



United States
Department of
Agriculture

Forest
Service

Alaska Region

P.O. Box 21628
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File Code: 2770

Date: May 18, 2011

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Preliminary Section 4(e) Terms and Conditions and Preliminary Comments

Cascade Creek Hydroelectric Project, FERC No. 12495-001

Dear Ms. Bose:

We regret that we are unable to file Preliminary Terms and Conditions for the Cascade Creek Hydroelectric Project, FERC No. 12495-001, pursuant to Section 4(e) of the Federal Power Act at this time.

The Forest Service review of the Draft License Application (DLA) and Preliminary Draft Environmental Assessment (PDEA) finds that the documents are incomplete. The PDEA fails to clearly display the issues, describe the alternatives, and disclose the direct, indirect, and cumulative effects of the proposed action and the no action alternative. Several effects analyses appear to be based upon erroneous and/or missing data or yet-to-be completed fieldwork. The documents lack key information needed for the drafting of meaningful preliminary terms and conditions.

The Forest Service is recommending to Cascade Creek, LLC that it prepare a revised and complete preliminary environmental document and circulate it for review before the Final License Application and Draft Environmental Assessment (EA) / Environmental Impact Statement (EIS) are filed with FERC. If this occurs and is acceptable to FERC, we would then be able to submit Preliminary 4(e) Terms and Conditions based upon the revised documents. The Forest Service will file Final 4(e) Terms and Conditions found to be necessary for the protection and utilization of the Tongass National Forest whenever they are requested by FERC.

We plan to continue working with Cascade Creek, LLC and other licensing participants to ensure that accurate resource and operations information is used in determining the project effects and needed mitigation. This on-going work will also include discussion of resource specific plans that can be referenced or included in the Final 4(e) conditions.



Ms. Kimberly D. Bose

Page 2

Enclosure 1 contains our schedule for submitting the Final 4(e) Terms and Conditions. Forest Service comments regarding the DLA and PDEA are in Enclosure 2. Enclosure 3 contains a recent letter from the Forest Service to Cascade Creek, LLC and the Certificate of Service is included as Enclosure 4.

Sincerely,

/s/ David P. Harris (for)
BETH G. PENDLETON
Regional Forester

Enclosures (4)

cc: Mr. Christian Spens

Enclosure 2

**Forest Service Comments
On Draft License Application
and
Preliminary Draft Environmental Assessment
for the
Cascade Creek Hydroelectric Project
FERC Project P-12495-001**

Forest Service reviewers fully appreciate the difficulty of analyzing and presenting the effects of this project on the environment. Our comments and suggestions are meant to be constructive and helpful to the preparers in improving the adequacy and clarity of the documents. It is apparent, however, that many of our previous comments and suggestions, including those made in response to Scoping Documents 1 and 2, have been disregarded.

NEPA

Many of the comments below reference Forest Service NEPA procedures and requirements. We recognize that FERC's NEPA direction and required document formats may differ from those of the Forest Service.

Based on the material presented in the application documents, the Forest Service believes that the proposed project would have significant irreversible and irretrievable effects to the environment. Because of this, the Forest Service recommends that an Environmental Impact Statement be prepared for this project, rather than the current Environmental Assessment.

Cascade Creek LLC has stated that it intends to conduct additional field studies during 2011. The Forest Service's review is based on the current documents, as submitted, and is irrespective of any future planned or potential additional fieldwork. We find it unusual that the Draft License Application (DLA) and the Preliminary Draft Environmental Assessment (PDEA) were submitted for FERC and agency review before the completion of critical field studies. Based on our review, the DLA and PDEA are incomplete and fail to clearly display the issues, describe the alternatives, and disclose the direct, indirect, and cumulative effects of the proposed action and no action. Several effects analyses appear to be based upon erroneous and/or missing data, including yet-to-be completed fieldwork. Conclusions are unsubstantiated by facts. The Forest Service strongly

recommends that a revised and complete preliminary environmental document be prepared and circulated for review before the Final License Application and Draft EA/EIS are filed with FERC.

In general, the current version of the PDEA does not allow the reader to easily:

- Find information.
Please improve the Table of Contents by listing the actual resources in addition to broad headings, such as Terrestrial Resources. Consider reorganizing the resource discussions and adding headers or footers so the reader does not become lost in the longer sections.
- Determine the issues.
This document does not describe what the issues are. The document only states that “Comments received thus far in the licensing process are included in Appendix E.” There is no discussion of what issues – if any - came out of scoping or how they are being addressed. Appendix E is incomplete.
- Obtain a clear, concise, and accurate picture of existing conditions.
The affected environment sections often contain irrelevant and extraneous material and do not clearly describe the existing conditions.
- Obtain a clear and accurate picture of the potential effects of the Alternatives.
It is not apparent whether the direct/indirect effects for each resource have been analyzed. There are no cumulative effects analyses for any of these resources. The Applicant indicates on page 3-5 that there are no cumulative effects related to this project!
- Assess consistency with the Forest Plan and the Roadless Rule.
The Forest Service has previously commented (SD1, SD2) that these analyses must be included and Applicants were provided a copy of the Forest Plan with Land Use Designation (LUD) maps, descriptions, and applicable Standards and Guidelines. Information has also been provided for the Roadless Rule.
- Determine who prepared reports/sections and their qualifications.
A List of Preparers is not included in the document.
- Determine the persons and agencies that were consulted, determine the extent of scoping, and read the comments.
Appendix E, Consultation Record, is incomplete. There is no consultation list. Transcripts and comments from public meetings are missing.

General Resource Comments

Several of the more obvious and serious resource deficiencies are listed below. Detailed comments are listed under the DLA and PDEA sections.

Botany and Invasive Species:

- No field surveys conducted to identify rare, sensitive, and invasive plant species. (Requested by FS in SD1 and SD2 comments.)
- Effects discussion appears meaningless due to lack of knowledge of actual species present.
- No cumulative effects discussion.
- Numerous examples of erroneous and/or missing data.

Fisheries:

- Radio telemetry study and spawning assessment/monitoring studies have not been completed. (Requested by FS in SD1 and SD2 comments.)
- Lacks information on effects of project operation on fish species inhabiting areas downstream of Swan Lake.
- No cumulative effects discussion.

Geology:

- No geotechnical studies have been conducted to determine stability at sites of major structures. (Requested by FS in SD2 comments.)
- No details are presented regarding planned geotechnical or geochemical studies at project-specific locations.

Hydrology:

- No details are presented on methods used to evaluate instream flows in the bypass reach.
- Lacks information to determine effects of project operation on Falls Lake, Lower Cascade Creek, including aquatic habitats and sediment/debris transport, sight and sound of waterfalls at Falls Lake and the Cascade Creek trailhead, and small boat navigability through Falls Lake. Information must be displayed in context of year-round Operations Model.
- No discussion of cumulative effects.

Minerals:

- No studies have been conducted to determine actual presence or potential for acid rock drainage at major construction and disturbance sites.
- No mention of presence or absence of mining claims in the area.
- No discussion of the impacts of the use of mineral materials (gravel, shot rock, etc) in the project.

Recreation:

- Recreation survey was poorly administered and results are likely invalid. (See comments in SD2 response.)

- Actual data from recreation survey is apparently not available for review.
- Aerial flight surveys and trail counts were not completed.
- There appears to be no record of recreation comments made at the public meetings in Petersburg.
- Recreation section is long, rambling, confusing, and hard to follow with extraneous and irrelevant material. Writing style, presentation, and conclusions appear to be biased and demonstrate a lack of understanding of the importance of the recreation resources to local residents and businesses.
- Effects discussion is inadequate. No cumulative effects discussion.

Riparian:

- Lacks detailed information about proposed construction activities and timber harvest within riparian areas.

Scenery:

- Forest Service comments have been ignored (SD1, SD2, Recreational Resources Study Plan)
- No study plan for scenery
- Much of the discussion is intertwined with the Recreation section. Please separate.
- Photo-renditions are not adequate for assessing effects upon scenic resources.
- No computer simulation has been completed.
- Impacts to Scenery are not clearly stated. Analysis is inadequate to determine effects.
- Analysis is not adequate to ensure compliance with the Standards and Guidelines of the 2008 Forest Plan.

Soils and Wetlands:

- No study plan submitted to FS for review.
- Several soils are misclassified.
- Wetland determinations are incorrect.
- Data in ATSI Wetland report do not support the wetland interpretations
- FS recommends that the entire wetland delineation and report be redone.
- No actual effects discussion. No cumulative effects discussion.

Timber Resources:

- No discussion related to timber resources
- No effects analysis

Wildlife:

- Section contains mostly background information on wildlife species.
- Existing habitat condition information is missing.
- Where are the wildlife-related comments from scoping and what issues were generated?
- Black oystercatcher survey has not been conducted.
- Goshawk survey work is adequate to determine presence or absence of goshawks.

- No cumulative effects discussion.

Subsistence:

- No discussion of subsistence resources.
- No analysis of effects upon subsistence resources and subsistence users.

Land Status

Power Site Classifications 9 and 192

The DLA and PDEA make numerous references to Power Site Classifications 9 and 192 and indicate that these lands are withdrawn for hydropower development.

Background

During the 1920-30s, the United States Geologic Survey (USGS) inventoried potential hydropower sites in southeast Alaska. Those sites with hydropower potential were classified as Power Site Classifications (PSCs) and were withdrawn by administrative orders under the authority of the Organic Act of March 3, 1879. (This is the USGS Organic Act; in 19xx authority for these withdrawals was transferred to the Bureau of Land Management (BLM). The intent was to set aside and protect those lands with potential water power value, until that potential could be realized or developed.

The Cascade Creek/Swan Lake area was identified as having potential water power value and was withdrawn as Power Site Classifications 9 and 192 on August 20, 1921 and November 14, respectively. In accordance with the provisions of Section 24 of the Federal Power Act of June 10, 1920, these lands are reserved from entry, location, or other disposal under the public land laws until otherwise directed by FERC or by Congress.

Current Situation and Management

A Power Site Classification withdrawal identifies an area as having water power potential but it does not authorize water power development. It serves as an identifier for possible development and not as a right for development. The withdrawal in no way overrides Forest Service management discretion under the Tongass National Forest Land and Resource Management Plan. While the actual withdrawal has no expiration date, these are not necessarily permanent withdrawals. There is a process by which a Power Site Classification withdrawal can be revoked, if it is later determined that the area lacks water power development potential or if the PSC is incompatible with multiple use objectives. Several of the PSCs on the Tongass NF have been revoked or relinquished over the years. At present, there are an estimated 20-25 PSCs in effect on the Tongass National Forest.

The Forest Service continues to have jurisdiction over the management and resources of these lands while recognizing that the withdrawn areas have power values which should be protected to the greatest extent possible, consistent with other land-use requirements.

In several sections of the DLA and PDEA, the Applicant asserts that the withdrawn lands are not subject to other management considerations and/or that Forest Plan Standards and Guidelines do not fully apply. These assertions are incorrect.

Roadless

The Proposed Action may be inconsistent with the Roadless Rule. Because the Proposed Project is located in an Inventoried Roadless Area (Spires Roadless Area 202), the Forest Service considers this type of action a Class 2 action requiring an EIS per 36 CFR Part 220 – National Environmental Policy Act (NEPA) Compliance as described below:

§ 220.5 (a) Classes of actions normally requiring environmental impact statements:

(2) Class 2: Proposals that would substantially alter the undeveloped character of an inventoried roadless area or a potential wilderness area.

Examples include but are not limited to:

- (i) Constructing roads and harvesting timber in an inventoried roadless area where the proposed road and harvest units impact a substantial part of the inventoried roadless area.
- (ii) Constructing or reconstructing water reservoir facilities in a potential wilderness area where flow regimens may be substantially altered.

The Tongass National Forest is currently under active Roadless litigation and we are working with both our Washington Office and the Department of Agriculture to determine the implications of a recent District Court opinion (*Organized Village of Kake et al. v. USDA et al.*) regarding Roadless on the Tongass. A final summary judgment in this court case is pending. The 2001 Roadless Rule (Federal Register / Vol. 66, No. 9 / Friday, January 12, 2001) needs to be cited in this document, and provided as a reference. The Roadless Rule applies to all projects on the Tongass National Forest.

Draft License Application (DLA)

Draft License Application Initial Statement

Page 2,d: Consultation with SHPO is not related to the Endangered Species Act.

Page 2,j: There is no mention of tribal consultation which is integral to meeting the NHPA implementing regulations.

DLA, Exhibit A

Figure A-1: Map should identify the location of Swan Lake Outlet structure.

2.1.1 Intake Structures -- The intake structure is at the base of an avalanche chute which may be prone to rock fall. How will the structure be protected from damage?

Clarify if the 10 foot diameter siphon piping from Swan Lake to the gatehouse will be buried or be on top of the ground.

The Intake Structure section should include the "Proposed Construction Laydown Area" shown in Exhibit F-2. It is assumed that this is a permanent impact, as it is not otherwise stated.

2.1.2 Outlet Control Structure

What are the dimensions of the outlet control structure house?

Page 4, 2nd paragraph: "*The weir would serve several purposes: minimize outflow leakage through the shallow substrata...*" In the PDEA, the Applicant includes Swan Lake outlet leakage as part of the Swan Lake discharge, and also assumes that leakage will continue to provide streamflow through bypass reach and into Falls Lake (PDEA page 3-71). If the intent of the outlet structure is to minimize leakage, please explain how this water can contribute to flows in the bypass reach.

Section 2.1.4 Powerhouse -- What is the height of the powerhouse? This is important for determining the effects on scenic resources.

Section 2.1.6, Marine Access and Housing Units – Please provide details, including dimensions, for the two proposed housing units. They are shown on Exhibit F-9 as being located along the tunnel access route. We found no information regarding size and type of structures.

"Localized transportation from the housing units to the powerhouse site would be by vehicle or by foot." Include access details/description.

Page 7, Transmission Line and Substation: Will timber be harvested from within riparian areas along the transmission line? If timber is harvested, the Tongass Timber Reform Act of 1990, PL 101-626 (TTRA) will apply and buffer zones will be likely required along any streams. An analysis would need to be completed that documents how riparian resources will be protected along the transmission line. BMPs will apply to non-fish bearing streams where timber is harvested. Please discuss.

There is no road adjacent to one section of the transmission line. Discuss and analyze how the power line will be accessed for maintenance and what the effects will be.

Section 7.0 U.S. Lands... 1st sentence should read: Tongass National Forest.

Add the following sentence after 3rd sentence, “The 2008 Tongass Land and Resource Management defines the management direction on NFS lands per the Semi-remote Recreation Land Use Designation (LUD) (2008 TLRMP, 3-63 to 3-68).”

Table A-1, 2nd row, column 1: should read: Tongass National Forest.

DLA, Exhibit B

1.0 Alternative Sites Considered

2.0 Alternative Facility Designs Considered

Page 1, 4th Paragraph, Section 2.0: Will these Alternative Facility Designs be included in the “Alternatives Considered but Eliminated from Detailed Analysis” section in the PDEA?

Page 2, 3rd paragraph: “*The transmission line would continue as a 7.7-mile long undersea cable...*” In Exhibit A it reads “*approximately 7.6 miles.*” Need to be consistent by saying “approximately” when referring to acres, miles, etc. throughout this document so as to not confuse the reader.

Page 2, last paragraph, 1st sentence: “*The preferred alternative avoids new road construction and land based transmission lines within view of Thomas Bay.*” Improper use of word preferred. The Council on Environmental Quality (CEQ) regulations for implementing NEPA require that a Record of Decision (i.e., EIS; not EA) specify “the alternative or alternatives which were considered to be environmentally preferable” (40 CFR 1505.2(b)).

last paragraph, 2nd sentence: “This alternative minimizes land disturbance and clearing...” Please note that this is an Inventoried Roadless Area where road construction and clearing of trees is generally not allowed. The Transportation S&G for this LUD also states “Generally new roads are not constructed in this area, except to link existing roads or provide access to adjacent LUDs.”

3.0 Proposed Project Operation

The Operations Model should show how water will be managed throughout the year, incorporating Swan Lake inflow magnitude and timing, Swan Lake levels, amount diverted, magnitude and timing of release and spill from Swan Lake into Lower Cascade Creek and Falls Lake levels. Currently Exhibit B contains some of this information, but major omissions include diversion amount (only a single maximum is specified), and the magnitude and timing of Swan Lake spill into the bypass reach. Additionally there are apparent discrepancies in the information presented, as detailed in following comments.

3.3 Operation During Adverse, Mean, And High Water Years

Page 4, last paragraph: *“Power generation would be curtailed when the lake level fell to operational minimums prescribed under license, and would resume when water was again available.”* The Final Aquatic Resource Report (Dec 3, 2010, page 61-62) states that *“The hydropower plant will be in a non-operational mode under circumstances where the water flow into Swan Lake is too low. This can be expected to occur during the winter months.”* This information is not clearly presented in the DLA. It is likely that license conditions will include minimum and maximum lake levels as well as minimum instream flow released from the Swan Lake outlet. For a run-of-river project, the fact that average annual discharge (226 cfs) is significantly less than plant capacity (670 cfs) suggests that the power generation will be curtailed much of the year, and particularly when energy demand is high in late winter. Please explain this.

Page 6, last paragraph: *“Along with measured surface flow from Swan Lake, there is also some subsurface leakage near the lake outlet which is accounted for in the Falls Lake hydrology analysis ...”* The Applicant should take care to distinguish between direct measurements of flow at a given location and estimated/reconstructed flows based on correlations between lake stage and stream flows at different locations. The Hydrology Report (PDEA Appendix C-4) should be explicitly cited as the source of these estimates wherever they are used. The analysis and results presented in the Hydrology Report are credible but should be considered provisional at this point, given the limited amount of Swan Lake data collected to date.

Page 6, last paragraph: *“The net effect of the outlet control structure would be to allow the relocation of the primary outlet of the lake to the power tunnel...”* Please clarify: does this mean that the outlet control structure is intended to eliminate seepage at the natural lake outlet? If so, additional work is needed to quantify the magnitude and timing of seepage, since it will need to be factored into releases from the structure into the bypass reach.

Page 7, Figure B-2: This chart apparently displays a subset (?) of selected years of estimated Swan Lake outlet discharge. Please clarify if this intended to display the estimated Swan Lake outlet discharge for the entire period of record corresponding to Table 3-1 of the PDEA (page 3-45). Is the solid horizontal black line intended to represent estimated mean annual flow at the lake outlet?

Page 7: *“Comparison of mid-winter and mid-summer aerial and shoreline photographs over several years indicates the lake fluctuates approximately 6 feet in elevation annually.”* Please clarify if 1) the six foot fluctuation is an annual event based on photographic evidence or 2) the six foot fluctuation is an estimated average based on reconstruction of lake stage using a correlation with lower Cascade Creek stream gage for the period of record. Figure B-3 shows that some years the fluctuation is estimated to be less and some years more. Is this statement intended to imply that the analysis presented in the Hydrology Report is substantiated by photographic evidence?

Page 7: *“Based on 38 years of USGS stream gaging at the mouth of Cascade Creek (Figure B-3)...”* Figure B-3 does not display Cascade Creek discharge data. Please clarify or add figure.

