Town of Richmond
Selectboard Meeting
Minutes of December 3, 2024

Members Present: Bard Hill, Adam Wood, David Sander, Jay Furr, Lisa Miller

Absent: None

Staff Present: Town Manager, Josh Arneson

Others Present: MMCTV Erin Wagg, MMCTV Tom Astle, Stone Environmental Engineers Meghan Arpino, Branden Martin and Ben Matthews; Douglas Arneson, Wright Preston, Marcy Harding, Chuck Farr, Duncan Keir, Jessie Heiser, Mark Fausel, Margaret Keir, Susannah, Sam Pratt, Julie Welkowitz, Phoebe Judge, Sam Pratt, Staci Pomeroy, Cath Burns, Bobolink, Hartsfield's, Aaron Worthley, Molly Segelin, Ernie Buford

MMCTV Video: Recorded by MMCTV by Erin Wagg
https://youtu.be/8dudOu6z4hk?si=H7CfPj4EGpTPU77-

Call to Order: 7:00 pm

Welcome by: Sander

Items for Presentation or Discussion with those present

Overview of the flood mitigation study goals and tasks
Timestamp: 0:01

https://www.richmondvt.gov/fileadmin/files/Selectboard/Meetings/2024/11/3a1_RFP_Engineering_Services_for_Flood_mitigation_in_Richmond.pdf

https://www.richmondvt.gov/fileadmin/files/Selectboard/Meetings/2024/11/3a2_Q___A_for_RFP_for_Engineering_Services_for_Flood_mitigation_in_Richmond.pdf

https://www.richmondvt.gov/fileadmin/files/Selectboard/Meetings/2024/11/3a3_Stone_Environmental_Response_to_RFP.pdf

Examples of flood mitigation projects

Feedback from public with maps and charts for attendees to provide input regarding areas of concern, project ideas, etc. and ask questions of the project team

People who participated in discussion: Sander, Arneson, Arpino, Matthews, Martin, Furr, Harding, Keir, Hill, Preston, Segelin, Welkowitz, Harding, Susannah, Buford

Arneson introduced the three engineers from Stone Environmental, stating that this was a kickoff meeting. Then turned it over to Arpino, who explained that she is a hydrologist and certified floodplain manager, who will be the primary point of contact on this project. Matthews continued that he is a river scientist and will be helping with some of the

hydraulic analysis. Martin, a water resource engineer, will be assisting with multiple facets of the project, and taking the reins on the conceptual design phase. They presented an overview and showed examples of other projects using PowerPoint slides. They will create a hydraulic model of the Winooski River. They will also use the US Army Corps of engineers' hydraulic engineering centers, and river analysis system to simulate current flooding conditions. They will do similar studies for Jones Mill Brook, Snipe Island, and the Huntington River. Once those results are in hand they can identify and assess potential flood mitigation projects to reach the goal of reducing flood levels. Arpino continued explaining that they will go through a benefit cost analysis process, which is required for FEMA Hazard Mitigation Grant Program (HMGP) funding, where it is necessary to show that the benefit of the project outweighs the cost. Projects can happen on public land, private land with the owner's permission or a combination of both. A final report will be created. The timeline and plan is to have the project completed within 6 months, or June 2025.

Harding asked if these projects were based on current river data, or if historical data was also considered. Arpino replied UVM is a great resource for historic aerial imagery and earlier 20th century data sets, so we do look at historic data to inform regarding the general river patterns and migration over time. Furr inserted that Google Earth could also be a good resource going back to 2000. Matthews added that cost analysis is also included because that data helps fuel the BCA; for example, how much money has the Town or private landowner spent, and if we mitigate a risk, how much money could that potentially save in the future? Harding wanted to know if the Town has kept good records of what has been spent on the last 3 flooding events, Arneson replied yes.

Keir stated that he is a hydrologist who lives in Richmond and he was curious about the spatial scope of the study since it seems to focus on the inundation, but it seemed like a lot of our damage in Richmond from the past few events have been erosive hazards, such that waterways that are normally empty ditches become raging torrents during these events, and therefore probably a major cost for the Town more recently. Arpino replied we will be looking at both inundation and erosion, but the major goal is how can we reduce the inundation. Martin added, after a question was posed regarding the gravel deposits in the Winooski near the bridge, that one of the things that they can look at is what the impacts of gravel removal would be now in the present, not as it relates to the history of flooding. Hill mentioned that Richmond struggles with water coming down off steep mountainsides into the Winooski River. Arpino emphasized that tributaries around the river will also be included in the study.

She continued to explain what FEMA Hazard Mitigation Grant Program Funding (HMGP) is available for this study. She showed some photos of projects, such as upsizing culverts or dam removal or bank stabilization and floodplain restoration. Matthews mentioned planting trees as a viable solution in some areas, but Hill added that along the River on Volunteer's Green several large trees have fallen into the river, making trees not the safest solution for this area.

