Whitemore

Infiltration Reduction Plan

Last Updated: March 2025

United Utilities

Water for the North West

Executive summary

Whitemore, Cheshire is currently in the monitoring stage (see Figure 1) to address infiltration and reduce spills at the Whitemore Pumping Station Storm Overflow (STA0100SO). A desktop assessment concluded that groundwater infiltration is possible in this drainage area and surveys have confirmed this. Interventions to address this are underway and due to be completed in Spring / Summer 2025.

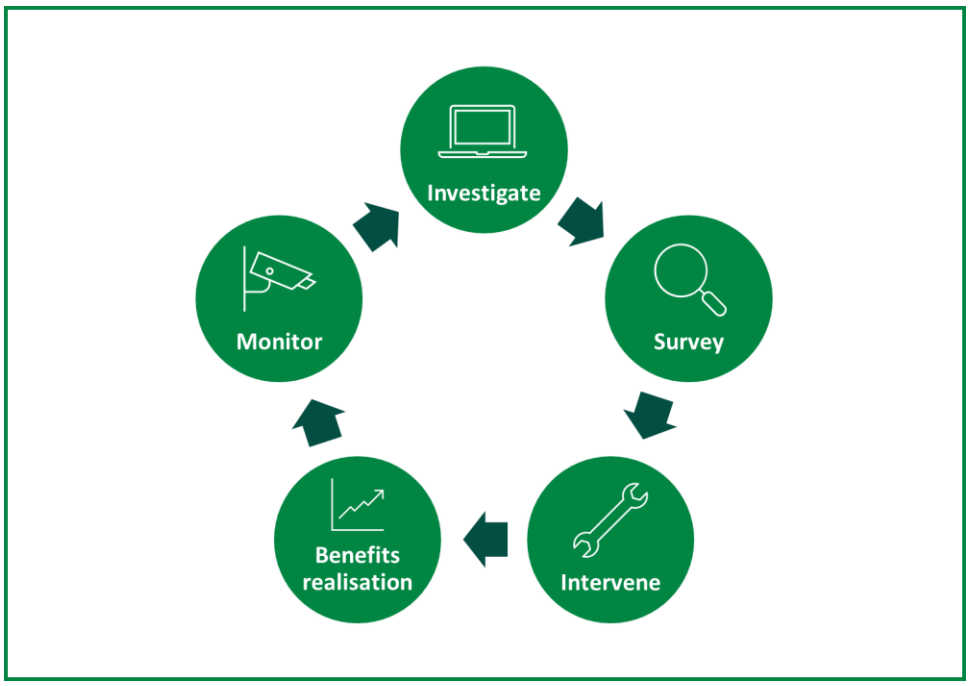

Figure 1: Iterative process to investigate, identify and address groundwater infiltration

Context

Sometimes, water can enter our wastewater pipes that they were not designed to receive. One source of these additional flows can be groundwater infiltration which can occur through pipe defects, leaky joints or issues with manholes. Extra water in the network can cause the sewer capacity to be exceeded, leading to sewer flooding or contributing to storm overflow activations.

As part of our ongoing work to maintain an effective network and achieve Better Rivers for the North West, our Infiltration Reduction Plans demonstrate our efforts to date and next steps to address infiltration and inflows in the catchment. This plan covers the Whitemore drainage area and the associated overflow, Whitemore Pumping Station Storm Overflow (STA0100SO). In 2023, infiltration was identified as a potential leading cause of the storm overflow discharging. The purpose of this plan is to capture the process to investigate, identify and address significant groundwater infiltration.

