



ENVIRONMENTAL LAW AND CONSERVATION CLINIC

LEON SZEPTYCKI, DIRECTOR

December 5, 2008

By E-mail and First Class Mail

Dr. James B. Price
W.V. Hydro, Inc., General Partner
Hydro Matrix Limited Partnership
P.O. Box 903
Gatlinburg, TN 37738

Re: Comments on Draft License Application, FERC Project No. P-12737

Dear Dr. Price:

In accordance with 18 C.F.R. § 4.38(c) and your email of Monday, September 8, 2008, this letter will serve as the comments of the Roanoke Chapter and Virginia Council of Trout Unlimited (collectively "TU") on the draft license application of Hydro Matrix Limited Partnership ("HMLP") with respect to the above named project. TU is a national, not-for-profit organization with over 150,000 members, whose mission is to conserve, protect, and restore North America's trout and salmon fisheries and their watersheds. TU's Roanoke Chapter has 323 members in the Roanoke area, many of who fish and recreate on the Jackson River and Lake Moomaw. TU's Virginia Council has 3,544 members statewide, many of who also fish and recreate on the Jackson River and Lake Moomaw.

These comments are being submitted on behalf of TU by the Environmental Law and Conservation Clinic at the University of Virginia School of Law, which is an academic program of the School of Law designed to give law students practical training in the practice of environmental law. These comments represent the positions and views of TU, and in no way represent the position or views of the University of Virginia or the University of Virginia School of Law.

TU is concerned about the effect that the proposed project would have on the Jackson River's pristine and self-sustaining trout fishery. HMLP must submit additional information in order for FERC to be able to consider the license application and arrive at license terms that can adequately protect the Jackson River.

1. Water Quality Concerns

As we noted in our comments to the pre-application document, a remarkable wild trout fishery has taken hold in the Jackson River Tailwater.¹ This fishery is the result of high quality cold water that flows out of Gathright dam. The recreational portion of the Tailwater runs seventeen miles, from the stilling basin below Gathright Dam to the water treatment plant intake at Covington. An agreement during the construction of Lake Moomaw was struck to develop the Tailwater into a self-sustaining trout fishery, in part to compensate for the loss of river habitat flooded by the lake. After about eight years of stocking, enough sexually mature trout remained in the Tailwater to allow natural reproduction and to sustain the population. The Virginia Department of Game and Inland Fisheries (VDGIF) has not stocked the Tailwater in over ten years. The Tailwater is the second-longest wild trout stream in Virginia, and many consider it to be the premier cold-water fishery in the state. It needs to be emphasized that what makes this fishery so valuable is that the trout population is wild and self-sustaining. Many anglers particularly value the opportunity to fish for wild trout, and this fishery could not be replaced through the stocking of hatchery-reared trout.

Although the applicant notes that the fishery is a self-sustaining trout fishery that is “popular with trout fishermen,” this greatly undervalues the Tailwater.² The Tailwater is estimated to contribute \$200,000 to the local economy and provides 5,002 angler days per year. These contributions are crucial to the economy of the area. The Tailwater requires little management by the VDGIF, with total expenditures below \$3,000 for fiscal year 2007. The Tailwater requires minimal management and intervention on the part of VDGIF because of the high quality habitat and excellent water quality. The essence of the value of the fishery is that it is a self-sustaining population of wild trout, which attracts far more anglers and costs far less to manage than a stocked trout fishery.

A wild, self-sustaining trout fishery has highly demanding habitat and water quality needs. The Tailwater below Gathright dam is classified as a natural trout water under Virginia water quality standards (9 VAC 24-260-430), which require an instantaneous minimum of 6 milligrams per Liter (mg/L) of dissolved oxygen and a maximum temperature of 21 degrees Celsius (9 VAC 25-260-50). The present operation of the Gathright Dam provides for dissolved oxygen and temperature levels that greatly exceed these state water quality standards. Average dissolved oxygen levels range throughout the average year from approximately 9 to 12 mg/L, and temperatures range from 5 to 15 degrees Celcius.³ These exceptional levels of water quality enable the Jackson River wild trout fishery to flourish.

Trout and other aquatic life in the Jackson River enjoy cold water and high levels of dissolved oxygen for many miles below the Gathright Dam as well. Water Quality sampling data from approximately 15 miles below the dam, at Clearwater Park, shows

¹ *Hydro Matrix Limited Partnership*, Motion to Intervene of Trout Unlimited and Comments on Pre-Application Document, FERC Docket No. 12737 (May 13, 2008) [hereinafter *TU Comments*], http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=13610302.

