Study Report Meeting
February 27, 2012

Meeting Goals

- Project Summary
- Review action items and direction from May 2012 meeting
  - Land management
  - Fish and wildlife resources
- Review study results, collect feedback, and discuss implications
- Agree on path forward with respect to:
  - Any additional information needs
  - The FERC Process
Summary of Proposed Action

- Additional height to existing dam, resulting in 15 additional feet of storage in Swan Lake
- Full pool changes from EL. 330 ft. to 345 (PMF at 347). Minimum pool remains at EL. 271.5 ft.
- Water right is currently 303,000 acre-feet (under review)

SEAPA Project Justification

1. Spilling water in the months prior to an extended period of diesel generation is poor hydro resource management

KPU Diesel Generation 2006 through 2009
2006-1,800 MWh; 2007-3,000 MWh; 2008-18,300 MWh; 2009-14,100 MWh
2. Enlarging system “battery” helps integrate new hydro resources

Diesel Comparison For Whitman Lake in Year 2016

If we don’t want to spill this energy, we must turn down Swan and store water; that way we can turn up Whitman to avoid spill at Whitman.

Real Time Data

- Ketchikan Public Utilities
- SEAPA
2012 Study Effort

- Lack of existing information in project area to inform discussion with agencies
- Desire to confirm suspicion that benefit of pool raise (diesel replacement) high relative to potential environmental impacts
- Intent was to produce “study reports” not “resource reports” (therefore no BE, invasive survey reporting forms)
- Early information to ultimately accelerate decision process

Studies Conducted by SEAPA in 2012

Discussed in May 2012 meeting and study plans provided to agencies for review.
- Land Verification Survey
- Cultural Resources
- Wildlife
- Spawning
- Botany and Wetlands
- Soils Study
- Tributary Access
- Fish Community and Aquatic Habitat
General Approach to Addressing Agency Comments

- Clarify, where appropriate, the intent and purpose of the study reports

- Issue 2012 Final Study Reports
  - That incorporate specific suggestions/requests where possible
  - Acknowledges any comments not addressed and describe path for resolving
  - Retains focus on area of impact

- Today:
  - Determine what other natural resource information is needed for the amendment
  - Define area of analysis for future NEPA documents

General Approach to Addressing Agency Comments

- Issue Initial Consultation Document (ICD)

- Joint Meeting (if necessary?) and Site Visit

- Information Development (desktop and/or field)

- Amendment and NEPA Documents
Changes in ownership composition with potential changes to FERC boundary

- **Approach**
  - Found selected corners of Lot 2 (conveyed lands) and established the position of the 350 contour (FERC boundary) in relation to the property boundary
  - Focused on major tributaries
  - Georeferenced the boundary for GIS purposes

- **Key Findings**
  - No apparent need to change FERC boundary
  - In area of Lost Creek, boundary extends upstream 0.8 miles into Tongass National Forest (TNF)
  - Approximately 25.8 acres of TNF are within the FERC boundary
Key Findings (Cont’d)

- USFS GIS Layers do not match R&M surveyed corners
- 6.3 acres of land <350’ appear to be outside boundary, but are actually within state lands

Land Verification Next Steps

- Confirm NEPA requirements of USFS relative to TNF lands within existing FERC boundary
- Correct GIS layer with USFS to reflect surveyed corners
Key Findings
- Site is typical of SE Alaska with respect to soils, steepness

Key Findings
- Along existing shoreline, erosion occurs as a result of frequent inundation, erosive wave action, and variable lake levels; exposing unvegetated soil to erosion by rain drops, runoff and wind.
Potential For Erosion, Soil Productivity, Mass Movement

- Potential Effects (Soil Productivity)
  - The project will result in an irreversible loss of approximately 138 acres of soil productivity
  - Mass wasting events would continue to occur on the steep slopes with shallow bedrock surrounding much of the lake
  - Increasing the lake level may slightly increase the incidence of mass wasting near the shoreline as slope toes are undercut from shoreline erosion, similar to existing condition

Summary of Comments Received (not exhaustive)

