

**UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

New York Power Authority

Blenheim-Gilboa Pumped Storage Project
Project No. 2685

**AMERICAN WHITEWATER'S PROPOSED STUDY MODIFICATION AND COMMENTS
IN RESPONSE TO THE RECREATIONAL BOATING DESKTOP FEASIBILITY
ASSESSMENT FILED BY NEW YORK POWER AUTHORITY FOR THE BLENHEIM-
GILBOA PUMPED STORAGE PROJECT, FERC PROJECT NO. 2685**

American Whitewater (AW) submits this Proposed Study Modification and Comment to FERC in response to the Recreational Boating Desktop Feasibility Assessment for the Blenheim-Gilboa Pumped Storage Project operated by New York Power Authority. Our organization has previously submitted comments asking the Licensee to study the impact of its hydroelectric operations on the recreational opportunities available to non-motorized boaters in the project area. We submit this Proposed Study Modification and comments in order to: 1) Address deficiencies in the Licensee's Recreational Boating Desktop Feasibility Assessment; and, 2) Request that FERC Direct the Licensee to modify *Study 4: Recreation Use/User Contact Study and Assessment of Effects the Project has on Recreation Use* in order to provide FERC with a more complete understanding of the Project's impacts on recreational use of Schoharie Creek so that it can develop appropriate license conditions that are protective of power and non-power values alike.

American Whitewater is a national non-profit 501(c)(3) river conservation and recreation organization founded in 1954 whose mission is to protect and restore our nation's whitewater resources and to enhance opportunities to enjoy them safely. Our members are primarily conservation-oriented kayakers and canoeists, many of whom live and/or engage in recreational boating in New York. American Whitewater has been engaged in the hydropower relicensing process for over 25 years and has worked with FERC and numerous licensees to study the impact of hydroelectric projects on recreational boating opportunities throughout the country. We have assisted with recreational facility and use assessments and controlled whitewater boating flow studies during the relicensing process on rivers throughout the northeast region, including the Deerfield, Kennebec, Rapid, Magalloway, Moose, Beaver, Raquette, and Penobscot rivers. AW has actively participated in the relicensing process through submitting comments on the proposed study plan. FERC required the Licensee to conduct a desktop study of the impact of its hydropower operations on whitewater boating opportunities in and below the project boundary as part of its mandate to give equal consideration to power and non-power uses and values under the Federal Power Act.

I. Comments on Interim Report on Recreation Use/User Contact Study and Assessment of Effects the Project has on Recreation Use

A. Introduction

In its Study Plan Determination, FERC recognized that project relicensing provides the opportunity for a new look at project operation including flow modifications to enhance recreational boating opportunities. An examination of recreational boating opportunities, including an examination of adequate flows and access, will inform the development of Protection, Enhancement, and Mitigation (PM&E) measures later in the relicensing process.

In response to requests by American Whitewater and others seeking information on the availability of whitewater boating opportunities in the project area under different operating scenarios, FERC recommended that the Licensee conduct a desktop analysis, as follows:

The analysis should follow the desktop analysis (phase 1) method set forth by Whittaker et al. (2005), which is consistent with generally accepted practices in the scientific community (section 5.9(b)(6)).¹ The analysis should include an assessment of existing river recreation information, the physical attributes of Schoharie Creek, hydrology, and operational constraints, taking into account current conditions, but also considering that changes to existing flows may occur with operational changes. NYPA should gather all readily available, existing information on river boating (i.e., canoe, kayak, and raft) and other recreational activities (e.g. public access locations, and constraints to public access) at the project and downstream of the lower dam. The analysis should focus primarily on desktop methods that rely on existing information and/or limited interview methods that gather flow and recreation opportunity information from people familiar with the river/reach. NYPA also should create a gradient profile for the Schoharie Creek below the lower dam, and identify any other flow-related information that may be pertinent to recreation in the reach. Finally, NYPA should include information on informal and formal put-ins and take-outs, and a description of other recreational boating opportunities in the project area. The results of this desktop analysis should be filed as part of Task 4 – Study Report of the Recreation Use/User Contact Study and would inform a decision on whether additional recreational flow information is needed.

