



PHIL STECK
Member of Assembly, 110th District

THE ASSEMBLY STATE OF NEW YORK ALBANY

CHAIR
Task Force on
People with Disabilities
COMMITTEES
Health
Insurance
Judiciary
Labor
Transportation

Statement of Assemblyman Phil Steck

I want to thank NYPA for meeting with me and giving me advance notice of how NYPA would be proceeding in the process for re-licensing the Vischer Ferry dam (VFD). This gave our office the opportunity to study the issue. We have initial familiarity with the issue through our office's attendance annually at the Mohawk River Symposium sponsored by Union College.

Unfortunately, based on our review, we cannot agree with the current proposal as to the studies that are required and urge NYPA to change course in one respect. We believe the effect of VFD in exacerbating the problem of ice jam flooding has not been studied by government.

To review, VFD is owned by New York Power Authority (NYPA) and the dam is used for Hydropower at the Vischer Ferry dam, and it is used for Navigation at Lock E7.

The initial license application was filed by NYPA to FERC on 31 May 2019, and the current license will expire on 5/31/2024. The initial application for the Vischer Ferry dam (#4679) is combined with the Crescent dam (#4678) because they are on the same river and the same license schedule.

NYPA released an initial scoping document in May (2019) that outlines the nature of the application, the fact that the two projects would be treated together, and the general aspects of the Mohawk River and the dams.

Comments and specific Study plans by outside organizations and individuals had to be submitted by 9 August 2019 to FEMA, and following this submission deadline NYPA pulled together not only its own intended studies, but also the study plans submitted.

Comments and study requests included issues and requests primarily related to:

- a) Recreation
- b) Fish passage
- c) Water quality
- d) Flooding and ice jams (see below).

There were five study requests for flooding (Steck, Garver, Woidt, Duggan, Wege). All five requests noted that a particularly important issue is ice jamming and the effect that the VDF may have on creating thick sheet ice, and preventing passage of ice floes. At issue is the role

that the VFD has on ice jamming and the resulting flooding caused by ice jams, particularly in the Stockade area of Schenectady.

NYPA submitted its Study Plan on 23 September. This initial document will guide discussions and planning through the initial re-licensing process.

The NYPA Plan rejects all studies of flooding. This is incorrect. NYPA has failed to distinguish between *freewater floods* and *ice jam floods*. NYPA is justified in its conclusion that freewater floods have been studied. On the other hand, ice jams floods are much more complicated and poorly studied. In explaining why floods and ice were NOT going to be part of the study plan, NYPA wrote (section 3.1.3)

“Several stakeholders provided comments related to flooding upstream of the Vischer Ferry dam and the effects, if any, of the Vischer Ferry Project operations on localized flooding. More specifically, some stakeholders requested that the Power Authority conduct a study to evaluate the role of Vischer Ferry dam in upstream flooding and to consider alternative dam configuration or operation to help reduce flooding potential.

The Stockade District (an historic waterfront area) of Schenectady, New York has a long history of flooding. The Stockade District lies within the 100 year floodplain of the Mohawk River and has been flooded repeatedly both before and after the Crescent and Vischer Ferry dams were built during construction of the original canal system (Shumaker and Rock, 2018). Over the years, numerous studies have been conducted by various entities, including the State of New York, NYSDEC, the USGS, and the Power Authority to examine the frequency and causes of the Stockade District flooding, including the role of ice jams and the potential effects of existing dams in such flooding. In a recent filing to FERC on August 9, 2019, the Power Authority provided FERC with two of the more recent reports on this subject. The letter report dated April 17, 2018 prepared by Gomez and Sullivan found that operation of the Vischer Ferry dam has little effect on upstream flooding, and that reducing the dam crest and installing crest gates would have almost no effect on upstream water surface elevations in the Stockade District during 10-year and 100-year flood events (Gomez and Sullivan, 2017).

More comprehensive studies of the lower Mohawk River flooding have determined that ice jams are more frequently the cause of flooding in the Stockade District than high river flows or the operation of the river’s dams. For this reason, the USGS, in partnership with other agencies and researchers, has conducted several studies to understand the nature and frequency of flood causing ice jams and to develop modeling tools to predict the potential for ice jams and associated flooding on the lower Mohawk River. (USGS, 2019).

NYSDEC has made the issue of flooding and flood control strategies a significant component of its Mohawk River Basin Action Agenda and prepares regular reports and updates on cooperative initiatives being undertaken to better understand, predict and mitigate flooding on the lower Mohawk River (NYSDEC, 2018). In addition, in 2018, the U.S. Congress authorized \$1.3 M in funds to assist the City of Schenectady with a study to evaluate options and develop flood mitigation plans for the Stockade District, and the Federal Emergency Management Agency (FEMA) has recently earmarked \$7.5 M for implementation of Stockade District flood mitigation strategies

(The Daily Gazette, 2019).

In short, the issue of flooding upstream of Vischer Ferry dam has been extensively studied and both ongoing and previous studies have repeatedly demonstrated that the existence and operation of the Vischer Ferry Project has little or no effect on upstream flooding of the Stockade District. Because the existing information is clearly sufficient to evaluate the flooding issue (see Criteria 4, 18 C.F.R. 5.9(b)), the Power Authority is not proposing a Vischer Ferry flooding study."

Against this background, we have the following specific comments:

- 1) I am personally familiar with the efforts to mitigate the effects of flooding in the Stockade. The ongoing work in that area has nothing to do with ice jam flooding.
- 2) The issue is ice jamming and ice jam flooding. The issue is not freewater flooding. There have not been any specific studies that address the role of the VFD on ice formation and entrapment. NONE. The Gomez and Sullivan report only addresses free-water flooding.
- 3) The USGS has NOT studied ice jam flooding. The erroneous reference above is simply the USGS web page for the ice jam monitoring system. This is simply a web page that serves data on the warning system that measures changes in water levels at and above the VFD in the case of ice jams. The system is unique, and one-of-a-kind because the ice jam hazard is so serious in front of the VFD. The USGS ice jam monitoring systems assumes the existence of ice jam flooding. It does not address what is necessary to solve this problem.
- 4) There have been a number of studies that in fact do show that the sheet ice in front of the VDF, the build up of sediment, and the pinch point in the Knolls drives ice jams, that then flood the Stockade. This link is indisputable. See submitted letter to FERC by Garver (August 2019).

The historical issue of whether the Stockade floods or not is irrelevant. **The primary issue is: has the dam made flooding worse.** There is no substantial quantitative data on this issue. But the recent study by Shumaker Engineering showed that nearly all damaging historic floods in the Stockade are driven by ice jams. So understanding ice jams, and the relationship between ice jams and the VFD, is the key to understanding flooding in the Stockade.

Freewater models of flood levels (with or without dam) have been used to infer that the dam has no effect on the Stockade. They are using the wrong tool: we need to understand Ice Jam driven flooding.

Thank you.

Document Content(s)

FERC October on letterhead.DOCX.....1-3

ORIGINAL

31 Van Voast Lane

Glenville, NY, 12302

October 29, 2019

Kimberly D. Bose

Secretary, FERC

888 First Street, NE

Washington, DC 20426

FILED
OCT 30 2019
FEDERAL ENERGY
COMMISSION
WASHINGTON, DC 20426
U.S. DEPARTMENT OF ENERGY

Vischer Ferry Dam Project #4679-049

Dear Secretary Bose:

I ask that the re-licensing studies of the Vischer Ferry Dam (VFD) hydroelectric plant include flooding issues exasperated by this dam.

I am a retired licensed engineer formerly employed by the New York State Department of Environmental Conservation Flood Control Bureau (NYSDEC) for almost thirty years. I was involved in the planning, design, construction, operation and maintenance of many flood control projects constructed by the five Army Corps of Engineers (COE) districts serving New York State.

The VFD was substantially completed in 1913 as a part of a ten year 500 mile canal construction project. As part of the state canal system, the Mohawk River was canalized from Utica to its confluence with the Hudson at Waterford. The river was dredged and movable dams constructed to produce the designed twelve foot depth. The exception was the construction of concrete gravity dams at Vischer Ferry and downstream at Crescent.

The VFD, with nearly a 2000 foot spillway constructed approximately thirty feet above bedrock, caused ice jam flooding that same year and the year after (1914 flood of record).

Since the VFD was constructed, the eleven mile reservoir pool flooded the Schenectady /Scotia area 23 times. Fourteen flooding events were ice jam events.

The flood prone Schenectady Stockade area is culturally unique dating back to the eighteenth century.

Over the course of twenty years I developed an understanding on what stops an ice run and creates ice blockage and backwater flooding. Briefly, a reduction in river slope, an ice covered pool, bridge piers, sharp bends in the stream channel and the confluences of high gradient tributaries trigger ice jamming. The Niskayuna Pool, formed by the VFD, triggers ice jamming by (1)thick sheet ice on the pool, (2)the sharp right bend in the river channel and (3)bridge piers.

There are small gates in the north section of the VFD. However, the Niskayuna Pool is not drained during the winter months. IF there was a winter draw down of only five feet the historical ice jam flooding events would be reduced to three. Tremendous economic loss and great inconvenience and stress would have been eliminated. I urge that this issue be addressed in the study to re-license this hydro electric plant.

I urge one additional study concerning the VFD and the re-licensing of the hydroelectric plant. I am aware that several hydraulic studies have been made on the backwater effect from the VFD in the Schenectady/Scotia reach of the Niskayuna Pool that have determined only inches of flood water reduction would result even if the VFD was removed. I question the data impute into such studies as the friction factor is so different when the reservoir pool transforms from a placid reservoir into a flood wave. The narrow rock cut channel section downstream from the Rexford Bridge will have a much higher friction factor (having high velocities) than the wide silt lined channel in vicinity of the Western Gateway Bridge (having small velocities).

