Cooper Lake Project Relicensing
Meeting Summary:
Fall 2002 Workshop to Review Draft Study Plans
December 3, 2002 — 9:00 A.M. to 4:00 P.M.
Kenai Princess Hotel
Cooper Landing, AK

Meeting Attendance:

Name	Affiliation
Dwayne Adams	Land Design North (LDN)
Margaret Beilharz	U.S. Forest Service (USFS)
Dan Bevington	Kenai Peninsula Borough / Planning
David Blanchet	USFS / Chugach National Forest
Jeff Breakfield	Alaska Department of Fish and Game (ADFG)
Sirena Brownlee	HDR Alaska, Inc. (HDR)
Jack Dean	Concerned citizen
Karen Demsey	Long View Associates, Inc. (LVA)
Suzanne Fisler	Alaska Department of Natural Resources (ADNR)
Todd Glass	Heller Ehrman
Dora Gropp	Chugach Electric Association, Inc. (Chugach)
Carl H. Harmon	Chugach
Steve Hennig	USFS / Chugach National Forest
Eric Johansen	USFS / Chugach National Forest
Carol Johnson	Chugach
Bruce King	ADFG / Sportfish Division
Ken Lancaster	Representative, Alaska State House of Representatives
Glenda Landua	ADFG
Tony Largaespada	USFS / Chugach National Forest
Howard Lee	Montgomery Watson Harza (MWH)
Anne Leggett	HDR
Mike Massin	Chugach
Paul McLarnon	HDR
Ray Morgan	Matanuska Electric Association
John Morsell	Northern Ecological Services / HDR
Sally Morsell	HDR Alaska
Steve Padula	LVA
Doug Palmer	U.S. Fish and Wildlife Service (USFWS)
Larry Peltz	National Marine Fisheries Service (NMFS)
Don Perrin	State of Alaska, Office of Management & Budget, Division of Governmental Coordination (DGC)
Gary Prokosch	ADNR / Water Resources
Mari Reeves	USFWS
Jeff Schively	HDR
George Siter	Cooper Lake Fish & Game Advisory Committee (CLFGAC)

Name	Affiliation
Phil Steyer	Chugach
Bill Stockwell	Cooper Lake Fish & Game Advisory Committee, and the Fish for Cooper Creek Coalition (CLFGAC/FCCC)
Cassie Thomas	National Park Service (NPS)
Jim Topolski	Chugach
Dave Westerman	ADFG Kenai River Special Management Section
Mike Yarborough	Cultural Resources Consultants

(*Note: A copy of the PowerPoint presentation slides shown during the Dec. 3 workshop is attached to this meeting summary.*)

Opening / Workshop Overview

Following a welcome by Mike Massin (Chugach) and introductions around the room, Steve Padula (LVA) began the meeting with an overview of the agenda and purpose of the workshop. He noted that the main objective of the workshop was to review draft study plans that had been issued to date: nine draft study plans issued on November 15, and four draft study plans issued by email November 27 and mailed December 3. Also to be discussed were the remaining (five additional) study plans, which were targeted for issuance before year end.

Steve reminded the group that this workshop did not represent the last opportunity to provide comments on draft study plans. He informed the group that Chugach was extending the review deadline for all study plans to January 31, 2003. Steve added that if any of the remaining study plans does not end up being issued by year end, then the comment deadline for that particular study plan will be extended to provide a full 30-day review period.

Steve noted that the agenda for the workshop basically covered Chugach's responses to the study requests that were received from relicensing participants in response to the Initial Consultation Package (ICP). As explained in detail in the "Response to Stage 1 Comments and Study Requests" document (Stage 1 Response document), while Chugach has developed study plans to address the majority of study requests, there are other study requests for which no study plan has been developed at this time — either because the study would not be timely at this point, or because Chugach disagrees that the requested study is necessary to support the license application.

Margaret Beilharz (USFS) requested clarification on the context for the relicensing studies development and consultation; specifically, she asked for confirmation that Chugach is pursuing relicensing using a traditional (three-stage consultation) relicensing process, and that the consultation on development of the study plans therefore does not comprise scoping of issues for the purpose of a National Environmental Policy Act

(NEPA) analysis. Steve Padula confirmed that Chugach will continue to conduct a traditional relicensing process, and that in this process, the final license application serves as the basis for the Federal Energy Regulatory Commission's (FERC's) NEPA analysis. He added that Stage 2 consultation, which includes conducting studies and development of the draft and final license applications, is just getting underway.

Review of Draft Study Plans

After the overview of the workshop and preliminary discussion, the technical study leads reviewed the study plans and other information for the individual resource areas. The presentations and associated discussion are summarized briefly below (also see attached copy of presentation slides).

