Project Activity Update

May 2019

Purpose: To provide updates on technical aspects of ongoing planning studies for the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan)

Fish Passage Element

Cle Elum Dam Fish Passage Facilities and Reintroduction Project:

The juvenile fish passage facility will use an innovative helix design to transport juvenile fish downstream. It will allow fish to leave the reservoir as the water surface fluctuates over the top 63 feet in elevation. This will provide downstream passage from April 1 through the beginning of June in most years. The upstream adult fish passage facility will be a trap-and-haul facility where fish are trapped at the base of the spillway, loaded into a truck, and then hauled for release into Cle Elum Reservoir or to upstream tributaries.

Construction Update: The access road and spillway bridge is complete. The secant vault construction is substantially complete. Construction for the downstream passage tunnel is in progress. The Intake, Gate, and Helix contractor mobilized in late April 2019. Reclamation's goal is to have the contractor install the lowest intake levels within the reservoir this summer, if level of reservoir is at or below elevation 2170.

Study Update: In 2018, Reclamation and the Yakama Nation worked with the USGS to conduct an adult sockeye tracking test to understand their migration between Roza and Cle Elum dams. Results of the study showed (1) sockeye released at Roza Dam were not falsely attracted to any tributary, (2) upstream migration was relatively quick with only some minor slowing at the Town Ditch Diversion, and (3) 100 percent of the tagged sockeye made it to the base of the Cle Elum Dam. Plans are underway to conduct a sockeye tracking study in the lower Yakima River in Summer 2019.

Box Canyon Creek Fish Passage:

Washington State Department of Fish and Wildlife (WDFW)—with input from Reclamation, Ecology and other passage restoration experts—has completed a conceptual design for the Box Canyon Creek Fish Passage Enhancement Project. Reclamation, Ecology, Yakama Nation and Yakima Basin Integrated Plan partners will finalize the design. An additional field survey was needed to move the conceptual design toward final design. This survey work was obtained the week of October 22, 2018 and is being processed for use by the design team. The preliminary final design is anticipated to be completed by June 2019.

Clear Creek Dam Fish Passage:

Reclamation completed an appraisal level design for fish passage in September 2018. The design consists of a traditional pool-and-weir-style fishway with a steel bulkhead at the upstream end that will draw cool water from deeper in the reservoir. Situated along the left abutment of the dam, fish would enter the fishway in the stilling basin and exit in the reservoir pool. The bulkhead will be deep enough to maintain suitable water temperature in the fishway for Bull Trout. Reclamation is coordinating with USFWS, Yakama Nation, WDFW, and others to review and refine the design. The

final design will be complete by December 2019. Construction timing will depend upon final cost estimates and funding availability. Until passage improvements are accomplished, USFWS, Reclamation, and WDFW will continue capturing Bull Trout from below Clear Creek Dam and transporting them around the dam so they can reach spawning habitat in the North Fork Tieton River. Fish capture and transport was conducted in 2016, 2017, 2018, and to-date, 66 adult Bull Trout have been transported above the dam.

Structural and Operational Changes Element

Cle Elum Pool Raise:

The purpose of the Cle Elum Pool Raise Project is to increase the reservoir's capacity for improved aquatic resources for fish habitat, rearing, and migration in the Cle Elum and upper Yakima River, thereby fulfilling the intent of the congressional authorization, Title XII of Public Law 103-434.

Completed: Radial Gate construction was completed in April 2017. Reclamation completed modifications to three saddle dikes as of 2018. The U.S. Forest Service Cle Elum River Campground shoreline protection was completed in November 2017.

Shoreline Protection Update: Reclamation and Ecology are currently implementing shoreline protection actions for private and public lands and facilities. Shoreline protection for Speelyi Day Use Area is in progress and it is anticipated to be completed in May 2019. Shoreline protection actions will begin for the Wish Poosh Campground in 2019, while other actions will be awarded as funding becomes available. Shoreline landowners and the public will be notified about shoreline designs and construction timing via mail and postings at U.S. Forest Service facilities. Reclamation and Ecology continue to meet with landowners throughout project implementation.

Chandler Pumping Plant Electrification:

Kennewick Irrigation District (KID) and their consultant developed a concept design for an electric pumping plant at Chandler. Reclamation reviewed the concept design and KID performed a transient analysis in June 2017, which was reviewed by Reclamation, and comments were sent to KID September 2017. KID provided an updated concept design and transient analysis for Chandler Electrification with an isolating reservoir to Reclamation in 2018. Reclamation will continue to coordinate with KID on Chandler Electrification project design review.

