

VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW

IN REPLY REFER TO:  
L7425 (AKRO-EPC; ER-11/0158)

United States Department of the Interior  
National Park Service  
Alaska Regional Office  
240 W. 5<sup>th</sup> Avenue  
Anchorage, AK 99501

Chris Spens, Licensing Manager  
Cascade Creek, LLC  
3633 Alderwood Avenue  
Bellingham, WA 98225

Re: Cascade Creek Hydroelectric Project P-12495-001; Draft License Application and Preliminary Draft Environmental Assessment

Dear Mr. Spens,

The National Park Service (NPS) appreciates the opportunity to provide preliminary comments on the Cascade Creek Hydro Draft License Application and Preliminary Draft Environmental Assessment in response to the Notice of Intent filed with FERC on February 18th, 2011. The NPS Hydropower Assistance program works with parties involved in licensing hydropower facilities regulated by the Commission to ensure that public interests in recreation and conservation are addressed. The program draws its authority from the Federal Power Act and technical assistance provisions of the Outdoor Recreation Act of 1962, the Wild and Scenic Rivers Act of 1968, and the National Trails System Act of 1968.

The proposed Cascade Creek Hydro project is a major unconstructed project on Swan Lake, Falls Lake, and Cascade Creek, located on federal lands within the Tongass National Forest at Thomas Bay, about 15 miles northeast of Petersburg in Southeastern Alaska. Project facilities would include: a screened siphon intake approximately 40' below Swan Lake's surface with underground gatehouse and low weir lake outlet structure; a three mile long rock tunnel and 12' diameter unlined steel buried penstock; a powerhouse at elevation 4658 [sic] feet msl, with three Pelton turbines; and a 40' x 450' rock-lined tailrace discharging to marine waters. Docking facilities including piers, floats, and a barge ramp. Housing facilities would also be constructed on the Thomas Bay shoreline. Overhead and submarine transmission lines would traverse Thomas Bay, the Patterson Delta, and Frederick Sound, connecting to a substation on Mitkof Island southwest of Petersburg. The project would be capable of generating 70 MW of power, and would be operated to divert high flows from the upper Cascade Creek and Swan Lake system, with most generation likely occurring in the summer and early fall months when snowmelt and rainfall increase inflow to the lake. [note: the elevation of 4658 feet msl indicated

above is from p. 2-2 and is incorrect. The correct elevation is shown at the third instance of p. 1-2. Pagination is difficult to follow because three sections use the same numbering, i.e., Definitions of Terms, Executive Summary, and the Introduction. Also, on p. 2-2 an “Exhibit F” is referenced to show the location of the powerhouse. There are no “Exhibits” in the PDEA, and this reference is apparently to Figure 1-1]

The U.S. Forest Service’s Land Use Designation for this area of the Tongass NF is “Semi-remote Recreation,” and the site is also subject to “Roadless Rule” restrictions on development. Feasibility of the project is thus dependent on USFS/Department of Agriculture policy considerations and federal court precedents. The purpose of NPS’s preliminary comments on the project is to provide guidance to the applicant and FERC if the project is determined to be compatible with Tongass National Forest requirements.

#### Preliminary Comments on DLA and PDEA

This project is classified as a “major unconstructed project”, which appears consistent with the project description. Consequently, due to the significance of the project’s environmental impacts, also suggested by the length of the PDEA, a Finding of No Significant Impact (FONSI) may not be possible. For this reason, consideration of an Environmental Impact Statement (EIS) rather than an Environmental Assessment (EA) may be more efficient for all involved.

There are a number of errors, omissions, and inconsistencies in the PDEA, not the least of which is the initial description of the project, i.e. the powerhouse’s elevation of “4658’ msl”, pagination, and exhibit naming protocol noted above. Overall, the PDEA appears to be a very rough draft.

English and metric measurements are mixed in the document, making it confusing for the reader (e.g. the Swan Lake siphon is sometimes described as being located 40 feet below the lake’s average surface elevation, other times 12 meters below this surface). A single measuring convention should be used for the final document.

