

Susitna-Watana Hydroelectric Project Document

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1.1. Aesthetic and Recreation Resources Study

1.2. Requestor of proposed study

AEA anticipates resource agencies will request this study.

1.3. Responses to study request criteria (18 CFR 5.9(b))

1.3.1. Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of the recreation resources assessment is to identify, document and evaluate regional and local recreation needs, existing opportunities and developed and dispersed resources. The study is intended to help identify existing and future recreation needs related to the project and identify potential impacts resulting from Project construction and operation.

For Aesthetics Resources, the goal is to assess the aesthetic and recreation resources in the proposed Project are and to identify potential effects on those resources from the proposed Project construction and operations. The 2013-2014 Study Plan follows data collection, field reconnaissance, and mapping in 2012. This work will provide information for completing Exhibit E, Report on Recreation and Aesthetics Resources under FERC's 18 CFR 4.41 regulations.

Objectives for the 2013 - 2014 recreation resource study are described below.

Recreation resources assessment

Evaluating future trends in recreation activity participation is necessary for assessing the type of recreation facilities and opportunities that may be needed [at the Project](#) in the future. An estimate of potential future recreation uses and activity rates will be developed for the Project area. Considerations and assumptions regarding the accuracy, source, age, and quality of data to be used in making projections will be documented. Projections will be made using population projections and input from agencies, users, and the public.

~~The study will establish whether future recreation use levels can be accommodated with existing recreation facilities. The development of a Recreation Plan will be based on the identification of facilities needed in the future, in the Project Area.~~

Evaluation of recreation resource impacts

An evaluation of recreation resource effects resulting from Project construction and operation and relevant alternatives will be necessary. This study is intended to provide pertinent information to be able to identify levels and types of impacts or changes in recreation resource conditions resulting from development of the Project.

Development of a Recreation Plan

A comprehensive development and management plan will be prepared after completion of this study, based upon reasonably foreseen impacts, needs and opportunities ~~that will guide AEA's recreation planning and management for the Project for the term of the FERC license.~~

Aesthetic resources evaluations

The objective is to assess the aesthetic resources in the proposed Project vicinity and to identify potential effects on those resources resulting from Project construction and operations. Potential effects of the proposed Project include changes to views, soundscapes, and lighting/glare. The feasibility of potential options and enhancement opportunities to mitigate potential adverse effects of the proposed Project will be identified.

1.3.2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied. [Please include any regulatory citations and references that will assist in understanding the management goals.]

To be provided by requesting agency or Alaska Native entity

~~In addition to providing information needed to characterize Project effects, the Recreation and Aesthetics Studies will provide information to help agencies with jurisdiction over resources in the study area identify appropriate conditions for the Project license pursuant to their respective mandates. Project studies are designed to meet FERC licensing requirements, but may also be relevant to recent, ongoing, or planned resource management activities by other interested agencies.~~

~~Relevant resource management goals for each of the agencies with jurisdiction over resources to be studied are guided by several environmental laws. Comments and recommendations submitted by resource agencies are pursuant to the Fish and Wildlife Coordination Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, National Historic Preservation Act, Outdoor Recreation Act, Wild and Scenic Rivers Act, National Trails System Act, Federal Land Planning and Management Act, National Environmental Policy Act, Clean Water Act, and Federal Power Act.~~

1.3.3. If the requester is a not resource agency, explain any relevant public interest considerations in regard to the proposed study.

To be provided by requesting entity.

~~Many recreation and aesthetic resources are managed by local, state, and federal agencies and have a direct bearing on quality of life and economics of the region. The Project could potentially affect these public interest resources by affecting recreation and aesthetic resource conditions.~~

1.3.4. Describe existing information concerning the subject of the study proposal, and the need for additional information.

This study concentrates on analysis of baseline data, and implementation of recommendations for collecting original data. The proposed recreation needs analysis will synthesize data gathered in the gap analysis (HDR 2011) and PAD (AEA 2011), as well as the 2012 Study Planning efforts, and makes use of the results of other related resource studies. This study is intended to identify existing and future recreation needs related to the Project.

