

FINAL AESTHETICS RESOURCES STUDY PLAN

Takatz Lake Hydroelectric Project, FERC No. 13234

Prepared by:

City and Borough of Sitka Electric Department

105 Jarvis St., Sitka AK, 99835

February, 2011

INTRODUCTION and BACKGROUND

The City and Borough of Sitka Electric Department (City) holds a Preliminary Permit (Permit) from the Federal Energy Regulatory Commission (FERC, Commission) for the proposed Takatz Lake hydroelectric project (Project), FERC No. 13234-000-AK. Licensing the Project will proceed under steps required under various FERC regulations,

During Initial Consultation and Scoping, Project Stakeholders including Alaska state and federal resource agencies indicated concern for Project effects on scenic and aesthetics resources relative to construction activities and project features including the dam, reservoir inundation, powerhouse, and transmission line.

This study plan describes analyses proposed to *examine and quantify* existing aesthetics resources and to evaluate potential project-related effects on those resources.

CONSULTATION and COMMENT

A Draft Scenery Study Plan was distributed in August, 2010, with a request for comment. Comments were received from the US Department of Agriculture Forest Service (USFS), Sitka Ranger District. These comments were numbered and addressed in this Final Study Plan. The numbered comments are accompanied by a Comment Table showing comment summaries and how each comment was addressed (Attachments I and II). All resulting text changes are italicized in this Final Plan.

PROPOSED AESTHETICS RESOURCES STUDIES

GENERAL

Because the majority of potentially-affected aesthetics resources would be on lands managed by the US Department of Agriculture Forest Service (USFS) the aesthetics resources studies will be based primarily on methods and other requirements of the Tongass National Forest Land and Resource Management Plan ("Forest Plan"). The Forest Plan describes existing aesthetics resources within the various Land Use

Designations (LUD's) in the Project area, and specifies how aesthetics impacts will be assessed within these LUD's.

PROJECT/STUDY AREA

The area potentially affected by the project is quite large, including three different river basins and extensive upland areas along the proposed transmission route. As shown in Figure 1, new construction in the Takatz River Basin would include a dam as much as 200 feet high at the outlet of Takatz Lake, a possibly visible power conduit and a

