

Response: A-4-20

Thank you for your comment. Ecology has removed subsection (2) from this section as this information should be identified and communicated thru the feasibility plan – engineering report process.

Commenter: Christopher Stoll - Comment O-1-15

In section 173-219-360 10 c, the Draft Rule states that trucks carrying potable water shall never carry reclaimed water. Ecology should consider removing this statement and providing restrictions based on use of the water. Water trucks used for street sweeping, sewer flushing or other nonpotable uses will want to fill from various sources including both potable water and reclaimed water and will have backflow prevention when filling. Water trucks used for the delivery of potable water for potable uses exclusively could never be used to transport reclaimed water, but the rule should provide clarity on this.

Response: O-1-15

Thank you for your comment. Ecology has made language edits to address this concern.

Commenter: James Kuntz - Comment O-2-7

173-219-360 Storage and Distribution at .2.a another reference is made to a 1000 radius; but, inclusion of sub-section (b) allowing the lead agency to set a larger area is a step in the protective direction.

Comments about a consistent protective area would apply here also. At subsection (5) the distance of concern is 200', which is much too small. The same protective area based on wellhead protection area is needed here also.

At subsection (7) the same concern would apply regarding distance and approvals.

Response: O-2-7

The one thousand foot radius in subsection (1) of this section is an area within which we intend for the generator and generator's design engineer to accurately map and take into consideration access and any potential conflicts, such as pipe crossings, between the two water systems. It also informs the lead agency during submittal review. It does not define a zone of facilities or reuse prohibition.

Subsection (5) identifies the minimum horizontal setback. This may be increased by the proponent/design engineer, local requirements, or the lead agency - based on the specific conditions.

Comments on Support for other comments submitted

Commenter: James Kelly - Comment O-7-1

The City of Arlington is a member of the Washington Water Utilities Council and appends the WWUC comment letter by reference.

Commenter: Northeast Sammamish Sewer and Water District - Comment A-3-2

The District supports comments submitted by the Washington Association of Sewer and Water Districts, the East King County Regional Water Association and the Washington Water Utilities Council.

Commenter: Tom Martin - Comment O-6-1

Please note that the District supports the Washington Water Utility Council comments on the proposed rule. The last page of their comment letter includes a recommended new rule section: Interlocal Agreement with Affected Water Utilities. The District stands firmly behind this recommendation.

Commenter: John C. Krauss - Comment A-5-1

As a member of both CWA and Washington Association of Sewer and Water Districts (WASWD), the District has participated in drafting the comments submitted by these agencies, and supports the comments.

Commenter: Cara Tomlinson - Comment O-5-1

On behalf of the Washington Water Utilities Council, Cascade Water Alliance, The Washington Association of Sewer and Water Districts, the Washington Public Utility Districts Association, and Seattle Public

Utilities, please see attached comments.

Thank you for the opportunity to comment on the Department of Ecology's (Ecology) proposed reclaimed water rule, dated August 23, 2017. Please accept this comment on behalf of the Washington Water Utilities Council, Washington Association of Sewer and Water Districts, Washington Public Utility Districts Association, Cascade Water Alliance, and Seattle Public Utilities.

Please find enclosed a General Comment on the proposed rule supported by all of the above water utilities and organizations. The last page of the General Comment sets out a single proposed new section that, if included in the final rule, would suffice to address our comments for this rulemaking.

Commenter: James Kuntz - Comment O-2-4

We have also reviewed the comments of the Washington Water Utilities Council, which speaks for water purveyors statewide. We agree with their concerns and fully support them.

Response to Support for other comments submitted

Thank you for your comments. Ecology acknowledges the support each of you have for the comments submitted by other potable water suppliers and utilities. Please see responses under the applicable comments where you expressed support.

Comments on Coordination with Potable Water Suppliers

Commenter: Tom Martin - Comment O-6-3

The District is concerned about unintended consequences of reclaimed water reuse on District public water supply wells. The interlocal agreement sounds like a way to properly coordinate and plan for the implementation reclaimed water reuse without adverse effects.

Commenter: John C. Krauss - Comment A-5-3

The proposed rules fail to establish planning requisites for the generators of reclaimed water similar to those mandated to public water purveyors.

The proposed rules fail to require the generators of reclaimed water to engage in appropriate planning and coordination with water purveyors to minimize or mitigate environmental and economic impacts to water purveyors.

Commenter: Cara Tomlinson - Comment O-5-4

Policy of Holistic Water Management - Reclaimed water rules should advance comprehensive or holistic water management and should not be organized around traditional agency program boundaries or categories. (Footnote 5: The "One Water" approach seeks a unified policy approach to wastewater, stormwater, and water supply (i.e., drinking water, municipal water)

The legislature intended the agencies to work together to adopt a comprehensive and rational regulatory program. The Reclaimed Water Act gives shared jurisdiction to Ecology and Health and directed the agencies "to coordinate efforts" to develop the program. (Footnote 6: RCW 90.46.005)

The two agencies' rules "must address all aspects of reclaimed water use." (Footnote 7: RCW 90.46.015)

Agency Coordination - The two agencies' rules regarding reclaimed water must be considered together when assessing the adequacy of Ecology's proposed rule. We note that Health recently updated its Group A water system rule without proposing or adopting any new provisions regarding reclaimed water distribution or use. We understand that Health's Group A rule speaks to reclaimed water only by continuing the requirement that water system plans evaluate "opportunities for the use of reclaimed water, where they exist, as defined in RCW 90.46.120." (Footnote 8: WAC 246-290-100(4)(d)(vii) (applies to systems serving one thousand or more total connections). This water system planning requirement rebuts Ecology's assertion that a water utility could "prohibit" reclaimed water use.)

The Group A rule does not address other provisions of RCW 90.46.120 regarding planning coordination. In addition, Health's Group A water system rule is silent as to how reclaimed water fits into the service area regulatory framework to coordinate and resolve purveyor and customer conflicts. Thus, a water system plan must evaluate opportunities for reclaimed water, but no regulations guide the coordination needed with water suppliers that enable the best outcomes for customers as well as the resource.

Similarly, the Proposed Rule narrowly approaches reclaimed water from the perspective of the reclaimed water generator or the agencies themselves.

Reclaimed water generator(s) can assert unfettered legal authority to sell and supply reclaimed water for use inside any other entity's service territory, without planning coordination or interlocal agreement or assessment of impacts.

In this context, reclaimed water is now a product in the water business, and therefore it is necessary to include reclaimed water in water service and provision processes, as appropriate for the new and unique commodity.

Commenter: Cara Tomlinson - Comment O-5-9

New Section - WAC 173-219-095 Interlocal Agreement with Affected Water Utilities.
(1.) When an operator, a distributor, or a permittee proposes to supply reclaimed water for municipal use at one or more location(s) within the service area of, or that may impact, a Group A public water system, the operator or distributor must enter into a written agreement, consistent with chapter 39.34 RCW, with such system as to a) reclaimed water supply within the water service area and b) groundwater source protection areas of the Group A public water system. If a non-governmental entity owns the Group A public water

system, then the written agreement should in substance address the subjects to be covered in an interlocal agreement. "Service area" has the same meaning as defined in WAC 246-290-010 (232).

(2.) This section does not apply to the use of reclaimed water for stream augmentation, wetlands or other environmental purposes of use unless the use it is within a wellhead protection area, as identified under WAC 246-290-135(3), or is hydraulically connected to a groundwater drinking water source that is subject to a wellhead protection area.

(3.) An affected Group A public water system, in its sole discretion, may waive the interlocal agreement requirement in WAC 173-219-095(1) for a period of time not to exceed ten (10) years.

(4.) If no interlocal agreement has been established, or no waiver granted, after a conscientious effort by the operator, distributor, or permittee within one year of commencing consultation with a public water system, then any such party may initiate mediation, consistent with RCW 7.07. The operator, distributor, or permittee and the Group A public water system will make a good faith effort to resolve the dispute by mediation for at least 90 days.

(5.) If no interlocal agreement has been established following the mediation and the dispute has not been resolved, then the operator, distributor, permittee, or Group A public water system may petition the secretary of the department of health, or his or her designee, who will issue a decision.

