Final Minutes Barnet Dam Committee Meetings of March 9, 2026

A meeting was held at the Barnet Library on March 9, 2026. Attending the meeting were representatives of the Barnet Dam Committee (BDC) including Dylan Ford, George Coppenrath, Joe Mangiapane, Red Dufresne and Richard Downer (on zoom). Also attending were representatives of the State of Vermont Dam Safety Program (DSP) including Ben Green, PE, Steve Hanna (on zoom) and for a short time Jeff Crocker, River Ecologist from DEC (on zoom). Finally, Nicole Buck, PE from McFarland Johnson, Inc. the consultant on the upstream H&H Study for the Town of Barnet. The meeting followed the agenda items contained in an email of February 8, 2026 from Red to Ben Green which responded to state comments regarding alternative project concepts. The agenda items are appended to these minutes.

Summary

The meeting focused on discussing alternative dam modifications and water management solutions for reducing the backflow from South Peacham Brook into Harvey Lake, with participants reviewing hydrological modeling results and proposed design changes. Nicole Buck, PE presented the results of computer modeling which showed that decades of soil deposition upstream of the dam significantly limits flow passage to and over the dam regardless of any improvements made at the dam. The section of South Peacham Brook of greatest concern is located between Harvey Mountain Road Bridge and the dam. This section has been silted in and is now very shallow and unable to pass even moderate rates of flow to the dam without flooding the area upstream of the dam. This constriction causes forces water to pass to the south into Lake Harvey during storm events. However, the model results indicated that dredging this section of the South Peacham Brook channel in addition to implementing dam modifications could effectively eliminate backflow to the lake for storm events up to and including the 25-year storm. Although not modeled, Nicole felt that storms greater than the 25-year event would still result in back flow to the lake but much less than presently experienced.

Nicole had previously met with the BDC and presented model results which indicated the limited benefit in reducing back flow based on the use of an alternative 85-foot bladder concept due to the shallow stream channels upstream of the dam. The BDC then asked Nicole to simulate a large sluice gate in addition to a bladder and this concept also showed limited improvement. The BDC then asked Nicole to ascertain the effect of two project concept modifications including:

1. Including a 5’ wide by 10’ high sluice gate on the east side of the dam and shortening the bladder to 70 feet in length to provide space for the sluice gate, and
2. Clearing and excavating a wider and deeper channel for the South Peacham Brook channel from the Harvey Mountain Road Bridge to the dam. The modified

channel geometry used in the model included deepening the channel by an additional 5 feet and holding a 20-foot bottom width and armored side slopes at a 2H:1V slope back to existing grade with the excavated material forming a berm on the southern side of the improved channel to restrict flood flows from short circuiting to the lake. There was discussions after the meeting with Nicole on the potential benefit of a more direct channel but this alternative was not simulated. Also, it is noted that the geometry of the sluice gate would depend on soil borings and dam substructure considerations yet to be defined.

The model results indicated a significant improvement when both of these improvements were simulated for inclusion into the project. Red indicated that the original goal was to eliminate backflow into the lake for storms up to and including a 100-year storm event and asked how the BDC members felt about the model results that appeared to indicate these project improvements may only eliminate backflow into the lake for storms up the 25 year event and that seemed acceptable to the BDC members given the 50 plus years of soil deposition in the upstream area.

Participants expressed concerns about operational requirements, permitting challenges, and the need for ongoing maintenance, particularly regarding who would handle dam operations in the future after this project was completed.

Meeting Minutes:

The discussion at the meeting followed along the agenda as follows:

1. The concept for the control and instrumentation control system was discussed and Ben noted that this level of automation was not typical for small rural dams. Joe indicated that in his experience it was typical that programable logic controllers (PLC's) as part of a supervisory control and data acquisition (SCADA) system is routine for water control systems. Red indicated that unfortunately the complexity of the outlet configuration with the lake outlet confluence with the South Peacham Brook created a level of complexity not typically encountered. Nicole also indicated the model grew to be complex because of the two much different watersheds upstream of the dam. All agreed to better define the proposed dam control system in the Basis of Design Report for review and comment by the state.
    a. Ben asked who would be in charge of dam operation and Red felt that it was likely that the Town would have to take on operation through the public works department. Dylan felt the need would require a trained individual familiar with the equipment and instrumentation.
    b. Joe indicated that Ryan Mathews from McIndoe Falls does this type of work and could be considered.