Descriptive language throughout the document suggests a proponent bias toward the project regarding likely environmental effects and the regulatory environment for this proposed development. There are frequent references to the 1921 Power Site Classification for the project area. It is stated in nearly every section of the environmental analysis as settled fact that this classification controls federal land use decisions, while the Roadless Area is mentioned only in passing, with no analysis of this designation in light of recent federal court decisions.

This apparent proponent bias, along with project history, diminishes confidence in the objectivity of project engineering; resource study methods, data, and conclusions; the environmental impact assessment; compliance with the ALP; or proper consultation with agencies, tribes, and the public. It is noted that the DLA and this PDEA have been filed without addressing FERC comments in March and July 2010 made on several resource study plans. The work that FERC stated would be needed in order to assemble all the resource information for this project apparently has not been done. It appears that a license application may be premature before

perhaps at least another season of field work, filling in important information gaps as identified by FERC, agencies, and the public.

It is also noted that Cascade Creek, LLC (CCLLC) applied on March 15, 2011 for a new Preliminary Permit for the site, and that the project described in this application differs from the one described in the DLA and PDEA. It is unreasonable to expect FERC, resource agencies and the public to expend considerable time and energy consulting on pre-license study plans and reviewing project impacts when the project presents such a moving target.

#### No Action Alternative Summary and Analysis

The PDEA's summary of the No Action Alternative (p. 2-1) does not meet NEPA's standards for objectivity, i.e. unbiased descriptions of a federal action's effects – both positive and negative – on the environment. The summary notes, for example, that under the No Action Alternative, "recreationists would not benefit from the additional access facilities and upgrades proposed" by the project, while ignoring the reality that the project would permanently alter and in some cases destroy the area's existing remote recreation opportunities.

Conclusions regarding the No Action Alternative's effects on other resource values also show proponent bias. For example, on p. 3-77, the only impacts on water quantity and water quality described under the No Action Alternative heading relate to CCLLC's data collection efforts, not to the actual water resources of the area, e.g. the natural flow regime with dramatic variations in flow events from the mouth of Swan Lake downstream, which would be left unchanged under this alternative. The Final EA/EIS for the project should read less like an advertisement for the project and more like the full and objective description of project impacts that NEPA requires.

#### Cumulative Impacts Analysis

The PDEA on p. 3-5 states "As there are currently no other active or operational projects within the project vicinity and no other foreseeable developments, the Applicant determined that there are no cumulative effects related to hydroelectric development." Yet the PDEA (p. 3-63), acknowledges attempts to assess the cumulative impacts of two other potential hydro projects at Scenery Lake and Ruth Lake on the temperature, salinity, density, circulation, stratification, and ice formation of marine waters within Thomas Bay. Similar assessment of cumulative impacts needs to be done for other resource values (including wildlife, land use and recreation) that would be affected by other hydro developments in the immediate area.

#### Geographic Scope

In addition to the hydro facilities proposed for Swan Lake, Cascade Creek, and the Thomas Bay shoreline, the project would involve construction of a transmission line from the powerhouse across Thomas Bay, the Patterson Delta, and Frederick Sound to Mitkof Island. This transmission line will have environmental impacts. Therefore, in the description of geographic scope on p. 3-5, you should be clear that the transmission line corridor is included, as required by NEPA.

### Description of Project's Effects on Hydrology

Throughout the document, generalized assertions are made that, e.g., the range of Swan Lake's elevation will be within the footprint of pre-project variation, and that the lake's annual average elevation will not change. This, along with the description of the post-project flow regime in lower Cascade Creek, glosses over the significant changes that would result from project operations. The "natural hydrological footprint" of the lakes and creeks affected by this project is not solely defined by the annual maximum and minimum, or annual mean, flows and elevations. Other parameters such as the seasonal timing and duration of flows and elevations, the frequency of very high flows and elevations, and the rate of change of flows and elevations, are also important. These parameters in turn affect flow and elevation dependent resources, e.g. aquatic resources and recreation. A quantitative description needs to be included in the final NEPA document for this project, of how the proposed project would alter the seasonality, duration, magnitude, frequency, and rate of change of Swan and Falls Lake elevations and lower Cascade Creek flows so that the true magnitude of the project's effects on the area's "natural hydrological footprint" can be understood.