Page 9: Figure B-5 suggests frequent reductions in power generation capacity throughout the year, based on maintaining minimum lake elevation of 1511 feet. It also displays a lower frequency of minimum lake elevations in late winter than expected, and a high frequency of low lake levels in mid-summer when peak flows are more likely to sustain a higher lake level even when a maximum diversion is underway. This is not explained in the DLA or the PDEA. Please clarify. What is the data source for this graph? It is not clearly correlated to the operations model.

4.0 Dependable Capacity and Average Annual Energy

Page 10, 2nd paragraph: *“Generation for the Project was modeled for 14-years and a 26-year average. The years modeled are 1960 through 1972, 2010, and the average of 26-years.”* Please explain why these subsets of the period of record were selected.

Page 11, 1st paragraph: *“The usable capacity [within Swan Lake] represents 63 hours of full plant generation capability at 70MW, assuming no inflow to the lake.”* This information should be more fully explained here, and the effects presented and displayed in the EA, since it is a scenario that is likely to occur very frequently given the plant capacity and low stream flows expected in late winter. Is this what Figure B-5 (page 9) attempts to illustrate?

Page 12, second sentence: *“The minimum hydraulic capacity of the powerhouse would be 35 cfs.”* Maybe refer to Table B-3 on Page 13. Note that Table B-3 shows 34 cfs; not 35 cfs.

Page 13, Table B-7: Is this table referenced in the text?

Page 13, Table B-3: The sentence that precedes this table should explain a bit more about what this table is summarizing and titles of columns should be consistent with what is discussed in text (i.e., “Flow (%)” in first column should be “plant hydraulic capacity (%)” and “Flow (cfs)” in second column should be “Flow Rate (cfs)” and “Plant eff (%)” in 3rd column should be “Plant Efficiency (%)”; not eff).

Page 14, 1st paragraph, 3rd sentence: *“The average powerplant efficiency between 10 percent flow and 100 percent flow is 85.16%.”* Why choose between 10 – 100 % flow, when Table B-3 on Page 13 shows between 5 - 100%, and 5% as generating 3.5 MW? Shouldn't this be averaged in, too since you refer to this in next sentence... *“The powerplant is still over 60% efficient at 3.5 MW...”*

Pages 14-17, Monthly Flow Duration Curves: Given the proposed limited storage capacity of Swan Lake, the duration curves suggest that full capacity power generation (670 cfs) would be a relatively rare event. This is not clearly addressed in the DLA or the PDEA. Flows of 670 cfs are exceeded only 5% of the time on an annual basis (Figure B-9), and are unlikely to occur at all in February, March, or April (page 16). Please explain how this information is factored into the operations plan on

a seasonal and annual basis. What is the proposed actual diversion and how is it likely to fluctuate over the course of the year?

Page 14, 2nd paragraph, 1st sentence: The tables on Page 16-17 (monthly flow duration curves) need to be referenced (i.e., table # provided) at the end of the first sentence.

Page 18, 1st paragraph: Manning's equation...what is that? Please include in the Definition of Term, Acronyms, and Abbreviations section (glossary).

Page 19, 1st paragraph: Head – please include in glossary or explain for the general reader.

5.0 Statement of System and Regional Power Needs

Page 20, 1st sentence: “*Southeast Intertie*”. The correct name is Swan-Tyee Intertie. Please correct throughout the documents.

Page 20, 2nd paragraph last sentence: “*A proposal to connect the Southeast Interties to B.C. Canada and the North American Grid has been studied and placed under future planning consideration by the Alaska Energy Authority, a state agency.*” Need to provide a reference of this study to substantiate this statement. Suggest that you remove “...placed under future planning consideration....” and insert “*No action has been taken to date.*”

Page 20, 4th paragraph: This is a very general comment. Please provide a reference(s) to substantiate this statement or provide additional details.

Page 21, Table B-4: Need to be specific about which “Southern Southeast Alaska Communities” these forecasted energy requirements are referring, and cite where data was derived. Southern SE includes more than 4 communities.

Page 22, Figure B-12: Need to be specific as to which “Southern Section” communities the forecasted energy requirement/existing hydropower supply are referring, and cite where data was derived.

Page 23, Power Sales: Please expand this section – more information is needed. Where is the power likely to be sold and to whom? Have there been any discussions with Petersburg Municipal Power and Light? Is the utility company interested in purchasing the power? Is the Southeast Alaska Power Agency (SEAPA), owner of the Swan-Tyee Intertie, interested in the power? Who would pay for any necessary line and substation upgrades?

Page 23, 2nd paragraph: “*Energy from the Project would be higher than energy from the SEAPA projects.*”

Do you mean higher in cost? Please re-word and explain this statement.

6.0 Plans for Future Development

What is the relationship of this project to other proposed hydro projects at Ruth and Scenery Lakes?
What is the business relationship between the Applicants?

DLA, Exhibit C

Upper tunnel advancement is proposed during winter. Is this feasible?

Why is the construction of the outlet control structure deferred to the summer following plant start up?

DLA, Exhibit D

Page 1, 1st paragraph: The Forest Service special use permit will not include the 4(e) conditions. The 4(e)s will appear in the FERC license.

Page 1, 2nd paragraph: How much State land and private land is involved?

Page 5, 4th paragraph: Environmental Measures section and Table D-6 on Page 6: These are measures that have been discussed by the Applicant and the Forest Service. Note that it now costs approximately \$250,000 to plan and construct a new Forest cabin and the needed outhouse, woodshed, etc. The costs of any environmental or mitigation measures will need to be updated to reflect final design and license conditions.

Page 6, 1st sentence: For value of Project energy, compare to other hydropower, rather than only to diesel. On page 8 in section 6.0, first sentence states "other hydroelectric" is another electric energy alternative.

Page 6, 2nd sentence: "*The resulting benefit/cost ratio for the Project is 3.82.*" What is 3.82? A ratio is usually written as A:B or A/B or by the phrase "A to B".

Page 8, 1st sentence: Need to expand on how "conservation" is considered another electric energy alternative. Include other alternatives such as geothermal, hydrokinetic, biomass, etc. Suggest that this section be re-written and expanded. Biomass is an economic alternative in some applications.

Page 9, 1st paragraph: There are other hydropower projects proposed in the area. This paragraph leads one to believe that only diesel could meet projected load demands if the Cascade

Creek Project is not licensed/constructed. This section seems to be rather self-serving and should be re-written.

Page 9, 2nd paragraph: *“The USFS has identified portions of the Tongass National Forest as appropriate for hydroelectric development; specifically, the Cascade Creek drainage, within which the proposed Project would occur.”* Actually, the USGS identified the Cascade Creek drainage as having hydropower potential and withdrew the lands as a Power Site Classification. The Forest Service recognizes that the lands have been withdrawn for their hydropower potential. See response in introductory section under Land Status.

Page 9, 2nd paragraph, last sentence: The statement is made that license denial would be severely detrimental to Applicant because of \$2.9 million already invested (i.e., cost to develop license application). Seems inappropriate to say this as Applicant understood the cost of doing business. Again, this is a very self-serving statement and should be re-written or deleted.

Page 10, 2nd paragraph, 1st sentence: What is meant by short-term shaping? Suggest including the term in the glossary or explaining here.

DLA, Exhibit F

Exhibit F: Though not discussed in detail in any DLA narrative, drawings in Exhibit F include use of mineral materials (boulders, possibly shot rock) for construction of the project and infrastructure. The Applicant should be aware that any rock used for construction or other purposes during the life of the project, whether that rock be quarried for a specific construction purpose, or whether that rock be the result of another construction activity must be purchased from the USFS, if the rock was taken from USFS lands.

Exhibit F-2 and F-3 show maximum post-project lake elevation as 1520.9 feet. Exhibit F-4 shows maximum post project lake elevation 1519 feet. Exhibit B describes and displays maximum post-project lake elevation as 1517 feet. Please address these discrepancies.

Exhibit F-9: Please describe the tunnel access route. The road as drawn is very steep. The second, upper switchback climbs at an estimated 50% gradient, climbing 50 feet of elevation over 100 feet in road length. The effects of such a road were not discussed anywhere in the PDEA nor was a geotechnical investigation of the site conducted, as required by the Tongass Land Management Plan (TLMP) on page 4-82 Number 3.

Exhibit F-9: The FS trail leading from the cabin to the falls should be depicted on this map since the trail is affected by the proposed action.

Exhibit F-9: Please highlight the location of the two proposed housing units -- very easy to overlook on this drawing.

DLA, Exhibit G

Exhibit G: Again, please note that any rock taken from NFS lands and used for construction or other activities during the life of the project must be purchased from the USFS.

Exhibit G-6: The FS trail leading from the cabin to the falls should be depicted on this map since the trail is affected by the proposed action.

Exhibit G-6: Again, please highlight the location of the two proposed housing units -- very easy to overlook on this drawing.

Preliminary Draft Environmental Assessment (PDEA)

Executive Summary

Page 1-5, 2nd paragraph : There is no mention of actual tribal consultation.

Page 1-3: *"The purpose of this PDEA is to analyze the potential for both temporary effects from project construction activities and long-term effects from project structures and operation, and describe the proposed protection, mitigation, and/or enhancement (PME) measures for potentially affected resources."* This document really fails at the basic levels to complete an analysis of the effects of the project for the long term and barely recognizes effects in the short term.

1.0 Introduction

Page 1-1, Last paragraph: *"...The USFS acknowledges the Power Site Classification designation and indicates the drainage is "withdrawn from other management considerations."*

2003 SEIS, Volume II Appendix C Part 1, Page C1-40 states the following for the Spires Roadless Area (#202:

"(8) Transportation and Utilities: There are no transportation corridors proposed in the roadless area. The Scenery Lake and Swan Lake drainages have been identified by the Federal Power Commission as potential hydropower generation sites and are withdrawn from other management considerations. Several proposals have been

made over the years to develop the hydropower potential at Swan Lake, but to date no development has taken place and is not likely in the immediate future.” Refer to comments under Land Status: Power Site Classifications... Forest Plan LUDs and Standards and Guidelines apply to the lands within PSC 9 and 192.

It would be helpful to include copies of project drawings in this section, or at least reference Exhibits F and G. The reader may know very little about the project at this and it is very difficult to read a document without some maps/schematics to indicate where the project activity is taking place. Figure 1-1 is not adequate.

1.2 Purpose of Action

Page 1-3: Suggest adding this as an opening paragraph:

“The purpose of the proposed action is to determine whether to grant Cascade Creek LLC a license for the construction and operation of the proposed Cascade Creek Hydroelectric Project in compliance with FPA requirements and other laws.

The proposed federal action is the Federal Energy Regulatory Commission’s (FERC) decision whether to issue a license for the proposed project and, if so, what conditions should be placed in the license.”

Page 1-3, 2nd paragraph-- states that Applicant anticipates additional field work and study during 2011. Please provide a detailed description of the work to be accomplished during the 2011 field season. Explain why this work was not accomplished prior to submittal of the DLA and PDEA.

1.3 Need for Power

Page 1-4: 1st sentence/paragraph doesn’t belong here. Perhaps place at the end of this section.

Page 1-4: “Additional energy needs will continue to require fossil fuel generation (primarily diesel). This sentence leads one to believe that there are no other proposed or existing projects that would/could meet this need. What about other renewables? Other hydroelectric projects? Misleading sentence.

1.4 Statutory and Regulatory Requirements

This section should also address:

- Alaska National Interests Land Conservation Act of 1980, PL 96-487 (ANILCA),

- Tongass Forest Plan Standards and Guidelines for Semi-Remote Recreation Land Use Designation,
- Tongass Forest Plan Forestwide Standards and Guidelines
- TTRA - Tongass Timber Reform Act (if any timber sale activities are proposed).
- Best Management Practices consistent with those described in Forest Service Handbook 2509.22, Alaska Region amendment effective July 14, 2006

Page 1-6, 1st paragraph: - 132° 7"W is out of place.

Page 1-6: - Need to mention the 2008 Tongass National Forest Land and Resource Management Plan and direction for Semi-remote Recreation LUD.

Page 1-6, 2nd paragraph: "...The USFS acknowledges the Power Site Classification (PSC) designation and indicates the drainage is "withdrawn from other management considerations." To say the USFS "acknowledges the Power Site Classification designation" is not accurate in terms of what we state in SEIS. See previous comments on this topic.

Page 1-6: "Though the USFS has not requested preliminary conditions..." USFS does not request preliminary conditions; FERC requests them and the USFS submits them. As the land managing agency, the Forest Service has the authority to submit mandatory 4(e) terms and conditions to be included in the FERC license, as are necessary for the protection and mitigation of impacts to National Forest System land and resources.

Page 1-6: Section 10(j) Recommendations "*As part of the ALP, the Applicant has been in consultation with federal and state agencies... To date, no preliminary recommendations have been provided.*" This is the first time that agencies have been asked to submit 10(j) recommendations. The current wording is misleading, it could read that nobody has concerns so have not commented to date – not a factual statement.

Page 1-10, paragraph 2: The SHPO is a person, not an office; therefore it should be the State Historic Preservation Officer, same with the THPO.

1.5 Consultation

Page 1-14, Section 1.5.3 Comments on the Application, last sentence: "*Comments received thus far in the licensing process are included in Appendix E.*" Appendix E is not a complete record of the comments received thus far. Where are the transcripts of the public meetings? Agency comments are also missing from Appendix E. How many comments were received? What issues were derived from those comments? How did the Applicant respond to and or address comments? Please include a brief description of the project-specific issues that will be addressed in the EA.

Page 1-15, Figure 1-1: The map should be a bit more specific and show the project boundary; not just point to powerhouse. It should also be referred to in text somewhere. This is more of a general vicinity map and probably belongs in the beginning (not end) of Introduction section.

2.0 Proposed Action and Alternatives

2.1 No Action Alternative

Page 2-1, *“In turn, pre- and post-licensing resource assessment studies, aimed at providing further resource data to agencies, would not be performed and potential habitat enhancements and protection measures would not take place.”* This statement is inappropriate. Why are possible benefits being discussed in the No Action Alternative? "No action" should mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

“... and Recreationists would not benefit from the additional access facilities and upgrades proposed.” Later in the document when recreation resources are analyzed, the Applicant makes large assumptions that recreation use would increase due to the presence of a dock --even though outfitter-guides are being misplaced.

The description of the No Action alternative is too long and includes self-serving and hypothetical statements. Please re-write the alternative description.

“Energy would not be provided to replace regional reliance on petroleum dependent ...” This statement is too general to be meaningful. Major communities in the region (southern SE Alaska) are not reliant upon petroleum dependent electric generation.

Please include a map and plans of project areas to simplify descriptions.

2.2 Proposed Action

Page 2-1: First paragraph of Proposed Action should provide an overview of what will be discussed here (i.e., WHO, WHAT, WHERE, HOW, WHEN). For example,

“Cascade Creek, LLC (Applicant) proposes to construct an intake structure, outlet control structure, power conduit, powerhouse, tailrace, marine access, transmission line, and appurtenant equipment, which will accommodate three turbine generator units for the proposed Cascade Creek Hydroelectric Project (Project) for a total capacity of approximately 70 megawatts (MW). The Project boundary encompasses Swan Lake and associated intake equipment, the power conduit complex, the powerhouse including the 200-foot setback for non-marine dependent project facilities, tailrace, and transmission line corridor. The proposed Project is located on Swan Lake, Cascade Creek, and Thomas Bay, approximately 15 miles northeast of Petersburg, Alaska in the

Tongass National Forest (“Tongass”), administered by the United States Forest Service (“USFS”) (reference a map). Proposed features of the Project, including the construction schedule, project operation, and environmental and safety measures are described below.”

2.2.1 Proposed Project Facilities

It would greatly assist the reader if the proposed project facilities were separated and discussed like they were in Exhibit A, which is not part of the NEPA document. In Exhibit A the author separated these components of the proposed facilities with bolded headings starting with “Intake Structures,” “Outlet Control Structure,” “Power Conduit,” “Powerhouse,” “Trailrace,” “Marine Access and Housing Units.”

Somewhere in this section, there needs to be a reference to Exhibit C Figure C-1 or a discussion of the “Proposed Construction Schedule” to ensure phases / timing of development (i.e., WHEN) is included in proposed action.

There are many references in this section referring the reader to Exhibits for more detailed information. Are Exhibits F and G readily available to the general reader?

All of these “Project Facilities” (i.e., screened lake siphon, underground gate house controlling water flow, outlet control structure, remotely controlled crest gate, powerhouse, Pelton generator, power plant switchgear and controls) are discussed. Again, for the general reader, illustrations and a brief description of the function would be helpful.

Information should be provided on HOW these facilities will be constructed and what construction entails. For example, in section 3.0 on Page 3-19 (last paragraph, second sentence) it reads, “Construction activities will involve the use of heavy equipment and will result in vegetation removal, blasting, excavation and other earth disturbance.” There is also discussion of managing rock spoil material or tunnel excavation materials in section 3.0, which is never discussed under proposed action. This information needs to be explained fully here, in the proposed action so it doesn’t have to be explained in section 3.0.

Page 2-2, 1st paragraph: Include a discussion/description of the outlet control house.

Describe how the outlet control structure will be designed to allow for fish passage.

Page 2-2, 2nd paragraph: How can the elevation of the powerhouse be 4,558 feet msl when the tunnel originates at Swan Lake at 1,430 feet? Please correct.

Page 2-2, 3rd paragraph, *“Additional facilities will include a 30-foot by 228-foot shoreline barge landing ramp, a new dock that would be approximately 12 feet wide by 290 feet long on a fixed pier with an approximately 8-foot by 60-foot ramp down to a 60-foot by 30-foot floating dock stationed to pilings, and two housing units within the overall powerhouse footprint. The dock and adjacent barge landing ramp would provide direct access to the site during construction and operations.”* The timing of this construction is not discussed (see

Figure C-1) and HOW it will be constructed is not discussed (i.e., materials used, how it will be brought in, amount of barge traffic, what the construction entails).

Provide details on the two housing units. Dimensions, type of structure, accommodating x workers, and more.

Page 2-2, last paragraph, last sentence: *"Systems will be closed tank/containers if onsite development is not feasible."* More information is needed about closed tank/containers. How will these be emptied or pumped?

Page 2-3, 1st complete sentence: *"Localized transportation ... would be by foot"*. On page 6 of Exhibit A, the Applicant indicates that transportation will be by *vehicle or by foot*. Please correct.

Page 2-3, 1st sentence: *"...buildings would be separate from other structures and would be surrounded by proposed and existing vegetative screening."* What is the proposed vegetative screening?

Page 2-3, 2nd paragraph, 1st sentence:, *"As proposed, water would drop vertically from the turbine units to the tailrace below."* Take out *"as proposed."*

Page 2-3, 3rd paragraph, 1st sentence: *"...the Applicant proposes to site project structures at least 200 feet back from the marine shoreline..."* Just state, *"The project structures would be sited at least 200 feet back from the marine shoreline..."*

Page 2-3, 3rd paragraph, 1st sentence: *"It anticipates re-vegetation of most disturbed areas post construction."* Does "it" mean the Applicant? This belongs in mitigation section and needs to state that ALL disturbed areas will be re-vegetated post construction. For example, page 3-19 (2nd paragraph, first sentence) states: *"The Applicant also proposes to re-vegetate any [not most] disturbed areas not occupied by project structures, which will stabilize shorelines and exposed soil."*

Page 2-3, 4th paragraph, 1st sentence: *"The proposed transmission line, described in detail in Exhibit A and depicted in Exhibit G..."* Need to discuss the details here in this section. How will powerline construction be done (i.e., excavation and setting of new poles)? Also would be good to know about existing transmission line corridors (i.e., Thomas Bay and Petersburg transmission line corridors), which are discussed in section 3.0, but not here. There is discussion in section 3.0 about "routine vegetation maintenance of the transmission line corridor."