Commenter: James Kuntz - Comment O-2-2

The new reclaimed water proposal does not contain a requirement for coordination between the project proponent and a water supplier: all that is required in the permit application is "List of all potable water suppliers, potable water sources, storage and distribution facilities within 1000 feet of all potential reclaimed water generation, reclaimed water storage, and inadequately treated water storage facility areas, as well as any proposed use areas.

At a minimum. water source protection and cross-connection control actions and concerns must be identified (173-219-180(c) (vii)"

This does not mention coordination with the water purveyor to ensure the safety of the drinking water supply, and does not include the kind of comprehensive planning for all sources of water that the potential use of reclaimed water would imply and that the legislature surely intended.

It is very much a "one way street, with reclaimed water taking primacy over the safety of drinking water supplies. The mention of potable water supplies within 1000 feet of the reclaimed water project is an arbitrary number. The basis for a protective area should be based on local conditions, which are well documented in the Wellhead Protection Area plans already required of local water utilities.

Summary Response to Coordination with Potable Water Suppliers

Thank you for your comments on Coordination with Potable Water Suppliers (PWS). Ecology and Health have worked together to develop this chapter and believe the agencies have worked within the boundaries of the legislative intent and statutory authority requiring water system plans to evaluate "opportunities for the use of reclaimed water," as defined in RCW 90.46.120.

The Reclaimed Water statute (RCW 90.46) places the duty on existing potable water suppliers to look for ways to incorporate reclaimed water into their regional water supply plans - not the other way around. Ecology disagrees with commenters that this chapter doesn't require coordination with the PWS. There are multiple requirements in this chapter for identification, coordination, and communication with PWS.

The feasibility analysis requirements, which occur early in the project development process, require identification of all PWSs and a description of the proposed method to coordinate with PWS on reclaimed water service, including cross-connection prevention actions in design and operation of the reclaimed water system.

Language additions clarify the requirement to include the results of the early coordination in the engineering report under WAC 173-219-210(f). The feasibility analysis also requires identification of any interlocal or interagency agreements related to reclaimed water with PWS (and others) within the area of existing or proposed distribution and use of reclaimed water.

The feasibility analysis is the first document submittal—and required approval—for a reclaimed water project and is necessary to determine the feasibility of a project before moving forward with engineering and design. Ecology believes it is clear that our intention is for notification and coordination to begin early—and to continue throughout—as there is also a requirement for a communications plan that outlines notification procedures of any potable water purveyors identified in the feasibility analysis.

In addition, each application for a reclaimed water permit will be public noticed, as will each draft permit. This opportunity for public notice—and appeal—provides an appropriate opportunity for PWS to weigh in on—or outright object by appeal—the individual reclaimed water permits developed and issued under this chapter.

As such, Ecology and Health will not be incorporating the suggested "WAC 172-219-095" language into the chapter. The agencies believe the plain language of the authorizing statute demonstrates that the Legislature intended for Ecology and Health work towards integrating reclaimed water for beneficial uses in regional water supplies whenever and wherever possible, rather than create additional local regulatory requirements for reclaimed water permit applicants.

Comments on Permit Conditions

Commenter: Lisa Dennis-Perez - Comment A-4-13

For storage of reclaimed water in an aquifer and/or recovery of the water, the permit must include the recovery period of the reclaimed water based on the hydrogeologist report. Ecology may modify or ask health to modify the reclaimed water permit and the recovery period based on later, supplemental documentation. It appears this section should be numbered 7f?

Response: A-4-13

Thank you for your comment and notation. This paragraph was numbered 7(f) as suggested.

Commenter: Carla Carlson - Comment T-1-6

WAC 173-219-270 Reclaimed water permit terms and conditions - Subsection (11): Water Rights Impairment. It is stated here that "the permit must require proof of continuing compliance with RCW 90.46.130." We suggest inserting "and applicable case law" after RCW 90.46.130.

Response: T-1-6

Thank you for your comment. Regarding reclaimed water and potential water rights impairment, the only statutory requirement that must be met is RCW 90.46.130. WAC 173-219-090(2) states that applicable case law will be used in determining compliance with RCW 90.46.130.

Comments on Preliminary Regulatory Analysis

Commenter: Jacque Klug - Comment A-2-18

We disagree with the characterization that Section 173-219-340 represents a baseline condition of existing conditions. As written, the language is unclear if there is a new regulatory disinfection standard. If facilities must have a 1 mg/L of free chlorine after a contact time of 30 minutes, many reclaimed water facilities would need to increase chemical dosing for systems using chlorine disinfection, increasing production costs. Higher chlorine dosing would also increase disinfection by-products and cause negative benefits to users. De-chlorination systems might need to be developed for certain users. It's unclear from reading the rule text if the existing disinfection standards will continue to be applied or if reclaimed water producers would need to change current practices. See also comments 31-37.

We disagree with the characterization that Section 173-219-310 represents a baseline condition of existing conditions. As written, it appears that reclaimed water generators would have develop comprehensive cross-connection programs including hiring Cross-Connection Control Specialist to review the program. Developing the program would result in costs to reclaimed water generators. Also, as written, the draft rule requires protections that are designed to protect drinking water in all circumstances even though the concern may be protecting reclaimed water from lower quality waters. See comments 26-29. In summary, we do

think that, as written, the rule requires practices outside of the current reclaimed water standards and would result in costs to reclaimed water generators.

Response: A-2-18

Thank you for your comment. Ecology identified some differences between the baseline and adopted requirements for disinfection. Adopted requirements for chlorine disinfection now specify a minimum total chlorine standard, consistent with current practice at existing facilities. Adopted requirements now specify that existing facilities must demonstrate compliance with the virus removal standard. The Final Regulatory Analyses have been revised to reflect costs of verifying and documenting virus removal by an engineer.

Ecology identified some differences between the baseline and adopted requirements for cross-connection, the rule includes new requirements for documentation of a cross-connection program and clarifies when cross-connection controls are required for reclaimed water. The requirements themselves may or may not be new to a given generator but the documentation, planning, and certification by a cross-connection control specialist will be new based on this rule. The Final Regulatory Analyses have been revised to reflect costs of planning, documenting, and certification by a cross-connection specialist.

Commenter: Darlene Schanfald - Comment O-10-16

Concerns expressed about an agency ability to "opt out" of review.

Response: O-10-16

Thank you for your comment. This language was inadvertently copied from a previous analysis on earlier versions of the rule language. Opting out of a review and participation is not an option for either agency in this chapter. The regulatory analysis has been revised in response.

Commenter: Darlene Schanfald - Comment O-10-6

*Please note that Ecology believes all of the comments (now numbered for easier reading) are referring to the paragraph copied from the preliminary Regulatory Analysis that is **below** the numbered comments.*

1. Are only monetary costs considered?

2. The authorizing statutes are old. Current science is not considered. This leaves the "reasonable understanding" questionable.

See Preliminary RA: "Ecology concludes, based on its reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed rule, that the benefits of the proposed rule are greater than the costs. Ecology assessed alternatives to proposed rule content, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the proposed rule were the least burdensome to those required to comply with them. After considering alternatives to the proposed rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed rule represents the least burdensome alternative of possible rule contents meeting these goals and objectives."

3. What costs are being "mitigated?"
4. Exactly which impacts are not expected?

See Preliminary RA-P.15 Discharge and construction standards for water and wastewater. Moreover, it is consistent with other Ecology permitting program requirements designed to mitigate information costs. Reclaimed water facilities already need to comply with these rules under the baseline. No impact is expected.

5. Exactly which impacts are not expected?

See Preliminary RA-P. 15 Class B requirements. The proposed rule follows requirements and processes for water releases classified as Class B, as based on the authorizing law (chapter 90.46 RCW), and on existing applicable standards. Moreover, it is consistent with other Ecology permitting program requirements designed to mitigate information costs. Reclaimed water facilities seeking to release Class B water also need to comply with these rules under the baseline. No impact is expected.

6. What impacts are not expected?

See Preliminary RA-P. 16 2.3.38 WAC 173-219-380 General use-based requirements. The rule provides general use-based requirements that are applicable to all uses of reclaimed water, such as site evaluation, signage or advisory notification, label and design requirements, confining the use to site, and restricting operations to authorized personnel. Reclaimed water facilities also need to comply with these rules under the baseline. No impact is expected.

7. We would like to see a detailed accounting of all the costs – financial, impacts to health, wildlife, soil, water, and air.