Operations/Hydrology

Supplemental Information

Howard Lee (MWH) reviewed the operations and hydrology information that had recently been provided in the Supplemental Information Packet included with the November 15 mailing of draft study plans. The Supplemental Information Packet addressed specific information requests related to the following areas (among others):

- *Description of the Project* — new Project boundary map; clarification of hydraulic capacity of facilities; clarification of the Project water right; explanation for development of the reservoir area-capacity curve; explanation for height of the dam as constructed; and description of potential future modifications of the dam.
- *Operations/Hydrology* — description of existing and potential future reservoir operations; data and description by water-year type for Cooper Lake inflows, powerhouse flows, and power generation; explanation of releases from the penstock into Porcupine Creek; and description of the proposed operations model.

Cassie Thomas (NPS) asked why the hydrologic analyses presented in the Supplemental Information Packet included only years from 1985 to the present. Howard explained that early Project records (reservoir levels and generation) were more intermittent and not as reliable as records from 1985 and later years, so only the more reliable records were presented in the analyses. He added, however, that the pre-1985 data were evaluated and did not change the overall trends in the analyses.

Noting that the information on the State water right for the Project indicates that the Project does use more than the annual allocation of 90,600 acre-feet from Cooper Lake some years, although average annual use is approximately 73,000 acre-feet, Dave Blanchet (USFS) asked if provisions were needed for the Project to comply with the water right for those years when use exceeds the annual Cooper Lake allocation. Gary Prokosch (ADNR) responded that for those years, Chugach should apply for a temporary permit for the additional water use. (Gary also noted that State law has a "use it or lose it" provision; it specifies that a water right may be revoked if the user does not use the allocation for a period of 5 years.)

George Siter (CLFGAC) asked if the turbines could be installed in sequence between Cooper Lake and the powerhouse on Kenai Lake to increase total generation from the Project. Howard Lee explained that the total increments of generation produced in series would basically add up to the same amount of total generation currently produced by generating only at the bottom of the penstock.

Hydrology Study

Howard Lee also briefly reviewed the components that will be included in the Hydrology Study: comparative hydrologic analysis of Cooper Creek, Cooper Lake, Kenai Lake and the upper Kenai River under historic, existing, and proposed operations; and evaluation of the effect of reservoir operations on Cooper Lake freezing. He stated that the draft study plan for the Hydrology Study is targeted for issuance by December 20.

In addition, the estimate for the theoretical probable maximum flood (PMF) into Cooper Lake, which was developed in a 1984 study, will be reevaluated based on more recent information and, if needed, will be updated.

Road Conditions Survey

Sally Morsell (HDR) explained that Chugach will be conducting a road condition survey, which will include undeveloped access routes (such as transmission line access routes). The survey, which was requested by the USFS, will be conducted in accordance with USFS protocol. Sally noted that some remaining planning tasks needs to be completed before the draft study plan can be finished. Among the planning tasks are coordination with the USFS to determine the level of detail to which the survey will be conducted. Sally noted that while the target for issuance of this draft study plan is by December 20, the need for further planning may mean that this study plan is not issued until January.

Fish and Aquatic Resources

Cooper Creek Aquatic Habitat Survey

Paul McLarnon (HDR) summarized the planned approach for the Cooper Creek Habitat Study and the habitat survey work completed in 2002. (*Note*: The power went out shortly into Paul's presentation, so he was unable to show the slides he had prepared; however, the slides are included in the attached presentation materials.)

Paul briefly described the 2002 habitat survey work, which was done in cooperation with agency representatives (ADFG and USFS) and under the guidance of Bill Lorenz of the USFS. The survey was conducted according to the USFS habitat survey protocol. This protocol consists of four separate tiers of survey criteria, depending on reach type and survey objectives: Tier 1 (used for relatively superficial surveys) through Tier 4 (the most complex and is used for the most detailed surveys).

Paul explained that for the purposes of the habitat survey, Cooper Creek was subdivided into five distinct reaches: (from downstream to upstream) alluvial reach, canyon reach, Stetson reach, falls reach, and lake reach. He explained that a modified Tier 3 survey, incorporating many aspects of the Tier 4 protocol, was conducted for the alluvial reach.

Areas of the alluvial reach that were modified by recent high flows will be resurveyed in 2003. In the canyon reach, Tier 3 surveys were conducted for 100 meters above and below each tributary confluence and in the middle of each segment; the remainder of the canyon reach was surveyed to Tier 2. Paul noted that 1.6 km of the canyon reach remains to be surveyed (this will be surveyed in 2003). The Stetson reach was surveyed to Tier 3. The falls reach and lake reach were both surveyed to Tier 2. Analyses of habitat types, habitat richness, etc., by reach were summarized in the presentation materials (see attachment) and will be described in more detail in the results summary that will be included in the draft study plan, targeted for issuance in December.

The proposed study program for 2003 includes finishing the survey in the canyon reach, resurveying areas of the alluvial reach modified by recent high flows, and obtaining low-level aerial photography to produce a detailed basemap.

