

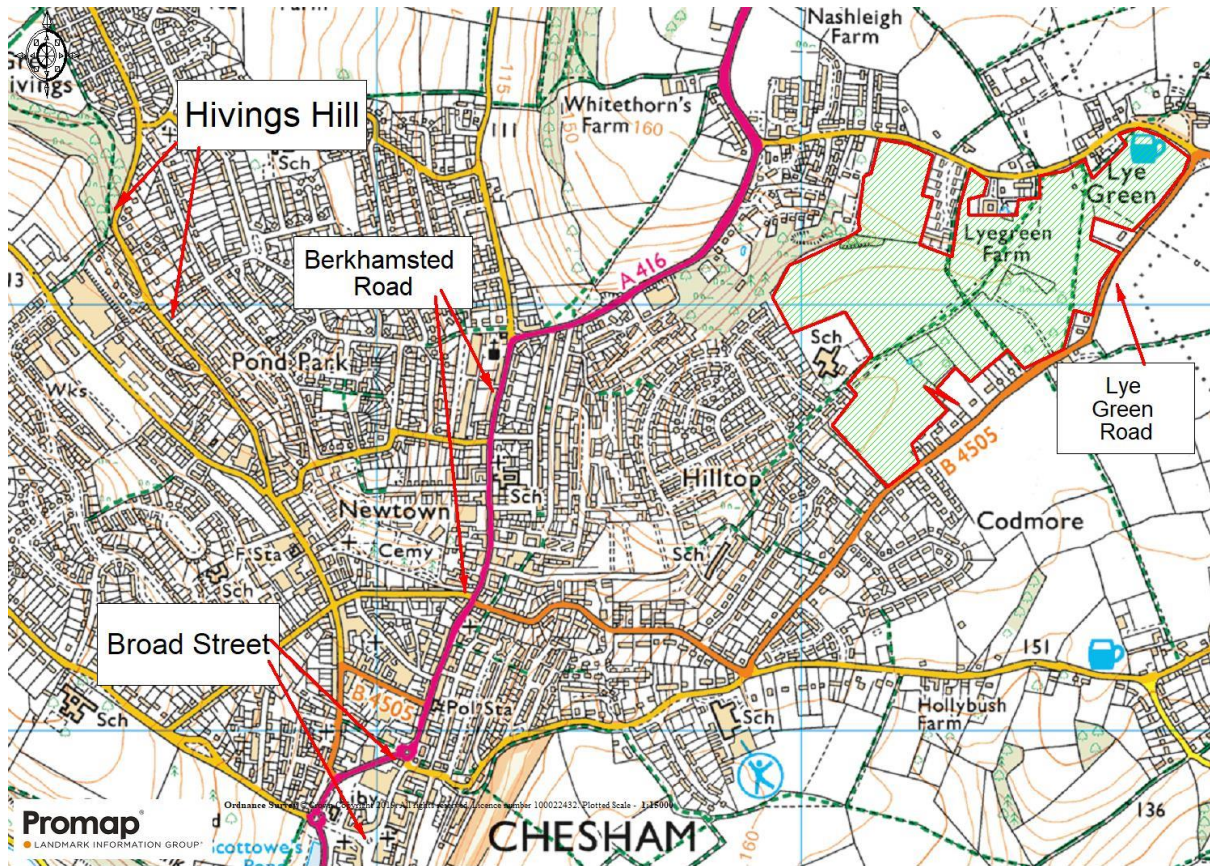
Flooding & Drainage - around Lye Green & Chesham



A brief review of the long-known flooding and drainage issues around Chesham

BACKGROUND:

- Parts of Chesham are at risk from flooding; this includes places that many people might not expect, including some of the hilltop areas.
- This includes areas around Lye Green currently being proposed for major housing development. The problems are not new and have been a regular occurrence for decades as the historic picture above shows. Accordingly, flooding is of special relevance to Chesham.
- The combined potential for flooding and the **need for improved drainage infrastructure** in Chesham means that whilst the town is not in a listed flood zone related to coastal surge or overflowing watercourses, it does suffer from periodic flooding.
- This is largely caused by **local topography** and **surface water runoff** especially during prolonged or intense periods of rainfall.
- Obviously, the valley floor (along Broad Street/Berkhamsted Road) is particularly vulnerable.
- The flooding from rain water runoff does also occur elsewhere in the town including around Lye Green probably due to the combination of clay soils that do not drain well in heavy/prolonged rainfall together with inadequate drainage methods nearby that for surface water is reliant upon field ditches that can become overgrown.