² *Hydro Matrix Limited Partnership*, Draft Application, p. 39, FERC Docket No. 12737, September 2008.

³ *Id.* at table 2.

that dissolved oxygen levels are between 9 and 12 mg/L throughout the year, with a temperature of between 5 and 16 Celsius (see below and attachment A).⁴ This data shows that the exceptional water quality at the dam is maintained for over 15 miles of river, which results in pristine trout waters. For the trout fishery to continue to thrive, these exceptionally high levels must be maintained throughout the length of the Tailwater.

Month	pH	DO (mg/L)	Temp (C)	Spec Cond (uS/cm)		
Jan	7.7	12.3	6.1	155.3		
Feb	7.7	12.3	6.1	155.3		
Mar	7.9	12.0	9.2	155.1		
Apr	7.9	12.0	9.2	155.1		
May	7.8	10.6	13.6	156.1		
Jun	7.8	10.6	13.6	156.1		
Jul	7.7	9.1	17.4	157.9		
Aug	7.7	9.1	17.4	157.9		
Sep	8.1	9.4	16.0	174.8		
Oct	8.1	9.4	16.0	174.8		
Nov	7.9	10.9	11.1	176.1		
Dec	7.9	10.9	11.1	176.1		

TU is concerned that any change to these exceptional levels caused by the proposed project would irreparably harm the blue-ribbon trout fishery of the Jackson. The FERC license needs to put measures into place to ensure that existing water quality is maintained, including both operational measures and monitoring. The draft license application is lacking information confirming how existing water quality will be maintained or any description of what monitoring will take place to ensure continuing high water quality at the dam and downstream.

FERC often requires provisions in licenses for monitoring and operations to ensure that existing high water quality is maintained. Many FERC-licensed projects have faced dissolved oxygen and temperature maintenance considerations similar to those at Gathright Dam. For example, FERC license terms have required real time reporting of water quality during construction of hydro projects to ensure that trout fisheries below a dam are not being harmed.⁵

⁴ Data from Virginia Department of Environmental Quality, received November 13, 2008.

⁵ *Borough of Leighton*, 124 FERC ¶ 62,194 (2008) (requiring real-time water quality monitoring before and during construction of a project to be reported to the state and the Corps).

Most applicable to Gathright, FERC has included dissolved oxygen standards in licenses set at levels above those required by state water quality standards where such higher levels are needed to protect fisheries and other aquatic resources. *Boise-Kuna Irrigation District, New York Irrigation District, Nampa and Meridian Irrigation District, Wilder Irrigation District, and Big Bend Irrigation District* held that the Commission has the “independent authority and responsibility . . . to condition a license as necessary (so long as any condition does not conflict with the terms of the water quality certification) to secure the project best adapted to a waterway,” especially in a situation where “there is significant evidence that prolonged exposure to DO concentrations of less than 6 mg/L presents a degree of risk.”⁶ At the very least, the terms of any license granted to HMLP must require the project to maintain dissolved oxygen and temperature standards at the high levels of 9 to 12 mg/L and 5 to 15 degrees Celcius, respectively, in accordance with current data from the Corps and DEQ.⁷

HMLP has repeatedly stated that this project will not cause any change in water quality, and in any event it will be bound by existing temperature and DO standards. This, however, is not a substitute for providing detailed information in the draft application. HMLP needs additional information in its draft application confirming exactly how the project will maintain existing water quality and temperature and describing a monitoring program that will verify maintenance of water quality and the protection of the fishery.

HMLP must add several important components before FERC should consider its application complete. First, as described in more detail in section 3 below, HMLP must obtain data from the Corps about its current water mixing practices and conduct sufficient analysis of that data to confirm that its tower and turbine configuration can replicate, at all times, the Corps’ historical mixing practices. Second, the license application needs to include all relevant water quality data (at the dam and downstream) so that the license can include a clear requirement that existing DO and temperature levels be maintained. Finally, the draft application needs to lay out a proposed monitoring program that would verify that historic water quality is being maintained and that the project is not affecting the health of the fishery. Such a monitoring program could be developed in consultation with the Corps, DEQ, and VDQIF, but it would be beneficial to make the results as publically available as possible. For example, HMLP could post monitoring results on a public web site.