Page 2-4, first paragraph, first and second sentences: *"...Applicant is not proposing construction of new interconnect facilities and/or substations...It anticipates working through existing system upgrade requirements prior to and during interconnection discussions."* Just state, *"No new interconnect facilities and/or substations are proposed and work would be*

conducted through existing system upgrade requirements prior to and during interconnection discussions.”

2.2.3 Proposed Environmental Measures

The list on pages 2-5 and 2-6 is merely a list of some of the ideas that have been discussed. There has been no Forest Service agreement regarding these items.

Measures should also include or address:

- A screen at the lake intake to exclude fish entrainment
- Design of lake intake to minimize damage associated with potential rockfall.
- Restrictions associated with blasting or drilling during saturated slope conditions in the vicinity of landslide-prone terrain.
- Management of groundwater potentially encountered during tunnel construction.
- Identification and protection of streams in the vicinity of the powerhouse, tunnel access route, and tunnel excavation rockpile.
- Design of tunnel access route to address steep slope and drainage.
- Design of tunnel excavation rockpile to address steep slope and drainage.
- Identification and protection of stream crossings during project construction and maintenance along the entire transmission line, including treatment of riparian vegetation consistent with Tongass Forest Plan, TTRA and BMPs
- Restrictions on heavy equipment during construction and maintenance (not allowed to operate off established roadways unless site-specifically approved).
- Equipment access to Swan Lake for both intake and lake outlet construction and maintenance work (including, specifically, access to and from the staging area shown near the intake to the lake outlet).
- Equipment access for construction and maintenance of transmission line where no road currently accesses the shoreline on both sides of Frederick Sound (Aggasiz and Sandy Beach)

Page 2-5, #2: Please reference Best Management Practices consistent with those described in Forest Service Handbook 2509.22, Alaska Region amendment effective July 14, 2006

Page 2-5, #5 and #6: Although water quality monitoring may be required (#5), the gaging stations are more likely to be relevant to a Water Management and Operation Plan (#6). The gaging stations should be established and maintained (and data collected and analyzed) in accordance with USGS standards, as described in the Applicant’s Hydrology Report (Appendix C-4). Monitoring gages should provide post-project continuity with pre-project data collection.

3.0 Environmental Analysis

Page 3-1, 1st paragraph, first sentence: *“In this section, the Applicant provides: (1) a general description of the project vicinity and specific description of the project area; (2) an explanation of the scope of cumulative effects analysis; and (3) analysis of the proposed action and other recommended environmental measures....”* If this is a discussion about how Section 3.0 should be laid out, we already had a discussion about general description of the project vicinity and specific description of the project area. Here’s a suggestion:

“This section combines descriptions of the environment that would be affected and discussions of the anticipated direct, indirect and cumulative impacts of the Proposed Action and the No Action Alternative on various resources and resource uses. The analysis of potential impacts from the Proposed Action includes implementation of environmental measures as described in Section 2.2.3 of this EA. The terms “effects” and “impacts” are used synonymously.”

All that is required in this section is a discussion about the “affected environment” of the resource (i.e., wildlife, fisheries, recreation) or resource use (i.e., subsistence) to facilitate the reader’s understanding of the direct, indirect and cumulative effects the Proposed Action and No Action would have on these resources or resource uses. That’s it.

3.1.2 Major Land Uses and Industries

Page 3-2: The Applicant does not discuss the possibility of mining claims in the area. The Applicant should conduct a records search to ensure that there are no claims adjacent to the project area, which may have extralateral rights extending beneath the project area.

Page 3-2, last complete sentence: The LUD is Semi-Remote Recreation, not Semi-Remote.

Page 3-3, 1st paragraph, last sentence: *“This LUD also includes...”* This sentence does not make sense. Missing words?

3.1.3 Topography

Page 3-3: The entire project area is not located on the Southeast Alaska mainland. Portions of the transmission line corridor (also within the project area) are located on Mitkof Island.

3.1.4 Climate

Page 3-4, 1st paragraph: *“Summer temperatures average 55 degrees F with an average of 109.9 inches of rainfall annually... Precipitation on the mainland is significantly higher than that in Petersburg.”* Please clarify: the figure cited (109.9 inches) approximates mean annual precipitation in Petersburg, which has the nearest National Weather Service climate data. [The cited website www.usclimatedata.com does not report their data source, but this is within the range reported by the Western Regional Climate Center.] No climate data are available for the Cascade Creek watershed or nearby mainland, though there are credible sources available to estimate precipitation and temperature for Cascade Creek. It is unclear why the Applicant states that

precipitation on the mainland is significantly higher than that in Petersburg. This may or may not be true at this location, but the citations given do not support this statement.

3.2 Cumulative Effects

Page 3-5, 1st paragraph, last sentence: *“As there are currently no other active or operational hydroelectric projects within the project vicinity and no other foreseeable developments, the Applicant determined that there are no cumulative effects related to hydroelectric development.”* This statement is invalid. Just because there are currently no other active or operational hydroelectric projects in Project area and no other development proposed, there may be other past, present or reasonably foreseeable actions or downward trends other than hydro development that when combined with the Proposed Action could have cumulative effects. Putting this statement up front before we have even disclosed the direct and indirect effects to individual resource areas is pretty bold. By definition, cumulative effects must be evaluated along with the direct effects and indirect effects of each alternative. What resources have the potential to be cumulatively affected by this project? Please list.

3.2.1 Geographic Scope

Page 3-5, 1st sentence: *“The Applicant’s geographic scope of analysis for cumulatively affected resources is defined by the physical limits or boundaries of the proposed action’s effect on resources within the Thomas Bay and the Patterson Delta. Specifically, Swan Lake, Cascade Creek, Cascade Falls, Thomas Bay, and facilities provided by the USFS to access the project area are included within the Project’s geographic scope.”* Defining the scope of the cumulative effects analysis for every resource in this way is incorrect. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected. Analyzing cumulative effects requires focusing on the resource, ecosystem, or human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects. In other words, the geographic scope of cumulative effects analysis may be different between resources; not a one-size-fits-all.

The geographic scope should also include the Mitkof Island portion of the project.

3.3 Analysis of Proposed Action and Action Alternatives on Individual Resource Areas

Please include a section addressing the 2001 Roadless Rule and how the alternatives would impact the Spires Roadless Area characteristics. Refer to our comments on roadless in the General Comments section.

In addition, please consider including a section on Air Quality.

The PDEA does not address subsistence and the effects of the alternatives upon subsistence resources and subsistence users. This must be corrected. The Alaska National Interests Conservation Act of 1980, Public Law 96-487 (ANILCA) provides for the continuation of the opportunity for subsistence uses by rural residents of Alaska on the public lands. ANILCA requires the analysis of the potential effects on subsistence uses of all actions on federal lands in Alaska. The analysis most commonly focuses on those food-related resources most likely to be affected by habitat degradation associated with land management activities.

3.3.1 Geologic and Soils Resources

The information in this section is poorly organized and difficult to follow. Paragraphs of information and lengthy explanations are used when tables, figures, or even bullet statements could have been used. There is no list of preparers (in an appendix) to assess the qualifications of those analyzing the impacts to the geology or soils resources. A study plan was not provided for review.

The focus on geologic stability misses many of the stability issues in the Cascade Creek Project area. These include, the common, shallow mass wasting events, avalanches, and the problems of building road on steep slopes. None of these were analyzed in the PDEA.

The Applicant is under the impression that most of the instability on the Tongass National Forest is a result of earthquakes. In reality, the several landslides near the project area are a result of a complex interaction of geology, landform, and climate. There was not a stability analysis that took into account the most common landslide mechanisms in the project area.

The Applicant used Web Soil Survey, a NRCS product, for the soil information. The data was run in September 2010, before the data had been subjected to any Quality Control. The dataset has been subsequently improved. However, several problems still exist with Web Soil Survey, especially with the interpretations Drainage Class and Parent Material. Web soil survey uses the most limiting soil to make the interpretations. For example, for the map units 16B and 16D Kupreanof-Mosman the Web Soil Survey drainage class is Somewhat Poorly Drained even though both Kupreanof and Mosman are well drained and comprise 90% of the map unit. Mitkof is an inclusion, less than 10% of the map unit, but is Somewhat Poorly Drained. This is what is driving the somewhat poorly drained interpretation. In the future, the Applicant should use the Official Series Descriptions (<http://soils.usda.gov/technical/classification/osd/>) or obtain the information directly from the Tongass National Forest.

The effects discussion describes no real impacts to the soils or to the geology resource, but rather, includes vague statements about potential effects and future intentions. This analysis is inadequate. A discussion of regional Soil Quality Standards (FSM 2554) is also missing.

Page 3-6 to 3-7: There is a very general discussion of regional geology with very little focus on the geology at specific project locations. There is no discussion of mineral assemblages found within each rock unit. Mineral assemblages will be important to identify and to determine the potential for Acid Rock Drainage (ARD). ARD potential in any rock which will be disturbed by construction or

operations, and as such, must be identified in order to fully understand the impacts to the environment.

Page 3-8, paragraph 2, Soil Resources: There is no known loess in the project area. This is a result of an error from Web Soil Survey. See General comments on web soil survey above.

Pages 3-8 through 3-18. Most of the discussion here is not needed in the PDEA. This section should focus on the stability concerns and the soil quality concerns of the Cascade Creek Project. Instead, the Applicant notes both pH and the erosion factor K for the USLE model. The USLE model is generally not used on the Tongass and therefore including K values for each of these soils is unnecessary. PH had no bearing on management of soils for this project and is not used to differentiate soil interpretations on this project so why is it included?

The maps provided in this section (Page 3-11, 3-17, 3-18) are illegible and should be improved.

Page 3-12: The Rock Outcrop: Bedrock can provide drainage if shears or fractures exist. Bedrock can also have an erosion potential if it is weathered or friable.

3.3.1.2 Environmental Effects

Page 3-19, subsection: *“Effects of Project Construction on Ground Disturbance and the Potential for Erosion and Sedimentation.”* This should be “Effects of Project Construction on Soils” instead, since the discussion should revolve around ground disturbance, erosion and sedimentation.

Page 3-19: - *“the disposal and dispersion of a large quantity of boulder, cobble and rock material, which will be re-purposed for construction fill and penstock burial or otherwise disposed of on-site, but which could affect the surrounding areas.”* The proponent should be aware that any rock used for construction or other purposes during the life of the project, whether that rock be quarried for a specific construction purpose, or whether that rock be the result of another construction activity must be purchased from the USFS if the rock was taken from USFS lands.

Page 3-19, paragraph 2, Proposed Action: *“While current geologic assessments do not indicate a high probability of rock slides and or cliff shearing, the Applicant anticipates undertaking additional, site-specific geologic evaluation as part of final project design and construction.”*

Actually, the current geologic assessment contains photographs of several rock falls (Appendix C-3, photos 1, 2, 3, 4, 8, 10, 11) and the intake structure is located in an avalanche track with active rock fall. While avalanches are not geologic instability they can wreck havoc on structures. There is ample evidence of instability in the project area.

Pages 3-19, paragraph 2 to 3-20 paragraph 1: The Applicant proposes to develop an “Erosion and Sedimentation Control Plan”. Applicant does not mention the development of a plan to characterize acid rock drainage (ARD) potential in any construction or disturbed bedrock or outcropping areas. The Applicant should propose a study plan and mitigation plan in the event

that unexpected ARD is encountered. In addition, an erosion control plan does not mitigate mass wasting hazards.

Page 3-20, paragraph 4: This discussion of effects to soils does not explain what the effects even are or how extensive they would be. Localized is an appropriate term only if defined by a location or extent. A better way to say this would be: The effects to soil would be limited to the XX acres of the construction footprint. The effects to soils include: XXX.

Page 3-21 paragraph 2: *“Permanent alterations will occur within the footprint of the proposed outlet control structure; in some cases changes to underlying bedrock features may be required for its construction. While these will be permanent alterations, they will only occur within the footprint of the structure and will not contribute to further effects once construction is complete.”* What is a permanent alteration? These terms do not describe any actual effects. Is a permanent alteration a permanent effect to the soil resource? What does it look like? Can the site still function as it does now, without a structure sitting on it? Define these terms and describe what is going on.

Page 3-22 paragraph 1: *“As outlined in prior documentation and associated geotechnical reports, the entire location of the tunnel lies within quartz diorite (HA, 1985). While numerous shear zones and joint features are present, they are readily visible on aerial photography and will be avoided during construction.”* It will be very difficult, if not impossible, to avoid all of the joints shown in Figure 3 of Appendix C-3.

Page 3-22 paragraph 1: Managing rock and spoil material requires placing it somewhere, which is an effect to the soil resource. Where was this analyzed? How many acres of effects to soils will there be?

Page 3-22 paragraph 2: The support facilities include a very steep road (Exhibit F-9). Stability is a concern here along with an eroding cut and fill slope.

Page 3-22 paragraph 3: How many acres will be filled with *“an appropriately shaped geoform feathered into the adjacent topography and re-vegetated?”*

Page 3-23 paragraph 3: The soils on Mitkof Island are deep, organic soils that require special attention when it comes to placing structures in and on them. How will the poles be placed? These soils are easily rutted and will not support the weight of heavy equipment.

Pages 3-23 paragraph 4 and page 3-24 paragraph 1: Which are temporary and which are permanent effects?

Page 3-24, second paragraph: *“Effects of Project Operation on the Potential for Erosion and Sedimentation.”* Should read *“Effects of Project Operation on Geologic and Soil Resource.”*

No discussion of cumulative effects in this section.

3.3.2 Water Quantity and Water Quality

The EA and appendices do not describe the methods that were used to evaluate instream flows in the bypass reach. Instream flow studies should specifically address Falls Lake, Lower Cascade Creek, including aquatic habitats and sediment/debris transport, sight and sound of waterfalls at Falls Lake and the Cascade Creek trailhead, and small boat navigability through Falls Lake. The EA must include this information, in the context of the year-round Operations Model and relevant alternatives and affects on aquatic and recreation resources.

3.3.2.1. Affected Environment

Page 3-26 and 3-27 (end of p. 3-26 and beginning of p. 3-27): *“The hydrologic cycle for the region as a whole consists of precipitation nearly year-round, with heavy precipitation occurring from September through December (USFS 2008b). As storms decrease substantially during the winter months, and much of the system’s precipitation...”* What region is being discussed? How much precipitation? What system?

Page 3-27, 2nd paragraph: *“This watershed can subsequently be broken down into three distinct sub-basins...”* Please note that these are not distinct sub-basins: one flows into the next. The PDEA’s repeated descriptions of the three sub-basin areas, as if they are unconnected, are irrelevant and confusing.

Page 3-27, 2nd paragraph: *“The Cascade Creek watershed occupies approximately 23 mi2...”* Should be mi²

Page 3-30, 2nd paragraph: *“Swan Lake is ... bordered by steep cliffs and ice-fields to the southwest.”* The ice fields are to the southeast.

Page 3-34, 2nd paragraph: *“This model determined that seepage averages 28.7% of the total outflow from Swan Lake during the summer months, and 39.7% during the winter months (December through mid-May).”* The Applicant should quantify the seepage in more detail since it will likely be factored into releases from the Swan Lake outlet as a license condition.

Page 3-36, Figure 3-7: The colors in this graph are too similar to distinguish between the months. Please re-create this figure so it clearly displays the monthly lake level differences described in the text.

Page 3-37, 1st paragraph: The correct Hydrologic Unit Code for the Cascade Creek watershed is 19 01 02 01 05 03.

Page 3-37, 2nd paragraph: Appendix B is described as the Aquatic Resources Study. The citation should be to a Final Aquatic Report, which is missing from the PDEA (see comments below).XXXXXXXX

Page 3-38, last paragraph: Should the citations be to Figure 3-6 or Figure 3-8? Please clarify.

Page 3-43 to 3-50, Stream Gage Data: In this section, the Applicant should clearly account for the water budget of the entire watershed. The Hydrology Report provides a credible provisional analysis of the data collected to date. However, this section reports mean annual flows from Swan Lake outlet (226 cfs) to Falls Lake outlet (263 cfs) to Lower Cascade Creek (250 cfs). These figures support flow accretion between Swan Lake and Falls Lake, but imply a loss of water that could contradict the assumption of flow accretion by unaffected tributaries (page 3-71) in the bypass reach below Falls Lake. Please address this. There is at least one notable unaffected tributary in Lower Cascade Creek that is not discussed in the PDEA.

Page 3-44, “...recent stream gaging data obtained from Swan Lake Outlet.” The Applicant should take care to distinguish between direct measurements of flow at a given location and flows based on correlations between lake stage and stream flows at different locations. There is no gage at the Swan Lake outlet. Stream flow data at Swan Lake Outlet is based on a stage instrument near the lake inlet correlated with very few discharge measurements at the lake outlet. The Hydrology Report (PDEA Appendix C-5) should be explicitly cited as the source of these estimates wherever they are used. The analysis and results presented in the Hydrology Report are credible but should be considered provisional at this point, given the limited amount of Swan Lake data collected to date.

Page 3-47: “...calculated average rainfall is over 148 inches of rain per year.” What is the source of this calculation?

Page 3-51: “Precipitation...occurs mainly during the months of September through December.” This statement is misleading without context. Perhaps half or more occurs during these months? Please address.

Page 3-52, 1st paragraph: “Project operations are proposed to mimic these natural fluctuation patterns, with flows less than or equal to 670 cfs diverted through the proposed hydroelectric facility.” The PDEA and the DLA don’t clearly describe the quantity of water diverted on a monthly or annual basis. This information is necessary to evaluate the effects of the diversion. Further, aside from the estimated range of lake fluctuations, the project operations do not mimic natural fluctuation patterns. There is no evidence that the timing, frequency or duration of high and low lake levels that occur pre-project will occur post-project.

Page 3-53, Water Rights: “At this time, there are no water rights (existing or proposed) for Swan Lake...” This statement is incorrect. The Forest Service holds certificated water rights on unnamed streams at the Swan Lake Cabin and at the Cascade Creek Cabin.

Page 3-54, Table 3-2: What is DO in first column, 2nd row? Also, what is the source of this information? There should be a citation under the table.

Page 3-55, 3rd paragraph: What are TMDL’s? Please define/add to the glossary.

3.3.2.2 Environmental Effects

Page 3-62, last paragraph: "...there will be times during the year where hydropower operation will be minimal or will, in some cases, be completely curtailed." The DLA and PDEA don't explicitly describe when these times occur, how long they will last, and what will trigger them. Please address in the context of effects (frequency, magnitude, duration) on lake levels and stream flow in the bypass reach.

Page 3-63, 2nd paragraph: "Project operations are designed to follow the natural hydrograph of Swan Lake, mimicking the lake elevations that would occur under natural conditions. Therefore, the effects of project operations on Swan Lake are expected to be minimal..." Figure 3-18 does not follow the natural hydrograph of Swan Lake in terms of timing, frequency, and duration of lake levels. What is the likely affect of repeated lake drawdown under ice cover? Will this increase ice depth and/or create unstable ice conditions?

Page 3-63, last paragraph: Please check citation of Figure 3-6. Is this the correct figure?

