

**Grant Lake Hydroelectric Project (FERC No. 13212)
Natural Resources Work Group (NRWG) Meeting
Aspen Suites Hotel, 100 E. Tudor Rd., Anchorage, AK
March 18, 2014, 8:00 am to 5:30 pm**

In Attendance

Dwayne Adams, USKH
Amal Ajmi, ERM
Emily Andersen, McMillen LLC (McMillen)
Katy Beck, Beck Botanicals
John Eavis, U.S. Forest Service (USFS) *[via phone]*
Kim Graham, USKH
Jessica Ilse, USFS *[via phone]*
Joe Klein, Alaska Department of Fish and Game (ADF&G) *[via phone]*
Kevin Laves, USFS *[via phone]*
Katie McCafferty, Army Corps of Engineers (USACE)
Mort McMillen, McMillen
Monte Miller, ADF&G

Jason Mouw, ADF&G
Paul Pittman, Element Solutions
Eric Rothwell, National Oceanic and Atmospheric Administration (NOAA Fisheries) *[via phone in afternoon]*
Mike Salzetti, Kenai Hydro, LLC (KHL)
Charles Sauvageau, McMillen
Lesli Schick, Alaska Department of Natural Resources (ADNR) *[morning only]*
Levia Shoutis, ERM
Robert Stovall, USFS *[via phone]*
Cassie Thomas, National Park Service (NPS)
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
- Terrestrial Resources
- Water Resources
- Recreation and Visual Resources
- 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

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

- *Comment:* With respect to the map showing proposed Project infrastructure (*Slide 6¹*), Cassie Thomas (NPS) asked if the detention pond is a new feature.

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

- *Response:* Mike Salzetti (KHL) stated that the pond was part of the modified Project proposal in 2010. The intent of the pond is to provide spinning reserve to the power system (in the event of a disruption to the power supply).
- *Comment:* With respect to the hydrologic characteristics of the Project (*Slide 13*), Monte Miller (ADF&G) asked whether the values were correlated with the Trail River USGS stream gauge.
- *Response:* Mort responded that they were.
- *Comment:* Eric Rothwell (NOAA Fisheries) asked if the flow duration values (*Slide 14*) were based on actual flow discharge measurements for a complete calendar year.
- *Response:* Mort responded that they were.
- *Comment:* With respect to the conclusions of the Project’s hydrologic review (*Slide 18*), Eric Rothwell asked if there is any concern about the accuracy of the 20% exceedance flow (the target flow for the beginning of analyzing powerhouse sizing,) given that it is based on a relatively short record (1948-1958).
- *Response:* Mort indicated that the analysis will be run with the 20% exceedance value “bumped” up/down on each side.
- *Comment:* With respect to the discussion of the HECRAS model (*Slide 20*), Eric Rothwell noted that at the study plan meeting (December 12, 2012), the methodology for evaluating operational impacts downstream of the Project was unknown, and asked if that is better understood now.
- *Response:* Mort replied that hydraulic impacts can be evaluated using the HECRAS model, and impacts to other factors, like water temperature, would be discussed during the respective resource presentation.
- *Comment:* During the discussion of the HECRAS model calibration (*Slide 22*), Monte Miller noted that the Instream Flow Incremental Methodology (IFIM) cross sections were defined by fish presence, but the preferred methodology is to tie the cross sections to fish habitat and asked whether that is of concern for the hydraulic analysis.
- *Response:* Mort responded that they are not currently working on water surface area calculations, but rather, trying to establish the rating curve. That said, for the final analysis, the HECRAS model will be updated with the bathymetry and topographic data that will be collected in summer 2014.
- *Comment:* With respect to the geotechnical update (*Slide 28*), Monte Miller asked whether the tunnel will be bored or blasted.
- *Response:* Mort indicated that it would be blasted.
- *Comment:* As part of the operational model demonstration (*Slide 33*), Eric Rothwell asked if the HECRAS model is ready to run IFIM constraints.
- *Response:* Mort indicated that the model is at a point of being fully functional and ready to start running scenarios.