My main point is the re-licensing process offers an opportunity to define and adress a long standing problem using modern technology. Not available when the VFD was designed, the National Weather Service can now reliably forecast huge runoff events days before they occur. Local gauging stations can monitor the building flood wave and refine the arrival time of the flood wave. I believe IF there was a designed gated opening in the VFD that would pass a base flood flow (130,000 cfs), without overflowing the existing dam crest, and the Niskayuna Pool was drawn down prior to the arrival of the flood wave, significant flood level reductions in the Schenectady/Scotia area could be realized.

Madam Secretary, the area I am speaking about has billions in constructed development in the 500 year floodplain, including new hotels and a large manufacturing plant (General Electric). The Irene event of August, 2011, caused over a hundred million in damages.

I urge the study to re-license the VFD hydroelectric plant, include a comprehensive flood control review. The City of Schenectady, Stockade Association, Community College and Scotia/Glenville will appreciate flood relief benefits in future years.

Sincerely,

Russell Wege

Retired engineer

Copies to:

Senator Jim Tedisco

Senator George Amadore

Assemblyman Angelo Santabarber

Assemblyman Phillip Steck

Assemblywoman Mary Beth Walsh

Supervisor Christopher Koetzle

City of Schenectady, Kristin Divtto

Professor John Garver

Document Content(s)

15398888.tif.....1-2

NON-DECISIONAL

31 Van Voast Lane

Glenville, NY 12302

November 6, 2019

Jody L. Callihan, PhD

Federal Energy Regulatory Commission

888 First Street, Suite 6H-03

Washington, DC 20426,

Reference: Vischer Ferry Dam, Hydroelectric Plant

Project #4679-049

Dear Jody,

It was good to meet you and have a brief chat at the recent scoping meeting concerning this project.

Some further thoughts may have importance in FERC's consideration of the flooding issue concerning the study plan for re-licensing this project.

The NYPA has referenced two studies, one a 1979 DEC study and a recent study by Gomez & Sullivan Consultants that conclude the Vischer Ferry Dam produces only negligible backwater flooding in the Schenectady/Scotia reach of the Niskayuna Pool.

Some background information may be helpful in understanding these two studies. First, I wrote the 1979 DEC report. I do not consider myself a technical hydrologic engineer. (My education and technical experiences was in petroleum engineering) A technician, Mike Milburt did the technical analysis of that 1979 study. Being responsible for that report, I recall Mike had a difficult time with friction factors in using the HEC-2 program that would recreate the recent flooding event.

I recall Mike used a very smooth friction factor, a figure that would NOT be used outside of lab conditions. Neither of us were happy using a number that would normally not be used to calculate river backwater conditions. However, that unrealistic number was used in that study as it duplicated the recent flooding event.

Years later, and hopefully a little wiser, I concluded that the Vischer Ferry Dam rendered that study in error. The error was, and remains, the spillway elevation of the dam (approximately 210 feet), sets the channel parameter, NOT the bottom of the river/pool bed. The Niskayuna reservoir/pool bottom is 10 to more than 20 feet below the spillway elevation. This results in moving water flowing over a static water

column for the major length of every cross section through the permanent eleven mile pool. I must conclude that no channel bottom friction occurs. I believe this is where error occurs in using standard hydraulic backwater computations.

Jim Duggan and I have discussed this understanding with the NYPA consultants Gomez and Sullivan. They do not agree with my stated understanding, saying that turbulence in the pool column has been observed below spillway elevation. Their studies and others were based using the full cross section of this channel.

The effect of this turbulence on modeling flood flows is debatable. It certainly reduces the friction factors throughout the Niskayuna Pool during flooding events and allows one to question the validity of modeling rivers that are affected by a major dam obstruction.

Gomez and Sullivan Consultants produced five or six alternatives for managing water levels at the dam. Each alternative illustrates the negligible effect on water elevations in the Schenectady/Scotia area. One alternative involved a shallow cut in the dam.

I do not believe that study was sufficient in analyzing the impact of this dam on the high- value upstream properties in the Schenectady/Scotia area. I suggest a few additional runs that assumes a gated weir cut in the spillway that would pass a base flood flow.

May I further suggest a new study employ a management tool. Assume a major storm event of 6 to 10 inches in the watershed with a predicted flood wave 24 hours in advance: and assume the new flood gates are opened, allowing the Niskayuna Pool to partly drain prior to the arrival of the flood wave. Such an ability to manage the pool elevation would produce higher velocities that would shorten the flooding time and may significantly reduce flood elevations.

Finally, the ability to draw down the Niskayuna reservoir pool during the winter months would yield significant flood elevation reductions from ice jams in this high-value area.

Therefore, I am convinced that flooding is a valid concern and should be included in the proposed studies for re-licensing the Vischer Ferry Dam hydroelectric plant.

Sincerely,

A handwritten signature in black ink that reads "Russ Wege". The signature is fluid and cursive, with the first name "Russ" and the last name "Wege" clearly distinguishable.

Russell Wege, retired engineer

copies to:

Jim Duggan

John Garver

Document Content(s)

15415401.tif.....1-3

John Cococcia, Niskayuna, NY.

Hello

I was just reading an article about possible ice jam study as related to the relicensing of the Vischer Ferry Dam (P-4679).

I live between the Vischer Ferry Dam (Lock 7) and the Crescent Dam (Lock 6) on the Mohawk River. I believe it is IMPERATIVE that any review of ice jams related to Lock 7 (P-4679) also include a review of ice jams related to Lock 6 (P-4678). Often times, the ice and debris that flows over Lock 7 contributes to jams at Lock 6 which impacts all of the property and home owners along that stretch of the river. Making any recommendations related to Lock 7 must consider the impact to Lock 6 and the stretch of river between the two.

Thank you for taking my comment.

Regards,

John

Document Content(s)

92754.TXT.....1-1

Carol Delamarter, Schenectady, NY.
Stockade Association of Schenectady
32 Washington Ave
Schenectady, NY 12305

December 19, 2019
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Vischer Ferry Dam Project #4679-

049

Dear Secretary Bose,

Dear Secretary Bose:

The Stockade Association of Schenectady requests that NYPA revise their Study Plan submitted to FERC on September 23, 2019. A revised study plan must specifically address flooding issues related to the effects of the operation of Vischer Ferry hydroelectric project on flooding issues in the impoundment area of the Vischer Ferry dam.

The Stockade Association, established in 1958 and incorporated in 1973, is a 501 (c) (3) charitable organization and was formed to preserve, protect and improve the Stockade Historic District in Schenectady. The Historic Stockade, on the south shore of the Mohawk River, was designated a National Register historic neighborhood in 1973 and New York State's first historic district in 1962.

In reading the FERC Scoping Documents it is our understanding that in order for FERC to complete the relicensing process for Vischer Ferry Hydroelectric plant, FERC must have the information needed to complete an environmental assessment. This environmental assessment requires that all issues including flooding (Section 4.2.2 of SD 2) are analyzed. To do this NYPA must provide data that allows for a thorough and balanced assessment of all impacts of the project on resources. The NYPA Study Plan, as submitted, asserts there is sufficient existing information to allow FERC to evaluate flooding issues in order to complete an Environment Assessment. (Section 3.1.3 related to Criteria 4, 18 CFR 5.9 (b)). The Stockade Association asserts this statement is incorrect and more study is required.

In its Study plan submission letter to FERC, NYPA asserts further study is not needed as the several studies they cite in Section 3.1.3 are adequate.

The work done by Shumaker and Rock (2019) for Phase 1 of the City of Schenectady flood project was cited by NYPA. Shumaker consultants have stated their investigation was limited and did not include any review of VFD operations on flooding in the Stockade. Because of funding for their City of Schenectady work, consultants were not allowed to make recommendations except in Stockade neighborhood. In PAD comments, Shumaker consultant, James Woidt recommended that a study be conducted that quantifies the frequency and magnitude of ice jamming on the Mohawk

River upstream from VFD and quantifies the impact of VFD operations on upstream flooding.

Another study referred to was work by USGS. Again it appears USGS modeling tools referred to by NYPA are monitoring ice jams and their backwatering between Lock 7 and 8 but have not addressed how adequately modifying the design and operations of Vischer Ferry gateless dam could mitigate the formation of backwatering and ice jams.

The NYSDEC Mohawk River Basin agenda referred to by NYPA, includes initiatives to better understand flooding throughout the entire Mohawk River Basin. To date, the area of the lower Mohawk River in question has not been analyzed nor is it clear that any DEC consultant workplan includes any study of the impacts of the 100 year old gateless dam on this section of Mohawk River Basin. NYPA is relying on an as yet unpublished DEC Mohawk River Basin report as sufficient for FERC to complete their Environmental Assessment.

The Gomez and Sullivan findings are being challenged in the comments submitted by several stakeholders. The models and scenarios used in the Gomez and Sullivan study did not assess modifications to dam crest and gates that could significantly change backwatering and localized flooding. Such modifications in dam operations combined with updated technology to forecast high water events throughout the basin could prevent local flooding to properties in Schenectady especially Historic Stockade, Scotia and SUNY Schenectady County Community College.

