New Tidegate for Batt Slough

Collaboration builds trust in the valley

Introduction

After a 1960 flood inundated over 8000 acres of prime agricultural land in the Snohomish River Valley, the U.S. Bureau of Reclamation built a series of levees and gates to reduce flooding and manage the return flow of the flood water. The Marshlands Flood Control District (MFCD), a small public entity not normally in the public's eye, was formed to manage these structures. Concerns and complaints led the state Department of Ecology (Ecology) and MFCD into what could have been a tense relationship that instead became a partnership to meet MFCD goals and improve water quality and help salmon. Bob Penhale of Ecology and Paul Reasoner of the MFCD developed a true "odd couple" relationship.

Batt Slough prior to new tidegate installation

With help from the Snohomish Conservation District and a grant from the U.S. Fish and Wildlife Service, a marginally functioning 50-year-old failing structure was replaced with a modern high-tech, low-maintenance flood gate. This provides for more efficient flood water return, allows access for juvenile salmon and other fish, and improves water quality.

Problem

The underlying issue was a matter of trust. Ecology was concerned about the water quality in this predominantly agricultural area, including maintaining a natural fish population. MFCD was leery of interacting with environmental agencies in general and Ecology in particular. Manager Paul Reasoner took initiative and, as he described, "Once we started to talk about the issues and responsibilities of both agencies, it became apparent that we all had legitimate and important mandates. We know about water quality being important, and once Ecology understood our legal responsibility, it was much easier to work together."

The specific issue was a failing flood gate on the Snohomish River about six miles upstream of Interstate 5. That gate served to drain Batt Slough, which is a remnant side channel that offers potential refuge habitat for migrating salmon. The old gate was subject to plugging and vandalism, limiting both salmon access and flood control functions. Batt Slough could provide about one mile of resting and refuge opportunities at a critical location.

The Snohomish River Chinook Recovery Plan highlights the need to increase this type of habitat in the basin. Significantly, the gate was not serving its original purpose of flood control.

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It was an old flapper-type gate, a four-foot diameter rusty steel gate which was so difficult to open it was causing water to back up and affect the land inside the levee. The water in the slough became stagnant, discoloring with high temperatures and low oxygen in the summer.

Old 48-inch flapper valve tide gate

Project goals

New self-regulating tide gates utilize the pressure difference inherent in the rise and fall of tidally influenced water to open and close the gate. They have a record of being low maintenance and to operate in severe conditions when access to manually-operated gates is limited or unsafe due to floodwater. Several environmental and flood control permits were needed for the installation. Site-specific engineering and manufacturing specifications were necessary to obtain the permits and have the gate built. The installation was planned to comply with the permits and work around late summer tides.

Bob Penhale inspects the final tidegate

Milestones and outcomes

The Snohomish Conservation District and MFCD worked cooperatively to apply for and obtain a U.S. Fish and Wildlife grant for the manufacture of the tide gate. Ecology provided a Coastal Protection Fund cost share grant to pay for a planning, engineering, permitting, and installation. When the grants were obtained, MFCD contracted with the conservation district for the planning engineering and permits.

The permits and the tide gate were delivered in September 2009. A short work window remained for installation that year.

MCFD hired Glacier Peak Construction through a competitive bid process. They removed the old tide gate and replaced it with the new high-tech version. The timing of the tides required some early morning odd hours and working under artificial light, as well as the typical fine tuning required in any project. A final inspection by the tide gate's manufacturer gave the installation a thumbs-up. We were ready for winter. Observations thus far show water quality has visibly improved, the fish are utilizing the Slough and flood control mandate has been met.

Partners

Paul Reasoner – General Manager
Marshland Flood Control District
PO Box 85
Snohomish, WA 98291-0085

Snohomish Conservation District
528 - 91st Ave NE, Ste A
Lake Stevens, WA 98258

Funding

National Fish and Wildlife Foundation
Attn: Stephanie Watson
1133 Fifteenth St NW, #1100
Washington, DC 20005

Washington State Dept of Ecology
Shorelands and Environmental Assistance (SEA)
Terry Husseman Account - Coastal Protection Fund

For more information

If you'd like to know more about the Batt Slough tidegate installation, Bob Penhale would be willing to talk with you and refer you to other stakeholders in the project.

Bob Penhale, Water Quality Specialist
Washington State Department of Ecology
Northwest Regional Office
3190 160th Ave SE
Bellevue, WA 98008
425-649-7074
Bob.Penhale@ecy.wa.gov