- The above OS Plan shows the locations of some of the local regular flooding points around Chesham – Broad Street & Berkhamsted Road are low points in the valley floor but Lye Green & Hivings Hill are relatively higher either on the valley sides upon a settled plateau overlooking the town.
- The following pictures taken in 2014 are of the roads beside the Lye Green site which were closed for several days due to prolonged rainfall and the runoff of water from the fields onto Lye Green road.





Flooding along Lye Green Road - 2014

- Self-evidently, the build-up of surface water on such relatively high ground does eventually also add to the problems of surface water flooding in the lower areas of the town itself in due course too. This is mainly seen in Broad Street & Bekhamsted Road and in side roads leading off both roads but as the following picture shows also occurs in Hivings Hill and other areas of the town.



Flooding on Hivings Hill - August 2019

- Modelling by the Met Office predicted an increase in rainfall intensity in Chesham due to climate change. In fact, 35% of properties in Chesham were predicted to experience flooding in the next 100 years.

The flooding is caused by:

- high groundwater levels combined with rainfall
- surface water flooding, especially in steep areas during heavy rainfall
- river flooding from the River Chess and Vale Brook



- The aged drainage system of the town clearly cannot cope with prevailing needs of the town and any significant development upon Green Belt on high ground outside the town has obvious potential to make matters worse.
- FloodSmart was a project that ran from 2013 to 2015. The aim was to enable Chesham to be more aware, resilient, and prepared for the effects of flooding.
- It was part funded by the Department for Environment, Food and Rural Affairs, (Defra) and managed by Buckinghamshire County Council, working in partnership with the Environment Agency, Chiltern District Council, Chesham Town Council, and the National Flood Forum.
- Although certain works have been done, as can be seen from some of the more recent pictures attached herein, taken just in 2019, the problems still persist.



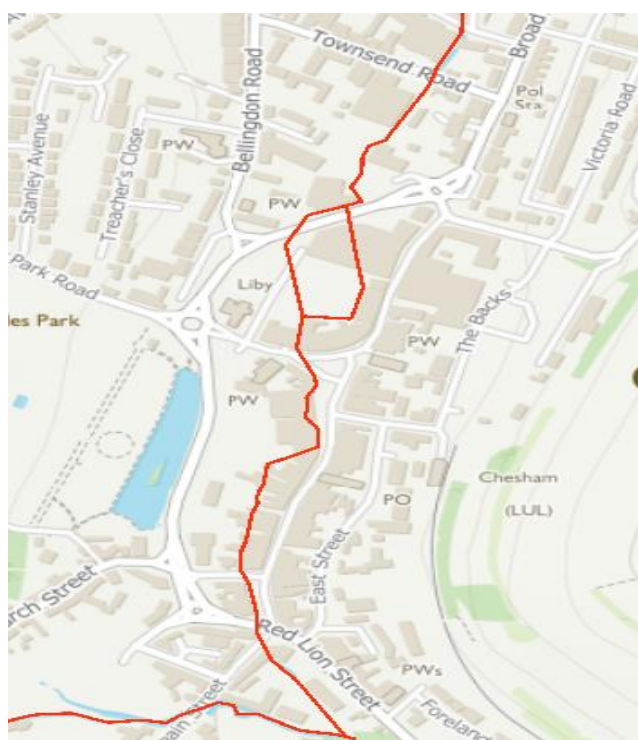
- Proposals for additional development of hundreds of homes on Green Belt will potentially make matters worse.
- The increased surface water run off will place further strain upon the drainage infrastructure with potential for overflow and contamination of watercourses including the vulnerable Rover Chess chalk stream river.
- The Vale Brook Culvert is old and has suffered damage and blocking. Work under Floodsmart has help clear some of the blockages but the drainage system is in need of major improvement.
- The attached local newsletter from Summer 2018 explains the ongoing difficulty.
- Any development around Chesham must be mindful of the potential for flooding and must incorporate mitigation measures to alleviate the flood risk and the consequential risk of pollution of watercourses and the chalk stream rivers



Reducing flooding in Chesham Newsletter Summer 2018

This newsletter provides an update on the ongoing work by the partnership between Chesham Town Council, Chilterns District Council, Buckinghamshire County Council and the Environment Agency to reduce flooding in Chesham.