See Preliminary RA-P. 35 5.2 Conclusion. Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed rule, that the benefits of the proposed rule are greater than the costs. Here again, these need to be the most protective of public health and the environment. P. 36 Chapter 6: Least-Burdensome Alternative Analysis 6.1 Introduction. To be able to adopt the rule, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

Ecology assessed alternatives proposed rule content, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the proposed rule were the least burdensome to those required to comply with them.

Response: O-10-6

Response 1: The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate quantifiable and qualitative costs and benefits in this analysis. Ecology also considers other types of impacts, such as willingness to pay, replacement costs, existence and use values, etc.

Response 2: The age of the authorizing statute is outside the scope of this rulemaking.

Requirements are based on best available science and developed for consistency with applicable laws and regulations.

Response 3: By setting permit process requirements consistent with what is already required under the baseline (existing permitting process), the rule amendments are not likely to make permittees change behaviors they already do to comply. If the rule amendments included, for example, additional application or recordkeeping requirements, or contained significant differences from existing permitting requirements, permittees would incur additional costs of learning how to comply with the new requirements, as well as the costs of the new compliance behaviors. It is this type of impact that is not expected.

Response 4: In this case, by minimizing redundant record keeping and reporting, the costs on generators in these areas are mitigated.

Response 5: By setting permit process requirements consistent with what is already required under the baseline (existing permitting process), the rule amendments are not likely to make permittees change behaviors they already do to comply. If the rule amendments included, for example, additional application or recordkeeping requirements, or contained significant differences from existing permitting requirements, permittees would incur additional costs of learning how to comply with the new requirements, as well as the costs of the new compliance behaviors. It is this type of impact that is not expected.

Response 6: By setting general use-based requirements consistent with what is already required under the baseline (existing requirements), the rule amendments are not likely to make permittees change behaviors they already do to comply. If the rule amendments included, for example, additional application or recordkeeping requirements, or contained significant differences from existing requirements, permittees would incur additional costs of learning how to comply with the new requirements, as well as the costs of the new compliance behaviors. It is this type of impact that is not expected.

Response 7: The current analysis provides evaluation of the qualitative and quantitative costs attributable to the adopted rule, including pecuniary (financial) and non-financial, including health and environmental impacts.

Commenter: Cara Tomlinson - Comment O-5-8

The Reclaimed Water OCPI Underscores the Need for Interlocal Agreement - The Proposed Rule recognizes that reclaimed water uses may degrade groundwater quality. The Preliminary Regulatory Analyses document explains that where the associated treatment standards are not adequate to meet groundwater quality standards, then degradation of groundwater quality may be justified to avoid costs based on overriding considerations of the public interest (OCPI).

"Ecology believes codifying the Overriding Considerations of Public Interest (OCPI) for reclaimed water purposes will benefit reclaimed water purveyors by mitigating the costs of compliance overall with groundwater quality standards." (Footnote 15: Preliminary Regulatory Analyses, p. 22, 37 (emphasis added))

The Proposed Rule would preposition all reclaimed water sales and uses to take advantage of OCPI. The Proposed Rule directs such "reclaimed water purveyors" to make the demonstration set forth in the groundwater quality standards guidance document, which consists of a simple balancing test:

When combined with the DNS, Ecology's pre-authorization of OCPI has the effect of making reclaimed water decisions more remote from a local process. The Proposed Rule would set in motion a process going forward that makes an end run around local input and water utility participation on decisions that directly affect their customers and groundwater sources.

These short-cuts have the effect of excluding water utilities and necessitate a corrective measure such as the interlocal agreement approach we propose. The proposed new section would add a modest level of balance to the reclaimed water rule and provide a more workable process for local entities to reach a fair and equitable agreement.

If Ecology proceeds with the Proposed Rule as currently drafted, then the lack of a comprehensive policy will result in avoidable "barriers" to reclaimed water use. The lack of a balanced decision-making process will compel water utilities to look outside the Ecology process for a rational policy outcome.

Response: O-5-8

The Final Regulatory Analyses have been revised to correct the inaccurate reference to OCPI in the Preliminary Regulatory Analyses. The adopted requirements include the requirement for compliance with groundwater standards for groundwater recharge uses. Ecology and Health will evaluate compliance with all applicable water quality standards during permit development and issuance. Any use of the overriding public interest provision of the groundwater standards must be justified at the time of permit issuance and is subject to appeal. Similarly, individual facility projects must determine applicability of the State Environmental Policy Act (SEPA) when they apply for reclaimed water permit coverage and any local permits that may be required. SEPA compliance will be evaluated for each individual project as required.

The adopted rule establishes a permitting process and framework which provides for appropriate consideration of site-specific water quality protection during permit issuance. This provides statewide consistency while also allowing for appropriate consideration of site-specific concerns. See also the Summary Response for Groundwater Topic for more information.

Comments on Use Standards

Commenter: James Kelly - Comment O-7-4

The Rule, as written, removes the only authorized re-use in the City's current reclaimed water permit, effectively dismantling Arlington's reclaimed water program- treatment wetlands.

Response: O-7-4
Ecology did not intend to disallow Constructed Treatment Wetlands in the proposed rule language. We clarified our intent that this be an allowable use under this chapter by doing the following:

- Included the statutory definition of Constructed Treatment Wetland to the definitions in chapter 173-219-010 WAC.
- Added this beneficial use to Table 3 in WAC 173-219-390.

Commenter: Kenneth Alexander - Comment O-3-3

WAC 173-210-390 - Table 3. Use-Based Performance Standards:

a. Row 5, Public Contact (including public water features): Delete this row and merge into Row 2, Commercial, industrial and institutional uses with public contact. No unique requirements are provided for Row 5.

b. Row 8, Irrigation of Food crops: Add the words "Unless otherwise specified" to the row title, since Rows 9, 11 and 12 are also about irrigation of food crops.

c. Row 10, Irrigation of nonfood crops: Suggest deleting this row, since it is duplicated by Rows 13 and 14 and provides no unique requirements.

d. Row 11, Irrigation of orchards or vineyards: Add a note that the Class B irrigation water must not touch the fruit. Otherwise, Row 8, Irrigation of food crops (Class A), will apply.

e. Row 12, Process Food Crops: Add a definition of processed food crops to the "Additional Requirements" column or as a table footnote.

f. Row 19, Depressional Wetlands: Add the net environmental benefits and effluent quality language from Rows 17 and 18, unless the intent is that nutrient removal is not required for depressional wetland uses. Where are (1) and (2) of this section?

g. Row 21: Delete the words "Class A or" if Class B is acceptable.

h. Row 22, Surface Water Augmentation: Suggest dividing this into two categories, one for (a) general surface water augmentation and one for (b) direct augmentation of potable water supply impoundments. For (a), require Class B reclaimed water with case-by-case evaluation for compliance with Surface Water Standards (but not Drinking Water MCLs). For (b), require Class A reclaimed water with case-by-case evaluation for compliance with Surface Water Standards and Drinking Water MCLs.

i. Row 23, Indirect Groundwater Recharge: Delete the words "Class A or" if Class B is acceptable. Remove the reference to Drinking Water MCLs; Groundwater Quality Standards are sufficient for this use.

j. Row 25, Recovery of Reclaimed Water stored in an aquifer: This row should be deleted and the text should be a footnote applied to Rows 23 and 24.

k. Footnote 3 does not apply and should be revised; it was copied from Table 2. Also, where are footnotes (1) and (2)?

Response: O-3-3

Thank you for your comments.

a. Accepted: Made rule language text edits.

b. Accepted: Made rule language text edits.

c. Rejected: Would like to retain general category for non-food crops.

d. Accepted: Noted that Class B irrigation water must not touch the fruit within 15 days of harvest to be consistent with the "Frost protection of orchard crops" category.

e. Processed food crops are those that are processed by physical or chemical methods sufficient to destroy all pathogenic agents before distribution, sale, or use. Ecology will consider the need to add this definition in updates to the guidance materials outside of this rulemaking.

f. Partially accepted: Made language edits to address concern and clarify, but did not make exact suggested edits.

g. Rejected: Either Class is acceptable so both are needed. Should be noted that the column head is "Required" Class of Reclaimed Water, not "Minimum Class Required.

h. Rejected: Criteria is established on a case-by-case basis to protect existing beneficial uses (recreational, environmental or other), but any release of reclaimed water to surface waters of the state must meet *applicable* requirements of the Surface Water Quality Standards and the Drinking Water Maximum Contaminant Levels (MCLs) to protect health and the environment.

i. Rejected: Criteria is established on a case-by-case basis to protect public health and the environment. The Groundwater Quality Standards and the Drinking Water MCLs, and the Underground Injection Control Program's *applicable* requirements will also be required.

j. Rejected: Ecology chose to differentiate the requirements of the groundwater recharge beneficial use and the recovery of the reclaimed water in this way to distinguish it from Aquifer Storage and Recovery regulated under chapter 173-157, which does not apply to reclaimed water.

k. Accepted: Ecology removed and updated all footnotes to be accurate.

