

All – Below is a summary of our meeting yesterday (10.01.25) with Ben and Steve at VT DSP and responses to recent questions and comments on Shadow Lake Dam.

### **VT DSP Meeting Summary**

The primary topic of this meeting was to review and discuss Alternative 2A with VT DSP, which includes permanently lowering the level of Shadow Lake by approximately 12-inches, and to evaluate if this alternative could be permissible through VT DSP. This alternative provides only approximately 0.6-foot of freeboard during the design storm (VT DSP requires a minimum of 1.5-feet) and does not increase discharge downstream. I have re-copied our alternatives and hydraulic results below.

Given the unique circumstances of this dam, lake, and project and limited viable and cost-effective alternatives, VT DSP indicated that their agency could approve an alternative that does not provide the required freeboard. This could be done if an alternative(s) that maintains historic lake levels and provides 1.5 feet of freeboard but increases downstream impacts is identified, such as Alternative 3B. VT DSP does, however, require sufficient overtopping protection be incorporated into rehabilitation design if the required freeboard is not provided. The type of overtopping protection will be dependent on the results of a wave runup analysis that would need to be completed during final design. This type of analysis gives us the potential for, and degree of, overtopping during storm/wind/wave events. Depending on the results of the analysis, overtopping protection could include turf reinforcing matting or something more extensive such as cast-in-place concrete system (roller compacted concrete). These systems can get quite costly.

VT DSP requested that we finalize and send to them our final HEC-RAS models for both Alternative 2A and 3B for review. Based on their review, they will provide a determination if Alternative 2A is permissible through VT DSP. We estimate that we can finalize and send our models to VT DSP in about 2 to 3 weeks. We cannot predict VT DSP's review time but hope we would get their determination a couple of weeks after we send the models.

It is favorable news that VT DSP is understanding of this project's unique situation and open to an alternative that does not provide the required freeboard provided overtopping protection is incorporated into final design. We will begin working on our report that includes the two feasible and permissible alternatives (Alt. 2A (assumed at this point) and Alt. 3 (lower lake by 2 ft.)), advantages and disadvantages of the alternatives, and approximate cost estimate ranges of the alternatives). The Town will need to make an informed decision of their preferred alternative weighing costs, advantages and disadvantages, and the Town's best interest. We are of course here to help the Town through the decision. **I want to reinforce that there is not a viable alternative that will maintain Shadow Lake at its historic level. This needs to be understood and accepted.**

## Email Correspondence Responses

Below are bulleted responses to recent (overt the last week) email correspondences. Please let me know if I missed anything.

Animal Burrow: Please estimate the depth of the burrow into the embankment and let me know. If the depth is relatively short, we can backfill with granular material after trapping and relocation.

Timing of Selected Rehabilitation Alternative Selection: Based on our meeting with VT DSP as discussed above, we estimate that we will receive VT DSP determination on Alternative 2A (a 12-inch drawdown with overtopping protection) in about 4-5 weeks. We should be in a good position to discuss and review alternative advantages and disadvantages and cost estimates with the Town at that point.

Ownership of Land Exposed by Lowering of Lake: Contact Lakes and Ponds?

Placement of Fill in Lowered Lake: I am not certain, but my opinion is that it is highly unlikely that residents would not be allowed to place fill in areas exposed because of lowered lake levels. Lakes and Ponds should be able to confirm.

Potential Seepage Along Discharge Channel: Based on the video, it appears that water flowing along/behind stones along the left side of the discharge channel is coming from flow out from the discharge conduit since the flow appears parallel to the channel. Let me know if you observed differently. I suggest to monitor and note and forward to me any perceived changes.

Thanks and feel free to reach out with any questions.

Tom