



SUSITNA-WATANA HYDROELECTRIC PROJECT

Formal ILP Proposed Study Plan Review

August 8, 2012

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Proposed Studies

- **Recreation Resources Study**

- Describe current land and water-based recreation resources, uses, facilities, and demand. Evaluate the potential impacts of the proposed Project.

- **Aesthetics Resources Study**

- Describe aesthetic (visual and auditory) conditions in the Project area and evaluate potential impacts of the proposed Project.

- **Recreational Boating / River Access Study**

- Describe recreation flows, access, uses, and user preferences. Evaluate the potential impacts of the proposed Project.



Summary of Study Requests

- Noise/Auditory Assessment
 - Expanded Assessment now included in Aesthetics
- Recreational Boating and Access Study + Recreation Flow Study
 - Included as separate study because of distinct flow methodology
- Recreation Resources Study
- Aesthetics Resources Study

Summary of Comments

- Coordination with other disciplines, especially biophysical
 - Data inputs-outputs have been defined as part of 2012 study processes
- Define study area
 - For Recreation, the study area is that of the Project area. Indirect effects to other areas will be identified as part of study processes.
 - For Recreation Flow studies, the study area will be concentrated on most critical areas/reaches of the river
 - For Aesthetics, the study area is that of the Project area, and concentrated on areas with proposed Project facilities or riverine areas affected by changes in river flows.
- More detail for user surveys, focus groups
 - Included; content and analysis developed as part of study planning processes.
- Focus on quality of recreational experiences
 - Recreation demand (counts) will be quantified; includes focus on quality of recreational experience.
- Description of comprehensive user surveys, sampling strategies, and methodologies
 - Outlined in the Study Plan – consistent and comparable with instruments in other recreation surveys. Coordination with agencies/disciplines in 2012.

Summary of Comments

- Economic valuation
 - Elements to be addressed in the Socioeconomics section
- Contribution of information, corrections to previous documents
 - Incorporated
- Effects to tourism industry, assessment of recreational spending
 - Addressed in socioeconomics section with contribution from recreation survey results
- Ensure coordination with Agencies/Study Plans
 - Ongoing
- Ensure coordination with Agencies/Data
 - Initiated.
- Ensure studies are year-round and of sufficient number of years to capture all conditions; covering exiting and construction/operational phases of the proposed project; timespan of projections.
 - Further described as year-round, during all proposed project phases. Baseline data currently covers one year.
- Dust
 - To be conducted by geomorphology section (for visibility/haze).

Comments/Discussion

National Park Service 8/7/2012

- Wording of Gap Analysis/PAD
- Study Interdependencies/critical path/short timing
- 2012 study results (11/14/12) vs. comment period (10/15/12)
- Focus on recreational quality, not just quantity
- Carrying capacity elements
- Timing of review of survey instruments/methods
- Aesthetics Study Area – limits
- Input on KOP's and auditory stations selected
- Flow Aesthetics
- Boating/Access Study
- Ice?
- Method of measure of change/geographic areas of study
- Flow and Ice
- Adequacy of length of study

Comments/Discussion

Background Study Plan Information – if needed

Relationship to Physical Studies

10. 5 RECREATION , 10.6 AESTHETICS 10.7 BOATING/RIVER ACCESS				
	INPUT	OBJECTIVE	OUTPUT	TIMING
PROPOSED INFRASTRUCTURE PLANNING	Dimensions, access, construction and operational features, workforce, and staging.	Determine impacts to recreation opportunities and quality.	Potential Recreation Management Plan	Q4 2014
PHYSICAL STUDIES				
4. Geology and Soils	Dust modeling	Determine effects to visual aesthetics (haze) and quality of recreational experiences; potential erosion of shore recreation opportunities and facilities (including trails) (10.5, 10.6)		Q3 2013
5. Water Resources	Baseline and projected river water quality, depth, and course changes.	Determine effects to recreational water-based activities, habitat for wildlife and fish (10.5, 10.7), and viewsheds (10.6)		Q3 2013
6. Instream Flow	Baseline and projected flow rates.	Developing recreation flow preference mapping (10.7)		Q3 2013
14. Safety	Assessments of risks and hazards of the Proposed Project.	General risks to recreationists, or recreational facilities caused by natural events or accidents. Related to Health Impact Assessment.		Q2 2013

Relationship to Biological Studies

10. 5 RECREATION , 10.6 AESTHETICS 10.7 BOATING/RIVER ACCESS				
BIOLOGICAL STUDIES				
	INPUT	OBJECTIVE	OUPUT	TIMING
7. Fish and Aquatic Resources	Baseline and projected habitat and populations. ADFG harvest data records and creel studies. Interviews may be conducted with guides and lodge owners in the Susitna River area to address low participation fisheries.	Determine opportunity, availability and location of sport fishing.	Baseline and projected sound modeling to determine effects to aquatic resources. Effects to and by sport fishing management regimes. Projection of fisher activities.	Q1 2014
8. Wildlife Resources	Baseline and projected habitat and populations. ADFG/USFWS harvest records and surveys	Determine opportunity, availability and location of sport hunting, and wildlife viewing. ADFG/USFWS harvest records and surveys	Baseline and projected sound modeling (10.6) to determine effects to wildlife resources. Effects to and by sport hunting management regimes. Projections of hunter activities.	Q1 2014
9. Botanical Resources	Baseline and projected vegetation cover.	Determine effects to visual landscape (10.6).		Q3 2013

