

Project Activity Update

February 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 where the water surface fluctuates as much as 63 feet in elevation. 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.

Project Construction Updates: The secant vault construction is substantially complete. The downstream passage tunnel is in construction. The Intake, Gate, and Helix contractor will mobilize Spring 2019. The construction contract for the tunnel bypass was awarded in August 2017, and work began onsite in April 2018. To date, the contractor has installed the tunnel portal and completed the grading needed to start tunnel boring operations. Tunnel boring started the week of October 29, 2018. Reclamation awarded the Intake, Gate, and Helix contract in September 2018; onsite work is anticipated to begin in April 2019.

Study Updates: 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 in October 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:

U.S. Fish and Wildlife Service (USFWS), Reclamation, and WDFW completed a study of fish passage at Clear Creek Dam in 2015, finding that existing fish passage facilities were not functional and Bull Trout from the North Fork Tieton River were unable to reach critical spawning and rearing habitat. Ecology received funding for fish passage improvements at this location in the 2017–2019 State funding biennium request. With a portion of this funding, 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, 59 adult Bull Trout have been transported above the dam.

Structural and Operational Changes Element

Keechelus-to-Kachess Conveyance (KKC) Project:

Refer to KDRPP project below.

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, Saddle Dikes 1, 2 and 3, and the U.S. Forest Service Cle Elum River Campground shoreline protection in November 2017.

Shoreline Protection Updates: Reclamation and Ecology are in the process of implementing shoreline protection. The agencies awarded the construction contract for Speelyi Day Use Area shoreline protection in FY18. Speelyi Day Use Area access was closed for construction October 1, 2018 and will remain closed through early spring 2019. Shoreline protection actions are planned for the Wishpoosh Campground in 2019. Other shoreline protection contracts related to the Cle Elum Pool Raise will be awarded as funding becomes available. Reclamation and Ecology continue to meet with local landowners. Additional public notices about the timing of construction and informational meetings on existing shoreline designs will be mailed to shoreline parcel owners and posted at USFS facilities.

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 also 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 Salmon Tracking

The Lower Yakima River Salmon Tracking Study completed a successful field season for 2018. Data are being analyzed, and planning is underway for the 2019 field season. The study team captured, tagged, and monitored juvenile Chinook salmon, steelhead, and Pacific lamprey from late March through late June. The fish were released in the Yakima River near the cities of Yakima and Prosser, and they were monitored downstream to the Columbia River. In 2018, the U.S. Army Corps (Corps) of Engineers also deployed monitoring systems on the mainstem Columbia River at McNary and Bonneville dams. The Yakama Nation and irrigation district partners collected data related to predator abundance and diet from the lower river, focusing on smallmouth bass. Currently, the study team is conducting quality control on nearly 34-million lines of collected data and developing environmental data sets, such as river flow and water temperature.

Preliminary results indicate outmigration survival is highest in early May and lowest by June when the river warms. Next steps are evaluating fish migration rates, behavior at dams, and survival through river reaches. The 2018 data collection results and findings are expected by spring 2019.

Surface Water Storage Element

Kachess Drought Relief Pumping Plant (KDRPP)

Reclamation is required by the National Environmental Policy Act (NEPA) to prepare an environmental impact statement for all projects proposed on Federal land. 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 an extensive public comment period, Reclamation and Ecology reviewed all comments on the DEIS, collected additional scientific data as necessary, evaluated new findings, and developed a floating pumping plant alternative. These changes required another NEPA document to describe the new alternative and present new findings. *The Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance **Supplemental Draft** Environmental Impact Statement (SDEIS)* was the second NEPA document released to the public April 13, 2018.

After a public comment period, Reclamation and Ecology prepared the *Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance **Final** Environmental Impact Statement* anticipated to be released to the public in March 2019. Responses to all comments from both the DEIS and the SDEIS are included in this final NEPA document.

Wymer Reservoir

Consideration of site requirements is ongoing.

Bumping Reservoir Enlargement Project

Consideration of site requirements is ongoing.

Groundwater Storage Element

Groundwater Storage Basin-wide 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 is working with Yakama Nation Engineering to locate and drill the three (3) additional wells. The drill crew has been rescheduled for February 2019. 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.

The Groundwater Subcommittee reviewed project proposals for the 2017 – 2019 biennium. Four proposals were selected for funding and approved by the executive committee. 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 just coming under contract and will be implemented over the next two 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 45 days in January and February. 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 are worked with the Teanaway Community Forest (TCF) advisory committee to develop a recreation plan for the TCF, which has been adopted and incorporated into the TCF management plan. Funding appropriated by the State for the 2017-2019 biennium will be used for habitat, forest and infrastructure projects. The primary focus of habitat projects will be continued removal of fish passage barriers, and installation of 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 by TCF goals include:

Goal 1 – Watershed Protection: 6 miles of road maintenance and abandonment work to address priority sediment delivery problems in the Cle Elum Ridge portion of the TCF completed this quarter. Projects have reduced sediment delivery to streams by 31 tons of sediment per year.