2. Ben noted the need for an Operation and Maintenance Manual as part of the project. Red agreed the O&M manual was an important item and would be completed after the project concept was defined and approved. The Basis of Design will outline the basic O&M requirements and address how the Town will ensure proper O&M system is put in place prior to operation. But the manuals are usually completed as part of the construction process as portions of the manual are prepared in part by the equipment manufacturers that are selected during the construction phase.
3. The operation of the conceptual sluice gate was discussed and Red felt that the sluice gate would be electrically operated but controlled using a manual start-stop control rather than an automated system based on water level. Red noted that these gates are difficult to control as significant flow begins when the gate is barely off the bottom. The concept would be that the bladder would effectively control normal and moderate water flow based on water level detected just upstream of the dam as well as at remote water level sensor locations at the lake and at south Peacham Brook. The sluice gate would be used during significant flow conditions when the bladder cannot pass sufficient flow to prevent backflow to the lake. Joe suggested the gate could either be controlled manually or automatically using the SCADA control system and Red agreed this was easily done.
    a. There was discussion on the existing 2-foot square low level drain sluice gate. Joe noted the gate and stanchion had been repaired but we were hesitant to operate the gate without an upstream bar rack to prevent trees and other debris getting trapped in the small opening and not allowing the gate to close. George asked if a limited scope permit could be prepared providing for installation of a bar rack only and Ben agreed this was possible and favored this limited scope improvement to allow the bottom drain gate to be routinely exercised. The BDC members felt this made sense and would consider preparation of a separate permit application at the next meeting.
4. Nicole discussed the results of the modeling which is briefly described in the summary above. During this discussion, Steve Hanna suggested a small weir be installed at the upstream end of the outlet channel which caused some concern by BDC members as this same concept was initially considered during previous studies but grew into a huge project involving steel sheeting across the valley, significant earthwork, and disturbance of wetlands when the weir or “riffle” was considered to be a dam under the state regulations and was required to meet all dam criteria including passage of a 100 year flood event. After review of the 30% complete design drawings the project concept was not approved by the Dam Safety Section. This was disappointing to the BDC since the concept was

prefaced in a report and then taken to 30% design by Interfluve. Failure to obtain state approval resulted in discarding this alternative.

a. Dylan expressed her frustration with the dam permitting process, feeling like every attempt to move forward was blocked by the state and mired with never-ending permit requirements. It seemed like the local officials (volunteers) who had spent so much time attempting to protect lake water quality were given little support in actually getting to the point of allowing construction to begin to accomplish the goal of protecting lake water quality. She highlighted the importance of maintaining the lake's cleanliness and cool temperature. Dylan also questioned the approvability of alternative solutions like dredging and the installation of a sluice gate, calling for clarity on what options are realistically available before further investments are made. Dylan highlighted the importance of moving sediment and water downstream on the Stevens rather than further deposition of material in wetland and lake. The purpose of this meeting was to ascertain the likelihood for approval of a combination of a sluice gate and bladder system for controlling flow during high-flood events and noted the frustration of not obtaining an answer from the State. Dylan also mentioned past community efforts to prevent lake pollution and limit impact of temperature rises on aquatic life, reinforcing the urgency of addressing the current issues. The discussion included the evolution of the project from a full bladder dam to a shorter bladder with a sluice gate, and the need for dredging the South Peacham Brook channel from Harvey Mountain Road Bridge to the dam based on the model results.
b. George supported Dylan’s concerns and outlined his personal history with the pollution of, and backflow into, the lake. Thirteen years after the construction of the dam a 1983 study directed by the Vermont Department of Conservation found that backflow was damaging the water quality of the lake. It was also found that there was “runoff” pollution on the east side of the lake that was addressed by local volunteers and the Lake Harvey Association Diversion ditches were dug to intercept and alter the runoff away from the lake to a stream that flowed through the Choate meadow bypassing the lake. All water quality recommendations that could be accomplished without permits were completed locally. George added that the backflow has been depositing silt at the outlet for 55 years and has increased the temperature of the water to the extent that the Vermont Fish and Wildlife Department has stopped stocking rainbow trout due to the collapsing of the cold temperature gradient needed for the trout to survive.

c. Red noted that the purpose of the meeting was to obtain a clear decision on whether or not a sluice gates were approved for use by the state. Ben indicated that he could not give approval until more information was available as the “devil is in the details”. Red indicated he felt that based on his experience, sluice gates were not approvable by the Vermont Dam Safety Division. However, Ben and Steve indicated that this was not the case and there was no general rule disallowing sluice gates. Nicole suggested that the dam improvements should be separated from the dredging so they could both move forward separately and the dam committee voted to follow her recommendation.
d. Joe asked for permission to operate the stopboards especially during spring runoff and Ben indicated that was not his call and that even at dams owned by the state, it is not possible to remove or install stopboards without a study which typically costs about $30,000. Ben indicated that the stopboards could not be manipulated under state regulations.