2. TMDL report concerns

In Appendix A of HMLP’s “Reply of Hydro Matrix Limited Partnership,” dated October 7, 2008, HMLP asserts that the “TMDL study by the Corps, VA DEQ, and VA DGIF has not been done and will not be complete for a couple of years.”⁸ This is not completely accurate. A draft “Benthic TMDL for the Jackson River” was completed in June of 2007. Although the report is still in draft form, extensive data found in the TMDL report shows that downstream segments of the Jackson River (below Covington)

⁶ 53 FERC ¶ 61, 328 at 61,345-6 (1990).

⁷ See *Supra*, note 3, data from Gathright dam.

⁸ *Hydro Matrix Limited Partnership, Reply of Hydro Matrix Limited Partnership*, FERC Docket No. 12737 (October 7, 2008) [hereinafter *Reply*], http://clibrary.ferc.gov/idmws/File_list.asp?document_id=13651023.

are impaired for failure to comply with both the dissolved oxygen and the general benthic standards.⁹ The draft TMDL also cites a completed study that found “that increased flow velocity resulted in significant scour of periphyton in the Jackson River.”¹⁰ Essentially, the report finds that increased releases from the dam would contribute to improved water quality in the Tailwater by washing downstream, or scouring, certain detrimental life in the stream. Although the TMDL is not completed, these studies show that there is a substantial likelihood that higher flows from the Gathright Dam into the Jackson River could be required in the near future to improve water quality downstream.

HMLP has now filed a draft application, which puts them in the second stage of consultation. The second stage of consultation requires that the applicant “conduct all reasonable studies and obtain all reasonable information requested...that are necessary for the Commission to make an informed decision regarding the merits of the application.”¹¹ In light of this requirement, HMLP must analyze the draft TMDL and analyze what effect this study and potential outgrowths of the study (i.e. a 216 report by the Army Corps of Engineers to change flows out of Gathright Dam) would have on the economic feasibility of the project. Without information on potential higher flows from the dam, it is impossible to analyze electricity generation and cost-effectiveness.

In fact, studies of precisely this sort are contemplated in the regulations. The second stage consultation requirements state that studies “must be completed and information obtained...if the results...would influence the financial (e.g., instream flow study) or technical feasibility of the project (e.g., study of potential mass soil movement).”¹² The TMDL study does precisely that. The study noted preliminary flow data indicating that increased-velocity flows which cause scour improved dissolved oxygen levels in the Tailwater.¹³ These flow requirements may change the existing flow regime, energy production potential, and the financial feasibility of HMLP’s project.

3. Engineering Concerns

As we indicated in our comments on the Pre-Application document, TU has a number of concerns regarding the sufficiency of engineering designs and background work made available by HMLP. As a preliminary issue, TU has concerns about the ability of the project to replicate the same quality and temperature mix currently achieved by the Corps. The Corps currently uses a series of portals at various elevations in the intake tower to achieve the appropriate temperature and high levels of DO. The sliding power module proposed in the draft application would cover one of the lower-level portals and a mid-level portal most of the time. The partial or full blockage of these portals may limit the Corps’ ability to attain downstream water quality standards during the summer. TU is also concerned that this blockage may make it more difficult to blend water from the upper and lower layers of the reservoir during the springtime.

⁹ “Draft Benthic TMDL for the Jackson River, Virginia,” Virginia Department of Environmental Quality, p. E-1, June, 2007.

¹⁰ *Id.* at 3-33, citing Bott and Newbold, *The Effects of Water Velocity on Jackson River Periphyton Biomass and Nutrient Uptake*, 2000, a study commissioned by Mead Westvaco.

¹¹ 18 C.F.R. § 4.38(c)(1) (2008).

¹² 18 C.F.R. § 4.38(c)(1)(i) (2008).

¹³ “Draft Benthic TMDL for the Jackson River, Virginia,” Virginia Department of Environmental Quality, p. 3-34, June, 2007.

The PAD also indicates that water for turbine operations will be withdrawn using a cylinder gate for upper level withdrawals and “one or two” gates lower in the module. In its reply to TU’s comments of May 13, HMLP states both that “water will be withdrawn in the same proportions from the same levels of the lake” and that “lower blocked ports...will be replaced by similar gates.”¹⁴ In light of the fact that some of the Corps’ ports will in fact be blocked, it is necessarily impossible for flows to be exactly what they were prior to the installation of the proposed turbine. As noted in section 1 above, without getting more data from the Corps showing how and with which portals the water from the intake tower is mixed, and using this data to analyze whether or not the proposed project can mirror this mix, HMLP has not shown that the proposed alteration can reproduce the water quality mix that the Corps now achieves. Without this information, the applicant cannot determine what effect the project will have on both the day-to-day operation of the intake tower and the corresponding effect on water quality below the dam. HMLP must obtain the relevant data from the Corps about how it currently mixes water, and conduct sufficient analysis to confirm that it can replicate this mix.