- *Comment:* With respect to the engineering schedule (*Slide 35*), Monte Miller asked about the timing for issuing the Draft License Application (DLA) for stakeholder comment.
- *Response:* Cory Warnock (McMillen) indicated that KHL is targeting end of 2014/early 2015.

Katie McCafferty (USACE) asked if that would be the same timing as submittal of the Section 404 application to USACE, to which, Cory replied yes.

Cory asked that if there is other staff within a resource agency that should be reviewing the engineering deliverables, to provide him the contact information.

- *Comment:* Cassie Thomas stated that understanding that the HECRAS model is still under development, what are the preliminary thought regarding the degree of Grant Lake elevation fluctuation during Project operations.
- *Response:* Mort indicated that the current target is 11 feet without a dam, and 13 feet with one.

Terrestrial Resources Study Results

Levia Shoutis (ERM) presented an overview of the terrestrial resources studies (see PowerPoint included as [Attachment 3, Slides 1-6](#)).

Katy Beck (Beck Botanicals) presented the vegetation, sensitive plant, and invasive plant components of the terrestrial resources study results (see PowerPoint included as [Attachment 3, Slides 7-41](#)).

- *Comment:* With respect to the discussion of potential qualitative impacts on vegetation (*Slide 21*), Cassie Thomas (NPS) asked whether there is vulnerability due to wind throw.
- *Response:* Katy Beck replied yes, but no more than other areas of the Kenai Peninsula.
- *Comment:* With respect to the discussion of next steps for the vegetation and sensitive/invasive plant components (*Slide 40*), Cassie Thomas (NPS) noted that she could envision a scenario where the Project is operating on/off in the fall when ice is developing, potentially resulting in scouring downstream.
- *Response:* Mort noted that the engineers will run the HECRAS model taking into consideration the “shoulder” seasons (i.e., ice formation in the fall and ice melt in the spring), with an intake and without (i.e., the natural outlet), and provide that output to the natural resource leads for impacts analysis.
- *Comment:* Monte Miller (ADF&G) noted that based on the engineering presentation, normal pool elevation of Grant Lake is ± 2 feet of natural pool elevation (i.e., 703 feet) and asked what, if anything, would be the impacts to plants with a 13-foot elevation fluctuation.
- *Response:* Katy Beck replied that the plants can already withstand some inundation given the natural fluctuation of approximately 7 feet.

- *Comment:* Robert Stovall (USFS) noted that relative to development of management plans (*Slide 40*), KHL would want to consult with Betty Charnon (USFS).
- *Response:* Katy Beck agreed and noted that she has been in contact with Betty already during the study phase.

Levia Shoutis presented the wetlands component of the terrestrial resources study results (see PowerPoint included as Attachment 3, Slides 42-67).

- *Comment:* Katie McCafferty clarified that the study area for the wetlands component (*Slide 44*) went to elevation 705 feet, which is the entire area of lake if dam in place (i.e., +2 feet of natural pool elevation, i.e., 703 feet).
- *Response:* Levia replied yes, and noted that the study plan had indicated up to 703 feet.
- *Comment:* Katie McCafferty asked the percentage of wetlands within the wetland/non-wetland mosaic areas on the south side of Grant Creek (*Slide 60*).
- *Response:* Levia replied 20%.
- *Comment:* Katie McCafferty indicated that the 15 functional classes were established as part of the functional assessment of all “waters” within the study area (e.g. Trail Lakes Narrows) (*Slide 62*) and asked if any specific wetlands appeared to exhibit human disturbance.
- *Response:* Levia replied no.
- *Comment:* Katie McCafferty stated that the wetland analysis should include a functional assessment of Grant Creek and Grant Lake and the streams associated thereof.
- *Response:* Levia clarified that such an analysis had not yet been conducted. Cory Warnock (McMillen) requested that Katie include the request with informal written comments and suggested that Katie and Levia further discuss details about such an analysis following the meeting.
- *Comment:* Cassie Thomas asked about the scope of the wetlands study area relative to the proposed Iditarod National Historic Trail (INHT) re-alignment and whether any wetlands impacts are associated with that effort.
- *Response:* Levia indicated that they briefly looked at this, and did not believe that the INHT crossed any wetlands, but could confirm during the recreation and visual resources presentation.