Arpino opened it up to input from the public. Furr mentioned the beaver dam that may have breached at Richmond Pond. Preston said that some beaver dams did breach, but not all. Segelin said she is terrified of more damage to her home after the last flooding on Snipe Island, and she has been working with a beaver specialist who suggested beaver baffles. Martin stated that beaver baffles work well around culverts but do need to be well maintained. Welkowitz shared that she has had repeated flooding and wants her area included in the study. Furr added that Stage Road was completely wiped out due to the

mountainside flash floods, which cost the Town $400,000 to repair. Furr added that if such a price tag was taken into account, what would that cost get the Town in preventative measures. Arpino said this was helpful information, and informed that the footprint of the model will be such that it will capture at a minimum, the 100 year floodplain and looking at the road elevations, culverts, and more, all of that will be incorporated in the geometry of the model. Harding added that she lives on Stage Road and it was closed for five weeks primarily due to washed out culverts after the last flooding. Burns asked in the chat if this study will impact buyouts. Martin said that this study will provide information that can be helpful in decision making, but they can't help anyone make that decision explicitly. Susannah also lives in Lily Pond Circle and emphasized that the problem in her area has so many different layers and she urged the engineers to consider all those levels, ponds, steep hillsides, culverts and more. Hartsfield mentioned Esplanade Street and Volunteers Green and what effect a multitude of buyouts in that area will do to the flood waters. Arpino stated that buyouts will be considered in the model.

A Huntington resident mentioned the Huntington River and how soil from fields in Huntington were washed into the river and flowed down into the Winooski and ended up in people's homes on Esplanade. Arneson mentioned Dugway Road and the Huntington River as being another area of concern. Pomeroy wanted to bring the engineer's attention to the large gravel sand bar in the Winooski on the western part of Town, causing the river to widen. Sander specified Kenyon Road and Hinesburg Road. Matthews replied that Kenyon Road wasn't mentioned initially as being included in the scope of the study.

Miller wanted clarification in three areas: a) the current flooding conditions, which is well documented. b) Second would be where your improvements are proposed related to current flooding. c) Third would be your projection of what those improvements are going to do, essentially predicting the future. Arpino replied: we will set up the hydraulic model during the development phase, and we'll validate it by simulating the July 2023 flood, then we move on to simulating the potential mitigation projects, changing the topography, or we'll change a culvert size in the model to match a proposed design and rerun the model simulations to get an understanding of what we can expect after the project is implemented.

Buford wanted to add that flooding in the business district due to water coming off the hill above Richmond should be added to the study. Hill concurred because he lives on Tilden Ave and experienced the water coming down the hill. Harding showed a picture she has of the July 2023 flooding that shows the water up to the base of the Bandstand. Arpino said that the model they use is a hydraulic model using more recent LIDAR data. From a question asked by Susannah, Arpino restated that planting trees could very well be part of a solution they will present. Pratt mentioned that he thinks the Town needs guidelines for clear cutting, to make sure it's done responsively. He wanted to know how projects are reviewed in terms of what projects will be eligible. Arpino said that usually it's based off an Alternatives Analysis taking into consideration the overall potential benefit of the project as well as permitting issues, location and accessibility as well as cost. The next meeting will likely be at the end of Feb or early March. Furr thanked the engineers for coming.

Adjourn

Furr moved to adjourn. Wood seconded.
Roll Call Vote: Hill, Furr, Miller, Sander, Wood in favor. Motion approved.

Meeting adjourned at: 8:35 pm

Chat file from Zoom:

00:25:23 Staci Pomeroy: If you would like to look at historic topographic maps of the area a great resource is the USGS & ESRI Historic Topo Explorer: https://livingatlas.arcgis.com/topomapexplorer/#maps=&loc=-72.79,44.59&LoD=13.62

00:26:57 Staci Pomeroy: For historic 1963 and 1942 imagery, the Vermont Center for Geographic Information has good resources: https://vcgi.vermont.gov/data-release/1962-aerial-imagery-now-available-statewide-non-georeferenced and, https://hub.arcgis.com/documents/VCGI::vt-data-historic-dcc-1942-black-white-imagery-120000/about

00:55:41 Cath Burns: My family lives on Lily Pond Circle and have applied for a buy out. I understand that these projects are not coordinated (as in the work Stone is doing may not inform decisions regarding FEMA funding for a buy out). I'm curious if this project can help us with the difficult decision that will be coming regarding whether a buy out will happen and whether or not we should take advantage of it? It is a strange purgatory to fix your home to move home because you have to while also half expecting to have to have it knocked down. Thanks for your thoughts.

01:02:47 hartsfield: I have a follow up question to Cath's question about property buyout timing impacting this analysis

01:12:39 Staci Pomeroy: To look at the large gravel island downstream of the Rte. 2 /interstate bridge crossing - can removal / lowering of that bar and/or opening the flood chute/side of the island help reduce flooding in the area?

01:15:04 Staci Pomeroy: The small tributary near the school that runs under the interstate where a portion of the culvert was upgraded is an area where the small stream has filled in and changed location several times in the last 3 storms. This has affected farm fields. Can gravel removal in these types of tributary areas be looked at in this effort?

01:27:17 Susannah: I also wanted to note that I'm interested in some (potentially less expensive) flood mitigation work that would involve planting native trees and shrubs to provide more canopy cover and stabilize stream banks - is this something Stone could advise on?

01:32:27 Cath Burns: Reacted to "I also wanted to not..." with 👍

01:44:23 Cath Burns: Thank you!

01:45:03 Margaret Keir:Does "stream scoping study" takes into consideration, the full picture of how flooding occurs here in our Winooski River watershed...: There is flooding when rivers and culverts and ditches are insufficient to move the water within

the river channels and tributaries. This aspect of flooding happens after water spills over the banks... what about the flooding caused by rainwater before it reaches rivers and tributaries..... Flooding that surges down from the hills, reaching the upper hill roads .... That type of flooding , it seems to me, needs more than a river study. Studying the topography, conducting topographic scoping study of the entire watershed in our hilly towns, would be necessary to get a more complete understanding of the flooding hazard of the town. I would hope the study will analyze how the topographical aspects that are consequential in our flooding problems... ie, is a 'river scoping study enough?.