The following baseline data collection and analysis has taken place, or in some cases is taking place in 2012:

- In 2011, the Alaska Energy Authority (AEA) filed ~~at~~^{his} Notice of Intent (NOI) and Pre-Application Document (PAD) with the Federal Energy Regulatory Commission (FERC) for an original license for the Susitna-Watana Hydroelectric Project, FERC No. 14241.
- In 2011, a Recreation Data Gap Analysis was prepared (HDR 2011).
- In 2012, data collection will be implemented according to the 2012 Study Plan which incorporates:
 - Recreation Resources
 - Supplemental data collection
 - Interviews with key representatives of agencies and organizations knowledgeable about regional and state recreation management and issues
 - Compilation of existing recreation inventory and capacity information
 - Inventory of Project area access – trails and roads
 - Geo-referenced mapping
 - Field reconnaissance
 - Compilation of existing recreation uses, activity, and demand information
 - Identification of 2013-2014 original data collection methods
 - Initiation of interdisciplinary and agency coordination
 - Identification of future trends and issues
 - Aesthetics Resources
 - Review of project description and proposed facilities
 - Determination of preliminary analysis Area
 - Assessment of management framework
 - Initiation of interdisciplinary coordination
 - Review of baseline data
 - Identification of preliminary Key Observation Points (KOPs), beginning with those identified in 1985
 - Preliminary photography and identification of the scope of 2013/2014 photography and videography, as determined in coordination with other resource areas and work group input
 - Field reconnaissance
 - Description of existing soundscape

Elements for the proposed 2013 – 2014 Study Plan are as follows.

Recreation resources

- Projection of Recreation Uses, Levels, Days (Demand) – ~~Reasonably foreseeable~~^{foreseeable} Estimates of future recreation use levels and corresponding activity participation. ~~rates over the term of the FERC license.~~
- Comprehensive Survey - A comprehensive survey is needed to quantify existing recreational use in the Project Area. A survey captures data that may be used for establishing current and future recreation activity. This includes the amount of use,

activity types, daytime and overnight use, and spatial and temporal distribution of existing use within the Project area, including developed recreation sites, dispersed recreation uses, and boating on the reservoir. It would also quantify public perceptions relative to Project-related recreation facilities, use areas, opportunities, and preferences.

- Visitor/Recreation User Surveys – Targeted surveys, such as boat launch and railroad ~~flagstop~~flag stop surveys, will be conducted to identify specialized recreation needs and use levels and patterns.
- ~~Recreation Facility Demand/Capacity Analysis—Assessment of whether existing recreation facilities could accommodate future recreation uses. Planning for appropriate future facilities.~~
- Recreation River Flow Analysis - Analysis of river flows, depths, and sedimentation on boating activities, developed in accordance with the hydrology resource analysis.
- Description and Graphic (GIS) Depictions of Project Changes to Recreation Uses.
- Validation of Results - Continuation of field work.
- Development of Effects by Alternative - A full assessment of potential Project-related impacts, including the effects of Project operations and maintenance and Project-related recreation.
- Coordination with Project Development Plans, Resource Agencies and other Resource Areas; Concordance with Existing Community and Regional Plans.
- Recreation Management Plan - Project-related recreation needs, with input from relicensing participants, will be identified to help form the basis for a proposed Recreation Management Plan ~~that for the Project and included in the License Application~~. The Recreation Plan will guide recreation planning and management at the Project for the term of the FERC license.

Aesthetic Resources

- Visual Simulations – Visual simulations depicting the appearance of the proposed project will be produced for a subset of Key Observation Points, and used to inform the impact analysis. Simulations will be developed from a digital 3D model of the proposed project using 3-dimensional specifications provided by AEA, and geo-referenced using GIS data. Simulations will be produced to illustrate the structure (1), downriver landscape characteristics (2), reservoir landscape characteristics (3), access roads and transmission lines (3), views of reservoir from upland areas (3), and views of potential construction-related impacts (3). Additional simulations and/or videography will be produced as needed in key areas.
- Noise Analysis – An analysis of soundscapes will be completed to understand potential impacts to recreation and other land uses. The System for the Prediction of Acoustic Detectability (SPreAD) model for a geographic information system (GIS) environment will be utilized to estimate existing soundscapes based on the site layout for construction

and operation phases, including anticipated changes in concentration of motorized vehicles (Reed, et al, 2010).