Dave Blanchet (USFS) commented that the USFS is interested in evaluating potential habitat at alternative flows in Cooper Creek, and asked if the information from the aquatic habitat survey would be useful for the objective. Paul McLarnon and John Morsell replied that this study will provide the basis for the Cooper Creek fish resources study as well as information that will be used directly to help design the Cooper Creek instream flow study. John Morsell added that the aquatic habitat survey provides important baseline information regarding habitat that exists under present conditions, and the instream flow study will be used to predict habitat that would be available under alternative flow conditions. It was noted that the instream flow study would be discussed in detail on December 5 at the planned instream flow study methods technical workshop.

Cooper Creek Fish Resources Study

John Morsell (NES/HDR) briefly reviewed the study plan for the Cooper Creek fish resources study. He noted again that the information from the aquatic habitat survey would be used to delineate habitat units to provide the basis for a survey of fish distribution and relative abundance. Depending on study reach, fish sampling methods will include snorkeling (e.g., in pools) and/or electroshocking (e.g., in riffles).

Bill Stockwell (CLFGAC/FCCC) asked how this study would determine use by migratory fish that are not always present in Cooper Creek. John Morsell clarified that the study components described above apply only to resident and juvenile fish that are present in the creek year round. For adult migratory fish, the study will rely primarily on data that have been collected by ADFG through a weir study in Cooper Creek (1999–2001). John noted that the weir study data will be sufficient for the purposes of the relicensing analysis, except for two areas: (1) determining distribution of spawning Dolly Varden and characteristics of the Dolly Varden spawning areas; and (2) determining distribution of coho salmon in Cooper Creek. The relicensing study will address these two information gaps through observations to be made during a foot survey along Cooper Creek in fall 2003.

There was discussion regarding the timing of the planned electroshocking surveys, and audience members noted that electroshocking should not be done when spawning adult

fish are in the stream. John Morsell responded that the electroshocking was planned for late July, when it was assumed that no spawning adult fish would be present; he added that if spawning adult fish were observed, then the electroshocking would not be done at that time. Dave Blanchet (USFS) noted that previous observations indicate migratory fish are in Cooper Creek as early as mid-July.

Doug Palmer (USFWS) commented that late October (timing proposed in the draft study plan) may be too late to make observations on distribution of Dolly Varden in Cooper Creek. Jeff Breakfield (ADFG) agreed, adding that in a typical year, migratory fish start leaving the creek around mid-September and by mid-October the creek is mostly frozen over.

John Morsell thanked the group for this input and indicated that he would make appropriate adjustments to the draft study plan.

Cooper Creek Instream Flow Study

John Morsell described the basic approach for the planned instream flow study in Cooper Creek: select study reaches and transects (based on the aquatic habitat surveys); survey the transects and water surface elevations at selected flows; model the hydraulics; incorporate applicable fish habitat suitability criteria (for different species and life stages) into the modeling; and use the modeling to predict quantities of fish habitat at different flows. The instream flow study is proposed to be done using the Instream Flow Incremental Methodology (IFIM) and accompanying models for habitat (PHABSIM), temperature (SNTEMP), and sediment transport/deposition (HEC-6). John noted that the advantage of using IFIM is its predictive capabilities.

John again mentioned that study planning for the instream flow study would be discussed in detail at a technical workshop on December 5. The workshop was to be attended by agency experts (hydrologists and fish biologists) and the objective was to get final input and recommendations on technical aspects of the study (e.g., study reaches, fish species and life stages to include in the study, modeling assumptions, etc.). The draft study plan for this study would be completed based on the input from the December 5 technical workshop.

Streamflow and Water Quality Study

John Morsell briefly described the planned streamflow and water quality data collection. The data collected for this study will be used in other studies, including the Cooper Creek instream flow study and the evaluation of Project effects on Kenai River fish habitat. John noted that the gage sites for the streamflow and/or water temperature monitoring sites for this study were located in Cooper Lake, Cooper Creek (above Stetson Creek and at the mouth), in Stetson Creek (at the mouth), and in the Kenai River (near the outlet of Kenai Lake, and above and below the confluence of Cooper Creek). He noted that the thermistor string in Cooper Lake had been removed for the winter to prevent ice damage and will be reinstalled next spring as soon as the ice is off the reservoir.

Cooper Lake Fish Resources Study

John Morsell reviewed the components of this study. He explained that it is a multi-disciplinary study program to evaluate both rainbow trout and Arctic char in Cooper Lake, especially aspects of these populations that relate to the reservoir fluctuation zone. John noted different capture methods for this study were evaluated during preliminary fieldwork this fall — including one event in mid-October during which 120 Arctic char were captured in one net overnight. Based on this preliminary field work, the study team has a good idea of what types of methods will be effective for this study, as described in the draft study plan.

John covered some other activities and findings from the fall 2002 preliminary field work for this study. He noted that all fish >210 mm in length were marked so that potential recapture of these fish next season may provide information on population size. The researchers also identified some spawning locations on the reservoir, including one large spawning area located in front of the powerhouse intake. Underwater video footage of this spawning area was recorded; based on the observations, there appeared to be no visible current in this area. Spawning areas observed in the reservoir all appeared to have a good supply of suitable gravel (e.g., construction-related material in front of the intake, and relatively freshly eroded gravels located immediately below bluffs along the shoreline).