Commenter: Lisa Dennis-Perez - Comment A-4-21

Table 3. Footnote 3. The intent of this footnote is not clear - should it refer to beneficial uses 1-5 instead of 1-15? It also refers to Use-Based Requirements when it seems it should refer instead to Performance Standards (to be consistent with the title of the Table)?

Response: A-4-21

Thank you for your comment. Footnote 3 should not have been included on Table 3 and was removed. The content of footnote 3 is associated with the performance based standards in Table 2 and should be applied to uses 1-13 on Table 3.

Commenter: Carla Carlson - Comment T-1-2

The direct discharge of either Class A or B reclaimed water may aggravate existing impairments in some situations depending on the difference in temperature or nitrogen and phosphorus concentrations between the discharge and receiving water. The safeguard against this kind of impairment in the name of streamflow augmentation is not clear in the rule. Although discharges to ground and surface water are allowed under the current statute for reclaimed water, we believe that a cautionary approach is warranted especially in light of the issues with emerging contaminants, including endocrine disrupters, personal care products, and other pollutants.

Many questions remain about the fate and transport of these contaminants which are not fully removed from reclaimed water or wastewater undercurrent treatment technology. Until more is known about emerging contaminants in the scientific community, reclaimed water for streamflow augmentation, artificial groundwater recharge, and conveyance in streams should be very limited. RCW 90.46 does not preclude that augmentation projects be limited to pilot studies with a phased approach. Much more has been learned about emerging contaminants since RCW 90.46 in 1995 and climate change impacts were also not as well understood as they are today. We recommend that such a cautious course be taken and we oppose the use of reclaimed water for streamflow augmentation for all but pilot projects.

Response: T-1-2

Thank you for your comment. As you note, the beneficial use of reclaimed water for streamflow augmentation is in chapter 90.46 RCW. This chapter also allows for this beneficial use with criteria established on a case-by-case basis, meeting applicable requirements of WAC 173-201A for surface water standards, as well as WAC 246-290-310 for drinking water Maximum Contaminant Levels.

Ecology is required to address surface water quality standards in the individual reclaimed water permit. We encourage participation in the draft permit review process for any reclaimed water permit with the aforementioned proposed uses. This rule establishes the permitting process designed to address the concerns you raise.

Emerging contaminants such as personal care products and endocrine disrupters are contaminants that Ecology and Health continue to assess and evaluate as new information becomes available. Monitoring and testing capabilities have improved to the extent that many of these components are now found at very low levels. We will continue to track treatment technology advances, studies, and federal regulations to determine what, if any health or environmental, impacts they have and will act accordingly as we review projects and individual reclaimed water permits.

Commenter: Darlene Schanfald - Comment O-10-12

Twenty years have passed and many peer reviewed scientific studies released that would make the standards obsolete, or at least show cause for reconsideration. Standards need updating.

Proposed measures will not protect public health. It will only codify standards for your purpose. Human exposure to RW in these areas – agricultural and landscape irrigation, golf course watering – are unsafe.

Response: O-10-12

Thank you for your comment. Updating the existing standards referenced in this comment is out of the scope of this rulemaking. The rulemaking and development of this chapter are codifying, with some noted changes based on the acquired science on reclaimed water treatment and use, the standards in place since 1997. In the more than 20 years that these standards have been in place there have been no known human health impacts from reclaimed water use in Washington State.

Ecology and Health believe that the proposed rule is protective of human health and the environment (including potable water sources) and meets the legislature's intent that reclaimed water be a highly treated and regulated resource that is suitable for reuse. All reclaimed water use with a chance of public contact must be treated to the highest standards of Class A Reclaimed Water.

Commenter: Christopher Stoll - Comment O-1-16

Section 173-219-390 Specific use-based requirements, Table 3, Use #s 22, 23, and 24[3]Additional Requirements Column include "Must meet applicable requirements of: "including Chapters 123-200 and 246-290-310 WAC (groundwater and drinking water standards" amongst other conditions. If the reclaimed water must meet these requirements, then the Reclaimed Water Class Requirements are not valid and Class A+ should be listed as the class requirement. Ecology should also consider adding the reference to WAC 173-200-030 (Antidegradation Policy) to these sections.

[3] Due to text edits these are now 20, 21, and 22 on Table 3 respectively.

Response: O-1-16

Thank you for your comments. The additional requirements in Table 3 for number 22, 23, and 24 (now numbers 20, 21, and 22) are correct, as are their corresponding Reclaimed Water Class Requirements.

The applicability of the surface and groundwater standards in Table 3 corresponds to the receiving environment for the reclaimed water and are in line with Ecology's obligation under chapter 90.48 RCW, "to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof...".

With the applicability of the groundwater standards (chapter 173-200 WAC), comes the applicability of the Antidegradation Policy contained within—the applicability of this provision to reclaimed water use would be established on a case-by-case basis.

Class A+ in this chapter is a category of reclaimed water for Direct Potable Reuse only. The proposed rule does not establish specific criteria for this class of reclaimed water, instead it merely creates a pathway for the possibility of its use. Criteria would be established on a case-by-case basis and approval from the State Board of Health would be required. It is a high bar, but Ecology and Health believe protecting public health and safety are of the utmost importance, yet acknowledge a future in which the need—and importantly, the technology—exist to treat reclaimed water to a level that is safe for human consumption.

Commenter: Elaine Packard - Comment O-11-1

Whether the RW returned to streams and wetlands will meet the water quality standards of the Clean Water Act.

Whether the RW injected into aquifers, a process which in various ways can contaminate groundwater, will protect public drinking water systems.

We believe that there is a need for more consideration of the potential risks of using RW before any use is recommended and approved.

Your stated qualitative benefits are to protect public health and safety; enhance water quality for ground and surface waters; wise management of water supplies to replace potable water; contribute to restoration and protection of instream flows; and respond to population growth and climate change. We are not assured that your rule will meet your qualitative goals.

Response: O-11-1

Thank you for your comment. Ecology and Health believe that the proposed rule is protective of human health and the environment (including potable water sources) and meets the legislature's intent that reclaimed water be a highly treated and regulated resource that is suitable for reuse.

Ecology and Health believe this is supported under the chapter. It sets minimum requirements, including reliability and redundancy measures to ensure that no partially-treated or off-spec reclaimed water enters a distribution system or is delivered to a customer. Also required, the generator/project proponent identify and coordinate with public water systems near proposed facilities and reuse sites.

Specific local concerns, such as meeting surface and groundwater quality, must be addressed in the permitting and environmental review process.

Ecology encourages participation during the individual permitting process for reclaimed water use. Every complete permit application will be posted for public comment and each draft reclaimed water permit—issued by either agency—will have a minimum 30-day public comment period.

Comments on Definitions

Commenter: Jacque Klug - Comment A-2-3

All the words defined should be assigned a number/subsection. The proposed rule repeats some but not all of the statutory definitions found in Ch. 90.46 RCW. Defining some statutory definitions in the rule, but not all, may lead to confusion. We recommend not repeating the statutory definitions and just reference. Or if the definitions from statute are used in the rule, use all of them.

Secondly, a rule definition of a word defined in the statute cannot be different than the statute. For example, "domestic wastewater" is defined in rule differently than in statute. For "groundwater" we suggest you use the same definition found in RCW 90.44.035(3) and or WAC 173-100-040(3)

Response: A-2-3

Thank you for your comments on the definitions. The agency’s preferred method for handling definitions is to keep them unnumbered so that any future additions or deletions don't require renumbering, either of the definitions themselves, throughout this chapter, or as references.

