Hellifield

Infiltration Reduction Plan

Last Updated: October 2026



United Utilities

Water for the North West

Executive summary

Hellifield is currently in the survey stage (see Figure 1) to address infiltration and reduce spills at the Hellifield Wastewater Treatment Works Storm Overflow. An initial desktop assessment concluded that significant groundwater infiltration was unlikely in the catchment. However, further observations identified areas where the sewers run close to or cross a watercourse; therefore, CCTV surveys are in progress. The site will follow the iterative process displayed in Figure 1 to confirm whether significant groundwater infiltration is present and, if so, address it.

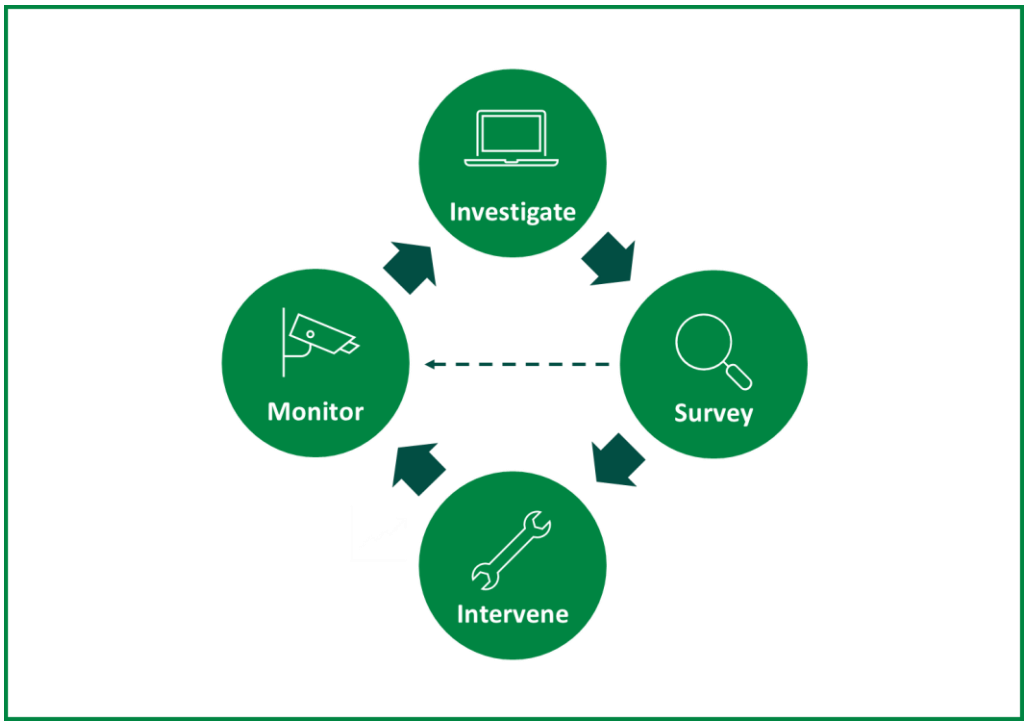


Figure 1: Iterative process to investigate, identify and address groundwater infiltration

Context

Sometimes, water can enter our wastewater pipes, for which 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 Hellifield drainage area and its associated overflow, the Hellifield Wastewater Treatment Works Storm Overflow. In 2024, 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.

