




MEMORANDUM

TO: Water Resources Commission

FROM: Alyssa Mucken, IWRS Coordinator 

SUBJECT: Agenda Item K, October 14, 2016
Water Resources Commission Meeting

Update on the Willamette Basin Review Study

I. Introduction

The Department continues to work with the U.S. Army Corps of Engineers (Corps) to complete the Willamette Basin Review, a planning study that examines the feasibility of reallocating stored water from the Willamette Valley Project reservoirs. Improving access to built storage, including reallocation of water in federal reservoirs, is a recommended action (10B) of the 2012 Integrated Water Resources Strategy. During this agenda item, staff will update the Commission on recent activities related to the Willamette Basin Review (WBR) Study.

II. Background

The U.S. Bureau of Reclamation currently holds water right certificates to store 1.64 million acre-feet from the Corps' eleven storage reservoirs located on major tributaries of the Willamette River. Only a small portion of storage has been contracted for irrigation uses.

A feasibility study to consider reallocation options of stored water was started in 1996 and postponed in 2000 to allow time for a federal consultation process initiated under the Endangered Species Act. In recent years, the Department has worked closely with the Corps and local partners to gain state and federal funding to re-initiate this study. The Department secured \$1.5 million from the 2013 Oregon Legislature to participate as the non-federal sponsor.

In February 2015, the Corps received approval to re-initiate work under the WBR Study, along with funding for Fiscal Year 2015. In August 2015, the two agencies signed a new cost-share agreement. The Study has been scheduled to occur over the next three years, with a final Chief's Report sent to the Assistant Secretary of the Army and the U.S. Office of Management and Budget in late 2018. Following this, the United States Congress will provide the authorization for implementing the final recommendation.

III. Estimating Current and Future Demands

Since reinitiating the study, several members of the study's project team have been working on the first task of estimating current and future demands for municipal and industrial uses, agricultural uses, and fish and wildlife uses. The current Project Team—which consists of staff from the Corps of Engineers, Water Resources Department, David Miller and Associates, and the Department of Agriculture—are determining the current use of water in the Willamette and estimating any unmet demands that could be met from stored water in the future. Various demand scenarios are being developed to provide a range of options to model and consider as potential reallocation options.

Municipal and Industrial Demands

The Department met with several municipalities in late December 2015 and March 2016 to discuss the data and methods used to estimate demands. David Miller and Associates (DMA), a consulting firm with expertise on Corps' planning studies, is responsible for completing this task. DMA has been able to utilize existing information contained in municipal water management and conservation plans, water system master plans, and water use reports. Estimates for both current and future demands were completed this past spring and shared with municipal stakeholders. In developing municipal demands, DMA is considering the reliability of existing water rights, peak flow demands during the late summer months, and the need for some municipalities to build redundancy within their water supply systems.

Fish and Wildlife Demands

A fish and wildlife technical working group first met in January 2016. The Corps had initially assumed that instream flow needs described in the 2008 Biological Opinion (BiOp) were the appropriate and necessary flows to consider for the WBR Study. However, the Corps recognizes the benefits of looking at data and studies that have been developed since the release of the 2008 BiOp to confirm this assumption. A technical workgroup was formed and several meetings have occurred throughout the summer.

The workgroup efforts are being used to document the current scientific understanding of instream flow effects on critical aquatic resources in the Willamette River Basin, and will be used to confirm if maintaining the BiOp instream flow targets is recommended, or if an alternative should be considered.

A field trip has been scheduled for late September to visit reaches that vary in mainstem channel morphology, access off channel areas, observe juvenile habitat and existing riparian plant communities, as well as amphibian habitats. This trip is meant to provide some context to the working group for future discussions and a shared understanding of habitat needs across disciplines. Following the field trip, an all-day meeting has been scheduled to further discuss and refine recommendations for instream flows to support fish and wildlife needs. More specifically, the September meeting will be used to review progress to date and confirm tasks

and meeting schedules. The working group is responsible for making a flow recommendation to the Project Team this Fall.

