

CLASS V ROADS STUDY COMMITTEE
TUESDAY, January 8th, 2019
1 PM
TOWN OFFICE CONFERENCE ROOM

Agenda

Erin Darrow of Right Angle Engineering, LLC presentation of the FEMA proposal Dorchester Road Project

Present – Sue MacKenzie, Mike Smith, Karen Henry, Bret Ryan, Steve Williams, Rusty Keith, Kevin Sahr

The meeting was called to order at 1:05 PM.

Sue explained that she wanted the Committee to be able to review Erin's plans for the FEMA (Federal Emergency Management Agency) supported proposed work of replacing three culverts on Dorchester Road. The culverts are designed to carry much larger volumes of storm flow than the current culverts.

Erin brought two copies of plans for the projects to the meeting which were left with the Town.

The culverts are referred to at Culvert 1 (near Bret Ryan's house at 383 Dorchester Road), Culvert 2 (393 Dorchester Road, Perkins Brook) and Culvert 3 (at Smart's Mountain Appalachain Trail Head).

Erin described that the grant hinged on the determination that the Benefit Cost Ratio would be 1.0 or greater by completing the proposed project. Further that Culvert 3 was added just prior to the submission of the application (the original approach was to just proposed replacing culverts 1 and 2). Culvert 2 has been determined to be structurally deficient. After replacement, increased flows (due to increased hydraulic capacity of the culverts) will begin at Culvert 3.

Sue explained that near Culvert 1, the field upstream of the culvert fills up with water (back up) when the flow capacity of the culvert is exceeded. She said that she and Bret are concerned that when the culvert's capacity is increased, the water will flow through very fast which may result in erosion upstream that does not currently occur. Bret explained that he has observed increased erosion on his property related to the placement of a culvert on an adjacent property upstream. Erin explained that the field has been identified as flood storage by FEMA (as observed during repeated storms).

After some discussion, Bret said that he thinks that as long as alignment of the culvert is maintained (including the orientation of the headwall), he does not think that there will be a problem. Erin pointed out that the slope of Grant Brook will not change and therefore water will slow at the less steep slope (adjacent to the field in discussion). There will be a standard concrete headwall for the replacement bridge at Culvert 1. The concrete bridge that will replace this culvert will have a deck span of 30 ft with an opening at the bottom of 18 ft. Sue pointed out that this is replacing a 6 ft diameter round culvert. Erin said that the capacity of the culvert will be 2600 ft³/s – approximately tripling the current 850 ft³/s required to meet the 100-year storm runoff.

There was some discussion about the need to update design storm events as they apply to the standard rates of flow required for hydrologic analysis. Erin said that the permitting process requires a hydrologic analysis, but often the geomorphology of the stream results in a crossing size that is great than the hydrologic capacity requires. Further, a large opening often accomodates debris such a trees passing through. Erin said that she has completed a detailed analysis of every crossing downstream of the bridge crossing.

Steve commented that most of the issues related to these culverts are ice jams. Erin replied that ice jams are often a controlling factor in bridge design.

Erin said that Culverts 1 and 3 will be open bottom and Culvert 2 will be a box culvert – there is no need for it to be open bottom.

There was discussion about the logistics of the construction process. For example, whether a temporary road will be needed, and/or whether the road will have to be closed during construction. Removing trees is a big FEMA concern.

Steve asked about the availability of waste blocks used in the current culverts (because the Town Highway Department can use them), and Erin said that she thinks that they will be available for re-use by the town. There was more discussion about how to construct the headwall for the bridges.

Bret commented that he will cooperate with the Town on access to his land required to complete the construction. Erin said that there is possibilty that Culvert 2 can be replaced in one day (emergency resources would have to be available on the side of the brook that would have to be closed). She said that planning on a one-day construction can be risky. She also mentioned that possibility of renting a temporary bridge (which the Town might buy at the end of construction).

There was considerable discussion about who lives and owns camps on the part of Dorchester Road that might be isolated by construction. Erin said that permission might be tricky at the Smart's Mountain Trailhead. Mike gave her the name of Kevin Peterson as someone who might be helpful with this. This led to more discussion about how to construct the replacement bridge at Culvert 3.

Erin explained that the proposal has been selected as high priority for funding by FEMA, and FEMA made a site visit in November. The first environmental review has been completed. Once the final review has been completed, they will be ready to proceed wtih funding. She noted that they are concerned about trees and bat habitat.

She pointed out that the Town should be keeping track of their time as all time dedicated to this project can count (IN KIND) as part of the 25% contribution of funding to this project. FEMA has guidelines about hourly rates for labor and equipment in making these determinations.

Erin commented that there are other grants that might be available for funding through FEMA and that she would be willing to work on a contingency basis again.

The meeting was adjourned at 5 PM.

Respectfully Submitted,

/s/ Karen Henry