A desktop analysis of a potential whitewater boating resource is the first phase in a whitewater boating controlled flow study that includes a literature review, structured interviews with knowledgeable individuals, and a hydrological analysis of the frequency of boatable flows available in the project area. Depending on the results of the phase 1 analysis, an on-water evaluation of various flows in a step-wise manner may be warranted. On rivers where there is a known whitewater boating resource, an on-water flow study is often required in FERC's study plan determination.

With regard to the geographic scope of the Licensee's study of the impact of project operations on recreational use in the vicinity of the project, the Licensee identified four study areas on Schoharie Creek, and also surveyed regional boating opportunities within a 50-mile radius. The four study areas are as follows:

- Area 1: Schoharie Creek downstream of the Lower Dam, to Max V. Shaul State Park

¹ See, Whittaker, Shelby, and Gangemi (2005). *Flows and Recreation: A Guide to Studies for River Professionals*.

- Area 2: Schoharie Creek from the Gilboa Dam downstream to the Power Authority's Lower Dam
- Area 3: Schoharie Creek upstream from the Gilboa Dam (including Schoharie Reservoir)
- Area 4: Schoharie Creek downstream from Max V. Shaul State Park (the downstream end of the primary study area) to the confluence with the Mohawk River

While the Licensee has identified Area 1 as the primary study area, it has inappropriately omitted from its analysis the 3-mile reach above the Lower Dam that is within the project boundary that forms the Lower Reservoir. The Licensee needs to revise its Recreational Boating Desktop Feasibility Assessment to include in the primary study area the impact of project operations on all waters that fall within the project boundary.

B. Methods

As an initial step in its Recreational Boating Desktop Feasibility Assessment, the Licensee conducted a literature review regarding existing recreational boating opportunities on Schoharie Creek. Unfortunately, there is limited information available either in the American Whitewater river database or in boating guides describing boating opportunities on Schoharie Creek. According to American Whitewater, whitewater boating with rapids ranging from Class I to Class III are known to exist on several sections of Schoharie Creek including: 1) Esperance to Fort Hunter; 2) Gilboa to Mine Kill; and, 3) Hunter to Prattsville. The Licensee did a good job in assembling the limited information available on websites, from recreational groups, and in boating guides. While the Licensee extended its literature review to include all four study areas, it limited its analysis of the physical characteristics, facilities and access, and hydrologic and hydraulic conditions to the primary study area. In doing so, the Licensee excluded from its detailed analysis other waters within the project boundary and elsewhere that may be impacted by project operations.

In its hydrology assessment, the Licensee analyzed project inflows using USGS gages at Gilboa (USGS-01350101), Platter Kill (USGS-01350120), and Mine Kill (USGS-01350140). The Licensee also utilized flow data using USGS gages at North Blenheim (USGS-01350180) and Breakabeen (USGS-01350335). The Licensee should be required to fund and maintain these and any other gages as may be necessary in any future license granted by the Commission.

The Licensee's hydraulic analysis utilized the hydraulic model to determine the maximum depths and average velocities within the primary study area for a range of flows. Unfortunately, the Licensee omitted from its analysis the impact of project operations on flows upstream of the lower dam that may be affected by pool fluctuations in the Lower Reservoir between el.860 ft and el.900 ft. Project operations will certainly have an effect on water depth and velocities upstream of the project, as river features may be intermittently inundated or revealed depending on project operations.

In addition, the Licensee conducted structured interviews with individuals who were identified by American Whitewater, local paddling clubs, and other organizations and knowledgeable individuals with experience boating on various sections of Schoharie Creek. The Licensee did a

good job in identifying and interviewing these individuals given the limited number of individuals with experience boating on the Schoharie.

C. Results

1. Literature Review

The Licensee described the physical characteristics of the primary study area, relying primarily on Google Earth imagery, and identified a gradient ranging from 21 fpm near the Lower Dam to 13.6 fpm as Schoharie Creek approaches the Max V. Shaul State Park. The Licensee did not review historical Google Earth imagery above the Lower Dam to determine the physical characteristics of areas that are impacted by the Licensee's operation of the pumped storage project. The Licensee should expand the scope of its analysis to do so. It should also indicate whether its review of boating guides, websites, and other material provides information on the physical characteristics of Study Area 2 and Study Area 4.