Activities planned for 2003 for this study include: collecting scales from fish to evaluate growth; obtaining information on fish distribution; conducting two or three trapping events in spring and fall; and continuation of rainbow trout tributary spawning surveys that were started in spring 2002. John referred to the draft study plan for information on proposed analyses of the data.

In response to a question from Doug Palmer (USFWS), John Morsell explained that there are good locations for setting trap nets for this study in both the north and south ends of Cooper Lake; he added, however, that there are not many suitable net locations along the middle sections of the shoreline. Doug also asked whether recapture of the fish tagged this fall would provide information on whether the fish move between the north and south ends of the reservoir. John replied that this information would be available, and agreed that it was information that should be taken into consideration.

Jack Dean (USFWS, retired; concerned citizen), noted that there are two color phases of the "normal" size Arctic char in Cooper Lake (as there also are in Char Lake, a tributary to Cooper Lake). Jack stated that it is unknown whether these two color phases spawn together, and asked whether this study would address this question. John Morsell replied that color will be included in the description of fish captured in the trap nets, but he stated that it would be difficult to determine conclusively from these observations whether the two color phases are separate populations. He added that while this is an interesting research question, it is tangential to the Project impacts analysis so is not an objective of this study. John mentioned that based on the underwater videography from the spawning area near the intake, it appeared that both color phases, as well as larger and smaller sizes, of Arctic char were spawning in this area.

Preliminary Entrainment Evaluation

After a brief explanation of the evaluation of literature and existing information that comprises this preliminary evaluation, John Morsell addressed questions from the group regarding this evaluation. Glenda Landua (ADFG) asked whether the redds in the observed spawning area near the intake would be monitored to determine what happens to the juvenile fish after they emerge. John replied that he had given some thought to this idea and suggested that taking velocity measurements over the redds could be done relatively easily, but added that monitoring emergence of juvenile fish from these redds would be a whole new study (not planned); he noted that existing research indicates timing of emergence for Arctic char may be quite variable. Based on a suggestion from Dave Blanchet (USFS), John confirmed that any velocity measurements taken at these redds would include measurements taken during full powerhouse flow. John mentioned that the underwater video images showed leaves present on the spawning area immediately in front of the intake, and noted that undisturbed leaves would not be expected to be present if flow velocities were significant.

Cooper Lake Macroinvertebrates Study

Sally Morsell (HDR) explained that the objectives of the macroinvertebrate study were to describe existing conditions and to assess potential impacts of existing and future reservoir operations on the macroinvertebrate population. She noted that during preliminary field activities in summer 2002, five separate habitat types were identified around the shoreline; therefore the study plan proposes to locate sampling stations in each of these five habitat types.

Sally described the planned study activities for 2003, which include beginning sampling in early spring and continuing at least through September. She explained that sampling will be conducted monthly and is designed to sample progressively along transects to increasingly higher elevations as reservoir level rises through the study season. The results will be analyzed using standard metrics that are used to evaluate relative health of macroinvertebrate populations; the data sets for different sampling episodes will be analyzed separately to evaluate effects of reservoir level and changes in reservoir level on the macroinvertebrate community.

Margaret Beilharz (USFS) suggested that the final study plan should include more detail on the statistics that will be used in the data analysis for this study.

Glenda Landua (ADFG) asked what percentage of the shoreline zone of Cooper Lake was represented by each of the five habitat types that had been identified. Sally replied that the relative proportion of each habitat type had not been determined yet, but noted that the most abundant habitat is the steep/rocky terrain type. Glenda stated that ADFG suggests that Chugach consider establishing more than one sampling station in each of the more prevalent habitat types; she suggested that up to three stations in these habitat types might be more appropriate, to allow good statistical analysis. Glenda noted, however, that ADFG's expert who had made this suggestion was not very familiar with lake sampling strategies. Sally noted that the reference source for the methodology

proposed in the draft study plan did not divide the sampling site proportionally to relative habitat abundance, but indicated that ADFG would be consulted further regarding sampling protocol for this study.

Porcupine Creek Fish Resources Study

John Morsell (NES/HDR) provided an overview of this study. He noted that the original concern from agencies regarding Project effects on Porcupine Creek was the potential effect on aquatic habitat of periodic releases from the penstock. However, as noted in the study plan, Chugach has indicated that it will maintain future releases from the penstock drain valve into Porcupine Creek to very low flow rates (1 cfs or less). This being the case, the dominant factor affecting fish habitat in the creek now is the perched culvert across the powerhouse access road that eliminates access to the creek from Kenai Lake. Therefore, the emphasis of this study is evaluating the potential habitat in the portions of the creek that would be accessible to migratory fish if the culvert did not block access. John noted that the habitat evaluation will be done using USFS Tier 3 habitat survey protocol.