Page 3-65, Figure 3-18 suggests frequent reductions in power generation capacity throughout the year, based on maintaining minimum lake elevation of 1511 feet. It also displays a lower frequency of minimum lake elevations in late winter than expected, and a high frequency of low lake levels in mid-summer when peak flows are more likely to sustain a higher lake level even when a maximum diversion is underway. This is not explained in the DLA or the PDEA. Please clarify. What is the data source for this graph? It is not clearly correlated to the operations model. [same comment in DLA on this graph]

Page 3-65, Potential Effects of Project Operations to Falls Lake: "Once the project starts up, the inflow from Swan Lake will diminish, leaving some subsurface flow from Swan Lake and the numerous creeks and waterfalls from its sub-basin area." Figure 3-20 apparently displays this effect, but it is unclear what data are being used for this graph or to substantiate this statement. The Applicant should quantify the actual diversion as well as the flow accretion downstream of Swan Lake that will not be affected by the proposal.

Please ensure that the EA addresses small boat navigation through the lake in the context of the reduced lake level and the effects of reduced stream flow on the falls at the head of Falls Lake. Determination of effects on fisheries cannot be determined until fisheries studies are completed.

Page 3-71, last paragraph: The Applicant has not documented accretion flow between Falls Lake and Lower Cascade Creek gage. In fact, data presented suggest a loss of water in this reach.

Page 3-74: Please ensure that a geotechnical report is completed for final project design that addresses the potential for acid rock drainage during project construction.

3.3.2.3 Unavoidable Adverse Effects

Page 3-78: Additional evaluation of the quantity and timing of diversion and unaffected accretion, seepage, and tributary flows will be necessary to determine adverse effects.

No discussion of cumulative effects in this section.

3.3.3 Fish and Aquatic Resources

3.3.3.1 Affected Environment

Page 3-81-3rd paragraph:- Please provide more information on population size of rainbow trout in the Cascade Creek system.

Page 3-82-1st paragraph: -States rainbow trout that migrate downstream are unable to return to Swan Lake. Fisheries resource report lists 3 “potential” barriers directly downstream of Swan Lake in reach 2A and 2B (Pg 91 resource report). If these are only potential barriers then it is not known if rainbow trout can return upstream-please clarify. The radio telemetry study previously requested is needed for determining if fish are unable to return to Swan Lake.

Page 3-83 -2nd paragraph: -One spawning survey in upper Cascade Creek is not enough to make any determinations. Please conduct more spawning surveys and include Spring Creek too since that is where potential redds were documented. Conduct more spawning surveys in Lower Cascade Creek and tributaries (Pond Area) during June and July as well as May to verify that no spawning is taking place. This is important since water will be diverted from this reach. Please discuss and analyze effects to these populations from decreased water flow.

Page 3-83-3rd paragraph, last sentence: Please re-word.

3.3.3.2 Environmental Effects

What will the effect of project operation (i.e. water diversion) be on fish species inhabiting areas downstream of Swan Lake (i.e. rainbow trout, Dolly Varden, coho salmon, and coast range sculpin). Please analyze and discuss.

Page 3-98 -1st paragraph: Discuss how project operations will contribute to low flow passage barriers by diverting water to the bypass reach.

Page 3-99 -1st paragraph, Page 3-108 -2nd paragraph: -Regarding the naturalized channel and constructed falls, what will be the effect to coho, Dolly Varden, and coast range sculpin that utilize lower Cascade Creek from the mouth to the first falls for some part of their lifecycle? How many freshwater sources are available in the area that these fish can utilize? Please analyze and discuss.

Page 3-102-1st paragraph: Please discuss how decreased flow to Lower Cascade Creek will affect benthic food resources drifting over the falls at Falls Lake where the highest concentrations of fish were captured. What will the effect of the outlet control structure be on invertebrate populations at

the outlet of the Swan Lake and any fish that feed in that area? What about the zooplankton and phytoplankton drift through the outlet of Swan Lake? Please discuss and analyze how aquatic resources will be affected by project operation. Since there are only potential barriers between the outlet of Swan Lake and top of Falls Lake falls, fish may be able to migrate from the top of the falls to Swan Lake. The zooplankton and phytoplankton drift and macroinvertebrate populations are important food sources for this section of stream and will be directly affected by project operations. Please discuss and analyze for effects.

3.3.3.3 Unavoidable Adverse Effects

Page 3-105, Fish Resources, 1st paragraph: Need to confirm that fish are washed out of Swan Lake. Since there are only potential barriers between the top of the falls at Falls Lake and Swan Lake outlet, it is not known for sure that fish were washed out of Swan Lake. More information is needed to make this determination.

Page 3-109-3rd paragraph: Please include a discussion of any proposed timber removal within riparian areas along any part of the transmission line corridor. Discuss the effects.

No discussion of cumulative effects in this section.

3.3.4 Terrestrial Resources

Wetlands -- The information for the wetland resources is poorly organized and difficult to follow. There was no list of preparers to assess the qualifications of those analyzing the impacts to wetland resources. The Wetland analysis section is buried under the terrestrial resources heading. It is difficult and confusing trying to determine the effects to wetlands when the discussion is mixed in with wildlife effects and botanical effects. The effects analyses did not discuss any actual effects and a cumulative effects analysis was absent.

No wetland resources study plan was developed or submitted to the USFS. We seriously question the wetlands calls made on the wetland delineation forms provided. Many of them appear to be incorrect and this calls into question the entire wetland report and analysis based on these forms. Based on the soil descriptions provided, the soils are misclassified and the vegetation protocol should have included the prevalence index. The data provided in the ATSI Wetland Report do not support the wetland interpretations made.

The soils information provided in the wetland report is not entirely correct. The Applicant used Web Soil Survey, a NRCS product, for the soil information. The data was run in September 2010, before the data had a chance to go through any Quality Control. The dataset has been improved; however, several problems still exist with Web Soil Survey, especially with the interpretations Drainage Class and Parent Material. Web soil survey uses the most limiting soil to make the interpretations. For example, for the map units 16B and 16D Kupreanof-Mosman, the Web Soil Survey drainage class is Somewhat Poorly Drained even though both Kupreanof and Mosman are well drained and 90% of the map unit. Mitkof is an inclusion, less than 10% of the map unit, but is

Somewhat Poorly Drained. This is what is driving the somewhat poorly drained interpretation. In the future, the Applicant should use the Official Series Descriptions (<http://soils.usda.gov/technical/classification/osd/>) or get map unit descriptions directly from the Tongass National Forest.

Vegetation-- There are numerous examples of erroneous or missing data with regard to plants and vegetation in general. The Vegetation Resources Overview in Appendix C-6 is more complete; however, it also has errors and confusing or misleading statements.

Timber --There is no mention within the Cascade Creek Draft License Application EA or Draft License Application of the impact to national forest timber resources. Include language concerning the amount of forested area (acreage) impacted delineated by Land Use Designation (LUD) and an estimated timber volume (by species of Old Growth and merchantable Young Growth) the proposed project would affect during infrastructure construction, transmission line corridor clearing, and the cutting of potential hazard trees, where applicable, across USFS lands. Define the extent of clearing limits necessary to maintain the type of transmission corridor specific to the project. Though much of the proposed transmission corridor is parallel to the established road right-of-way and adjacent to existing managed stands or previously harvested timber, the proposed utility corridor route *does* pass through areas where previous management has not occurred. Before any cutting of timber is to take place on NFS lands, a value must be assigned through a timber cruise meeting Forest Service Handbook standards. Forest Service Manual (FSM) 2400- Timber Management Chapter 2440 – Designating, Cruising, Scaling, and Accountability Section 2442 Timber Cruising, states, “The object of timber cruising is to determine the quantity and quality of timber to be offered for sale within established standards of accuracy. Based on the quality and quantity of the timber cruised, an appraised value would be assigned and a timber settlement agreement would be completed, in accordance with applicable manual direction, contract provisions, and federal regulations.

Wildlife -- The wildlife sections contain mostly background information on some of the species in the area.

Where are the comments generated from the scoping process as well as the response to those comments? It is impossible to know what issues were generated through scoping and which ones were determined to be significant.

Much more is needed than background information and a summary of fieldwork. Where is the existing condition information for the habitat for the wildlife species that may be affected by this project? The existing condition needs to be compared with the results of the field work (as documented in the wildlife resource report) and an analysis needs to be completed that clearly shows the process used in determining the effects of the project. The effects discussions are inadequate.

The 2009 Sensitive Species list needs to be used instead of the older 2002 Sensitive Species List and those species need to be evaluated. Ospreys are not a sensitive species but they are found in

the project area. When they are sighted, care should be used to document their location and Forest Plan Standards and Guidelines followed.

As stated in the August 2010 response to the Draft Study Plan, we strongly recommend that you survey for Black Oystercatchers.

In addition, the second round of Goshawk surveys must be completed in the spring/summer 2011 to follow the current survey protocol. The only surveys that we are aware of were conducted on August 26 and 27, 2010. This is not adequate for determining the presence/absence of goshawks.

Subsistence--Please include a discussion of subsistence resources and describe the impact of the alternatives upon subsistence users and resources. The Forest Service suggests a separate analysis report that can be summarized in the EA; these are often included with the wildlife reports since they rely on some of that information. Forest Service Handbook 2090.23 includes the standards for an ANILCA 810 analysis, including specific FINDING language that must be used, i.e., whether or not there is a "significant possibility of a significant restriction on subsistence uses". Please contact the forest Service for additional information.

3.3.4.1. Affected Environment

Page 3-111, 2nd to last sentence: Fern-leaf goldthread (*Coptis asplenifolia*) is incorrectly referred to as fern-leaved goldenrod (*Coptis grandifolia*). Table 3-5 on the next page refers to the plant correctly, but the scientific name is misspelled with an extra "i."

Pages 3-112 and 113, Table 3-5. Some species appear to be misidentified:

--Dunegrass (*Elymus arenarius*) – This species does not normally occur in SE Alaska. Perhaps it should be American dunegrass (*Leymus mollis*) which commonly occurs on marine shorelines as is mentioned on page 3-123.

--Wild carrot (*Daucus carota*) – This species does not normally occur in SE Alaska. Perhaps it should be Pacific hemlock parsley (*Conioselinum pacificum*) which commonly occurs on or near marine shorelines as is mentioned on page 3-123.

--Yellow pond lily (*Nuphar luteum*) -- This species should be spelled *Nuphar lutea* instead of *Nuphar luteum*.

Page 3-116, paragraph 1: Incorrect and misleading statement -- The ATSI report did not assess any effects to wetlands.

Page 3-116, Paragraph 2 *Swan Lake Intake*: This area is not wetlands, as confirmed by the National wetlands map (NWI) and the Stikine soil inventory map unit 73 (avalanche tracts). Stikine Soil map unit 73 is poorly developed, upland soils on slopes from 60 to 120% gradient. There is not any site investigation to clearly determine that this is a wetland, which is doubtful given that this is an alluvial fan forming on the toe of an active avalanche tract. The assumption that the area is wetland is highly questionable. (ATSI Wetland report, page 6, section 4.1 Intake Site).

Page 3-117, Paragraph 1, *Powerhouse*: Please see general comments above. We seriously question the integrity of the wetland mapping here. Twenty wetland delineation forms were completed on this 20 acre site. Normally this would be more than adequate for an area of this size.

Page 3-120, Paragraph 2, *Thomas Bay Transmission Route*: There is no mention of field forms, vegetative plots, or soil pits for this section of the transmission route. Fieldwork appears to be inadequate to support the analysis.

Page 3-121, Paragraph 2, *Petersburg Transmission Route*: The site was not visited and the vegetation and soils were not sampled. The conclusions were based on assumptions (ATSI Wetland Report, page 17, section 4.4).

Page 3-123 : Forgot to include scientific name for false lily-of-the-valley. Also, the species identifications for Dunegrass and Wild carrot are questionable as described in comments for Table 3-5 above.

Page 3-124, First sentence: Change who's to whose and add ending quotes to sentence.

Page 3-124, 2nd to last sentence: Invasive plant species are most likely found on existing roads, regardless of whether they are existing transmission line corridors. Existing roads and existing transmission line corridors may not be the same thing.

Page 3-124, Table 3-8: The table title misleads the reader into thinking these species could likely be found in the project area. While it is possible the species could be found, since they occur on the Tongass, many of the species are not likely to be found in the project area since they have not been found on the Petersburg Ranger District, or are only found in very specialized habitats or in very limited populations. For example, the knotweeds are found mainly near communities, Garlic mustard has not been found closer than Juneau and Brass buttons are found only on tideflats and in only a couple isolated places on the Tongass.

Page 3-124, *Exotic and Invasive Plants*: This half page discussion and table for Affected Environment is inadequate. At the very least, it should include an accurate list of the invasive plant species found in the project area, not just which species could potentially be present. A field survey of disturbed habitats in the project area, especially existing roads, is necessary to compile this list.

Page 3-125 and 126, Table 3-9: Like Table 3-8 (discussion above), the table title is misleading as far as which wildlife species could be found in the project area. For example, coyotes are very unlikely to be found.

3.3.4.2 Environmental Effects

Page 3-137, 2nd paragraph, 1st sentence: Ground disturbing activities during construction laydown could have more than temporary effects to plants. Plants could be destroyed by trampling and smothering and may not come back when construction is complete, even if the disturbed ground is no longer being used. It is essential to know if there are any rare or sensitive plants found in the project area and exactly where they are located to properly analyze effects to plants.

Page 3-138, Paragraph 2 Proposed Action: Page 3-114 refers to the Swan Lake intake area as a wetland while the proposed action on 3-138 calls it upland. Which is it? “*Altering a wetland*” is imprecise language. Is the Applicant converting wetland to upland by filling the wetland?

The powerhouse area was improperly mapped as entirely wetland mosaic when the majority of the wetland delineation cards described upland.

Page 3-138, Paragraph 3 *Swan Lake Intake and Outlet*: This is the first site-specific mention of wetland acres. How did the Applicant arrive at 1.2 acres of upland and 0.88 acres of wetland? The ATSI wetland report does not support this level of detail. Is there metadata for the analysis here? “*Recently harvested hemlock*” is described under the Swan Lake section—where is there recently harvested hemlock in Swan Lake?

Page 3-139, 1st paragraph, last sentence: The reader could not find where ...”re-purposing the rock spoil material for burying the penstock...” was discussed below. Use the same wording or give a specific reference.

Page 3-139, 2nd paragraph, *Powerhouse and support Facilities*: The assessment of wetlands in the ATSI report is questionable, as noted previously. What does permanently affect mean? Does it mean fill? If so, say so.

Page 3-141, 3rd paragraph: “*Habitat loss for terrestrial species occurring in the project area will occur during the construction period and may be either permanent or temporary dependent on the proposed activity.*” Where is the discussion of permanent habitat loss? Please address.

3.3.4.3 Unavoidable Adverse Effects

Page 3-145, 4th paragraph through Page 3-146, 1st paragraph: “*Altered*” is an imprecise term. What is going to happen to the wetlands? What are the temporary effects to wetlands? What are these effects and why are they temporary? This is the first time “temporary effects” to wetlands has been brought up. If they are temporary, why would the Applicant need to mitigate them? Filling a wetland is not considered a temporary effect.

Page 3-145, *Spread of Noxious Plants during Project Construction and Operation* paragraph: Field observations (surveys) for noxious plants should already be completed to properly analyze effects in this PDEA. This discussion of effects is meaningless.

Page 3-146, 1st paragraph, 1st complete sentence: The PDEA states that the existing wetlands and vegetation in construction access areas would return to existing condition over time. This is misleading. Disturbances to wetlands can take many years to recover. Some plant species may not return if the area population is small and many plants are destroyed.

3.3.5 Rare, Threatened, and Endangered (RTE) Species

3.5.5.1 Affected Environment

Page 3-146, 1st Heading – It is confusing to see the heading *Federally Listed Wildlife Species* and not a similar heading for Federally Listed Plant Species. The last 2 sentences on page 3-152 under the heading *Botanical Species* refer to listed plant species.

Page 3-152, *Botanical Species* : This paragraph is confusing because it groups together rare, threatened, and endangered, when it is really discussing mostly rare and sensitive species as in Table 3-10. As stated previously, the threatened or endangered species (which are the same as Federally listed and species protected by the ESA) should be discussed separately to make it clear that the only listed plant in Alaska is not found in SE Alaska and has only been documented in the Aleutian Islands. This is stated in the Vegetation Resources Overview in Appendix C-6. The third sentence is incorrect because there are **no** threatened or endangered botanical species likely to occur in the project area. The only threatened or endangered plant documented in Alaska was found on Adak Island in the Aleutians. The sentence would more accurately read "...38 rare and sensitive species..." The first 3 species listed in the next sentence are not likely to occur in the project area or on the Petersburg Ranger District.

Pages 3-153 and 154, Table 3-10 : Table is missing some sensitive species and is inaccurate with regard to other species. (Queen Charlotte Butterweed is no longer on the Regional Forester's sensitive list). Even though the title says it's a partial list, the only rare plants listed are two species that were once considered sensitive by the Forest Service, but were removed from the list in the February 2009 revision. These are not the only rare species likely to be found in the project area. There needs to be some discussion as to why this is only a partial list. Does it mean these are the most likely rare and sensitive species to be found? I would disagree since some of the species listed are not likely to be found in the project area at all. The first four species listed, for example, are not thought to occur on the Petersburg Ranger District. There are 18 species on the Forest Service Alaska Region's Sensitive Species List which was revised in 2009 as discussed in the Vegetation Resources Overview (Appendix C-6). Of those 18 species, 9 species are suspected to occur on the Petersburg Ranger District and only one of those 9 species has been documented on the Petersburg District (*Lobaria amplissima*). This information should be documented in the Biological Evaluation for Plants. Since a Biological Evaluation has not been completed, it is impossible to accurately analyze environmental effects of the proposed actions with any confidence. A Biological Evaluation would include risk assessments for any sensitive species found and a Botany resource report (also not completed) would document any rare species found and risk assessments for them.

3.3.5.2 Environmental Effects

Page 3-155: The heading, *Effects of Project Construction and Operation on TE and Sensitive Terrestrial and Botanical Species and Habitats*, is misleading because there is no discussion of botanical species in this section. Botanical resources are not mentioned until page 3-157 under the heading, *Additional Pre-Construction Study Efforts*.

Page 3-155, 3rd paragraph: “Construction can result in short-term effects to state-listed or USFS-sensitive wildlife habitats resulting from ground disturbing activities in construction laydown areas and permanent effects within the project facilities footprints, including the transmission line.” What are these the permanent effects of project construction and operation upon sensitive terrestrial and botanical species and habitats? Be specific.

Page 3-157, 1st paragraph: Botanical surveys should have been completed prior to this PDEA so that the effects could be discussed and analyzed.

2nd paragraph: Again, adequate studies to identify the presence of state-listed or USFS sensitive species for wildlife and botany should have been done **prior to** analyzing environmental effects in this EA.

Likewise, a Biological Evaluation for Plants needs to be completed to adequately assess effects.

3.3.5.3 Unavoidable Adverse Effects

Page 3-158: This section is very general with little to no substance. The information gathered from studies planned for 2011, as mentioned above, should have been done prior to attempting to analyze effects in this EA.

There is no cumulative effects analysis.

