

**Grant Lake Hydroelectric Project (FERC No. 13212)
Aquatic Resources Work Group (ARWG) Meeting
Aspen Suites Hotel, 100 E. Tudor Rd., Anchorage, AK
March 20, 2014, 8:00 am to 3:00 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
Joe Klein, ADF&G
Katie McCafferty, Army Corps of Engineers
(USACE)
Mark Miller, BioAnalysts (BA) [via phone]
Monte Miller, Alaska Department of Fish and
Game (ADF&G)

Jason Mouw, ADF&G
Eric Rothwell, National Oceanic and
Atmospheric Administration (NOAA
Fisheries)
Kim Sager, Alaska Department of Natural
Resources (ADNR) [via phone]
Mike Salzetti, Kenai Hydro, LLC (KHL)
Hal Shepherd, Center for Water Advocacy
(CWA) [via phone]
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):

- Aquatic Resources, Instream Flow
- Integrated Natural Resources/Engineering Discussion

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.

Aquatic Resources Study Results, Instream Flow

John Blum (McMillen) presented the instream flow study results (see PowerPoint included as Attachment 2).

- *Comment:* Monte Miller (ADF&G) commented that it has been understood that Reach 5 would be de-watered at certain times of the year, but given the current location of the tailrace outfall from the detention pond at the Reach 4/5 break (*Slide 12¹*), it appears that Reach 4 could be periodically de-watered as well.
- *Response:* Mike Salzetti (KHL) re-iterated that it is likely that the detention pond would not be used most of the year. Cory noted that while the location of powerhouse is fairly set, the orientation of the outfall is still to be determined. Kelly Tilford (McMillen)

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

added that there are many options to ensure proper conditions (e.g., angle of flow, type of habitat where the flow is released, etc.).

- *Comment:* Katie McCafferty (USACE) asked if it is known how often the detention pond might be utilized in a given year.
- *Response:* Mike Salzetti replied no, but spin is only required if a [generating] unit fails on the Railbelt grid. Historical failure rates could be determined based on the Railbelt regional power data.

- *Comment:* In reference to the discussion about mesohabitats in Grant Creek (*Slide 14*), Eric Rothwell (NOAA Fisheries) asked at what flows the mesohabitats were determined at.
- *Response:* John Blum answered that the flows were between 150 and 250 cfs.

- *Comment:* Jason Mouw (ADF&G) commented that there are several habitat types discussed relative to mesohabitats (*Slide 14*), and asked if the definitions are provided somewhere.
- *Response:* John Blum indicated that the terms are defined in the Aquatic Resources study plan (March 2013).

- *Comment:* Jason Mouw asked how the transects (the basis of the Habitat Suitability Index [HSI] curves) relate to documented fish utilization/spawning areas.
- *Response:* John Blum indicated that transects were prioritized for that reason, but also noted that while in the field, the crew walked the entire stream, not just transects, to note observed fish and redds within 10 to 15 feet of a given transect. Mike Salzetti asked Jason if there was a deliverable (e.g., a map) that could provide the desired information. Jason indicated that he would detail what information he is looking for in his informal written comments.

- *Comment:* Jason Mouw asked about the distribution of HSI curves throughout Reaches 1-4 and other relevant data (e.g., at what flows measurements taken at, distance from shore, etc.).
- *Response:* John Blum said that he could provide the relevant data as it is all detailed in a spreadsheet.

- *Comment:* Jeff Anderson (USFWS) pointed out that the species and life history stage table (*Slide 17*) does not appear to match with Table 4.2-4 in the Instream Flow/Aquatic Habitat Mapping Study, Draft Report (February 2014). He also asked why fry rearing sockeye salmon was not checked yes.
- *Response:* John Blum stated that juvenile rearing coho salmon should have been checked in the report (Table 4.2-4), and same for juvenile Chinook salmon in the table in the presentation. He agreed to correct any discrepancies in the final report. Regarding the fry rearing sockeye, John Blum replied that they believe the species to migrate out quickly, and therefore, there would not be any apparent rearing.

