

Project Activity Update

November 2018

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 has an innovative helix design to transport juvenile fish downstream over 63 feet of reservoir fluctuation. The upstream adult fish passage facility will be a trap-and-haul facility where fish are trapped at the base of the dam, loaded into a truck, and then hauled for release into Cle Elum Reservoir or upstream tributaries.

Project Construction Updates: The secant vault construction is complete. The downstream passage tunnel will be the only onsite construction until the Gate/Helix, and Intake contractor mobilizes sometime in 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 grading needed to start tunnel boring operations. Tunnel boring started the week of October 29. Reclamation awarded the Gate/Helix and Intake contract in September 2018 and onsite work is expected in spring 2019.

Study Updates: In 2018, Reclamation and the Yakama Nation worked with the USGS to conduct an adult sockeye tracking test to understand sockeye migration between Roza and Cle Elum Dam. Results of the study showed that sockeye released at Roza Dam were not falsely attracted to any tributary, that upstream migration was relatively quick with only some minor slowing at the Town Ditch Diversion, and that 100 percent of the tagged sockeye made it to the base of the Cle Elum Dam.

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 YBIP partners will finalize the design. 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 expected to be processed soon. 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.

Shoreline Protection Updates: Reclamation and Ecology are in the process of implementing shoreline protection. The construction contract for improvements on U.S. Forest Service (USFS) facilities at Cle Elum Campground was awarded September 2017, and construction was completed November 2017. Reclamation and Ecology 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 earlier 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 Smolt Survival

The Lower Yakima River Smolt Survival 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. 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)

The *Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance Supplemental Draft Environmental Impact Statement* was released to the public for comment on April 13, 2018. Public meetings were held in May. The public comment period ended on July 11. Approximately 6,000 comments were received on the 2015 Draft Environmental Impact Statement and 2018 Supplemental Draft Environmental Impact Statement. Reclamation and Ecology are working to respond to the comments and make appropriate edits to prepare the Final Environmental Impact Statement.

Wymer Reservoir

Consideration of site requirements is ongoing.

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 is working with Yakama Nation Engineering to locate and drill the three (3) additional wells. The drill crew has been rescheduled for March 2019. Ecology will install pressure transducers, and data will be 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.

The Lower River Subgroup is exploring opportunities to use groundwater recharge to improve 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 plans to recharge its aquifer in the winter of 2018-2019. 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 working with the Teanaway Community Forest (TCF) advisory committee to develop a recreation plan for the TCF. Actions will be guided by 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: The recreation plan SEPA kickoff meeting will be October 24th. Following the comment period, DNR will review comments/make any needed edits and have the plan adopted in December. 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 projects 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, and 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 water 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 has been requested through the Corps' 1135 Program.

Benton Conservation District (BCD), in partnership with Yakama Nation and volunteer partners, have completed 9 thermal profiling floats during the summer and early fall of 2018. The floats covered the stretch of the lower Yakima River from Wapato to Mabton, and from Prosser to Bateman Island (Richland). A total of 88 river miles were profiled for micro-scale river temperature changes. BCD shared preliminary results at the September 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) beginning in October. KCCD received 23 applications by the deadline in November 2017. KCCD staff have been working closely with NRCS staff to complete the conservation plans, design the practices to be implemented, and execute contracts with the highest priority applications. As of September 30, all seven contracts have been signed and nearly \$770,000 in EQIP funds obligated to these projects. Construction of these projects is underway. KCCD received one application for fish habitat improvements in the EQIP sign-up, and although planning work began on the contract, it will likely not be executed this year. The project partner advertised the project for bid and bids came in much higher than expected. This forces the project to be delayed until the design can be adjusted to reduce costs or additional funds can be secured. The second EQIP sign-up is underway now with a deadline of November 2, 2018. So far, 22 applications have been received and only four are rolled over from last year.

KCCD conducted a sign-up for the Agricultural Conservation Easement Program (ACEP) beginning in May, with a deadline of June 22 and then extended to July 18. One application was received from Kittitas County and Forterra for a 280-acre farm. KCCD will be working with the partners and NRCS to verify the

application and begin work toward executing the easement. KCCD will also be setting up a sign-up for the Healthy Forest Reserve Program (HFRP) in late fall of 2018. 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. Projects with Wapato Irrigation Project and Benton Conservation District are drafted and should be finalized this quarter.

Market Reallocation Element

In September 2017, Kittitas Reclamation District was awarded Reclamation's WaterSMART Water Marketing Strategies grant (<https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=60457>) The funding from Reclamation are being matched with funding from Ecology's Water Resources Program and Office of Columbia River to analyze issues that limit market transactions throughout the Yakima River basin. Denver Reclamation staff are working with KRD and Trout Unlimited (TU) to develop the partnership agreements necessary to formally award the WaterSMART funds. Additionally, KRD and TU provided a draft scope of work for matching funds to Ecology staff. The two agencies are working on a detailed Scope of Work using Ecology's YBIP templates and anticipate providing a draft for review in the near future.

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. Projects proposed recently and currently being evaluated are listed here.

KRD Upper Yakima Basin Storage System (under evaluation)

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 is currently contracting for a feasibility study to analyze storage sites, operational approaches, and potential benefits. Ecology has provided matching funds to assist KRD in participating in Reclamation's WaterSmart program that is funding the evaluation study. Once the study is complete, further analysis of the project objectives as it may compare to the goals of the Yakima Integrated Plan will be evaluated and presented to the Workgroup.

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 alternatives. YTID is currently meeting with USFS, WDFW, Reclamation, Ecology, and others to assist in development of alternatives and evaluation of metrics to meet Integrated Plan goals and objectives as listed above. For example, RiverWare modeling is being evaluated (simulate) for the YTID project alternatives comparing these to baseline conditions and will be discussed with YRBWEP Workgroup members to assist in identification of metrics that are consistent with Integrated Plan goals and objectives.

Contacts for Information on the Integrated Plan:

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