

November 21, 2024

Westford Select Board
Town of Westford
1713 Vermont Route 128
Westford, VT 05494

RE: 1705 Vermont Route 128 Property

Dear Board,

I have spent a small amount of time reviewing the materials collected for the above mentioned properties. The documents more heavily reviewed were from KAS Engineering and David Tudhope. In general, this is a very complex piece of property which has a lot of known and unknown issues, some of which I will outline further below.

Soils:

Krebs and Lansing have not performed any test holes on the property in question but have worked in the area. In general, this part of Westford has heavier soils consisting of clays and silts in combination with a higher water table. This is consistent with the soils test pits performed by Tudhope on the property. He found a seasonal high water table at 12 inches.

Tudhope Septic System Review:

The design by Tudhope was for a 4 bedroom single family home or 490 GPD. This included a new drilled well which was within an existing hazard zone and therefore was not allowed to be processed. The property also has a shallow well in the rear of the property which appears to supply the current buildings onsite with domestic water. Tudhope's abandoning of this well in the design allowed him to place the proposed mound in the area shown. That existing well will likely need to be abandoned for any further septic design because its well isolation zone encompasses much of the property. The designed mound also seems to be positioned within a Class II Wetland Buffer from the KAS plan and the State of Vermont River Corridor. Both of which would present challenges for permitting.

Possible Septic System Design on Site:

From a septic point of view a high water table is not an ideal situation but there is capacity in the soils for septic development. With the high water table, you will be limited to a mound system which uses septic mound sand to treat the effluent. These systems will at minimum require septic tank(s) and a pump station to pressurize the effluent in the mound. Another

positive of the mound systems is there is not a requirement to permit a replacement system on site.

The soil test pits performed by Tudhope show that the soils are consistent in that location and the hope is that they would extend around the area. Our suggestion would be to move the mound further upslope and out of all environmental features. This would require additional testing of the soils, but we suspect the soil will be constant because they are mapped as such by the National Resources Conservation Service (NRCS). We feel there would be an opportunity to get at least the 490 GPD capacity outlined in Tudhope's design. Further, we feel there is a possibility to get additional capacity with additional testing, monitor well testing, redesign, and possibly pretreatment systems. We cannot guarantee anything until the additional work is performed but feel these steps could produce a system with a much larger capacity.

I would like to further define septic pretreatment. Pretreatment provides the ability to double the application rate of a mound in the same footprint. There are other aspects of the design which can restrict this, i.e. the length of the mound, but pretreatment can provide an opportunity to maximize the parcels septic capacity. These systems have a large upfront cost and running costs but provide more capacity.

Design Flow:

It is unknown at this time what the Town would like to use the system for a how many users would be permitted to tie in. This could be limited by the system itself, but I wanted to provide the Board with an example of a system. Please see attached calculation chart. This outlines a system for a mock Town Hall and Library for example. The buildings would have a total of 10 full time employees and 85 guests per day. This is just an example of what could be proposed. Commercial flows, which is what these buildings would be characterized as are a lot smaller than residential flows. The above example for flow would require 490 GPD which is consistent with the single family 4-bedroom dwelling. As discussed above this could be maximized but this calculation provides the Board with an example.

Water Supply:

Providing a new drilled well on this property would be difficult with the number of environmental features and required setbacks. This is further difficult when having to push the system up hill for those same reasons. If the parcels were combined or well was placed offsite the 1705 parcel would not be encumbered by well shields. Further, the new well will be a public water supply and will require public water supply permit. This is a separate process from State WW permitting but could be worked through.

Additional Environmental Concerns:

Attached with this report is a quick plan I pulled together which shows some of the known environmental encumbrances on the property. These include a Class II Wetland, Class II Wetland Buffer, Vermont River Corridor, FEMA base flood plain, slopes exceeding 20%, mapped streams, and hazardous plume. The entire site as well as all of Westford Center is also mapped

as “urban soils”. There are no mapped rare threatened or endangered species, significant species communities, or uncommon species communities mapped onsite by the State from their website.

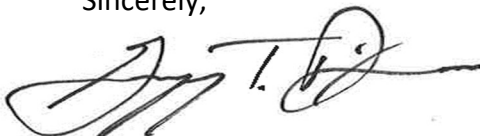
From conversations it does seem like further environmental review will be needed for different funding sources. We suspect Archeology and possible environmental species reviews may also become an issue for this site.

Working around these features can be difficult. Definition and location of these features can be costly. The easiest path to permitting anything is working around these features. This may not be possible at which point working with the Authorities Having Jurisdiction is the next step. This is not a forecastable process and requires a lot of input from the entities who delineate and the AHJs. However, there is often a path forward.

Conclusion:

In general, this is a difficult site to foresee a heavy amount of development taking place. There is some upside if the property was used simply for septic treatment for the Westford Town offices and library. Again, we have not performed any onsite review, so we cannot guarantee development of any sort. Please let me know if there is anything more you need or if you have any additional questions. I apologize that I was not able to attend tonight’s Board meeting in person, I am at the DRB meeting in the City of Essex Junction for another project. I would be happy to sit in at the next meeting to further answer any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Dixson". The signature is stylized and cursive, with a long horizontal flourish extending to the right.

Greg Dixson, P.E.