

## **Bristol Mills Dam ad hoc Advisory Committee**

Minutes of Meeting Tuesday, July 11<sup>th</sup>, 2017  
Bristol Town Office

Committee members present: Pam Allen, Phil Averill, Bill Benner, Claire Enterline, Chuck Farrell, James Hatch, Abby Ingraham

Absent: James Albright, John Freburger

Also present: Chris Hall (Town Administrator); Chad Hanna, Rob Davidson, Rick Poland, Slade Moore, George Parker, Don Means, Louise and Peter Riley.

The meeting was called to order by chair Enterline at 6:00 pm with a quorum present, and the Pledge of Allegiance was recited.

A motion to accept the Minutes of 6/13 was proposed by Farrell, seconded by Hatch. In discussion, it was questioned whether there needs to be further descriptions of certain of the listed alternative sites. Agreed to consult with Bristol Fire and Rescue on this. Subject to possible amendment therefrom, the minutes were adopted unanimously.

There were no amendments to the agenda.

Chair Enterline asked Chad Hanna, Chair of Selectmen, to describe the recent history of the dam and fish passage, prior to the formation of the Dam Committee in 2016. He reported as follows:

- In 2005 US Fish and Wildlife inspected the fish passage, concluding that: (i) it conformed to the design plan for the Denil passage in 1971; (ii) the design lacks adequate flow control at entry, turning point and exit; (iii) the entrance lacks adequate attraction flow, thus requiring a leader.  
They proposed enhancements as follows: (i) add concrete extensions to the entrance and exit; (ii) incorporate a concrete baffle midway at the turning pool; and (iii) extend the concrete base to form an entrance pool.
- In 2012, Slade Moore took an interest in the alewife run, joining Rick Poland who serves as the primary steward of the fish ladder on the Fish Committee. Slade identified funding opportunities for a study of the fish passage.
- In October 2012 this led to a Maine Coastal program, Coastal Communities Grant application, which was awarded in December 2013.
- In March 2014, an RFP for engineering services was issued and in April, a contract awarded to Wright-Pierce after a competitive bidding process, with engineer Joe McLean assigned to work with the Town on the design of a new fish passage.
- In June – August 2014 meetings were held for data collection and development of design concepts, leading to the presentation in September of two alternatives, both re-using a portion of the existing Denil fishway: (i) adding the 2005 USF&W recommended enhancements, or (ii) replacing the lower half of the fishway with a ‘dogleg’ structure to an entrance at the base of the dam. Other designs were considered, like using Alaskan SteepPass for sections, or constructing a pool and weir fishway, but rejected because of their limited capacity to pass fish (in the

case of the Alaskan SteepPass), or high construction costs (in the case of a pool and weir). In December 2014 Wright-Pierce delivered the 90% design drawings that utilized portions of the existing 3-foot Denil.

- In consultation with state and federal fisheries experts and fishway engineers from USFWS and NOAA, the team recognized that the 3 foot width of the current Denil passage would limit passage to an estimated 200,000 fish, compared with a theoretical capacity of 600,000 for the watershed, in January 2015 Selectmen considered other alternatives:
  - o A 4-foot wide Denil with two entrances;
  - o Two, side-by-side Denil passages;
  - o A Nequasset-style 'linear' concrete sided pool-and-weir design, 5 feet wide; and
  - o A round pool-and-weir design similar to that at Damariscotta Mills.

Hanna presented a handout with a matrix summarizing the engineering discussion with Wright-Pierce around these alternatives. The factors considered to make this decision and weigh the alternatives against each other were:

- The potential for each structure passing 600,000 fish
- Factors complicating performance
- Tolerance to flow fluctuations
- Cost ranking
- Time to design
- Time to obtain construction funding

The chosen solution was a 4-foot Denil ladder, with entrance at the base of the dam, engineered so that a second ladder could be built in parallel as a Phase Two once the fish returns justified the additional capacity.