Vale Brook culvert condition



Current route of the Vale Brook

The Vale Brook runs through the centre of Chesham. This brook is largely underground in a series of buried tunnels (called culverts). Some of the culvert sections are now over 150 years old and they are in varying states of disrepair. The debris within the culvert limits the amount of water that can flow through it, causing a flood risk during heavy rain.

Earlier this year, we commissioned another CCTV survey of the whole length of culvert, from Townsend Road down to where it joins the River Chess. This survey lets us see the latest condition of the culvert to assist our decision making to develop options to reduce short and long term flood risk.

The survey confirmed which sections of the culvert are in poor condition and where debris has built up. The CCTV remote vehicle used to enter the culvert was unable to enter sections through the town centre due to excessive debris. We are working with our contractor to develop a plan to remove some of the debris from the culvert to allow the camera vehicle to pass through. This is a difficult process because of the small size of the culvert and potentially poor condition of the culvert structure.



CCTV image of the Vale Brook Culvert

Vale Brook Public Consultation

After our initial public consultation in June 2017 we are further refining our options for a permanent, long term solution to the aging culvert. Our proposal mainly consisted of a new culvert and section of open river running through the car park to the west of the High Street. This land is predominantly owned by Chiltern District Council (CDC). As such, CDC wanted to ensure this was the best long term option for the town. CDC have commissioned a separate study to either rule out or introduce a possible alternative option



of routing the river through Skottowes Pond in Lowndes Park.

We will provide another update on the progress of this project in the autumn following the next CCTV survey, which should take place this summer and further discussions between the partners to determine which of the flood reduction options, if any, can be progressed.

Vale Brook clearance

In October 2017, Chesham Environmental Group volunteers cleared out a stretch of the Vale Brook that runs next to Topps Tiles on Townsend Road. They cut back overgrown vegetation and removed large amounts of fly-tipping and litter. As well as improving the appearance of the area and its habitat value, their work has reduced the flooding risk posed when rubbish is swept into the culvert downstream and causes blockage.

The clean-up was the result of lots of partners working together. Impress the Chess made contact with the landowner to get permission to do the works, Topps Tiles allowed the use of one of their parking spaces to pile up the rubbish, nearby Wickes donated jumbo bags to remove the green waste and Chiltern District Council collected the rubbish.

Chesham Environmental Group will be returning to the site this spring for some follow-up work.

Pednornead End area of Chesham

Buckinghamshire County Council are also working on options for managing surface and groundwater flooding in the Pednornead End area of Chesham. As part of these works we identified an opportunity to restore a section of the Missenden Stream. This was completed in February 2018. The Missenden Stream flows into the River Chess which is one of a number of chalk streams originating in the Chilterns. Chalk streams are a globally rare habitat, confined

mainly to North West Europe. England has the majority of the world's chalk streams and as such, has a special responsibility to conserve this rare wildlife habitat.

The restored reach is located along a 200m section of the Missenden Stream which flows through part of the Great Hundridge Manor Estate, bordering Chesham Tennis Club and the grounds of the Tennis Club itself. Historically, the river channel in this location has been widened, deepened and impounded by two concrete weirs. As a consequence, flow, when present, is sluggish and the reach acts as a sink for sediment, which overlies much of the gravel bed especially on the upstream side of the weirs and adjacent to the tennis courts, where the channel is at its widest.

By carrying out this restoration work, this section of the river Chess catchment will be returned to a more "natural" state. It will allow the natural chalk stream processes to re-create habitat, carry natural amounts of sediment and reconnect the channel and floodplain. Once the habitat is created the wildlife will come back to this reach of the river Chess.



Missenden Stream ready to be recolonized by wildlife

Advice on making your property resilient to flooding is available on our website at

www.gov.uk/prepare-for-flooding

For further information on our plans to reduce flood risk in Chesham please email

HNL-PSO@environment-agency.gov.uk