- *Comment:* Specific to connectivity in Reach 5 (*Slides 30-33*), Monte Miller asked why the average of the T510 and 520 site flow data was calculated.
- *Response:* John Blum stated that it is the approach used by Thompson (1972), but agrees that it may not be the ideal approach when assessing connectivity of a stream.
- *Comment:* Relative to the Reach 5 connectivity analysis, Jeff Anderson asked whether habitat quality of the reach was determined.
- *Response:* John Stevenson reiterated that a total of 5 redds were observed in the reach, 16 fish observed (rearing) during snorkeling, and 36 salmonids captured in minnow traps. John Blum indicated that the flow information needs to be integrated with the fish timing data to start to get at the habitat quality of Reach 5. Mike Salzetti pointed out that in order for the Project to work properly, a significant amount of the Reach 5 flow will need to be bypassed through the Project.
- *Comment:* Jeff Anderson asked how the substrate in the Reach 5 canyon may impact sediment recruitment.
- *Response:* Cory Warnock indicated that the Geomorphology study presentation (given at the March 18 Natural Resources Work Group [NRWG] meeting), goes into detail about this, but provided a few highlights: 1) gravel recruitment would be episodic (100s to 1,000 years), likely due to a major slide; 2) any sediment recruitment will come from Reach 5, and not Grant Lake; and 3) the observed flaking of gravel may be more due to fish spawning activity than from high flows. Jeff Anderson stated that based on this, then there is evidence that flows due to Project operations will affect Reach 5 habitat, but there would be no impact on sediment transport. Mike Salzetti clarified that the geomorphology study showed that sediment transport in Reach 5 *would* be impacted by Project operations.
- *Comment:* Specific to potential habitat enhancements in the side channels at the Reach 2/3 break (*Slides 34-44*), Jason Mouw commented that while the side channels generally offer good habitat, except for at the head of the island complex, few fish are observed there. He added that it would seem utilization of the side channels could be limited by the relatively low winter flows and temperature controlling bedrock.
- *Response:* John Blum re-iterated that the next step with the instream flow work is to overlay the fish presence information with the habitat delineations to explore these theories.
- *Comment:* Specific to the discussion regarding the Reach 1 distributary (*Slides 45-53*), Patti Berkahn (ADF&G) asked about the flow during the September 2013 Project site visit.
- *Response:* Cory Warnock (McMillen) indicated that the flow in Grant Creek was approximately 400 cfs, and thus the distributary approximately 4 cfs.
- *Comment:* Eric Rothwell asked whether there is a rating curve for the Reach 1 distributary.
- *Response:* John Blum replied, no, its calculation is being based on stage/discharge data.

- *Comment:* Eric Rothwell observed that based on the information presented for the resources at the various meetings (March 18-20), integration of natural resources with the proposed Project operation scenarios is the next logical step. And added that there are still some questions to be answers (e.g., utilization of winter flows). Also, in general, Project operations will be constrained by the relatively small useable storage area of Grant Lake.
- *Response:* The group generally concurred.
- *Comment:* Eric Rothwell asked about the Q2 of the 11-year (1948-1958) plus 1 year (2013) record and its duration.
- *Response:* Mike Salzetti indicated that per Ebasco (1984), it is 1,000 cfs, and with regression, station weighted at 961 cfs. Eric replied that with the limited usable storage capacity that exists, it would seem difficult to prevent significant flow events from spilling into Reach 5 (e.g., 10 days of 1,000-cfs flows would fill Grant Lake).
- *Comment:* Monte Miller asked about the current thoughts regarding maximum operational flows.
- *Response:* Mike Salzetti stated that the current proposal is around 385 cfs and added that KHL plans to manage the lake levels to keep from [unnecessarily] spilling water.
- *Comment:* Joe Klein (ADF&G) commented that there are two apparent pieces missing from the evaluation thus far: 1) an estimate of effective spawning habitat; and 2) when comparing the Project operations scenarios, development of a habitat timing series.
- *Response:* John Blum agreed and stated that both would be done, likely ahead of the next agency meetings (likely in the June/July timeframe), provided the relevant hydrologic data and operations model output are available.
- *Comment:* Joe Klein recommended that for IFIM modeling, a record longer than 11 + years (1948-1958) should be utilized and asked what the potential correlation between Grant Creek and the Kenai River might be.
- *Response:* John Blum stated that he would review the Kenai River gauge at Cooper Landing data with an engineer to verify its correlation potential and if it was determined to be adequate, use it to extend the record.
- *Comment:* Jeff Anderson asked how the substrate utilized by sockeye and Chinook in Grant Creek compares to that in other streams.
- *Response:* John Blum responded that the size is generally similar; however, the substrate in Grant Creek is predominantly fractured or jointed bedrock.
- *Comment:* Jeff Anderson noted that he did not see a discussion in the Instream Flow/Aquatic Habitat Mapping Study, Draft Report, about the overflow into the adjacent trees/forest at the Reach 1/2 break.
- *Response:* Referring to the flow partitioning information (*Slide 21*), John Blum noted that the Reach 2 tributary activates starting at 450 cfs.

