

From: Larry G. Harris
56 Oyster River Road
Durham, NH 03824

28 January 2022

Dear Members of the Conservation Commission:

I writing to express some opinions concerning the issue of the Mill Pond Dam. I am aware of the strong opinions already expressed by a majority of the commission members, but I feel it is important for you to at least hear from someone who has some alternative opinions to what is being expressed through the Town Council and the recently present FAQ produced by the Town. I come at my opinions based on a 51 year career as a professor in marine biology at UNH and as someone who has spent much of that time directly observing the Oyster River and Mill Pond, including teaching a course in Aquatic Invasive Species, that made use of the Mill Pond for laboratory projects. I have pasted my comments to each of the 23 statements in the FAQ below. Thank you for your service to the town and I hope you will at least consider my statements.

Sincerely yours,

Larry G. Harris
Emeritus Professor of Biological Sciences, UNH

RESPONSES TO THE TOWN FAQ

1. Functions served: The Mill Pond Dam is a historical centerpiece as the site of origin for Durham and the Ambursen Dam is on the NH Historical Register and is eligible for the National Register. There has been a dam and Mill Pond for hundreds of years and it serves the residents of Durham by providing free recreation, wildlife habitat and as a retention pond to help remove excess nutrients which originate from agricultural practices and paved services with increasing development. UNH has allowed toxic runoff from the agricultural activities to flow into both the Oyster River and College Brook. The town of Durham has done nothing to stop the toxic runoff from the Mill Plaza parking lot despite repeated reports and videos being shown to them.
2. Priority Project: Issue is impaired waterways, but that is from upstream inputs, including Moore Fields, paved surfaces, and previously, coal piles and direct drains from UNH science labs into College Brook. There has been no effort to address the sources of inputs that cause impairment, especially water flow from the UNH Dam that greatly reduces turnover in the Mill Pond during dry periods.
3. How Long has this been an issue: In 1984 the town voted to develop plan for maintenance of the Mill Pond. A number of studies have been funded but nothing has been done other than a minor repair of the gates of the dam. The town has spent \$523,000 on studies but only \$3,000 on repairs. **The VHB study was to justify removal**

of the dam so the decision had been made before funding the study and nearly \$400,000 was spent to justify the decision already made. A citizen's petition was submitted that required the citizens of the town to make that decision rather than the Town Council.

4. Why VHB: They have worked on other studies focusing on dam removal and that was the focus of the proposed study. If you want a certain result then you select of firm that has that track record and offer them \$340,000 and title the request for quote (RFQ) Dam Removal.
5. Non-menace waiver: Apparently, the dam is already assumed to be non-menace and that needs to be clarified. No effort has been made to do that.
6. Cost to taxpayers: No mention of LCHIP and other sources of funding for stabilization and the anticipated funding for removal is not guaranteed. Cost of stabilization is likely lower than projected by VHB since their approach would significantly alter the structure.
7. Impact on property values: Speculation, but no specific information and replacement of habitat with what is currently below the Plaza parking lot will certainly have an impact. If you have ever looked at a home on waterfront, you know it will cost more that a home across the street. If waterfront meant nothing, why does the Town of Durham have a special designation for homes on the water?
8. Water Quality: College Brook is one of the most polluted streams in NH and the Oyster River is the recipient of runoff from both agricultural fields and extensive impervious surfaces with more being added with continued development. A steady release of water from the UNH Dam would greatly reduce the buildup of algal blooms and lowering of oxygen levels; that has not been addressed and neither has reducing runoff from fields and surfaces.
9. Why not dredge the pond: Toxic sediments from runoff and previous coal piles and drains from science labs at UNH make disposal an issue. Any channel restoration as proposed with dam removal will face the same issue. There have been two permits issued for dredging the pond but they have been allowed to expire with no action taken. Also, VHB suggested that removing the dam would dump 5,000 yards of toxic sludge, laden with heavy metals, downstream into the tidal portion of the Oyster River; this area is already heavily silted in, not to mention the oyster farms just downstream.
10. Why not clean up the water quality: Very good question, but College Brook begins at the UNH Dairy and receives runoff from athletic fields and snow dumping and drainage from the Plaza parking lot, which the Town has done nothing about. The Oyster River receives runoff from multiple sources and nothing has been done to address those. Steady water release from the UNH dam would help water quality in the pond but do nothing to solve the issue of water quality.
11. Compliance with stormwater permit: Some efforts to address runoff in new construction, but the Oyster River runs brown with each significant rain event so not solving the problem.
12. EPA fines: Any efforts relating to toxic sediments in the pond may change EPA's focus on this issue.
13. Environmental implications: There is the fallacy that dam removal will enhance fish runs and provide new habitat, but repeated observations of what will remain with dam

