

**Grant Lake Hydroelectric Project (FERC No. 13212)
Aquatic Resources Work Group (ARWG) Meeting
Aspen Suites Hotel, 100 E. Tudor Rd., Anchorage, AK
March 19, 2014, 8:00 am to 5:00 pm**

In Attendance

Emily Andersen, McMillen LLC (McMillen)
Jeff Anderson, U.S. Fish and Wildlife Service
(USFWS) *[via phone]*
Patti Berkahn, Alaska Department of Fish and
Game (ADF&G) *[via phone]*
John Blum, McMillen
Gary Fandrei, Cook Inlet Aquaculture
Association (CIAA) *[via phone]*
Kevin Laves, USFS *[via phone]*
Katie McCafferty, Army Corps of Engineers
(USACE)
Mark Miller, BioAnalysts (BA) *[via phone]*
Monte Miller, Alaska Department of Fish and
Game (ADF&G)

Sally Morsell, Northern Ecological Services
(NES) *[via phone]*
Jason Mouw, ADF&G
Carl Reese, ADNR *[via phone]*
Eric Rothwell, National Oceanic and
Atmospheric Administration (NOAA
Fisheries)
Mike Salzetti, Kenai Hydro, LLC (KHL)
Charles Sauvageau, McMillen
John Stevenson, BA
Kelly Tilford, McMillen
Cory Warnock, McMillen

Meeting Summary

Introductions and Agenda

Mike Salzetti (KHL) began the meeting with introductions and Cory Warnock (McMillen) reviewed the proposed meeting agenda (see Attachment 1):

- Engineering Feasibility
- Aquatic Resources, Macroinvertebrates and Periphyton
- Aquatic Resources, Fisheries Assessment
- Licensing Path Forward

Cory noted that all materials from the meeting (agenda and presentations) will be posted to the Grant Lake Hydroelectric Project (Project) website (<http://www.kenaihydro.com/index.php>) after the meeting.

Engineering Feasibility

Kelly Tilford presented the engineering feasibility work done to date (see PowerPoint included as Attachment 2).

- *Comment:* With respect to the discussion of flood water surface elevations (*Slide 26¹*), Eric Rothwell (NOAA Fisheries) asked whether the flow of record is observed or an extrapolation.

¹ For all PowerPoint presentations given during the meeting, slide numbers refer to the PDF page number.

- *Response:* Kelly responded (and Chuck Sauvageau confirmed) that it was not preferable to extrapolate flow readings above 1,000 cfs since the highest measured discharge value was ~700 cfs. Therefore, HECRAS modeling output was utilized.
- *Comment:* Jason Mouw (ADF&G) expressed two concerns with the proposed detention pond (shown on *Slide 6*), 1) temperature control impacts (heating up in summer and freezing of the pond in the winter); and 2) temperature issues with potential flow back into Grant Creek.
- *Response:* Kelly noted that the detention pond is intended to absorb discharge during high, pulse flows. It is anticipated that there would be flow through under the ice cover. Mike Salzetti (KHL) added that the initial purpose of the pond was to provide spinning reserve for the power system (in the event of a disruption to the power supply), but now integrating in the environmental impacts, could possibly also serve as a temperature control (e.g., install a bubbler to draw in cold winter air). Cory stated that the plan is to provide refined details about the Project infrastructure at the next agency meeting (in the June/July timeframe).
- *Comment:* Katie McCafferty (USACE) stated that now having heard the wetlands discussion (at the March 18 Natural Resources Work Group [NRWG] meeting), she can see that the location of the detention pond is in close proximity to an identified patch of wetlands and asked if more details about the detention pond are known yet (i.e., will there be an outfall pipe or natural drainage, is the wetlands connected to Grant Creek, will the pond be lined).
- *Response:* Kelly said the details about the pond have yet to be determined. Cory Warnock (McMillen) suggested conferring with Levia Shoutis (ERM) regarding the connectivity of the relevant wetlands to Grant Creek.
- *Comment:* Monte Miller commented that the tailrace outfall could attract upstream migrating fish from Grant Creek, which should be taken into account with the design of the outfall.
- *Response:* Cory indicated that there have been preliminary internal discussions about the outfall design. The preference would be to not use any screens, but no decisions have been made thus far. Mike Salzetti added that one option is an elevated outfall. Mike also noted that KHL has been in discussions with the Kenai Peninsula Borough about this topic relative to their Anadromous Fish Habitat Protection ordinance. Monte stated that the potential for back flow into the Project outflow during extreme flow events should be considered relative to the design. Kelly replied that the tunnel would be designed to be hydraulically isolated for a 100-year flood event.
- *Comment:* Relative to the discussion of the current potential scenarios for the Project layout (*Slide 7*), Monte Miller (ADF&G) asked how a lake tap would work if water needed to be drawn from different levels based on the temperature discussion from the water resources presentation at the March 18 NRWG meeting.
- *Response:* Kelly replied that if necessary, the structure could include a multi-variable level intake system.

