The State of New Hampshire
**DEPARTMENT OF ENVIRONMENTAL SERVICES**

**Robert R. Scott, Commissioner**

Town of Meredith
Attention Town Manager
41 Main Street
Meredith, NH, 03253

June 9, 2021

RE: **Inspection Notice: Mill Dam, D155030, Non-Menace Hazard Potential, Meredith**

Dear Town Manager:

The New Hampshire Department of Environmental Services, Dam Bureau (NHDES) is responsible for ensuring the safety of dams in New Hampshire through its dam safety program. In accordance with RSA 482:12 and Env-Wr 302.02, an inspection of the subject dam was conducted on December 14, 2020.

Resultant of the 2020 inspection, NHDES has determined that the Mill Dam meets the definition of an active jurisdictional dam per RSA 482:2II. As a result, you will be required to apply for a permit to register the existing structure as required by RSA 482:5. Both statutes are reproduced below. **Within 30-days of receiving this letter, please submit to NHDES a completed application to register an existing dam (enclosed).**

**482:2II**

*(a) ""Dam" means any artificial barrier, including appurtenant works, which impounds or diverts water and which has a height of 6 feet or more, or is located at the outlet of a great pond. A roadway culvert shall not be considered a dam if its invert is at the natural bed of the water course, it has adequate discharge capacity, and it does not impound water under normal circumstances. Artificial barriers which create surface impoundments for liquid industrial or liquid commercial wastes, septage, or sewage, regardless of height or storage capacity, shall be considered dams. (b) An artificial barrier at a storm water detention basin, which impounds 0.5 acre-foot or less of water during normal conditions, shall not be considered a dam unless its height is 10 feet or greater or its maximum storage is 6 acre-feet or greater.*

**482:5 Non-permitted Existing Dams. –** *Upon written notice from the department, the owner of a non-permitted existing dam shall submit an application for a permit for said dam to the department along with a fee based on the classification of the dam under RSA 482:9. The application shall provide such information as the department may require to determine whether or not the dam is a menace to the public safety. Following a review of the permit application, the department may issue a permit to the owner with necessary conditions for the repair or reconstruction of the dam which the department deems necessary for the public safety. Such repair work shall be undertaken within a time period fixed by the department.*

**Env-Wr 101.28:** *"Non-menace structure" means a dam that is not a menace because it is in a location and of a size that failure or misoperation of the dam would not result in probable loss of life or loss to property, provided the dam is:*

*(a) Less than 6 feet I height if it has a storage capacity greater than 50 acre-feet; or*
(b) *Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet*

You should implement the following recommendations, which are aimed at improving the condition of the dam and extending its longevity, at the earliest practical date. If the condition of the dam has changed since the inspection, or if you have any other questions related to the dam, please contact the dam safety engineer named at the close of this letter.

1. Provide NHDES with a completed Operation, Maintenance and Response (OMR) form. This form should outline how you plan on completing routine inspection of your dam, include your monitoring and maintenance objectives, and should incorporate at a minimum the items listed within this letter. A blank version of the form may be found on NHDES's Dam Safety, Maintenance and Management webpage under the Dam Permitting and Forms tab.

2. It is recommended that you engage the services of an engineering consultant qualified, in accordance with Env-Wr 403.03(a), to complete a detailed inspection of the dam and to prepare a report detailing potential rehabilitation options for the dam. Ideally this would include options to improve discharge capacity. A preliminary hydrology and hydraulics evaluation by NHDES in 2020 indicates that the dam may overtop during the 50-year event.

3. NHDES recommends that dam owners cut all trees, brush and weedy growth from the footprint of the dam and 15' beyond the footprint of the dam to prevent damage to the dam from root penetration, blow down of the trees and to create a buffer zone to monitor the dam for seepage and other maintenance concerns. Observations from the 2020 inspection as follows:
    a. Multiple large/mature trees located on and adjacent to the dam.

4. Sinkholes were observed on the dam (see location notes below) and a significant quantity of leakage through and adjacent to the spillway section. Fill the sinkholes with a low-permeability granular soil, similar to the embankment soil material, and evaluate a plan to monitor, record, and evaluate the presence of sinkholes on the dam. Often the presence of sinkholes can be attributed to leakage/seepage through the dam and/or the transportation of sediment through the dam via a preferential pathway. It is recommended that leakage and sinkhole observations are made concurrently. Observations from the 2020 inspection as follows:
    a. Leakage on the order of 100 gallons per minute observed along the lower portion of the spillway (Photo 3977); and
    b. Settlement/sink-hole observed on the left abutment adjacent to the training wall. Potentially resultant of water movement through the dam; however, there is a raised area adjacent, so it could be resultant of excavation (Photo 3968).

5. Continue to monitor and evaluate the masonry portions of the dam and complete maintenance as required.
    a. Masonry portions of the wall appeared stable. Some minor bulging observed along the right abutment (Photos 3970 and 3975).

**Hazard Classification:**

Non-Menace in accordance with the criteria outlined in Env-Wr 101.28. A breach of the dam is likely attenuated within the winding reaches located between 0' and 3,000' downstream of the dam or within the approximately 60-acre area wetland located between 3,000' to 7,750' downstream. The dam has a maximum storage volume of approximately 2.6 acre-feet, and the downstream wetland has an area

of approximately 60-acres at normal pond. A breach of the dam, in consideration of the available downstream storage, is unlikely to significant raise the pool level or impact Page Brook Dam D155010 (exempt due to being less than 6' in height) located approximately 7,750' downstream.

Please note that you are receiving this Inspection Notice because of the relatively minor nature of the deficiencies observed and because available information in our files indicates that the dam is likely able to pass its design event without overtopping. Such assessments are subject to change, and are reviewed and updated periodically in response to changes in watershed characteristics, updated rainfall data and other information and/or improved methods of analysis. Should you consider performing modifications to spillways or other outlet works, regardless if such recommendations are included above, then a more in-depth analysis of the dam related to its contributing watershed, structural characteristics and hazard classification should be completed to ensure that any modifications proposed meet the design requirements consistent with current dam safety regulations. In addition, should you consider performing work that otherwise meets the definition of "reconstruction" (see below), please contact the Dam Bureau for guidance.

> RSA 482:2X. "Reconstruction" means:
> (a) A change in the height, length, or discharge capacity of the structure;
> (b) Restoring a breached dam or one in ruins;
> (c) Modification of flashboards which either increases their height or increases the headwater elevation at which the flashboards will fail; or
> (d) A change in the structural configuration of a dam

You are urged to implement the recommendations listed above at the earliest practical date and commit to regular maintenance and monitoring of your dam. Additional information specific to dams and dam-related topics may be viewed at the NHDES website (des.nh.gov) by selecting the Water then Dams links.

If you have any questions or comments, please contact Jonny Findon-Henry, P.E. at 271-7507 or me at 271-3406 or via email at jonathan.d.findon-henry@des.nh.gov or steve.n.doyon@des.nh.gov. You may also write to the Water Division at the address listed on the bottom of the cover page.

Sincerely,

Steve N. Doyon, PE
Administrator
Dam Safety & Inspection Section

Enclosures: Application to Register an Existing Dam
2020 Inspection photos
ec: Paul Dillon, Vice Chair, Meredith Conservation Commission
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D155030, Mill Dam, Meredith: Inspected December 14, 2020

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