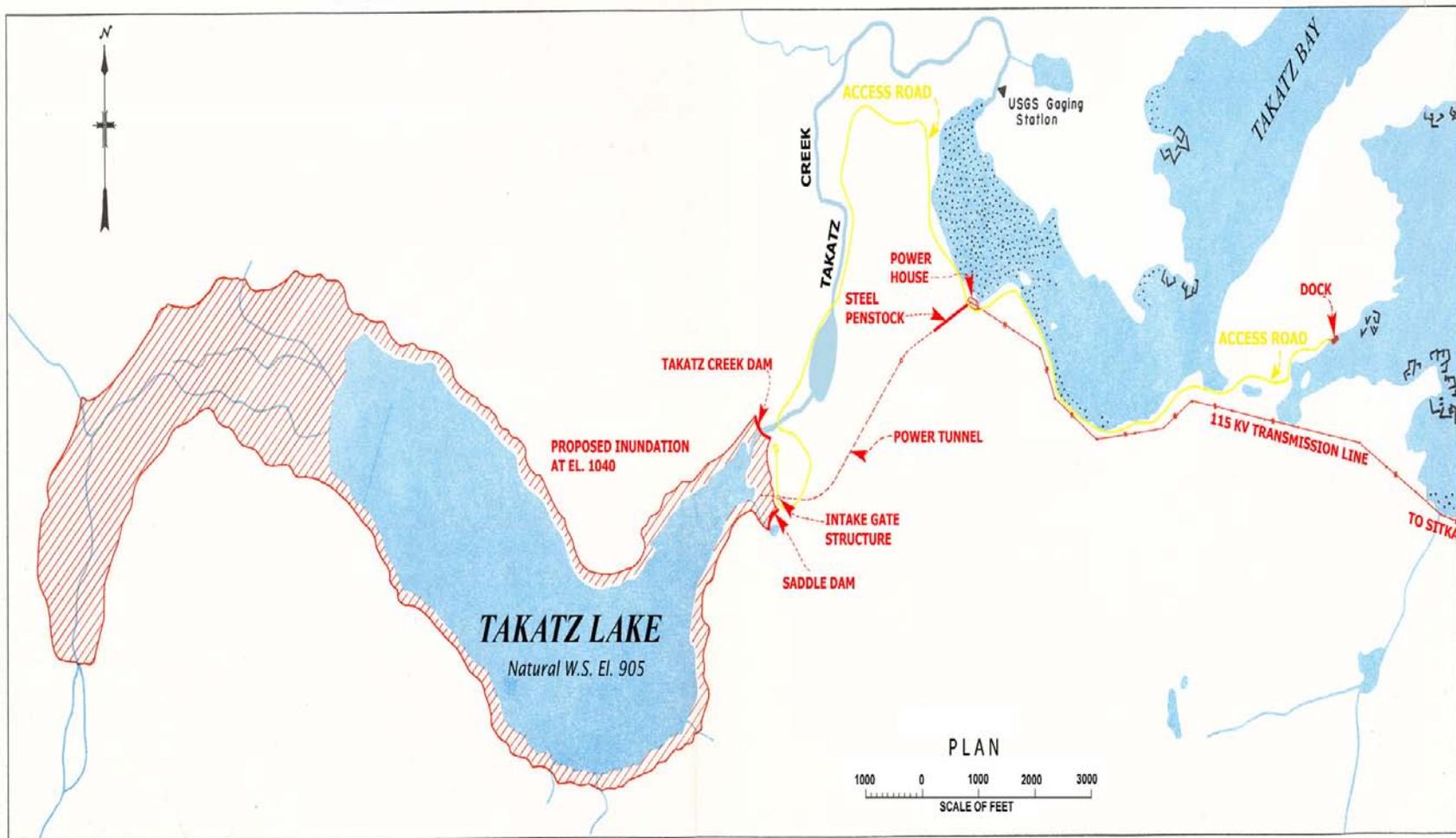


Figure 1. Takatz Lake Project Features.

powerhouse and switchyard. The dam would raise water levels sufficient to create significant additional inundation in Takatz Lake, depending on the final dam height selected. The power conduit would consist of an as yet undetermined length of above-ground penstock. Exact dimensions, materials and color of the penstock will be determine at least in part depending on results of scenic and aesthetics analysis.

There are currently two alternative transmission routes (Figure 2). The Marine Transmission Alternative (MTA) would consist of overhead and submarine segments routed from the switchyard into Chatham Strait and Baranof Bay continuing through Baranof Lake.