3.3.6 Recreation

While scenery has an influence on recreation, any discussions relating to visible changes of the landscape, and impacts to scenic integrity as a result of this project, should be discussed in the scenery section, rather than in the recreation section. Conclusions regarding changes and impacts of the project reached in that section can, and should, be referenced in the Recreation section and discussed with relation to recreation and the impacts that will be created.

The PDEA section on recreation is long, confusing, and hard to follow. Data from the survey should be summarized in a table to facilitate quick understanding. Photos regarding changes to the scenery should be consolidated into the scenery section and organized to provide a complete understanding of the “before” and “after” conditions.

Where is the recreation information that was gathered from the public surveys? Is there a database to share so reviewers can see what the public had to say?

There appears to be insufficient recreation inventory data to display existing conditions.

The Swan Lake/ Cascade Creek area is an especially valuable recreation place with few comparable areas on the Tongass with this combination of opportunities and quality. This analysis downplays the value of the area and shows a lack of understanding of recreation opportunities and related businesses such as outfitter-guides. Presenting a biased picture does not build trust from the public.

There were several public meetings held in Petersburg. Some were held with standing room only with most people giving public comment opposed to the proposal. Video was also taken. Where are the discussions/results from these public meetings? Transcripts from these meetings do not appear in Appendix E.

3.3.6.1 Affected Environment

Page 3-159, last paragraph - *“Recreation opportunities of the southeast Alaska region are largely provided by Glacier Bay National Park and Preserve, Admiralty Island National Monument, Misty Fjords National Monument, and the Tongass National Forest.”* ANM & MFNM are a part of the Tongass. This sentence reads as if they were not and shows a lack of understanding of the public lands in the area.

Page 3-161, Remove Glacier Bay National Park and Preserve from discussion. Not relevant.

Page 3-161: This next section has 3 pages of site specific information that is only peripherally related to the project. I.E. why has information about a how many visitors GBNP has (which is 150 miles from project) but not have the amount of visitor use at Baird Glacier (which is 8 miles from the project)? One permittee has proposed 1,120 clients for Baird flats in 2011. These same clients will also be visiting Cascade Creek.

Page 3-162, 1st paragraph - What is the “non-motorized” statement based on? Snow machines, airplanes, and motorboats are allowed almost everywhere, even in wilderness.

Page 3-162, last paragraph – The way the second sentence reads, it sounds like the acreage in the first sentence is wilderness, which it is not.

Page 3-163, last paragraph – Kootznoowoo is misspelled.

Page 3-164, last paragraph, 2nd sentence – Note that the project vicinity also includes State of Alaska lands at head of Thomas Bay.

Page 3-164, last paragraph, - 2nd and 3rd from last sentences repeat the same info.

Page 3-165: Title of map is *Recreation Facilities in the Project Vicinity*. It shows at least 4 kayak camping sites from the kayak paddling route map. These sites are gravel or sand beaches that provide a natural durable surface to put a tent on. There are no developments of any type at the

sites, zero facilities. The map shows the DeBoer Lake cabin, which is currently closed to the public. It shows a boat ramp at Petersburg Creek; there is none. It shows the Petersburg Harbor as a park; it is not. It shows Papke's Landing as a park; it is not. Both Petersburg Harbor and Papkes should be shown as a boat launch.

Page 3-166, 1st sentence – Although there may be “twelve documented freshwater fishing sites”, none are comparable to the quality of trout fishing at Swan Lake, so this comparison is not of similar opportunities.

Page 3-166, 1st sentence – Sentence refers to Table 3-11 which contains many errors. See below for comments.

Page 3-166, 4th sentence – States that Scenery Lake has a trail and a trailhead, which it does not.

Page 3-166, 4th sentence – Describes the Colp Lake Trail as “wilderness”, it is not in wilderness.

Page 3-166, last sentence – Could also access by helicopter.

Page 3-167, Table 3-11 - What is intent of table? Where is discussion of what it is intended to portray? If it is to show the number of fishing opportunities in the area, then it could be successful if the multitude of errors is corrected. If it is to show fishing opportunities comparable to Swan Lake, then 90% of table should be deleted, since the majority of the opportunities listed here are not comparable, and the few lakes listed for trout fishing are not of comparable quality with the exception of Petersburg Lake which has a different trout species but is good quality trout fishing. The other lakes listed have poor trout fishing and few people go to the effort or expense of fishing them.

- Column 4 – throughout table it lists “No publically available information”, this is due to non-existent or poor trout fishing at the sites, although most of the streams listed have anadromous species (Coho and pink salmon, Steelhead, and sea run cutthroat).
- Row 4, column 2 – “19 miles west; in Petersburg”, doesn't make sense since Petersburg Lake is not in Petersburg.
- Row 4, column 3 – remove “or helicopter” since helicopter use in wilderness is illegal.
- Row 4, column 4 – remove rainbow trout from list since it is not present.
- Row 5, column 3 – add floatplane
- Row 9, column 3 – List “Boat” for access to Scenery Lake, which is not possible.
- Row 10, column 3 – could also access Muddy R. via floatplane, helicopter, via roads with car, ATV, or bicycle.

Page 3-168, table 3-11 continued –

- Row 12, column 3 – add helicopter, floatplane.
- Row 13, column 3 – add helicopter, floatplane.
- Row 14, Spurt, column 3 – Spurt Lake trail is primitive and has no tread development.
- Row 15, DeBoer, column 3 – Cabin is closed to the public, should not be listed.

- Row 17, Petersburg Harbor, column 3 – States “Boat or float plane access only”, which is interesting since about 3,000 people live within a few blocks and access the harbor daily.
- Row 20, columns 1 & 2 – Frederick Point is not on Kupreanof Island

Page 3-169, 1st paragraph, 1st sentence - The USFS manages the land and habitat, ADF&G manages the wildlife.

Page 3-169, 2nd paragraph, 2nd sentence – Grizzly and brown bear are the same species. Elk do not occur in the project vicinity.

Page 3-170 – Map of Game Management Area 1A is not needed.

Page 3-171, 1st paragraph – “...include brown, black and grizzly bear; mountain goat; moose; elk...” shows lack of understanding of wildlife in study area. See comment from Page 3-169.

Page 3-171, 1st paragraph – Sentence about Douglas Island Management Area is irrelevant.

Page 3-171, 3rd paragraph – “The trailhead is also accessible by a 0.25 mile spur trail from the USFS Spurt Cove Cabin.” Incorrect statement; there is no spur trail between the cabin and the trailhead.

Page 3-171, 3rd paragraph - The trail receives little use and does not have a hardened tread. It is primitive with a muddy, soft surface not able to withstand much traffic without receiving soil and vegetation damage to the tread.

Page 3-171 - Outdated description. Water tower was removed by the City about 10 years ago.

Page 3-172 - Abbreviation typically used is PCDSCW, not PCW.

Page 3-173 – The next three pages are a mile by mile description of the sea kayak opportunity and two maps of kayak routes, which is excessive detail not needed to display existing conditions relevant to the proposal. It could be summed up in several sentences and Figure 3-34.

Page 3-174, 1st paragraph – “...the USFS identifies 11 formal campsites with the project vicinity...”. These are backcountry campsites and not described on the website as “formal” campsites. They are gravel beaches or other undeveloped sites appropriate for Leave No Trace tent camping. There are no signs or facilities of any type. This has been pointed out in previous reviews.

Page 3-175, Frederick Sound 2 – “The Sukoi Islets Lighthouse is visible...” There is no lighthouse.

Page 3-176, Figure 3-35. Unneeded map. The majority of this map is outside the project area and project vicinity. The campsites are undeveloped gravel beaches with no facilities. This map has little relevancy to the analysis and could be misleading to the unknowing. It gives the impression

that these are developed campsites with fire grills, tables, etc. as one would generally expect when it has been described as “formal campsites” as was stated on page 3-174.

Page 3-177, 1st paragraph - . RV park which was describe as “...adjacent to Wrangell Narrows...” is on the uphill side of the State highway and ¼ mile from the Wrangell Narrows; is that adjacent?

Page 3-178, Figure 3-36 – Map shows the DeBoer Lake cabin which is currently closed to the public.

Page 3-179, Note that the DeBoer Lake Cabin is closed to public use.

Page 3-179, Portage Bay Cabin – The Portage Mountain Trail is primitive and the leg that goes from Portage Bay to Petersburg Lake has several beaver ponds to wade and blowdown to climb over. I wouldn't emphasize it as access between the two cabins.

Page 3-179, Petersburg Lake Cabin , 1st sentence - Abbreviate “PCW” as PCDSC Wilderness, correct this throughout the document.

2nd sentence – “The cabin is...accessible by floatplane or boat only when...” How is it possible to access the cabin by boat?

3rd sentence – “Wrangel” is typo.

Page 3-179, last sentence – Add snowmachining for opportunities at Raven's Roost Cabin.

Page 3-180, Tracy Arm-Fords Terror – Abbreviate as TAFT Wilderness, not TAW, throughout paragraph and document...

Page 3-181 1st paragraph – “...attracts more than 15,000 bald eagles...”, should be 1,500 bald eagles.

Page 3-182, 1st paragraph- change “Mountain Loop Trail” to Portage Mountain Loop Trail.

Page 3-182, 1st paragraph – I'm not aware of three hiking trails in this wilderness, only the two that are named in this paragraph Where is the “unnamed primate trail? Also in the reference section did not find the reference “USFWS 2010c.

Page 3-183, 1st paragraph – “Several county and municipal...within 20 miles of the project area..” The State of Alaska does not have counties.

Page 3-184, National Wild and Scenic Rivers - Should note that 29 miles of the Farragut River have been recommended for designation as Wild and one mile is recommended as Scenic. See page 3-477 of the 2008 Forest Plan FEIS.

Page 3-187, last paragraph, 1st sentence - Unimproved is an incorrect description for the Cascade Creek Trail, and primitive is not a correct description for portions of it, although challenging is a good description for much of the route. The lower trail is double wide boardwalk and includes a

substantial bridge over Cascade Creek. This section of trail is classified as a Class 3. The middle and upper trail has a significant number of structures including rock steps, native log bridges, native log steps, walk logs, and row boats and is a Class 2. The trail structures are getting old and in serious need of repair and maintenance, but primitive and unimproved are not accurate technical descriptions.

Page 3-187, last paragraph, last line on page – “accessible by float plane or boat or skiff..” does not make sense.

Page 3-188, 1st sentence – “*The trail is largely inaccessible due to limited maintenance.*” is an incorrect description. If it was correct, why does the study plan show 7,340 RVD’s for the area of the trail (pg 6-12)? Also the estimated commercial service days for 2011 on the trail are 1,584 (based on compilation of average past actual use and the permittees proposed use for 2011). These numbers do not correlate with a trail described as “inaccessible”.

Page 3-188, 2nd sentence - Delete “Outside of the peak recreation season” and insert: *During the winter*, and replace “*impassable*” with *difficult to negotiate*. There are occasional people who snowshoe or ski the route.

Page 3-189, 2nd sentence – Replace “five people” with seven or more people.

Page 3-189, last sentence – Add boating and wildlife viewing to the opportunities.

Page 3-190, 1st paragraph, 2nd sentence – “*mostly remote wilderness activities*”, the area is not designated wilderness, remove “wilderness”.

Page 3-190, 1st paragraph, next to last sentence – “*flight tours and hunting opportunities are the primary commercial uses.*” This is not an accurate statement since the Baird Glacier flats gets a substantial amount of guided and unguided tours/hiking use, higher in numbers than the two uses listed.

Page 3-191, last sentence - Could not locate Reference 2009b in appendix.

Page 3-191, last sentence- note that it is commercial use being reported.

Page 3-192, Table 3-12 – “*Reported Recreation Use for PRD Study Area*”. Change to *Reported Commercial Recreation Use...*

Page 3-193, 1st paragraph : It should be noted that during the months of July and August when the Swan Lake is readily open for access, the Swan Lake Cabin is the highest use cabin on the Petersburg District. It is hardly used from October through May, due to the ice and weather; nevertheless, it usually ranks among the top five cabins for visitor use on the Petersburg District.

Page 3-195 – It might be appropriate here to explain how the commercial survey was accidentally sent to all recreationists causing confusion on how and if it should be responded to, which may have affected the response to the second mailing.

Page 3-203, 2nd paragraph – *“The TLMP designates a majority of the lands surrounding the project, and all lands within the project boundary and immediate vicinity, for Semi-Remote Recreation.”* This statement is not correct. The proposed transmission line from Thomas Bay to Frederick Sound passes through the following land use designations: Scenic Viewshed, Modified Landscape, and Old-Growth Habitat.

Page 3-202 to 3-203; *“While the USFS assigns LUDs to the project area, the sites Power (Page 3-203) Site classification remains the primary use objective. Accordingly, the USFS indicates that the project area has been removed from other management considerations. The Applicant intends to operate and manage the Project in a manner as consistent as possible with existing LUDs; however, pursuant to the Power Site classification, these management objectives should not inhibit hydroelectric development and generation.”* Forest Plan LUDs and Standards and Guidelines do apply to lands within the Power Site Classification. See previous comments on this topic.

Page 3-203, 3rd paragraph, 3rd sentence: *“The USFS generally manages these areas for the Semi-Primitive Recreation Opportunity Spectrum (ROS) classifications; however, new or existing development and other factors may result in different ROS classifications (USFS, 2008a).”* Not exactly the direction found on Page 3-66 of Forest Plan. The Forest Plan states, *“Generally, manage for Semi-Primitive ROS settings. Enclaves of concentrated recreation and tourism developments within the LUD or management activities in adjacent LUDs may cause the ROS setting to become Roded Natural, Roded Modified, or Rural.”* Forest-wide S&Gs state: *“1. Use the Recreation Opportunity Spectrum (ROS) system and Tongass National Forest Recreation Places Inventory. (Consult Forest Service Manual [FSM] 2310 and national/ regional ROS handbooks); 2. Update existing ROS inventories as a part of specific project planning and implementation, and whenever project activities cause a change in recreation setting conditions significant enough to reclassify the affected area; 3. Maintain the necessary data to determine the individual and/or cumulative changes in ROS class distribution throughout the Forest.”*

3.3.6.2 Environmental Effects

Page 3-205, 1st paragraph – *“...effects...are primarily associated with the...construction activities.”* Leap of logic. Where is the analysis to back this up? Where is discussion of effects of operation? Discussion points raised in the next 26 pages are not in support of the statement. A large percentage of commercial operators responded they would take clients elsewhere. This is an impact on businesses, a direct impact to the charter operators and potentially an indirect impact to the businesses in the community who depend upon the visitor industry. As supported by public comments and by this review, there will be long term effects to the recreational resource. This

should be acknowledged and analyzed so the decision maker can understand the effects and make an informed decision.

Page 3-205: The roadless characteristics of the Spires Roadless Area (202) are not discussed under Affected Environment to facilitate the reader's understanding of where this roadless area is in relation to the Project Area (i.e., no map), the size of the Roadless Area, or the existing conditions of the roadless characteristics therein. Ensure that you have included a discussion on the roadless characteristics for of the Spires Roadless Area, where activities would occur. If a roadless area characteristic is not relevant, a simple statement to that effect with the rationale for that conclusion is all that is necessary. Roadless area characteristics are described in the 2001 Roadless Rule (Federal Register / Vol. 66, No. 9 / Friday, January 12, 2001) and include:

- high quality or undisturbed soil, water, and air;
- sources of public drinking water;
- diversity of plant and animal communities;
- habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
- Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized classes of dispersed recreation;
- reference landscapes;
- natural appearing landscapes with high scenic quality;
- traditional cultural properties and sacred sites; and
- other locally identified unique characteristics.

As stated on Page 1-1 of the 2008 Tongass Land and Resource Management Plan Final Environmental Impact Statement (FEIS), the analysis for the 2008 Tongass Land and Resource Management Plan tiers to the 2003 Tongass Land Management Plan Revision Supplemental EIS (SEIS) for Roadless Area Evaluation for Wilderness Recommendations. Volume II, Appendix C Part 1 of this SEIS provides a roadless area evaluation for the Spires Roadless Area (202), and these roadless characteristics are described. This document is available on-line at the following link: http://www.tongass-seis.net/seis/pdf/Volume_II.pdf

Page 3-205, last paragraph, - The installation of structures and removal of vegetation for the permanent employee housing, the large dock, barge ramp, power house, access road, and other facilities , cannot be considered “short term”, nor “temporary”.

Page 3-206: *“The permanent effect of project structures on the recreation experience are predominantly associated with the changes to the visual landscape resulting from the presence of the intake structure on Swan Lake, the outlet control structure at Cascade Creek, and the powerhouse complex and tailrace near the shore of Thomas Bay.”* Many people, including the guides who make their living in Thomas Bay, would find this statement to be false. Displacement for those activities needs to be considered in this analysis as well... the analysis cannot simply

make statements that these guides can go somewhere else in the bay and do the same kind of work...

Page 3-206, 1st paragraph, 1st sentence – There is no mention of the building shown in Photo3-13 at the outlet.

Page 3-206, 1st paragraph, 2nd sentence - The proposed intake structure is located in an avalanche path that has little vegetation. As evidenced in the rendition in Photo 3-12, the 25' tall structure will not be shielded by vegetation of any significant height. Due to the nature of an avalanche path, it is not probable that trees can be planted to grow to a height that can provide screening.

Page 3-206, 1st paragraph, 3rd from last sentence - Fuzzy effects analysis: In the public survey, the respondents stated otherwise. The majority of the use occurs in the summer. On page 6-15 in the Study Plan, the table shows that hunting is one of the lowest types of activities reported for the summer. Nature study/wildlife viewing and sightseeing /photography are third and second in popularity after fishing; yet this is not mentioned in this analysis.

Page 3-206, 1st paragraph, last sentence – Change “...*may have implications*...” to *will have implications*.

Page 3-206, 2nd paragraph, 1st sentence - It is not apparent to this reviewer that the powerhouse, employee housing, and other building will be “*relatively obscured*”. One factor is that the ground slopes upward from the beach meaning the building will have a base elevation higher than the vegetation that will be providing the screening. Also the depth of the screening vegetation will not be very deep and 200' is probably not enough to hide what is behind. This is especially true with lights. Also there will be several openings created through the screen by the tailrace, the roadway up from the ramp and the dock and the exit path for the power line conduit. It is also not uncommon for trees to blow down after openings are created in what was once a windfirm boundary, resulting in less screening than what was originally envisioned. These conditions should be discussed in the effects.

Page 3-206, 2nd paragraph, - The table on page 6-15 displays that hunting is one of the lowest activities during the highest use season of June, July, and August, while pleasure boating and sightseeing are the 2nd and 3rd highest uses, so this statement is not true. Why does the document repeatedly make the argument that “*the primary activities are consumptive activities*”, when the data shows otherwise?

Page 3-206, 2nd paragraph – Extremely fuzzy logic and over-generalization to imply that people who hunt and fish are not concerned about visual resources.

Page 3-206, 2nd paragraph – Where is acknowledgement of impacts to hunting and fishing by the presence of permanent residents living on the site year around? Concerns were expressed by local residents during public hearings.

Page 3-207, Swan Lake, 1st paragraph – “Construction activities... will be timed to occur outside of the peak recreation season (May through October).” Sounds nice but has this proposal really been thought through? How long will this construction take? Is it realistic to expect it to be accomplished outside of May through October? The lake will be frozen, the weather poor for flying, and poor weather for working outdoors with a high probability of snow and avalanche conditions during November through April. The proposed intake structure is located in an avalanche path.