Relevant public interest considerations in regard to the proposed study- As stated here and by others the area known as the Stockade was listed on the National Register of Historic Places in 1973. It became New York State's first historic district in 1962 and includes 390 properties covering approximately 90 acres. Because of the location of the Stockade neighborhood on the Mohawk River, it has had historic and cultural significance for the City of Schenectady since it was first settled in 1661 as a water gateway to the west. FEMA has recently designated that 60-75 residential structures are located in a special flood hazard area. Proposals to mitigate periodic flooding of these properties require elevating or moving structures that have been an important part of the historic and cultural fabric of the Stockade community. This disruption of National Registered buildings and cohesive neighborhood setting located in the VFD impoundment area (approximately 8 miles upstream) has not included any assessment of impacts from VFD operations. Section 106 of National Historic Preservation Act of 1966 (NHPA) requires that FERC, as a federal agency taking a licensing action and completing environmental assessment, must have sufficient information to determine that the operation of VFD will have no significant impact on this NR setting. In their Study Plan, NYPA has not provided assurances that the information needed by FERC to issue a finding of no significant impact from Vischer Ferry Hydroelectric operations is currently available without further study. Property owners in the Historic Stockade neighborhood are being asked to make decisions and costly investments for the future of their historic homes. The 100 year old Hydroelectric dam operations downstream of Stockade should also be required to study and

make modifications to operations at VFD if it is found to reduce the impact on future flooding in the Mohawk River Basin.

Document Content(s)

92759.TXT.....1-3

gloria kishton, Schenectady, NY.
December 20, 2019
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Vischer Ferry Dam Project #4679-

049

Dear Secretary Bose,

Schenectady Heritage Foundation is a 501c3 non-profit organization founded in 1979 whose mission is to foster historic preservation in Schenectady County. To that end, we wish to comment on the Vischer Ferry Dam Project (#4679-049).

The Foundation is advocating that New York Power Authority be required to revise their Study Plan submitted to FERC on September 23, 2019. These revisions must specifically address how the operation of the Vischer Ferry hydroelectric project affects flooding issues in the impoundment area of the Vischer Ferry dam, especially in the Stockade Historic District, which is bordered by the Mohawk River.

Past studies cited by NYPA are inadequate and do not take into account new scientific information and technology that can help to analyze both ice jams and flooding in the area between Locks 7 and 8. This area includes the Stockade, a highly sensitive National Historic District, which was listed on the National Register of Historic Places in 1973, and became New York State's first registered historic district in 1962. Architecture in this area spans several centuries and includes some of the Nation's oldest examples of early Dutch housing. Every avenue of investigation and study should be thoroughly pursued in order to preserve this district, an important cultural resource.

Property owners, the City of Schenectady, and other government agencies are currently considering various flood mitigation measures to address the affects of flooding in the Stockade. These include "managed retreat" and elevating houses. At a time when such extreme measures and millions of dollars are potentially being spent, it is imperative that the best science and studies inform both the property owners and agencies that may be making decisions about such disruptive initiatives. We must be certain that everything possible has been done, vis-a-vis the Vischer Ferry Dam operations, to mitigate flooding, BEFORE other land-based measures are considered.

As part of a final Environmental Assessment, Section 106 of National Historic Preservation Act of 1966 (NHPA) requires that FERC, as a federal agency taking a licensing action, must have sufficient information to determine that the operation of VFD will have no significant impact on the Stockade, a National Historic District. In their Study Plan, NYPA has not provided assurances the information needed by FERC to issue a finding of no significant impact from Vischer Ferry Hydroelectric operations, is currently available without further study.

Property owners in the Historic Stockade neighborhood are being asked to make decisions and costly investments for the future of their historic homes and to preserve the Stockade, a National cultural resource. The 100 year old Fischer Ferry Hydroelectric plant operations, downstream from the Stockade, should be required to study and make modifications to its operations if such modifications are found to reduce the impact on future flooding in the Mohawk River Basin.

Document Content(s)

92764.TXT.....1-2

Phil Steck, Albany, NY.
PHIL STECK
Member of Assembly, 110th District

December 20, 2019

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

RE: Docket # P-4678 and P-4679

Dear Secretary Bose:

On behalf of my constituents in the 110th Assembly District, I would like to thank FERC for its recent comments to NYPA regarding proposed studies on the potential effects of the Vischer Ferry Project on ice-jam flooding in the lower Mohawk River.

Additionally, as mentioned in our original submission, we would like to re-emphasize our request for a full analysis of the Crescent and Vischer Ferry dams effects on water quality along more than 20 miles of the Mohawk River. Specifically, I would like to request the addition of chlorophyll and nutrients to the list of parameters to be include in its water quality study. Water quality in these impoundments affects algal growth, which in turn can affect drinking water quality and/or treatment costs by increasing the risk of formation of disinfection byproducts or harmful algal blooms (HABs). More than 100,000 people in Colonie and Cohoes rely on the Mohawk River as a drinking water source, and more than 120,000 people in Niskayuna, Schenectady, Scotia, Glenville, Rotterdam and Ballston rely at least in part on aquifers under the influence of Mohawk River water.

Thank you for your kind consideration of this request.

Sincerely,

Phil Steck
110th Assembly District

Document Content(s)

92763.TXT.....1-1



United States Department of the Interior

NATIONAL PARK SERVICE
NORTHEAST REGION
15 State Street
Boston, Massachusetts 02109-3572

IN REPLY REFER TO:

Comments on Proposed Study Plan and Responses to Additional Information Requests
New York Power Authority

Crescent and Vischer Ferry Hydroelectric Projects, FERC P-4678, P-4679, Mohawk River, NY

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.R., Room 1A
Washington, DC 20426

December 20, 2019

Dear Secretary Bose:

The National Park Service (NPS) responds to the Proposed Study Plan (PSP) and Responses to Additional Information Requests (AIRs) for the Crescent and Vischer Ferry hydroelectric projects, located on the Mohawk River with powerhouses in the towns of Colonie and Clifton Park, New York. The PSP was prepared as part of an application for a new federal license. We offer the following comments based on the PSP, submitted by New York Power Authority (NYPA), the current licensee, on September 23, 2019, on information we obtained at the site visit on July 10, 2019, the joint agency meeting on July 11, at a study plan meeting organized by NYPA and attended by FERC staff on October 23, 2019, and FERC Staff Comments on the PSP of December 17, 2019.

2.7 Recreation Study

FERC's August 9, 2019 Requests for Additional Information and Study Requests specifies that that the Recreation Study should, at a minimum:

1. Inventory all formal and informal public and private recreational sites/facilities within and adjacent to each project's boundary [page 13, Criterion (6) item 1]
2. Administer a recreation use survey that addresses all recreation activity types known to occur or potentially occur at each project.
 - The survey instrument should include items to assess visitor perceptions of crowding, recreational conflict, conflicts between the public and adjacent property owner(s), adequacy and placement of signage, adequacy of recreation facilities and access to the projects, and effects of project operation and management on recreation and recreation opportunities at the projects (e.g., fluctuating reservoir levels).[page 14, Criterion 6, item 2, 3rd bullet]

By contrast, NYPA's proposed Recreation Study is limited to "non-commercial public recreation sites, facilities, and amenities" (PSP 2.7.1, .3, .7). While the emphasis on publically available facilities and activities is appropriate, it is overly restrictive given the nature of on-water and shore-side recreational activities within the boundaries of these two projects. Recreation is very different at Crescent and Vischer Ferry than at most hydro projects in northeast, which are located in comparatively remote areas. The New York State Department of Public Works constructed these facilities during the 1920s as adjuncts to Barge Canal development. Their waters are used for commercial tug and barge traffic, small cruise ships, tour boats and private watercraft ranging from stand-up paddleboards to large motor yachts.

In addition to about a dozen formal and informal public access facilities within the project boundaries, there are at least five commercial marinas or boat clubs on the Crescent impoundment and four on the Vischer Ferry impoundment along with at least three boathouses and docks for university, school, and/or club rowing teams. While these commercial and club facilities are not public, they serve a large number of recreational users.

We do not propose the same level of Site Use and User Survey for marinas and clubs that NYPA proposes for project recreation sites, but they should be included in the Recreation Facility Inventory. The level of additional effort will be small. All docks and facilities on this section of the Mohawk River are required to have a Use and Occupancy Permit from the Canal Corporation. Additional information about marinas and boat clubs appears in the Canal Corporation's *Cruising Guide*, (2006), Richardson's *Hudson River & Adjacent Waterways Chartbook & Cruising Guide*, 3rd Ed.(2013), and the *New York State Canalway Water Trail Guidebook* (Waterford, NY: Erie Canalway National Heritage Corridor, 2019) pp 186-205.

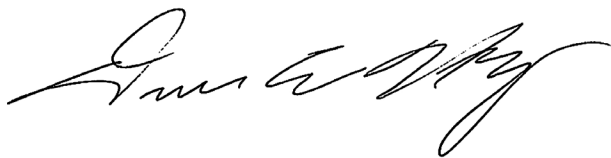
Floating mats of invasive water chestnut in the Crescent and Vischer Ferry impoundments render some access points unusable by mid-summer each year. The Inventory and Study Report should recognize late season limitations to access at particular sites and address the impacts of non-native species on recreational use. The Recreation Management Plan should propose measures to manage water chestnut on project waters.

The NYS legislature authorized transfer of the Canal Corporation from Thruway Authority to NYPA in April 2016 and the change became effective January 1, 2017. The Canal Corporation is now listed as a subsidiary of the New York Power Authority so any action by Canal Corp is effectively an action by the licensee. Since NYPA took control of Canals the annual navigation season has been shortened by several weeks at either end. Further changes to navigation on the Mohawk are currently being discussed under a NYPA initiative called "Re-Imagine the Canals." Some plans submitted by BuroHaphold, NYPA's principal consultant on the Re-Imagine initiative, recommend full or partial closure of segments of the canal system. Those changes would eliminate through traffic for both commercial and pleasure vessels and would certainly have an impact on recreational use within the project boundaries.