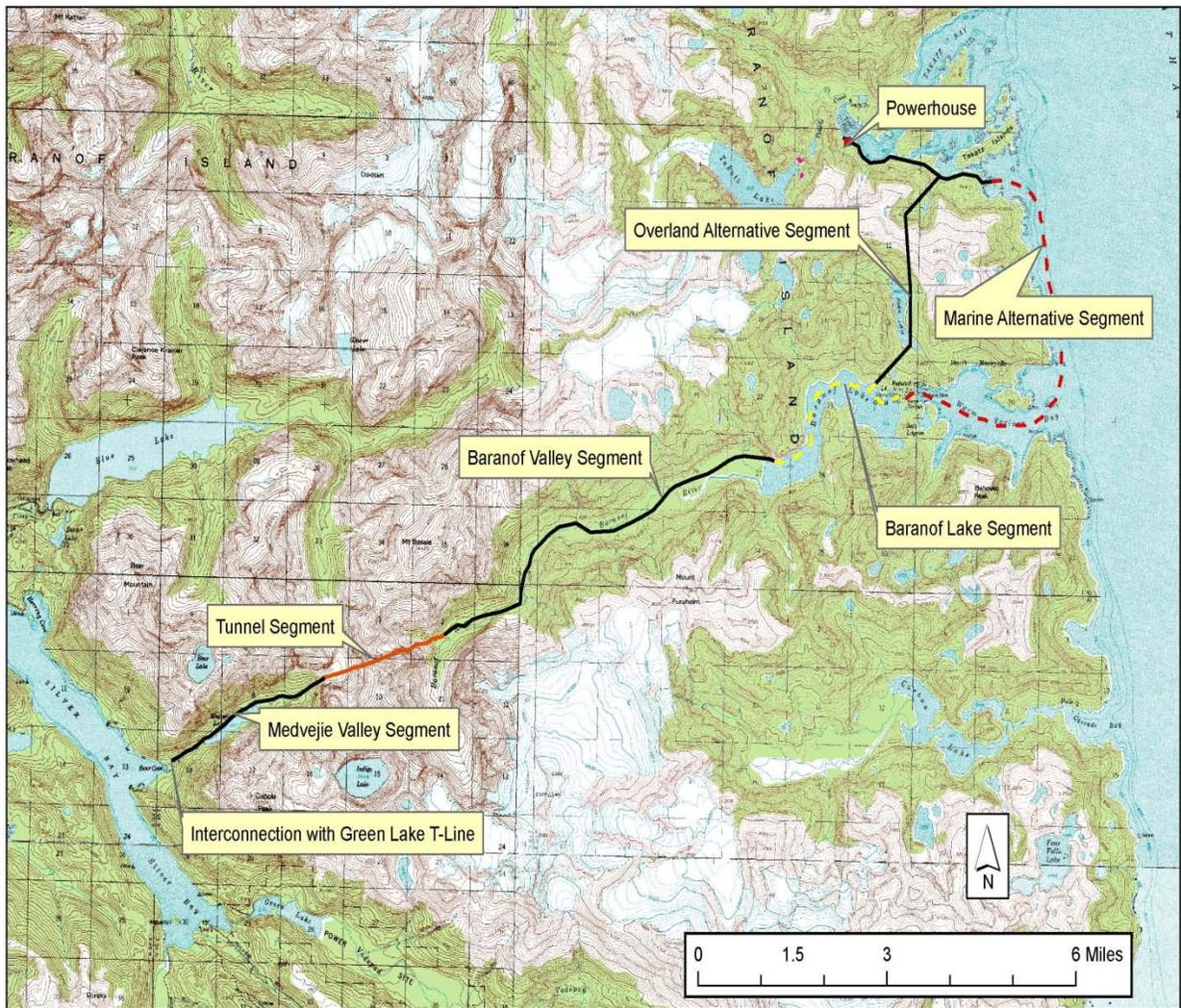


Figure 2. Takatz Lake Project Transmission Alternatives and Segment Terminology. (From USGS Sitka A-3, 1:63,360)

The Overland Transmission Alternative (OTA) would be routed from the switchyard overland to the shore of Baranof Lake without being routed through marine areas or the community of Baranof Warm Springs.

Along the Overland OTA, the transmission line would consist of a 69 kilovolt (kV) capacity overhead transmission line to the shore of Baranof Lake. The transmission line would continue underwater through Baranof Lake and would emerge near the confluence of the lake and Upper Baranof River. After emerging from the lake, the line would be either overhead or underground through the Upper Baranof River valley to a tunnel near the summit of the divide ridge in the Baranof mountains. Emerging from the western tunnel portal, the transmission line would continue overhead into the Medvejie River valley, past Medvejie Lake to the line's junction with the existing transmission line from the City's Green Lake hydroelectric project (See Figure 1).

The City has expressed its preference for the OTA over the MTA for economic, engineering and environmental reasons. We expect to focus resource studies on the OTA.

To evaluate this extensive area of potential scenic effect, aesthetics studies would be conducted in five major study areas:

Area 1, including all areas affected by the dam, reservoir inundation, the power conduit, powerhouse and switchyard;

Area 2, the Overland Transmission Segment area, including areas from the switchyard overland to the shore of Baranof Lake;

Area 3, the Upper Baranof Valley, including the Baranof Valley Transmission Segment, extending from the confluence of Baranof Lake with Upper Baranof River to the eastern portal of the proposed tunnel;

Area 4, the east and west tunnel portals; and

Area 5, the Medvejie River Basin, including the Medvejie Valley Segment and extending from the western tunnel portal through the Medvejie River valley, past Medvejie Lake to the proposed transmission line's interconnection with the existing Green Lake transmission line.

METHODS

Determination of LUD, VPRs and Use Areas

Effect on scenery in the various study areas will be analyzed based on the LUD's and Visual Priority Travel Routes and Use Areas (VPT's) in the applicable study areas. These factors are defined by the Forest Plan, which also designates specific Standards and Guidelines (S and G's) for scenic conditions, which help determine the kinds and

levels of scenic impacts which may be allowed in the various study areas. The applicable LUDs, VPT's and S and G's in each study area will be determined by review of the Forest Plan and through consultation with USFS, Sitka Ranger District before the final study design is determined. Among other potential use areas and VPT's, USFS has recommended evaluating the following:

1. *Travel Routes, Small Boat & Mid-Size Tour Boat Routes, Boat Anchorages: Chatham Strait, Warm Springs Bay, and Takatz Bay;*
2. *Saltwater Use Areas: Silver Bay;*
3. *Dispersed Recreation Areas: Baranof Lake;*
4. *Forest Service Recreation Cabin: Baranof Lake;*
5. *Communities: Baranof Warm Springs; and*
6. *Hiking Trails: Warm Springs Bay (USFS Trail No. 559).*

Impact Analysis

The analysis of each study area will be based on quantitative and semi-quantitative comparisons between existing and with-project conditions within the various study areas.