Ecology agrees with the suggestion to make the definition of “domestic wastewater” identical to the definition for this term in chapter 90.46 RCW.

Ecology rejects the definition suggestion for “groundwater” as the definition provided for in this chapter is directly from groundwater standards definition in 173-200-020 WAC and Ecology believes it to be sufficiently broad so as to encompass the definitions cited in the comment.

Commenter: Lisa Dennis-Perez - Comment A-4-4

"Nonpotable reuse systems" means on-site treated nonpotable water systems as defined by WAC 51-56-1500. This WAC does not make the meaning clear. Consider providing a definition in this rule. Recovery period: Consider providing a definition for this term. Reclaimed water: This definition indicates that reclaimed water is no longer considered a wastewater. We very much support this definition, but it raises a procedural question: In the case of a "spill" of reclaimed water, will the notification requirements change? Will spills of reclaimed water be treated differently than spills of wastewater?

Response: A-4-4

Thank you for your comments. Ecology revised the definition in the rule language for clarity and made a corresponding edit to WAC 173-219-030 (2)(a) so it better aligns with the updated definition.

Ecology is adding a definition for "recovery period" to the definitions section of the rule and will consider providing additional information in the guidance outside of the rulemaking process.

The reclaimed water permits will specify spill response requirements depending on the class of water and the beneficial use requirements.

Commenter: Christopher Stoll - Comment O-1-1

Ecology should consider using the modern term "Recycled Water" instead of "Reclaimed Water" as the term "Recycled Water" is used more often around the country and the world.

Response: O-1-1

Thank you for your comment. While Ecology acknowledges that “recycled water” is a term widely used in the industry, our statute and existing permits all use the term “reclaimed water” and Ecology believes that continuing to use this term is ultimately more consistent with state statutes, codes, and ordinances.

However, when applying plain language principles to materials created to communicate with the public and others, Ecology and Health strives to explain reclaimed water as being "recycled" or "reused".

Comments on Legislative Intent

Commenter: Darlene Schanfald - Comment O-10-18

Concerns with the age of the 90.46 RCW statute that provides the authority for this rulemaking.

Response: O-10-18

Thank you for your comment. The relative age of the statute is outside of the scope of the rulemaking.

Commenter: Cara Tomlinson - Comment O-5-5

Legislative Intent **-** The legislature intended for reclaimed water use to be coordinated and integrated into water system plans and regional water planning. In the Reclaimed Water Act, the legislature found that reclaimed water should be "a source of supply integrated into state, regional, and local strategies to respond to population growth (Footnote 9: 9 In addition, municipalities planning under the Growth Management Act must plan for and fund public facilities, which include domestic water systems and storm and sanitary sewer systems. RCW 36.70A.030(12), 36.70A.020(12).

Reclaimed water needs to be better integrated with GMA planning, especially in contexts where the reclaimed water generator and the water supplier are different entities.

In the most recent amendments to the Reclaimed Water Act, the legislature included a statement of intent about addressing planning and financial "barriers" to the use of reclaimed water and specifically about reclaimed water use to advance water supply objectives and to be consistent with water plans.

If Ecology and Health continue to refuse to "address regulatory, financial, planning" issues regarding drinking water and water utility service, then those issues will increasingly become a "barrier" to expanding reclaimed water usage.

Response: O-5-5

Thank you for your comments. Ecology and Health do not agree with your interpretation of the meaning and authority of the uncodified findings on which you rely to assert that the agencies are required to address existing water purveyors' financial concerns as part of the rulemaking process. Read in their entirety, the uncodified findings clearly imply that the financial barriers Ecology and Health are meant to consider are those affecting reclaimed water producers—not existing potable water purveyors.

As the remaining findings make clear, the Legislature intends to "expand the use of reclaimed water for nonpotable uses throughout the state…". The Legislature's wish to "[d]evelop information from the state agencies responsible for promoting the use of reclaimed water," does not require Ecology and Health to promulgate regulations that vest existing potable water purveyors with the authority to block

new reclaimed water purveyors from their local market. To the contrary, doing so would create the "barriers to the expanded use of reclaimed water," that the Legislature intends to eliminate through the promulgation of the reclaimed water rule.

Comments on Editorial

Commenter: Kenneth Alexander - Comment O-3-5

Lack of consistency when referring to the "Orange Book" and "Purple Book." For example, WAC 173-219-220(1)(c) refers to the "Purple Book" for reclaimed water facilities commissioning plans. Elsewhere, references for treatment processes are to the "Orange Book" (i.e. WAC 173-219-340(1)(b) for UV design guidelines), with the understanding that the "Purple Book" would be reserved for reclaimed water distribution and use not treatment.

Response: O-3-5

Thank you for your comment. Ecology removed this incorrect reference and crossed checked others to ensure consistency.

Commenter: Jacque Klug - Comment A-2-4

Public Meeting and hearing request (Section 130) - The rule should describe the differences, if any, between a "public meeting" and a "public hearing." If there is no difference, then use one term only.

Response: A-2-4

Thank you for your comment. Ecology has made rule language text edits in response.

Commenter: Jacque Klug - Comment A-2-5

Noncompliance (Section 150) 173-219-150(2)(a) and subsection (c) should be combined to be one subsection given most of the language/idea is repetitive.

Response: A-2-5

Thank you for your comment. This rule language text was kept as-is, however a small change was made for clarity.

Commenter: Lisa Dennis-Perez - Comment A-4-5

2. Scope **-** This chapter implements chapter 90.46 RCW and establishes requirements for production, distribution, and use of reclaimed water as authorized by Ecology and Health. (p5). It seems that the document would be made more clear if Ecology and Health were capitalized when referring to the specific agency. This change should be made throughout the document.

Response: A-4-5

Thank you for your comment. The Office of the Code Reviser provides state agencies rules for the format and style used when writing rule language. Under their rules, agency (department) names are not capitalized. Therefore, we can't make the change you requested. To see the style guide please see (pg. 9): http://leg.wa.gov/CodeReviser/Documents/InstructionsOnStyle.pdf

Commenter: Lisa Dennis-Perez - Comment A-4-6

Applicability b) - The correct RCW citation should be 90.46.010. (g) Reclaimed water facility operations and maintenance. The capture and redirection of wastewater effluent or reclaimed water for facility and internal purposes…This change would account for facility uses that include operations and process purposes as well as maintenance.

Response: A-4-6

Thank you for your comments. Both of these changes were accepted.

Commenter: Lisa Dennis-Perez - Comment A-4-7

Noncompliance **-** Immediate protection of public health or the environment. When it appears to the lead agency that immediate action is required to protect human health and safety or the environment, the lead agency may issue a written order or directive to the person or persons responsible without first issuing a notice of determination of violation pursuant to subsection (2) of this section. An order or directive issued pursuant to this subsection shall be served by registered mail or personally upon any person to whom it is directed. It shall direct the person or persons responsible to take immediate action, and shall also inform them of the process for requesting an adjudicative hearing. Suggested change to clarify that the purpose of the order is to direct the entity to take corrective action, not just to notify them of the adjudicative process.

3c) Direct the responsible person or persons to submit written notice to the lead agency within fourteen calendar days of: This change suggested to keep language in the list consistent.

Response: A-4-7

Thank you for your comments. Both of these changes were accepted.

Commenter: Lisa Dennis-Perez - Comment A-4-14

Fact Sheet (f) - For existing reclaimed water treatment facilities, the compliance history of the reclaimed water facility. Suggest inserting a break and a new bullet (g) for the following text: The need for monitoring and record keeping to document compliance. (The latter is not necessarily associated with an existing facility; this applies to new facilities also.)

Response: A-4-14

Thank you for this comment. The change was accepted.

Comments on Class A+

Commenter: Darlene Schanfald - Comment O-10-2

There is no reliable, foolproof method that creates safe potable water. Safer does not mean safe.

Commenter: Darlene Schanfald - Comment O-10-4

Lacking are long term health studies from use this as potable water.

Commenter: Darlene Schanfald - Comment O-10-11

Would the regulations follow Class A – a 5 year permit, self-monitoring, no agency oversight?

Commenter: Elaine Packard - Comment O-11-4

There are no long-term studies of RW use as potable water.

Summary Response on Class A+

Thank you for your comments on Class A+ reclaimed water for Direct Potable Reuse. Surface waters (lakes, streams, open reservoirs), which contain contaminants, may be used for drinking water when complying with federal and state drinking water treatment requirements. We accept the level of risk involved in drinking this water, even though the source isn't as pure as distilled water.