Page 3-208, end of paragraph from previous page - Audible impacts from blasting should be described. How long will blasting occur for and how far away can it be felt, as well as heard? How will public safety issues be handled during construction? Will employees be flown in daily or will they be housed temporarily on site at Swan Lake? How often will there be maintenance trips into this site? I assume employees will access the site by plane or helicopter. The statement that impact from employees will only be during the construction and will be temporary, is not true since there will be long term need for maintenance trips. Even though the structure is located at the opposite end of the lake from the public cabin, a floatplane landing on the lake makes its approach in front of the cabin, and both a helicopter and plane will be highly audible and noticeable from the cabin. Historically there are few flights into the lake except for the people using the cabin; otherwise the area is very quiet and private.

Page 3-208, end of last paragraph – The statement that the 49’x25’ intake structure on the hillside will be “largely obscured from view” does not make sense. Looking at a topo map it appears that the intake structure will be visible from approximately 1/3 of the lake; this is not insignificant. It will be in the foreground for people on the water at the lower end of the lake and for people in the trailhead area.

As noted earlier, the intake structure is being proposed in an avalanche path which does not have significant trees for screening the structure, so it is unlikely vegetation will provide much screening.

Page 3-208: Intake Structure: Where is the rock, resulting from the construction of the Swan Lake intake structure, to be placed? This is approximately 5000 cubic yards of excavated material that is not currently addressed. If it remains onsite, it will add to the site footprint and should be considered in the visual analysis. If it will be transported off site, where will it go, how will that happen, how long will it take, and how will that impact recreationists in the area?

Page 2-5 of the PDEA indicates the intake structure will be screened by earth materials and re-vegetative planting. This is not shown in “rendition” of the structure (Photo 3-12, Page 3-208 of the PDEA). The structure seems to be in an area of small trees and therefore the likelihood of planting being able to grow to a sufficient height to screen the structure is unlikely. Also, Photo 3-12 does not seem to show the “Construction Laydown Area” shown in Exhibit F-2.

Page 3-209, 1st paragraph – “the intake structure will make no noise and will have no effect on water levels”. This contradicts with the hydro section where it does show the lake levels will be affected. (Figures 3-17 and 3-18). On page 3-63 it states “The project will maintain lake levels...3.5 ft lower and 2.5 ft higher than the lake surface elevation...” than the historical lake elevations shown in Figure 3-6.

Page 3-209, 1st paragraph – “...*primary recreational pursuits of fishing and hunting*”. Hunting is an important activity, but it is not the primary recreation pursuit during the summer months which is the primary use season and is when the largest number of people is visiting. Did the Applicant review the cabin log books for comments from the public or review the hunting records from ADF&G? These records do not document hunting as a primary pursuit during the high use recreation season. Goat hunting is the only hunting of any significance that occurs at Swan Lake and even though the season opens in August, most hunters wait until September or October. On page 6-2 of the recreation study, the table shows 67 % of the respondents reported wildlife viewing and 67% reported scenic tours, and 15% reported hunting. In Table 6-4 the summer months show 72% of the respondents reported nature study/wildlife viewing/sightseeing/photography, and 7% reported hunting. In the analysis it appears that the Applicant is unaware that sightseeing, photography, and wildlife viewing are important activities. How are the impacts to these activities being analyzed?

Page 3-209, 1st paragraph - How will the change in lake levels affect the beach in front of the Swan Lake Cabin for recreationists? What is the lake level when the sand and gravel beach becomes unavailable for recreationist to use? This beach is important for people to use when fishing, swimming, picnicking, as a walking route up and down the shoreline from the cabin, and for loading/unloading the floatplanes. How will the containment dam at the outlet affect this beach?

Page 3-210, 1st paragraph – “...*maintaining the wilderness character...*” Swan Lake is not in a wilderness; rephrase description to primitive setting or natural. The public may use the term “wilderness” in a general sense, but *wilderness* and *maintaining wilderness character* refer to Congressionally-designated wilderness and a management goal for those areas.

Page 3-210, 2nd paragraph - Where is discussion of impacts from the outlet control structure? Photo 3-13 shows a building structure on the north shore that will be visible from the lake and be adjacent to the trailhead. How visible will the water control structure be? It is unlikely that it will be unnoticeable.

Page 3-211, Outlet Control Structure: The recently added “outlet control structure house” needs more detail. The approximate size of it should be defined. The location and visual impact of the structure and crest gates has not been accurately depicted or analyzed. Exhibit F of the DLA shows the house as located above the lake level (DLA F-4, Section B-B’) which indicates visibility from Swan Lake, while the PDEA refers to the entire outlet structure being “buried in native rock” and “not visible from Swan Lake.” (PDEA, Pages 3-210, 3-211). The descriptions of the structures need to be edited for accuracy and consistency within all the submitted documents because the current drafts do not present a uniform definition of the structure, and therefore the impact to scenery cannot be accurately analyzed. The crest gates should be described in more detail as well.

Page 3-212, Photo 3-13 – a rendition similar to Photo 3-12 would give a better idea of the visual changes. Also should provide the perspective from the lake. What is the gable roofed building shown here? This was not in previous reviews.

Page 3-213: “Approximately 69 percent of commercial outfitter and guide respondents indicated that the presence of the outlet structure would impact their recreational use of Cascade Creek.” I would call this a significant effect to these guides and their existing businesses.

Page 3-213, 1st paragraph, last 3 sentences – It is doubtful that the public will perceive the addition of a gatehouse and overflow crest gate as “minor”. Especially when the public has been told earlier that structures would not be visible from the lake and the site will appear natural. It appears the structure will be close to the trail and trailhead where the boat launch is located. This site is limited geographically by the stream on one side and the steep snow slope above. Page 3-210 states the outlet structures will not be visible from the lake – this appears to be incorrect.

Page 3-213, 1st paragraph, last sentence – Public response to natural flow levels may be different than opinions on structures, which they were not asked about. On page 3-220, 30% of outfitter/guides and 43% of general public indicated they would visit the area less due to new structures being developed, and now additional structures are being proposed.

Page 3-213, 2nd paragraph, 2nd sentence - Does one year of data at Swan Lake provide a valid long term correlation to forecast the impacts?

Page 3-213, 2nd paragraph, last sentence - Define ordinary high water with a number.

Page 3-213, last paragraph: Describe more fully what this alteration will be and how it will look. Discuss expected daily and weekly flows, in addition to seasonal flows. What will the change be to the recreation experience in July and August for hikers on the trail?

Page 3-214, 1st paragraph - Describe the change in level of flow in terms the public can understand the change; i.e. 20% less or 80% less flow.

Page 3-214, 1st paragraph - This statement doesn’t make sense if a substantial percentage of the flow is being diverted from the stream. It seems it would affect the cascades along the entire stream and especially be noticeable on the trail just below Swan Lake where the trail is immediately adjacent to the stream. It would also be very noticeable at the major falls into Falls Lake as experienced from the Falls Lake Shelter and from a rowboat on Falls Lake.

Page 3-214, 2nd paragraph, 1st sentence - At what lake elevation can a rowboat not pass the rocks in the narrow passage in the middle of the lake? Has this information been determined? Will the new lake level prevent the public from rowing up the lake and using the lake as the access route to the upper trail? This could be a serious impact since the lake is the primary trail route. The alternative route up over the side ridge is a substantial climb and traverses wet soils and steep slopes that would require substantial trail construction to avoid erosion impacts.

Page 3-214, 2nd paragraph - What will impact be to the recreational trout fishery be at this lake? Recreationists hike up from saltwater and down from Swan Lake to fish in Falls Lake.

Page 3-214, 2nd paragraph, last sentence – “There will be minimal effect to overall aesthetics...”

This statement shows a poor understanding of the recreational value of this area. There will be substantial change to the large waterfalls into the lake which is the most visually impressive character of the lake and one of the most scenic waterfalls on the Petersburg District. One comparison to other waterfalls in the area could be the square coverage of the face. Where is discussion of the impact to this waterfall?

Page 3-214, 2nd paragraph - Will there be a “bathtub ring” effect from the changes in the natural cycles of the lake elevations?

Page 3-214, 3rd paragraph, 2nd sentence – What are the natural flows in winter and summer? How much of the flow will be diverted for the hydro project? What percentage of the natural flow will be diverted? How much flow will be going over the falls? To allow the public to easily interpret what 70 cfs means, should list here what the summer flows are naturally before modifications to the stream flows.

Page 3-214, 3rd paragraph, next to last sentence - Be more specific of when the lower falls will have the aesthetic resource impacted and relate that to when the primary recreation season is. How will this impact the commercial tourism industry? What does “seasonal differences” mean?

Page 3-215, 1st paragraph, 1st sentence - Leap of logic that recreational use will be unchanged. There are aspects of bias in the survey and different ways to interpret the survey responses that could result in a different answer than the statement regarding unchanged recreational use. For one, Photo 3-15 shows the stream at very low flows and is labeled as “*Cascade Creek Fall Flow Conditions*”. Recreationists who use this area are well aware that the highest rainfall of the year is during the fall and hence some of the highest stream flows. This is supported by the USGS data shown in Figure 3-15. Respondents could have been saying they want no change to the natural fall flows, more so than saying they want no change to Photo 3-15. The question they were asked was “How would you rate the visual aspects of the existing Cascade Falls under fall flow conditions...?” Also a substantial number of commercial and public respondents said they would be less likely to use the area due to the proposed changes, which contradicts the Applicants assumption of no change in use levels.

Page 3-215, 1st paragraph, second sentence – “*Attenuated flows also have the potential to provide additional...viewing opportunities.*” Misleading fuzzy analysis, especially when public has stated they prefer a full flowing waterfall under natural conditions.

Page 3-215 - For the majority of the Cascade Creek Trail, recreationists experience the sound of the roaring, cascading stream, even when the creek is out of sight. At one point in the trail there is “echo rock” where the stream sounds bounce off of the uphill cliff. Describe the change to the audible experiences.

Page 3-215, last 2 sentences - 87% of outfitter/guides indicated a preference for higher Cascade Creek flows; this would seem to indicate an attraction to high flows for the falls. 67% indicating “No

Change” could mean a preference for no change in the natural conditions. Survey question #24B does not ask the respondent if she prefers the visuals in the photo depicting low flows; it asks if she prefers a level that is higher, lower, or about the same as the existing falls under average fall flow conditions. Again, local respondents are well aware that fall flows are some of the highest of the year and not as depicted in the misleading survey picture.

Page 3-216, Photo 3-15, - Picture does not accurately display fall flows. Compare to Fig 3-24. If the goal is to display what the falls is expected to look like after implementation of project, then re-label photo as expected future conditions, not as “Fall Flow”.

Page 3-217, 1st paragraph, last sentence – Respondents were asked “*How would you rate the visual aspects of the existing Cascade Falls under average fall flow conditions...*” 80 percent of respondents indicating they preferred no change can be interpreted as 80% want the creek to have natural fall flows since average fall flow conditions are known to be high, as supported by USGS data in Figure 3-12.

Page 3-217, last paragraph - The powerhouse site will have a .6 mile access road, a tail race, power line exit to saltwater, barge ramp entrance, and the uplands portion of the boat dock, and the new trail location. On the uplands there will be the powerhouse, resident buildings, and other structures. It seems improbable that the powerhouse will be fully screened from view from boaters on Thomas Bay.

Page 3-218, 1st paragraph, 3rd sentence - How many and what size outbuildings and residences? What will the locations of these structures be? How close and how visible will they be from the trail and the public cabin? What will the impact be on the recreationist at the cabin?

Page 3-218, 1st paragraph, last sentence - Has this statement been verified on the ground? It would be good to see a schematic drawing with elevations and a visual rendition to see how all these individual components will be situated on the site. Have they been laid out to scale to see how it fits? The site has a limited semi-level bench above high tide line, then the topography slopes upward, which will make it difficult to screen structures as proposed.

Page 3-218, 2nd paragraph, 2nd sentence – does “*tideline*” refer to mean high water? Please be more precise.

Page 3-218, 2nd paragraph, last sentence - Where is the discussion of effects upon the public who are staying at the Cascade Creek cabin? Was this user group surveyed to determine effects upon this specific user group?

Page 3-218, last paragraph – What barge is being referred to?

Page 3-220, 1st paragraph, 1st sentence – typo “the” should be they.

Page 3-220: Approximately 72 percent of outfitter/guide respondents indicated that the presence of the powerhouse would affect their use of the area, with 30 percent indicating that they would use the area less as a result and 26 percent anticipating a decrease in patrons. This would be a significant effect to these guides and their existing businesses.

Page 3-221, 1st paragraph, 1st sentence - The conclusion that the effect of this proposed development on the recreational setting is nominal does not make sense. This conclusion contradicts input from outfitter/guides, the general public, the Forest Plan, and Forest Service recreation specialists.

Page 3-221, 1st paragraph, next to last sentence - The USFS facility referenced is several miles away and is not a part of the Recreation Place where the new construction is being proposed.

Page 3-221, 1st paragraph, last sentence - Survey respondents said they would be less likely to use the area after construction, which contradicts the assumption of increased use. Commercial guides and public comments did not point towards increased use due to change in access. This is an incorrect conclusion drawn by the Applicant and appears to be somewhat self-serving.

Page 3-221, 1st paragraph, last sentence - An important feature that attracts people to this place is the lower waterfalls. With the significant decrease in the amount of water flowing over the falls, there may be a drop in demand for commercial businesses to bring tourists to the site. With high and medium flows over the falls, part of the experience is the wind and mist created by the water dropping over the falls. At low flows this does not happen.

Page 3-221, 2nd paragraph, 2nd sentence - What about operational noise from the people working at the site, such as motorized tools and transportation (4 wheelers)? Will generators be running during construction? Will transport vehicles be used to move equipment and supplies from the dock/ramp to the uplands?

Page 3-221, 2nd paragraph, last sentence - Based on experience at other sites, the lights will be visible through the trees and down the access routes, especially in the dark or during dusk hours.

Page 3-221, 2nd paragraph, last sentence - New openings in the canopy will increase likelihood of windthrow.

Page 3-221, 4th paragraph, last sentence - The landscape behind the Cascade Creek Cabin was harvested in 1965 and the vegetation has grown back to the extent that it is getting close to where it can be reclassified as motorized semi-primitive. This proposal will permanently move it into Roded Modified ROS class.

Page 3-222, 2nd paragraph, 2nd sentence - The overland line between Thomas Bay and Point Agassiz will be through an area that has no powerlines. What type of poles will be used? What is their height?

Page 3-222, Other Effects to Recreation – Where is economic analysis of short and long term effects to the tourism industry due to the loss of the unique recreation attractions currently available in the study area? Commercial operators have stated it will affect their businesses.

Page 3-222, last paragraph - There are no elk in this area.

Page 3-223: “Should changes to the landscape within the project area and immediate vicinity from the presence of the project structures result in a decrease in recreational use at Swan Lake, Falls Lake, Cascade Creek and/or Thomas Bay (in the vicinity of the Project) or at the USFS recreation facilities provided therein, these recreators are expected to be displaced to other recreation areas and facilities generally within the project vicinity, which provides a dozen freshwater fishing sites, six trails, and six USFS cabins for public use.” The Applicant is trying to justify the project by stating that people will go elsewhere.

Page 3-223, 1st paragraph, 1st sentence - The species listed (with the exception of elk) live in the project area year around; why state they only occur during travel or seasonal migration?

Page 3-223, first paragraph, 2nd sentence - Having permanent residents at the site will result in impacts on the fish and wildlife all year, whether from a consumptive standpoint or non-consumptive wildlife viewing. Impacts will include hunting, fishing, noise, personal watercraft, four wheelers, lights, etc. These impacts may occur 365 days a year. Where is discussion of this?

Page 3-223, first paragraph, next to last sentence - The proposed facility is located in a stretch of beach fringe used during the winter months by overwintering moose.

Page 3-223, 2nd paragraph, 2nd sentence - How does monitoring after the fact “*ensure that existing hunting resources in the project area are not impacted by the proposed project facilities or operation*”? Criteria for avoiding impacts to hunting resources should be developed before implementation of the project. If the impacts cannot be avoided, then they should be acknowledged. The Applicant mistakenly thinks that elk live in the project area, that moose don't overwinter here, and that other species “only occur in the project area during travel or seasonal migrations”. With this evident lack of understanding of the hunting resource, how can the effects be analyzed effectively and correctly? It appears that more time is needed for studies and research.

Page 3-223, 3rd paragraph, 1st sentence - The statement that there is “*vast availability of other comparable recreation opportunities in the project vicinity*” shows either the Applicants lack of understanding of the land and the public who use it, or a deliberate attempt to mislead the decision maker. We object to the assertion that other recreation opportunities in the vicinity can readily be substituted for those of the project area.

Swan Lake is a highly valuable, unique setting and fills a recreational niche that very few other places do on the Tongass National Forest, let alone within the project vicinity. The recognition of this uniqueness has been described in the book “Swan Lake, Nature's Amazing Grace” (by Austin

Deuel) and by the many public comments in the Swan Lake cabin logbook. Swan Lake is unique for its high quality trout fishing, alpine/glacial scenery, alpine hiking, and the goat hunting. The fact that the cabin is booked almost solid during the open summer months and the public is willing to pay the expense to fly in to the lake also attest to the value the public finds in the place. As a comparison, the nearby DeBoer Lake cabin, which is also on an alpine lake, receives very low use; to the point that the Forest Service is considering closing the cabin permanently due to the low use.

Falls Lake is exceptional because of the recreational opportunity to row a boat up to the base of a large waterfall.

The Cascade Creek Trail is the only hiking trail on the Petersburg Ranger District that accesses high country on the mainland, and it is one of a handful that do so on the entire Tongass. It is also the only trail in the area that accesses large waterfalls, as well as a cascading whitewater stream. The value of the trail is indicated by the number of commercial operators and their clients that use it.

There are few cabins that provide the combination of opportunities that Cascade Creek Cabin has. It has the Cascade Creek Trail leaving from the doorstep leading to the activities associated with that trail. It provides saltwater boating access to the Baird Glacier flats; a popular day trip destination. The flat area around the cabin provides good tent sites for groups that exceed the capacity of the cabin. The gently sloping gravel and sand beach provides safe access as well as a place for activities. The water in front of the cabin is a good year round anchorage for small and large boats, except in cold weather when it ices up. The cabin also provides access to saltwater fishing, duck hunting on the Patterson flats, bear, moose, and deer hunting.

Page 3-224, 1st paragraph, 1st sentence - It makes sense that people in Petersburg are more likely to spend more time in Frederick Sound, Wrangell Narrows, and Duncan Canal. Most people live on the shores of these waters, or can reach them safely in a small skiff. If this statement is meant to imply that more people use Farragut Bay and Portage Bay than do Thomas Bay; however, that would seem unlikely.

Page 3-224: *“As such, decreased use of the project area and immediate vicinity would likely result in increased use of in-kind facilities and other lands and waterbodies in the project vicinity.”* There are several such statements throughout the recreation analysis. The analysis is not adequate to support such statements.

Page 3-224, 1st paragraph, 1st sentence - Primary destination is not a direct relationship to value of a recreation place. Visitors are willing to pay to visit this area for its unique characteristics even though it may not be the “primary” destination. Local public may use it for special occasions once or twice a year but take more frequent trips to recreation sites that are closer to town.