With regard to access both within the primary study area, as well as in study areas 2, 3, and 4, the Licensee has identified numerous access points throughout the reaches. It has not, however, included any information on the suitability of these access points for boating based on either a literature review, structured interviews, or a physical inspection of these boating access points. A cursory inspection of many of these access points reveals serious impediments to boating access on Schoharie Creek at nearly all formal and informal locations. These impediments include steep and rocky embankments, limited parking, long boat carry trails, and mud swamped or overgrown launches. Notably, access immediately below the Lower Dam at the fishing access location below the project is virtually unusable by boaters. The Licensee should undertake a physical inspection of each of these access points in order to assess their adequacy as a boating launch. The adequacy of each of these access points may affect recreational use of Schoharie Creek.

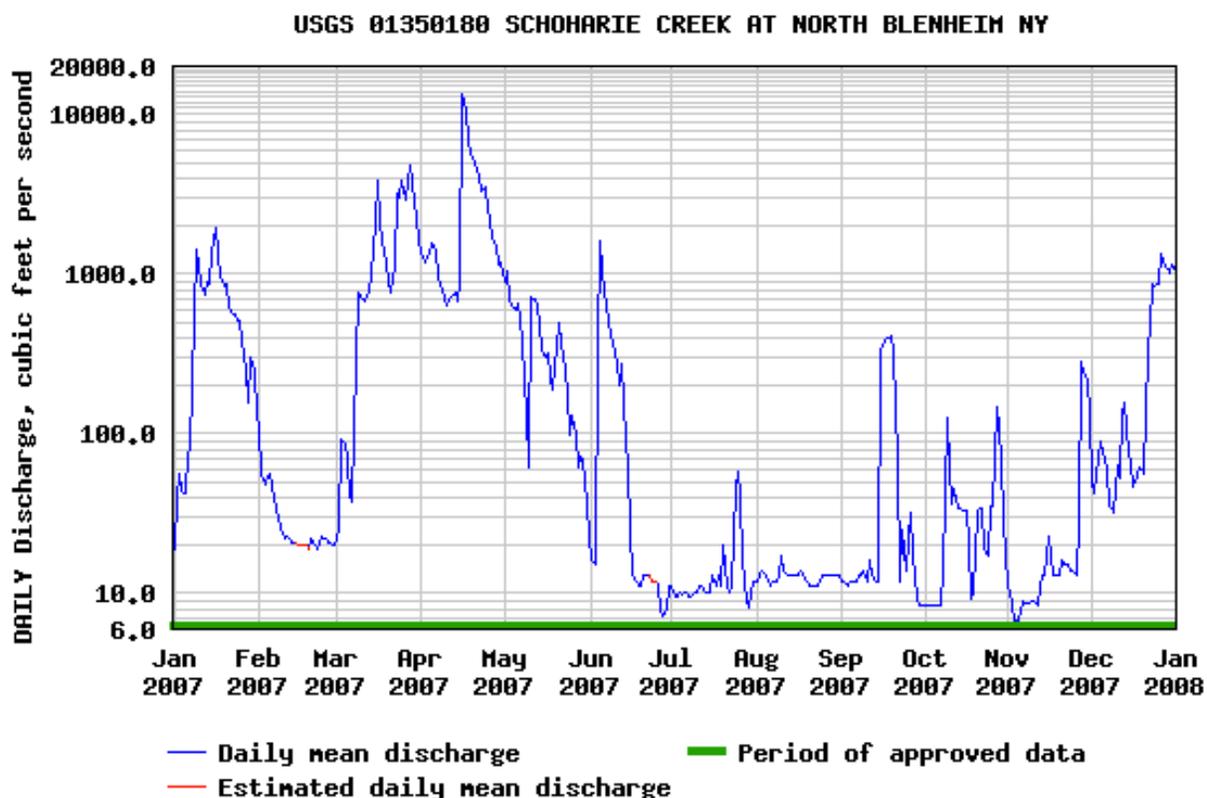
With regard to the relationship between streamflow and recreational boating opportunities, the Licensee correctly acknowledges that little information is known about boatable flows in the primary study area other than a description in the 2005 ADK guide (pre-Hurricane Irene) that references boatable flows between 1.5 feet and 3.0 feet on the North Blenheim stream gage. The Licensee was unable to locate any information identifying minimum boatable and optimal flows for boating in the Primary Study Area. With regard to Study Area 2, 3, and 4, limited streamflow information is available describing several reaches as containing rapids ranging from Class I to Class IV at high flows. The American Whitewater rivers database also lists the segment between Gilboa and Mine Kill as containing rapids ranging from Class II to Class III, but provides no details.