Relationship to Social Studies

10.5 RECREATION , 10.6 AESTHETICS 10.7 BOATING/RIVER ACCESS				
SOCIAL STUDIES				
	INPUT	OBJECTIVE	OUTPUT	TIMING
11. Cultural	Baseline cultural character and resources of the study area.	Develop aesthetic features and materials associated with the Proposed Project in keeping with the culture of the area (10.6).	Baseline and projected geographical distribution of recreationists in regard to archeological, cultural, and other historic sites.	Q1 2013 (preliminary)
12. Subsistence	Household harvest surveys. Spatial distribution of harvests; extensive demographic harvest data.	Collaborative review and interpretation of study findings. Develop hunting, fishing, and gathering profiles. Determine potential land use overlap between subsistence and recreational harvests.	Develop hunting, fishing, and gathering profiles. Determine potential land use overlap between subsistence and recreational harvests.	Q3 2013
13. Socioeconomic and Transportation (including Air Quality)	Baseline and projected demographics and economics, and multi-modal traffic. Surveys of and interviews with knowledgeable individuals and property owners in the area will be used to collect data on the types, levels, areas, and seasons of river transportation uses in the study area.	Develop projections of resident/non-resident tourists/recreationists in the study area, and regionally.	Survey results. The survey will collect information on participation in recreational fishing, hunting, boating, wildlife viewing, hiking, and camping in the study area, related expenditures, travel distance, site quality, and substitute recreational opportunities.	Q1 2013 (Preliminary)

Recreation Resources Study

Goals and Objectives

- Identify and document recreation resources and facilities that support both commercial and non-commercial recreation in the Project area;
- Identify the types and levels of current recreational uses and future reasonably foreseeable future uses based on surveys and interviews, consultation with stakeholders, regional and statewide plans, and other data;
- Evaluate the potential impacts of proposed Project construction and operation on recreation resources, needs, and uses in the Project area; and
- Use the results of analyses to develop a potential RMP for the Project.



Recreation Resources

Methods

- Collect and review data and studies related to land and water-recreation uses, facilities, trails, and land management.
- Conduct multiple surveys and interviews to collect information from recreation users.
- Describe recreation attributes, including quality of experience.
- Inventory trails and recreation facilities.
- GIS mapping
- Estimate future recreation demand, with and without the proposed Project.
- Estimate the capacity of recreational facilities, with and without the proposed Project.

Recreation Resources

Expected Results

- Evaluate the impact of the proposed Project on recreational uses in the study area.
- Identify mitigations for anticipated impacts.
- Potentially create a Recreation Management Plan.

Recreation Resources

Summary of 2012 Activities

- Collection of relevant studies, surveys (instruments), and land management plans, and data compilation.
- Deployment of Incidental Observation Form
- Field reconnaissance.
 - Informal discussions with area lodge owners, recreational organizations, and tour operators.
 - GPS waypoints of recreation facilities and some access points were recorded.
 - Evaluated survey intercept points, sample days, and fielding methodology
- Initiation of collaboration with agencies and other resource disciplines.
- GIS Mapping – acquired datasets from ADNR, the MSB, CIRI, the BLM and others; and collected imagery including elevation data. Trails were digitized.



Aesthetics Resources Study

Goals and Objectives

The goals for the Aesthetic Resources Study are to inventory and document baseline aesthetic (e.g., visual, auditory) conditions in the Project area and evaluate the potential effects on aesthetic resources, beneficial or adverse, that may result from construction and operation of the proposed Project.

Objectives for the Aesthetic Resources analysis are to:

- Identify the inherent quality of the aesthetic resources of the existing landscapes that would be directly or indirectly affected by development of the Susitna Project.
 - Visual and sound resources
 - Management regimes
 - Key Observation Points
 - Photo-simulations
 - Resource sensitivity to change, with public input
- Minimize impacts caused by human activity and development
- Maximize beneficial relationships between proposed project facilities and existing landscapes.



Aesthetics Resources

Methods

Visual Resource Analysis

- The visual resource impact analysis will follow methods developed by the BLM, augmented with relevant portions of the USFS Visual Management System (VMS) / Scenery Management System (SMS).
- The study area will be refined according to existing viewsheds, and those generated by the proposed Project features.
- Key Observation Points will be established.
- Seasonal field reconnaissance to establish an inventory of aesthetic resource values and scenic quality (BLM Visual resource Inventory).
- Visual sensitivity will be classified using the BLM Visual Sensitivity Level Analysis process, which includes input from focus groups.
- Photo Simulations of the proposed project will be created.