Page 3-224, 2nd paragraph, 1st sentence - Name the “in-kind” cabins, shelters, and trails that are similar to Swan Lake cabin, Cascade Creek cabin, Falls Lake Shelter, or Cascade Creek Trail. Describe how they have similar opportunities.

Page 3-224, 2nd paragraph, - “Commercial operators would likely seek alternative recreation areas in similar proximity of Petersburg..” This can add to overcrowding of the finite sites available in the area.

Page 3-224, 2nd – “The Applicant’s proposal for an additional USFS in the project vicinity...” This statement does not make sense. Missing words?

Page 3-225: “Furthermore, changes to the landscape within the project area that could result in a decrease in recreational use at Swan Lake, Falls Lake, Cascade Creek and the USFS recreation facilities would likely be offset by improvements proposed by the Applicant.” I take exception to this statement – the Applicant will be constructing a dock which they are now offering for use as a recreation facility. This project is not about providing recreation opportunities, such as a dock or a lake for fishing in but rather for the generation of hydroelectric power in a popular recreation area. This is inappropriate analysis and does not belong in this document.

Page 3-225, 1st paragraph, last sentence - The lower Cascade Creek waterfalls is the primary attraction for many day trip recreationists; if this attraction and the semi-primitive recreation opportunity are significantly altered, then improving access may not help since the purpose for visiting the area will be gone. Same thing may be true for trout fishing in Falls Lake.

Page 3-225, 2nd paragraph, 2nd sentence - This statement about displacing recreation use to other areas is only true if the recreation use disperses to sites in the vicinity. The use could also disperse to other communities where the recreation opportunities are still available.

Page 3-226, last paragraph, 2nd sentence - How close in proximity to the cabin?

Page 3-227, 2nd paragraph – “Access to the project area will remain unchanged and unimproved.” Not true. The Petersburg RD will be requesting funds for reconstruction of the Cascade Creek Trail in the next couple of years. Repair work will be completed on the trail near the lower falls this fiscal year. The lower 1.5 miles of the trail will undergo survey and design this year in preparation for major reconstruction work.

3.3.6.3 Unavoidable Adverse Effects

Page 3-227: After 68 pages, there is one sentence in this section stating there is “*potential*” for effects upon recreation. This is inadequate recognition and discussion of the effects.

Page 3-227, 3rd paragraph, last sentence: Add “and Swan Lake”.

Page 3-227, 4th paragraph, last sentence: This sentence does not discuss adverse effects and is not relevant.

There is no discussion of cumulative effects. The effects discussion is inadequate.

3.3.7 Land Use

Page 3-231, 4th paragraph – “There are existing industrial operations in Thomas Bay on lands within the TNF, most notably timber extracting operations in the Muddy and lower Patterson River valleys...” This statement is misleading. Although there may be industrial timber operations in these areas in the future, there have not been any for many years.

Page 3-237: The transmission line corridor at Petersburg on Mitkof Island is not within the Power Site Classification. Note that the “current Semi-Remote Recreation LUD” applies to both the lands within the Power Site Classification and to the lands immediately adjacent to the project boundary.

Page 3-240 and 241 – There are several references to the “Semi-Remote” LUD in this section. The correct designation is “Semi-Remote Recreation LUD”. Please correct.

3.3.8 Aesthetic Resources

The Aesthetic Resources (Scenery) analysis should be based on methodologies outlined in an approved Study Plan, which has not yet been completed. Refer to comments submitted in response to SD2 in January 2011 regarding the Recreational Resources Study Plan.

The impacts of the project to **SCENERY** should be clearly stated. Scenery is a separate resource from Recreation, and while there are many connections between resources, the effects on each should be addressed clearly.

We are providing comments on the DLA, PDEA, and Recreational Resources Study to aid in the development of an accurate Visual Resources Study. Previously submitted comments to SD2 and the Recreational Resources Study Plan should also be referenced. The existing draft of the Recreational Resources Study does not provide accurate data with which to draw unbiased, quantitative conclusions about the effects of the proposed project on scenery.

Scenic analysis should be a clear study between existing and proposed conditions, and a simple way to fulfill that is to compare the 2008 Tongass Forest Plan and the proposed project, showing where the project will or will not meet the Scenery Integrity Objectives (SIO) for each LUD in the project and why. Statements in Section 3.3.3.8.1 of the PDEA do not show an understanding of the process of scenic analysis or of the 2008 Tongass Plan Standards and Guidelines for Scenery.

In a general sense, the information presented in this section is not organized well enough to provide an easily understandable portrait of the project. Analysis should take into account the following: LUD, SIO, Visual Priority Travel Routes and Use Areas (VPTRUA) and distance from these routes and use areas: classified by Foreground, Middleground, Background, and Seldom Seen/Non-Priority. Much of this information can be presented in tables, well designed maps, and visual simulations, from which conclusions can be drawn and easily supported. Images included in the section should be selected for the ability to support analysis and determine effects of the project. “Before” photographs shown with accurate “After” visual simulations created using GIS and 3D

modeling are extremely effective and would be very helpful. Showing only a “Before” image or an artist’s interpretation of the “After” conditions is not helpful in determining effects.

Qualifications of the preparer of the scenic analysis and visual simulations should be included in the document or in an appendix . This type of analysis usually requires the expertise of a qualified professional such as a landscape architect or others who are trained in the methods of scenery analysis and simulations. It appears that a qualified professional was not assigned to this work, as indicated by the many deficiencies in the current PDEA and Recreational Resource Study Report

A few of the comments submitted in January 2011 that were not addressed in response to SD1, are as follows:

Pg 4 of FS Comments:

Page 6-22, last paragraph: If Cascade Creek LLC (CCLLC) intends to present scenic analysis as a stand-alone section of the PDEA, as stated in this paragraph, then a Scenery and Aesthetic Resources Study Plan should be developed and submitted for comment. The existing Recreation Study Plan does not address the complexity of the visual analysis required for this project.

Page 6-23, 3rd paragraph, states “*The study plan will also assess the importance of visual resources to recreational users.*” The Scenery Resource Study needs to analyze the project in terms of compliance with the Scenery Standards and Guidelines as defined in the 2008 Forest Plan. The existing Recreation Study Plan does not sufficiently address the process that will be taken to perform this analysis.

Page 6-24:

Methods specified in this section do not address the needs of a Scenery Resources Study. Regardless of whether it will be a separate study or included in the Recreation Resource Study, the methods outlined here are inadequate and inappropriate to develop professional scenic analysis results.

Regarding the Recreational Resources Study Plan, the following was stated (Pg 6 of FS Comments, Jan 2011):

Existing information in the Recreation Study Plan is not sufficient to conduct appropriate scenery analysis. Unless a Scenic Resources Study Plan is developed to outline the specific methodology of the scenery analysis for this project, the analysis in the PDEA will not be adequate to ensure compliance with the Standards and Guidelines of the 2008 Forest Plan.

At this time, no “Scenic Resources Study Plan” has been developed; a separate “Scenic Resources Study” is not included in PDEA, and few, if any, changes were made to the Recreational Resource Study Plan (and related report) to address the myriad of comments regarding proper scenic analysis. Therefore, the previously submitted comment still applies: The analysis in the

PDEA will not be adequate to ensure compliance with the Standards and Guidelines of the 2008 Forest Plan.

We are providing comments on the DLA, PDEA, and Recreational Resources Study to aid in the development of an accurate Visual Resources Study. Previously submitted comments to SD2 and the Recreational Resources Study Plan should also be referenced. The existing draft of the Recreational Resources Study does not provide accurate data with which to draw unbiased, quantitative conclusions about the effects of the proposed project on scenery.

Photo Simulations:

The following comment was submitted by the Forest Service as a response to Scoping Document 2:

Page 6-29: The Forest Service submitted a comment to SD1 stating *“Computer visualization software and techniques should be utilized to compare the existing visual condition with the future visual condition should be included in the Aesthetic Resources Study.”* The Applicant response was *“User surveys include pre and post construction photo renderings. Cascade Creek plans to use this methodology in the PDEA as well.”*

The term “photo rendering” is vague and does not provide sufficient methodology to proceed with visual analysis. The 2008 Forest Plan states the following: *“Perform landscape/viewshed analysis, using as much of the available tools and technology as possible.”* Considering the scale and complexity of this project, scenic analysis should be performed using advanced photo rendering, 3D modeling, and GIS techniques. All visual simulations of the project should be performed by a contractor with extensive experience in such techniques. 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 LUD, visual simulations should adhere to the timeline in the 2008 Forest Plan, and show post-construction conditions one year after completion, in order to ensure the Scenic Integrity Objectives will be met within the required timeline.

The existing “photo renditions” of the project, shown in both the PDEA and Recreational Resources Study Report, are insufficient. Provide the metadata related to the creation of these images, as well as qualifications and training of the creator. Technology and data are available to be able to provide accurate three-dimensional models of the site and project facilities and should be used to support any claims of the effects on scenery. There is no way to ascertain the precision and accuracy of the images, and because of this, they cannot be used to support the scenic analysis and to determine effects.

The Aesthetic Resources (Scenery) analysis should be based on methodologies outlined in an approved Study Plan, which has not yet been completed. Refer to comments submitted in response to SD2 in January 2011 regarding the Recreational Resources Study Plan.

3.3.7.1 Affected Environment

Page 3-245, 2nd paragraph : “...*Cascade Creek drainage which occurs adjacent to the Spires Roadless Area...*” The Cascade Creek drainage is within the Spires Roadless Area.

Page 3-250, 2nd paragraph – “...*as well as four recreation cabins that are owned and managed by the TNF...*” There are only two U.S. Forest Service recreation cabins at Thomas Bay (Cascade Creek cabin and Spurt Cove cabin).

Page 3-253, 1st paragraph: “...*the TNF maintains a three-sided Adirondack shelter at Falls Lake that can be reserved and utilized...*” Use of the shelter is on a first-come, first-served basis; it cannot be reserved

3.3.8.2 Environmental Effects

The conclusions drawn are not simply stated, nor fully supported. For example, on page 3-256, it is stated, “*Once constructed, the visual effects of the Project will be limited to vantage points from which the project features can be seen, operations and maintenance of the powerhouse and associated facilities, and routine vegetation maintenance of the transmission line corridor.*” Not only is this sentence confusing and difficult to interpret, but stating that “*visual effects of the Project will be limited to vantage points from which the project features can be seen*” is redundant and does not explain the actual effects. The effects must be stated plainly, and should be a result of clear and logical analysis. The effects should be summarized, and not spread out over 14 pages as is currently written. The reader must be able to easily understand ALL the effects to scenery.

Page 3-256 : A phrase used often in both the recreation and scenery sections is similar to the one found in the second paragraph, 4th line: “...*these affects [sic] are expected to attenuate with distance*”. While it is true that the visibility of the impacts of the project to scenery is less visible as you travel further away, the actual effects of the project are not changed. The changes to the scenery should be considered from specific viewpoints, and impacts discussed in relation to those viewpoints—therefore the distance will not be a factor in determining effects. Some viewpoints will be further away and some closer, and those distances will be a factor in the analysis, as they influence visibility and define the SIOs of the relevant LUD (by determining if a view is foreground, middleground, or background). This sentence, and all other instances of it within the DLA and PDEA, should be omitted.

Page 3-256, 4th paragraph: “...*routine vegetation maintenance of the transmission line corridor.*” How wide is the clearing area for the transmission line corridor?

Page 3-259: Intake Structure: Where is the rock, resulting from the construction of the Swan Lake intake structure, to be placed? This is approximately 5000 cubic yards of excavated material that is not currently addressed. If it remains onsite, it will add to the site footprint and should be considered in the visual analysis. If it will be transported off site, where will it go, how will that happen, how long will it take, and how will that impact recreationists in the area?

Page 2-5 of the PDEA indicates the intake structure will be screened by earth materials and re-vegetative planting. This is not shown in “rendition” of the structure (Photo 3-12, Page 3-208 of the PDEA). The structure seems to be in an area of small trees and therefore the likelihood of planting being able to grow to a sufficient height to screen the structure is unlikely. Also, Photo 3-12 does not seem to show the “Construction Laydown Area” shown in Exhibit F-2.

Page 3-260, Outlet Control Structure: The recently added “outlet control structure house” needs more detail. The approximate size of it should be defined. The location and visual impact of the structure and crest gates has not been accurately depicted or analyzed. Exhibit F of the DLA shows the house as located above the lake level (DLA F-4, Section B-B') which indicates visibility from Swan Lake, while the PDEA refers to the entire outlet structure being “buried in native rock” and “not visible from Swan Lake.” (PDEA, Pages 3-210, 3-211). The descriptions of the structures need to be edited for accuracy and consistency within all the submitted documents because the current drafts do not present a uniform definition of the structure, and therefore the impact to scenery cannot be accurately analyzed. The crest gates should be described in more detail as well.

Page 3-261, Power Conduit: Will all the rock be excavated from the Tunnel Portal (DLA F-6)? The documents indicate that all rock will end up on the slope below the tunnel portal. If any rock is to be removed from the tunnel from the Swan Lake invert, or from the shaft collar (Elev. 1600', show on DLA F-6), this needs to be noted, and where the rock will go (or if it will stay at those locations), and how it will be moved should be described in accurate detail.

Page 3-261, 1st paragraph: “...Swan Lake outlet structure (Photo 3-21).” The correct photo is 3-25.

Page 3-262, Powerhouse: As the height of the powerhouse had been determined and is necessary information relating to scenic analysis of the project, it should be included in the descriptions of the powerhouse, where currently only the building footprint is identified.

On page 2-5 of the PDEA, both a “tree screen” and “earth/rockfill berm” are indicated to provide screening of the powerhouse. Exhibit F-10 indicates that both of these are within the 200' setback. As a rockfill berm will not have vegetation on it until years after it is created, more detail is necessary for this area to determine how much vegetation will remain after construction of the powerhouse and rockfill berm, and how long it will take for the area to regrow to a sufficient height to screen the powerhouse.

Earlier documents also indicated that the powerhouse was to be designed to be consistent with the setting and other recreation buildings in the area. Provide support to how the current building design complies with this intent. (Forest Service Comments to SD2, Jan 2011, Page 6)

Page 3-262: What data was used to define the 200' setback between the beach fringe and powerhouse? Provide information that can prove this will provide adequate screening. Tree height, density, species and blowdown potential all play a role in this. In addition, varied viewing distances and eye levels should be considered. This applies to any place where “vegetative screening” is referenced and influencing scenery effects.

Rock at Tunnel Portal: The rock debris field below the tunnel portal and the road leading from salt water to the portal has the potential for creating some of the largest, most visible impacts of the project. An accurate visual simulation of the area as seen from the beach and from Thomas Bay should be presented. This visual simulation should be created using accurate contour data and 3D modeling software. The locations from which the simulations are taken should be presented on a map to indicate how close or far away the viewer is.

Mitigation measures for this area include revegetation and mulch. Where will the mulch and soil be stored during construction? Where will it come from? How much soil and mulch is estimated, and how deep a cover will that provide? For revegetation, what plants are being proposed, and how long will it take for them to grow to sufficient size to provide screening and naturalization of the site? For example, if alder is the only plant that takes hold after the rock debris field is created, the resulting large swath of alder may eventually hide the rock but will in itself present an unnaturally-shaped disturbance to the landscape that does not match natural forms (such as landslides and avalanche chutes).

The road to the tunnel portal will climb and traverse fairly steep slopes from the beach. One must assume the cut and fill slopes created from this road construction will be visible unless an accurate 3D model of the hillside shows otherwise. F-9 of Exhibit F shows the plan view, which seems to indicate cut and fill slopes (and therefore indicates that all the data is available to develop a 3D model of this site), but the proposed road does not show the new contours and therefore the scale of the cut and fill slopes is impossible to determine. The slope of the proposed road should also be shown.

3.3.8.3 Unavoidable Adverse Effects

Page 3-269: Several claims are not substantiated by any data or study and require more data. The two statements made relating to scenery are as follows:

“Construction and operation of the Project may temporarily influence aesthetics-based recreation within the Cascade Creek/Swan Lake basin and near-shore areas of Thomas Bay. Construction activities will likely create some noise and landscape disturbance that may temporarily disrupt or degrade the recreational quality and aesthetic character of the project area and immediate vicinity.”

“While the project structures and operations will permanently modify the landscape of the project area, the design of the structures will be in keeping with the Power Site classification but understated and in keeping with the visual context of the surrounding environment.”

These statements are extremely vague in their description of “unavoidable adverse effects”. A more honest statement of effects would read, for example, “Construction and operation will influence scenery and recreation in the Project area for the duration of construction, which is currently planned over three years. The project structures will permanently modify the scenery of the project area as shown in Appendix Z (referencing the study report and/or visual simulations), but will continue to meet the Scenic Integrity Objectives of the corresponding Land Use Designations.” If the project will

affect the scenery of the area so as it will no longer meet the SIO's of the LUDs, that should be clearly stated.

Page 3-270: Any statement that such as “*will likely not be heard from more than 200 feet from the powerhouse*” should have some fact to back it up, and stating “*the powerhouse will be surrounded by sound-blocking vegetation*” is not sufficient. Is this a specific type of vegetation? Are there studies that show the noise-dampening ability of various vegetation types? Does it differ between trees and shrubs? How do we know it is 200' and not 300'? This document makes many statement regarding effects and what will or will not be seen or heard, and there is nothing within the Recreational Resource Study Report to back any of these claims up. They may or may not be accurate statements but there is no way to know unless background information is provided.

3.3.9 Cultural Resources

3.3.9.1 Affected Environment

The terms cultural resources and heritage resources are used interchangeably. Suggest that you would choose one, perhaps cultural resources, and use that throughout the document.

Page 3-273, 2nd paragraph, last sentence: This statement is preemptive since there has yet to be an effects analysis.

Page 3-274, 2nd paragraph: FS Alaska Region now works in accordance with the *Third Amended Programmatic Agreement Among The USDA Forest Service, Alaska Region, The Advisory Council On Historic Preservation, And The Alaska State Historic Preservation Officer Regarding Heritage Program Management On National Forests In The State Of Alaska (2010)*.

Page 3-275, 1st paragraph, 2nd sentence: Our Programmatic Agreement states that inventory will include the high sensitivity zone for cultural resources, a sample of high sensitivity zone outside the APE but within the larger project area, and a sample of the low sensitivity zone in the APE. You are expected to follow this.

Page 3-275, 2nd paragraph: – Why didn't FREC send a consultation letter to the Petersburg Indian Association?

3.3.9.2 Environmental Effects

An actual effects analysis has not yet been completed.

Page 3-276, 2nd paragraph, 5th sentence: It does not matter if non-project activities are possibly affecting historic properties. That should be addressed in the cumulative effects analysis.

Page 3-277 3rd paragraph: Is a Cultural Resources Management Plan the same as a HPMP?

3.3.10 Socioeconomic Resources

Please be consistent in using the 2010 population figures/census data.

The impact analysis does not adequately explain how the Alternatives will directly or indirectly change demographics, housing, public services (e.g., estimated staffing, production, revenue and taxes), and even the aesthetic quality of the community that would result from the development. These results would then provide a foundation for assessing cumulative impacts on social and economic resources. Some of the impacts are discussed, but they are dispersed in different places in this section so it's hard to find / compare.

It is not clear in the analysis what indicators are being used to measure changes to social and economic resources in the area. The indicators used to measure the potential socio-economic impacts of a development might include the following:

Changes in community demographics;
 Results of service and housing market analyses;
 Demand for public services;
 Changes in employment and income levels; and
 Changes in the aesthetic quality of the community.