Reclamation, Ecology, and HDR are completing sensitivity analysis modeling for the lower Yakima River, including examination of return flows in the lower Yakima system to determine impacts from future conservation efforts on KID. Meetings were held with KID and the Water Use Subcommittee in October 2018 to share the draft study results.

Lower Yakima River Smolt Survival Study:

This year the lower Yakima River smolt survival study will collect and tag about 1,100 juvenile Chinook salmon and Steelhead trout to monitor their behavior and survival in the lower Yakima River. Monitoring equipment was deployed in March 2019; fish collection and tagging started April 1, 2019. Salmon smolts are being released weekly in April, May, and June to determine fish responses to varying environmental conditions. Data from the 2018 field season are being analyzed, and preliminary results indicate fish survival is highest in early May and lowest by June when the river warms. Additional data needed to validate fish migration rates, behavior at dams, and survival is being collected in 2019–2020. Reclamation also received Science and Technology grant funding ($150,000) to work with Pacific Northwest National Laboratory to obtain 500 tags for juvenile lamprey in 2019–2020. These tags are not commercially available and are the smallest, lightest tags made for fish; a

portion of the study will be dedicated to evaluating and improving the performance of these tags. The Yakama Nation and partners are collecting data related to predator abundance and diet from the lower river.

Surface Water Storage Element

Kachess Drought Relief Pumping Plant (KDRPP)

The KDRPP is proposed to access 200,000 acre-feet of inactive storage below the current outlet works in the Kachess Reservoir to use in severe drought. Since the proposed KDRPP and KKC projects are closely connected, they were analyzed together.

First, *the Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance* ***Draft*** *Environmental Impact Statement* (DEIS) was published in January 2015. The DEIS described the No Action Alternative and five action alternatives.

After two public comment periods, Reclamation and Ecology reviewed comments, collected additional scientific data as necessary, evaluated new findings, and developed a floating pumping plant as new alternative. This required Reclamation and Ecology to prepare the *Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance* ***Supplemental Draft*** *Environmental Impact Statement* (SDEIS), which was released to the public April 13, 2018.

After an additional public comment period, Reclamation and Ecology prepared the *Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance* ***Final*** *Environmental Impact Statement* (FEIS), which was released in March 2019. Responses to all comments from both the DEIS and the SDEIS are published in the FEIS.

On April 26, 2019, Reclamation signed the *Record of Decision (*ROD), which does not approve implementation of any alternatives but carries forward Alternative 4 - KDRPP Floating Pumping Plant for further analysis. Consistent with this decision, the remaining alternatives in the FEIS, including the KKC, will not be carried forward. Reclamation and Ecology have begun work on the additional EIS to focus site-specific analysis of the floating pumping plant and to present other reasonable alternatives.

Wymer Reservoir

Consideration of site requirements is ongoing. As presented at the March 13, 2019 YRBWEP Workgroup Meeting, KRD has proposed an alternative to gravity feed Wymer via Kittitas Reclamation District's system that will further reviewed under Wymer Dam and Reservoir Project.

Bumping Reservoir Enlargement Project

Consideration of site requirements is ongoing.

Groundwater Storage Element

Groundwater Storage – Basinwide Analysis

The Groundwater Storage Subcommittee is reviewing all ongoing groundwater storage projects.

In the Wapato Irrigation Project (WIP), additional monitoring-well locations have been identified, which will help with observation of the aquifer system response to recharge activities from Toppenish Creek. Reclamation has completed drilling of three (3) additional wells. Ecology will provide pressure transducers, and data will be retained and analyzed to determine the benefits of the recharge activities. Monitoring of existing sites continues.

Four project proposals were selected for funding for the 2017-2019 biennium. These projects include (1) Indian Creek Groundwater Dynamics Investigation, Oregon State University (2) Yakima Basin Focused Managed Aquifer Recharge Assessment, Kittitas Reclamation District (3) Yakima River Groundwater Infiltration Study, Selah-Moxee Irrigation District and (4) Geochemical Study of Groundwater in Potential Storage Sites, Central Washington University. These projects are coming under contract and will be implemented over the next 2 years.

The Lower River Subgroup is exploring opportunities to use groundwater recharge to enhance thermal refuges for migrating fish along the lower Yakima River. An initial study has been funded to develop current information on temperature variations in the river from Wapato Dam to the Yakima River mouth. The USGS is currently processing temperature data from this study and will work with Benton Conservation District to determine optimum locations for additional monitoring.

Aquifer Storage and Recovery (ASR)

The City of Yakima's ASR program is fully permitted. The City is recharging at the Gardner Well for 35 days in February and March. The City is planning full build-out for the program. They intend to drill two ASR devoted wells: the first well is estimated for 2020-2021, and the second is estimated for 2025-2026.