Eric Johansen (USFS) mentioned that the USFS had previously completed a road survey that included the spur from Snug Harbor Road that accesses the powerhouse. He noted that at the time of that survey, the drop to the jump pool below the culvert outfall was only 2 feet, and that Dolly Varden had been observed trying to jump upstream into the culvert.

Margaret Beilharz (USFS) asked what the maximum flow rate possible through the penstock drain valve is. Chugach indicated it would determine the capacity of the valve and provide this information to the relicensing participants.

Evaluation of Effects of Project Discharge on Kenai River Fish Habitat

John Morsell noted that the purpose of this study is to evaluate the effect of flows from the Project powerhouse on fish habitat in the Kenai River from Kenai Lake to the Russian River confluence. The degree of augmentation of upper Kenai River flows (above the Cooper Creek confluence) by the powerhouse flow is proportionally greatest during winter low flows. John explained the basic approach for this study, including reviewing existing information and interviewing area fishing guides regarding fish use of this reach of the Kenai River, surveying transects at selected locations across the river, and modeling change in wetted perimeter (analogue for habitat) with changes in flow in this reach.

John also described the stream temperature component of this study. The issue to be addressed is possible effects of reduction of Cooper Creek stream temperature (related to diversion of outflow from Cooper Lake) on aquatic habitat in the Kenai River below the Cooper Creek confluence. Data from the thermistors installed in the Kenai River, above and below the Cooper Creek confluence (as described in the draft study plan for the streamflow and water quality study), will be used for this study.

John noted that the influence of Juneau Creek on Kenai River flow in this reach may also need to be taken into consideration when evaluating the effect of the Project, and Bill Stockwell (CLFGAC/FCCC) suggested that Bean Creek should likewise be taken into consideration.

Mari Reeves (USFWS) asked whether habitat in Kenai Lake could be affected by powerhouse flows. John Morsell responded that there is no evidence that habitat in Kenai Lake has been affected by powerhouse flows and that fish populations presumably have adjusted to the presence of the flows over the 40+ years since the Project has been in operation. Mari asked whether the potential increase in reservoir operating level of Cooper Lake (which could change maximum capacity of the turbines from 380 cfs to 386 cfs) could affect habitat in Kenai Lake. It was discussed that this would represent a relatively minor change in maximum outflow, and that the total amount of water available to flow through the powerhouse would not change. Dave Blanchet (USFS), however, stated that until Chugach refines its potential operations proposals, it must be assumed for the purposes of the Project impacts studies that a change in Cooper Lake reservoir operations could significantly affect seasonal timing of powerhouse outflow and lake level fluctuations.

On a related issue, Margaret Beilharz (USFS) asked whether FERC's NEPA analysis will consider a proposed change in operations in terms of how it differs from operations allowed under the existing license or in terms of change from existing practice; she noted that the potential operations change of raising the Cooper Lake normal maximum operating level would fall within operations that are allowed under the existing license. Steve Padula (LVA) replied that he was not sure how FERC would frame its analysis but thought that because data collection for analysis of existing conditions was being done to evaluate the effects of existing operations, FERC's NEPA analysis would consider conditions predicted to occur under proposed operations relative to existing conditions.

Terrestrial Resources

Terrestrial Vegetation Studies

Anne Leggett (HDR) presented an overview of the planned terrestrial vegetation studies. There are three primary components to the terrestrial vegetation studies: vegetation mapping in the Project study area; evaluation of shoreline erosion around Cooper Lake; and surveys for sensitive and exotic plants. The first two components are summarized in the terrestrial vegetation study plan, while the sensitive and exotic plant surveys are described in a separate study plan.

Anne described the vegetation mapping, noting that the main purpose of the mapping is to allow description of wildlife habitat and how it would be affected with a change in Project operations. For this reason, the mapping will be conducted at a greater level of detail around Cooper Lake and along Cooper Creek than elsewhere in the Project study area (e.g., along the transmission lines). Anne also explained that historical aerial photography will be used to evaluate past Project-related changes in vegetation around Cooper Lake to help predict what future changes might be if reservoir operations changed from existing operations.

The shoreline erosion evaluation will use qualitative observations regarding existing factors influencing shoreline erosion around Cooper Lake to predict future erosion and shoreline changes under potential future reservoir operations.

Anne explained that the planned sensitive and exotic plant surveys (two separate surveys) respond to a USFS study request based on USFS-specific information needs for the relicensing. Therefore, the surveys are only planned to be conducted on USFS lands (i.e., most of the Cooper Lake shoreline, along Cooper Creek, and along the transmission line route from near Kenai Lake to the Portage/Girdwood area). Dave Blanchet (USFS) stated that the USFS also wants to have the Snug Harbor Road (USFS easement through State-owned land) included in the survey.

Mari Reeves (USFWS) asked how vegetation is managed along the Project transmission lines, and whether herbicides are used. Jim Topolski (Chugach) briefly described Chugach's standard vegetation maintenance practices, and explained that all vegetation clearing is mechanical (by machine or hand) and that no herbicides are used.