- Light and Glare – The impact analysis for light and glare will focus on potential impacts that may result from nighttime artificial lighting and daytime glare. The analysis of artificial lighting will identify potential impacts to human activity at nearby off-site locations that may result from the proposed Project. Photo simulations will be produced to demonstrate views of the proposed project at night from selected KOPs.
- Visual and Aesthetic Resource Impact Analysis – BLM contrast rating procedures will be used (BLM, 1986). The visual resource impact analysis focused on established indicators of change. Indicators will include, but will not be limited to, the following:
 - Impacts to aesthetic resources, measured by the degree of visual contrast created by the project
 - Change in existing VRI values of scenic quality, visual sensitivity, and distance zones
 - Change in viewshed area, including both the elimination and creation of views and vistas
 - Change in mechanism of view (i.e., transition from mobile view traveling downriver, to static view when situated on the reservoir)

Impact determinations are based on the identified level of contrast, and are not a measure of the overall attractiveness of the project (BLM, 1986). At each KOP, the appearance of landform, vegetation, and structures under post-project conditions will be evaluated. The level of perceived contrast between the proposed project and the existing landscape will then be classified.

The visual resource inventory analysis will be used to identify expected change to VRI Classes based on changes to the visual resource values of scenic quality, visual sensitivity, and/or distance zones that may result from operation of the proposed project. This analysis will be completed within the framework and scale of the existing VRI with the goal of understanding how visual resource values and resulting VRI Class may shift at the planning level based on operation of the proposed project. Impacts to VRI components will be evaluated by ranking each key factor used to classify scenic quality or visual sensitivity under operational conditions, and comparing those values to that determined through the established (pre-project) VRI.

Change in viewshed area will be determined by comparing the viewshed analysis generated under pre-and post-project conditions. This analysis will indicate the locations where views have been eliminated or created based on operation of the proposed project.

- Identification of potential avoidance, minimization, and mitigation measures.

1.3.5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Construction and operation of the Project may affect many aspects of public recreation, such as fishing, boating, hiking, camping, birdwatching, hunting, and other activities by

~~creating a large impoundment, affecting river flows, altering wildlife habitat, and changing access conditions. Gathering information on existing recreation and making reasonable projections of future recreation conditions in light of the Project will provide an information basis on which to establish recreation conditions for the license consistent with FERC's policies regarding development of public information at licensed projects. The proposal for 2013—2014 studies is intended to fulfill NEPA and FERC requirements for identifying and describing potential effects of Project construction and operation on recreation resources. This analysis also informs the development of avoidance, minimization, and mitigation measures recommended for Project alternatives. While recreation and aesthetics are part of a multi-disciplinary analysis, they are also the most common measures of human experience in the Project Area. It is for that reason that early identification of issues and trends has been recommended for implementation in these resource areas. It also serves to gain trust and input from the public.~~

- 1.3.6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.**

~~Preparation for FERC licensing, including the preparation of Exhibit E, Report on Aesthetics Resources, and Report on Recreation Resources is regulated under 18 CFR 4.41. In addition to specific data requirements, all resource reports are guided by public and agency scoping, agency/technical workgroup review, and public involvement. The methods and work efforts outlined in this study request are consistent with typical similar analysis used by applicants and licensees in preparation of Exhibit E reports outlined under 18 CFR 4.41.~~

- 1.3.7. Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.**

The work under this plan can be undertaken in two study seasons, summer 2013 and summer 2014 with analysis and report preparation in early fall 2013 and 2014. Tasks addressed under this study plan could potentially cost between \$200,000 and \$500,000.

1.3.8 Literature Cited

AEA (Alaska Energy Authority). 2011. Pre-Application Document: Susitna-Watana Hydroelectric Project FERC Project No. 14241. December 2011. Prepared for the Federal Energy Regulatory Commission, Washington, DC.

Bureau of Land Management (BLM). 1986. Visual Resource Inventory. BLM Manual Handbook 8410-1. Washington, D.C.: U.S. Bureau of Land Management.

HDR, Inc. 2011. Susitna-Watana Hydroelectric Project, Socioeconomic, Recreation, Air Quality and Transportation Data Gap Analysis. Unpublished, by the Alaska Energy Authority. (HDR 2011)

Reed, S., Boggs, J and Mann, J. 2010. SPreAD-GIS: an ArcGIS toolbox for modeling the propagation of engine noise in a wildland setting. Version 2.0. The Wilderness Society, San Francisco, CA.

