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NOV 06 2020
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Reason for Denial of the Wetland Application for 5 Research Pkw

In the past the IWWC approval of this site was an abject failure.

Although substantial effort was given to the protection of wetlands, not a single person ever spoke about the existence of the wetland itself. Why is it there? What and where is the source of water necessary to sustain this wetland? The hydrologic conditions that actually give rise to the wetland of concern were never discussed or mentioned. Most often wetlands associated with applications are not at the headwaters of a watershed. Usually, they are associated within the divides of watercourses, perched water tables, or side slope seepage conditions. This application being a wetland complex at the headwaters of a significant watercourse in the watershed of Wallingford's public water supply, demands recognition of where the source water maintaining the wetland comes from.

Specifically the wetland of concern is the largest contiguous wetland on this site. Referred to previously as (1B). It is located in the Northwest quadrant of the property. In an analysis of the hydrologic origins of this particular wetland it can be observed that it receives very little water from the north. Carpenter Lane most likely exists were it is in part due to that fact. However this is not true for the wetland paralleling this to the west. Previously designated (1D), this wetland does receive waters from the north under Carpenter Lane, and from the west. These two wetlands are completely disconnected at this location. Wetland (1B) is topographically at a higher elevation than wetland (1D) and isolated by a finger of upland. Hydrologically speaking, water from wetland (1D) will NOT move uphill to (1B). They do come together after the pond.

Given the southeasterly drainage of this general area, the ONLY direction left to investigate is to the east. It is significant that the bedrock beneath these surficial deposits is a coarse arkosic sandstone referred to as the New Haven Arkose. The bedrock in this area is mapped with a NNE/SSW strike with a 15 degree dip to the ESE. This characteristic of the bedrock is in alignment with and dictates the surficial topography.

The glacial movement over this area was generally NNW to SSE and given the significant post Triassic faulted bedrock ridge structure immediately north, today there are significant post glacial deposits forming a ridge extending south. This post glacial till deposit caps a sandstone ridge on the eastern side of this project. The till is of substantial depth and key to the formation and existence of the wetland below and to the west. The till cap was deposited on what is described in the boring data as COMPLETELY WEATHERED ARKOSE sandstone. This too has substantial depth, from 5 to 10 feet or more and an enormous water storing capacity. Even in August when these borings were done, there was still water being retained.

Conclusion

In the case of this application the most plausible answer as to the origin of water, based on the topography, surficial deposits, and bedrock geology is the substantial glacial deposits abutting the wetlands to the east. These deposits lie topographically above the wetlands and are the only significant source of SUSTAINABLE water needed for the existence and maintenance of this wetland. Without the SUSTAINED water this wetland will cease to exist and the current vegetation will slowly transition to all upland species. (NO ONE WILL NOTICE)

HUGE QUESTION - CAN THIS NATURAL CONDITION BE MIMICKED WITH ENGINEERING?

If not, the wetland will cease to exist and its function will be forever lost.

I believe this application deserves a complete review by a qualified hydrogeologist or DEEP at the very least, asking the right questions.

The eastern ridge slated to be removed is the aquafer that maintains the wetland at its western base. It is that glacial till cap and severely weathered arkosic sandstone that serves as a sponge and sustains the wetland and its associated streams especially during drought conditions.

Currently it can be observed that the stream coming out of these wetlands continues to flow long after it has stopped raining, even during droughts. This all relates to the ground water system and the till cap which is a perfectly INTEGRATED natural formation for water storage over long periods, slowly purging water from its base where it meets bedrock.

If the till caps are eliminated as a result of this project you should expect to see the adjacent wetlands desiccate. On any scale, the most important attribute of wetlands (much more important than flood mitigation) is the biotic interaction. The purification and filtration processes that maintain potable water will be diminished. Wetlands must be protected.

This is of particular importance in watersheds, especially PUBLIC WATER SUPPLY watersheds.

If this project eliminates the source of the necessary hydrology all the effort to protect these wetlands are for naught.

This is an extremely difficult circumstance for any wetland agency. Arguably it is technically out of the agency's jurisdiction and requires serious conviction to the very purpose of the commission. First protect wetlands and second have the wisdom to allow for development. The key here is wisdom and a balance tied to the value of what is being protected and to what end. Is the commission dedicated to a future or to immediate gratification?

James Heilman

Nov. 6, 2020

James Heilman