Dave Blanchet asked whether the vegetation studies will be able to predict potential gains/losses in habitat at different reservoir operating levels. Ann Leggett confirmed that the vegetation studies will allow this evaluation.

Cooper Lake and Cooper Creek Water Birds Study

Sally Morsell (HDR) explained that the water birds study is designed to evaluate the possible effect of reservoir fluctuation on nesting success of birds that nest in the shoreline area. Reconnaissance observations in 2002 indicate that most of the nesting at in the southern end of the reservoir. A total of 23 species of water birds were observed on the reservoir. Sally reviewed the study approach, which involves collection of nest data along transects that will extend from the water level to 15 feet (linearly along the ground) beyond the shoreline at the time of each survey event (i.e., the transects will shift vertically between survey events corresponding with changes in reservoir level). The surveys will be conducted through the nesting season, from the beginning of June through the end of July.

Margaret Beilharz (USFS) asked why the transects would not extend to 15 feet above the potential future maximum reservoir level of 1,206 feet msl. Sally explained that the effect of reservoir operations can only be observed on shoreline habitat that is currently affected; results will be extrapolated to predict potential effects at higher reservoir operating levels.

Bill Stockwell (CLFGAC/FCCC) asked whether birds other than water birds would be included in this study. Sally replied that other bird species will be studied in conjunction with the terrestrial wildlife study (separate study plan), but that any observations of terrestrial bird species would also be noted during the field work for the water bird study.

Dave Blanchet (USFS) noted that in the Preliminary Study Concepts and 2002 Data Collection Methods document (issued by Chugach in August 2002), description of the proposed water birds study had indicated that observations would also be made on other lakes besides Cooper Lake for comparison. Sally clarified that the intent of the description in the Study Concepts document had been that neighboring lakes might be observed if needed to determine whether water birds observed at Cooper Lake were nesting elsewhere and just using Cooper Lake as a feeding area; the intent was not to do comparative studies. Dave stated that the USFS is interested in evaluating Cooper Lake in a non-fluctuating condition. Sally replied that this was a policy question. Steve Padula (LVA) added that with respect to comparative studies that have been requested by the USFS and others, Chugach has declined to conduct this type of study for relicensing because of the research leads' significant reservations regarding the technical merits of this type of approach. In addition, from a cost perspective, Chugach would like to use the available resources in the most effective means possible, and for this reason it has proposed study methods that its experts have recommended as providing the best means for evaluating potential conditions under alternative Project operations. Dave Blanchet, however, stated that the USFS wants to know what the ongoing impacts of reservoir fluctuations on Cooper Lake are compared to conditions on a natural lake, and stated that operating Cooper Lake at a static level is within the realm of possibility so should be studied. Sally Morsell reiterated that the planned studies — including the terrestrial vegetation studies, hydrology study / operations description, and the macroinvertebrates study, as well as the water birds study — will allow evaluation of potential conditions under alternative operations as well as Project impacts under existing conditions. Steve Padula added that it seems most relevant to the relicensing analysis to first determine what the potential future operations regime will entail (based on the hydrology study / operations description) and then use the results of the relicensing studies to predict the effects of the proposed operations on vegetation and other terrestrial resources.

Terrestrial Wildlife Study

Sally Morsell briefly described the planned study approach for the terrestrial wildlife study. She noted that incidental observations of wildlife in the Project study area were made in 2002. She described the study area and study components (large mammal survey, agency brown bear database monitoring, etc.) and noted that this study was closely linked to the terrestrial vegetation/habitat mapping described earlier. In addition, incidental observations of terrestrial wildlife will be made during all fieldwork for other relicensing studies, using standard data sheets.

Recreation/Visual Resources

Dwayne Adams (LDN) summarized the planned recreation and visual resources study. He noted that the study plan had been developed through discussions with the USFS and that preliminary discussions have also occurred with ADNR regarding study planning for the portion of the recreation/visual resources assessment that will be conducted in Chugach State Park. Consultation with the State Park will continue toward planning for this study component in 2003.

Dwayne explained that because there is limited information specific to the Project area relative to recreation and visual resources, the major component of the recreation/visual resources assessment is a survey of visitors to the Project area, local user groups, and vendors. The survey consists of three separate but overlapping components: a winter survey (to capture snowmachine use, etc.), a summer survey (to capture summertime types of recreation use and the public's visual perceptions of the Project area from key viewpoints), and a fall survey (to capture hunting-related use). All three seasonal components of the survey will focus on high-use periods, and each will be conducted over three high-use days. The survey will use "cluster sampling," which targets every single user at the data collection points on the survey days, because this method of sampling should provide the most representative picture of actual conditions and trends.

Dwayne described the survey strategy further, noting that it intentionally avoids questions that attempt to determine "latent demand" because this approach has been shown to have significant flaws and limitations in usefulness for predicting future trends.