- In May to October 2015, Selectmen sought grant funding for construction of this design, but were ultimately unsuccessful.
- In 2015 Wright-Pierce also studied the condition of the dam at the request of the Town, and recommended urgent work to grout voids within the structure. The last dam maintenance work had been conducted in 1994. Once it became clear that fish passage funding would likely be delayed, Selectmen authorized proceeding with the grout repair work in 2016 because the company to perform the work had already been contracted by the Town.
- In May 2016, further discussion of funding opportunities led to the Selectmen requesting the formation of the Dam Advisory Committee, to see what the costs and benefits of full or partial dam removal would be that accommodated all factors (firefighting water supply, recreation, fish passage, and water control) but also saved the town money in the near and long term.

Hanna encouraged the Committee to keep Wright-Pierce within their scope of work and budget, focused on dam replacement options and related mitigation for water levels, recreation and fire protection. He would not discourage the Committee from studying alternative fish passage solutions, but not at the expense of the budget for engineering work.

In conclusion, he stressed that if the dam is to remain, we have to upgrade the fish passage; but extensive study undertaken between 2012 and 2016 suggests that the option chosen should remain as the base case or 'Option A' for comparison with other, full or partial removal, options. He asked the Committee to refine the alternatives of partial removal and replacement of the dam ('Option B') and full replacement ('Option C'), and press Wright-Pierce to study how each might maintain and/or enhance the four values of fish passage, maintaining upstream water levels, recreational swimming and fire protection.

In discussion, Hanna apologized for not giving this history sooner. In response to a question from Ingraham on funding, he suggested that once an option was selected (from Wright-Pierce's costing out of Options A, B and C), if no grant money seemed available the Town might establish a fundraising group to defray some of the costs to taxpayers. From the floor, D. Means added that Lincoln County regional planning Commission should also be engaged to seek grant help. Hatch stressed that upstream towns – Damariscotta, Bremen and Nobleboro – benefit from the dam and should be encouraged to contribute.

Allen asked if the Selectmen felt satisfied with the 4-foot Denil design. Hanna replied that yes, he thought it was a well thought out process with advice and guidance from state and federal agencies. The group looked at lower cost options, but these still required a substantial investment and did not provide the fishway capacity to pass the full projected run of 600,000 fish. He commented that Wright-Pierce did more work than was required by the contract during that process, by completely switching designs at the 90% design phase. The group did look at more expensive designs, but they did not find it feasible to spend 10 years fundraising for a new ladder.

Farrell asked why Hanna decided to present this information now. Hanna replied that in hindsight, he should have presented it sooner, but he realized now that it was important to clarify the background because not everyone was aware of the timeline or watched past Selectmen's meetings on LCTV. The past process was recorded.

Farrell asked whether there would be additional town funding if the Committee wanted more details, like data reports that required money to obtain. Hanna replied that this might be possible as long as the cost is reasonable.

Ingraham asked if Wright-Pierce would be developing cost estimates. It was clarified that yes, that was part of the scope of work to produce construction and long-term operation and maintenance costs for each option, as stated in the scope of work and contract with the Town.

Benner asked if grant funding would be available for construction of an upstream weir to regulate water levels, which Hanna felt was unlikely. Enterline pointed out that Alna and Whitefield have been successful in getting grants for solutions that involve partial removal or replacement of dams, including receiving grant funds for relocating fire protection water and enhancing recreation areas.

Opening questions from the floor, Means asked about the costs of dam repair foreseen, and those incurred to date. Hanna reported that the 2016 work had cost approximately \$25,000 and had only included grouting, and the projected work to control the dam boards remotely and complete the other dam repairs would cost perhaps \$75,000 with manual controls, or \$85,000 with electronic controls. He wanted to make sure there would be no "man-on-dam" in high water adjusting the boards. He stressed that they

are risking people's safety to control water level using the current system of manually placing and removing boards. If you add the cost of fixing some spalling on the concrete dam face, and perhaps some additional grouting, the total costs of dam work could approach \$100,000.

Asked if there would be any need for a fish ladder if the dam is removed, Hanna pointed out that any weir-like structure to maintain upstream water levels (perhaps at the Stone Arch Bridge) would need to be designed to ensure easy passage. Averill noted that this could look similar to the rock weirs that are in the river behind the town office.