Amal Ajmi (ERM) presented the wildlife components of the terrestrial resources study results (see PowerPoint included as Attachment 3, Slides 68-104).

- *Comment:* Cassie Thomas noted that with the short-term construction activity and long-term increased public access that could result from the Project, there is the potential for increased hunting.
- *Response:* Cory acknowledged the comment and indicated that public access would be further discussed during the recreation and visual resources presentation and that cross resource issues would be discussed at the end of the day.

<<LUNCH BREAK>>

Water Resources Study Results

Chuck Sauvageau (McMillen) presented the water quality and hydrology components of the water resources study results (see PowerPoint included as [Attachment 4](#)).

- *Comment:* Monte Miller (ADF&G) stated that the questionable 2009 dissolved oxygen data due to potentially faulty equipment (see *Slide 6*), maybe does not belong in the data set at all.
- *Response:* Chuck acknowledged comment.

- *Comment:* Monte Miller noted that on the graph showing water temperature results in Grant Creek in 2014 (*Slide 10*), there was an apparent dip in April to near 0 °C at all but the GC 600 station and asked if a thermistor was out of the water.
Response: Chuck responded that they are certain all thermistors remained in the water because they weighted the thermistor housings to insure they remained on the bottom of the channel.
- *Comment:* With respect to the water temperature results for the Grant Creek off-channel areas (*Slide 12*), Monte Miller recalled that during the September 2013 Project site visit the crossing at the Reach 2 backwater area (“moose pond”) was at the shallowest 2.5-3 feet deep, and asked whether backwater into the off-channel from the creek could impact the water temperatures.
- *Response:* Chuck responded that groundwater seeps on the adjacent hillside and hyporheic flow are what fill the pond. The main channel of Grant Creek flowing past the moose pond outlet controls the depth of the back water with minimal main channel infiltration. No impact.

- *Comment:* Relative to water temperature study conclusions (*Slide 20*), Monte Miller asked whether the mixing period in Grant Lake was determined.
- *Response:* Chuck replied that the mixing period was not looked at, but believes it to occur early to mid-September.

- *Comment:* With respect to the re-established U.S. Geological Survey (USGS) gaging station (*Slide 21*), Monte Miller asked if measurements were taken in Grant Lake to correlate to the collected gage data in order to determine whether there is accretion.
- *Response:* Chuck responded no.

- *Comment:* With respect to the historic and 2013 hydrology results (*Slide 24*), Monte Miller noted that it appears that one year of data (2013) potentially shows the extremes, whereas the historic record (1948-1958) shows the average over time.
- *Response:* Chuck agreed with the comment.

- *Comment:* Relative to the accretion study results (*Slide 25*), Monte Miller commented that there is an apparent accretion rate of 0.2 cfs.

- *Response:* Chuck concurred, saying that, in other words, a difference due to measurement error. Cassie Thomas (NPS) asked whether they considered measuring flows in the fall when ground is not frozen to confirm the conclusion. Chuck replied that the fall flows (200 cfs) become too hazardous for trying to acquire the data and at these higher flow volumes it would be difficult to accurately quantify small flow differences within the canyon reach of Grant Creek. Monte commented that accretion will become a factor, if Project operations remove water from Grant Creek.

Paul Pittman (Element Solutions) presented the geomorphology component of the water resources study results (see PowerPoint included as [Attachment 5](#)).

- *Comment:* Relative to the observations of the Grant Creek sediment transport (*Slide 19*, Eric Rothwell (NOAA Fisheries) asked whether the sediment deposition also demonstrated spawning in isolated pockets behind “lunkers”.
- *Response:* Paul responded yes.
- *Comment:* With respect to potential mitigation actions (*Slide 24*), Eric Rothwell asked if that could involve gravel augmentation.
- *Response:* Paul responded yes.
- *Comment:* Cassie Thomas (NPS) asked when the southeast corner of Grant Creek was diverted, and whether the diversion could have created a sediment source.
- *Response:* Paul indicated that based on the existing vegetation, the diversion likely occurred from decades, up to a century ago, and that it is not believed to be a source of sediment.