removal suggests that the area impacted by dam removal will not support any aquatic life. The few inches of water depth will eliminate fish populations, as well as amphibians, turtles, water birds and beavers and muskrats. The exposed surfaces will be colonized by invasive plant species and there is unlikely to be either funding or effort to manage the close to 24 acres of exposed surfaces. A driving force for dam removal is to restore ground fish populations in the Gulf of Maine by increasing bait fish (herring) runs because it makes money and there are lobbyists. Proposing solutions counter to this emphasis is not good for job security. Each system is unique and the evidence from past drawdowns of the Mill Pond suggests that what is claimed by proponents is very unlikely to happen.

14. How much river will be restored?: This is very misleading. College Brook will not be affected at all as it flows down into the pond. The same is true for the Oyster River from Thompson Lane to the UNH Dam. Only the pond up to Hamel Brook and the short river section to Thompson Lane will be impacted. That means that aquatic habitat in the Oyster River to support aquatic life will be severely reduced to the section above Thompson Lane – not a lot of habitat to support fish and other aquatic life.
15. Can the UNH Dam be fitted with a fish ladder: Images from a draw down in 2016 suggest that the reservoir is heavily silted in and would need dredging to make it suitable for fish runs. The fish ladder on the Mill Pond Dam was installed in 1975. Why has nothing happened with the UNH Dam in all this time?
16. Blueback Herring: A major talking point for dam removal has been enhancing herring runs. Dam removal would eliminate any habitat for alewives and reduce habitat for Blueback Herring juveniles to only the stretch above Thompson Lane. Adults only spawn above Thompson Lane now, but juveniles have the impoundment that will be gone. American Eels will also be limited to the stretch above Thompson Lane which will further impact their populations. Without a fish ladder, there will be no monitoring of fish runs on the Oyster River making it very difficult to know whether the impact will be positive or negative.
17. Pollutants in the pond: There are pollutants including PAHs and heavy metals. There are also very high levels of Mercury in the deeper sediments which are not mentioned. They will be exposed with erosion and channel restoration. The impact on Great Bay and the oyster farms in the tidal portion of the Oyster River will be recipients of the pollutants.
18. Invasives: There are invasives waiting to colonize exposed habitats. At the meeting when the study to justify dam removal was proposed Administrator Selig said there was no funding for invasive management, but a 5 year plan is proposed here. It is highly unlikely that the almost 24 acres of habitat exposed with dam removal is going to be managed. Look at College Brook below the Plaza parking lot. The invasive species did not occur in NH in the precolonial era so restoration to that period is a fallacy.
19. Recreation: Minimal effort was made concerning recreation in the VHB study and some of what was described was associated with the tidal portion of the Oyster River below the dam. The impoundment provides a variety of recreational activities that are free and available throughout the year. No effort to highlight this resource has been made by Parks and Recreation even though winter sports on the pond have been conspicuous for

anyone traversing Mill Pond Road in the winter. Wildlife habitat similar to College Brook below the Plaza is not likely to attract much attention as a recreation destination.

20. Access: Access is available off Laurel Lane, the Foss Farm trail systems, the Milne Sanctuary and the small park on Mill Pond Road. If the Town had made any effort, access could be provided more easily in the warm months off Mill Pond Road.
21. Historic Dam: The Ambursen-style dam is unique and is on the NH Historical Registry and qualifies for the National Registry. VHB suggested the dam would have to be encased to repair it, but buttressing the basal plates as suggested by retired Professor Gress, an expert in concrete, would maintain the structure and be cheaper.
22. Will history be preserved with dam removal. There is currently no signage to inform the significance of the dam and pond and it is unlikely that there would be any afterwards given how difficult that site is to access. The VHB proposes channel restoration and techniques to stabilize sediments. The images produced show channelization with riprap which does not suggest a restored natural free-flowing river. During the summer months almost no water flows down the river and over the dam so free flowing is not accurate due to the UNH dam and upstream development. Also, the only area impacted by dam removal would be the impoundment and up to Thompson Lane. Most of the Oyster River and none of College Brook would be affected. Therefore, restoration to a natural system is a fallacy.
23. What will it look like after dam removal? College Brook below the Plaza for most of the impoundment and a very artificial channelized section near where the dam was. Hardly a natural system.