Cory Warnock stated that from a process perspective, as discussed at this meeting and those on March 18 and 19, KHL sees the next steps as continuing with the engineering feasibility work, beginning to integrate the operations modeling output with the natural resource study information, and meeting again with stakeholders in the June/July timeframe to discuss the progress made, but asked how the group wanted to proceed specific to the instream flow work. Jeff Anderson asked what field work would continue in 2014. Cory explained that there would be spring and summer wildlife surveys (consistent with the current scope of the terrestrial resources study plan) and continued collection of hydrology data. Jeff suggested further study of coho rearing/overwintering (per the fisheries assessment results discussion at the March 19 Aquatic Resources Work Group [ARWG] meeting) to better understand what was observed in 2013, building upon the single year of Chinook and coho escapement data, which will ultimately inform development of protection, mitigation and enhancement (PM&E) measures. Monte agreed with the request and noted that he has a general concern with having to base PM&E decisions on a limited and possibly incomplete data set. Cory suggested the use of 1980s data (Ebasco 1984) when a weir was also in place and incorporating it in with the 2013 information. Monte agreed with proposal as long as the methodologies were similar. Eric Rothwell alternatively recommended allowing the engineering feasibility work to proceed with the existing information, reserving the right that if the output shows that more habitat information is required to fully understand Project impacts, then the case for more study can be made at that time. Eric stated that if HEA was documenting “full utilization” of the species documented in Grant Creek, that this approach seemed appropriate.

In light of the various additional information requests made during the day’s meeting, Cory proposed a bi-weekly Instream Flow Subgroup call that would utilize an iterative approach (question, analysis, discussion, etc.). The group concurred with the proposal. The group agreed to March 27 for the first subgroup call. John Blum indicated that he would circulate a draft agenda.

Integrated Natural Resources/Engineering Discussion

Mike Salzetti gave a brief history of how the Grant Lake Project came about. The utility, Homer Electric Association (HEA)², traditionally dealing only in power transmission, decided to evaluate generation when its wholesale power purchase agreement with Chugach Electric Association, Inc. was set to expire in 2013. Most generation thus far is natural gas-fired, but with the changing price of gas, hydropower has become more economically viable. KHL considers the Grant Lake Project a great opportunity. Because the Project would be a minor percentage of KHL’s portfolio, KHL is open to considering operational scenarios that maximizes the benefit to natural resources (e.g., not maximize generation in winter in order to mimic natural flows in order to protect aquatic habitat). Based on the study results to date, Mike Salzetti indicated that KHL believes that the Project could be designed to have a net neutral impact to the environment.

Eric Rothwell (NOAA Fisheries) recommended building upon that foundation, and to come back for the next meetings with output from proposed operational scenarios and preliminary PM&Es, including associated rationale. Monte Miller (ADF&G) added that once there are actual

² KHL, the applicant for the Project, is a wholly-owned subsidiary of HEA.

operational scenarios to discuss, the group can move away from speculation and towards viable solutions.

Licensing Path Forward/Closing

Cory Warnock (McMillen) stated that 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).

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 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. Monte recommended setting the meeting as soon as possible, and to try to avoid scheduling meetings the last week of June/first week of July due to the Fourth of July holiday.

<<ADJOURN 11:30AM>>

Action Items

- **John Blum (McMillen)** to provide Jason Mouw (ADF&G) relevant data about the HSI curves.
- **John Blum** to correct the inconsistencies between the table in Slide 17 and the same table in the Instream Flow/Aquatics Habitat Mapping Study, Draft Report (Table 4.2-4).
- **John Blum** to develop effective spawning habitat estimates and habitat timing series information.
- **Mike Salzetti (KHL)** to determine how often the detention pond may be utilized annually.
- **John Blum** to circulate a draft agenda for the March 27 Instream Flow Subgroup meeting.
- **Stakeholders** to provide informal comments on the draft study reports by Friday, April 25.

Attachments

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

Attachment 1: Meeting Agenda

Attachment 2: Aquatic Resources, Instream Flow Study Results PowerPoint presentation