



January 3, 2017

Shannon Ames  
Executive Director  
Low Impact Hydropower Institute  
704 Potters Falls Road  
Wartburg, TN 37887

*Via Email: [comments@lowimpacthydro.org](mailto:comments@lowimpacthydro.org), and [sames@lowimpacthydro.org](mailto:sames@lowimpacthydro.org)*

Dear Ms. Ames:

The MadDog Chapter of Vermont Trout Unlimited (MDTU) writes in comment to the Low Impact Hydropower Institute Certification Application for the Northfield Dam on the Dog River (FERC Project P-6757 VT) as submitted by Gravity Renewables (Project). MDTU is concerned about the impact of the Project on the Dog River, in particular the flow levels, the effects on temperature and dissolved oxygen, and possible overall negative impact on the trout fishery. Without further study into these impacts, it is questionable whether the Project meets Criteria A and B of the LIHI Certification Criteria.

MDTU is the local chapter of the national Trout Unlimited organization with over 250 members in Lamoille and Washington Counties dedicated to the conservation of local rivers and streams. We are so named after the Mad River and the Dog River, both key tributaries in the Winooski River watershed. MDTU members, as well as members from other Trout Unlimited chapters that visit as part of Vermont's expansive tourist economy, recreate on the Dog River in the vicinity of the Northfield Dam.

The Dog River is an important native trout fishery that has been harmed by dam impoundments and other human-induced impacts for decades. Since 2000, the densities of trout populations in the Dog River have fluctuated, some years for known reasons, such as the impacts of Tropical Storm Irene, but in other years the population has rebounded only to diminish in subsequent years for unknown reasons. While the River is not listed on the Vermont 303(d) List of Impaired Waters, the health of the trout fishery has been of such concern to the state that it is designated a Test Water. Under 10 V.S.A. §4142, the Vermont Fish and Wildlife Department is authorized to designate certain waters as Test Waters "for the purpose of securing data relative to the propagation of fish." Specifically, this is done by the agency to more extensively study why a

specific fishery is struggling, and includes more authorization to narrow take restrictions and further testing to determine the cause of the decline. It is unknown whether the Project has any impact on the fishery, but a lack of studies has not diminished this possibility. In 2016, the agency extended the Test Water designation to 2018 to allow for further study, an action that highlights the continued effort to understand why the trout fishery is faltering.

Overall, one cannot say with any authority whether or not, or to what extent, the Project impacts the native trout fishery. To our knowledge, the applicant has performed no studies on the health of the fishery in the area of the dam or conducted any studies on the water quality in the area. One cannot label a dam “low impact” when the impacts are not quantified or understood. Further, environmental laws and practices have changed in the past several decades. Therefore, a 401 Water Quality Certificate that was issued in 1983 is a poor indicator of environmental compliance. While we are not calling for a new 401, some studies on the impacts of the dam on the native trout fishery are appropriate.

LIHI Criterion A, Ecological Flow Regimes, relates to whether “the flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.” The current required bypass flow of 5 cfs is based on a 401 Water Quality Certificate issued in 1983 and amended in 1985. Our understanding of the streamflow required to support healthy fish populations has expanded substantially in the over 30 years since the project was originally certified. Since 5 cfs is below 7Q10, the bypass flow imposes drought conditions in the bypass whenever the river flow is less than the turbines’ hydraulic capacity, which is inadequate to ensure a healthy fishery. The Vermont Dept. of Environmental Conservation (DEC) notes as much in their October 12, 2016, letter to Gravity Renewables, stating that “this value is below the current 7Q10 value and is likely not adequate to maintain dissolved oxygen, nor aquatic habitat at the base of the dam.”

The Project does not appear to meet the qualifications for any of the Standards in Criterion A. Standard A-1 is not met due to the 130-foot bypass noted in the 401. Standard A-3 also does not apply as the 7Q10 value does not appear to meet the state flow policy or the USFWS New England Flow Policy.

Standard A-2 requires a “site-specific, science-based agency recommendation” for flow (*emphasis in original*). The 1983 401 WQS recommends minimum flow of 5 cfs, but since the DEC currently notes this is below the 7Q10, this flow recommendation should be disqualified, as it is highly unlikely the agency would today recommend a flow below the 7Q10 level. If the age of the recommendation alone is not enough for disqualification, we would ask the applicant to produce a study to demonstrate that 5 cfs is science-based and meets currently accepted practices.

Standard A-4 requires a determination on “a site-specific basis, using a well-documented habitat evaluation technique or science-based flow-ecology model.” (*emphasis in original*) To our knowledge, no such studies have been done, although we certainly would welcome them. However, the applicant notes that they voluntarily maintain a flow of 20 cfs (which, incidentally, is itself tacit acknowledgement that 5 cfs is inadequate). We appreciate this action, but a voluntary flow is just that, voluntary, and could be rescinded for any reason, the most likely

being drought conditions that impact energy production. A review of historical stream flow data shows that 25 to 30 cfs minimum flow is more appropriate, particularly since the Project is required to operate as run-of-river. Barring any studies conducted by the applicant to show otherwise, we would ask that LIHI require a minimum flow of 30 cfs in order to meet Criterion A.

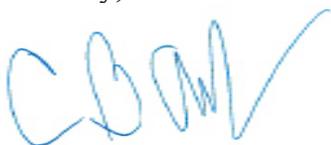
The Project also does not meet the Standards of LIHI Criterion B, Water Quality, under which the applicant is required to “demonstrate compliance ... with the appropriate state / provincial or federal water quality standards.” The Project does not meet the qualifications for Standard B-1 as the dam alters “the physical, chemical and biological water characteristics necessary to support fish and wildlife resources.”

Under Standard B-2, Agency Recommendations, the Project must comply with a “science-based agency recommendation providing reasonable assurance that water quality standards will be met ... (for example, a recent Water Quality Certification pursuant Section 401 of the Clean Water Act.) (*emphasis in original*).” While the Project has a 401 WQS, it was originally issued in 1983, and is therefore not “recent” and should be disqualified.

Turning to Standard B-3, Site-Specific Studies, the owner can demonstrate “it is in compliance with the quantitative water quality standards established by the state,” presumably through site-specific studies, as the title indicates, although this is not specifically enumerated in the body of this subsection. To our knowledge, no such studies have ever been conducted, so, in this case, it is unknown whether the Project is in compliance with the standards set by the state for Class B waters under the Vermont Water Quality Standards (VWQS), specifically for dissolved oxygen and temperature. The (again, voluntary) flow of 20 cfs likely helps the Dog River maintain the necessary levels of dissolved oxygen in the area downstream of the Project. However, the impoundment behind the Project has become impacted by sedimentation over the years, resulting in an ever-shallowing pool behind the dam. This shallow impoundment could result in non-compliance with VWQS for temperature. We recommend that studies be conducted on temperature and dissolved oxygen in the area of the Project to ensure that it is in compliance with VWQS and therefore would meet Criterion B.

In conclusion, the Dog River trout fishery has been impacted for years by many human-induced elements. We ask that LIHI require Gravity Renewables to conduct water quality studies for temperature and dissolved oxygen in the area of the Project to ensure compliance with VWQS and require a flow of 30 cfs instead of the current 5 cfs before it certifies the Project as Low Impact.

Sincerely,



Clark Amadon, President  
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Trout Unlimited of Vermont

cc:

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