While they were once separate entities within state government, operational changes by the Canal Corporation now have a direct effect on recreational use and access at FERC licensed projects operated by its parent. The Recreation User Survey and Study Report and the resulting management plan should address the effects.

The NPS appreciates the opportunity to comment on the PSP and looks forward to providing assistance to the applicant. Any comments or questions should be directed to the undersigned at Duncan_Hay@nps.gov or by phone at 617-223-5056.

Sincerely



Duncan E. Hay
Hydropower Licensing Specialist
National Park Service, DOI Region 1

Document Content(s)

NPS comments on Crescent-Vischer Ferry PSP.PDF.....1-2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits

625 Broadway, 4th Floor, Albany, New York 12233-1750

P: (518) 402-9167 | F: (518) 402-9168 | deppermitting@dec.ny.gov

www.dec.ny.gov

December 20, 2019

New York Power Authority (NYPA)
Attn: Mark E. Slade, Licensing Director
123 Main Street
White Plains, NY 10601

RE: Proposed Study Plan Comments and Study Requests
NYPA Projects
Crescent Hydroelectric Project (FERC No. 4678)
Vischer Ferry Hydroelectric Project (FERC No. 4679)
Town of Colonie, Albany County
Towns of Clifton Park and Halfmoon, Saratoga County
Town of Niskayuna, Schenectady County

Dear Mr. Slade:

The New York State Department of Environmental Conservation ("NYSDEC" or "Department") is submitting comments on the September 23, 2019 Proposed Study Plan and Response to Additional Information Request submitted by the New York Power Authority ("NYPA" or "Applicant") for relicensing the existing Crescent Hydroelectric Project (FERC No. 4678) and Vischer Ferry Hydroelectric Project (FERC No. 4679). The two projects, collectively referred to as the "NYPA Projects", are located on the Mohawk River with the Crescent Project located in Albany, Schenectady, and Saratoga Counties, New York and the Vischer Ferry Project located in Albany and Schenectady Counties, New York.

A Proposed Study Plan public meeting was held to discuss the NYPA projects on October 23, 2019 at the Hilton Garden Inn, Albany Airport, Albany, NY. In attendance at this meeting were representatives from the Federal Energy Regulatory Commission ("FERC"), NYPA, their consultant Kleinschmidt, USFWS, NYSDEC, Riverkeeper, other non-governmental agencies as well as interested members of the public. The purpose of the meeting was to present the proposed study plan, address questions, and accept comments and requests from those in attendance in preparation for official submissions of responses to the proposed study plan.

Comments on the Proposed Study Plan

The Proposed Study Plan is generally well-organized and addresses many of the several key issues for the NYPA Projects. NYSDEC offers the following comments and recommendations on the proposed studies:

I. Water Quality Study

NYPA proposes to conduct continual monitoring of Dissolved Oxygen (DO) and water temperature at 30-minute intervals. NYSDEC requests that these parameters be continually monitored at 15-minute intervals.



NYPA also proposes to conduct monthly water quality profile sampling, NYSDEC requests that NYPA conducts weekly water quality profile sampling. This could be accomplished at the same time the weekly spot checks and calibrations of the meters are conducted.

Following participation in an additional teleconference on December 17, 2019 with staff from NYSDEC, USFWS, NYPA and Kleinchmidt, NYSDEC would also like to request the addition of bypass monitoring sites. There should be two bypass monitoring sites at each of the NYPA Projects. Staff is requesting two because of the large size of the Mohawk River. At the Crescent project, one should be sited below Dam A and the other should be sited below Dam C. At the Vischer Ferry project, one should be sited below Dam D and the other should be sited below Dam F. NYSDEC would also like to request that the location of the tailwater monitoring site at both of the NYPA Projects be located not immediately at the outflow, but further downstream so that it may capture the outflows of all turbines under all possible operating scenarios.

II. Fish Entrainment Study

NYSDEC agrees with the proposed study but wishes to express the strong desire that the study includes both the Kaplan and the Francis turbines and both the Crescent and Vischer Ferry locations for analysis. While both locations are similar, there are different environmental variables that may impact which fish could be entrained. Likewise, Francis and Kaplan turbines do not operate within the same ranges and should be equally investigated.

III. Blueback Herring Migration Study

Based on a follow-up phone call held on November 7, 2019 including NYPA, Kleinschmidt, NYSDEC, USFWS and FERC, NYSDEC agrees that there is a large data pool already available for juvenile Blueback Herring and their interaction with the NYPA projects. NYSDEC currently has a greater interest and concern, at this time, in adult Blueback Herring and their interaction with the NYPA projects. As such, the currently proposed study and its goals to assess the timing, duration, and magnitude of the immigrating adults is acceptable; however, NYSDEC is also interested in assessing the timing, duration, magnitude of the emigrating adults as well as downstream mortality. The relationship between the NYPA projects and the adult Blueback Herring population, particularly during their outmigration, is incredibly important to assessing the impacts on the fishery.

NYSDEC requests that the monitoring commence just prior to the opening of the Canal System in April, when the canal will be in operation for use of the deployment of navigational buoys and other equipment for the canal season which fish may take advantage of for migratory purposes. It is also requested that the monitoring continue into October, to assess the downstream migration. NYSDEC would also like to request that some adult Blueback Herring be collected and equipped with acoustic tags. These fish could be collected from just prior to or within the canal flight so that they can be captured moving past the first hydroacoustic array and again when they are emigrating from the Mohawk River. Tagging in the locks may prevent loss of tagged fish due to "fallback", the moving of fish back downstream due to a stress event, but it may also present bonus data on how lockages affect migrating Blueback Herring and mortality from exposure to multiple lockages.

Understanding that the proposed study is already quite large and will be demanding of resources, NYSDEC suggests the creation of a fund that can be awarded in the form of a competitive grant to educational facilities to conduct an acceptable study(ies) in lieu of additional requests. This could relieve NYPA with some of the burden NYPA while also delivering

additional data to the resource agencies, which will further inform management of the Blueback Herring stock and how it may relate to the NYPA projects.

IV. Fish Community Study

NYSDEC agrees with the proposed study and has no further comments.

V. Aquatic Mesohabitat Study

NYSDEC agrees with the proposed study but would like to request that the study being conducted take into account the differences in water level when the flashboards are both in place and removed. This could be accomplished by making field observations during the summer field season and again in the fall after the flashboards have been removed and the impoundments have responded to the change in elevation.

VI. Bald Eagle Study

NYSDEC agrees with the proposed study and has no further comments.

VII. Recreation Study

NYSDEC agrees with the proposed study and had no further comments.

Study Requests

The New York State Department of Environmental Conservation requests that the Applicant conduct the following studies:

I. American Eel Study

American eel (*Anguilla rostrata*) has a wide range across the Eastern United States and New York State where it is native in 17 of the 18 watersheds in the state. Eel runs, in which young-of-year juvenile eels known as elvers migrate into freshwater habitat, have long occurred with elvers scaling waterfalls and the faces of dams to access more habitat further inland. Despite their robust nature, the American eel population has been steadily in decline and the construction of dams and the operation of hydropower projects are some of the contributing factors. American eels are not known to travel well through the canal lock system and may even show a preference for dam sites during their upstream migration in the spring. As the American eel has been documented in surveys to inhabit the Mohawk River Watershed, a study is needed to ascertain the presence and abundance of eels and the need to provide them a better mode of passage.

NYPA has proposed to conduct an American eel study following the results of the Fish Community Study, however NYSDEC strongly disagrees with hinging the conducting of the American Eel Study on a desktop analysis of previously conducted sampling and studies. The vast majority of the available material for review involves sampling methodologies that were developed for targeting specific species of fish, namely black bass and other sportfish. This presents the problem of a sampling bias and perhaps also gear bias. While American eel have been caught during some of these sampling efforts, it has been as limited bycatch. The behavior of the American eel is not comparable to the behavior of a Smallmouth Bass (*Micropterus salmoides*), for example, and their reaction to receiving an electric shock is more often to dig and burrow down into available substrate than to rise to the surface where scapers can net the fish for data collection. Moreover, the Mohawk River is a large and turbid river with great width

and depths, which makes the use of boat electrofishing for the purpose of sampling eel all the more difficult.

1. *Goals and Objectives*

The goals and objectives of this study are to assess the presence and relative abundance of American eel elvers in the NYPA Projects area and assess the need for eel ladders to improve successful and safe upstream passage.

2. *Resource Management Goals*

NYSDEC's mission is "to conserve, improve and protect New York's natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." The natural resource management goals within the Mohawk River Watershed will be consistent with the Department's mission while focusing on protecting and enhancing fish and wildlife habitat and improving public access.

There is a pre-proposal currently available for public review and comment which will elevate the American eel from a species of conservation need to a species of special concern in New York State (<https://www.dec.ny.gov/regulations/34113.html>).

3. *Public Interest*

The requestor is a state resource agency.

4. *Existing Information*

Although caught in low numbers in the past couple of decades, fishery surveys have continued to collect mature American eels while sampling. There are also historical records of American eel caught in the Mohawk River and adjacent tributaries as referenced by Greeley (1935) in the Atlas of Inland Fishes of New York (Carlson et al. 2016)¹: "...in waters above barriers eels are much less numerous, but sufficient numbers ascend the Mohawk..." and by Dittman et al. (2009c) that there had been commercial harvests of eel above Cohoes Falls in the Mohawk River during the colonial period.

