

River Advisory Committee Meeting
Thursday, May 18, 2023
3 PM
Town Offices, Nowak Room
Final Minutes

1. Call Meeting to Order

Members present: Richard Huber (Chair), Lionel Ingram, Dan Jones, Terrie Harman, Rod Bourdon, Select Board Rep Niko Papakonstantis, Conservation Commission Rep Trevor Mattera, and PEA Rep Warren Biggins. Town Engineer and Interim Public Works Director Paul Vlasich was also present.

Members Absent: Carl Wikstrom

The meeting was called to order by Mr. Huber at 3:02 PM.

1. Approval of Minutes

a. March 16, 2023

Corrections: Mr. Huber asked that the minutes include the two handouts at that meeting. Mr. Papakonstantis said he will follow up with the Town Manager's office.

Mr. Ingram moved to approve the minutes of March 16, 2023 as amended. Ms. Harman seconded. The motion passed 8-0.

2. Update on River Issues

Paul Vlasich introduced Jake San Antonio and Stephanie Hudoc of VHB [Vanasse Hangen Brustlin], Jim Weber from NH DES [the New Hampshire Department of Environmental Services] Dam Bureau, and Kevin Lucey from NH DES, who is also the administrator of the Coastal Resilience Grant. Mr. Vlasich also mentioned Deb Loiselle who was not present but was on the subgroup for the Great Dam project and is administering the \$100,000 Stormwater Planning Grant.

Mr. Huber asked whether there would be a special town meeting regarding funding for the siphons project. Mr. Papakonstantis said yes, the Select Board voted unanimously on Monday night to authorize Town Counsel to petition Superior Court to hold a special Town Meeting to secure additional funding for the siphon project. Should that be granted, the public hearing would be June 26, the Deliberative Session would be held July 11, and the voting would be August 15.

Mr. San Antonio gave a slide presentation on the Pickpocket Dam project. The project started in 2011 when NH DES issued a letter of deficiency for Pickpocket Dam, which required a dam breach analysis. That work was done by VHB in 2016, and identified that with a 100 year dam breach, there would be a few residential properties, mobile home structures, and bridges affected. The town then contracted VHB to do further analysis on those structures in 2017, which confirmed that there would be a more than 1 foot impact to at least one residential structure and multiple mobile home structures. At that time, DES changed the designation of the dam to High Hazard and

issued a revised letter of deficiency, which required an emergency action plan and submitting an application for how the dam would be brought into compliance. Those items were addressed, and a request was made to lengthen the time frame. The town got an extension to 2027 for reconstruction or removal of the dam. The dam is 15 feet high and 230 feet in length, with a main spillway length of 130 feet. There is a fish weir. There is a lot of rot to the low level outlet structure and the dam has limited operability.

Mr. Huber asked if alewife fish make it to this fish ladder, and Mr. San Antonio said yes, and it doesn't function as well as Fish and Game would like.

Mr. San Antonio discussed the previous studies done, including the Pickpocket Dam Breach Analysis, which showed a high hazard from the residential property impacts and a significant hazard from the overtopping of Route 111; a survey of downstream properties; the development of an emergency action plan; a hydrologic study; and preliminary investigations of potential dam modifications.

Mr. San Antonio said the new study will include a detailed survey of the dam and property lines; a detailed topography and bathymetry of the immediate impoundment of the dam; and survey transects through the four mile impoundment area. We will come up with alternatives and a conceptual design. We will be doing sediment sampling and have started to look at climate change and its impact on the 100 year storm. We're starting the Section 106 Cultural Resources consultation to see if there are any archaeological concerns that would require mitigation. There will be a detailed impact analysis on everything from fish passage to recreation to water supply. We'll develop a final report incorporating all these studies to support a decision on how to move forward. The Coastal Resiliency grant is paying for a portion of this work, and that deadline is coming up at the end of June. We're well on track to get that early work done. The Stormwater Planning Grant through SRF [State Revolving Fund] funding is for the length of this project.

Mr. Mattera asked if the hydrologic portion will be done by June. Mr. San Antonio said it will be finalized around that time. Mr. Jones asked if that will include the potential impact of lowering the water table. Mr. San Antonio said no, but that's in the impact analysis. Mr. Jones said we have a functionally unmonitored dump adjacent to this that affects springs on his property.

Mr. San Antonio said the existing crest has an elevation of 66', with a portion obstructed by a sediment island. The current dam doesn't meet the requirements for a significant hazard dam. The current 100 year precept is 8.4 inches in 24 hours, and the 2.5x 100 year flood flow is 10,000 CFS [cubic feet per second]. The climate change impact is 15% more, or 9.7 inches in 24 hours. That increases the peak flow about 50%, to 15,000 CFS.

Mr. San Antonio said we looked at whether Cross Road impacted the hydraulics of the dam. We took it out of the model, and it had no impact. The weir flow over the dam was what was primarily affecting water elevations.

Mr. San Antonio discussed the preliminary dam alternatives.

Alternative #1 is to increase the abutment height and leave the spillway elevation as-is. In this case, we'd need to raise the abutment by 4 feet to pass the 2.5x100 year with one foot of free board. With the increased discharge predicted by the climate

change model, we'd have to raise it 6.7 feet. Alternative #1A is removing the sediment island and increasing the abutment height. This decreases the necessary heights to 3.3 feet for the 2.5x100 year and 5.8 feet for the climate change model. Removing the sediment island would decrease the 100 year flood elevation as well.