The draft application also lacks critical details about how the project will be installed and attached to the intake tower. The Corps has mirrored the concerns of TU with respect to the daily operations of the dam, and, in a letter dated August 13, 2008, stated that there were still “substantial concerns regarding the constructability and implementation of the current conceptual plan” that were “due to the lack of information provided,” which together showed that the applicant’s submissions were as of yet inadequate.¹⁵ Further, the letter indicates that HMLP has not provided any “practical plan of construction and operation.”¹⁶ In response, HMLP does not provide any additional information to resolve the Corps’ concerns on how the Gathright dam would operate without access to all ports or how construction would take place. In fact, HMLP admits that “some important structural decisions will be made during final design.”¹⁷

Lack of information of such a critical nature can lead to serious consequences for the very dam itself. A similar project at the Jordan Dam in North Carolina, operated by HMLP, has been stayed by FERC so that the applicant can conduct “a flow/vibration test at the dam’s intake.”¹⁸ These tests were required by the Corps based on concerns that the project’s vibrations could “destabilize the intake tower and cause cracking in the tower’s foundation and seepage under the dam.”¹⁹ It is for precisely these reasons that HMLP should be required to provide more specific engineering information about the project, including how the project will allow the exact same water mixing capability that the Corps currently has, while simultaneously blocking a number of mixing ports that the Corps uses. These analyses must be done before approval of the permit precisely to avoid problems such as those at Jordan Dam.

¹⁴ “Response to Trout Unlimited Comments of May 13, 2008 and Meeting of June 25, 2008,” Hydro Matrix Limited Partnership, Draft Application, p. 50, FERC Docket No. 12737, September 2008.

¹⁵ “Response to Comments of Corps of Engineers of May 13, 2008 and August,” Hydro Matrix Limited Partnership, Draft Application, p. 30, FERC Docket No. 12737, September 2008.

¹⁶ *Id.*

¹⁷ *Id.* at 32.

¹⁸ *Hydro Matrix Limited Partnership*, 121 FERC ¶ 61,048, at 61, 061 (2007).

¹⁹ *Id.*

Lastly, the construction phase of the proposed project is of great concern to TU. The applicant has provided little information about the logistics of construction. Throughout the draft license application the applicant alleges that construction will not be problematic because “there will be no change in water quality during construction. There will be no excavation in the construction activity, so no sediment will be released.”²⁰ Even if this is true, sedimentation of the water is not TU’s only concern. It is not enough that “there will be no flow changes that could cause bank erosion or release sediment into the river.”²¹ Nowhere does the applicant address specifically whether and how ports and flows from the intake tower will be affected during construction. Since the applicant acknowledges that certain of the intake ports will be permanently blocked, it stands to reason that flows will be affected.

Should the Corps be unable to achieve their appropriate mix of water levels or should flow be interrupted to the river for even a short period of time, many aquatic species, trout included, could be imperiled by dangerously low water levels. Temporarily cutting off flows, or just cutting off coldwater releases, even for very short periods of time could have significant negative effects on the trout population and other aquatic life. The applicant must address construction procedures more fully, which is only possible with more concrete information from the Corps and a corresponding analysis of whether or not the proposed applicant can mirror current Corps operations at Gathright dam throughout both the construction and operation of the project.

More than simply being worrisome, failure to provide appropriate engineering documents and information can materially hinder the ability of an applicant to effectively consult with an agency as it is defined in FERC regulations. In failing to consult appropriately, an applicant can face rejection of his entire application.²²

Trout Unlimited appreciates the opportunity to comment on the Draft Application and looks forward to receiving additional information about the project.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Szeptycki', with a long horizontal line extending to the right from the end of the signature.

Leon F. Szeptycki

cc: Marvin Huffman
John Ross
Service List

²⁰ “Impact During Construction,” Hydro Matrix Limited Partnership, Draft Application, p. 25, FERC Docket No. 12737, September 2008.

²¹ “Impingement and Entrainment,” Hydro Matrix Limited Partnership, Draft Application, p. 25, FERC Docket No. 12737, September 2008.

²² See, e.g., *Manter Corporation*, 52 FERC ¶ 61,071 (1990) (affirming rejection of application for failure to provide agencies with sufficient information on which to base consultation).