Cassie Thomas (NPS) asked about contingency plans in case the targeted high-use recreation days for the surveys turn out to have unfavorable weather for recreation. Dwayne replied that the survey team can respond to changed schedule on short notice so that the survey days can be shifted if needed if weather for a planned survey day is not favorable.

Margaret Beilharz (USFS) commented that Dwayne's summary of the planned recreation/visual resources study had provided more background and detail than was included in the draft study plan, and she requested that the draft study plan be expanded to include this information and then be reissued as a revised draft. It was agreed that the draft study plan would be revised and expanded and reissued along with the remaining draft study plans on December 20. (Later in the meeting, Dwayne requested that comments on this draft study plan be submitted by January 15, instead of January 31 as for the rest of the study plans, so that the survey instrument can be finalized in time to begin the winter survey in early February. There were no objections to this request.)

Cassie Thomas noted that there is a small but dedicated group of rafters who use the upper Kenai River (above Cooper Creek) in winter months because of the availability of open water in this reach (as a result of flow augmentation from the Project powerhouse). She asked whether there was any planned study component to interview winter rafters regarding their experience with winter flows in the upper Kenai River. Dwayne replied that this particular issue would not be addressed by the statistically based survey questions designed for visitors to the Project area, but noted that it was an interesting issue that should be addressed. Dwayne suggested that anecdotal information that will be collected from user groups and vendors in the Project area for the recreation/visual resources study could provide information on trends related to winter rafting in the upper Kenai River. Cassie stated support for incorporating the issue of winter boating flows in the upper Kenai River into the planned whitewater boating study (for Cooper Creek). Cassie also mentioned that she could suggest a qualified person to conduct the whitewater boating evaluation.

Cultural Resources

Mike Yarborough (CRC) briefly described the study plan for the cultural resources evaluation. He explained that the study involves three related components: (1) inventory and assessment of archaeological/historical sites, (2) inventory and assessment of traditional cultural properties, and (3) evaluation of the potential historical significance of the Project's hydroelectric facilities. Mike noted that the work outlined in the draft study plan is guided by a full suite of regulations and relies heavily on consultation with federal agencies, the State Historic Preservation Office (SHPO), tribes and other native groups, and other interested parties. Planned field work for this study will start next spring and will cover the Cooper Lake and Cooper Creek areas as well as the transmission line route.

Mike also summarized consultation and preliminary data synthesis that have been conducted to date for this study. (Mike presented slides showing distribution of known cultural resource sites in the Project area but noted that these maps were not included in the meeting materials handout because they contain sensitive information.)

Mike also showed photos and historical maps from the era of active commercial mining on Cooper Creek, information that will be useful in the assessment of historical sites in the Project area. He noted that given the extent and intensity of the hydraulic mining in Cooper Creek, it is not likely that older historical or archaeological features along the creek would have survived.

Tony Largaespada (USFS) asked about two cabins that apparently existed very close to the shoreline on Cooper Lake before the Project was constructed. He noted that the USFS is very concerned that artifacts that may still be associated with the historical cabin sites may be put at risk (by increased erosion) if the reservoir fluctuation zone is raised in elevation. He expressed concern that there was no specific mention of evaluating these cabin sites in the draft study plan. Mike Yarborough assured Tony that he was aware of the cabin sites and that they would be evaluated as part of the inventory and assessment of historical and archaeological sites; Mike explained that no single site or feature was explicitly singled out in the study plan.

Tony Largaespada also expressed concern that the draft study plan proposed to focus field surveys only on identified sensitivity zones. Tony explained that Chugach National Forest has a programmatic agreement (PA) with the SHPO that it is required to follow, and this PA requires that cultural resource surveys in the Forest must entail complete coverage, wherever feasible. The reason for this requirement is that there is no predictive model for cultural resource sites for the Kenai Peninsula. Mike Yarborough confirmed that he did plan to use a predictive model for the Cooper Lake Project cultural resources study. Mike noted that the PA between the Forest and the SHPO would not limit the SHPO's ability to approve use of a project-specific predictive model for this study. In addition, Mike mentioned that he understood that Chugach National Forest would likely have a predictive model approved by the SHPO by next spring. Tony Largaespada confirmed that this was the case, and indicated that if the SHPO agrees to use of a

predictive model for this study (either the USFS's model or one developed specifically for this study), use of this model would be acceptable to the USFS.

Bill Stockwell (CLFGAC/FCCC) asked whether the study would also incorporate input from local residents with knowledge of the history of the Cooper Landing area. Mike confirmed that it would, and added that he planned to contact local historian Mona Painter to interview her. Bill Stockwell also suggested that Mike contact local resident David Rhode. Mike agreed, and added that in his work to date on this project, he had come to appreciate the importance of the area's mining history to the development of Cooper Landing community.

Alaska Coastal Management Program (ACMP)

At a break in the discussion of resource issues and draft study plans, Don Perrin (DGC) introduced himself as DGC's new project review lead for the State's review of the Project relicensing for consistency with the ACMP. He explained that DGC's review will be based on requirements for State, Borough, and federal policies and permits that may be applicable.