II. Hydrology Assessment

Project inflows are dramatically affected by the diversion of Schoharie Creek above the Gilboa Dam into the Shandaken Tunnel that feeds into the Esopus Creek and ultimately the New York City water system, reducing the effective drainage area to 40 mi². Project inflows include tributaries at Mine Kill and Platter Kill as well as any flows released through Gilboa Dam siphons into Schoharie Creek. NYCDEP is currently installing a low-level outlet in Gilboa Dam.

Once this work is completed, NYCDEP will have the capacity to release a greater volume of water below the Gilboa. NYCDEP is currently considering providing conservation flows of 10-15 million gallons daily into Schoharie Creek.²

In the absence of an on-water controlled flow study, the Licensee estimates that flows above 500 cfs may provide at least a minimum boatable flow on various Schoharie Creek reaches based on the limited information available through its literature review, interviews, and analysis. Presuming the accuracy of this information, the Licensee estimates that there may be 84 boating days annually in a typical year when flows exceed 500 cfs, most frequently occurring during the months of April and May. Mean daily flows exceed this threshold on approximately 23 percent of days annually. The cart below illustrates the frequency of potentially boatable flows in water year 2007:



Under the current mode of operation, project inflows generally equal outflows except that a continuous flow of 10 cfs from the Project is guaranteed from Gilboa dam releases, upstream tributaries, rainfall, and when necessary, storage. In order to assure that sufficient water is available to offset evaporation and conservation flow releases, the licensee has additional storage capacity in the Upper Reservoir beyond what is required for pumped storage operations. The Upper Reservoir has a storage capacity of 18,791 acre-ft, while the Lower Reservoir has a storage capacity of 16,167 acre-ft, the difference being available storage. While the Licensee

² http://www.nyc.gov/html/dep/html/press_releases/15-014pr.shtml#.VuMTG6grKR

asserts that this additional storage capacity is needed for minimum flows or to replace water lost to evaporation, it has not provided any data analyzing the extent to which it uses this excess capacity or the extent to which this capacity might be utilized to supplement project inflows in order to support additional recreational usage of project waters.

Utilizing the Licensee's estimate that a minimum of 500 cfs is required for a minimally acceptable boating experience, a 6-hour release of 500 cfs would utilize 41.3 acre-ft of storage less project inflows, or approximately 9 percent or less of the Licensee's storage capacity. Releases scheduled in April or May, months in which project inflows are typically much higher, the utilization of the Licensee's storage capacity would be far less.

In order to assure that there is sufficient storage capacity to replace water lost through a scheduled boating release, the Licensee could reserve a portion of project inflows for storage. The Licensee should analyze the impact of reserving, for example, 10 percent of project inflows for storage following a boating release in order to replace the 41.3 acre-ft utilized for the release. Additionally, proposals by NYCDEP to release conservation flows in the range of 10-15 million gallons per day from the Gilboa Dam low-level outlet could be used to replace depleted storage in 7 days or less, and perhaps as few as 3 days.

Upstream from the project, the Licensee's pumped storage operations limit recreational boating opportunities by inundating rapids beneath the Lower Reservoir. At full pond at el.900 ft, approximately 3 miles of Schoharie Reservoir are inundated. At low pond of el.860 ft, some of these features are available for boating. The Licensee has done no analysis of the impact of its operations on the availability of these features for recreational boating under different operating scenarios. According to the American Whitewater rivers database, the section of the river from Gilboa to Mine Kill possesses whitewater features ranging from Class II to Class III. Timing the Licensee's pumped storage operations to maximize recreational boating opportunities is within the Licensee's operational capacity, and as such, should be studied.