Replacing the dam with rock weir water control structures would be engineered, but once in place it would look natural.

Asked if there has been any determination of an acceptable drop in the upstream water level, Hanna replied "zero" – no sustained drop is acceptable. The other options would control water level within the current range.

Moore stressed that the Fish Committee currently only has two members, and it is very hard to sustain the run because of all the maintenance needed to get the fish ladder to work. The run is still in existence because of hard manual labor, and this level of effort is not sustainable for a long period. A ten year fundraising timeline is not timely for sustaining the run.

At 6.55 pm, chair Enterline thanked Chad Hanna and moved the discussion to Wright-Pierce's scope of work.

Hatch stated that while we have two options that are generally understood – 'A' being the fish passage outlined by Hanna, and 'C' being dam removal and replacement with rock weirs, the intermediate Option 'B', partial removal, is not clearly defined. We need to discuss this with Wright-Pierce; they need guidance from the Committee on any particular level of water.

Averill referred to Benner's earlier suggestion of small working groups as a way forward, to define an Option B. Benner agreed, but pointed out the time constraints the Committee is now under. Allen wished to see costings for option B and C as soon as possible.

Farrell pointed out that some implications of dam removal, including long-term costs, may be beyond the normal scope of an engineering study: taxation, land values, insurance, for example. He would like to understand public opinion, in Bristol and in neighboring communities. Allen agreed it would be good to consider these bigger questions, but it is best to do so once there are clearly defined options to share with the communities. This is not the same as presenting a fait accompli, but a way to have manageable public consultation.

Hall raised the question of whether a by-pass channel, such as at Howland, should be part of the study of Option B. Hatch believed that Wright-Pierce had already suggested this was too expensive, but stressed his desire to have at least an hour's discussion of Option B between Wright-Pierce and the Committee to define this option and understand the likely costs.

Enterline reminded the Committee that at the next meeting we would be able to learn from other towns as to their process and experience. Allen asked if Wright-Pierce should be at that meeting, Enterline said she will request Wright-Pierce to attend the July 25 meeting.

Enterline said that to ensure clarity she would like the Committee to consider a series of motions. First, she proposed (seconded by Farrell) that:

“The Committee requests Wright-Pierce to study and report, for each of options B and C, the implications for the four criteria of (i) upstream water level, (ii) recreational swimming, (iii) fire protection and (iv) fish passage; with, in addition, consideration of the implications of these options for abutting properties between the dam and the Benner Road bridge.”

Motion carried 6 – 0.

Enterline then proposed, seconded by Farrell, “that Option A, the base case of dam retention and enhanced fish passage, would be specified for the purposes of Wright-Pierce’s study to be the 4-foot Denil passage approved by selectmen in 2015, with the option of doubling capacity with a second parallel passage later.” This was passed 4 – 3.

Hatch proposed, seconded by Enterline, “that the options to be defined and costed by Wright-Pierce are limited to the options A, B and C in their scope of work.” In discussion it was questioned whether this excludes a “do nothing” option; Hatch pointed out that the motion is simply trying to define Wright-Pierce’s work, not limit the Committee’s options. The motion passed, 7 – 0.

Averill wished to share his ideas for Option B, proposing partial dam removal but retaining perhaps 5 feet of structure for water impoundment. This could be combined with a SteepPass or other fishway in the center of the dam, or else with a Howland-type by-pass stream – each of these being much cheaper if there is only a five-foot rise to be gained. This option will be referred to Wright-Pierce as part of their study of Option B, with the caveat that Averill will reword his assessment of the swimming hole, and revise the discussion of fishway type, leaving it to Wright-Pierce to suggest the best fish passage design for this option.

In public comments, Davidson stressed the needs of the Bristol Fire Department. He believed that at present, there is no support from that department for dam removal; Wright-Pierce should take more time with them to define the alternative water source options.

There being no further comments, at 7:55 pm Farrell moved to adjourn; seconded by Hatch. The motion passed 6-1.

Respectfully submitted,  
Chris Hall  
Town Administrator