Habitat Protection and Enhancement Element

Targeted Watershed Protection and Enhancement

The Washington State Department of Natural Resources (WDNR) and WDFW worked with the Teanaway Community Forest (TCF) advisory committee to develop a recreation plan, which has been adopted and incorporated into the TCF management plan. The State-appropriated funds for the 2017-2019 biennium will be used for habitat, forest, and infrastructure projects. The primary focus of habitat projects is removing fish-passage barriers and installing fencing, stream-crossings, and watering stations to keep grazing stock out of sensitive riparian areas. In addition, the Yakama Nation continues to work on wood placement in TCF streams to improve habitat conditions and watershed functions. Recent accomplishments of TCF goals include the following:

Goal 1 – WDNR is targeting 20 miles of road maintenance before the end of the fiscal biennium in June. Models suggest this will mitigate approximately10 tons of sediment delivery to the river.

Goal 2 – Working Lands: Work on the Cle Elum Ridge Shaded Fuel Break begin as roads dry out. This project connects fuel-break work with that done by WDNR a couple of years ago, and with a large multifamily private property projects doing the same. Ultimately, the community forest fuel break will connect to small landowners and The Nature Conservancy lands to create a preestablished fuel break along Cle Elum Ridge to protect communities below. Several precommercial thinning projects to control density of young forest stands are planned for summer. For grazing lands, WDNR plans to install an additional 2.5 to 6.5 miles of fence. A fencing contract was offered last month but received no bids. WDNR is contacting potential bidders to find out what they didn't like before the contract is advertised again. The intent is to correct fencing errors for greater success, rebuild old fences to help protect floodplains, and establish new fence where WDNR has identified need. Other types of grazing infrastructure including rocked stream-crossings and watering troughs are planned.

Goal 3 – Recreation: Staff are maintaining recreation sites and working on cultural resource assessments, gathering permits, preparing SEPA documents, and building contracts for the implementation of two grants. Those grants will renovate the West Fork Teanaway Camping Area and renovate and expand camping at Indian Camp. DNR installed a new CXT outhouse at the end of

the West Fork Teanaway Campground and is contracting interpretive signage work with help and input from the Goal 5 committee.

Goal 4 – Habitat Restoration: DNR intends to abandon one fish passage barrier on an unnecessary road in Story Creek. Additionally, DNR acquired all necessary permits for the replacement of the Carlson Bridge, which will allow access to more fish passage work and Yakama Nation fisheries habitat projects in Carlson Creek.

Goal 5 – Community Involvement: The committee has been engaged in advocacy for the capital request DNR submitted for the TFC. They made contacts and coordinated with the Integrated Plan team for some of those conversations. The committee is also working on the annual Teanaway Love Day volunteer event and celebration which is scheduled for May 4.

Mainstem Floodplain and Tributaries Fish Habitat Enhancement Program

A stakeholder group consisting of the City of Richland, Federal and State fisheries managers, irrigation districts, environmental and commercial interests, the U.S. Army Corps of Engineers (Corps)-Walla Walla District, the Yakama Nation, and Umatilla Confederated Tribes have been working together on the Yakima River Delta Enhancement Project. The proposed project to breach a portion or all the Bateman Island Causeway would change flow patterns and improve temperature conditions, instream flow, water quality, and fisheries within the Yakima Delta; it is viewed as critical to the long-term success of numerous upstream fisheries projects being implemented as a part of the Integrated Plan. Additional project support through the Corps 1135 program has been approved.

Benton Conservation District (BCD), in partnership with Yakama Nation and volunteer partners, have completed nine thermal profiling floats during summer and early fall 2018. The floats covered the stretch of the lower Yakima River from Wapato to Mabton, and from Prosser to Bateman Island (Richland). Eighty-eight river miles were profiled for micro-scale river temperature changes. BCD shared preliminary results at the September YRBWEP Workgroup meeting, and the full USGS analysis of the 2018 results is forthcoming.

The Yakama Nation and Kittitas County Conservation District (KCCD) are working to engage landowners and farm and ranch operators in contracting funds awarded in 2016 by the USDA Natural Resources Conservation Service (NRCS) through their Regional Conservation Partnership Program (RCPP). The Yakima Integrated Plan Toppenish-to-Teanaway Project is funded through 2021. The RCPP funding focuses on insufficient water/drought, water quality degradation, and inadequate fish and wildlife habitat in priority areas in Kittitas County, and Yakama Nation Reservation lands. The Yakama Nation is working on "beaver based" restoration projects on Reservation land.

