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Public Hearing: Chapter 173-201A WAC
Water Quality Standards for Surface Waters of the State of Washington
May 2021
Today’s Agenda

1. Presentation on the rule proposal
2. Question and answer session
3. Public comments on the proposed rule
How to Participate

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Chelan River Use Attainability Analysis

Water Quality Program

May 2021
Overview

1. Background on the Chelan River
2. Overview of water quality standards
3. Use attainability analysis and site-specific criteria request
4. Summary of proposed rule changes
5. Next steps and questions
Why are we here today?

- Lake Chelan hydroelectric project received a 401 water quality certification in 2004 and was relicensed in 2006. Chelan PUD received a dam compliance schedule to determine if Chelan River can meet water quality standards.

- Chelan PUD’s dam compliance schedule ended in 2019. Efforts included restoration activities, biological surveys, fish stocking, habitat enhancement, and water quality monitoring to determine the aquatic life potential of the river.

- Lake Chelan project 401 water quality certification states that a use attainability analysis and/or site specific criteria may be pursued if water quality standards cannot be achieved at the end of the dam compliance schedule.

- Ecology received a use attainability analysis and site-specific criteria request from Chelan PUD on December 20, 2019 for the Chelan River.

- Ecology responded within 60 days (per rule requirements) and indicated that the use attainability analysis and site-specific criteria request was complete and that we would consider a future rulemaking.
Background

Chelan River
Background

• Chelan River is a 4 mile long that connects Lake Chelan (headwaters) to the Columbia River

• Chelan River is fed by an outlet on Lake Chelan
  o Prior to the dam the outlet of Lake Chelan was shallow

• In 1892 the Lake Chelan dam was constructed
  o Chelan Dam has raised Lake Chelan water level by 21 feet

  o Chelan Dam low level outlet feeds the Chelan River with the coolest water available in the forebay

  o Chelan River remained mostly dry for 80 years
Natural Fish Passage Barriers: Reach 3

Car Wreck Falls

4 out of 5 fish barriers shown
Background

• Ecology issued a 401 Certification in 2004 and the project was relicensed by the Federal Energy and Regulatory Commission in 2006
  o This led to implementation of year-round minimum instream flows (2009), water quality monitoring, and a series of biological objectives

• Biological objectives included:
  o Establish a cutthroat trout population in Reaches 1-3
  o Establish viable populations of Chinook salmon and steelhead in Reach 4
  o Habitat protection and enhancement actions throughout Chelan River
    • Low-level outlet, riparian vegetation, channel construction, fish habitat, etc...
Summary of Monitoring Results

• Chelan PUD monitored water quality and conducted biological surveys during their dam compliance schedule

• Reach 1-3:
  o Unsuccessful in establishing cutthroat trout after multiple attempts
    • Limited habitat potential (limited spawning gravels, large woody debris, pools, shading, etc.)
    • Limited prey availability (limited primary productivity and benthic macroinvertebrates)
    • Naturally occurring high water temperatures from Lake Chelan from late spring to early fall

• Reach 4
  o Successfully established Chinook salmon and steelhead populations
  o Suitable salmonid habitat through enhancement work
  o Naturally occurring high water temperatures from Lake Chelan from late spring to early fall
Reach 4: Prior to Habitat Enhancement
Reach 4: After Flow Restoration & Channel Construction
Reach 4: After Maturation of Riparian Habitat
Introduction to Water Quality Standards
Surface Water Quality Standards

**Designated Uses**
Management objectives for surface waters.

**Criteria**
Numeric values (or levels) and narrative statements that protect water quality and support the designated use.

**Antidegradation policy**
Framework for maintaining and protecting water quality that has already been achieved.
Water Quality Tools

• EPA states:
  o “Setting water quality goals through assigning “designated uses” is best viewed as a process for states and tribes to review and revise over time rather than as a one-time exercise.”
  o “A key concept in assigning designated uses is “attainability,” or the ability to achieve water quality goals under a given set of natural, human-caused, and economic conditions.”

• Clean Water Act includes tools to revise water quality standards:
  o Use attainability analysis (UAA)
  o Site-specific criteria
401 Water Quality Certifications

• 401 water quality certification gives states or authorized tribes authority to condition any project that requires a federal permit or license

• Dams in noncompliance with the water quality standards must develop a water quality attainment plan that provides a strategy for achieving compliance
  o Dam compliance schedules provide time for a project to meet water quality goals

• At the conclusion of the dam compliance schedule the project should be in compliance or have substantial data to support a revision to the water quality standards
Use Attainability Analysis
Chelan River
Use Attainability Analysis (UAA)

• What is a UAA?
  o Defined in 40 CFR 131.10 and WAC 173-201A-440 as a scientific assessment of the factors affecting the attainment of a designated use
  o **Purpose**: A study to determine the highest attainable uses which may result in the modification of designated uses of a water body

• Six UAA Factors
  o May include *physical*, *chemical*, biological, and economic factors
  o Factors are used to justify a use change and must be well supported by data
Chelan PUD Requested Use Changes

- Chelan River is designated for salmonid spawning, rearing, & migration use
  - This is the aquatic life use assigned to all WA water bodies without site-specific information

Reaches 1-3:
- Chelan PUD requested the designated use of downstream migration only
  - Salmonids identified only temporarily resided in Reaches 1-3 before moving downstream
  - Salmonids presence was limited and coincided with seasonal stocking of Lake Chelan and high flow events
  - Habitat insufficient to support salmonids (prey, stream structure, spawning gravels, vegetation/shade, etc..)