Don noted that once Chugach submits its final application to FERC to relicense the Project, the State will start its 50-day review of the relicensing for consistency with the ACMP. He added that although DGC has determined that it would be premature now to begin the ACMP pre-application process for this relicensing, he will be keeping informed of relicensing activities throughout the pre-filing process and encouraged anyone to contact him for further information at any time.

Next Steps / Closing Remarks

Steve Padula (LVA) reminded the group that the target for issuing remaining draft study plans was December 20 and that comments on all draft study plans were due to Chugach by January 31, except for (1) the recreation/visual resources study plan, for which comments were requested by January 15, and (2) any study plan that should happen not to be issued by January 1 (in this case, the due date for comments will be 30 days after issuance of the draft study plan).

Steve reviewed the overall schedule for the relicensing process (see summary chart in attached presentation materials). He noted that to the extent possible, Chugach's plan is to complete a full suite of studies and alternatives analysis for inclusion in the draft license application, which will be issued early in the second quarter of 2004. Margaret Beilharz (USFS) asked whether relicensing participants would have the opportunity to review any "proposed action" by Chugach before the draft license application is developed, so that information/study needs can be refined if needed. Steve Padula replied that Chugach has been considering holding a workshop in spring 2003 to review results to date on the hydrology study and operations description, which would allow the parties to continue discussing the spectrum of potential alternatives and information needs to evaluate those alternatives.

Glenda Landua (ADFG) communicated a request from Clayton Hawkes (ADFG) that in the future, teleconferencing be an option at all relicensing meetings for those participants who may not be able to travel to the meetings; alternatively, holding all meetings in Anchorage would facilitate participation at the meetings because it reduces travel for many agency representatives. Steve Padula explained that Chugach's basic concept for selecting meeting locations is to alternate between Anchorage and the Project area (Cooper Landing) so that neither participants based in Anchorage nor participants based on the Kenai Peninsula are always disadvantaged. Tony Largaespada (USFS) agreed with ADFG that not having a teleconferencing option for these meetings was problematic.

Mari Reeves (USFWS) stated for the record that the USFWS continues to be concerned about possible remaining PCB contamination near the powerhouse outfall, and feels that such contamination should be considered a continuing impact from the Project that should be addressed as part of relicensing. Mari asked Chugach to explain why no studies were proposed to further investigate possible PCB contamination. Steve Padula responded that Chugach previously conducted a rigorous study to investigate PCBs in Kenai Lake and FERC was satisfied that the study results indicated that there was no remaining issue with regard to the PCBs at the Project. In addition, comprehensive measures have been taken to eliminate PCBs from the Project, so Chugach feels that past presence of PCBs at the Project is not a continuing Project operations issue or effect. Steve reiterated Chugach's position that the PCB issue has been dealt with in a separate process (the 1999–2001 powerhouse upgrade amendment activity), and is not a relicensing issue. Bill Stockwell (CLFGAC/FCCC) commented that local residents who live around Kenai Lake have expressed concern about the PCB issue because they are aware of both the USFWS's position and the results of Chugach's investigation, so they do not know whether or not to believe there is a continuing contamination concern.

The meeting adjourned at 3:15 P.M.

Cooper Lake Hydroelectric Project Relicensing (FERC No. 2170)
Fall Workshop to Review ICP Comments and Discuss Plans for 2003 Studies
Tuesday, December 3, 2002, 9:00 A.M. – 4:00 P.M.
Kenai Princess Hotel
Cooper Landing

Agenda

9:00–9:15 A.M.
Welcome/Introductions — *Steve Padula (Long View Associates)*

9:15–9:30 A.M.
Review of agenda and basic format for meeting — *Steve Padula (Long View Associates)*

9:30 – 10:00 A.M.
Facilities/Operations/Engineering — *Howard Lee (Montgomery Watson Harza)*

10:00–10:15 A.M.
Roads / Access Routes — *Sally Morsell (HDR Alaska)*

<10:15–10:30 A.M. — Break>

10:30 A.M. – 12:00 P.M.
Fish/Aquatic Resources — *John Morsell (Northern Ecological Services)*

<12:00–1:15 P.M. — Lunch>

1:15–2:15 P.M.
Terrestrial Resources — *Sally Morsell, Anne Leggett (HDR Alaska)*

2:15–2:45 P.M.
Recreation/Visual Resources — *Dwayne Adams (Land Design North)*

<2:45–3:00 P.M. — Break>

3:00–3:30 P.M.
Cultural Resources — *Mike Yarborough (Cultural Resource Consultants)*

3:30 P.M.
Review current schedule and discuss next steps — *Steve Padula (Long View Associates)*

4:00 P.M.
Adjourn

Chugach Electric Association, Inc.
Cooper Lake Hydroelectric Project
Fall Workshop 2002
December 3, 2002 — Cooper Landing

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