Remaining tasks proposed include: establishing flow objectives for key aquatic resources, completing reviews of mainstem and tributary instream flow science, identifying proposed changes to the BiOp flow targets, and evaluating any proposed changes which will include hydrologic modeling of the Willamette reservoir inflows, storage, and outflows under BiOp and alternative instream flow scenarios. Agency representatives from the Department, Corps of Engineers, Department of Fish and Wildlife, and NOAA Fisheries will then develop any recommendations for the Project Team to consider.

Agricultural Demands

The Oregon Department of Agriculture (ODA) developed a method for estimating agricultural water demands in the Willamette Basin. ODA convened several agricultural stakeholders in late Fall 2015 and has continued to meet with them on a number of occasions to explain the modeling approach and address questions or concerns. A draft report summarizing ODA's approach with initial estimates for basin demands was shared with the Department and Corps in April 2016. ODA hosted a meeting with the Department, Corps, and DMA's staff in early May to help answer questions stemming from the report, map out next steps to further refine the estimates, and develop variables that can influence future demands for agriculture. A revised report documenting the analysis and steps taken was shared with the Project Team at the end of June. Presently, the team has considered a number of factors for developing estimates, including areas in crop production, evapotranspiration rates, high quality soils, lands designated specifically for farm use, water rights, and the effect of climate change on irrigation use.

IV. Study Challenges

The Willamette Basin Review study is being conducted using a 50-year planning window. Estimating future demands using this timeline can be challenging, especially for an industry like agriculture in the Willamette, which is very diverse and planting decisions are not limited strictly to water availability, but often influenced by other factors, such as commodity prices and external markets. Agriculture use is currently utilizing a very small percentage of Willamette Valley Project stored water, which could be due to factors like proximity to the reservoirs, and excess stored water releases. Project partners are considering variables, such as the need for supplemental stored water on existing lands with water rights, as well as determining ways to reasonably estimate what new lands may be irrigated in the future.

Last year, ODA had some technical difficulties with its data server, which has caused a delay in the overall study schedule. Recently, DMA was tasked with helping to further develop current and future agricultural demands, beginning with a set of data inputs selected by ODA, with other information provided by the Department. Estimating the amount of water actually used for irrigation purposes from various sources of water has been challenging to date.

The state also has a set of minimum perennial streamflows (MPSFs) for fish and wildlife purposes that call upon natural flow and unspecified releases of stored water. MPSFs have been

established on all major tributaries and the mainstem Willamette River. However, these flows, which were adopted in the 1960's, have yet to be converted to instream water rights. Several questions arise, including how to convert a MPSF that calls upon two sources of water, both live flow and stored water, and what sort of affect that may have on existing junior water rights. From a regulation standpoint, any legally stored water released in excess of the needs of water rights calling on that source of water is considered natural flow.

Today, there are no contracts for the release of stored water for fish and wildlife purposes, municipal, or industrial uses. In order to release and protect stored water releases for such uses, the state or individual entities must obtain water rights and enter into a contractual agreement with the Corps for the release of that water. Developing a contracting program for municipal and industrial uses is a component of this Study. The Corps has expressed interest in granting authority to the state to administer a contracting program; however, the state has no authority to enter into such contracts. Discussions are ongoing.

V. Next Steps for the Study

Once all of demands have been estimated, the next task is to enter the estimates into a reservoir operations model called ResSIM. This model takes into account an extensive hydrology dataset and includes rules and constraints that mimic operations of the Willamette Valley Project. The Corps technical staff will be responsible for completing the modeling and determining to what extent the reservoirs can be used in the future to meet unmet demands.

The completion of this analysis is needed before project partners can initiate an environmental assessment under the National Environmental Protection Act. It's through this lens the team will analyze any potential impacts to other uses of storage, such as reservoir and downstream recreation, and hydropower. The Corps, in scoping this study, has acknowledged that any reallocation proposal cannot impact the flood control objectives of the Willamette Valley Project.

After evaluating and developing a set of alternatives, which includes other potential sources that can be used to meet future demands, the Project Team will draft a tentatively selected plan (TSP) report, which is due in April 2017. A meeting with the Corps vertical team staff will be held in July 2017. The Corps and the Department will also host ongoing discussions with stakeholders to share information and receive comments as part of this process.

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