III. Hydraulic Analysis

The Licensee completed a hydraulic analysis of the primary study area from the Lower Dam to the Max V. Shaul State Park. The hydraulic analysis shows that at flows of above 500 cfs, water depths of 1.5 or greater are often available in the Primary Study Area, Flows of 1,000 cfs often result in water depths greater than 2.1 feet. Based on the 2005 ADK Guide, Schoharie Creek between North Blenheim and the Max V. Shaul State Park can be paddled at water levels between 1.5 and 3 feet.

While the Licensee completed a hydraulic analysis in the primary study area, it has not provided hydraulic analysis of Study Area 2 between Gilboa and the Lower Dam. Inasmuch as the Licensee's pumped storage operations have an impact on the availability of boating resources at the upper end of the Lower Reservoir, the Licensee should expand its hydraulic analysis to include Study Area 2. Providing this information will assist FERC and the parties in determining appropriate PM&E measures later in the relicensing process.

IV. Structured Interviews

Given the limited information available on boating on Schoharie Creek, the Licensee did a good job in identifying individuals with experience boating in the primary study area, and the respondents were able to characterize the flows under varying conditions. The results indicate that there are rapids ranging from Class I to Class III on this river reach, and that these flows provide at least an acceptable paddling experience when sufficient flows are provided. Numerous individuals identified the sufficient flows as the most important factor affecting their use of the resource.

Evaluating the quality of the resource based on the anecdotal information collected by the Licensee is difficult due to a variety of factors, including the following: 1) No flow data correlating to boater evaluation of reach; 2) Lapse of time between boating experience and survey; 3) Differences in water craft and ability; and, 4) Changes since Tropical Storm Irene. A more definitive evaluation of the resource under current conditions would require a controlled flow boating study in which participants of varying ability using different water craft provided a single flow evaluation and a comparative evaluation of the river reach of varying flows in a stepwise manner.

Unfortunately, the Licensee did not include in its survey any questions about river access to determine whether the inadequacy of access limited the ability of the public to utilize the resource. For example, the extreme difficulty of launching below the Lower Dam due to the steep and rocky embankment on river left was not evaluated as an impediment to accessing the upper portion of the Primary Study Area. In addition, the Licensee did not evaluate the impact of the lack of any hand-carry portage around the Lower Dam as an impediment to recreational use. While there is a boat launch at the Mine Kill State Park, the Licensee states that there is no access to the Primary Study Area below the Lower Dam from this access point, raising serious concerns about the complete lack of a usable portage around the project.

The use of Schoharie Creek for recreation and power generation is sufficient to qualify the waterway as navigable-in-fact, and as such, the public has a right to pass freely over its waters. The Licensee concedes that, on average, there are sufficient flows for boating 84 days annually. The presence of the Lower Dam and the Licensee's restrictions on passage from the Lower Reservoir to the Primary Study Area is an impediment to navigation and recreational use of the waterway. The Licensee should include in the desktop boating analysis a discussion of its impediment to navigation and its impact on recreational use.

V. Conclusion

The literature review, hydrology assessment, hydrologic analysis, and structured interviews support the conclusion that when there are sufficient flows on Schoharie Creek, generally above 500 cfs that is available 84 days annually on average, recreational boating is a use that has been utilized by a small but significant number of individuals. The primary limitation on the use of the resource is that the majority of boatable days occur during the months of April and May, with occasional higher flows following significant rain events. Additional usage of the boating resource would occur if scheduled boating releases were provided, either through the use of the Licensee's excess storage capacity or through releases from the Gilboa Dam once the low-level

outlet construction is completed. Additional recreational usage would occur through access improvements at all of the formal and informal access points, including at the access point below the Lower Dam, and the creation of a portage route around the project. The relicensing process provides an opportunity for changes to project operations, use of excess storage capacity, access improvements, and coordination with NYCDEP operations at the Gilboa Dam in order to expand recreational boating opportunities including scheduled releases that would benefit the community.

II. Study Modification Request for Study 4: Recreation Use/User Contact Study and Assessment of Effects the Project Has on Recreation Use

We hereby request that FERC modify *Study 4: Recreation Use/User Contact Study and Assessment of Effects the Project Has on Recreation Use* for the Blenheim-Gilboa Pumped Storage Project 18 CFR 5.15.

(1) Describe the goals and objectives of each study proposal and the information to be obtained.