- Request to differentiate TNF and non TNF lands
- Suggestions for scale of analysis for NEPA
- Questions about field verification methods
- Questions about some inconsistent numbers / requests for clarification
Potential For Erosion, Soil Productivity, Mass Movement

- Next Steps
  - Respond to comments received and finalize reports
  - Identify outstanding issues in Initial Consultation Document (ICD) along with approach to resolving (today)
  - Confirm management and mitigation measures (see study report)
  - Align any timber removal plans with soil BMPs

Botany NEPA Approach

- Biological Evaluation will be completed for plants
- Discuss analysis area
- Construction areas will be looked at
- Emphasis on TNF lands
- Invasive Species Risk Assessment to be completed
Potential Changes To Botanical Resources, Including Wetland Areas

Key Findings
- No Sensitive plant species identified
- Two rare plant species located
  - Northern bugleweed and pacific buttercup
- Five plant species that have previously been on the rare vascular plant list were located
  - Boreal bedstraw, Choris’ bog-orchid, madenhair spleenwort, brightgreen spleenwort, and bog adder’s-mouth orchid
- Newly documented species
  - Wallace’s spikemoss; and bog St. John’s wort

Key Findings (Cont’d)
- Wetlands -- 55% (77 acres) of impacted area
  - Forested wetlands (43.4%)
  - Emergent wetlands (10.7%)
  - Moss muskeg (1.5%)
- Sensitive Plants -- though none observed, appropriate habitat types for 8 species were identified
- No invasive species found despite wide range of operations
Summary of Comments Received
(not exhaustive)

- Request to differentiate impacts on TNF and non-TNF lands
- Suggestions for scale of analysis and requests to clarify/amend analysis area; potential issues with basemap used in some figures
- Suggestions for treatment of data and inclusion of additional species for documentation
- Discussion of need for Biological Evaluation (BE)
- Affirmation of intent not to cut timber on TNF lands and description of timber settlement agreement
- Discussion of potential mitigation need for impacted wetlands
Potential Changes To Botanical Resources, Including Wetland Areas

- **Next Steps**
  - Respond to comments received and finalize reports
  - Identify outstanding issues in Initial Consultation Document (ICD) along with approach to resolving (today)
  - In context of amendment application, confirm management and mitigation measures (see study report)
  - Timber Cruise
    - Value
  - DNR follow up

Potential Impacts to Wildlife Species

- **Key Findings - TES Species**
  - Six species have some potential to occur within or directly adjacent to the analysis area
  - None documented during surveys
  - Within the area proposed for inundation, only the goshawk has the potential to be directly impacted
  - Some potential that yellow-billed loon and dusky Canada goose could utilize the lake during winter and migration periods
  - Humpback whale, Steller sea lion, and black oystercatcher may occur outside of the analysis area, but are in the adjacent marine waters of Carroll Inlet.
Key Findings – Endemics Known on Revillagigedo Island

- Although SE Alaska is a region with a high degree of endemism among mammals (24 species/subspecies) due to its archipelago geography and its glacial history, Revilla Island is not considered to be a “biodiversity hotspot” for the following reasons:
  - Island size
  - Close proximity to the mainland
  - Connectivity with other islands
- American water shrew (*Sorex palustris*) captured in a minnow trap during fish surveys in Lost Creek
Potential Impacts to Wildlife species

- Potential Effects – TES species
  - Goshawks
    - Inundation of areas suitable for nesting and foraging
    - Changes to hydrology adjacent to new max pool; alteration of wetland communities could impact species composition
    - Disturbances that adversely affect individuals or young including the removal of active bird nests or causing nest abandonment.
  - Loon / Geese
    - Removal of some emergent wetlands may have limited effects on potential cover and foraging
    - Temporary impacts would be associated with avoidance of the area near the dam due to construction noise.

Potential Impacts to Wildlife species

- Potential Effects – Management Indicator Species
  - Direct effects
    - Inundation of areas suitable for nesting and foraging habitat
    - Changes to hydrology adjacent to new max pool; alteration of wetland communities could impact species composition
    - Disturbances/displacement from human activities
  - Indirect Effects
    - Reduction of perching, foraging, caching and potential nesting habitat.
Potential Impacts to Wildlife species

- Potential Effects - Migratory Birds
  - Direct effects
    - Disturbances that adversely affect individuals or young, including removing active bird nests or causing nest abandonment.
    - Timber removal activities could also disturb and displace birds during the non-breeding season.
    - Reduction in POG.

