

Preliminary report on potential Groundwater issues related to Flood events on Site SP2 Whitwell by an independent flood consultant Nov 16

Although direct evidence for Whitwell is lacking I have found several documents relating to the serious groundwater flooding problems in Kimpton which it could be inferred should also relate, due to its close proximity, to the immediate area around Whitwell and specifically to site SP2. These include the following:

1. British Geological Society maps – these confirm that the underlying geology at Whitwell, indeed much of Hertfordshire is predominantly chalk. The higher ground between Whitwell and Kimpton is at the head of several dry river valleys that radiate out towards Whitwell and Kimpton. These would have been formed over time by the passage of water and probably once had springs at their head, indeed one plan I found from the 19th century makes reference to a spring albeit on the Kimpton side of the hill

2. HCC – Preliminary Flood Risk Assessment in which specific mention is made of groundwater reappearing in formerly dry river valleys, specifically at Kimpton and Sandridge in 2000-01. The geology at both is of the same type as at Whitwell so it could be expected that similar groundwater flooding/problems with infiltration should occur

3. Reference from a conference in December 2014 to a paper given by HCC and their consultant EDI who were commissioned to investigate the flooding of 2013/14 including groundwater effects. I have not, though, been able to locate a copy of the consultant's report.

4. A publication by HCC entitled 'The Cinderella Rivers, the Mimram and the Beane' from which the following is a quote "The Mimram and the Beane chalk streams – with their number of springs and high groundwater level"

5. The NHDC Strategic Flood Risk Assessment update issued in 2016 includes the following quote "Groundwater flooding is known to be an issue in Kimpton. KM3 includes some of the areas that are potentially affected and provide opportunities for management, however the problem is a much larger issue and future development should be aware of the issue and a response plan has been produced for this area." (my underlining). Whitwell shares the same geology as Kimpton and is only a short distance from it and should therefore be considered in the same manner.

Comment by David Ashton - NB The last major flood event in Kimpton in 2001 down a dry valley feeding into the valley in which Kimpton is situated had surface flooding from the 100 metre contour down to the village (and running through the village at the 85 metre countour). At site SP2 the 100 metre contour runs through the area which flooded in 2014-15 and the surface water collected at the 95 metre countour before flooding houses in Cresswick before continuing down to the Mimram (approximately 90 - 85 metres at that point).

6. A report produced by the Environment Agency titled "**GROUNDWATER FLOODING IN THE THAMES REGION WINTER 2000/01**". The following is

extracted from its summary “**Summary** The rainfall of winter 2000/01 and subsequent recharge into the Thames Region’s aquifers exceeded all previously recorded quantities for a similar period in most areas. As a result, groundwater levels, particularly in the Chalk aquifer, rose to the highest recorded levels and by a considerable margin at many sites. Extensive groundwater flooding occurred, mainly in the upper, normally dry valleys on the dip slope of the Chalk escarpment.”

The report clearly states that there is a real problem of groundwater flooding in the vicinity of the dry river valley upstream of Kimpton and the upper Mimram upstream of Whitwell.

7. An article from 2012 on the Flood Alleviation Directory Services website confirming that new equipment has been installed to enable groundwater flood warnings to be issued to residents in Kimpton.

There are, in summary, several references to groundwater flooding problems experienced in Kimpton, which is very nearby to Whitwell and shares the same geology and a dry river valley, but no direct reports or documented evidence that I can find of groundwater problems in Whitwell other than in the river Mimram, not on the adjacent higher ground and the site of SP2.