April 12, 2024

Melanie Loyzim
Commissioner
State of Maine
Department of Environmental Protection
DEP-Hydropower@maine.gov

RE: Green Lake WQC
DEP Application #L-020024-33-D-N
Green Lake Hydroelectric Project
(FERC Project No. 7189)

Dear Ms. Loyzim:

I am writing to register my interest and concern at the prospect of dam removal and/or enhanced fish passage on Green Lake, Ellsworth, Maine in response to FERC re-licensing. I oppose some the conditions included in the draft Water Quality Certificate circulated on March 14, 2024, specifically conditions 3F-H, that would require the construction of upstream fish passage facilities in the future based on activities at the Ellsworth Dam.

I have spent time nearly every summer on Green Lake, and it is a place that is special to me. I am current a biology professor at Merrimack College, after earning a PhD at the University of Georgia studying freshwater ecosystems. My research focuses on human change to aquatic ecosystems, including invasive species, pollution, and climate change.

As noted throughout the document, maintaining a low tropic state for the lake is a key priority. In many shallow water ponds, warm summer temperatures lead to anoxia throughout the water column. Warmer water temperatures mean that the water can hold less oxygen, and it also stimulates microbial activity to breakdown any organic matter, further reducing oxygen in the water. If the bottom of the lake does become hypoxic, this sets of a positive feedback loop that exacerbates the problem. This is particularly common in shallow ponds, especially in southern New Hampshire and Massachusetts where I currently live. These water bodies struggle to deal with this “internal loading” that is a huge contributor to both phosphorus in the lake and algal growth. To make matters worse, the excess phosphorus is particularly favorable for cyanobacteria, which can lead to lake closures due to high concentrations of toxic compounds from the cyanobacteria. Unfortunately, the reality of climate change is that Maine lakes are beginning to face many challenges that lakes in southern New England currently face. Cyanobacteria also thrive in warmer waters, so I fear that the combination of internal loading of phosphorus and higher water temperatures from a lowered water level and continued climate change could lead major water quality changes in the lake. Thus, I oppose conditions 3F-H in the Water Quality Certificate circulated on March 14, 2024.

Sincerely yours,

William G. McDowell
11 Heritage Cir
Hudson, NH 03051