May 9, 2023

MEMORANDUM

TO: Council Members

FROM: Stacy Horton, Washington Policy Analyst/Biologist

SUBJECT: Icicle Work Group

BACKGROUND:

Presenter: Tom Tebb, Director of the Office of the Columbia River, Washington State Department of Ecology (IWG Co-Convener)
Mike Kaputa, Director, Chelan County Natural Resources Department (IWG Co-Convener)
Brock Hoenes, Regional Director, Washington Department of Fish and Wildlife
Greg McLaughlin, Program Director, Washington Water Trust
David Child, Leavenworth Fisheries Complex Project Manager, US Bureau of Reclamation
Chuck Brushwood, Fish and Wildlife Policy Advisor, Colville Confederated Tribes (tentative)

Summary: Director Tebb and members of the Icicle Work Group will discuss collaborative solutions to water management in the Icicle Creek Watershed. The Work Group has a diverse set of stakeholders working collaboratively to improve water efficiency and boost stream flows for both instream and out of stream flow needs.

Relevance: The Council has a strategy in its 2014 Columbia River Basin Fish and Wildlife Program that discusses and promotes public engagement. Public outreach and involvement can support the work in the Council’s program and bring new capacity and vision to ecosystem and landscape
approaches, especially where we see productive partnerships across social and ecological boundaries

Background: The Act requires the Council to provide for the participation and consultation of the Pacific Northwest states; local governments; electricity consumers; customers of Bonneville; users of the Columbia River System including federal and state fish and wildlife agencies and appropriate Indian tribes; and the public in formulating regional power policies that are reflected in the Council’s Northwest Power Plan and the fish and wildlife program, which is part of the power plan. Public involvement and understanding will ensure that management decisions are more sustainable. (P. 99 2014 Columbia River Basin Fish and Wildlife Program)

More Info:

Icicle Creek water supply development https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-supply-projects-EW/Icicle-Creek-strategy

Icicle Work Group https://www.co.chelan.wa.us/natural-resources/pages/icicle-work-group

Icicle Work Group // The Origin Story https://vimeo.com/622832352/58847fc44f

Icicle Work Group // Projects : FALL 2021 UPDATES https://vimeo.com/622815914/28affb0d02
Icicle Creek Integrated Water Resource Management Strategy

Northwest Power and Conservation Council
May 17, 2023
Icicle Creek is a tributary to the Wenatchee River (WRIA 45) located in Chelan County, WA.
Background

**Problem:** Low streamflow, unmet obligations to tribes, irrigation/domestic water supply needs, litigation

**Opportunities:** Existing water storage in Alpine Lakes Wilderness, infrastructure improvements needed, motivated participants

**Challenges:** Many - more on this later…
Background

- **Co-Conveners:** Ecology’s Office of Columbia River and Chelan County
- **Process:** Resolve issues through Icicle Workgroup (IWG) collaborative advisory group
- **Goals:** Meet instream and out-of-stream objectives and tribal fishery obligations; provide an alternate pathway for conflict resolution other than litigation
IWG Members

- Ecology Office of Columbia River
- Chelan Co Board of Commissioners
- Yakama Nation
- WA State Dept of Fish & Wildlife
- Conf Tribes of the Colville Reservation
- Icicle & Peshastin Irrigation District
- USFWS – Leavenworth National Fish Hatchery
- City of Leavenworth
- NOAA Fisheries
- WA Water Trust
- US Forest Service
- Trout Unlimited
- Agricultural Representatives
- City of Cashmere
- US Bureau of Reclamation
- Cascadia Conservation District
- Cascade Orchard Irrigation Co
- Icicle Creek Watershed Council
- City of Leavenworth
- US Bureau of Reclamation
- Cascadia Conservation District
- Cascade Orchard Irrigation Co
- Icicle Creek Watershed Council
Icicle Strategy
Overview

Guiding Principles for the Icicle Strategy

The purpose of the Icicle Creek Work Group ("Work Group") is to develop a comprehensive Icicle Strategy through a collaborative process that will achieve diverse benefits defined by all of the Guiding Principles below. The Work Group will use best available science to identify and support water management solutions that lead to implementation of high-priority water resource projects within the Icicle Creek drainage.
Water Supply and Streamflow Benefits

**Average Water Year**
- Water Supply Benefits
  - 3 cfs added for agriculture
  - 6 cfs added for domestic use
  - 88 cfs added for habitat and instream flows
  - 63 cfs average base flow

**Drought Year**
- Water Supply Benefits
  - 3 cfs added for agriculture
  - 6 cfs added for domestic use
  - 58 cfs added for habitat and instream flows
  - 20 cfs average base flow
Completed & Near-Term Projects
Water Conservation and Efficiencies

Municipal and Domestic

• Status: City of Leavenworth Advanced Metering Infrastructure (AMI) Implementation Fall 2020-Summer 2021

• Upcoming
  • Leak detection and pipe replacement
  • Rate study
  • City and Rural Voluntary Lawn Reduction and water use efficiencies
Water Conservation and Efficiencies

Icicle Peshastin Irrigation District

- 15 miles of pipe installation plus lining projects completed
- Wooden Flume replacements completed
- Additional piping and lining being planned and implemented annually
- Status: estimated 7 cfs savings to date
- Goal: 10 cfs water savings
Stream Habitat Enhancements

- Several Riparian Improvement and Sediment Reduction Projects being designed.
- Construction completed at river mile 1.0 in 2022.
- Upcoming Projects may include riparian planting, side channel restoration, engineered log jams.
Boulder Field Fish Passage

- Replaced ~ 1600 feet of City of Leavenworth Mainline
- Upgraded fish screen facilities for COL
- Constructed step-pool passage channel and channel adjustment
Fish Passage and Fish Screens

- City of Leavenworth screen completed summer 2020
- Snow Creek bridge replaced in March 2021 (enables screen construction)
- IPID screen construction completed Spring 2023
LNFH Projects Relevance to Icicle Strategy

• Icicle Strategy Guiding Principles
  • Adequate Streamflow
  • Sustainable Hatchery
  • Tribal Harvest
  • Municipal Supply
  • Agricultural Reliability
  • Habitat Improvement
  • Laws and Regulation

* Fish denotes relevant guiding principle to projects, details to follow
Surface Water Intake Fish Screens, Passage Project (SWISP) & Pipeline Rehabilitation
SWISP Phase I Year 1 Construction Pictures
Pilot Circular Tanks

- 4 circular tanks have been installed to meet BiOp requirement; helps to inform water conservation goals and phosphorus discharge issues
- Project also includes UV treatment of water for fish health, and sludge tanks to contain solids
- Circular tank technology is expected to reduce hatchery water use by at least 50%
Tribal Fishery Adaptive Management

- Projects being identified by Tribal fishers and coordinated with Leavenworth National Fish Hatchery
- Assessing flow and channel morphology
- Tribal fishery effectiveness monitoring
Construction planned for 2023-24

Move diversion from RM 4.5 to RM 1.9 with new pump station and fish screen.

Convert open ditch to closed pipe.

Instream Flow: 11.9 cfs and 4,012 acre-feet/year for 2.6 miles
Modification of Existing Storage - Eightmile Lake Dam Rebuild and Restoration

- IPIID and Ecology Dam Safety Office developed options to meet safety requirements
- Office of Columbia River is prepared a Draft EIS under SEPA to examine alternatives
- Alternatives include retaining existing storage and restoring lake to historical elevation which would increase storage flexibility
Accomplishments, Challenges + Next Steps