

Melinda S. Eden  
Chair  
Oregon

Joan M. Dukes  
Oregon

Frank L. Cassidy Jr.  
"Larry"  
Washington

Tom Karier  
Washington



Jim Kempton  
Vice-Chair  
Idaho

Judi Danielson  
Idaho

Bruce A. Measure  
Montana

Rhonda Whiting  
Montana

September 28, 2005

## MEMORANDUM

**TO:** Council Members

**FROM:** Karl Weist

**RE:** Corps of Engineers Briefing on Willamette Temperature Control Project and the Willamette Floodplain Restoration Study

George Miller, project manager for the Willamette Temperature Control Project for the Corps of Engineers, and Matt Rea, Willamette Basin coordinator, will brief the Council on two Corps projects that could provide significant fish and wildlife benefits in the Willamette Basin. Enclosed please find information on both the Willamette Temperature Control Project and the Willamette Floodplain Restoration Study.

### **Willamette Temperature Control: Cougar and Blue River Intake Tower Modifications**

The construction of Cougar Dam and the subsequent withdrawal of water from the single low-level outlet have altered the natural temperature cycle of the river. This has resulted in cooler water temperatures downstream of the dam in the spring and early summer and warmer temperatures in the late summer and fall. The cooler temperatures impact the upstream migration of adult anadromous fish and warmer temperatures reduce survival of juveniles by impacting emergence timing.



The purpose of the Willamette River Temperature Control project is to modify outflow temperatures for the Cougar and Blue River projects with the objective of replicating pre-reservoir water temperatures below the reservoirs. Modifications to the existing intake towers and the resulting outflows are expected to aid in the recovery of both anadromous and native fish.

For the Cougar Project, this will be accomplished by attaching a wet-well with overlapping weir gates and two bypass gates to one side of the existing intake tower. The overlapping weir gates will allow the selective withdrawal of water from different temperature strata in the reservoir. Water withdrawn through the weir gates is mixed to meet temperature targets downstream of the project.

For the Blue River Project, this will be accomplished by attaching a wet-well with seven temperature control ports and two bypass ports to one side of the existing intake tower. The temperature control ports for the wetwell are spaced at various heights on the intake tower to allow the selective withdrawal of water from different temperature strata in the reservoir. Water withdrawn through the temperature control ports is mixed to meet temperature targets downstream of the project.

### **Willamette Floodplain Restoration Study (WFRS):**

The purpose of this study is to evaluate opportunities to modify existing floodplain features that may help reduce flood damages by increasing natural flood management capability. The USACE reservoirs in the Willamette River basin control only 27 percent of the Willamette River basin drainage. A restored floodplain could help absorb excess flood waters, slow the velocity of the water, and create habitat for a variety of plants and animals, including listed fish and wildlife species. The study includes examining the feasibility of restoring natural wetlands and promoting ecosystem functional restoration. The reconnaissance phase of the study was completed in 1999. While specific floodplain restoration actions cannot be identified prior to completion of the remaining study phases, the intent of the study and action options evaluated will be to aid in restoring floodplain ecosystem function consistent with reasonable and prudent action alternatives identified.