Recreation and Visual Resources Study Results

Dwayne Adams (USKH) presented the recreation and visual resources study results (see PowerPoint included as [Attachment 6](#)).

- *Comment:* Relative to the discussion of the study’s scope of work (*Slide 4*), Cassie Thomas (NPS) asked if field staff of other resource studies documented observations of recreational use.
- *Response:* Dwayne replied that the aquatics staff, who was on site for the entire study period, emailed him details regarding fishing activity, which was mostly during the summer.
- *Comment:* With respect to the dates of study site visits (*Slide 5*), Cassie Thomas noted that March 3 and July 12 were weekends (Saturday and Friday, respectively), and asked if there appeared to be more recreational activity then versus a week day.
- *Response:* Kim Graham (USKH) concurred.
- *Comment:* Monte Miller (ADF&G) asked if there was concern with having only one summer site visit.

- *Response:* Dwayne clarified that there were two summer visits (July 12 survey and August 25 aircraft flight). Monte noted that those dates would not fall on the angling season though. Dwayne said that they primarily relied on the aquatics field staff for that information.
- *Comment:* When reviewing the potential Project impacts to the recreation and visual resources (*Slide 12*), specifically the possible increase of access, Cassie Thomas asked if KHL has considered gating the primary proposed access road.
- *Response:* Cory Warnock (McMillen) indicated that specific to access, KHL has made no decision and is open to considering all potential options, including gating of the access road. Mike Salzetti (KHL) added that KHL will want to take into account the various resource agencies' needs as they relate to their respective land management goals and objectives. Cassie recommended that the process for determining the solution for access be collaborative and that it include the public. Cory and Mike agreed with both suggestions.

Dwayne indicated that if there are additional information needs relative to winter recreation that it would be good to understand now, in order to try to coordinate data gathering with USKH's existing plan to survey supplemental areas soon. John Eavis (USFS) commented that two days of recreational use survey work is insufficient and suggested installing trail cameras to collect additional data in order to justify the existing conclusions regarding recreation use. John also indicated that information on the ice condition for winter motor use on Grant Lake would be useful. In general, Cassie Thomas replied that it would be good to understand the competing recreational needs of various agencies/groups. Cory suggested a call to discuss additional recreation information needs. Individuals identified as potential participants included, Cassie Thomas, Robert Stovall (USFS), John Eavis, and Lesli Schick (ADNR).

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). Cassie Thomas (NPS) noted that she will be traveling most of the next four weeks but will try to provide the minor comments that she has by the deadline. Robert Stovall (USFS) noted that he has asked his staff to provide him comments on the relevant study reports by April 25. Monte noted that despite the internal glitch with ADF&G being able to receive the draft study reports electronically, he should be able to meet that deadline.

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. Cassie suggested a more collaborative, "workshop" format for the June/July meeting, rather than presentations.

Cory indicated that except for maybe the need to present engineering information, that is what KHL envisions as well. Monte stated that ADF&G recognizes that the licensing process is transitioning from the studies to license application development.

<<ADJOURN 4:00PM>>

Action Items

- If there is other staff within a resource agency that should be reviewing engineering deliverables, **resource agency representatives** to provide Cory Warnock (McMillen) the contact information.
- **Levia Shoutis (ERM) and Katie McCafferty (USACE)** to coordinate on a functional assessment for Grant Creek, Grant Lake, and the associated streams thereof.
- **KHL** to schedule a call to discuss additional recreation information needs.
- **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: Terrestrial Resources Study Results PowerPoint presentation

Attachment 4: Water Resources, Water Quality and Hydrology Study Results PowerPoint presentation

Attachment 5: Water Resources, Geomorphology Study Results presentation

Attachment 6: Recreation and Visual Resources Study Results PowerPoint presentation