- *Comment:* Eric Rothwell asked what the active storage capacity of the Project would be.
- *Response:* Mike Salzetti replied that he did not know the estimate off hand, but it should be available in the 2010 revised Project description [*the value was later confirmed during the meeting to be 15,900 acre-feet with the no dam alternative (between elevation 692 and 703 feet)*].

Aquatic Resources Study Results, Macroinvertebrates/Periphyton

Chuck Sauvageau (McMillen) presented the macroinvertebrate and periphyton study results (see PowerPoint included as [Attachment 3](#)), and pointed out that Sally Morsell from Northern Ecological Services (NES), who conducted the study, is on the phone to answer questions.

- *Comment:* Monte Miller (ADF&G) asked if the notable fewer Chironomidae in 2009 at GC300 relative to other samples (*Slide 10*) could have been due to weather conditions in that year that may have resulted in fewer flies/mosquitoes.
- *Response:* Sally indicated that they tried to assess whether the relatively low numbers were due to an environmental cause or sampling conditions, but could not definitively conclude either way. She noted that in general, it is challenging to sample in the Project area. Flows in 2009 were comparable to those in other sampling periods; however, how comfortable an individual technician was to wade out into Grant Creek where Chironomidae prefer to over winter may have been a factor.
- *Comment:* Relative to comparing the Grant Creek data with other streams in Cook Inlet (*Slide 18*), Monte Miller asked whether stream gradient, which can impact various population density and taxa richness metrics, was taken into account.
- *Response:* Sally stated that some Alaska Stream Condition Index (ASCI) data was available from the Kenai for high gradient streams such as Grant Creek. Grant Creek habitat scored low, however the best use of the Grant Creek baseline data is for comparison to future conditions in Grant Creek.
- *Comment:* Monte Miller stated, relative to differences seen in density and taxa numbers between GC100 and GC 300, generally density and taxa numbers increase as one moves downstream and so GC100 would likely be a better monitoring location.
- *Response:* Sally responded yes, that was a reasonable conclusion given the results to date.
- *Comment:* Jason Mouw (ADF&G) asked if individual species by sample are detailed in the report.
- *Response:* Sally responded yes, that raw data tables are provided in a report appendix.

Aquatic Resources Study Results, Fisheries Assessment

John Stevenson (BioAnalysts) presented the fisheries assessment results (see PowerPoint included as [Attachment 4](#)).

- *Comment:* Monte Miller (ADF&G) commented that it was unfortunate the incline plane design (i.e., 1/4" mesh; *Slide 9*) did not allow for capturing of smaller fish.
- *Response:* John S. agreed. Monte added that it was unfortunate that the upper incline plane malfunctioned (*Slides 9 and 39*). John S. clarified that the incline plane did not malfunction, but rather, had to be shut down intermittently due to high flows and debris and not having a suitable alternate location to move it to during these events.
- *Comment:* With respect to the discussion of potential impacts, specific to juvenile rearing habitat (*Slide 63*), Eric Rothwell (NOAA Fisheries) asked at what flow does the Reach 2 distributary become watered.
- *Response:* John S. replied 420 cfs. Monte Miller noted that it was de-watered during the September 2013 site visit.
- *Comment:* Monte Miller asked whether fish can get out of Reach 2 distributary when it is cut off from the main channel.
- *Response:* John S. stated no, once loss of connectivity, fish are trapped from getting back into Grant Creek, although they can swim through to Trail Lake Narrows at the other end.
- *Comment:* Monte Miller asked if there was a known reason for the relatively low Chinook counts in 2013.
- *Response:* John S. said that they did not know for sure, although he noted that timing of installation of the adult weir (May 23, 2013; *Slide 4*) was based on 2009 distribution data, which was later than is generally typical, so may have missed capturing and tagging some of the early returns. John S. added that the goal was to tag 65 fish, but only 9 were tagged.
- *Comment:* Eric Rothwell asked if there was a general sense of where the rearing mesohabitats (like tiny alcoves and glides/pools) were located in Reaches 1-4.
- *Response:* John S. replied that based on the snorkeling, ideal mesohabitats were consistently found in deeper, quiet side channels and ice shelves in Reach 3 as well as right back above the adult weir, which was particularly quiet in April. Jason Mouw (ADF&G) added that similarly with spawning, he has observed it consistently occurring in the same areas of the creek each of the last four years. Cory Warnock noted that mesohabitats and definitions thereof would be discussed in more detail during the instream flow study presentation (at the March 20 Aquatic Resources Work Group [ARWG] meeting).
- *Comment:* Jeff Anderson (USFWS) asked about the level of confidence in the observed redd counts (*Slide 26*).
- *Response:* John S. noted that there is always an inherent risk of not observing all redds and explained that while water clarity decreased near the end of the study period, potentially impairing ability to see all of the redds, the field staff did weekly counts of redds, and since actively working in the field seven days a week, any new redds observed in between official counts were included in the dataset.