Summary of Comments Received (not exhaustive)

- Request to differentiate impacts on TNF and non TNF lands
- Suggestions for scale of analysis (Analysis Area) and requests to clarify/amend analysis area
- Questions about construction impacts/staging areas
- Suggestions for better framing Effects Analysis
**Potential Impacts To Wildlife Species**

- **Next Steps**
  - Plan and complete goshawk surveys
  - Complete aerial bald eagle/raptor surveys around lake and shore of Carroll Inlet
  - Identify outstanding issues in Initial Consultation Document (ICD) along with approach to resolving (today)
  - In context of amendment application, discuss Management Requirements and Mitigation Measures for wildlife species (TES, Migratory Birds, Endemics, MIS)

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**Potential Impacts to Fish Populations**

- **Key Findings**
  - Access to potential spawning/rearing areas in major tributaries.
    - Lost Creek falls more frequently inundated
    - No changes to Mint, Track, Fry
    - Minor tributaries non-contributing
  - Changes to potential tributary (Lost Creek) spawning and rearing habitat
    - No observed spawning in Lost Creek
    - Reach 1 rearing habitat and potential spawning areas changed
    - Reach 2 quality rearing habitat and potential spawning areas unchanged
Potential Impacts to Fish Populations

- Littoral habitat used for shoreline spawning/rearing habitat
  - Inundation of existing Swan Lake rearing littoral habitat
  - Potential expansion of Swan Lake rearing littoral habitat
  - Gain of littoral habitat in Lost Creek
- Impacts to overall fish populations
  - Fish community appears to be similar to pre-impoundment findings

Rearing habitat – Lost Creek (September, 2012)
Large gravel bar and overhanging vegetation in Reach 1

LWD and overhanging vegetation in Reach 2
Lost Creek Lower Falls at Elevation 314, December 4, 2012

Rapid increase in flows within a Lost Creek side channel demonstrated by conditions on September 7 and two days later on September 9, 2012
Potential Impacts to Fish Populations (and Habitat)

- Potential Effect
  - Seasonal reduction of lotic rearing habitat in Reach 1
  - Reduction of potential spawning areas in Reach 1
  - Improved access to Lost Creek
  - Gain more shallow littoral habitat in Lost Creek
  - Potential expansion of Swan Lake rearing littoral habitat
  - Gain more lake rearing area

Summary of Comments Received
(not exhaustive)

- Request to differentiate impacts on TNF and non TNF lands
- Suggestions for scale of analysis (Analysis Area) and requests to clarify/amend analysis area
- Questions about analysis of areas outside FERC boundary (e.g., Lost Lake and its tributaries)
- Requests for clarification on methods
- Suggestions for better framing Effects Analysis
Fisheries and Aquatics Next Steps

- Discuss what we can do within side-boards to provide SEAPA with assessment of risk
- Can we discuss range of potential mitigation alternatives that provide SEAPA with a sense of their risk for proceeding with engineering?

2013 Information Effort

- Any additional studies discussed today
  - Terrestrial
  - Aquatics
- Prepare for NEPA documents
  - EA/BE, Resource Reports
  - Outline, consult, etc.
  - GIS work above EL. 350 ft.
- Goshawk / Raptor Surveys
- Timber Cruises (DNR)
- Engineering questions
  - Construction process, areas of impact
Amendment Process

1. Important to make amendment process efficient, without limiting ability for meaningful review
2. SEAPA would like to get amendment application filed by Q1, 2014
3. Agencies will have opportunities to review draft Resource Reports, Draft BA/BE’s Preliminary Draft Environmental Assessments prior to the filing of final amendment application.

Near-Term Schedule and Next Steps

- Issue Initial Consultation Document
- Joint Meeting and Site Visit
- Issue Resource Reports
- Continue agreed to aerial bald eagle/raptor surveys
- Seek waivers where appropriate