The analysis of effects of changes in Takatz Lake levels will be done primarily with a photo comparison of existing lake levels to proposed lake levels using Photoshop software to render views from VPT's, as required by Forest Plan and from other viewpoints. These graphics will depict existing conditions at various natural lake levels vs. conditions with various lake level elevations related to different dam heights under consideration.

Visual simulations will include, but not be limited to:

1. *Viewpoint from the cross-island hiking route.*
2. *Viewpoint from Medvejie Lake.*
3. *Viewpoint from Green Lake Road, on the point south of Bear Cove, looking up Medvejie Valley (approximate lat/long: N57° 00.519', W 135° 09.672'), showing transmission lines and power station impacts.*
4. *Visual simulation of the project areas from the air, especially of the Medvejie Valley segment and the Baranof Valley segment. The Medvejie-Baranof route is a common route for small planes to use crossing the island on clear weather days. In addition, this area is a popular flightseeing area.*

Analysis of the powerhouse and will be done using photo based rendering showing the potentially-affected area from both prescribed viewing points and from those most likely encountered by boaters in Takatz Bay using known cruising routes and anchorages. The renderings will be spatially based on plan and elevation view design drawings available at the time of the scenic analysis.

Analysis of the aesthetics effects along the transmission line segments will be conducted on a segment-by-segment basis to analyze the various transmission types and alternative

routes selected in the areas. As with analysis of other features, transmission line analyses *will* be based on photo renderings of existing conditions along with renderings showing various transmission pole designs and placements. Results of these aesthetics evaluations may be used to assist selection of pole characteristics and placement especially within scenically sensitive areas.

Visual simulations will illustrate the project pre-construction, post-construction, and then incremental post-construction conditions five and ten years out. To show that the Scenic Integrity Objectives will be met within USFS required timelines, visual simulations will show the project one year after completion within the Semi-Remote Recreation LUD's, and six months after completion within the Remote Recreation LUD's.

REPORTING

The Takatz Lake Expansion Aesthetics Resources Report will include sections on:

Objectives

Descriptions and Locations of proposed project and study areas

Analysis of each study area including:

- Potentially affected areas in acres;
- LUD's of the various study areas;
- Visual Priority Travel Routes and Use Areas within the study areas;
- Evaluation of each study area for conformance with applicable Standards and Guidelines in the Forest Plan
- Impacts, based on photo renderings and other methods;

STUDY AND REPORT SCHEDULE

The aesthetics resources studies should commence during summer, 2011 and, because of the extent of the project, may continue through *summer, 2012*. Activities in 2011 will focus on selection of a qualified scenic and aesthetics contractor who will, in association with City representatives, consult with USFS on details of the applicable LUD's, VPR's and Standards and Guidelines. A reconnaissance trip to the area will probably be conducted in 2011.

Most field work, photo interpretation, impact analysis and report writing will be conducted in 2011. This will allow project engineers to develop a more refined and assured project design with which to interact with the scenic specialist.

A report documenting 2011 activities will be available in early 2012 and the *final* Scenery Resources report will be available in fall, 2012.

ATTACHMENT I
COMMENTS FROM USFS SITKA RANGER DISTRICT

with

CITY ASSIGNED NUMBERING

City and Borough of Sitka - Electric Department
Christopher Brewton, Utility Director
105 Jarvis Street
Sitka, AK 99835

RE: Takatz Lake Hydroelectric Project (FERC No. 13234), USDA Forest Service, Tongass National Forest, Sitka Ranger District, comments on August 2010 Draft Aesthetics Resources Study Plan

Dear Mr. Brewton:

We reviewed the August 2010 Draft Aesthetics Resources Study Plan and offer the following comments:

- USFS 1 { INTRODUCTION and BACKGROUND: Third paragraph reads “The study plan describes analyses proposed to quantify existing...” Quantify indicates assigning a numerical value to the resources, which is not accurate. Recommend “examine and quantify” or “define and quantify existing resources.”
- USFS 2 { PROJECT/STUDY AREA: Project features (overhead or buried transmission lines, etc.) that are visually evident would be inconsistent with the 2008 Forest Plan High Scenic Integrity Objectives that may be required as the proposed project crosses the Remote Recreation LUD.
- USFS 3 { METHODS: Before starting the analysis, a summary of the landscape character of each segment should be developed to define a baseline for the project and provide reference for later design decisions.
- USFS 4 { Impact Analysis: The 2008 Forest Plan TUS LUD objectives are that “Transportation Utility Systems may dominate the seen foreground area, yet are designed with consideration for the existing form, line, color, and texture of the characteristic landscape.” The desired condition of the TUS LUD is that the systems “have been designed to be compatible with the adjacent LUD to the maximum extent feasible.”(2008 Forest Plan, 3-128). The LUD Standards and Guides direct us to “bury or submerge powerlines where feasible.” (3-131). Project design considerations should be given to being consistent with the Forest Plan. Along with pole design and placements, the transmission line analysis should consider line burial where feasible.
- USFS 5 (Cont. on next page) { Visual Priority Travel Routes and Use Areas are defined in Appendix F of the Forest Plan. Visual simulations should be developed for all the following in the project area:
 - 1. Travel Routes, Small Boat & Mid-Size Tour Boat Routes, Boat Anchorages: Including Chatham Strait, Warm Springs Bay, and Takatz Bay

- USFS 5 {
- 2. Saltwater Use Areas: Silver Bay
 - 3. Dispersed Recreation Areas: Baranof Lake
 - 4. Forest Service Recreation Cabin: Baranof Lake
 - 5. Communities: Baranof Warm Springs
 - 6. Hiking Trails: Warm Springs Bay (#559)

- USFS 6 {
- Although not specified in the Forest Plan, we encourage visual simulations to be completed for the following viewpoints:
- 5. Viewpoint from the cross-island hiking route.
 - 6. Viewpoint from Medvejie Lake.
 - 7. Viewpoint from Green Lake Road, on the point south of Bear Cove, looking up Medvejie Valley (approximate lat/long: N57° 00.519', W 135° 09.672'), showing transmission lines and power station impacts.
 - 8. Visual simulation of the project areas from the air, especially of the Medvejie Valley segment and the Baranof Valley segment. The Medvejie-Baranof route is a common route for small planes to use crossing the island on clear weather days. In addition, this area is a popular flightseeing area.

USFS 7 { Fourth paragraph - “transmission line analyses may be based on photo renderings along with....” should be changed to “analyses will be based on photo renderings along with...”

USFS 8 { Visual simulations should illustrate the project pre-construction, post-construction, and then incremental post-construction conditions such as five and ten years out. Also, for the Semi-Remote Recreation and the Remote Recreation LUDs, visual simulations should adhere to the timeline in the Forest Plan (showing the project one year after completion for Semi-Remote Recreation, and six months after for Remote Recreation), to show that the Scenic Integrity Objectives will be met within the required timelines.

USFS 9 { Due to the large scale and complexity of this project, I suggest you use a contractor experienced in visual simulation work.

Thank you for the opportunity to comment. The Forest Service Landscape Architecture team is willing to work with the City to provide information and assistance on this project. If you have further questions, please contact me by mail at 747-4218; or cgoularte@fs.fed.us. Please copy (cc) Melissa Dinsmore, at mdinsmore@fs.fed.us

Sincerely,

/s/ Carol A. Goularte
 CAROL A. GOULARTE
 District Ranger

ATTACHMENT II

NUMBERED COMMENTS, SUMMARY of COMMENT INTENT, and CHANGE(S)

Comment Number	Comment Summary	Comment Action
USFS 1	Suggests language change	Language suggestion inserted verbatim, page 1, para 3.
USFS 2	States that certain project features may be inconsistent with LUD visual quality objectives	Comment noted; will be address after further project design considerations
USFS 3	Suggests a summary of landscape characteristic by segment prior to analysis	Comment noted; this will be done prior to analysis
USFS 4	Discusses Standards and Guidelines relative to LUD, possible need for design changes to meet standards	Comment noted: these considerations will be addressed during further scenic analysis and design requirements.
USFS 5	Requests visual simulations for various travel routes	Travel routes included in final plan, page 4, para. 1.
USFS 6	Requests additional simulations from suggested travel routes	Suggested simulations added to plan, page 5, para. 3 under Impact Analysis.
USFS 7	Suggests word change, “may” to “will”.	Suggested change made.
USFS 8	Suggests simulations be done over specified time line	Suggested timeline changes added, page 6, para. 2
USFS 9	Suggests using an experienced contractor to conduct visual simulation work	City will select a contractor for agency approval.