

ARTICLE 23: APPROPRIATE FUNDS FOR SNAKE BROOK DAM VALVE REPAIRS

Proposed by: Conservation Commission

Estimated Cost: \$115,000

To determine whether the Town will vote to:

- Appropriate a sum of money to be expended under the direction of the Conservation Commission for the purpose of designing and permitting the repairs recommended by the Town's contracted engineer to make the low-level outlet operational and to provide access to the low-level outlet inside the gatehouse;
- Determine whether such appropriation shall be provided by taxation, by transfer from unappropriated funds, transfer from available funds already appropriated for another purpose, by borrowing under Massachusetts General Law Chapter 44 or other enabling authority, or otherwise;
- Authorize the Town Administrator to take any action necessary to carry out this program, and;
- Provided that a qualified contractor with expertise in dam repairs is contracted to perform the necessary design and permitting documents.

FINANCE COMMITTEE COMMENTS: Passage of this article will provide funding for engineering design services and permitting for repairs to the Snake Brook Dam located near 70 Rice Road. Specifically, the Town needs to repair the low-level outlet pipe in order to release water from the impoundment during periods of high water and to enlarge the existing spillway. The impoundment is the area that holds the collected water behind the dam and is approximately 12-acres in size. The Snake Brook Dam 2017 Phase I Inspection Report prepared by Haley & Aldrich, Inc. recommended that the low-level outlet in the gatehouse be restored and maintained to allow the reservoir to be drained and to identify and address any other known hazards at the dam site. Further, the Town is required to prepare an Emergency Action Plan as required by the revised Dam Safety Regulations of 302 CMR 10.00.

The Snake Brook Dam is located on Rice Road (between 70 and 78 Rice Road, at the southern end of Hamlin Woods) and under the care and custody of the Conservation Commission. The dam was constructed in 1879 and is classified by the MA Office of Dam Safety Regulations as an Intermediate dam with Significant Hazard Potential. The low-level outlet repairs are essential to maintain safe water levels in the impoundment to prevent a flood hazard potential downstream.

Capital appropriations were approved at two prior Annual Town Meetings (ATM). At 2011 ATM, \$100,000 was approved to repair the earthen dam and gatehouse at Hamlin Woods. This request was based on an engineering inspection of the dam; the inspection was conducted because during the March 2011 rains, water overtopped the dam. At 2013 ATM, an additional \$25,000 was appropriated to supplement the \$90,000 remaining from the previous appropriation for the purpose of repairing the earthen dam. Specifically, the request included repair of the spillway and emergency relief pipe and removing stumps. The cost was anticipated to cover design work, permitting and the work to make the identified repairs.

Approximately, \$82,000 remains from prior appropriations; however, design and permitting expenses have increased to an estimated \$195,000. Therefore, this article requests \$115,000 in funding to meet the difference in the escalated costs described below. A request to fund the repairs will occur at a future Town Meeting.

Since 2013, routine maintenance has been done, a beaver control device was installed in the spillway, and, in the summer of 2018, the gatehouse roof was repaired. In November 2018, following an extended period of rain, water levels in the impoundment were within 2-3 inches of overtopping the earthen dam. This situation required immediate action, and an engineer from Tighe & Bond was consulted. Tighe &

Bond inspected the dam and gatehouse and prepared the following scope of work and a cost estimate that addresses the repair of the low-level outlet pipe, other hazards identified during the site visit, and maintenance issues.

Proposal includes:

- Review of existing files, data, and other information, including review of files obtained through a public information request from the MA DCR Office of Dam Safety
- Kick-off meeting with our project team and the Town to establish project goals, and a site visit to observe and document existing conditions at the dam, particularly inside the gatehouse and the outlet piping.
- Test borings to document existing subsurface conditions at the spillway and to aid in the design of a retaining wall around the existing gatehouse (described below)
- Identification and flagging of jurisdictional wetland resource areas
- Topographic survey of upland areas and bathymetric survey of below water areas of the anticipated work zone
- Diving inspection to attempt to locate and inspect the inlet to the existing low-level outlet pipe(s). The divers will also attempt to video the condition of the pipe(s) from the upstream inlet, if found, to the gatehouse. They will also attempt to video the condition of the discharge conduit from the downstream end up to the gatehouse.
- Hydrologic and hydraulic (H&H) analysis to aid in the design of improvements to the spillway structure
- Seepage and stability analysis to evaluate the existing embankment and to aid in the design of embankment improvements and slope flattening
- Design goals of:
 - Re-establishing a functional low-level outlet, including control(s) on the upstream side of the embankment to depressurize the pipe through the embankment while not in use to reduce risk of an internal embankment failure
 - Embankment improvements including tree & brush removal in accordance with the DCR's Policy on Trees on Dam, supplemental riprap protection on the upstream slope and flattening the downstream slope which may include constructing a concrete retaining wall with stone facing around the existing gatehouse
 - New reinforced concrete spillway with stone facing for improved hydraulic capacity and ease of maintenance
 - Sedimentation/erosion and water controls
- Plans and specifications
 - 50% draft plans for Town review
 - 90% draft plans and specifications for Town review and for submission with permit applications
 - 100% plans and specifications based on comments from the Town and regulators on the 90% submittal
- Permitting (assumes wetland resource area impacts will be less than 5,000 square feet and dredging will be less than 100 cubic yards)
 - Notice of Intent pursuant to the Massachusetts Wetlands Protection Act and Wetland Wetlands and Water Resources Bylaw
 - Pre-Construction Notification to the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act
 - Chapter 253 Dam Safety Permit from the MA DCR Office of Dam Safety
- Bidding assistance
 - Develop an agenda and attend a pre-bid meeting at the site
 - Respond to bidder questions and issue bid addenda
 - Evaluate bid results and bidder qualifications, and make a recommendation for award to

the Town

- Prepare an Emergency Action Plan per Dam Safety Regulation requirements

A formal engineering design proposal (based on this scope of work) was provided from Tighe and Bond in January 2019 for an anticipated fee of \$195,000. The balance of the capital improvement funding is \$80,000 and the difference of \$115,000 is the requested funding to complete the scope of work.

The Conservation Commission is requesting this funding now because the wet weather in November 2018 demonstrated an immediate need to design and permit the repair of the low-level outlet to prevent potential downstream flooding. As of the late March 2019, the water is again 2-3 inches from the top of the impoundment. Passage of this article will allow the Conservation Commission to start design work immediately and prepare a good cost estimate for Town Meeting consideration in the spring.

The Town held a Municipal Vulnerability Workshop on April 10, 2019 that included Public Safety and Land Management officials from across the towns departments and committees. The workshop was the kick-off to creating a Municipal Vulnerability Plan and, when submitted to the State, the town will become eligible to apply for a grant to offset the design and permitting plans in this request. The workshop identified the Snake Brook Dam as one of the Towns top three major concerns and highlighted the urgency to move forward with the grant. The grant application was due in April 2019 and awards will be made in July 2019. The grant may match up to 75% of the costs, and the Town may also be eligible for a grant to offset the actual repair work.

If the article passes and a grant is received, the amount appropriated under this article will be reduced by the proportional amount of the grant. Design work will proceed with the goal of bringing a construction article to an anticipated Spring 2020 Town Meeting. If this article does not pass and the Town does not receive a grant, the \$80,000 is not sufficient to complete design and permitting work. The Town would begin work with the existing funds and would return to an anticipated fall 2019 Special Town Meeting to request the remaining design funds. It is not likely that sufficiently detailed design work can be completed before 2020 ATM without these additional funds, and the repair work cannot wait for another town meeting cycle.

ARGUMENTS IN FAVOR:

Passage of this article allows design and permitting work to begin to make needed repairs. The Snake Brook Dam has been identified as an Intermediate dam with Significant Hazard Potential.

In November 2018, there was an immediate concern and need to pump water out of the impoundment to relieve pressure on the dam. In late March 2019, the water was again 2-3 inches from the top. The dam needs to be repaired to alleviate the potential hazard.

The cost estimate for the design and permitting work is based on a proposal from Tighe & Bond for a defined scope of work.

The potential damage caused by flooding from this impoundment necessitates the need to fund these repair costs and implement the repairs in a timely manner.

ARGUMENTS OPPOSED:

The repair to the low-level outlet should have been done when the capital improvement funding was awarded in 2013 and when the repair costs may have been lower.

It has been suggested that the dam could be removed dependent on the condition, safety and historical relevance.

RECOMMENDATION: The Finance Committee recommends approval. (3-1-1)

QUANTUM OF VOTE: Majority vote for appropriation or transfer of funds – Massachusetts General Laws Chapter 40, Section 5 and Chapter 44, Section 33B

For more information about this article, contact Linda Hansen, Conservation Administrator, at 508-359-3669 or lhansen@wayland.ma.us.