More recent records of American eel presence in the Mohawk River come in the form of bycatch from other fish sampling efforts, usually black bass and other sportfish, but also Blueback Herring. There have been limited to no concentrated efforts to sample American eel in the Mohawk River. They have been caught as far upstream as downstream of the Blenheim-Gilboa Dam on the Schoharie Creek (NYSDEC Survey #490009) and downstream of Newport Dam on the West Canada Creek (NYSDEC Survey #688202). They have also been caught in high numbers (100 individuals) above the NYS Dam (FERC No. 7481) in its impoundment and included all mature adults (NYSDEC Survey #490012). While often caught in small, limited amounts, American eel have been caught in the project area of the NYPA projects such as the tailwater of Vischer Ferry (NYSDEC Survey #413005).

¹ Carlson, D.M., R.A. Daniels, and J.J. Wright. 2016. Atlas of Inland Fishes of New York. NYS Education Department and NYSDEC. Pg. 28-30.

According to the 2017 American Eel Stock Assessment Update by the Atlantic States Marine Fisheries Commission², there is evidence of a trend of neutral or declining abundance of eels and that the stock is depleted. This is a cause for concern as the eel is important for both its ecological and commercial value. The New York State freshwater stock of eels, from the elver through the yellow and to the silver eel life stage, are of great concern and as a result NYSDEC is considering the proposal of raising the species to the status of a species of concern in the state and begin to afford it some additional protection. Additionally, the American eel is on the IUCN red list of threatened species as endangered.³

There is an ongoing USGS study to evaluate the status of American eel populations in the Mohawk River basin, however it is not expected to be completed until March 2021 and no data is currently available.⁴ This study will use American eel DNA to determine presence and abundance based on a model created using known eel populations in other Hudson River tributaries.

5. *Nexus to Projects Operations and Effects*

Both NYPA Projects have constructed dam structures which pose a migratory hurdle for the American eel in their upstream migration as elvers. While elvers may be able to ascend the dam face, they are also put at a higher risk of predation and will have to expend additional energy to do so. They may stage at the foot of the dam and then ascend by crawling up the face of the dam with slow and steady progress in order to surmount the dam and have access to upstream habitat.

6. *Methodology Consistent with Accepted Practice*

The sampling of eels should be conducted through the deployment of eel traps and eel mops to determine staging of upstream migration and relative abundance of elvers. The recommended study uses standard sampling techniques such as those used by Kleinschmidt in the relicensing of the Parr Hydroelectric Project (FERC Project 1894)⁵, utilizing an eel ramp pass trap design as developed by Haro (2006). Consultation with NYSDEC and USFWS will help to refine the number, size, and placement of the eel traps and eel mops.

Traps and mops should be in place by the end of April to ensure that they will function well and be available to collect any early arriving immigrating elvers. Traps should be checked at regular intervals; once a week at numbers less than 50 and daily at more than 50 individuals. Collected eels should be enumerated and have their length and life stage recorded. All elvers should be released upstream and any mature eels released downstream of the associated NYPA project dam. Traps should be removed in October.

7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew. The study would last for one field season, two if abnormally high flows damage the sampling gear and disrupt the study. The actual cost is unknown and would depend upon the cost of sampling gear, number

² <http://www.asafc.org/species/american-eel>

³ <https://www.iucnredlist.org/species/191108/121739077>

⁴ <https://www.sciencebase.gov/catalog/item/5d70f37ee4b0c4f70cfc202>

⁵ Kleinschmidt. 2016. American Eel Abundance Study Report: Parr Hydroelectric Project (FERC Project 1894). Kleinschmidt. Lexington, S.C.

of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries, mussels, and water quality) into one task, etc. The existing literature provided in the PAD (Section 4.4.2.3) is inadequate to fully address the NYPA projects impacts and the proposed Fish Community Study would not be truly representative of the American eel population in the Mohawk River. The Applicant has the flexibility to design the most cost-effective way to acquire the necessary data and may combine efforts with other study efforts but is encouraged to continue to consult with the resource agencies and FERC.

We appreciate the opportunity to comment. If you have any questions or would like to discuss further, please feel free to contact me at 518-402-9179 or michael.higgins@dec.ny.gov.

Sincerely,



Michael Higgins
Project Manager
Bureau of Energy Project Management

CC: Nicole Cain, NYSDEC, Bureau of Ecosystem Health
Chris VanMaaren, NYSDEC, Region 4
Mary Anne Bonilla, Office of General Counsel
Scott Wells, NYSDEC, Region 4
William Eakin, NYSDEC, Region 3
John Wiley, USFWS

2019.12.20 NYPA Crescent-Vischer Ferry Study Plan Comment Letter.docx

Document Content(s)

2019.12.20 NYPA Crescent VF Proposed Study Plan Comment.PDF.....1-6



December 20, 2019

Via Electronic Filing

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

Re: Comments of Riverkeeper, Inc. on NYPA's Proposed Studies for the Crescent Hydroelectric Project (P-4678-052) and Vischer Ferry Hydroelectric Project (P-4679-049)

Dear Secretary Bose,

Riverkeeper appreciates this opportunity to comment on the proposed environmental studies as part of the relicensing applications for the Crescent and Vischer Ferry Dams (FERC Nos. 4678 & 4679, respectively), located on the Mohawk River in Saratoga, Albany, and Schenectady Counties, New York.

A. Background on Crescent and Vischer Ferry Dams' Impacts

The Crescent and Vischer Ferry dams affect water flow and quality along approximately 20 miles of the Mohawk River from Schenectady to Cohoes, and are part of a canal system that has drastically altered hundreds of miles of the Mohawk River. These dams impede migration of herring and American eel, and can maim or kill fish passing through the turbines. The dams create lake-like pools of slow-moving or still water, which can concentrate pollutants, and threaten drinking water quality for as many as 250,000 people who rely on the river or its associated aquifer as a water source.

The Crescent and Vischer Ferry areas include multiple pollution sources, including wastewater treatment plant outfalls, urban areas that shed street water runoff directly into the river, and agricultural land that can contribute pollutants like sediment and fertilizers. The conjunction of these pollution sources and water uses makes it extremely important to understand the roles these two dams play, individually and cumulatively, in the ecosystem. By controlling the flow of



water, the operations of these dams have the potential to affect many physical and biological properties and processes in the Project Area.

In addition, changes in flow, temperature and precipitation due to climate change will have a significant impact on water quality and flooding risks. Climate change was not included in Scoping Document 1, Scoping Document 2, or the Proposed Study Plans. However, the issue was raised in public comment at the Study Plan meeting on October 23, 2019, and its relevance underscored by the “Halloween Storm” of October 30-31, 2019, which caused severe flooding and extensive damage throughout the Mohawk Valley, and prompted the National Weather Service to warn of a “potential dam failure condition” at the Trenton Falls Dam on West Canada Creek in its Flood Watch.¹

Riverkeeper’s comments and study requests seek to ensure that the relicensing process includes a thorough and comprehensive examination of impacts, to facilitate the Federal Energy Regulatory Commission’s (FERC) development of license requirements that will lessen the harmful impacts of these dams on the Mohawk River and its life.

B. Comments on Proposed Water Quality Study

FERC’s Scoping Document 2 (SD2), released on September 20, 2019, recognizes the importance of cumulative impacts from hydropower facilities and wastewater treatment facilities on drinking water supplies.² Riverkeeper appreciates that FERC has acknowledged additional information provided in our comments and comments from other parties. The importance of considering diverse and cumulative impacts is also reflected in the geographic scope of FERC’s proposed environmental assessment. The geographic scope for cumulative impacts includes “the Mohawk River from the Vischer Ferry impoundment to its confluence with the Hudson River because this relatively short (15-mile) reach of the river contains five hydropower projects ***and numerous wastewater treatment facilities***, the operation of which may cumulatively affect water quality

¹ National Weather Service, *October 31-November 1, 2019 Record Flooding and High Winds*, <https://www.weather.gov/aly/Halloween2019Storm>; Glenn Coin, *Dam Failure Possible in Oneida County: Weather Service*, [syracuse.com](https://www.syracuse.com/weather/2019/11/dam-failure-possible-in-oneida-county-weather-service.html) (November 1, 2019), <https://www.syracuse.com/weather/2019/11/dam-failure-possible-in-oneida-county-weather-service.html>.

² FERC, Scoping Document 2 for the Crescent Hydroelectric Project § 4.1.2, P-4678 and Vischer Ferry Hydroelectric Project, P-4679 (2019) (*hereinafter* Scoping Document 2).



and ***drinking water supplies in the identified area.***³ NYPA must update its water quality study proposal to reflect the geographic and substantive scope of concerns identified by FERC in SD2.

The New York Power Authority's (NYPA) water quality study proposal is based on the false premise that "water quality immediately upstream and downstream of the dams and powerhouses has not been evaluated for many years."⁴ Beginning in 2016, the New York State Department of Environmental Conservation (NYSDEC) and the United States Geological Survey (USGS) collected extensive water quality data and discharge measurements at 30 sites in the Mohawk River.⁵ This sampling was a first step in the development of a TMDL for the river, and NYSDEC and USGS are currently engaged in the process of developing, testing and applying hydraulic and water-quality simulation models that cover the Project Area.⁶ Not only is there a study of the water quality, but in fact these models have been built upon NYPA's own flood warning models.

7

The most recent water quality assessments must be used as the basis of the Water Quality Study Plan. As stated in Riverkeeper's comments submitted August 9, 2019, NYSDEC's Waterbody Inventory/Priority Waterbodies List for the Mohawk River in the Project Area was last updated in 2010, and does not reflect more recent data. Nor does the proposed study plan reflect the most recent information. Data presented by NYSDEC and USGS at the 2017 Mohawk Symposium showed that "chlorophyll-a exceedance of guidance values does not appear to become an issue until ... the area of Amsterdam – Cohoes."⁸ The authors concluded that the "results may suggest a complex interaction between nutrient concentrations, altered flow regime due to the canal

³ Scoping Document 2, § 4.1.2. (Bold and italic type reflect revisions from Scoping Document 1, as noted by FERC in SD2).