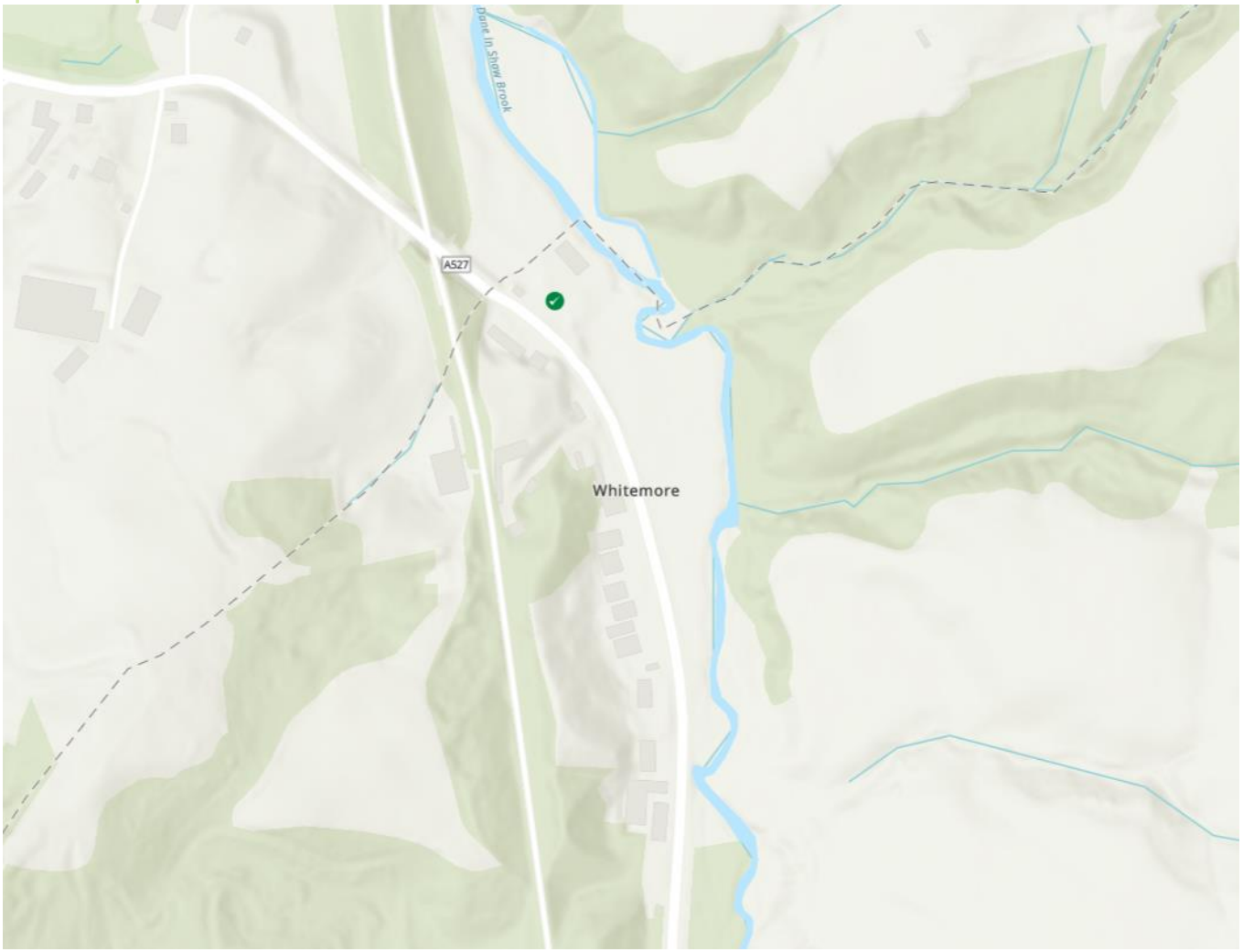

Figure 2: United Utilities – Better Rivers – Storm Overflow Map (November 2024). The green dot marks the Whitemore Pumping Station Storm Overflow.

Whitemore, Cheshire sits south of Congleton and north of Biddulph. It features a small area of housing and is bordered to the right by Biddulph Brook, a tributary of the River Dane.

Investigate

A desktop study was undertaken using available data to understand the extent of infiltration in the sewer network of the drainage catchment. The following data (where available) was analysed to determine the scale and location of potential infiltration:

- Relevant flow and depth data
- Operational information
- MCERTS data
- Hydraulic models of the catchment
- River levels
- Groundwater (borehole) data
- Spill analysis
- Topographical and sewer maps

The assessment concluded that groundwater infiltration was possible due to a constant flow into the pumping station wet well with little change from day to night but with some seasonality effects. Additional flows could also be due to slow response run-off.

From these findings, it was recommended that CCTV surveys are completed to see if there is infiltration of the water course into the sewer. The CCTV survey should also identify if there is land drainage connected into the sewer, which would be assessed for removal.

Survey

Infiltration was confirmed at one manhole in the sewer network, near to the pumping station and the need for remedial works was confirmed.

Intervention

Remedial works to address infiltration, sealing the manhole via grout injection, were completed in Spring 2025.

Next steps

Whitemore will move into the monitoring stage of identifying and addressing infiltration. The site will follow the iterative process displayed in Figure 1 to monitor the efficacy of the remedial works and identify new points of infiltration, should they arise.