

**Kenai Hydro, LLC**  
**Grant Lake/Falls Creek Hydroelectric Project**  
**Aquatics Technical Work Group Meeting**  
**Conference Call**  
**May 19, 2009, 10:00 am – 11:45 am**

**In Attendance**

Jenna Borovansky, Long View Associates  
(LVA)  
Mike Cooney, Friends of Cooper Landing  
Lynnda Kahn, U.S. Fish and Wildlife  
Service (USFWS)  
Gary Fandrei, Cook Inlet Aquaculture  
Association (CIAA)  
Jim Ferguson, Alaska Department of Fish  
and Game (ADFG)  
Eric Johansen, USDA Forest Service  
(USFS)  
Jeff Hetrick, Inn at Tern Creek  
Jason Kent, HDR  
Joe Klein, ADFG

Jason Mouw, ADFG  
Paul McLarnon, HDR  
Lee McKinley, ADFG  
John Morsell, Northern Ecological Services  
(NES)  
Doug Palmer, USFWS  
Gary Prokosch, Alaska Department of  
Natural Resources (ADNR)  
Kim Sager, ADNR  
Rob Spangler, USFS  
Sue Walker, NOAA Fisheries (NOAA)  
Brad Zubeck, Kenai Hydro, LLC (KHL)

**Draft Meeting Summary**

**Agenda**

- Introductions
- Grant Creek Hydrology Station Locations
- Review of April 21, 2009 TWG meeting discussion
- Discussion of instream flow methodologies
- Action items and agenda for next TWG meeting
- Schedule next TWG meeting

Jason Kent (HDR) and Brad Zubeck (KHL) welcomed meeting participants and previewed the agenda for the day (Attachment 1).

**Grant Creek Hydrology**

Jason Kent summarized the revised hydrology station proposal sent via email (HDR Memo dated May 6, 2009) to the Technical Work Group (TWG). Jason clarified that the five stations to be established this year are:

- One continuous station at the former USGS site on Grant Creek
- Three instantaneous stations on Grant Creek: mouth of the lake, potential powerhouse location, and tributary of intermittent stream
- One continuous station on the mouth of Falls Creek

Gary Prokosch (ADNR) agreed with the revised locations for the reconnaissance year of data collection, noting that it is appropriate to look for correlation between the former USGS site and the instantaneous measurements. HDR agreed that after the first year of data collection and after field data from the summer are available, the need for additional hydrology stations can be revisited by the TWG.

Jim Ferguson (ADFG) asked whether or not for the instantaneous flow data would be collected year-round. Paul McLarnon (HDR) stated that measurements would be taken only through ice-up.

The TWG was in agreement with the hydrology stations identified in the May 6, 2009 memo.

### **Review of April 21, 2009 TWG Meeting Discussion**

Jason Kent summarized decisions and action items identified in the April 21, 2009 meeting summary. Paul McLarnon summarized habitat suitability information collection proposed for this summer's reconnaissance effort – noting that species and life stages that are present during snorkel and electrofishing efforts (5-6 events) will be the focus of initial data collection. Jason Kent noted that the 2009 summer data will be used to determine focal species and life stages for the instream flow studies.

[Jeff Hetrick (Inn at Tern Lake) joined the call near the end of the discussion of the previous meeting's content, at approximately 10:25am.

Lynnda Kahn (USFWS) joined the call at approximately 10:28am, just before the Instream Flow Methodology discussion]

### **Instream Flow Methodology Discussion**

Jason Kent stated that the goals for the TWG discussion of instream flow methodologies today were:

1. Provide clear direction to the HDR fish resources team regarding data needed this summer to support instream flow study development, specifically the type of habitat suitability data that will be needed.
2. Determine a recommended methodology for the instream flow study, if possible.

Jason Kent noted that he emailed the TWG a comparison of instream flow methodologies on April 29, 2009. The four methods that are currently under consideration are those discussed at the April TWG meeting (PHABSIM, River 2D, habitat criteria mapping, and expert habitat mapping).

Jason Mouw (ADFG) noted concerns with determining a methodology that requires habitat suitability curves, as he feels that these methodologies are necessarily very data intensive to produce site-specific curves that are supportable. He noted that the hydrologic record for Grant Creek may be sufficient to support a flow-based method.

Jason Kent stated that no matter which method is chosen, some site specific habitat data will be used to inform the analysis. He said that he is uncomfortable relying solely on the 10-11 years of flow data from the 1948-1958 water years. He stated that the complexities of having a proposed hydroelectric project in the system may not be conducive to using a hydrology-based method as the primary instream flow method, but that he would like to hear thoughts from the TWG.

Jason Mouw stated that the level of effort in data collection should match the scale of the proposed project. He noted that the HSC instream flow methodologies are microhabitat based and rely upon assumptions about distribution of habitat and he is concerned that until the TWG has more information about the project area, incorrect drivers for habitat use may be chosen. For example, he noted that in some Alaskan streams, bed temperature and intergravel up and down welling gradients are the driving factors for habitat use; and habitat assessment that relies upon depth, velocity, substrate and cover may not capture the driving factors behind habitat use. He also noted that some of these questions would require academic level research to determine, and may be very data intensive.

Jason Kent acknowledged that there are many factors that may influence habitat use, and that data collection this summer will provide the TWG additional information to inform the choice of methodology. Jason Kent asked the TWG to consider habitat information that would be useful to collect this summer, given that the choice of instream flow methodology will be deferred until the September TWG meeting.

Rob Spangler (USFS) inquired regarding the ability of the different proposed methods to extrapolate beyond data collected.

Jason Kent noted that if any of the model based methods are chosen, data can be interpolated between calibration/field collection flows, but that extrapolation to flows lower or higher than what was observed during calibration flows is more problematic.