⁴ NYPA, Crescent Hydroelectric Project, FERC Project No. 4678, Vischer Ferry Hydroelectric Project, FERC Project No. 4679, Proposed Study Plan and Responses to Additional Information Requests § 2.1.5 (2019) (*hereinafter* Study Proposal).

⁵ USGS, *Surface-water Quality in the Mohawk River Basin (Pilot RIBS/TMDL)*, https://www.usgs.gov/centers/ny-water/science/surface-water-quality-mohawk-river-basin-pilot-ribstmdl?qt-science_center_objects=0#qt-science_center_objects.

⁶ USGS, *Mohawk River Basin Water Quality*, https://www.usgs.gov/centers/ny-water/science/mohawk-river-basin-water-quality?qt-science_center_objects=0#qt-science_center_objects

⁷ Alexander J. Smith & Elizabeth Nystrom, *Enhanced Water Quality Monitoring in Support of Modeling Efforts in the Mohawk River Watershed* in Proceedings from the 2017 Mohawk Watershed Symposium, Union College, Schenectady NY (J.M.H. Cockburn & J.I. Garver eds., 2017).

⁸ *Id.*



system, and the build-up of suspended algae in downstream impoundments.”⁹ The impoundments referenced include those behind the Vischer Ferry and Crescent dams. We respectfully request that NYPA increase its coordination with NYSDEC, particularly the Mohawk River Basin Program and the Stream Monitoring and Assessment Section, when revising the Water Quality Study Plan, to ensure that the most recent water quality assessments are used as the basis of the plan.

In the Study Proposal, NYPA acknowledges that “certain water quality parameters, particularly [dissolved oxygen (DO)] and temperature, can be affected by the operation of hydropower projects,” and that information about these parameters is “needed to confirm that the Project operations are not having adverse effects on river water quality, and that Project discharges meet applicable water quality standards for these parameters.”¹⁰ In comments submitted August 9, 2019, Riverkeeper requested a water quality study that would also include collection of chlorophyll and nutrient data, including sites located near drinking water intakes, and throughout the year to reflect a broad range of conditions and the year-round withdrawal of drinking water.¹¹

In response to Riverkeeper’s request, NYPA stated that chlorophyll and nutrients are “not related to Project operations.”¹² This is incorrect because project operation impacts on chlorophyll--a measure of algal/cyanobacterial biomass--and nutrient concentrations within the project area are analogous to the impacts on DO and temperature.

The impoundment is defined as part of the project facility.¹³ Temperature is related to hydropower operations because solar radiation heats the surface layer of the water, and this effect is more pronounced in slower-moving waters, such as impoundments formed by dams. Dissolved oxygen is closely related to photosynthesis and respiration. Near the water’s surface, DO is produced through photosynthesis, largely by planktonic algae and cyanobacteria, whereas DO is consumed through respiration, largely by bacteria, at depth. The presence of nutrients, primarily nitrogen (N) and phosphorus (P), promote photosynthesis. When algae and

⁹ *Id.*

¹⁰ NYPA, Study proposal, § 2.1.5.

¹¹ Riverkeeper, Comments of Riverkeeper, Inc. on the Scope of Environmental Review and Study Requests for the Crescent Hydroelectric Project (P-4678-052) and/or Vischer Ferry Hydroelectric Project (P-4679-049), § 5 (2019).

¹² NYPA, Study Proposal, Appendix B.

¹³ NYPA, Crescent and Vischer Ferry Hydroelectric Projects Pre-Application Document FERC No. P-4678 & P-4679 § 3.3 (2019).



cyanobacteria die, they sink toward the river bottom, where DO is consumed during decomposition. The more biomass that is available at the bottom of the river, the more respiration may occur, and the more DO can be depleted. Due to these relationships, vertical (depth) profiles of DO and temperature provide some information about biological activity. Nutrients and chlorophyll a are interrelated components of the aquatic ecosystem. It is unreasonable to acknowledge the need to study the effects of hydropower operations on DO and temperature, and simultaneously claim that nutrients and chlorophyll “are not related to project operations.”¹⁴ The importance of studying chlorophyll and nutrients is validated by the existing water quality information and analysis by NYSDEC and USGS, and the ongoing use of surface water and hydraulically connected groundwater in the Project Area by approximately 250,000 people. Chlorophyll and nutrients are of greater concern for drinking water quality, whereas dissolved oxygen and temperature are more of concern to aquatic life. Both of these impacts are important.

The Mohawk River is known to be impaired under the Clean Water Act due to excess phosphorus. NYSDEC is developing a TMDL in order to reduce the risk of harmful algal blooms, disinfection byproduct formation and other water quality concerns that result from excessive nutrients. NYSDEC has also initiated a drinking water source protection program in the Mohawk River watershed and launched a study of disinfection byproduct formation potential.¹⁵ NYPA should heed these concerns by including chlorophyll and nutrients as part of its water quality study to assess how hydropower operations influence water quality in this portion of the Mohawk River.

When revising the study plan, NYPA must gather all the relevant information, and should work closely with NYSDEC to design a water quality study that will comprehensively address known water quality issues in the project area.

¹⁴ NYPA, Study Proposal, Appendix B.

¹⁵ Brian Nearing, State wants sewer system fixes to protect Mohawk, Albany Times Union, January 18, 2019, <https://www.timesunion.com/business/article/State-wants-fixes-at-sewer-systems-Albany-13541579.php>; Andrea Conine, Michaela Schnore, Zachary Smith, Gavin Lemly, Charles Stoll, and Alexander Smith, *Characterization of disinfection by-product formation potential in Mohawk River source waters to support TMDL implementation* in Proceedings from the 2019 Mohawk Watershed Symposium, Union College, Schenectady NY (J.M.H. Cockburn & J.I. Garver eds., 2019).



C. Comments on Proposed Fish Studies

The American eel is a native migratory species that has inhabited the Mohawk River and its watershed since the last glacial minimum. The presence of the Fall at Cohoes is not a sufficient barrier to prevent eels from entering the Mohawk River. Historical references denote the importance of the species to people who inhabited the Mohawk River Valley as represented by the Mohawk tribes, who maintained totemic eel clans as a fundamental kinship unit,¹⁶ and by the hamlet of Alplaus, which receives its name from the Dutch word *Al Plaats*, or "Place of the Eels."¹⁷ Furthermore, archaeological evidence cites the presence of eel weirs in the river from which Native Americans captured eels.¹⁸ Therefore, it is reasonable to conclude that American eels have inhabited the Mohawk River for thousands of years and that eels were a commonly encountered migratory fish before the dams and other hydropower facilities contributed to their decline.

More recently, the presence of eels in the Mohawk River has been confirmed by NYSDEC, incidental to fish surveys designed to target other species over the past 30 years, and most recently in 2018, whereby the presence of a large, female silver eel was documented in the impoundment of the Project Area¹⁹. However, any out-migrating silver eels in the Project Area would have to negotiate the dams and the turbines of the Crescent and Vischer Ferry hydroelectric facilities before exiting the Mohawk River system. Eels in the Project Area are likely to be seriously impacted by the dams and may be delayed, entrained, or killed by the presence of the Vischer Ferry and Crescent Dams and other hydropower facilities, as has led to the decline of their species across its range.²⁰

At the present, we do not have adequate information to understand eel density and distribution patterns in the Project Area. NYSDEC has acknowledged a lack of information pertaining to the density, distribution, and the factors driving the distribution of American eel in the Mohawk

¹⁶ C.M. Barbeau, *Iroquoian Clans and Phratries*, *American Anthropologist New Series* 19(3), 392-402 (1917).

¹⁷ <https://www.alplaus.org>

¹⁸ *American Ancestry: Embracing lineages from the whole of the United States*. 1888[-1898]. Ed. by Frank Munsell

¹⁹ USGS, *Status of American Eel Populations in the Mohawk River Basin*, https://www.usgs.gov/centers/ny-water/science/status-american-eel-populations-mohawk-river-basin?qt-science_center_objects=0#qt-science_center_objects. (hereinafter USGS American Eel Population Status)

²⁰ Atlantic States Marine Fisheries Commission, *2017 American Eel Stock Assessment Update* (2017) (hereinafter ASMFC 2017 Eel Assessment).



River.²¹ What is known is that hydroelectric dams have been constructed in many rivers where eel populations were historically present, and it is recognized that these structures have contributed to habitat inaccessibility and the general decline of the species.²² Accordingly, we find the proposed study plan for American eel insufficient in scope and scale, sampling design, and most importantly shows insufficient concern for the historical and current presence of this species, which has likely been seriously harmed by the production of electricity on the Mohawk River. The proposed study plan suggests that American eel rarely occur in the Mohawk River and in the vicinity of the Project Area. This statement is inaccurate. USGS states that “[t]he presence of eel in this basin has been confirmed only by a handful of [NYSDEC] fish surveys (aimed at sampling other species) over the past 30 years and that the density and distribution of American eels are largely unknown in this watershed.”²³

Accordingly, the NYSDEC’s Mohawk River Basin Draft 2018-2022 Action Agenda clearly states that it is necessary to:

- “Investigate and gather baseline information to better understand the spatial distribution and condition of existing populations.
- Conduct watershed-wide surveys to determine the status of American eel in the Mohawk River and tributaries. Identify prime eel habitat and identify limiting factors for juvenile migration into the watershed.
- Implement a project similar to the “Hudson River Eel Project: Citizen Science Juvenile American Eel Survey” to document the movement of glass, yellow, and silver life stages of American eel within the Mohawk River and tributaries. Augment the proposed citizen science program with additional academic research of these life stages.
- Develop and implement comprehensive management actions that help grow, recover, or restore migratory fish populations that are struggling or on the edge of local extirpation.”

