

CLASS V ROADS STUDY COMMITTEE  
TUESDAY, May 1st, 2018  
4 PM  
TOWN OFFICE CONFERENCE ROOM  
Approved

Present: Sue MacKenzie, Karen Henry, Frank Bowles (arrived 405 pm), Bret Ryan, Mike Smith, Bill Malcolm, Ernst Kling, Steve Williams

## Agenda

- Minutes from 4-17-2018
- River Road South of N. Thetford Road-imminent bank failure
- River Road South of Gregory road- worsening of bank erosion and threat to road
- Pony Hill Lane- culvert, guardrail failure, road at risk
- Project Reports:
  - River Road over Hewes Brook
  - Area South of Grant Brook bank stabilization
  - Baker 1
  - Dorchester Road Culverts
  - Closed portion of River Road
- Process 10 Year plan

The meeting was called to order at 4PM.

Minutes – The minutes from the 4-17-2018 were approved as amended (Bill Malcolm added to attendees).

Sue explained that she put the three areas of worsening stability problems on the agenda in order to obtain the Committee's advice/input about how to address these problems.

River Road South of N. Thetford Road-imminent bank failure – An approximately 15 ft length of road appears to be on the verge of failure. Sue reported that she shared pictures and discussed this with the US Army Corps of Engineers (USACE), and they agreed that it “looks bad,” and we are still scheduled for USACE support on this area in the Fall of 2019. The vertical scarp at this point in time is approximately 6” – 8”. Sue pointed out that there is very little soil support on the bank at this location.

There was some discussion of rerouting traffic through a farm road that goes behind Carola Lea's house. There was also discussion about calling GeoStabilization International (discounted later in meeting as being too expensive), the possibility of stabilizing with large rock (discounted as impractical and DES unfriendly). Ernst is still looking for information on the log bank stabilization project in Orford, and he pointed out that because the project was in a field, they were able to make the embankment less steep as part of the stabilization project.

Frank outlined a potential solution of moving the road, making the slope angle less steep, load the toe of the slope, reinforcing the soil with soil nails and possibly also armoring the slope.

Worse case scenario in the near future is that there is a slope failure such that the road translates into the River. Karen asked the Committee what happens should this occur. There was discussion about whether emergency permits would be easily obtained in that case. Bottom line is that the loss of land and having to relocate the road located so close to homes would be

permanent and very undesirable. The Committee discussed keeping only one lane of the road open and limiting the size of loads on the remaining lane to 6 tons in order to minimize driving forces on the steep bank that has already slipped.

Karen asked whether there was an engineering opinion about the stability of the slope, and the answer is no. Bret pointed out that the longer we wait to address this problem, the more we limit our options. Frank said that we must get engineering plans for a repair. Sue outlined that USACE plans include constructing a toe, making the bank less steep than it is currently and then to rip rap the bank. USACE will pay 65% of the costs of repair.

There was considerable more discussion about limiting the weight of vehicles on the one open lane of this portion of River Road. Bill Malcolm moved that the traffic on the open lane be limited to passenger vehicles only. Frank seconded the motion. Discussion followed in which Bret pointed out that limiting the load to a specific weight was more prescriptive and removes doubt about what constitutes a passenger vehicle. A specific weight limit is also better for the Town from a liability perspective. Bill amended his motion to impose a weight limit of 6 tons on the open lane. The amended motion passed unanimously, and this is what the Committee recommends to the Select Board.

The Committee also supports Sue in contacting USACE and DES (State of NH Department of Environmental Services) as soon as possible to notify them of the situation and the potential risk of loss of this portion of River Road. Further, she will notify the Lyme School that the bus cannot use this portion of the road.

Sue stated that, ultimately, we will probably have to move the road (in order to make the slope less steep in order to promote stability), and it is probably time to start notifying people that this is the likely long-term approach to solving this issue.

River Road South of Gregory road- Sue reported that there are three areas of significant soil loss and erosion that reach within 2-3 feet of the road shoulder. There are significant large soil slumps in this area (with indications of sudden mass movement).