It is important to note that this classification of reclaimed water contains no specific requirements. Any proposed use of reclaimed water for this beneficial use will be determined on a case-by-case basis by the Department of Health—with the added requirement that the project receive approval by the State Board of Health.

Both Ecology and Health are closely tracking research in this area and observing other states as they lead the nation in production and use of reclaimed water as a direct potable supply.

Comments on Preplanning and Project Application

Commenter: Jacque Klug - Comment A-2-6

Preplanning and project application Subsection 2 references a fee payable to Health but nowhere in the rule is there a statement on what the fee is for filing an application. How would an entity know what the fee is for a reclaimed water permit?

Response: A-2-6

Thank you for your comment. Language edits were made in response to your comment to clarify fee information.

Comments on Monitoring Recording and Reporting

Commenter: David Batts - Comment I-7-2

The noted monitoring once per permit cycle is inadequate; at a minimum monitoring for priority pollutants should be annually for Class B and quarterly - ideally monthly - for Class A and direct groundwater discharge.
For all substances in the table, required limits of detection should be included.

Commenter: Darlene Schanfald - Comment O-10-7

Self-monitoring and testing is of major concern to us. Where does Ecology and Health oversight come in? Only in self-written reports? Here again, this begs the question of staff capacity to oversee this program and activities.

Commenter: Darlene Schanfald - Comment O-10-10

Since some WWTPs self-monitor and report and there is little or no inspection, decreasing monitoring parameters and frequency just to lower financial costs is not putting public safety first.

Commenter: Darlene Schanfald - Comment O-10-15

Concerned about nutrients in wetlands and monitoring.

Commenter: Christopher Stoll - Comment O-1-10

Monitoring, Recording, and Reporting In section 173-219-260, the Draft Rule says that monitoring requirements may change based on significance of the pollutants. Ecology should provide clarification as to what is meant by the significance of the pollutants.

Summary Response to Monitoring Recording and Reporting

Thank you for your comments on monitoring, recording, and reporting. It is important to note when discussing the proposed standards and requirements, including monitoring requirements, that this chapter creates a permitting program for reclaimed water generation, distribution, and use. It is intended to create a regulatory framework around which draft individual permits will be developed, released for public comment, and issued as final, 5-year permits.

These permits will then incorporate the standards and requirements established in this chapter (and RCW 90.46) into individual permits, taking into account site-specific situations, including requirements specific to the proposed beneficial use(s), treatment methods, distribution systems, use sites, etc.

When developing an individual reclaimed water permit for reclaimed water generation, distribution, and use, the lead agency will develop permit conditions and limitations on a case-by-case basis depending on the proposed beneficial use and use area(s).

Monitoring, including the limits of detection will be identified in each permit as needed to ensure water quality. Any decrease in monitoring requirements could only happen during a permit renewal process after an evaluation of the permit compliance history.

In addition, there are multiple protections and redundancies built into the chapter to guard against fraudulent monitoring submissions, such as requirements for lab accreditation, operator certification requirements that include continuing education, and certification and signature requirements by professional engineers and hydrogeologists. These additional requirements, along with significant penalties for falsifying information on reports provide multi-level protections against the submission of falsified monitoring data.

Comments on Permits applications renewals & modifications

Commenter: Darlene Schanfald - Comment O-10-8

This is a chronic permit issue. Staff capacity lacks and permit renewal requests linger for years. This is a long time problem for renewal of NPDES permits. How would this time differ?

Response: O-10-8

Thank you for your question. Ecology is always looking to improve our response time for permitting and improvements over the last several years have been made. Ecology expects continued improvement in this regards, and has built in provisions to ensure that as long as the permittee has met their obligation to reapply, the existing permit remains in full effect until a new permit is issued.

Comments on Revenue impacts Potable Water Suppliers

Commenter: Cara Tomlinson - Comment O-5-2

Appended to this comment is a proposed new section to the Proposed Rule - In the proposed rule, we are concerned that the Department of Ecology ("Ecology") is disregarding legislative intent in significant ways. The legislature's direction to Ecology and the Department of Health ("Health" or "DOH") calls for the departments to "coordinate efforts" on reclaimed water. Unfortunately, this is not evident in the proposed rule.

Ecology's Proposed Rule does not yet address adverse impacts of reclaimed water on water utilities and other unintended but potentially significant consequences of the Reclaimed Water Act, chapter 90.46 RCW.

The Proposed Rule as it is currently written too narrowly reflects Ecology and DOH's mission under the reclaimed water statute.

Ecology has failed to address the important local public water system role in protecting designated wellhead protection areas

If Ecology does not include language as proposed here by water utilities then Ecology's Proposed Rule will fail to address adverse impacts to drinking water. This is inconsistent with legislative intent and sound public policy. If Ecology does not concur with the specific language of our various proposals to protect ratepayers and drinking water sources, then Ecology (and Health) must create its own rule provisions to address these concerns.

Commenter: Cara Tomlinson - Comment O-5-6

Successful Water Utility Management and Protection of Ratepayers - Water utilities need to be part of the decision-making process to manage their assets and future investments and to protect the integrity of rate structures. Although the rate impact is not significant at present given the small number of current reclaimed

water customers, ratepayer impacts will become more pronounced going forward as reclaimed water distribution and use expand. (Footnote 12: Typically, these water ratepayers are also sewer ratepayers, such that inefficient infrastructure investments or uncoordinated system development can adversely affect same ratepayer twice; the state agencies have yet to acknowledge this "cost equity" issue in the reclaimed water regulatory program.)

The type of customer who is a reclaimed water marketing target is one with substantial irrigation needs in the summer. Over the long run, it may be in the public interest to shift this sort of customer use to reclaimed water, but it needs to be planned and coordinated with utilities who are the current water service providers to avoid duplicative investments and maintain long-term affordability and rate stability for customers. By seeking a meaningful voice in the process, water utilities are not seeking to prohibit or reject the use of reclaimed water. Rather, we are seeking to assure reclaimed water is integrated into water planning and provision in a way that best serves our customers and public health.

Commenter: James Kuntz - Comment O-2-3

Impact to Potable suppliers' revenue **-** Another concern that WASWD expressed in the last round of public comment was that of service areas, and the potential impact of reclaimed water use on revenues.

The introduction of reclaimed water into these districts should be closely coordinated with the purveyors, so that revenues are not unduly reduced, and infrastructure assets stranded in areas where reclaimed water potentially supplants potable water as an irrigation or industrial source. We are simply asking that reclaimed water be required to conform to the existing legal parameters under which the rest of the water industry must operate.

Summary Response to Revenue impacts Potable Water Suppliers

Thank you for your comments on the revenue impacts of reclaimed water use on potable water suppliers (PWS).

We understand that there may be loss of potable water supplier revenue if customers choose to buy reclaimed water in place of potable water. This is, in part, why we require early identification of and notification to PWS in the generator's required document submittal process—to aid in collaboration and discussion of any issues between the potable water suppliers and generators of reclaimed water.

This is in addition to the development or updating of regional water supply plans, which the legislature intended to include both existing potable water suppliers and reclaimed water suppliers. See Chapter 90.46.120 WAC.

Ecology and Health assert that the regional planning processes are the best vehicle through which to address the financial concerns regarding revenue and service areas. Ecology and Health are confident that affected potable water suppliers are and will continue to evaluate the potential impacts (including financial) of reclaimed water use in their service areas, through these and other planning efforts.

Comments on Other

Commenter: David Batts - Comment I-7-1

Unregulated chemicals/human contact limitations/priority pollutant

- Human contact should be only allowed for Class A+ reclaimed water, and expressly prohibited by the rule for all direct human contact including but not limited to swimming and/or wading pools, body rinsing, bathing, or washing facilities.
- Class A+ reclaimed water should be tested and be found free of any hormones, hormone analogs, or antibiotic resistance factors.

- 'Priority pollutant' is not defined in the Rule or in the Purple book.
- Especially notable is lack of monitoring for any PBTs, personal care products, and pharmaceuticals and antibiotic resistance factors.