24

²¹ USGS American Eel Population Status.

²² ASMFC 2017 Eel Assessment.

²³ USGS American Eel Population Status,

https://www.usgs.gov/centers/ny-water/science/status-american-eel-populations-mohawk-river-basin?qt-science_center_objects=0#qt-science_center_objects

²⁴ NYSDEC, Mohawk River Basin Action Agenda: 2018-2022 (2018),

https://www.dec.ny.gov/docs/water_pdf/mohawkactionag.pdf. (*hereinafter* Mohawk Basin Action Agenda)



In truth, there have been no specific studies aimed at determining the true density and abundance of American eels in the Mohawk River. To state that American eels rarely occur in the Mohawk River based on the results of surveys aimed at other species is an incorrect interpretation of the data and history. Absence can never be proven. All that can be established is a high probability that the target species are not present. But since we already know that American eels are in fact present in the Mohawk River, a true determination of density and distribution of the population is required to accurately assess how hydroelectric production actually impacts the fish and their populations. Towards this goal, calibrated methods, based upon detailed knowledge of gear efficiency and catchability are necessary to estimate abundance from catch per unit of sampling effort.

In order to determine the true density and abundance of American eel in the Mohawk River and especially in the Project Area, NYPA must conduct a rigorous scientific study utilizing proper sampling techniques, using effective gear from which quantification of effort can be measured. Moreover, for any study of fish populations, whether in the Mohawk River as a whole or in the Project Area, NYPA must include a robust sampling regime to determine both abundance and density. NYPA must also incorporate catchability into study designs, since it is critical when indexing abundance.²⁵ In addition, NYPA must account for any variability in catchability to avoid biased survey results, and ultimately arriving at an incorrect estimation. Finally, it must be clearly noted that NYPA's study must thoroughly evaluate sampling effort and gear selectivity to avoid inadequate designs leading to inaccurate results.²⁶

American eels are a semelparous, catadromous species, which abstractly means that all mortality within their freshwater range occurs prior to spawning. American eels spawn once and subsequently die after an arduous return migration to the Sargasso Sea. Female eels may defer spawning for up to 20-30 years. According to the Atlantic States Marine Fisheries Commission's (ASMFC) 2017 American Eel Stock Assessment, the status of the American eel remains depleted, at historical lows in US waters.²⁷ The stock assessment continues to say that eels have precipitously declined or have been extirpated over portions of their historical freshwater habitats

²⁵ Assessing Reservoir Largemouth Bass Standardized Boat Electrofishing: Effect of Catchability on Density and Size Structure Indices. Stephen M. Tyszko, Matt A. Hangsleben, Richard D. Zweifel, Jeremy J. Pritt & Joseph D. Conroy North American Journal of Fisheries Management, Volume 37, 2017 - Issue 3

²⁶ A Review of Sampling Designs Commonly Used in Canadian Freshwater Habitats
<https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/ar/AR-1240.pdf>

²⁷ ASMFC 2017 Eel Assessment.



during the last 100 years mostly due to dams and turbine mortality, often in combination with over-harvest.²⁸ Therefore, in order to rebuild the stock, ASMFC's Interstate Fishery Management Plan has laid out goals and objectives that are designed to reduce mortality and increase conservation measures for the American eel across all life stages.²⁹

Hydropower facilities will continue to negatively impact American eels if no protective measures are undertaken. Accordingly, we strongly recommend that FERC take strict action to promote safe upstream and downstream passage of American eel in the Mohawk River system. Currently, there are no protective screens on the Vischer Ferry and Crescent hydropower facilities to prevent entrainment. This is unfortunate because eels will often seek deep water escape through turbine intakes only to be injured or killed.³⁰ Hence, providing screens over the turbines and safe passage past the dams for eels and other migrating diadromous fish is absolutely necessary. To improve the mortality of American eels in particular, placement of screens over the turbine intakes, along with an appropriate adjusted flow velocity through the turbines to prevent impingement. FERC must also mandate state-of-the-art bypass facilities to benefit diadromous fish to avoid incurring more damage to these fishes. In addition, FERC must determine the appropriate species specific fishways and eel passages, as there are no universally applicable fish passage mechanisms. In their present condition, Vischer Ferry and Crescent Dams are currently out of alignment with the recommendations set forth by NYSDEC's Mohawk River Basin Action Agenda and the ASMFC's FMPs by impeding upstream passage by harming, killing, or delaying out-migrating eels. These dams do not enhance conservation of the American eel. Most importantly, since the presence of American eels has been confirmed in the Project Area, the installation of properly sized screens that protect yellow phase and silver phase life stages of American eels from being impinged or entrained and mangled by the turbines is the most effective way to comply with the Action Agenda and recommendations of the Atlantic States Marine Fisheries Commission to help restore and re-establish a species in decline.

The largest problem confronting migrating American eels in the Mohawk River is the presence of a series of dams, but most especially the hydroelectric facilities, including the Vischer Ferry

²⁸ *Id.*

²⁹ Atlantic States Marine Fisheries Commission, *2017 Review of the ASMFC Fishery Management Plans for American Eel (Anguilla rostrata) 2016 Fishing Year*, <http://www.asmfc.org/uploads/file/5ac2aafbAmericanEelFMPReview2017.pdf> (2017).

³⁰ JW Carr & FG Whoriskey *Migration of Silver American Eels Past a Hydroelectric Dam and Through a Coastal Zone*. 15 Fisheries Mgmt. and Ecology, 393 (2008), <https://doi.org/10.1111/j.1365-2400.2008.00627.x>.



and the Crescent Dams. However, since American eels are confirmed to be present and a large, female silver eel has recently been captured in the Project Area impoundment, NYPA and FERC must follow the guidelines outlined in the NYSDEC's Mohawk River Basin Action Agenda, as well as the ASMFC protocol, which encourage the conservation of the species and the reduction of mortality.³¹

The best way to adhere to these guidelines is to conduct a robust sampling survey of American eels in the Project Area, facilitate the eels' safe movement in and out of the system, and protect eels that are present from being impinged and entrained into the turbines. In a study of hydroelectric dams by Carr and Whoriskey, demonstrated that 100 percent of entrained eels suffered mortality.³² Accordingly, we strongly urge FERC to require NYPA to conduct all studies needed to implement appropriate fish passage devices that will re-establish American eels in their ancestral habitat and allow them to out-migrate safely.

D. Comments on Potential Ice Jam Studies

The issue of flooding due to ice jams was raised in multiple comments and at the October 23, 2019, study proposal meeting. Impacts on fish and water quality must be accounted for if operational changes to reduce ice jam flooding are considered in the future.

The Mohawk River has been extensively altered by navigational structures and hydropower generation facilities. Surface water in the Project Area and the hydraulically connected Great Flats Aquifer provide drinking water for approximately 250,000 people. A 2009 planning report for the Great Flats Aquifer states, "the water level in portions of the aquifer adjacent to the river is dependent on the river level, which varies between navigational and non-navigational seasons."³³

If an ice jam study is conducted and operational changes are deemed necessary to mitigate ice jam flooding, protection of aquatic life and water quality must be prioritized. License requirements that may affect water level and flow must consider whether wastewater effluent

³¹ ASMFC 2017 Eel Assessment.

³² JW Carr & FG Whoriskey *Migration of Silver American Eels Past a Hydroelectric Dam and Through a Coastal Zone*. 15 Fisheries Mgmt. and Ecology, 393 (2008), <https://doi.org/10.1111/j.1365-2400.2008.00627.x>.

³³ Thomas M. Johnson, *Responsible Planning For Future Ground Water Use From The Great Flats Aquifer: Two Case Studies: The Gep Energy Project And The Si Green Fuels Boiler Project* in Proceedings from the 2009 Mohawk Watershed Symposium, Union College, Schenectady NY (J.M.H. Cockburn & J.I. Garver eds., 2009).



discharge and water withdrawal volumes change seasonally, while keeping in mind that groundwater-surface water connections do change seasonally.³⁴

E. Conclusion

Where the mere existence of hydropower facilities will necessarily cause significant environmental impacts, it is critically important to incorporate all feasible methods to mitigate these impacts to the maximum extent possible. There are still many major gaps in the information needed to determine effective mitigation techniques. Therefore, FERC must obtain a thorough understanding of how the Crescent and Vischer Ferry Dams affect water quality, fish and other aquatic wildlife, and ice-jam flooding through our recommended comprehensive studies in order to develop the most protective license requirements.

Riverkeeper appreciates the opportunity to comment. If you have any questions about these comments, please contact Jennifer Epstein at jepstein@riverkeeper.org or (914) 478-4501 x248.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jepstein'.

Jennifer Epstein

Water Quality Program Scientist

³⁴ *Id.*

Document Content(s)

RiverkeeperProposedStudyCommentsCrescentVischer.PDF.....1-11

James Woidt, PE, Scarborough, ME.

I am the lead engineer responsible for producing the draft Hydrologic, Hydraulic, and Ice Jam Analysis Report (2019) for the City of Schenectady's (City) Mitigation Measures to Reduce Flood in the Historic Stockade (Stockade Mitigation Project). This report was prepared by Shumaker Consulting Engineering and Land Surveying, DPC (Shumaker) and the US Army Corps of Engineers' Cold Regions Research and Engineering Laboratory (CRREL). Please note that the following comments are mine as an individual and were not prepared at the request of my employer nor any of my employer's clients which at this time include the City of Schenectady, Schenectady County, New York State Department of Environmental Conservation (DEC), and New York Power Authority (NYPA), all of whom have an interest in the FERC relicensing studies.