5. The dredging of South Peacham Brook was discussed and it was noted the Harvey Mountain Road Bridge was a significant impediment to water passage during flood conditions and was responsible for the flood waters passing through the beach parking lot and causing significant damage to the beach and Sunny Beach Road properties. Dylan indicated this was a locally maintained bridge and replacement is not scheduled for the near future.
    a. Joe gave Ben several photos showing the water levels upstream and downstream of the bridge he observed during the flood of 2024.
6. However, it is noted that the model indicated although the bridge can restrict flow, the greater restriction is the silt deposition between the bridge and the dam. Basically, during high flows most of the flood water travels overland and into the lake.
7. Ben noted that there would likely be a need to maintain this improved brook channel. Red felt that intermittent operation of the sluice gate may eliminate future needs for dredging. George noted that when the two sluice gates were opened during storm events at the pre-1970 dam, the channels were much deeper and wider without any dredging. Red indicated that it may even be possible to eliminate mechanical dredging just by use of the modified dam and sluice gate during storm events.
8. Regarding the need to release flow during low flow events, Red outlined the option for a low flow meter device as part of the project to match flow release at the dam to flow passing under Harvey Mountain Road Bridge. In this case, flow would be estimated based on a gaging station at the bridge and the low flow device would match this flow for release. However, Ben and Steve felt this

system would not be necessary as long as the dam was maintained at the normal level during low flow events.

9. Red questioned the 10% retainage comment (contained in the January 22, 2026 State review comments copy attached) and Ben clarified that in a low flow or a drained for maintenance condition and if the lake needed to be refilled, only 10% of the flow could be retained to fill the lake and 90% of the flow must continue downstream. The BDC members felt this would not be an issue and would provide assurance in meeting this criterion.
10. The questions on operation of the proposed bladder were discussed and followed the narrative in the attached agenda.
11. The issue of fish passage came up and there was unanimous input by the BDC that this was a waste of money as the fish ladder had never been used since construction. This item was required at the last minute due to the Connecticut River salmon stocking program which was not successful. However, BDC members felt that if required, it would be a minor cost to replace the baffles as the concrete structure was still in good condition.
12. Ben reminded the BDC that permit compliance would be required well beyond the Dam Safety Section and suggested contact be made to for permit specialist including but not limited to Stream Alteration, Lakes & Ponds, Floodplain, Fish & Wildlife, and Water Quality.
    a. Nicole suggested contacting Jason Borge at this time and indicated she would have a discussion with him.
13. Red asked about State funding since this project was directly and exclusively related to protecting waters of the State of Vermont. Ben indicated the potential for state funding was not his area of expertise.
14. Red asked if Ben could comment on the past statements made by representatives of the state that the State may be able to take ownership of the dam and if the state owned the dam, these state regulators indicated they would breach the dam and drop the lake to its pre-dam condition. Ben couldn't comment on past discussions before his time, but he felt that the state was not able to take on any additional dam ownership at this time.
    a. Joe felt there was ledge that limited the lake drop to about two feet. However, Red indicated the channel probes by Interfluve did not support this. In addition, the historical record showed that one of the early dams built just after the Civil War showed that permission was given to raise the lake by about 4.5 feet from its original level.
15. Richard indicated that the Harvey Mountain Road Bridge be given high priority for replacement with a bridge of a much wider span to allow more water to pass. The BDC members felt that unless the bridge was improved it was a matter of time before the beach was lost again.

16. Richard also felt that there was a need for stream realignment at the confluence of South Peacham Brook and the Lake outlet stream to eliminate the 90-degree turn which contributed to erosion of the machine shop parking lot bank.
17. Red felt that since there was a common goal to improve water quality and hoped that with the work done by Nicole and the BDC that with the States' help we all could ensure success limiting backflow into Lake Harvey to improve and maintain the quality for the lake.

Next steps:

1. The Barnet Dam Committee will prepare a summary of the project concept as refined based on the recent modeling as part of these minutes.
2. Nicole will complete the upstream Hydraulics and Hydrology memorandum which will be appended to the Basis of Design Report being completed for State review by the Barnet Dam Committee. Nicole indicated her memorandum will likely be completed by the end of March 2026.
3. The Barnet Dam Committee will revise and prepare the draft Basis of Design Report for submittal to the Dam Safety Section. After the meeting Red indicated to Ben that the draft Basis of Design could be submitted to Dam Safety in two months.
4. Nicole will contact Jared Borge (River Management Engineer) to discuss the potential for dredging and channel improvements and get initial comments on such a concept.
5. Ben Green recommended the Basis of Design Report include a narrative section on permitting requirements to be addressed as part of the project

AGENDA MATCH 9, 2026 MEETING
BARNET DAM COMMITTEE

The State Review Comments of January 22, 2026 (shown below in italics) and the BDC response of February 8, 2026 (shown in normal font) serve as the Agenda for the March 9, 2026 meeting. The numbering format has been added for reference:

1. *Instrumentation and automation of the system will be required and it sounds like it may be complex with substantial startup and future O&M considerations. This is true of any gate automated operation system.*
    a. We agree that the instrumentation & control items identified in the project concept seems complex at this stage of the project, but the devices and control logic will be further delineated in the Basis of Design Report. In addition, the control system will be designed by Instrumentation and Control specialists and will be subject to review by DSP engineers prior to construction. BDC members agreed there may be start-up refinements and continuing O&M consideration regarding system controls. However, several of the BDC members have experience with similar sensors, transmitters, PLC's, that form the makings of a supervisory control and data acquisition (SCADA) system. Experience in the past several decades has demonstrated the reliability of these SCADA systems that are used at most water and wastewater treatment facilities throughout New England and have been shown to reduce operational time substantially as well as provide real time data and allow for permanent data recording. However, we feel that the lifecycle cost of an automated control system will be less than the salary for a part time dam operator.
2. *If low-level gates are used, there may be a preference to operate them often to keep a steady state of natural sediment load moving downstream (rather than unnatural slugs of sediment).*
    a. This makes sense. Once the low-level outlets are protected from debris with bar racks, these gates could be opened a minor amount depending on stream flow. Due to the gate geometry required for storms greater than 25-year events, it may not be possible to control the large sluice gate to pass stable flow during a normal dry weather condition without dropping the upstream water level below the dam crest. However, the small 2-foot square low-level sluice gate would be easier to control. It seems to make sense to hold off operation of the larger sluice gate for use only during high storm events except for routine open/close cycle events. The large sluice gate could be electrically actuated using an up-stop-down controller at a push button station instead of being part of the SCADA system. Using this concept the existing 2-square-foot low level gate would

be fitted with an electric operator for control though the SCADA system along with the bladder. As with all control items, there would be manual override.

3. *Visual flow over the dam is a parameter of the Vermont water quality standards that will need to be addressed.*
    a. Agreed. The concept we have discussed is based on matching the flow in the South Peacham Brook as sensed and transmitted from a gauging station located at the Harvey Mountain Road Bridge. As you may know, there was an extended period of time during 2025 when there was no flow passing over the Harvey Lake dam. We monitored the Lake level in terms of NAVD elevation at the lake as well during this abnormally dry period and there were extended periods when the lake level was below the dam crest.
    b. Also, we feel it is unlikely effective operation of the bladder or the gates will be sensitive enough to "match flows" during these low flow periods and we may want to include an 8-inch-diameter magnetic meter and control valve for low flow passage (flows between 0 and 500 GPM or 0 and 1.1 cfs). The current least invasive location for this control valve is at the current fish stop logs. The stop logs would be removed and replaced with a stainless-steel slide gate with the magnetic meter and flow control valve attached. A valve at this location would readily be observed and facilitate maintenance.
4. *It is our understanding that the industry standard is to not inflate a bladder under load, while passing water. This would mean a lowering of the lake level until the bladder could be safely inflated. In addition, only 10% of inflow can be retained for storage. Also, how would it be operated in freezing/icy conditions?*
    a. We contacted the potential bladder manufacturer used during development of the project concept and they provided the following information shown in smaller font below. Regarding the comment that "only 10% of inflow can be retained for storage", we would need to discuss the comment in more detail to understate the potential issue at our next meeting. It has always been our intent to bypass the south Peacham Brook flow. We have no interest in diverting any of the South Peacham Brook flow to the lake. The other items raised in this comment are addressed by the manufacturer below:
        i. Thanks for sending us comments and questions regarding the bladder from the state.
        ii. It wouldn't be necessary to lower the lake level to inflate the bladder. The rubber dam will be able to inflate and deflate freely within the range from the dry condition up to the designed dam height + 10% (safe operational range).

iii. The dam can typically continue to operate in freezing conditions. The bladder material is rated for temperatures down to -40 degrees F. There are rubber dams installed throughout the Northeast U.S. as well as up into higher latitudes where they operate without problems in the freezing temperatures. While a bubbler system would certainly be nice, I don't know of many projects in that area where they are used. The recommendation in our O&M Manual states that if the rubber dam is to be used in the winter in freezing conditions, keep the water in the upstream surface unfrozen if possible. However, on many of these projects we recognize it just isn't feasible. However, the rubber dam can be useful in passing ice over the top when partially deflated to prevent ice dams where fixed dams (like concrete) are unable to do that.

iv. We could include in our scope of supply a mechanical emergency deflation system to completely deflate the dam when a certain high-water level is reached. This helps protect the bladder if the auto mode were to fail during a high-water event.