Response: I-7-1

Thank you for your comment. Your comment references priority pollutants, personal care products, pharmaceuticals, and other chemicals of concern. You also mention other federal and state rules including reference to human health criteria. This reclaimed water rule establishes minimum performance standards and use-based standards for reclaimed water. The regulated chemicals you note are considered both in the permitting of the source water for reclaimed water, secondary treated effluent, and the reclaimed water itself.

The rule does not reference or define terms like priority pollutant, as those pollutants will be addressed during the individual permitting process. This rule requires compliance with all applicable surface and groundwater standards in addition to the performance based standards it establishes for reclaimed water. It is not feasible or appropriate to list all potential contaminants in rule. Ecology and Health are relying on this rule and demonstration of compliance with applicable standards applied during the permitting process to ensure protection of public health and the environment.

Commenter: Nickie Davis - Comment I-1-1

My neighborhood on San Juan Island in Washington has a five year old reclaimed water system that has been never been able to be put to use, although the water always tests clean. If this rule could be passed so we could use our reclaimed water in our toilets and underground irrigation system that would be awesome. Thank you for your hard work and consideration.

Response: I-1-1

Thank you for your support of the reclaimed water rule. The development you mention was approved as a large on-site sewage system (LOSS) several years ago by Department of Health. So far, the system isn't meeting water quality requirements in the effluent under the existing Reclaimed Water Standards, nor for what's proposed in this rule. Department of Health LOSS program (360-236-3330) would be happy to talk to you directly about this situation.

Commenter: Robin Zukoski - Comment O-12-4

Additional guidance may be necessary regarding control of flow. Consider adding guidance for controlling flow to streams and other surface waters as increased flows can cause erosion of downstream channels. The NPDES Phase I Permit requires certain projects to control flows to certain downstream water bodies. Utilizing similar guidance or referencing the Ecology stormwater guidance may be appropriate in these sections.

Response: O-12-4

Thank you for your comment. Ecology evaluates flows for reclaimed water facilities during the permitting process and may adjust requirements if needed at that time on a site-specific basis. Ecology anticipates providing more guidance on topics as the number of permitted facilities increases. Maintenance of our reclaimed water guidance will continue throughout implementation of this rule.

Commenter: Jacque Klug - Comment A-2-17

Maintenance of chlorine residual (Section 380)

What kind of benefit would warrant a waiver of the residual? Environmental? Operational? User benefit? There could many different reasons why a lower residual is beneficial and it would be helpful if the Purple Book expands on the criteria Ecology and Health would use to assess a waiver or modification request.

Response: A-2-17

Thank you for your comments. Any of the benefits listed in your comment may support a waiver. Ecology agrees that additional guidance will be helpful, including where and why a waiver may be applicable, and will work with you and other stakeholders to add guidance where needed, including after rulemaking.

Commenter: Lisa Dennis-Perez - Comment A-4-9

(2)(d) All other applicable regulations and authorities. This is vague and subject to interpretation.

Response: A-4-9

Thank you for your comments. Ecology agrees and has deleted this language from the rule.

Commenter: Carla Carlson - Comment T-1-4

Conveyance in waters of the state **-** temperature effects may be an important component of water resource protection if surface waters are used to convey reclaimed water. These effects may not be included in typical NPDES permits for point discharges because they usually don't address temperature. Adding warmer water to streams that are fed primarily by cool groundwater may exacerbate conditions for salmon, which need cool water. We suggest adding this requirement to both streamflow augmentation and to conveyance in waters of the state: "The volume of water discharged and conveyed must not raise the temperature in the intervening surface water body above background levels."

Response: T-1-4

Thank you for your comments. This requirement is in Table 3, Surface Water Augmentation's additional requirements to comply with chapter 173-201A WAC - Surface Water Standards.

It is important to note when discussing the proposed standards and requirements, that the proposed rule language is creating a permitting program for reclaimed water generation, distribution, and use. The proposal is intended to create a regulatory framework around which draft individual permits will be developed, released for public comment, and issued as final, 5-year permits.

These permits will incorporate the standards and requirements established in this chapter (and RCW 90.46) into individual permits, taking into account site-specific situations, including requirements specific to the proposed beneficial use(s), treatment methods, distribution systems, use sites, etc. When developing an individual reclaimed water permit for reclaimed water generation, distribution, and use, the lead agency will develop criteria on a case-by-case basis depending on the proposed beneficial use and use area(s). Given this permitting process, it should be noted that Ecology will evaluate temperature effects during the permitting process.

Commenter: Darlene Schanfald - Comment O-10-1

Removing this toxic water from the marine system is important. We do not favor putting it on land or using it for potable water, including pumping into aquifers. Encourage Ecology to turn its attention to encouraging communities building of waste-to-energy facilities; to study the advanced treatment and reuse methods in which European countries invested.

Very few wastewater constituents are assessed; most are unknown. Pathogens like prions and antibiotic resistant genes cannot be treated and can multiply. Contaminants of emerging concern, ultra-fine particulate matter, and plastic fibers are just a few examples that pass through treatment and will remain in reclaimed waters. Adequate is not sufficient.

Response: O-10-1

Thank you for your comment. Ecology agrees that removing toxic water from the marine systems is important and as you likely know, the water that is being reclaimed is/was otherwise being discharged as a waste to our rivers, streams, and marine environments. Reducing this discharge of lower quality wastewater and instead reusing reclaimed water for beneficial purposes is part of wise water management and a goal of this chapter. The encouragement of building "waste-to-energy facilities" is outside the scope of this rulemaking.

Ecology and Health are unclear how the proposed rule "is putting profit in front of public safety." Public health and the environment have been at the forefront of Health and Ecology's focus while developing this chapter. Ecology and Health believe that the proposed rule is protective of human health and the environment (including potable water sources) and meets the legislature's intent that reclaimed water be a highly treated and regulated resource that is suitable for reuse.

Ecology disagrees with the statement that the rule language is not science based. Washington State, and other states throughout the nation, have been reclaiming water for more than 20 years in various forms or another. There are no known cases of public health impacts in Washington due to reclaimed water use.

Ecology will continue to track treatment technology advances, studies, and federal regulations to determine what, if any, health or environmental impacts they have, and will act accordingly as we review projects and write and revise individual reclaimed water permits.

The use of the term "Adequate" is derived directly from chapter 90.46 RCW. It is used throughout the chapter, most notably in both the definition of "reclaimed water", but also in the section authorizing the issuance of reclaimed water permits in RCW 90.46.220, which requires that "the permit must assure adequate and reliable treatment". As such, it is outside the scope of this rulemaking to consider changing the use of this term as it is a core underpinning of reclaimed water treatment in Washington State.

Commenter: Christopher Stoll - Comment O-1-2

Permit Required Section 070 **-** In section 173-219-070, the Draft Rule states that persons must comply with "local statutes, ordinances, or regulations." This may allow local governments to restrict or ban the use of reclaimed water. Ecology should consider providing clarification on this in order to promote the use of reclaimed water.

Response: O-1-2

Thank you for your comment. Ecology believes that WAC 173-219-070 is consistent with chapter 90.46 RCW's overall goal of promoting the use of reclaimed water while acknowledging that reclaimed water purveyors must still comply with local laws.

Commenter: Christopher Stoll - Comment O-1-3

WAC 173-219-080 Applying for a reclaimed water permit. In section 173-219-080 A, the rules states that applications need to be submitted 180 days prior to the use of reclaimed water. Ecology should consider providing an exemption to this as the 180 days may make some projects infeasible.

Response: O-1-3

Thank you for your comment. 180 days is the minimum amount of time necessary for the lead agency to evaluate all necessary planning and engineering documents, write a permit, and conduct the required public participation processes prior to issuing or denying a permit.

Commenter: Christopher Stoll - Comment O-1-6

In section 173-219-190 2, the required signatures and titles are listed. Ecology should consider revising this as agencies, companies and other entities may use different terminology and should be able to dictate who has signature and decision-making authority.

Response: O-1-6

Thank you for your comments. These signature requirements are aligned with current state and federal permitting requirements. Ecology did make a slight rule language text change to more completely align these signature requirements with the state waste discharge permitting requirements.

Commenter: Christopher Stoll - Comment O-1-7

Review standards- In section 173-219-200 (2)(d), the Draft Rule requires facilities to meet all applicable standards. This is a generic statement and should be revised as it is hard to interpret. Other generic statements in the Draft Rule should also be removed or revised.

