

# Leavenworth National Fish Hatchery Conservation Project

**DRAFT**

## ICICLE COMPREHENSIVE WATER RESOURCES STRATEGY

More Information Available at <http://www.ecy.wa.gov/programs/wr/cwp/>

### PROJECT DESCRIPTION

The Leavenworth National Fish Hatchery (LNFH) relies on both a surface water diversion from Icicle Creek at RM 4.5 (42 cfs) and groundwater wells located near the hatchery canal (14.9 cfs) to produce the water quality necessary for their fish production year-round. The hatchery also relies on 16,000 acre-ft of storage to supplement surface water diversion during low flow periods (July through early October). To maintain groundwater supplies in the shallow wells, flows from Icicle Creek are used in the hatchery canal for groundwater recharge. These flows are controlled by Structure 2.

Several projects have been identified that would offset some of the surface water that the LNFH currently uses for its operations.

**Water Effluent Pump Back** - this proposal would have the LNFH's effluent water pumped into the hatchery canal to recharge the wellfield. This would result in a reduction of 10 to 20 cfs currently diverted from Icicle Creek for that purpose.

**Wellfield Enhancement** – this proposal would develop a new wellfield for use by the hatchery that is hydraulically connected to the creek. This would result in a reduction of water currently diverted from Icicle Creek to recharge the existing wellfield at the hatchery canal.

**Water Re-Use** – The hatchery would implement a water re-use system for its onsite operations. This presumes half of the hatchery diversion water right may be temporarily placed into trust to benefit instream flows.

**Lead Entity to Implement: US Fish and Wildlife Service**

**Estimated Project Cost: \$10 Million**

Water Effluent Pump Back- \$5 Million

Wellfield Enhancement- \$5 Million

Water Re-Use- \$10 Million (\$3.6 Million, Pilot Study)

#### *Timeline to Implement*

- Water Effluent Pump Back Study is Ongoing
- Wellfield Enhancement– Pending Funding
- Water Re-Use– Pilot Study is being evaluated, pending funding

### PROJECT BENEFIT

- Instream flow benefits for a) and b) assumes a 10-cfs saving to Icicle Creek between RM 2.7-3.8 (the historic channel/Icicle Creek).
- Instream flow benefits for c) assumes a 20-cfs savings from the diversion to LNFH return, RM 2.7 to 4.5.

### GUIDING PRINCIPLES

- Instream flow (GP #1)
- Sustainable Hatchery (GP #2)