Alternative #2 would be to add a second abutment in addition to the existing abutments. The second abutments would need to be raised by 3.24 feet or with climate change 5.17 feet. This would create a small increase in the 100 year flood. Alternative #2A would remove the sediment island in addition to building a second abutment. This would require a second abutment elevation increase of 2.82 feet or with the climate change model 4.76 feet. This would create a decrease in the 100 year flood.

Alternative #3 would be dam removal. This creates a significant decrease of about 8 feet in the hundred year flood level.

A further alternatives development is underway. The dam could be stabilized to pass the discharge as an alternative to modification, and we will explore reclassification by purchasing property downstream. Even with reclassification, there is still the overtopping of Route 111, which makes it a significant hazard dam, and it does not meet the significant hazard requirements.

In April VHB did the bathymetric survey and sediment sampling. Right around the dam, the soft sediment depths were in the three foot range, tapering not that far from the dam to about a foot, and tapering to hard refusal all the way. There's not that much soft sediment upstream of the dam.

The sediment sampling is complete, and the sample results came back last week. We were looking at what potential contaminants could be in the area and what we should be sampling for. We also did grain size analysis to help with transport potential. There were five sediment sampling locations, three upstream of the dam and two downstream. No concentrations of pesticides or PCBs [Polychlorinated Biphenyls] were detected, but PAHs [Polycyclic Aromatic Hydrocarbons] and metals were detected in all samples, which is typical. Arsenic was the only contaminant detected in excess of remediation standards, but is thought to be background given the naturally occurring arsenic in the area. The ecological risk for contaminants is low for metals and PAHs upstream, moderate for arsenic both upstream and downstream, and moderate for PAHs downstream.

The hydrology and hydraulics analysis are underway. It's a 74 square mile watershed. In previous work, we developed a rainfall runoff model using the Army Corp's hydrologic modeling system. We found that the 100 year discharge at the dam is 3,980 CFS. To meet the discharge requirements of 2.5x, it's around 10,000 CFS. The guidance of evaluated climate change is a 15% increase, which brings the 2.5x to 14,900 CFS. Given the large watershed site, this results in an almost 50% increase in the design flood when you build in climate change.

The next steps are working with Paul Vlasich to finalize the alternatives, starting the cultural resource studies, finalizing the impact analysis, and doing a visual dam inspection and stability analysis. We're looking to finalize the draft feasibility study by April 2024.

Mr. Huber asked when we should be inviting Brentwood to see what we found. Mr. Vlasich said not before January of 2024. That's when we'll have a draft report. We need to button up the project for the Stormwater Planning Grant by April of 2024.

Mr. Huber said with the Great Dam project, we had an informative meeting for the public. Should that also happen in January of 2024? Mr. Vlasich said yes. With this project, we have the benefit of having already gone through the Great Dam project, so we can have a condensed timeline for public input. He added that we have all of those alternatives we'll be looking at, but there will not be detailed analysis for each of them, we'll pick three to do the detailed analysis on.

Kevin Lucey of DES asked for more details on the sediment results, which Mr. San Antonio provided.

Mr. Huber asked that the slides be included with the minutes of the meeting.

Jim Weber of the Dam Bureau asked if the Board had any questions about dam classifications. Ms. Harman asked what happens if the sediment island gets taken out. Mr. Weber said the island doesn't impact the hazard classification, which is based on what would happen if the dam were to fail. The important components are the amount of water stored behind the dam and the downstream topography and structures.

Mr. Jones asked if any thought had been given to whether the mobile homes affected had been built with permits. Mr. Weber said no, we look at what's there, not necessarily how it got there. Mr. Ingram said if we have it, we're stuck with it. Mr. Weber said the only way to modify the classification would be to lower the amount of water, which likely wouldn't make financial sense; buy downstream properties and remove them so they are no longer a potential hazard, but you're still stuck with 111 and some additional houses that had significant hazard impacts; or modifying the downstream terrain, such as raising the peninsula with the mobile homes by three feet or building a levee or flood wall under six feet in height. If it were over six feet in height, it would be considered a new high hazard dam.

Mr. Huber asked about the Exeter Reservoir issue. Mr. Vlasich said that analysis is separate. Mr. Weber just approved that contract in scope, so the town will put together a contract for VHB to figure out how to increase the discharge capacity of that reservoir as well. The timeline will be similar to this one with the addition of three or four months.

Mr. Vlasich said in an upcoming meeting, he'll be talking about the 319 Grant for adaptive nitrogen plan for the bay, specifically the fertilizer reduction efforts. A nice pamphlet and some signs for people to put out in their yard were devised. Kristen Murphy played a large role in that program with our consultant. He'd also like to use the River Advisory group to give information on the siphon project prior to the special Deliberative Session.

3. Other Business
 - a. There was no other business discussed at this meeting.
4. Public Comment
 - a. There was no public comment at this meeting.

5. Review Committee Calendar

- a. Mr. Huber said the next meeting will be June 15th.

6. Adjournment

Mr. Ingram moved to adjourn. Ms. Harman seconded. All were in favor and the meeting adjourned at 4:10 PM.

Respectfully Submitted,
Joanna Bartell
Recording Secretary