Reach 4:
- Chelan PUD requested the designated use of limited salmonid spawning, rearing, & migration
  - Water quality conditions influenced by Lake Chelan results in less than full protection
Chelan PUD’s Reasons for Use Changes

Reaches 1-3
- **Factor 5**: Physical conditions related to natural features of the water body prevent attainment of the use.
- **Factor 1**: Naturally occurring pollutant concentrations prevent the attainment of the use.

Reach 4
- **Factor 1**: Naturally occurring pollutant concentrations prevent the attainment of the use.
Ecology’s Evaluation of Changing Designated Uses

Reaches 1-3
- We agree with the request to modify the designated use of salmonid spawning/rearing/migration but have changed the name of the designated use
- We concur with justifying the UAA using Factors 5 and 1

Reach 4
- We agree with the request to modify the designated use of salmonid spawning/rearing/migration but have changed the name of the designated use
- We concur with justifying the UAA using Factor 1
Site-Specific Criteria

Chelan River
Site-Specific Criteria (SSC)

What is a site-specific criteria?
- Defined in 40 CFR 131.10 and WAC 173-201A-430
- A tool to modify criteria to local conditions and key species

Site-specific criteria often accompany a change in the designated use
- Site specific criteria protects the highest attainable use while accounting for site specific characteristics (habitat, hydrology, geology, aquatic life, etc...)
Site-Specific Temperature Criteria Request

Existing temperature criteria
- Magnitude: 17.5°C
- Duration: 7-day average of the daily maximum temperature (7-DADMax)
- Frequency: exceedance may not occur more than once in a 10-year period

Temperature criteria requested by Chelan PUD
- Magnitude: 7-DADMax temperature increase of 3.6°C within Reaches 1-3 and a 7-DADMax temperature increase of 1.0°C within Reach 4 based on solar heating and atmospheric temperatures
- Duration: two or more non-overlapping 7-DADMax increases
- Frequency: No change
Site-Specific Dissolved Oxygen Request

**Existing** dissolved oxygen criteria:
- Magnitude: 8.0 mg/L
- Duration: 1-day minimum
- Frequency: exceedance can occur no more than once in a 10-year period

Dissolved oxygen criteria **requested** by Chelan PUD:
- Magnitude: 8.0 mg/L or **90% oxygen saturation**
- Duration: No change
- Frequency: No change
Ecology’s Evaluation of Site-Specific Criteria

• We have revised Chelan PUD’s request for site-specific temperature and dissolved oxygen criteria

• We aimed to align the temperature criteria to natural warming that occurs over the course of the defined reaches
  o Natural warming was determined through monitoring data and statistical analyses

• We propose to add a special provision to limit heat inputs into Chelan River
Proposed Rule
CR-102
Proposed Rule Changes: Aquatic Life Use

Chelan River Reaches 1-3
  o Existing Aquatic Life Use: Salmonid spawning, rearing, and migration
  o Proposed Aquatic Life Use: Migration for naturally limited waters

Chelan River Reach 4
  o Existing Aquatic Life Use: Salmonid spawning, rearing, and migration
  o Proposed Aquatic Life Use: Salmonid spawning, rearing, and migration for naturally limited waters
Temperature Site-Specific Criteria

Chelan River Reaches 1-3
- Existing temperature criteria: 17.5°C
- **Proposed temperature criteria:**
  - When temperature is >17.5°C at the end of Reach 3, the maximum allowable 7-DADMax increase in temperature is 3.75°C from the dam outlet to end of the canyon in Reach 3
  - No changes to duration or frequency

Chelan River Reach 4
- Existing temperature criteria: 17.5°C
- **Proposed temperature criteria:**
  - When temperature is >17.5°C at the end of Reach 4 habitat channel, the maximum allowable 7-DADMax increase in temperature is 1.25°C from the end of the canyon in Reach 3 to the end of the habitat channel in Reach 4
  - No changes to duration or frequency
Proposed Temperature Provision

No anthropogenic heat source inputs are allowed downstream of the Lake Chelan Dam outlet to the Chelan River confluence with the Columbia River

- This is to ensure that temperature increases in Chelan River are due to natural causes and are not human related

- Aimed at maintaining the highest attainable use into the future
Dissolved Oxygen Site-Specific Criteria

Chelan River Reaches 1-3
- Existing dissolved oxygen criteria: 8.0 mg/L

- Proposed dissolved oxygen criteria: 8.0 mg/L or 90% saturation

Chelan River Reach 4
- Existing dissolved oxygen criteria: 8.0 mg/L

- Proposed dissolved oxygen criteria: 8.0 mg/L or 95% saturation
Rulemaking Process and Next Steps
Next steps
Chelan River UAA Rulemaking

File CR-101
Oct. 27, 2020
Gather information, meet with tribes and stakeholders, and develop rule

File CR-102
March 24, 2021
Public Comment open until May 21, 11:59 p.m.

Public Hearings
May 11 & 13

Finalize Rule
Summer
Respond to comments

File CR-103
Aug. 4, 2021
Decision on rule adoption
Questions?

Email: bryson.finch@ecy.wa.gov

DEPARTMENT OF ECOLOGY
State of Washington
Public Hearing
Hearings officer: Cynthia Wall

Other ways to send us your comments, due May 21, 2021:

Online: https://wq.ecology.commentinput.com/?id=NGpTD

By mail: Department of Ecology
         Water Quality Program
         Marla Koberstein
         PO BOX 47600
         Olympia, WA 98504-7600
Thank You

Email: marla.koberstein@ecy.wa.gov