

## Response to Draft Application for Conservation Reserve Funds for Volunteers Green Riverbank Stabilization

Jon and Josh, thank you for taking the time to submit this well written, well documented and well thought out application. You asked that I review it to ensure that it addresses the points that the Richmond Conservation Commission (RCC) wished to have explained, and I am submitting the following list of statements that will be subject to scrutiny by the RCC.

The RCC had asked the SB to state the cause of the erosion problem; the advantages and disadvantages of alternate solutions along with evidence to support them; and to discuss the potential downstream impacts of the installation of riprap or alternative solutions. We had other questions but for simplicity's sake these will suffice. Please let me reiterate that I appreciate the care taken in assembling this application.

### Comments:

On page 3, paragraph 1, the statement "no action taken between 2009 and early 2017" may not be entirely accurate. SB discussions on this point would be easier to track if SB agendas were posted, but they are not. There was a reference to adding the erosion issue to the next agenda in the summer of 2016; it is mentioned with reference to the FY2018 budget during the 21 Nov 2016 SB meeting, and at some point prior to 2016 the SB directed Geoff Urbanik to investigate options for controlling the erosion (pers comm during the meeting with Geoff Urbanik, Judy Rosovsky, Gretchen Alexander, Ann Smith and Karen Bates). This is a minor point, but I wonder if some prior discussions of this topic were informal and not documented.

### Page 3, paragraph 2;

Chris is cited as saying the erosion problem is classic scour in a conversation he had with Gretchen Alexander, which she reports in an email to you dated 25 May 2017. If he said that during a site visit I would be interested in seeing any surviving notes of that visit.

In that same email, Gretchen enumerates alternatives to riprap, as follows:

- 1) Do nothing and monitor the erosion, ideally using fixed reference points
- 2) Combine tow armoring with bank sloping and bioengineering
- 3) Use hard armoring
- 4) Incorporate a recreation access into an stabilization design to decrease ongoing erosion from that source
- 5) Create a minimum 100' vegetative buffer between the river and any desired infrastructure
- 6) Utilize any number of options and trade-offs

### Page 3, Project Description

I thought I'd take this opportunity to slip in a quick question – in earlier iterations of the project the number 100' of riverbank is mentioned, but the final number came out at 240'. Is there any documentation explaining why the size of the bank to be riprapped more than doubled?

### Page 3 Responses to the Conservation Commission's questions-Alternatives to Riprap.

I dispute the idea that there are no alternatives to riprap, in part based on perusal of publications on solving erosion problems, and in part based on the list that Gretchen Alexander supplied, in her note to you dated 25 May 2017. If there are any existing notes from the site visit with Chris Brunelle, it would be illuminating to see them.

### Page 4, What will the impacts be?

Gretchen is referring to the unpredictability of lateral erosion in this note, as I understand, and does not refer to downstream erosion. In her memo of 23 March 2017, page 2 paragraph 1, she does refer to the likelihood of downstream erosion: "...bank armoring in one location often leads to increased erosion downstream...".

Page 4, Has the rate of erosion been measured?

The exposure of the piers mid river has to do with water depth levels as much as with anything, and being in the middle of the river they have nothing to do with streambank erosion. Bob Low has done some analysis of river widening rates, which I will include once I am able to reach him. He does not think the rate is as rapid as feared.

Page 5, salmon redds:

Nick did say he wasn't worried about the riprap but he went on to say "My big concern would be that many of the salmon redds found in the area can be located tight up against the bank. For whatever reason, the flow, depth and substrate along the edges are what these fish like." I am not quite clear how he can be concerned and not concerned at the same time, so clarifying what he meant would be helpful.

Page 5, use of CRF funds

The CRF funds for Gillett Pond are directed towards the installation of a new dam to replace a failing older dam. They are not intended for any downstream hardening, as far as I know.

Page 5, CRF criteria

I agree that the Volunteers Green is a great asset to the town, but I am not of the opinion that it is about to be swept away.

In reference to the specific criteria that this application claims to meet, I feel that the interpretation of some of these rests on the assumption that the installation of riprap is a benevolent and protective activity, which I dispute. In particular B1, the preservation of river, stream and wetland quality, seems dubious given that installing riprap generally causes further erosion downstream. But the intent, I recognize, is to protect that area from further erosion, and the criteria mentioned, with that intent and interpretation, do meet the stated goals.

If we look at this project in the big picture, there are some problems on the Winooski that are causing erosion. Chris claims that the force of the river going through the bridge causes scouring. But Gretchen mentioned that the upstream wetland allows the force to dissipate, as it should. My feeling is that this is a bigger topic than the 100-240' of riverbank under contention. Rivers are dynamic, and upstream problems roll downstream and continue to cause problems. I would happily recommend that CRF monies be spent on determining what is happening upstream on the Winooski, and learning what, if anything, we can do about them to alleviate the issues that take place within our town.

I strongly recommend reading or at least perusing the publication "Living in Harmony with Rivers and Streams" [https://winooskiriver.org/images/userfiles/files/Stream Guide 1-25-2012](https://winooskiriver.org/images/userfiles/files/Stream%20Guide%201-25-2012). It vividly illustrates how upstream issues affect downstream sites.

Thanks for your time and attention,

Yours appreciatively,  
Judy Rosovsky

