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W-S2: PAST AND CURRENT BIG GAME AND FURBEARER HARVEST STUDY - DRAFT

INTRODUCTION

The Alaska Energy Authority (AEA) is preparing a License Application that will be submitted to the Federal Energy Regulatory Commission (FERC) for the Susitna-Watana Hydroelectric Project (Project) using the Integrated Licensing Process (ILP). The Project is located on the Susitna River, an approximately 300 mile long river in the Southcentral region of Alaska. The Project's dam site will be located at River Mile (RM) 184. The results of this study and other studies will provide the information basis for the FERC's National Environmental Policy Act (NEPA) analysis for the Project license. Past and current information on big game and furbearer harvest and hunter effort will be used to evaluate potential changes in patterns and locations of harvest and hunter effort that may result from improved access to the Project area.

Construction and operation of the Susitna-Watana Hydroelectric Project as described in the Pre-application Document (PAD; AEA 2011) may alter human access to the region through construction of the access road and transmission corridors, and through the creation of the reservoir (Figure 1-1 from the PAD, provided below). This study plan outlines the objectives and methods for characterizing the past and current harvest and hunter effort in the region by summarizing and analyzing data maintained in the Alaska Department of Fish and Game (ADF&G) harvest database.

STUDY OBJECTIVE

The objective of this study is to identify and acquire available big game and furbearer harvest and population data from ADF&G to identify past and current trends in hunter access mode, hunting locations, and harvest locations. Existing data from harvest reports will be compiled and reviewed for its adequacy to address Project-specific changes in human access. The analysis will also determine whether the tributary-scale Uniform Coding Unit (UCU; Figure 2) data are adequate for detecting and predicting potential Project-related changes in total harvest and harvest locations due to potential changes in human access.

The 2012 study will investigate the need for collection of additional hunter access and harvest data through interviews, harvest reporting stations, or other methods. The study will identify potential Project-induced changes that could alter hunter access or harvest patterns, identify remaining data gaps, and develop 2013-2014 study plans.

STUDY AREA

The study area includes ADF&G Game Management Unit (GMU) 13A, 13B, 13E, 14B, 16A and portions of 20A for Delta herd caribou which may be either directly or indirectly influenced by Project construction and operations, including facility sites, access roads, laydown/storage areas and the inundation zone for the reservoir.

EXISTING INFORMATION

The GAP analysis for wildlife identified the need for an updated drainage-specific compilation of subsistence, sport hunter, and trapper harvest data for all game animals and furbearers (ABR 2011). Hunter access to this region has changed since the 1980s, but potential changes in patterns of harvest at this scale have not been evaluated or compared to movements of moose or caribou. Compilation of historic data could also be useful for identifying any potential trends in human access and harvest locations over the past decades and will provide input to ADF&G's management goals for big game and furbearers in the Project area.

METHODS

Initial efforts will focus on compilation and analysis of hunter harvest and effort within harvest report units contained within the ADF&G harvest record database (Figure 2). Movement and aggregation patterns of game resources will be evaluated from available ADF&G telemetry databases (moose and caribou) or other field notes maintained by ADF&G. The spatial resolution, adequacy, and completeness of the harvest data record for detecting potential changes in use of wildlife resources in the Project area will be evaluated. Collection of additional harvest data may be recommended if existing data are determined to be at an insufficient resolution to detect potential changes in harvest due to changes in human access. Additional information gathering may involve interviews with trappers, upon approval and in coordination with subsistence interviews that will be conducted in the affected communities in 2013-2014.

Task 1: Harvest Data Acquisition

1. Identify and compile available ADF&G past and current harvest data for big game and furbearers.
 - a) Period should cover 1980s or earlier to present.
 - b) Data should contain both effort and harvest records to the highest resolution possible (UCU).
 - c) Note that a data sharing agreement will be developed between ADF&G and AEA, and data would be obtained through coordination with AEA.
2. Compile and organize existing harvest and hunter effort data for caribou, moose, Dall's sheep, black bears, brown bears, and wolves within data tables that include information for harvest unit, effort, mode of transportation, and any other available relevant data.
3. Compile and organize existing harvest and trapper effort data for sealed furbearers (wolves, beaver, river otter, marten, lynx, wolverines) within data tables that include information for harvest unit effort, mode of transportation and any other available relevant data.
 - a) Note that marten hides are not required to be sealed in GMU 13 or 20, but sealing is required for surrounding GMUs (14 and 16).

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- b) Note that beaver hides are not required to be sealed in GMU 20.
 - 4. Identify additional data sources, such as data summarized in trapper surveys (Schumacher 2010) for similar harvest and effort information for unsealed furbearers (coyote, red fox, mink, weasel, muskrat, marmot).

Task 2: Evaluate Available Harvest and Effort Data

- 1. Prepare a summary of the existing data and an evaluation of its utility for identifying potential changes in big game and furbearer harvest patterns and hunter effort in relation to anticipated changes in access.
- 2. Develop additional data collection and harvest monitoring method for hunters and trappers currently using the Project area, if warranted.

Task 3: Seasonal Wildlife Distribution Data

- 1. Identify and compile existing data on current abundance and seasonal movements of big game, furbearers, small game mammals and upland gamebirds.
 - a) Data may include GMU-specific estimates for big game animals, and furbearers, and telemetry locations especially during hunting seasons.
 - b) Note that a data sharing agreement will be developed between ADF&G and AEA, and data would be obtained through coordination with AEA.

Task 4: Preliminary Mapping and Analyses

- 1. Complete spatial analyses of existing data to determine and compare past and current distribution of hunter and trapper reported harvests and reported effort.
- 2. Compare current harvest patterns to current abundance and seasonal movements of big game, furbearers, small game mammals and upland gamebirds.