### POTENTIAL ISSUES/ DATA GAPS

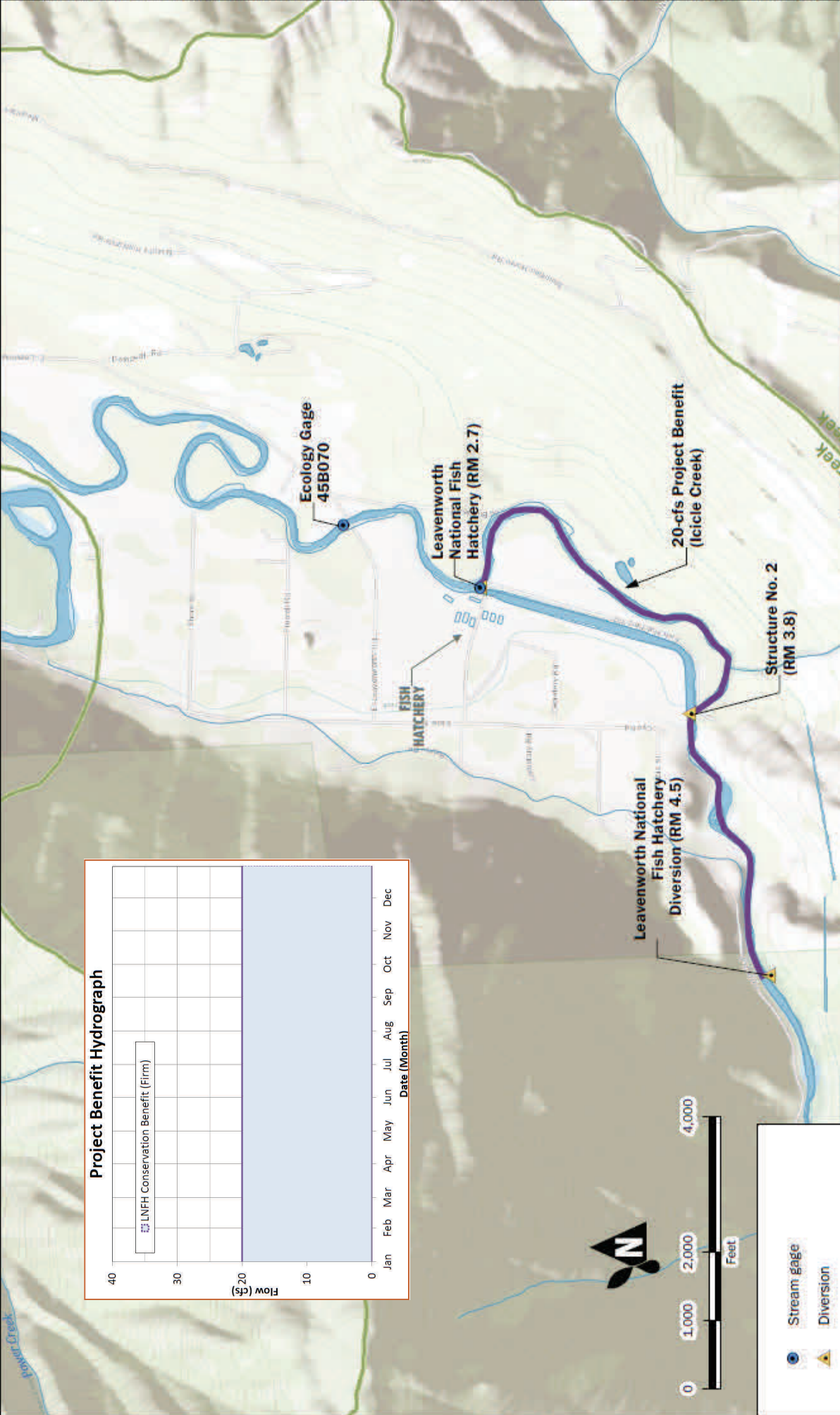
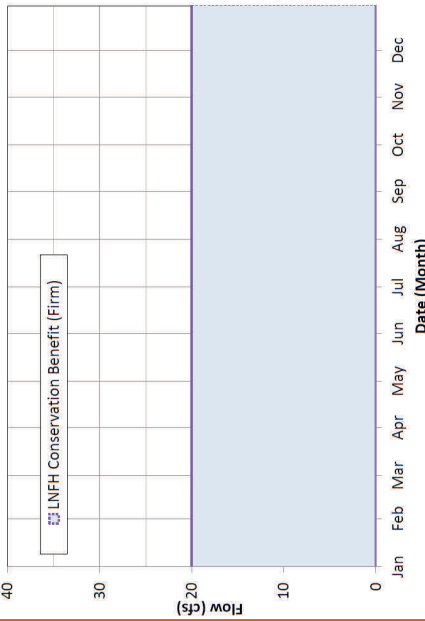
- Requires NEPA environmental review (beginning FY 2014).
- Coordinate with Passage Improvements Project for Structure No. 2 and Screening Improvements Project.
- Further review of Water Reuse pilot study.
- Need hydrogeologic data to explore new wellfield options and clarification of recharge timing and quantity needs for existing wellfield.
- Potential water quality issues for nearby domestic wells with effluent pump back—ongoing study will clarify.
- Any projects need to maintain the hatchery groundwater supply.

### EXISTING and ONGOING STUDIES

- Lower Icicle IFIM, 2005, US Bureau of Reclamation; Basis for Wenatchee Instream Flow Rule (WAC 173-545) addressing Icicle Creek from RM 0.0 to RM 2.7.
- Icicle Creek Target Flow Report of the Leavenworth National Fish Hatchery, 2004, Montgomery Water Group; Addressing Icicle Creek from RM 3.9 to RM 4.5.
- Instream Flow Incremental Methodology (IFIM) Study, (Ongoing), US Fish and Wildlife Service; Addressing Icicle Creek from RM 2.7 to RM 3.8.
- Effluent use water quality study, (Status?); Will determine if the use of effluent to recharge the shallow aquifer could have water quality impacts to nearby domestic wells.
- Hatchery Water Re-Use Pilot Study, (Ongoing, Pending Further Review).

Revision Date: September 5, 2013

**Project Benefit Hydrograph**



- Stream gage
- Diversion
- Instream Flow Benefit (Firm)
- Adaptive management

**Water Supply Availability:**  
 Guaranteed - water rights are permanently placed in the State Trust Program under RCW 90.42.08  
 Firm - water rights that are described as "non-permanent conveyances" under RCW 90.42.040  
 Interruptible - water rights that are subject to interruption during drought years

# Leavenworth National Fish Hatchery

Icicle Creek Comprehensive Water Management Strategy  
 WRIA 45, Washington



AUG-2013  
 PROJECT NO. 120045

BY: EAH / JRB  
 REV. BY: ---

FIGURE NO. **4**