### Terrestrial Habitat

The PDEA notes that there are wetland habitats along lower Cascade Creek and Falls Lake (p. 3-114). Yet the document only assesses potential impacts on wetlands from project construction, not the major reduction in lower Cascade Creek flows that would result from project operations. NEPA requires evaluation of the project's impacts on all wetlands affected by the project. If there is a conclusion of no impact on Cascade Creek and Falls Lake wetlands, there must be an explanation of why the post-project flow regime would have no effect.

### Recreational Resources

The affected area for the project should be corrected to include the transmission line route across Thomas Bay, the Patterson Delta and Frederick Sound (p 3-159). This powerline route will be visible from multiple terrestrial sites used by recreationists, and from vantage points used by those aboard boats in Thomas Bay and Frederick Sound. It will alter the developmental character of the area.

It should be explained why acreages were given for Glacier Bay National Park and Preserve, several hundred miles north of the proposed project, but not for the Tongass National Forest, within which the project would be located.

The Falls Lake shelter should be shown in Figure 3-36 on p. 3-178. This cabin is located on a waterbody that would be significantly affected by the project.

The statement regarding National Wild and Scenic Rivers on p. 3-184 is incorrect. Five miles of Cascade Creek were previously found by USFS to be eligible for Wild and Scenic River designation in the 1997 Tongass Forest Plan. This segment was noted for its scenic, recreational and fishing values, including rock formations, two alpine lakes, many waterfalls, and abundant

population of rainbow trout. To be eligible for consideration it had to have at least one nationally or regionally “outstandingly remarkable” resource value, and was found to possess three. While the creek was not found suitable for designation, this decision was based on subjective rather than objective considerations.

In March 2010 and again in July 2010, FERC commented on the project recreational resources study plan, urging field monitoring (e.g. Thomas Bay boating, Swan Lake day use, and Cascade Creek trail counts) and interviews with users within the project area to determine what kinds of recreational experiences they were seeking. We concur with the FERC recommendation and agree that such field monitoring is necessary.

NPS notes that there have been no surveys of independent travelers to Thomas Bay who originate outside the Petersburg, Wrangell, and Kake area, and do not use commercial outfitter/guide or air and water taxi services to access the area. Nor were the clients of local guide and air/water taxis services interviewed. While pre-filing recreation studies incorporated local guides’ speculation about how these visitors might respond to post-project conditions, the PDEA includes no actual data on this significant segment of recreational users. Additional studies are needed to close this data gap. One reliable method would be to conduct field surveys of visitors to the cabins, shelter, Swan Lake, and Thomas Bay on multiple randomly chosen dates during the high use season.

The project’s primary effects on recreation will not be temporary, but will continue beyond construction activities throughout the project’s operational life. The project will significantly alter the hydrology of Swan and Falls lakes and Cascade Creek. High season (summer) flows over waterfalls below Swan Lake will be significantly diminished, with Cascade Creek disappearing underground far more frequently than it does now during these periods of highest recreational use. The statement that the power site classification, made nearly ninety years ago, “recognizes the appropriateness of the Project” (p. 1-2 Executive Summary) suggests an assumption of somewhat less rigorous licensing than a site not within such a classified area. The classification was made well before the adoption of NEPA. In addition, the current version of the FPA requires “equal consideration” of non-power uses of public waterways such as Swan Lake, Falls Lake, and Cascade Creek, in licensing decisions, and is applicable to projects within classified power sites. The further suggestion (p. 3-205) that the “Project’s power site classification anticipates and accommodates” the effect on recreation use of the area is overly simplistic and likely incorrect considering the classification well predates the general public interest in remote recreational values. No requirement, either to analyze the effects of major federal actions (NEPA) or to compensate for unavoidable effects (1986 FPA revisions) existed in 1921.

The “Environmental Analysis” section of a NEPA document should not be used to express an untested legal theory that the 1921 PSC “anticipates and accommodates” all the project’s environmental effects, and overrides the 1986 amendments to the Federal Power Act, the federal land manager’s current land use designation for the area, and the recent court-imposed Roadless

rule restrictions (p. 3-205). While this may be CCLLC's view, it is unrelated to an objective analysis of environmental impacts.

