

Eklutna Hydroelectric Project

Fish & Wildlife Program Development Technical Group Follow-up Meeting

Date: July 16, 2019

Time: 1:00 PM to 4:00 PM

Location: Chugach Electric Association
5601 Electron Drive
Anchorage, AK 99518

Attendees: Paul Risse Chugach Electric, Mike Brodie Chugach Electric, Julie Hasquet Chugach Electric, Tony Zellers MEA, Bruce Aspray ML&P, Steve Padula Hydro Regulatory Services, Samantha Owen McMillen Jacobs Associates, Mark Schimscheimer AWWU, Joe Sanks AWWU, Brian Lindamood ARRC, Michael Walton ADNR, Kurt Hensel Chugach State Park, Sara Meitl OHA, Jim Rypkema ADEC, Ron Benkert ADFG, Kevin Foley USFWS, Sue Walker NMFS, Sean Eagan NMFS, Steve Connelly Eklutna Inc., Marc Lamoreaux Native Village of Eklutna, Brad Meiklejohn The Conservation Fund, Eric Booton Trout Unlimited, Austin Williams Trout Unlimited

Welcome, Introductions, and Meeting Purpose

Paul Risse (Chugach Electric) welcomed everyone, introduced the representatives for the three utility owners and the consultant team, and explained the purpose of the meeting. The owners have initiated efforts to implement the 1991 Fish and Wildlife Agreement regarding the protection, mitigation of damages to, and enhancement of fish and wildlife (including related spawning grounds and habitat) affected by hydroelectric development of the Eklutna Project. During the initial consultation meetings in March and April, several entities requested a follow-up group meeting to promote technical discussion amongst the resource agencies and interested parties. This meeting was organized in response to those requests.

Contact List and Existing Information

Steve Padula (Hydro Regulatory Services) reviewed the list of entities that the owners met with in March and April. He also reviewed the list of additional contacts that have been identified as potential sources of information or interested parties and asked if there are any other entities that could contribute to the technical work. No additional contacts were recommended at this time.

Steve reviewed a map depicting the project features and location. He highlighted the distinction between the old hydro project constructed in 1929 and the Federal hydro project constructed in the 1950's, including the current dam constructed after the 1964 earthquake. He also highlighted the development of the AWWU pipeline and water treatment facility constructed in the 1980's, the existing

tailrace fishery below the Eklutna Power Plant, the Eklutna tailrace salmon hatchery, and the existing infrastructure downstream of the dam including the ADOT and ARRC bridges.

Steve reviewed the current list of existing information and highlighted key documents and sources of information that have been collected to date. He asked the group if anyone was aware of any additional sources of information or documents that should be reviewed. No additional documents or sources were recommended by the meeting attendees.

Updates on On-going Data Collection

Samantha Owen (McMillen Jacobs) stated that during the initial one-on-one consultation meetings, the owners heard from multiple entities about several different on-going studies being conducted to collect data on current fish resources and habitat. Some of these studies are a result of the Section 404 permit issued by the U.S. Army Corps of Engineers (USACE) to Eklutna Inc. for the lower dam removal project. Samantha invited each entity to speak about their respective on-going efforts including the scope and geographic extent of each study.

The Section 404 permit included an Aquatic Habitat Monitoring Plan. The plan requires three cross sections to be established below the lower dam site. The Alaska Department of Fish and Game (ADF&G) worked with the National Marine Fisheries Service (NMFS) to establish a total of seven cross sections, five below and two above the lower dam before it was removed. Ron Benkert (ADF&G) stated that ADF&G has been contracted by Eklutna Inc. to conduct the water quality monitoring at three of the locations below the lower dam site. ADF&G is measuring turbidity, dissolved oxygen (DO), conductivity, temperature, and pH at each site. Monitoring will continue through 2021. In addition, ADF&G is conducting fish sampling using minnow traps.

Sean Eagan (NMFS) also presented on the work being conducted in accordance with the Aquatic Habitat Monitoring Plan. He explained that the technique for managing the sediment plug behind the lower dam was to let the river wash the sediment downstream. Since not many 60-foot dams have been removed in the United States, it was relatively unknown exactly what would happen to the sediment plug. Sean showed the locations of the seven cross sections established before the lower dam was removed. He then highlighted cross section number 6 (XS6) located below the lower dam site and explained that one year after the dam removal almost 6 inches of additional material had accumulated at bottom of the channel, and that this aggradation was expected to continue as the material in the sediment plug moves downstream. He also showed a graph depicting the change in pebble counts and particle diameter. There is still a lot of fine sediment, but there is also more middle range cobble and fewer of the larger particles (although these could just be buried). Sean suggested continuing to monitor the cross sections every other year after the first three years.