Frank said that this is a problem we can likely address with the Town's current resources. Karen stated that it is likely that making the embankment slope stable could cause the toe of the slope to reach into the hayfield at the bottom of the road embankment. Sue suggested that we make this portion of River Road one lane only until the situation is remedied. Steve said that the Highway Department has barrels to do this.

Ernst said that a lot of the problem on this section of road stems from poor surface water drainage-the water is flowing down the paved surface – sheet flow is occurring. The Committee agreed that surface water runoff seems to be the main problem. Steve said that there are 3 culverts in that area and that they were installed improperly and have settled over the years. He doesn't think that the culverts are undersized at 15" to 18" diameter.

After a long discussion of potential fixes to prevent further erosion and mass movement; and noting that some, but not all, of the Committee members had visited the site before the meeting, Karen suggested that the meeting recess and reconvene at the site. The Committee agreed to do this on Wednesday afternoon, May 2nd (the next day) at 4PM.

Pony Hill Lane- culvert, guardrail failure, road at risk – Steve Williams reported that Daniels construction told him that they could fix the culvert for about \$200,000. The fix would involve re-sleeving the current culvert. Sue and Frank pointed out that a temporary bridge would buy some time before we could obtain enough funding to fix the bridge. There is a temporary

logging bridge available for \$25,000 that might possibly be used to help shore up this situation until a permanent solution is found.

Project Report - River Road over Hewes Brook bridge. Frank reported that he sent numerous emails with corrections to Right Angle Engineering about the Hewes Brook Request for Proposals (RFPs), and the corrections don't make it in. The final RFP that was advertising had several grammatical and spelling errors. Adjoining landowner John Emery has been unresponsive in regards to granting the Town the right-of-way for this project. Ernst said that he will call him about this matter.

Project Report – Baker Hill Road culvert. Sue explained that they culvert will be designed to be located completely within the Town's right-of-way so that no landowner permissions will be required for the permit to be granted. Bill and Sue will schedule a meeting together in the near future to review what still needs to be done on this project. Steve asked whether the road will have to be completely closed during construction of the new culvert and the answer is yes; however, the project is still to be scheduled and will not happen before the end of July 2018.

The meeting recessed at 535 PM.

The meeting reconvened on May 2<sup>nd</sup> at 4PM at the location of the bank instability near Gregory Road.

Present: Sue MacKenzie, Karen Henry, Bret Ryan, Frank Bowles, Mike Smith, Scott Bailey was in attendance to represent the Highway Department, substituting for Steve Williams.

The committee toured the highly eroded bank areas adjacent to the road shoulder and also inspected three culverts along an approximately 400 ft section of River Road just south of the Gregory Road intersection. The middle culvert of the three culverts inspected was at the lowest elevation of the road section.

The three culverts appear to be in good shape, although the concrete on the downslope sides of the culverts have caused the culvert pipe to bend downwards.

There is a small berm formed by plowing and other road maintenance on the edge of the pavement to the west of the road. This berm has apparently been channeling surface water flow from the pavement – directing it to locations where the water can finally break over the small berm and flow onto the steep bank. The failed locations along the bank are downslope of the areas where the water broke over the berm. There is evidence of both rill type erosion, as well as mass movement of large blocks of soil (hummocks) downslope.

Based largely on Bret Ryan's recommendations, and in coordination with Scott Bailey, the Committee made the following recommendations:

1. Remove the berms from the edges of the pavement and shoulder (road grader).
2. Shape the bank along the roadside to make the banks less steep, and relocate any soil removed to another location (best alternative is to use it as a subbase to other roads in town that need elevating).
3. Place rip rap on top of the newly formed slopes.
4. Remove failed concrete headwalls on the downslope sides of the culvert.
5. Clean ditches and relocate ditch soil (per #2 above).

6. Seed and cover with erosion control matting.

The meeting adjourned at 500PM on Wednesday, May 2<sup>nd</sup>, 2018.

Respectfully submitted,

/s/ Karen Henry