The PDEA states that project related changes in lower Cascade Creek hydrology "may have implications to recreational use of the Cascade Creek Trail and/or Falls Lake" (p. 3-206). The phrase, "may have impacts on recreational use" would be clearer. Later in this section, the PDEA states that "Project operations will result in the alteration of flow into Cascade Creek. The proposed operations will . . . closely match the seasonal timing of flows and mirror the existing hydrograph albeit at a lower level of flow" (pp. 3-213-214). The lower level of flow should be quantified and the appearance and sound of the resulting lower flows described.

The PDEA asserts that project facilities will not have a significant impact on the availability of recreation opportunities in the project area (p. 3-206). Even if true, other aspects of the recreational experience require analysis. Project facilities will change the recreational experience and opportunities provided by the project area. Recreational resources are characterized by much more than the number of people who can access an area. All recreational experiences are not of equal value to all recreationists, and in Alaska, in particular, a proportionally high number of recreationists seek primitive recreational experiences. The environmental analysis for this project needs to explain what kinds of experiences current visitors to the area seek and how those experiences will be changed by the presence of project facilities and the effect of project operations on flows. Will some users be displaced because the area no longer meets their needs? Where will they go to obtain the same recreational experience? What, if anything, could be done to mitigate these impacts?

The PDEA states (p. 3-214) that "there will be minimal effect to overall aesthetics and none which do not occur naturally now" resulting from what are significant post-project reductions in Falls Lake levels, particularly during the high use season. An objective basis to support this conclusion of minimal effect will be needed in the final NEPA document.

The PDEA states that, based on "recreator opinions" (actually, the opinions of outfitters/guide respondents to the survey, along with some boaters and pilots), "recreational use of the Cascade Creek trail, with respect to the influence of the aesthetics of Cascade Creek from Thomas Bay to Falls Lake, is expected to be unchanged" (p. 3-214-5). This conclusion is at odds with the results of the outfitter/guide and boater/pilot survey reported in the same section. Those surveyed were not asked whether they would use the trail more or less if flows were lower, so there is no basis for conclusions about post-project use levels. Also, respondents expressed a clear preference for the higher natural summer flows that exist now. It is apparent that the survey does indicate a change in aesthetic value. It is recommended that this section be revised to more closely reflect the survey results.

NPS notes that no data is provided on the effects of lower flows from Swan Lake to Falls Lake, including flows over cascades and major waterfalls that can be seen from Falls Lake and the Cascade Creek trail. Because of this, the project's effects on recreation in this portion of the

project area cannot be assessed. It would be very helpful to the reader if approximate flow levels (in cfs) depicted in the photos and simulations were included in this section.

On p. 3-221, it is stated that “the actual effect of the development to the overall recreational setting is nominal.” This conclusion is inconsistent with survey results and the expression of why the project effect is nominal appears to be more promotional than objective environmental analysis.

The visual impacts of an overhead transmission line across the Patterson Delta have not been assessed. Supporting data for the conclusion that visual impacts “will likely not be significant,” (p. 3-222) are not included. Visual simulations of the powerline from major vantage points should be developed so that the impacts of these project facilities can be assessed. There may be routing options that would help screen the line, but information that would help identify such options is not included. It is noted that on another major unconstructed hydro project currently under consideration in southeast Alaska (Takatz Lake, P-13234), LIDAR data was obtained by the applicant along the entire transmission line route for aesthetics and engineering purposes. Similar data should be provided for this project.

A post-licensing Recreational Use Monitoring Plan (p. 3-223) is proposed to ensure facilities and operations do not impact hunting. This plan needs further explanation, e.g. how would development of the plan actually prevent impacts? Is adaptive management proposed for project operations? If so, what standards and indicators are proposed to protect recreational resources, i.e., what is the magnitude of the impacts that would be allowed before making changes in facilities or operations to prevent additional impacts? To actually be effective in reducing impacts, data collected from monitoring needs to be tied to established threshold action points.