The Section 404 permit also included an Infrastructure Sediment Monitoring Plan, which requires the channel alignment and geometry of the Eklutna River to be monitored for sediment deposition both upstream and downstream of the Glenn highway and railroad bridges. Steve Connelly (Eklutna Inc.) gave more detail and explained that monitoring occurs twice per year, once before spring break-up and once before fall freeze-up. He also stated that it is too early in the study to draw any conclusions. Brad Meiklejohn (The Conservation Fund) asked Steve Connelly if he was aware of the large pieces of debris

still imbedded in the sediment plug. Steve said that he was not aware of it but would talk to the construction group at Eklutna Inc. Ron stated that they had known it was a possibility and would work with Eklutna Inc. to remove the debris if needed.

Marc Lamoreaux (Native Village of Eklutna) stated that his staff walked the entire Eklutna River during the last two weeks of June in an effort to replicate and extend the 2007 USACE study titled “Habitat Assessment of the Lower Eklutna River”. Marc and his staff defined 11 reaches and 120 habitat units by measuring flows and classifying the substrate. They agree with the U.S. Fish and Wildlife Service’s (USFWS) assessment that an average of 109 cfs (minimum 99 cfs, maximum 128 cfs) is needed for instream flows to restore fish habitat. He also noted that their results are currently preliminary and that he would share their analysis when it is final.

Kevin Foley (USFWS) stated that the USFWS conducted a fish habitat assessment in May 2019 of the upper Eklutna River where they measured channel characterization and discharge near the existing upper dam. The report written by Heather Hansen (USFWS) is now final and provides recommendations for instream and flushing flows¹.

Ron Benkert stated that the ADF&G Sport Fish Division has conducted genetic testing on fish returning to the Eklutna tailrace. He further explained that ADF&G is interested in also conducting genetic testing on fish returning to the lower Eklutna River. He offered that any fish carcasses could be sent to ADF&G for analysis.

Samantha asked if there is any other on-going data collection in the Eklutna River that the project owners should be aware of. Brad stated that The Conservation Fund established a time lapse camera at the lower dam site to document the dam removal and offered to share the footage.

Current Operations

Paul Risse reviewed the current hydroelectric project operations and reviewed a graph depicting the Eklutna Lake level from 2000 to 2019. Paul highlighted the years 2012 and 2013 as being the only years the lake level has exceeded the spillway crest elevation (el. 871 feet) since 2000. He also explained that the owners manage the reservoir to not spill by anticipating the potential for storms, with the goal of going into winter with as much water as possible to meet peak energy demands. The lake level generally peaks in September and reaches its minimum level in May. Any necessary maintenance is generally conducted around lower lake levels, with exceptions such as the earthquake in November 2018. After the earthquake, both turbines were shut down for approximately one month so that the utility owners could safely inspect the tunnel with a remotely operated vehicle for any damage or debris. Paul also pointed out the natural lake level (el. 850 feet) and explained that the reservoir is operated so that for approximately six months of each year the lake level is below the natural lake level. The current lake level as of July 16, 2019 is at elevation 849 feet. Brad Meiklejohn asked if JBER had classified the Eklutna Hydroelectric Project as defense critical infrastructure. Paul responded that he knows they consider a number of Chugach’s facilities as critical infrastructure, and that Chugach works with them to establish

¹ The final report titled “Upper Eklutna River Survey: Preliminary Fish Habitat Flow Assessment” was shared by Kevin Foley (USFWS) shortly after the meeting.

elements of reliability and resilience. Brad asked if JBER should be a stakeholder. Chugach committed to following up with JBER to ask if they would want to participate in the consultation process.

