

Hughenden Valley and Little Marlow Position Statement:

During 2017 the Drainage Strategy work around Little Marlow focused on a variety of surveys intended to highlight areas of infiltration or defects in the Thames Water network. These surveys followed on from the flow survey data collected over the winter of 2016/17 and desktop data collection such as sewer flooding questionnaires (SFQs) and Network Trigger Levels for Thames Water Ops.

The surveys undertaken included manhole surveys, lift and look surveys, CCTV surveys and impermeable area surveys. These surveys targeted areas that have been highlighted as potential problem areas based on historical data collection and a catchment walkover with members of Hughenden Valley Drainage Improvement Group which aided us in better understanding the catchment characteristics. The manhole surveys were designed to gather information for us to update our hydraulic model of the catchment to ensure that it represents the Thames Water network accurately. Lift and looks are a useful tool to identify and investigate possible evidence of groundwater infiltration in the network while also letting us gain a better understanding of network performance. Lift and look surveys are focused on identifying evidence of diluted foul flows in the network while also assessing the condition of manhole chambers. Due to the investigative nature of these surveys we were able to assess a greater number of manholes as opposed to a full manhole survey. CCTV surveys were also undertaken across the catchment. Areas were targeted based on historical CCTV footage and consultation with stakeholders. The CCTV surveys allow us to inspect the entire length of the sewer for groundwater infiltration and defects such as fractures and cracks. Where infiltration or defects have been identified Quick Win reports have been produced and supplied to Thames Water Operations for repairs to be undertaken. These will provide immediate benefit for the winter of 2017/18. Impermeable area surveys (IAS) were also undertaken this past spring. IAS is fundamental for understanding how the Thames Water performs during periods of rainfall. IAS can be undertaken to determine the destination of rainwater landing on roofs, roads and impermeable areas. Rainwater entering the foul system can impact on the sewer network and pump stations, by potentially reducing their capacity. Where areas that have been highlighted as draining to the foul system have been found these have been passed on to Thames for further investigation.

In addition to these surveys further work was undertaken in the catchment including the inspection and repair of depth monitors across the Thames Water network in Little Marlow, which going forward will allow Thames to highlight future problems in the network such as blockages and collapses. Furthermore we re-connected flow monitors at strategic pump stations around Little Marlow and Hughenden Valley which will allow us to highlight future issues with unplanned inflows into the network.

Manhole surveys and flow monitor survey data has been used to update the hydraulic model for the Little Marlow and Hughenden Valley catchments. In addition we have been supplied with a surface water and groundwater model for the Hughenden Valley area produced by Atkins which we have imported the Thames Network into it. This will be used to further assist in the analysis of the impact on groundwater on the network and at Little Marlow STW and to model possible solutions to negate this impact. We have met with Atkins staff to understand the drivers of their project and how best to integrate the two sets of data.

2017 was a relatively dry year and as a result of this dry period groundwater levels were unusually low across the majority of the south. This hampered the survey process and meant that we did not attain the results we would have wanted. Groundwater levels have started to rise again due to a wetter period at the start of 2018 and because of that we are going to undertake some new CCTV and Lift and Look

surveys over the next month or so. We will be going back and surveying some key areas we surveyed last year to ensure infiltration is still not present while also surveying some additional areas that were not inspected last year.

We have put together an interim Stage 2/3 report which gives further details on our work and findings in 2017. This is undergoing the final internal checks and reviews and should be published on the Thames Water website in the near future.