- *Comment:* Jeff Anderson asked if the relatively low number of radio-tagged Dolly Varden (*Slide 14*) could be due to the pickets on the adult weir that tend to attract smaller sized fish.
- *Response:* John S. replied yes that is possible. He added that another possibility is that it was a low migration year for the species.
- *Comment:* Jeff Anderson asked if the peak movement of parr/early smolts was observed in fall, prior to overwintering.
- *Response:* Referring to *Slide 50*, Monte Miller pointed out that he believes some fingerlings move into Grant Creek from Trail Lake Narrows.
- *Comment:* Referring to Table 5.1-10 of the Fisheries Assessment, Draft Report (February 2014), Jeff Anderson stated that the approximately 20% estimate of 0.x aged Chinook and coho seems high.
- *Response:* John S. replied that they will check with the ADF&G staff that performed the age analysis using scale samples to confirm the findings. Monte Miller noted that it is possible the apparent 0.x migrate out to the Trail Lake Narrows, rather than out to sea, and therefore, only temporarily fall out of the system. John S. concurred with that possibility and admitted that it is not possible to say with 100% that fish that apparently migrate downstream, return upstream.
- *Comment:* Jeff Anderson asked about potential impacts to habitat in the tailrace.
- *Response:* Kelly Tilford (McMillen) responded that the impacts cannot be determined until the Project operations scenario and detention pond design are further refined. Cory Warnock indicated that more should be known by the next agency meeting in June/July.
- *Comment:* Jeff Anderson asked if there are plans to provide the fisheries assessment data to Jay Johnson (ADF&G) for the “*Atlas and Catalogue of Waters Important for Spawning, Rearing, or Migration of Anadromous Fish*”.
- *Response:* John S. replied no, but can do so if deemed appropriate. John S. noted that consistent with the terms of the fish resource permit, a summary report has been provided to Scott Ayers (ADF&G). Monte Miller added that Robert Begich should also receive the relevant data.

Licensing Path Forward/Closing

Mike Salzetti (KHL) stated that KHL’s primary objectives over the next few months are to continue with the momentum gained from the engineering progress made thus far, and to start to integrate operational scenarios across the various resource disciplines. Cory Warnock noted that consistent with the engineering schedule, which has a number of deliverables due by May, KHL anticipates holding the next agency meeting in the June/July timeframe, with the primary focus being on 1) progress made with the operations modeling; 2) outstanding significant resource issues; and 3) exploring potential options for addressing Project impacts.

[Note explicitly stated at the March 19 meeting, but mentioned in other agency meetings that same week, KHL welcomes informal written comments on the draft study reports, and requests

that they be provided by Friday, April 25, at which point, KHL will work to finalize the reports and file them, along with the meeting notes, with the Federal Energy Regulatory Commission (FERC).]

<<ADJOURN 1:00PM>>

Action Items

- **BioAnalysts** to check with ADF&G about fish scale age analysis.
- **BioAnalysts** to provide relevant fisheries assessment data to Jay Johnson (ADF&G).
- **Stakeholders** to provide informal comments on the draft study reports by Friday, April 25.

Attachments

Attachments are available on the March 18-20, 2014 Natural Resources Study Report Meetings page at www.kenaihydro.com.

Attachment 1: Meeting Agenda

Attachment 2: Grant Lake Engineering Feasibility PowerPoint presentation

Attachment 3: Aquatic Resources, Macroinvertebrate and Periphyton Study Results PowerPoint presentation

Attachment 4: Aquatic Resources, Fisheries Assessment Results PowerPoint presentation