Conclusions about recreational displacement (pp. 3-223/224) do not appear to be supported. While displacement is expected it is concluded that the project area is not as important to users as other areas. This suggests the recreational value is based on user volume rather than the remote character of the area. Discounting project impacts based on the very characteristic that distinguishes the area does not support the conclusion. If the project causes displacement, this needs to be objectively evaluated in more detail. Also, some supporting data is needed for the conclusion that project facilities would “likely” (p. 3-225) offset any decrease in recreational values caused by the project.

The PDEA notes that USFS estimates of current project area use compared to carrying capacity show that use exceeds capacity (p. 3-226). This seems inconsistent with the suggestion noted above that the project area is not an important recreational resource. While it may not be a large resource in comparison with TNF’s overall size, it appears to be popular enough that its use needs to be managed. Also, Table 3-12 (p. 3-192) is cited for the claim that the two cabins in the project area are only utilized 10% of their capacity. However, Table 3-12 does not include cabin occupancy data. Also, it is commonly understood in Alaska that the high season for recreational use occurs during a few short weeks each summer. USFS cabin occupancy rates for recent years (see Table 3-13, not 3-12) show that the Swan Lake cabin, in particular, has been occupied on

most nights of the critical late June – early September period. This is not low use. It is recommended that this section be revised to analyze occupancy rates by season instead of annually.

It is noted that the annualized approach used to report on recreational use is the same as the approach taken to report on post-licensing hydrology. For variables with high seasonal variances (e.g. Cascade Creek flows and recreational visitation rates), reporting only annual means renders data meaningless and gives a false appearance of small impact. For this reason, it is again recommended that seasonal analysis be provided to avoid the leveling of important peaks in use and flows respectively.

Please add to the description of resource conditions under the No Action Alternative (p. 3-227) text noting that degradation of the project area’s aesthetic resources by project facilities, as documented in your recreational survey, would not occur. It should also be stated that existing natural flows would remain unchanged. By only talking about the loss of project attributes under this alternative, the continuing resource values of the No Action Alternative are inappropriately discounted.

Please expand the description of Unavoidable Adverse Impacts to include project-related changes to Falls Lake water levels and to flows within lower Cascade Creek, including over waterfalls, with a focus on changes that would occur during the high use season.

In the introduction section of the PDEA, it is noted that the temporal scope of the document is the 30-50 year license period. However, no information is provided about the future demand for recreation in the project area over this time period, or about the project’s effects on this demand. This is a major omission.

#### Land Use

It is stated that under the No Action Alternative, “communities adjacent to the transmission line corridor would not realize the benefits . . . of green power . . .” (p. 3- 244). This sentence appears to be from a NEPA document for another hydro project because it does not apply to the Cascade Creek project. There are no communities “adjacent to the corridor,” except for Petersburg, at the transmission line’s terminus. Petersburg’s existing electric power is generated by hydro, and municipal and regional utilities have consistently indicated they do not need the power the Cascade Creek project would generate and do not want to incur the expense of tying in to the proposed project. Please review this section for accuracy.

#### Aesthetic Resources

Most of this section of the PDEA repeats material in the Recreational Resources section. It is unclear why the PDEA is structured in this way. Consolidation of repeated material could shorten the document and improve reader comprehension.

The PDEA states (p. 3-25) that “Flows within the [Cascade] Creek will remain within the range of natural conditions.” Diversion of Swan Lake water for power generation seems to belie this

conclusion. See comments on changes in hydrology, above. It is impossible to assess the project's impacts on aesthetic values without data on the magnitude, frequency, duration, seasonality, and rate of change of post-project flows in lower Cascade Creek. The limited data provided is not in useful form (e.g. monthly flow duration curves) and the reader cannot tell what actual flow rates are depicted in the photos.

The visual simulations included in the PDEA are different from those used on the survey, e.g. the rendition of the powerhouse site and tunnel tailings pile as viewed from Thomas Bay is different from the depiction used in the survey. In the latter, project facilities appeared larger, having more of a visual impact. The impression is that the project's effects have been intentionally minimized in the more widely distributed PDEA. Also, the "average fall flow" photo of Cascade Creek as seen from the Thomas Bay shoreline is not included in the PDEA. Despite the lack of information about actual flows in cfs for either the existing flow "summer" photo or this one, it is our understanding that the "fall" photo illustrates post-license summertime flows. For this reason, this photo would be a useful addition to the document to show the project's effects for readers who did not get the survey, i.e., most of the readers of the PDEA.