Steve Padula (HRS) reviewed some of the basic AWWU operations. The AWWU tunnel diverts approximately 10% of the water from the Eklutna power tunnel to the AWWU pipeline. The pipeline and access road follow the Eklutna River and cross the river at several locations before reaching the AWWU water treatment facility located near the lower dam site. Steve stated that the 10% of water diverted from Eklutna Lake supplies approximately 90% of the public water supply for the Municipality of Anchorage. Mark Schimscheimer (AWWU) clarified that 90% is not a fixed number and varies in any given year. AWWU has three public water supply sources including Eklutna Lake, Ship Creek, and various ground water wells. This enables AWWU to take the Eklutna Lake facility offline if needed. This is dependent on seasonality and water rights. Brad asked if JBER has its own water system. Mark responded yes; JBER's treatment facility is in Arctic Valley. Mark further clarified that JBER is not an AWWU customer.

Discuss Initial Comments and Concerns of Agencies and Interested Parties

Steve Padula (HRS) presented a summary of the initial comments and concerns that were expressed by the agencies and interested parties during the initial consultation meetings in March and April. He explained that this information will be used to start to build a foundation about what questions need to be answered during the studies. Some of the primary comments included:

- Eklutna Inc., NVE, and USFWS want to find a new balance amongst the uses of water from Eklutna Lake
- USFWS looks at habitat restoration as more than just restoring fish habitat, however salmon are considered a keystone species
- King salmon are the target species for Eklutna Inc. and NVE
- NVE's main hope is to have some sockeye migration into the lake

Marc Lamoreaux (NVE) clarified that the Village is interested in king, sockeye, and coho salmon. Austin Williams (Trout Unlimited) agreed and pointed out that there are potential differences between the needs for chinook (king) vs coho salmon. Steve acknowledged the desire to also look at coho salmon and referenced the report released by USFWS as having considered all three species of salmon.

Steve reviewed the protection, mitigation, and enhancement (PME) measures suggested by the agencies and interested parties. These include instream flows to provide fish habitat above the lower dam site, flushing flows to move sediment from behind the lower dam site (before vegetation is established), and fish passage into and out of the lake. Sean Eagan (NMFS) agreed with all three and noted that even once the sediment behind the dam has been moved, flushing flows will still be needed.

Steve reviewed the alternatives for releasing water that were suggested by the agencies and interested parties. These included releasing water from the AWWU pipeline and rerouting two creeks back into the Eklutna River that were reportedly diverted during construction of the Federal project. Brad Meiklejohn pointed out one of the diverted creeks on a map as coming from Twin Peaks. Samantha stated that the owners had been unable to find any documentation that the creeks had been diverted. Sue Walker

(NMFS) responded that she was unaware of any documentation but considered the diversion works on the creek from Twin Peaks visually obvious. Brad pointed out the pool between the current dam and the location of the previous storage dams. He stated that the pool is fed by the second diverted creek located on the south side of the river. Brad also asked about the 30x30 inch gate in the spillway. Bruce Aspray (ML&P) clarified that it was originally designed to drain the pool during the winter so that water wouldn't freeze on the dam. Ron commented that the pool is full of fish and that he can provide pictures. Ron also stated that ADF&G Sport Fish Division has stocking records for Eklutna Lake. Those records are likely located in both the Anchorage and Palmer ADF&G offices. Ron stated that historically excess hatchery fish were placed in Eklutna Lake, and that he knows there is evidence of some kind of sockeye in the lake, but is unsure if they are resident or stocked. Kurt Hensel (Chugach State Park) asked if there are any fish sampling records. Ron responded that there are sampling records from the 70's and 80's that found sockeye scales in the sediment. Brad mentioned the 2015 report titled "Evidence for historic salmon runs in Eklutna Lake, Alaska: Evaluating the sensitivity of sedimentary nitrogen isotopic data". The results presented in the report provide no evidence for a sockeye run into Eklutna Lake before 1929 when the lower diversion dam was constructed. However, the report also states that a moderately sized salmon run into the lake could be undetected by the isotopic analysis. Therefore, the report concluded that further research is needed.

Another alternative was to release water from the beaver dam upstream of the lower dam site to provide a flushing flow to move sediment in the sediment plug. Brad stated that the beaver dam keeps reforming ½ mile above the lower dam site and creates a 150-yard-long waist deep impoundment. Brad suggested periodically removing it to provide a flushing flow, or alternatively to construct a cofferdam and let water build up then remove the cofferdam to release a flushing flow. Sue commented that the sediment wedge is evolving and that Crane Johnson (NWS) has good new photographs. Sean stated that the photographs are from June 28th. Based on those photos, he thinks there is more than 50% of the sediment left. Sue also commented that the beaver dam is functioning as a silt sink and is therefore improving water clarity.