Goal 2 – Working Lands: Addressing issues related to implementing the grazing strategy including livestock fencing, grazing management, and public interaction with livestock. Fencing accomplishments to date are 4.5 miles of new range fence. Additional fence work (approximately 4-6 miles) is in the contracting phase. Grazing monitoring results from the season will be available in the

next quarterly update. DNR also established contracts for forest health projects: one for connecting the shaded fuel break on Cle Elum Ridge to the private lands fire risk reduction projects for an all lands/cross boundary approach to better wild land urban interface preparedness; another for 500 acres of pre-commercial thinning throughout the community forest.

Goal 3 – Recreation: DNR received 559 comments on the recreation plan during the SEPA comment period. DNR issued a determination of non-significance, and the recreation plan was adopted. Staff are maintaining sites and working on cultural resource assessments, gathering permits, preparing SEPA's, 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 also installed a new CXT outhouse at the end of the West Fork in that high use area.

Goal 4 – Habitat Restoration: DNR replaced a fish passage barrier on an un-named tributary to the West Fork Teanaway with a new bridge structure for the T-4000 road. Two other fish passage barriers were removed in Lick Creek via road abandonment. The only fish passage barrier remaining on the Lick Creek system at this point is the county road crossing. The county is working on designing that project. It will be reason to celebrate when that project is complete making 11 barriers removed opening a whole major tributary to fish again.

Goal 5 – Community Involvement: The G5 members are coordinating legislative outreach for the upcoming session. G5 has also launched a photo contest to engage the community in spotlighting their favorite aspects of the TCF.

Mainstem Floodplain and Tributaries Fish Habitat Enhancement Program

Funding of \$5.4 million for projects during the 2017-2019 biennium was appropriated by the State Legislature in January 2018. The Habitat Subcommittee reviewed the proposed projects in February 2018 to bring information up-to-date. Ecology is working with the funding recipients to establish contracts for these projects.

The Habitat Subcommittee has approved a funding request for the next State biennium (2019-2021).

A stakeholder group consisting of the City of Richland, Federal and State fisheries managers, irrigation districts, environmental and commercial interests, the U.S. 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 of the Bateman Island causeway will change flow patterns and improve temperature conditions, instream flows, water quality, and fisheries within the Yakima Delta, and 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 will be available early next year.

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 official ranking cannot occur until NRCS enters the contracts in their system. That is expected to occur in the next quarter.

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. HFRP 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) has entered into agreements with the Bureau of Reclamation (2017 WaterSMART award) and Washington Department of Ecology to research and analyze the Market Reallocation element of the Yakima Basin Integrated Plan. The objective is to research the limitations on market participation and develop a market reallocation strategy specific to the Yakima basin that increases potential participation between willing buyers and sellers, basinwide. KRD is partnering with Trout Unlimited (TU) to complete the work and plans a formal, public rollout of the effort at the March 2019 YRBWEP Workgroup quarterly meeting.

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 manner in which climate changes 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 recently and 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*.

In 2018, in collaboration with the cost share partners KRD and Ecology, Reclamation initiated further analyses for the Study on a 20,000 acre-foot water storage site located near the upper end of KRD's system. However, Reclamation was unable to obtain written right of entry from the landowners at this site to perform seismic and geologic investigations.

Subsequently, investigations began at another site located on further down the KRD system off the North Branch, a site was located with a 9,000 acre-foot water storage potential. It became evident during geologic data collection and preliminary seismic hazard evaluation that the Currier Creek site had significant technical concerns that would take additional time and effort to analyze. Preliminary information indicates this is not an ideal site since an active fault is likely present. This information has led us to the conclusion that this site is not worth pursuing at this time.

Due to the time lost pursuing these two sites that are not currently feasible due to unforeseen circumstances, feasibility and environmental compliance cannot be completed in the time allotted as conditioned by the WIIN Act funding. Therefore, Reclamation, Ecology and KRD have agreed to suspend the feasibility study at this time.

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 is continuing evaluation of these and new alternatives. February 7, 2019 YTID met with agencies to provide an update on alternatives and introduced a new tunnel alternative that is also being evaluated. Work is on-going for YTID to assess project metrics to demonstrate how it measures up against Integrated Plan goals.

Contacts for Information on the Integrated Plan:

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