Task 4: Data Reporting

- 1. Prepare temporal distribution maps of hunter/trapper harvest and effort by game species within minimum reporting units (UCU or subunits).
- 2. Synthesize past and current harvest data for location (UCU), mode of transportation, hunter/trapper effort, and game species harvested within GMUs affected by the Project and surrounding units for comparison.

ANALYSIS

Chronologic data for harvest reported by species within UCU will be developed for past harvest since the 1980s or earlier through the current period. Harvest data records will be evaluated based on mode of transportation and harvest date for comparison to abundance and seasonal

distributions of the harvested species. If available, corresponding data for snow depth or other climatological data may be compared to harvest summaries.

NEXUS BETWEEN PROJECT AND RESOURCE TO BE STUDIED AND HOW THE RESULTS WILL BE USED

The Project would create an access road to the dam site, as well as a large water body that could be used for floatplane access to the region. These Project features along with transmission line corridor(s) have the potential to facilitate human access to the Project area and change the pattern of human harvest of big game, furbearers, small game mammals, and upland gamebirds.

ADF&G will be conducting moose and caribou telemetry studies beginning in 2012. Harvest patterns will be compared to the telemetry data on moose and caribou seasonal habitat use and movement. Subsistence surveys will be conducted by ADF&G in 2012 and 2013; the questionnaires will be reviewed and modified to incorporate data needs for this analysis. Additional surveys may be conducted in communities not addressed within the ADF&G subsistence study.

This study addresses the following issues identified in the PAD (AEA 2011):

- W4: Potential impact of changes in predator and prey abundance and distribution related to increased human activities and habitat changes resulting from Project development.
- W5: Potential impacts to wildlife from changes in hunting, vehicular use, noise, and other disturbances due to increased human presence resulting from Project development.

PRODUCTS

In 2012, existing information will be compiled and evaluated. The evaluation will be updated in 2013-2014 to incorporate results from concurrent studies such as subsistence use, moose and caribou telemetry studies, and as additional data needs are identified. Study products to be delivered in 2012 will include:

Development of final study plans. The 2012 component of the study will be finalized through consultation with AEA, the resource agencies and other licensing participants. The AEA-selected environmental contractor will participate in the Work Group meetings as the technical lead for this study and will assist AEA, the Program Lead, and the licensing participants develop the final study plan.

2013-2014 Harvest Study Plan(s). The 2013-2014 study plans will be developed through consultation during the Terrestrial Resources Work Group meetings through the formal FERC ILP study plan process. The AEA selected environmental consultant will participate in the Work Group, and as appropriate, and assist AEA, the Program Lead, and licensing participants develop the study plan outline, draft and final Proposed Study Plans and draft and final Revised Study Plans.

Draft Technical Memoranda. Draft technical memoranda will be prepared for each Work Group meeting summarizing the interim results, the harvest and effort database and all spatial

products will be submitted to AEA. Results and recommendations for future studies will be presented to resource agency personnel and other licensing participants.

Relational database. A relational database of harvest and effort data used in the analysis will be prepared. This database will form the basis for additional data collection in 2013-2014. Naming conventions of files, data fields and metadata descriptions must meet the ADNR standards established for the Susitna-Watana Hydroelectric Project.

Spatial products in ArcGIS software. Harvest and hunter effort maps showing big game and furbearer species will be developed for UCUs based on the relational database developed from the ADF&G harvest database. Naming conventions of files, data fields and metadata descriptions must meet the ADNR standards established for the Susitna-Watana Hydroelectric Project. All map and spatial data products will be delivered in the two-dimensional Alaska Albers Conical Equal Area projection, and North American Datum of 1983 (NAD 83) horizontal datum consistent with ADNR standards.

Final 2012 Technical Memorandum. A technical memoranda summarizing the 2012 results, the harvest and effort database and all spatial products will be submitted to AEA. Results and recommendations for future studies will be presented to resource agency personnel and other licensing participants, along with spatial data products.

SCHEDULE

The following schedule is for the early 2012 scope of work. The schedule for the 2013-2014 components will be developed with the AEA-selected environmental consultant during the final 2013-2014 study planning process. Summary results and evaluation of existing data may lead to development of additional data collection or evaluation techniques in subsequent years. If available harvest data are inadequate, additional harvest monitoring could potentially be designed and initiated in fall 2012. The Technical Memo will inform the formal study planning process.

- Final 2012 Study Plan – March 20, 2012
- Final Draft 2013-2014 Study Plan Outline – March 20, 2012
- Complete inquiries into existing information for data gaps – April 13, 2012
- Draft 2013-2014 Proposed Study Plan – April 27, 2012
- Final 2013-2014 Proposed Study Plan – May 21, 2012
- Draft Technical Memorandum – June 29, 2012
 - Draft relational database and metadata – June 29, 2012
 - Draft ArcGIS spatial products – June 29, 2012

- Draft 2013-2014 Revised Study Plan – August 15, 2012
- Final 2013-2014 Revised Study Plan – September 24, 2012
- Final Technical Memorandum – November 9, 2012
 - Final relational database and metadata – November 9, 2012
 - Final ArcGIS spatial products – November 9, 2012

REFERENCES

ABR (ABR, Inc.). 2011. Wildlife Data-Gap Analysis for the Proposed Susitna-Watana Hydroelectric Project. Draft Report, August 16, 2011. Prepared for The Alaska Energy Authority by ABR, Inc.—Environmental Research and Services, Fairbanks, Alaska. 114 pp.

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Schumacher, T. 2010. Trapper Questionnaire: Statewide annual Report 1 July 2008 – 30 June 2009. December 2010. ADF&G Trapper Questionnaire Coordinator, Alaska Department of Fish and Game, Division of Wildlife Conservation, Juneau, Alaska.