The 5-year agreement between the Yakama Nation and NRCS was finalized in September 2017. KCCD conducted their first of, at least, four annual sign-ups for the Environmental Quality Incentives Program (EQIP) receiving 23 applications by the deadline in November, 2017. KCCD staff worked closely with NRCS staff in 2018 to complete the conservation plans, design the practices to be implemented, and execute contracts with the highest priority applications totaling more than $770,000. As of December 31, 2018, six of the seven contracts that were signed are under construction and expected to be completed in the next quarter. The second EQIP sign-up was completed on November 2, 2018. A total of 35 applications were received with five rolled over from the previous signup. Applicants include producers who have not previously had a contract or worked with the NRCS. An initial ranking was completed and work on the conservation planning has begun on the highest priority applications. The officially ranking cannot occur until NRCS enters the contracts in their system.

KCCD conducted a sign-up for the Agricultural Conservation Easement Program (ACEP) in summer 2018. One application was received from Kittitas County and Forterra for a 280-acre farm. The appraisal report was expected in September but was not completed until November and is still under review by the

landowner and Forterra. KCCD continues to work with the partners and NRCS to work toward executing the easement. KCCD will also be setting up a sign-up for the Healthy Forest Reserve Program (HFRP) in coming months. HRFP is focused on private forestland adjacent to the Teanaway Community Forest.

Enhanced Water Conservation Element

Funding of $5 million for additional projects during the 2017-2019 biennium was appropriated by the State Legislature in January 2018. In February 2018, recipients of 2017-2019 funded proposals provided updates to the Water Use Subcommittee. Projects with Kittitas County Conservation District, Kittitas Reclamation District, and Roza Irrigation District are under contract and moving forward.

Market Reallocation Element

The Kittitas Reclamation District (KRD) and its partner, Trout Unlimited (TU), advanced the Market Reallocation element of the Yakima Basin Integrated Plan. Initial planning, contracting, and research began in early 2019. Trout Unlimited is leading research of the technical components—e.g. rights analysis, instream flow needs analysis, smart market development, and outreach—and will lead and collaborate with partners to develop the market strategy. A key part of the effort is the outreach, which began with both KRD and TU providing information to various groups and media outlets.

Proposed Projects for Consideration

During implementation of the Integrated Plan, an adaptive approach will be used periodically to assess progress towards meeting the identified instream flow objectives, the 70 percent proratable supply goal for irrigation, and goals for other out-of-stream needs. The need for additional water supply enhancements would depend on the effectiveness of projects that are implemented as part of the Integrated Plan, how the Yakima basin economy develops over time, and the timing of and way climate changes may affect water supply availability. From time-to-time, new projects may be identified (and proposed) for consideration under the Integrated Plan. Reclamation, Ecology, Yakama Nation and the Executive Committee are developing a formalized process to consider new projects. Projects proposed for evaluation and those currently being evaluated are listed here.

KRD Upper Yakima Basin Storage System (suspended)

The purpose of the KRD Upper Yakima Storage System Study Project is to identify and assess storage projects within the KRD service area that can use conserved water or water diverted for storage as part of total water supply available (TWSA) for tangible improvements. This water could be used for the following: instream flow objectives, tributary supplementation, aquatic habitat improvements, supporting delisting steelhead and Bull Trout populations, proratable drought-year supply, and TWSA throughout the Yakima River basin. KRD commissioned a study which resulted in the, *Kittitas Reclamation District Initial Water Storage Assessment Summary Report and Recommendations June 2017*.

Reclamation, Ecology and KRD have agreed to suspend the feasibility study at this time. As presented at the March 13, 2019 YRBWEP Workgroup Meeting, KRD has proposed an alternative to gravity feed Wymer via KRD's system that will further reviewed under the Wymer Dam and Reservoir Project.

YTID Diversion Relocation (under evaluation)

In March 2018, Yakima-Tieton Irrigation District (YTID) completed a report that evaluates alternatives to replace or repair the YTID main canal. Alternatives considered include:

1. Baseline Alternative (Tieton Main Canal Repair)
2. Tieton Main Canal Replacement
3. Diversion Relocation to Wapatox Diversion Dam (and associated new conveyance system)
4. New North Fork Cowiche Creek Reservoir, either with or without the Wapatox diversion.

YTID continues to evaluate these and new alternatives. On February 7, 2019, YTID met with agencies to provide an update and introduced a new tunnel alternative also being evaluated. Work is ongoing for YTID to assess project metrics to demonstrate how it measures up against Integrated Plan goals.

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Project website: http://www.usbr.gov/pn/programs/yrbwep/index.html