I have reviewed portions of the licensing documents relative to ice jamming and have identified several inaccuracies in the Proposed Study Plan for Vischer Ferry Hydroelectric Project (FERC Project No. 4679) as follows:

1. On Page 47 of the Proposed Study Plan, Shumaker and CRREL's draft Hydrologic, Hydraulic, and Ice Jam Assessment (2019) was referenced. This document was shared in a draft format with three individuals for technical comment. Explicit directions were provided that this draft was not to be shared with any other individuals as the funding agency for the Stockade Mitigation Project has not yet completed their review of this deliverable and approved it for public dissemination. Therefore, sharing of this report beyond those three individuals and its reference in the Proposed Study Plan is a violation of the conditions under which the report was provided. In lieu of this report, NYPA may find beneficial information in the public reports and presentations provided on the Stockade Mitigation Project website:

<http://www.stockaderesilience.com/project-updates>.

2. On Page 47, the Proposed Study Plan states "numerous studies have been conducted...to examine the frequency and causes of the Stockade District flooding, including the role of ice jams." This is an inaccurate statement. The Gomez and Sullivan (2018) letter report on Page 5 states "The hydraulic analysis assumes free-flowing conditions and does not assess impacts due to ice or debris". Therefore, Gomez and Sullivan (2018) did not evaluate ice jamming. The New York State Department of Environmental Conservation (1979) report's conclusion on ice jamming was based on a 40-year old discussion with a former member of CRREL; to characterize this as a "study" is misleading. Also, Mr. Joseph Rocks, CRREL's current subject matter expert on ice jamming, presented that such a determination is not possible without technical study.

3. In response to Addendum #26 authored by the Schenectady County Chamber of Commerce Flood Assessment Task Force that "Vischer Ferry is probably an asset to the region in terms of reducing ice jamming and flooding": Vischer Ferry may simultaneously be an asset to the region but a detriment to the local community. Both are relevant to Vischer Ferry.

Addicks and Barker Dams in Houston, Texas are well-publicized example of this (for fluvial "free-flow" flooding).

4. On Page 47, the Proposed Study Plan states that the USGS is studying the nature and frequency of flood-causing ice jams. It should be clarified that the USGS is studying the nature and frequency of flood-causing ice jams empirically. That is, they are collecting measurements of ice jams and deducing relationships from those observations. Therefore, the study applies only to the current configuration of the Mohawk River and Vischer Ferry. The USGS study does not attribute the cause of ice jam flooding to natural conditions, Vischer Ferry, or other potential features that may promote or discourage ice jamming.

5. On Page 47, it is stated that DEC is investigating the issue of flooding and flood control strategies on the Mohawk River. It should also be stated that NYPA is a partner in this effort and is providing direct technical support in the form of hydraulic modeling of alternatives. This is an apparent (to the public; but perhaps not real) conflict of interest that should be disclosed.

6. On Page 47 and 48, NYPA concludes that "the issue of flooding has been extensively studied and... studies have repeatedly demonstrated that the existence and operation of Vischer Ferry has little or no effect on upstream flooding in the Stockade District." Per the above comments, this is an incorrect conclusion. No study has been performed to attribute the nature and frequency of ice jam-induced floods to Vischer Ferry, natural conditions, and/or other impediments.

Otherwise, I concur with NYPA's conclusion that Vischer Ferry has a small impact on upstream fluvial (free-flow) flooding and that the upstream fluvial flood risk posed by Vischer Ferry has been adequately studied. However, I still recommend that an ice jam study be performed. I have previously provided technical comments as part of the scoping study to justify an ice jam study; I will not repeat those comments but recommend that they, as well as comments by Dr. John Garver, be re-reviewed by NYPA.

[Comment reduced due to character limitation]

I again recommend that an ice jam study be performed to quantify the impact of Vischer Ferry on upstream and downstream ice jamming. Specifically, I recommend that a physically based study be performed that integrates the physical processes that cause the formation and break-up of ice jams as well as the impoundment of water behind them. Such a study may include physical modeling or numerical modeling via HEC-RAS, MIKE11, and/or CRISSP 2D. Finally, the ice jam study should also evaluate whether a change in the operation of water levels impounded by Vischer Ferry Dam, such as lowering the impoundment level in advance of a warm-up or rainfall event that commonly causes ice jams, would reduce the risk of flood-causing ice jams.

Document Content(s)

92766.TXT.....1-2



United States Department of the Interior

FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, New York 13045



December 23, 2019

Ms. Tara Groom
New York Power Authority
30 South Pearl St.
Albany, NY 12207

**RE: Crescent and Vischer Ferry Hydroelectric Projects (FERC Nos. 4678 and 4679)
Comments on Proposed Study Plan**

Dear Ms. Groom:

The U.S. Fish and Wildlife Service (Service) has reviewed the September 23, 2019, Proposed Study Plan (PSP) filed by the Power Authority of the State of New York (NYPA) for the Crescent and Vischer Ferry Hydroelectric Projects (Projects) (FERC Nos. 4678 and 4679), located on the Mohawk River in Schenectady, Albany, and Saratoga Counties, New York. We have also reviewed the December 17, 2019, letter from the Federal Energy Regulatory Commission (Commission) staff providing their comments and additional information requests on the PSP (Staff Comments). The Service provided our Study Requests in our August 9, 2019, letter to the NYPA (Study Requests).

Fisheries Studies

In our Study Requests, the Service requested studies of the downstream migration and routing of blueback herring (*Alosa aestivalis*) (BBH) and American eel (*Anguilla rostrata*). For BBH, the Service requested a variety of radio telemetry, acoustic, and mortality studies to evaluate the movement and mortality of BBH as they move downstream past the Projects. For American eel, we requested field studies to evaluate the occurrence of American eels in the vicinity of the Projects' tailraces and in the impoundments. In the PSP, the NYPA proposed to study the upstream migration of BBH and conduct a literature review of American eel presence in the lower Mohawk River. The Service participated in the October 23, 2019, PSP meeting and a follow-up teleconference on November 7, 2019, regarding fisheries studies, with the NYPA, the New York State Department of Conservation (NYSDEC), and Commission staff. During these meetings, the Service, NYSDEC, and Commission staff provided preliminary comments regarding the studies proposed in the PSP for fisheries resources. These concerns were adequately captured in the Staff Comments provided to the NYPA, and we understand that the NYPA is reevaluating their proposed studies for these resources for the Revised Study Plan (RSP).

due to be filed with the Commission on January 21, 2020. We appreciate the NYPA's efforts to enhance their proposed studies for BBH and American eel at the Projects.

While we understand that there is existing information available for BBH in the lower Mohawk River and at the Projects, there are notable gaps in the available information for the river between the Projects, for the current configurations for fish protection measures, and between adults and juveniles for routing and survival between the Kaplan and Francis turbines present in the powerhouses. These gaps have been identified in our Study Requests and additionally in Commission Staff Comments. The Service encourages the use of the best available information; however, we strongly encourage the NYPA to propose an updated, holistic assessment for the downstream routing of BBH through the Projects. With a comprehensive study, the NYPA will be able to readily evaluate the proportion of BBH passing through the current flashboard notches, over the dams, through the locks, and through turbines at both Projects. Coupled with existing or any needed assessments of turbine mortality for both life stages, this would provide the information needed for our analysis of BBH passage at the Projects.

It is our understanding that the NYPA will be further evaluating additional information regarding American eel presence in the vicinity of the Projects. The Service is evaluating the need for upstream passage and downstream passage and protection for this species at the Projects. If the available information suggests that American eel are present below the Projects, the NYPA should consider proposing a study for upstream passage and protection as well as entrainment mortality studies for this species in the RSP.

Water Quality

In our Study Requests, the Service recommended standard water quality studies at the Projects that are conducted during most hydroelectric project relicensing. The NYPA has proposed to conduct these studies. We participated in an additional teleconference on December 17, 2019, with the NYPA and the NYSDEC to provide technical assistance regarding the proposed water quality studies. We recommended that the NYPA install at least two floating downstream water quality monitors below the Projects in order to ensure that outflows from each of the turbines are adequately measured under all operational scenarios during the study period. Additionally, we continue to recommend that chlorophyll-a be recorded during periodic monitoring as we have noted this parameter to be highly correlated to water quality in nutrient- rich systems such as the lower Mohawk River.

Run-of-River

The Service recommended a Run-of-River Compliance Study in our Study Request. The NYPA has not proposed this study in the PSP. The Service is concerned that there will be inadequate information available to assess the impact of the Projects on notable downstream fluctuations at the United States Geological Survey Cohoes Gauge. Operational activities related to ramping rates and the Projects' abilities to accommodate upstream flow variability can notably influence downstream Projects and flows. Primarily, this study would utilize existing generation, headpond, lock operation, and gauge data; however, one additional flow monitoring station

would need to be installed and calibrated downstream of the Crescent Project. The Service continues to recommend this study and requests its inclusion in the RSP.

* * * * *

Thank you for the opportunity to provide study requests for the Projects. If you have any questions or desire additional information, please contact John Wiley at john_wiley@fws.gov or 607-753-9334.

Sincerely,


Acting for David A. Stilwell
Field Supervisor

cc: NYSDEC, Stamford, NY (C. VanMaaren, S. Wells)
NYSDEC, Albany, NY (N. Cain)
NYSDEC, New Paltz, NY (W. Eakin)
FERC e-file

Document Content(s)

20CPA0020out.PDF.....1-3