Rob Spangler (USFS) asked for a characterization of pros and cons of proposed methods to date.

[Paul McLarnon (HDR) had to leave the call at approximately 11:00 am.]

Jason Kent stated that the 2-D model (River 2D) is sometimes limited in systems with larger substrate, but that the 1-D (PHABSIM), habitat criteria mapping, or expert habitat mapping methodologies all seem applicable to this system. John Morsell noted that there may be challenges applying the habitat mapping methodologies when Grant Creek is not wadeable. Jason Kent noted that the majority of Grant Creek habitat should be visible from the banks to allow expert habitat mapping, if that method is chosen. Jason also noted that collecting data in an unregulated system such as Grant Creek can limit the ability to meet an exact flow rate, as can be done in regulated systems. Jason also noted that the habitat mapping methodologies require up front data collection before field work may begin.

Jason Kent described the aerial photo and geo-referenced data needs for the habitat mapping methods. Rob Spangler noted that the habitat mapping methods allow for key habitat subsets to be examined, such as spawning areas – and areas such as upwelling zones that are critical habitat components that may not be captured by the transect methodologies. Transect methods don't get at rare habitats, but field methods can pick-up these rare habitat types more easily.

Joe Klein stated that he agrees with Jason Mouw's concerns, and feels that more site-specific information is needed before the choice of instream flow methodology can be made. He feels that the 2-D model is probably not feasible, and would like to see at least some use of site-specific data on habitat used, as he does not feel that existing habitat curves, mostly from the lower 48, apply well to Alaskan streams.

Jason Mouw discussed summer information needs and stated that if data are collected only on aggregations of fish, data on unoccupied habitat is also needed for comparisons. Rob Spangler stated that density dependence must be in effect in order to make true comparisons of occupied

versus unoccupied habitats. He noted that field data on occupied habitat allows for HDR and the TWG to apply best professional judgment on habitat characteristics of high use areas that can inform development of a full instream flow study.

Jason Kent reminded the TWG that the summer data collection effort was aimed at collecting reconnaissance data, and that the TWG would be involved in drafting a complete instream flow study plan, starting with the September TWG meeting. He stated that based on the discussions at today's meeting, HDR will focus summer data collection on the describing habitat characteristics in areas of high fish use (versus collecting more formal, preliminary Habitat Suitability Index information). HDR will focus field efforts on documenting fish species and life stages presence and absence, and will characterize highly utilized spawning and rearing habitat. Jason Kent stated that HDR will follow-up with Joe Klein, Jason Mouw, and Rob Spangler to determine how to limit biases when collecting data primarily from spawning locations. HDR will provide a memo to the TWG that confirms this approach for habitat data collection – this memo will supplement the existing Fish and Aquatics Study Plan.

The TWG discussed the timing of data availability. Doug Palmer noted that rainbow trout will be spawning early in the season, and John Morsell stated that the remaining spawning data will not be available until mid-summer to early fall. The TWG requested a July update meeting, and HDR confirmed that raw data from the summer regarding presence/absence of fish will be available at the September TWG meeting.

Members of the TWG concurred with the decision to move forward with reconnaissance data, and to use the summer data to inform the choice on instream flow methodology in September.

Gary Prokosh noted that he had received emails from other parties with statements offering interpretations regarding the guidelines in the Kenai River Special Management Area component of the Kenai River Comprehensive Plan. He noted that the plan does not prohibit new dams; the plan prohibits construction of new dams, only if the proposed dam blocks fish passage and/or reduces essential stream flows for fish.

## **Closing**

Jason Kent noted that in order to accommodate a field visit and decisions regarding the instream flow methodology to be used, the September meeting may need up to be 3-days. TWG members were requested to hold September 22-24 on their calendars.

The meeting adjourned at 11:45 am.

## **Action Items**

- Jason Mouw will provide Jason Kent with white paper analyses of additional instream flow methodologies, and Jason Kent will provide the paper(s) to the TWG for their review and input.
- HDR to provide TWG the summer field schedule and TWG members are encouraged to join HDR in the field to familiarize themselves with the project area.
- HDR will provide the TWG with a technical memo describing reconnaissance habitat data to be collected in 2009.
- Paul McLarnon will schedule a July conference call to update the TWG on field data collection efforts.

- HDR will tentatively schedule three-days in September for instream flow study methodology selection, focal species/lifestages selection, TWG field visit, and study reach selection.

## **Attachments**

Attachment 1: Agenda

Kenai Hydro, LLC  
Grant Creek/Falls Creek Instream Flow  
Technical Work Group Meeting #2

Tuesday, May 19

Teleconference Dial-in number (866) 994-6437  
Passcode 30267459#

**DRAFT AGENDA**

<b>Time</b>	<b>Topic</b>
10:00 AM	Welcome / TWG member introductions
10:10 AM	Discussion of March 21 Meeting Minutes <ul style="list-style-type: none"><li>• Addendum on hydrology stations</li><li>• Discussion of meeting minutes</li></ul>
10:30 AM	Discussion of relevant instream flow assessment methodologies <ul style="list-style-type: none"><li>• 4 potential methodologies are currently on the table. Open floor to suggestions for other methodologies</li><li>• Group discussion. Suggested methodologies:<ul style="list-style-type: none"><li>- 1-D modeling (PHABSIM)</li><li>- 2-D modeling (River2D)</li><li>- Habitat criteria mapping</li><li>- Expert habitat mapping</li></ul></li><li>• Group concurrence on Grant Creek instream flow assessment methodology</li></ul>
12:00 Noon	Develop action items and agenda for next TWG meeting
12:10 PM	Schedule next TWG meetings <ul style="list-style-type: none"><li>• Tentative field trip – September 22-23, 2009</li></ul>
12:15 PM	Adjourn