The magnitude of the project effects on visual resources is difficult to assess because before and after views have not been simulated of Cascade Creek above the views from the Thomas Bay shoreline, including cascades below Swan Lake and the significant waterfall where the creek enters Falls Lake. Also, the appearance of Falls Lake's reduced elevation, particularly during summer months, has not been simulated. On other major unconstructed projects in southeast Alaska, where most projects are located on high gradient streams, such simulations have been an important source of information about some of the target waterway's non-power uses, such as aesthetics and recreation. Other applicants have tried to capture both still images and video with sound footage of natural stream features at various flow rates, and have presented detailed post-construction flow data in their license applications so that the appearance and sounds of post-license flows can be assessed even before any control structures are built. Given the project area's known high aesthetic values (see the project surveys of outfitter/guides and resident pilots and boaters, if not of out-of-area visitors, who are likely to be less habituated to the area's aesthetics), it is essential that FERC, resource agencies, and the public know what changes are likely to result before making final decisions about licensing the project, including potential mandates for aesthetic flows.

It is strongly recommended that representative images be acquired of existing flows at all waterfalls and cascades along lower Cascade Creek, and at Falls Lake, and that a study be conducted comparing these natural flows to post-construction flows, before the final NEPA document for this project is prepared.

It is noted that in 1921, when the area's Power Site Classification was established, there was essentially no modern understanding of the national public interest in the recreational and aesthetic values of public lands and waterways, and no quantitative techniques had been developed to assess these values. Only the wealthiest Americans had the time or money to travel

for leisure. Alaska was still a thinly populated territory. Modern color film had yet to be invented, so few Americans had ever seen Alaska's scenery except in black and white photos. Major environmental legislation, including the Outdoor Recreation Act, Wilderness Act, Wild and Scenic Rivers Act, NEPA, and the Clean Water Act, were decades from creation. Based on this reality, the assertion that the project's aesthetic effects "are within the known effects resulting from the development of the resource under the Power Site classification" is not supported.

Again, on p. 3-259, a post-development simulation is included of what the mouth of Swan Lake would look like. However, there is no data provide of the depicted flow rate or comparison of frequency and duration of natural summer flows at the site. Survey questions were directed only at the visual impact of the man-made outfall structure but not of impacts of the structure and the reduced flows.

A meaningful description of these impacts needs to be included in the final NEPA document for the project. Without this information, FERC will not be able to assess the magnitude of project impacts on non-power use of the lakes and creek, nor will the public, agencies or FERC be able to develop appropriate PME's. For example, in order to mitigate the impact of reduced or eliminated surface flows in Cascade Creek and flows over waterfalls, instream flow releases in excess of what is proposed may be required during high recreational use periods. Without any data explaining how often these low flows might occur, or any visual analysis of the effects of the reduced flows on recreational values, as determined by current and potential visitors to the area, it is impossible to identify appropriate instream flows for aesthetic and recreational impact mitigation.

Thank you for the opportunity to comment on this important project. We look forward to working with all parties in the licensing process. If you have any questions, please contact Cassie Thomas, Alaska Hydro Coordinator, NPS Hydropower Program, by email at [Cassie\\_Thomas@nps.gov](mailto:Cassie_Thomas@nps.gov) or by phone at 907/350-4139.

Sincerely,

/s/ Joan Darnell  
SIGNED ORIGINAL ON FILE

Team Manager  
Environmental Planning and Compliance

cc:  
FERC, eFile (P-12495-001)  
[waso\\_eqd\\_extrev@nps.gov](mailto:waso_eqd_extrev@nps.gov)  
[Shawn\\_Alam@ios.doi.gov](mailto:Shawn_Alam@ios.doi.gov)  
[Cassie\\_Thomas@nps.gov](mailto:Cassie_Thomas@nps.gov)  
[cspens@thomasbayhydro.com](mailto:cspens@thomasbayhydro.com)

Document Content(s)

P-12495-001, NPS Comment.PDF.....1-10