The goals of a modified study request are as follows:

1. To analyze the use of the Licensee's excess storage capacity in the Upper Reservoir for recreational boating releases under the Operations Model;
2. To evaluate the suitability of formal and informal access points in each of the identified study areas for recreational boating usage and identify potential improvements to parking and boat launch facilities;
3. To analyze the hydrology and create a gradient profile of Schoharie Creek between the Gilboa Dam and the Lower Dam;
4. To identify an appropriate portage route between Mine Kill State Park and Schoharie Creek below the Lower Dam

(2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The requester is not a resource agency.

(3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Schoharie Creek in and below the project boundary has the potential to offer a boating resource when flow conditions are suitable. Conducting the necessary studies and implementing measures to ensure public access to outdoor recreation is in the public interest. It is widely accepted that outdoor recreation has significant benefits to participants including health, well-being, and quality of life. Outdoor recreation also has proven economic benefits for communities located near recreational resources.

FERC must decide whether to issue a license to New York Power Authority for the Blenheim Gilboa Pumped Storage Project. Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located, and what conditions should be placed on any license that may be issued. In making its license decision, the Commission must equally consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. Recreation has been identified as a legitimate project purpose by the Commission. Identifying effects of project operations pertaining to this resource is relevant to the Commission's public interest determination.

(4) Describe existing information concerning the subject of the study proposal, and need for additional information.

While many flow studies have been conducted during FERC relicensings on New England's rivers that have a long history of whitewater paddling use, there is limited information available on the Schoharie River in and below the project boundary. With proper study, planning and flows, there is the potential for improving recreational boating use of Schoharie Creek in and below the project boundary.

Current project operations, however, have adversely impacted recreational boating use and access in and below the project boundary, and there exists the potential for increasing recreational use of Schoharie Creek through changes in the current mode of operation and through access improvements under a new license.

(5) Explain any nexus between Project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Project operations have a direct effect on recreation as the Lower Reservoir impounds and directly withdraws water from Schoharie Creek. When the Lower Reservoir is at maximum pool height of el.900 ft, boating features at the upper end of the project boundary are inundated by project operations. At el.860 ft. some of the river features that are inundated at higher pool elevations are revealed, improving the recreational boating experience between Gilboa Dam and Lower Dam when sufficient flows are present.

The Project creates an impediment to navigation and has an adverse impact on recreational use. The project prevents access to Schoharie Creek below the Lower Dam from Mine Kill State Park and creates an obstacle to boating access below the project boundary. There is no identified portage around the Lower Dam. The inadequacy of access in and below the project boundary likely limits the ability of the public to utilize the resource. Below the Lower Dam, the Licensee created a steep and rocky embankment presumably to prevent erosion, but in doing so, limited access to the waterbody below the Lower Dam.

(6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

As modified, the study we request on Schoharie Creek should follow the standard methodology as described in Whittaker et al., in “*Flows and Recreation: A guide to studies for river professionals*” (2005), as we formally request below. This study would examine:

- The range of optimal and acceptable boating flows for various water craft;
- The frequency, timing, duration and predictability of optimal and acceptable paddling flows under current conditions in the bypass reach, and how proposed alternative operations could be used;
- The access needs of boaters and the current and potential river access option for paddling;
- The flow information needs for boating and the current and potential flow information distribution system;
- The location, challenge, and other recreational attributes associated with river features.

This methodology is designed to gather information to assess the presence, quality, preferred flow ranges, and access for river-based boating.

(7) Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The Licensee will need to modify its Recreational Boating Desktop Feasibility Assessment in order to achieve the modified study goals and supplement its report to document the availability of recreational boating under different operating scenarios. The Licensee will need to analyze the use and replenishment of its excess storage capacity for recreational boating releases at certain times of the year and perform a qualitative assessment of existing and alternative points of access and portage. The estimated cost of these additional tasks is less than \$10,000, depending upon the extent of fieldwork conducted.

Respectfully submitted this 13th day of April, 2016.

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Blenheim-Gilboa Pumped Storage Project
New York Power Authority**

FERC Project No. 2685

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, I hereby certify that I have this day caused the foregoing **American Whitewater's Proposed Study Modification and Comments on the Recreational Boating Feasibility Assessment for the Blenheim-Gilboa Pumped Storage Project (P-2685)** to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 13th day of April, 2016.



Megan Hooker
American Whitewater