Steve reviewed some of the initial concerns expressed by the agencies and interested parties. These included impacts to downstream infrastructure (ARRC, AWWU, and ADOT facilities and bridges), water quality of the public water supply, dam safety and flood protection, straying fish impacts to the tailrace fishery, flooding and erosion of the lakeside trail, the potential for increased bear/human interactions near the campground, historic and archaeological resources, the current water rights, decreased water availability for power production, and potential liability for sediment. Brad suggested that the cost and potential impacts to ratepayers be added to the list. Sean commented that the agencies might feel better if the project was managed to spill for one day in late September to move sediment but not damage downstream infrastructure. Sue clarified that there was a potential for changes in bear/human interactions near the campground and commented that in her experience where fish are present, bears generally don't care about humans.

Steve reviewed some of the other PME's suggested by the agencies and interested parties that do not involve changing the flow regime in the Eklutna River. These included habitat restoration near the Eklutna Inc. gravel pits and habitat enhancement in the Eklutna tailrace. Austin Williams (Trout Unlimited) commented that the 2018 agency workshop identified discrete reaches within the river. The

reach from the upper dam to where the canyon begins was identified as one of the best areas for salmon rearing habitat. Austin asked if habitat restoration in this reach might be appropriate now. Marc commented that the top part of canyon has a lot of pools and habitat restoration potential.

Next Steps

Steve Padula (HRS) reviewed the next planned steps in the effort to implement the 1991 Agreement, including launching the project website in early August, conducting a field reconnaissance during the last week of August, finalizing the budget for 2020, possibly capturing drone footage of the entire river basin this fall, developing the Initial Information Package during the first quarter of 2020, and initiating the study planning process in the spring of 2020. Steve also noted that the owners are targeting to present the final study plans and schedule to the Governor in the fall of 2020. Brad Meiklejohn asked to clarify if the owners were required to present the study plans to the Governor or just the proposed Fish and Wildlife Program after completion of the study effort. Samantha Owen (McMillen Jacobs) clarified that the 1991 Fish and Wildlife Agreement requires the owners to present the study plans and schedule to the Governor and referenced the exact language in the agreement.

Brad questioned if the 1991 Fish and Wildlife Agreement was meant to be an improvement over the typical FERC licensing process and asked for Steve to explain the differences between the two. Steve explained that most of the language from the 1991 Fish and Wildlife Agreement was copied from the existing FERC regulations at the time which described what has become known as the Traditional Licensing Process, and that there have been changes to the FERC process, including process options, since then. Samantha gave one example that in a FERC licensing process, once the Final License Application is submitted, FERC has two years to conduct their NEPA process before issuing the actual license. The owners do not anticipate the Governor taking two years to issue the final Fish and Wildlife Program after they have submitted their proposal, so that is one major improvement over the FERC process. Sue Walker (NMFS) agreed and further explained some of the differences among the three FERC licensing processes currently available and how the process defined under the 1991 Fish and Wildlife Agreement is an improvement. Brad asked if we should consider conducting a public scoping. Sue agreed that scoping would be a good idea and added that the process being undertaken now is scoping.

Sean Eagan (NMFS) commented that he had spoken with some of the other resource agencies that morning. He noted that we don't know what flows are currently in the river and asked that Chugach start gathering that data as soon as possible. Marc commented that the Village collected weekly flow data from 2002 to 2004 right above the confluence with Thunderbird Creek and at the Old Glenn Highway Bridge to support an instream flow application with the Alaska Department of Natural Resources (ANDR). He noted that the average flow above Thunderbird Creek was about 7 cfs and offered to share the raw data. The Village also has single point measurements from their field work this year. Sean acknowledged this but noted that the owners may want to supplement this data.

Sue Walker recommended establishing multiple Technical Work Groups (TWGs) including fisheries, recreation, infrastructure, economics, etc. Brad asked if existing information documents will be made available. Samantha Owen responded that most of the existing documents will be available on the project website, excluding anything that might contain sensitive information. Steve Padula commented

that the next formal in-person group meeting probably won't be needed until early 2020 to review the Initial Information Package. Sean Eagan recommended scheduling regular calls approximately every 3 months to provide updates in the interim.