Aesthetics Resources

Methods (cont'd)

Sound Resource Analysis

- A systematic sound study will be conducted to characterize the existing ambient sound environment in the vicinity of the proposed Project and estimate the potential impact associated with construction and operational activities. This data will also be used to describe an attribute of recreational experiences. This includes:
 - Review of existing sound data; seasonal surveys of ambient sound; and modeling using SPreAD.

Visibility

An analysis of dust and particulates created by the construction or operation of the Proposed project, and its contribution to haze, will be conducted by the Geomorphology Resource Study.

Lighting and Glare

Baseline Lighting and glare, as well as that created by the construction and operation of the proposed Project will also be assessed.



Aesthetics Resources

Expected Results

- Evaluate the impact of the proposed Project on aesthetics resources in the study area.
- Identify mitigations for anticipated impacts.
- Minimize impacts caused by human activity and development
- Maximize beneficial relationships between proposed project facilities and existing landscapes.



Aesthetics Resources Study

Summary of 2012 Activities

- Literature / Information Review – Review of relevant documents and plans
- Viewshed Mapping – GIS-based viewshed models have been completed for portion of Susitna River located upstream from the proposed Dam Site. This includes existing and post-project conditions.
- Identifying and mapping relevant GIS data - A current viewshed was produced from ¼ mile viewpoints along the river corridor from 5 miles below the planned dam site to 5 miles past the end of the potential reservoir. Another viewshed was produced on the IFSAR Digital Surface Model, based on a potential reservoir based at 2200 ft in elevations with viewpoints at 1 square mile within the reservoir area. Viewpoints identified in field were plotted on the viewshed.
- Landscape character description



Aesthetics Resources Study

Summary of 2012 Activities (cont'd)

- Field Visit –
 - Site visit via jet boat, helicopter, car travel
 - Evaluation of landscape character (Susitna River above/below proposed Dam Site, upland areas);
 - Collection of landscape character photographs
 - Identification of viewer groups, viewer access
 - Evaluation of anticipated indicators used in impact analysis
 - Collection photography at preliminary Key Observation Points (KOPs) suitable for simulations (if needed in early 2013)



Recreational Boating / River Access Study

Goals and Objectives

This study incorporates and contributes to data and analysis conducted as part of the Recreation Resources Study. Changes in river flow regimes may that may impact boating and other flow-dependent recreation activities will be identified.

Using a specific methodology, the objectives of the study are to:

- Develop flow preference curves for each major river reach by type of use and equipment.
- Describe the potential effects of altered river flows on existing and potential boating activity and other recreational uses of the Susitna River.
- Describe any new boating or other flow-dependent recreational opportunities that may be created by Project construction and operation.



Recreational Boating / River Access Study

Methods

- This Study is designed to identify the minimum and optimum instream flow preferred for motorized, non-motorized, and whitewater boating, as well as other flow-dependent recreational activities on the Susitna River.
- Elements of the methodology include:
 - Data Collection – inventory water recreation attributes for sections of the Susitna River; type of motorized and non-motorized water craft; commercial and non-commercial uses; and trip purposes, trip length, frequency of use, and seasonal considerations.
 - Field Reconnaissance - river recreation opportunities and associated instream flow attributes will be observed and described. Existing and potential sites for recreational boating access along the river corridor and the area inundated by the proposed reservoir will also be described.
 - Consultation – interviews with river recreation users, and focus group sessions to determine flow preferences.



Recreational Boating / River Access Study

Expected Results

- Motorized and non-motorized boating opportunities and associated attributes for the range of flows will be examined. This includes, where applicable, the level of whitewater difficulty, portage requirements, length of trip, and characterization of experiences. Includes tourism boating up to Devils Canyon.
- Flow preference curves for each reach will be developed for respective river recreation opportunities.
- The frequency for the range of preferred flows for respective opportunities will be quantified for existing conditions and likely proposed Project operations.
- Put-in and take-out sites and related needs (e.g., scouting and remote camping) that may be associated with respective recreation opportunities in a particular river segment will be identified.



Recreational Boating / River Access Study

Summary of 2012 Activities

- Reconnaissance of Susitna River from Denali Hwy bridge to Talkeetna.
- Data Collected from:
 - Commercial outfitters: jet boats, rafting companies, hunting, fishing, flight services
 - Private users: jet boats, air boats, rafters, kayakers, pak rafters, pilots, hunters, fishermen
 - User groups: Hunting groups, fishing groups, whitewater groups, adventure racers
 - Outdoor retail and rental stores
 - Agency staff
 - Identification of three distinct reaches identified for this study based on access and river difficulty. Put-in, take-out, length, users, float ranges, and seasons are in the process of being inventoried.
 - Upper Susitna—Denali Hwy Bridge to Watana Canyon
 - Middle Susitna—Watana and Devil’s Canyon
 - Lower Susitna—Portage Creek to Talkeetna