Response: O-1-7

Thank you for your comment. Ecology has removed that language from the rule.

Commenter: Christopher Stoll - Comment O-1-14

There are numerous references in the Draft Rule to technical documents and guidance. Ecology should consider revising this language as these documents and guidance will change over the life of the rule.

Response: O-1-14

Thank you for your comment. This chapter defines "most recent edition" to mean that version of a specific guidance or reference document in effect at the time lead agency begins the feasibility and design review process to help mitigate for this inevitability. Ecology has done this to account for changes while still providing the regulated community reasonable ability to find guidance.

Commenter: Tom Martin - Comment O-6-2

Impact to potable suppliers revenues - The District is concerned about the potential rate impact of proposed rule. These potential impacts could be addressed and avoided through the process of negotiating an interlocal agreement between the water utility and the reclaimed water

Response: O-6-2

Thank you for your comment. The proposed rule requires early identification of and notification to potable water suppliers and the generator submittal process to aid in collaboration and discussion of any issues between the potable water suppliers and the generator. This is in addition to the development or updating of regional water supply plans, which the legislature intended to include both existing potable water suppliers and reclaimed water suppliers. See RCW 90.46.120. Ecology and Health believe that regional planning processes are the best vehicle through which to address your financial concerns regarding revenue and service areas.

Ecology and Health are not incorporating the requirement for interlocal agreements and the suggested "WAC 172-219-095" section into the chapter. The agencies believe the plain language of the statute demonstrates that the Legislature intended for Ecology and Health work towards integrating reclaimed water for beneficial uses in regional water supplies whenever and wherever possible, rather than create additional local regulatory requirements for reclaimed water permit applicants.

Commenter: Cara Tomlinson - Comment O-5-3

Lack of Water Utility Representation - The RAC has strong membership on technical subjects and generation projects, but the RAC lacks the perspective of key stakeholders that will be potentially impacted.

Response: O-5-3

Thank you for your comments. It is Ecology's and Health's assertion that we have more than met our legislative directive to work with stakeholders in developing this chapter. Over the 10+ years of this rulemaking, the Rule Advisory Committee (RAC) has included representatives from utility districts or those representing the interest of potable water purveyors, including from the Washington State Public Utilities District. In addition, the Department of Health has been advising the RAC on protection of public water supplies as the agency charged with overseeing these. More recently, Ecology met with and/or invited onto the RAC, a member from the Coalition for Clean Water, an association of the 12 largest water purveyors in the state, as well as an attorney for the Washington Water Utilities Council.

Commenter: Elaine Packard - Comment O-11-2

EPA does not require testing for many, if not most, contaminants in wastewater. Many scientific studies on RW indicate that many contaminants are not removed during treatment. Contaminants of emerging concern, ultrafine particulate matter, and plastic fibers are just a few examples that pass through treatment.

Response: O-11-2

Contaminants of emerging concern, such as those you mention, are contaminants that Ecology and Health will continue to assess and evaluate as new information becomes available. Monitoring and testing capabilities have improved to the extent that many of these constituents can now be found at very low levels. Ecology and Health will continue to track treatment technology advances, studies and federal regulations to determine what, if any, health or environmental impacts they have, and will act accordingly as we review projects and write and revise individual reclaimed water permits.

Commenter: Elaine Packard - Comment O-11-3

Provided that Washington State has a need to use RW, we encourage Ecology to follow the precautionary principle which guides us that if there is a suspected risk of causing harm to the public, or to the environment, and in the absence of scientific consensus (that the action or policy is not harmful), the burden of proof that it is not harmful falls on those taking that action.

We also urge Ecology to study the advanced treatment and reuse methods in which European countries have invested and to encourage water conservation and efficiency in our state.

Response: O-11-3

Thank you for your comment. Ecology and Health believe that the performance and use-based standards required by this rule and implemented through individual permits are protective of public health and the environment. These requirements include redundancies and conservative assumptions in appropriate areas. We will continue to study and look to others generating and using reclaimed water, nationally and internationally. Although Ecology does encourage water conservation and efficiency in our state, it is outside the scope of this rule making.

Commenter: James Kuntz - Comment O-2-6

173-219-280 Fact Sheet. This should include information on how groundwater sources of drinking water will be protected.

Response: O-2-6

Thank you for the comment. This will be included in fact sheets as part of our evaluation of compliance with groundwater and surface water quality standards. Requirements for including this content derives from other rules and we've chosen not to duplicate the requirement here to streamline regulations where possible.

Appendix A: Citation List

Appendix A: Citation List

Chapter 173 – 219 WAC

Reclaimed Water

AO # 06-12

This citation list contains references for data, factual information, studies, or reports on which the agency relied in the adoption for this rule making (RCW 34.05.370(f)).

At the end of each citation is a number in brackets identifying which of the citation categories below the sources of information belongs. (RCW 34.05.272).

Citation Categories	
1	Peer review is overseen by an independent third party.
2	Review is by staff internal to Department of Ecology.
3	Review is by persons that are external to and selected by the Department of Ecology.
4	Documented open public review process that is not limited to invited organizations or individuals.
5	Federal and state statutes.
6	Court and hearings board decisions.
7	Federal and state administrative rules and regulations.
8	Policy and regulatory documents adopted by local governments.
9	Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under other processes.
10	Records of best professional judgment of Department of Ecology employees or other individuals.
11	Sources of information that do not fit into one of the other categories listed.

	Citation	Category
1.	*Reclaimed Water Facilities Manual*, September 2010	2,3
2.	*Pipeline Separation Design and Installation Reference Guide Version 9* as revised, published by ecology and Department of Health.	2
3.	*Guidelines for Water Reuse* published by the United States Environmental Protection Agency, EPA/625/R-04/108 September2004, as revised.	11
4.	*Guidelines and standards of professional practice* published by the Water Environment Federation, American Public Works Association, the American Society of Civil Engineers, American Water Works Association, or the American Society for Testing and Materials, as applicable to reclaimed water.	1
5.	State of *Washington Irrigation Guide* and *Irrigation Management Practices to Protect Groundwater and Surface Water Quality in the State of Washington* (http://www.wa.nrcs.usda.gov/technical/ENG/irrigation_guide/index.html)	1
6.	*Water Quality for Agriculture*, FAO #29 published by the Food and Agricultural Organization of the United Nations.	1
7.	International Building Code (IBC), the Uniform Plumbing Code (UPC), and other national model codes as adopted by the state of Washington.	1
8.	Washington State Departments of Health and Ecology. *Water Reclamation and Reuse Standards*. Publication 97-23. September 1997.	2
9.	Washington State Department of Ecology. *Washington State Wetlands Identification and Delineation Manual*. Publication 96-94. March 1997 or latest edition.	2
10.	Asano, Takashi et. al, *Wastewater Reclamation and Reuse, Volume 10*, Water Quality Management Library, Technomic Publishing Company, 1998.	1
11.	Blatchley, Ernest R III et. al. *Effects of Wastewater Disinfection on Human Health*, WERF Final Report,2005.	1
12.	Crites, Ronald, et. al, *Land Treatment Systems for*	1

	Municipal and Industrial Wastes, McGraw Hill, 2000.	
13.	NWRI/ AWWARF, *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*, Second Edition, May 2003.	1
14.	State of California, Department of Public Health, *Treatment Technology Report for Recycled Water*,December 2009.	1
15.	Tchobanoglous, G and Stensel, D., Metcalf and Eddy, *Wastewater Treatment and Reuse, 4th Edition*,McGraw-Hill, 2003.	1
16.	Guo,Y. Carrie, et, al., NWRI Final Project Report,*Source, Fate, and Transport of Endocrine Disruptors, Pharmaceuticals, and Personal Care Products in Drinking Water Sources in California, May 2010.*	1
17.	State of California, State Water Resources Control Board, *Science Advisory Panel on Chemicals of Emerging Concern in Recycled Water, Draft Panel Report*, April 2010.	1
18.	State of Idaho, Department of Environmental Quality, *IDAPA 58.01.17 Reclamation and Reuse of Municipal and Industrial Wastewater,* March 2007.	1
19.	Clean Water Act 33 U.S.C. §1251 et seq. (1972)	5
20.	Safe Drinking Water Act 42 U.S.C. §300f et seq. (1974)	5
21.	USEPA Guidelines for Water Reuse	1
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