A socioeconomic report was not found. Normally, this report provides information to satisfy FERC license application requirements specific to Project-related effects on the socioeconomic environment as specified in the applicable sections of 18 CFR Parts 4 and 16. It isn't clear what methods were used to collect the data, the data sources that were used, problems that precluded collecting data as planned, and shortcomings in the proposed data collection methods. Here are some examples:

- Published literature
- Public reports
- Internet sources
- Personal observations from site visit
- Dialogues with members of communities, organizations, and agencies
- Information from the tribes
- Information from socioeconomic work groups

A socioeconomic report should have also provided the following to adequately describe the Affected Environment:

- Describe the existing socioeconomic environment in the study area, including population, housing, economic development, public services, fiscal conditions, and infrastructure.
- Describe socioeconomic resource trends under the existing condition.
- Summarize the existing condition of the recreation resources in the study area, referring to the recreation resource report.
- Describe the current socioeconomic condition of the tribes.

- Identify socioeconomic issues and concerns.

Here's an example of a table that would be helpful:

Proposed Action – Estimated Hydropower Project Staffing, Revenues, Operating Costs, and Taxes

Year	2012	2013	2014	2015
Employees				
Payroll (\$ thousands)				
Estimated Power Sales Revenue (\$ millions)				
Operating Costs (\$ millions)				
Taxes (\$ thousands)				
Net Proceeds Taxes (\$ thousands)				

Note: Dollar amounts (\$) are in 2012 US dollars.

Page 3-292, 3rd paragraph: “Under the no action alternative, the socioeconomics of this area will continue to depend on fossil fuels for energy “. This statement is poorly worded and is not entirely true. Please be more specific. Currently Petersburg and Wrangell are not dependent upon fossil fuels for energy, but are on hydropower. The smaller communities in the Petersburg-Wrangell Census Area are generally dependent upon fossil fuels.

4.0 Developmental Analysis

5.0 Conclusions and Recommendations

Pages 5-1 through-5-5, Table 5-1:

“Temporary impacts to soils will be primarily the result of construction activities and movement of equipment. Impacts related to soil erosion and sedimentation would be limited by implementing proper sediment and erosion control techniques through the Soil Erosion Control Plan.”

There is no mention of the rock fall hazards that are noted by the geology report.

“Table 5-1 provides a comparison of the development and non-developmental effects of the proposed action and the no action alternative.” Scenery is addressed in this table on page 5-5, but the effects are not stated, only referred to as “temporary effects” and “permanent effects”. The table does not summarize the effects and does not provide a helpful comparison to the no action alternative.

Section 5.1.2 Unavoidable Adverse Impacts states that there is *“the potential for project structures, alterations, and operations to permanently influence aesthetic-based recreation within the Cascade Creek/Swan Lake basin and near-shore areas of Thomas Bay.”* This section does not specifically reference scenery but is the only statement to come close. The impacts of the project to SCENERY should be clearly stated. Scenery is a separate resource from Recreation, and while there are many connections between resources, the effects on each should be addressed clearly and separately.

5.2 Consistency with Comprehensive Plans

Page 5-7, Table 5-2, 6th row, 1st column: It states *“Land Use, Recreation, Aesthetics, Fish and Aquatic Resources, Terrestrial Resources”* as resources under “Forest Service. 2008. Tongass National Forest land and resource management plan. Department of Agriculture, Ketchikan, Alaska. January 2008.” This plan applies to ALL resources on NFS lands.

Page 5-10, 2nd paragraph: *“The Project is located entirely within the USFS lands, although state lands do occupy portions of the surrounding area.”* A portion of the transmission line corridor passes through private land southeast of Point Agassiz.

This section should also address:

- Tongass Forest Plan Standards and Guidelines for Semi-Remote Recreation Land Use Designation,
- Tongass Forest Plan Forestwide Standards and Guidelines
- TTRA - Tongass Timber Reform Act (if any timber sale activities are proposed).
- Best Management Practices consistent with those described in Forest Service Handbook 2509.22, Alaska Region amendment effective July 14, 2006

Page 5-10 of the PDEA states the 2008 Tongass Forest Plan “has been reviewed, and the proposed Project is consistent with the goals of the Plan.” The PDEA and Recreational Resource Study Report do not provide sufficient scenic analysis to determine if the proposed project is consistent with the goals of the 2008 Forest Plan with regards to scenery.

PDEA Appendices

Appendix A -- Federal Power Reserve Documentation

Appendix B – Study Plans

Final Aquatic Resources Study Plan
 Cultural Resources Study Plan (not included)
 Proposed Final Hydrology Study Plan
 Recreational Resources Study Plan
 Final Wildlife Study Plan

Appendix C – Study Reports

C-1: Swan Lake Hydroacoustic Study

C-2: Aquatic Resources Studies, December, 2010

This document was difficult to find. It was not labeled as a separate document (C-2) and was attached to C-1.

2. Upper Cascade Creek Geomorphic and Aquatic Habitat Survey

This section provides a very thorough description of survey methods and results. Thank you. However, I did not find the channel cross-section or pebble count data in the report appendices. Please include these data in future reports.

2.1. Introduction

Page 10, 1st paragraph, "...*quantitative stream habitat surveys were not conducted in Lower Cascade Creek*" Nonetheless, the Applicant must provide a credible analysis of habitat and species affected in the bypass reach.

C-3: Cultural Resources Study Report (not included)

C-4: Preliminary Historic Earthquake, Fault, and Slope Stability Analysis & Initial Characterization of Bedrock & Surficial Geology, and Soils of Key Areas Thomas Bay Hydro, Swan Lake Site - Petersburg, AK Project Number 355.001

The boulders at the toe of the existing harvested area were likely a result of logging practices, and not a large mass wasting event. This report identified a few stability concerns especially at the Swan Lake Inlet. Stability analyses near the powerhouse, including the road, were not conducted but are needed.

There is no mention of any analysis for the potential of the geology to generate ARD.

The report appears to be just what the title suggests a "Preliminary" discussion of the physical setting and geology. Actual geotechnical studies will be needed for the final design of the structures. When the contractors consider the historic earthquake activity and the stability of the area they might reference/consider the following:

Yehle, L.A. 1978. Reconnaissance Engineering Geology of the Petersburg Area, Southeastern Alaska, Petersburg Area, Southeastern Alaska, with Emphasis on Geologic Hazards. US Geological Survey, Open-File Report 78-675.

C-5: Hydrology Report

This report thoroughly documents the gage site descriptions, data collection, and development of stage-discharge rating curves. Thank you.

Page 2, last paragraph: “*Flows in Cascade Creek generally reach their minimum levels for the year in March or April...*” Figure 2 displays minimum flows in February as well. Please check and clarify.

Page 3, Figure 2: The x-axis (months) appear offset from the data points. Please correct.

Page 10, Figure 8: The x-axis (months) need adjustment (January repeats, February missing, March repeats). Please correct.

Page 14, Figure 11: The colors in this graph are too similar to distinguish between the months. Please re-create this figure so it clearly displays the monthly lake level differences described in the preceding text (page 13).

Page 20, 2nd paragraph: “*Swan Lake levels were estimated for the historical period of record by first estimating surface water discharge from Swan Lake using the relationships developed to predict these discharges as a function of discharge at the lower gage site.*” Please confirm if this is the same correlation described on page 18. Please provide graphical proof (display) of these correlations and explain if/how the two correlations (one for low flow and one for normal/high flow) were combined (or used separately) to create the Swan Lake level correlation illustrated in Figure 14. The effects of the Applicant’s withdrawal on Swan Lake levels (compared to natural fluctuations) is one of the main concerns for aquatic species, so this analysis is critical. It appears that there is greater uncertainty about the low flow correlation. Since low flow periods are likely to be most limiting in terms of withdrawal, the Applicant should explain how this uncertainty has been accounted for in their analysis and mitigation measures.

Figures 15, 16, 17: The colors in these graphs are too similar to distinguish between the months. Please re-create these figures so they clearly illustrate the corresponding text.

C-6: Draft Recreation Resources Study Report, February 2011**C -7: Vegetation Resources Overview**

Page 5, 1st paragraph: The last sentence highlights why it is important to do actual field surveys for noxious and invasive plants. It is impossible to know without looking on the ground what species may be present.

Page 6, 4th paragraph: *USFS Alaska Region Pre-field Review Worksheet for Sensitive Plants* – This document was completed in November 2008 for a specific project. The document contains outdated information about the Alaska Region Sensitive Species List that has since been revised on

February 2, 2009. No field efforts were done in conjunction with this project because of its very small footprint and limited disturbance to existing vegetation.

Page 6, 5th paragraph, *USFS Alaska region Sensitive Speices List and Proposed Revisions* – The 2002 list is outdated; the 2009 list should be used instead. There are no proposed revisions to this list since they were incorporated when it was approved. It makes more sense here to just state that there are 18 plant species on the current list, instead of talking about the revision which happened over two years ago.

Page 6, 6th paragraph, *USFS Petersburg Ranger District* – The lack of vegetation surveys in the project area increases the importance of doing thorough surveys for this project before analyzing effects.

Page 7, 1st paragraph – It is concerning that the only field surveys conducted in the area were for wetland delineation. Although some good information was obtained, the upland habitats were not likely surveyed thoroughly for sensitive and rare plants. Also, the dates of the surveys are concerning since the ideal time for surveys is mid-June to mid-August at the latest. The surveys for this project were done August 29-30 and September 1-4, 2010 (Wetland Reconnaissance Delineation Report, page 2). Many species are well past their prime and may not be correctly identified or even detected during that time period.

Page 7, 2nd paragraph, last sentence – Again, the reference to lack of survey efforts in or near the project area makes the importance of doing surveys for this project that much more important.

Page 7, Table 1: Two species on this table are erroneously labeled as sensitive in the Alaska Region. They are the Queen Charlotte butterweed which was previously on the list before the revision in 2009 and Upswept moonwort which has never been on the list.

Page 12, last paragraph: – Invasive species would most likely be found on existing roads in the project area. It doesn't appear that the roads were surveyed for plant species. The pre-field review referenced here does not mention invasive plants because that is not the purpose of that document. A pre-field review, like a Biological Evaluation, focuses on sensitive plants. A separate Invasive Plant review was conducted for the stream gage installation.

C-8: Wildlife Resource Studies

Overall, the structure and content of the wildlife report is inadequate, and the author provides no effects determinations to wildlife and or wildlife habitat that may be affected by the proposed project. The wildlife report should cover all U.S. Forest Service (USFS) management indicator species (MIS) (updated 2009 list), or give reasoning for why they are not analyzed (e.g. do not occur on the proposed project area.). Effects determinations should be consistent with U.S. Fish and Wildlife Service (USFWS) and USFS terminology, and it would be helpful if a table were provided to show the effects determination. Generally the wildlife report should cover U.S. Forest Service MIS and other species (e.g. migratory birds, endemics) and the Biological Evaluation

covers Federally listed Threatened, Endangered, Candidate, and Sensitive species. However these can be combined into one report but should be put in different sections. Usually species are covered in detail and a table is provided that summarizes the effects. Please consider contacting the Forest Service for examples of wildlife resource reports and biological evaluations.

Wetlands Report (Appendix ?)

This report from September 2010 by Aqua-Terr Systems, Inc. (ATSI) was not included as an Appendix to the PDEA. Why not?

The contractor used the improper hydrophytic vegetation protocol

Reliance on the Dominance Test and FAC vegetation ignores the subtleties needed to define sites in a Temperate Rainforest. While using the dominance test for Wetland calls is acceptable, it is not the best method when there are very few dominants present or when strata are very different in total plant cover. The Prevalence Index is the most comprehensive indicator (COE, 2007 page 11). When the proper vegetation method is used, these areas have non-hydrophytic vegetation. In most cases, areas described by the contractor as having hydrophytic vegetation do not have any OBL or FACW species present. The vegetation in Southeast Alaska is overwhelming classified as FAC, which means the species is equally in upland as wetland. It is important to account for the other, less dominant vegetation when working in Southeast Alaska.

The contractor did not understand Southeast Alaska Soils

The 2007 COE Alaska Supplement also describe, with photos, what a histosol and histic epipedon look like and their criteria. The contractor said the soil described meets the criteria for the histosol but according to the wetlands supplement, they do not. Soils classified as Histosol or with a histic epipedon (data forms 4, 5, 6, and 7 pages 49-56 of the wetland report) have less than 1 inch or organic material and some have gravel to the surface. It is clear that the contractor was unable to properly describe a Histosol. Additional information in the remarks field or supporting photos were not provided.

Further, the contractor describes coarse gravels and even sands as a Restrictive Layer (Cards 5, 6, 7, and 9). A restrictive layer is a hardened layer in the soil, like bedrock or permafrost, that impedes water's ability to percolate through the soil. Gravels and sands allow water to move through the soil more freely. Restrictive layers are described on page 20 under the bullet *Soil Materials* in the COE Alaska Supplement (COE, 2007).

The contractor made inappropriate assumptions

Based on no field data, the area by the intake structure was determined to be wetlands based on assumptions. The remote sensing data, soil mapping, and National Wetland Inventory (NWI) that pointed to upland was ignored.

The entire wetland delineation and report needs to be redone with the following:

- The vegetation needs to be analyzed using the Prevalence Index
- The work needs to be conducted by someone with a working knowledge of wetland soils
- A site visit to the lake intake structure needs to occur to delineate wetlands/uplands there.

- The soil descriptions used must be from the Tongass National Forest or from the Official Series Descriptions. Web Soil Survey cannot be used due to errors in interpretations.

Aquatics Sampling Report (Appendix ?)

Why isn't this report included as an appendix to the PDEA, similar to other studies? It appears on the website.

Appendix D – Communications Protocol

This Communications Protocol is labeled "Draft". Is there a final version of this document?

Appendix E – Consultation Record

This is not a complete record of the consultation. Many documents are missing. There are no records or transcripts of the public meetings in Petersburg. Many agency comments are missing.

Enclosure 1**SCHEDULE FOR SUBMITTING FINAL 4(e) TERMS AND CONDITIONS****Cascade Creek Hydroelectric Project
P-12495-001****USDA Forest Service
Alaska Region
Tongass National Forest**

The following schedule is submitted pursuant to 18 CFR 4.34(b)(1)(i).

Document	Date To Be Submitted To FERC
<ul style="list-style-type: none"> • Forest Plan Consistency Finding 	Within 60 days of publication in the Federal Register that the DEA or DEIS is available for public comment
<ul style="list-style-type: none"> • Final 4(e) Terms and Conditions 	Within 60 days of publication in the Federal Register that the DEA or DEIS is available for public comment
<ul style="list-style-type: none"> • Modified 4(e) Terms and Conditions 	Within 60 days of publication in the Federal Register that the FEA or FEIS is available for public comment.



United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest

648 Mission Street
Ketchikan, AK 99901
Phone: (907) 225-3101
Fax: (907) 228-6215

File Code: 2770

Date: May 19, 2011

Mr. Christian Spens, Project Manager
Cascade Creek, LLC
3633 Alderwood Avenue
Bellingham, WA 98225

Dear Mr. Spens:

The Forest Service has completed its review of the Draft License Application (DLA) and Preliminary Draft Environmental Assessment (PDEA) for the Cascade Creek Hydroelectric Project and will be filing comments with FERC on or before May 19, 2011. We will not be filing Preliminary 4(e) Terms and Conditions at this time.

We find it unusual that the Draft License Application (DLA) and the Preliminary Draft Environmental Assessment (PDEA) were submitted for FERC and agency review before the completion of critical field studies. Based on our review, the DLA and PDEA are incomplete and fail to clearly display the issues, describe the alternatives, and disclose the direct, indirect, and cumulative effects of the proposed action and no action. Several effects analyses appear to be based upon erroneous and/or missing data, including yet-to-be completed fieldwork. Conclusions are unsubstantiated by facts.

The documents lack key information needed for the drafting of meaningful preliminary terms and conditions. In the absence of clearly-stated, site-specific information regarding project operations and stream flows, we would rely upon a desktop method, such as the Tennant method, for calculating instream flow requirements. The Forest Service would require that the project maintain a minimum instream flow of 60% of the mean monthly flow in all reaches of Cascade Creek.

The Forest Service strongly recommends that a revised and complete preliminary environmental document be prepared and circulated for review before the Final License Application and Draft EA/EIS are filed with FERC.

In addition, we recommend that an additional round of public scoping be conducted to update Petersburg residents and interested parties on the many changes in project facilities and operation since the earlier public meetings. We remain concerned about the review process for draft/final study plans and reports and are very confused as to the status of individual documents. Lastly,



we suggest that Cascade Creek LLC and all signatories to the Communications Protocol discuss on-going communications issues and consider the need for a new or amended protocol.

Our comments and suggestions are meant to be constructive and helpful to Cascade Creek, LLC. We are available to meet with you and your staff to discuss our comments and we do plan to participate in the June meeting in Petersburg. A copy of our comments is enclosed.

Please contact Barbara Stanley at (907) 228-6262 or bstanley@fs.fed.us if you wish to arrange an additional meeting.

Sincerely,

A handwritten signature in blue ink, appearing to read "Forrest Cole".

FORREST COLE
Forest Supervisor

Enclosure

Enclosure 4

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

IN THE MATTER OF PRELIMINARY)
4(e) TERMS and CONDITIONS AND)
PRELIMINARY COMMENTS FOR)
THE CASCADE CREEK)
HYDROELECTRIC PROJECT)

Project Number: P-12495-001

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have served the U.S.D.A. Forest Service's Preliminary 4(e) Terms and Conditions and Preliminary Comments on the Draft License Application and Preliminary Draft Environmental Assessment by electronic filing, with the Federal Energy Regulatory Commission, at www.ferc.gov, and a copy of said documents by electronic mail to the following listed parties:

Party	Primary Person or Counsel of Record to be Served
Joe Nelson	Joe Nelson Superintendent 11 S. Nordic Petersburg, ALASKA 99833 UNITED STATES pmpl@ci.petersburg.ak.us
Alaska Department of Natural Resources	John Dunker Water Resource Manager Alaska Department of Natural Resources PO Box 111020 Juneau, ALASKA 99811-1020 UNITED STATES john.dunker@alaska.gov
Cascade Creek, LLC	Chris Spens Project Manager Cascade Creek, LLC 3633 Alderwood Ave Bellingham, WASHINGTON 98225 UNITED STATES cspens@thomasbayhydro.com
Four Dam Pool Power Agency	Jenny Trieu Associate Attorney Four Dam Pool Power Agency 222 SW Columbia, Suite 1800 Portland, OREGON 97201 UNITED STATES jlt@aterwynne.com

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USDA Forest Service - Region 10	Roger Birk Individual PO Box 21628 Juneau,ALASKA 99802-1628 UNITED STATES rbirk@fs.fed.us
USDA Forest Service - Region 10	Dawn Collinsworth Office of the General Counsel U.S. Department of Agriculture PO Box 21628 Juneau,ALASKA 99802-1628 UNITED STATES Dawn.Collinsworth@ogc.usda.gov
USDA Forest Service - Region 10	

** These contacts were served by US Postal Service mail.

Dated this 19th day of May, 2011

/s/ Barbara A. Stanley

USDA Forest Service
Federal Building
Ketchikan, Alaska 99901-6591

(907) 228-6262

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