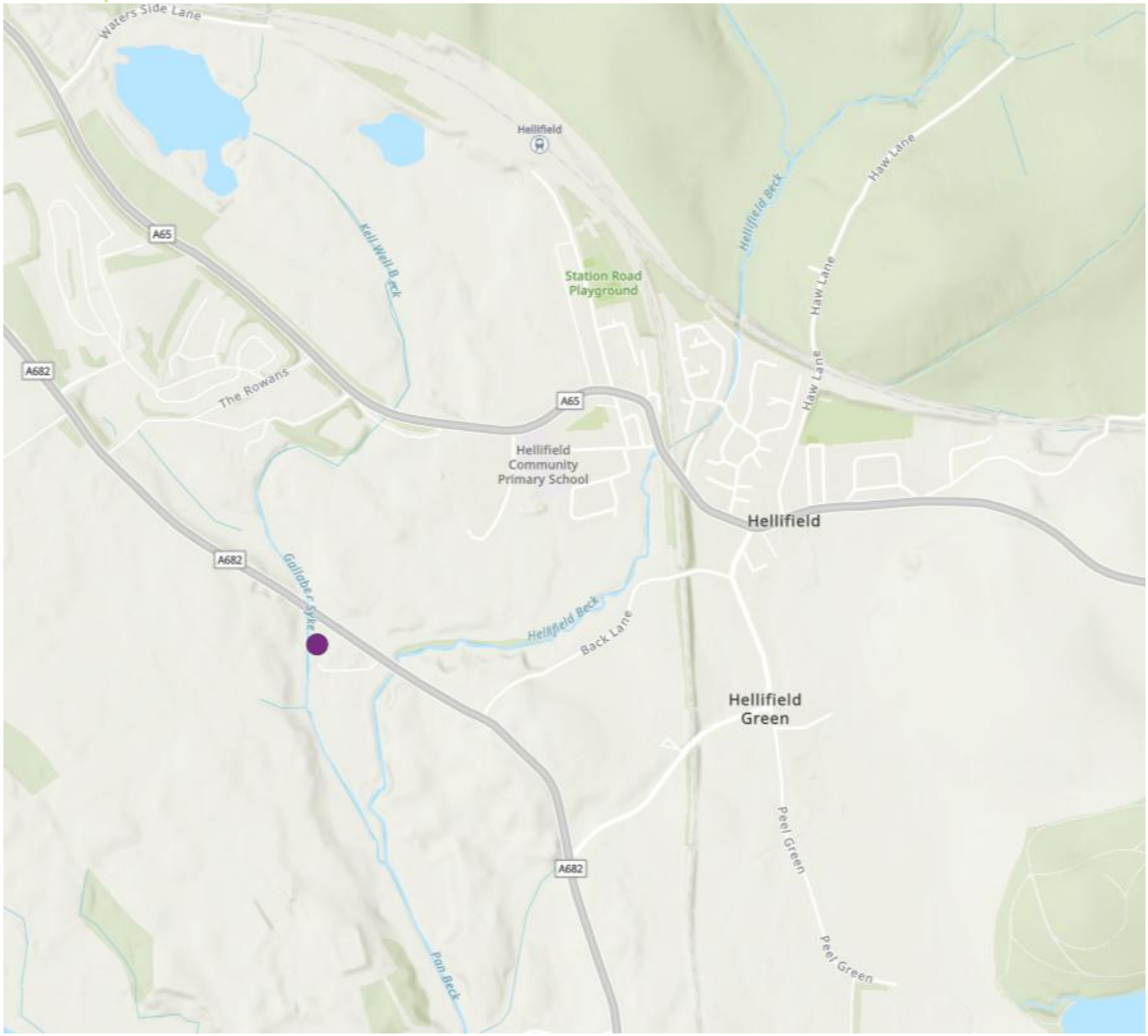


Figure 2: United Utilities – Better Rivers – Storm Overflow Map (September 2024). The purple dot marks the Hellifield Wastewater Treatment Works Storm Tank Overflow

Hellifield is situated on the southern edge of the Yorkshire Dales. It lies within the Craven district, positioned between the market towns of Settle and Skipton. Surrounding land is predominantly agricultural and the broader landscape transitions into moorland and limestone pavement as elevation increases toward the Dales.

The village lies near the headwaters of the River Ribble catchment; surface water features are limited but include small becks and seasonal wetlands.

Investigation

An initial 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 significant groundwater infiltration was unlikely in the catchment with EDM and MCERTS data indicating slow response runoff. Further observations identified areas where the sewers ran close to or across a watercourse.

From these findings, it is recommended that CCTV surveys be completed to see if there is infiltration of the watercourse into the sewer. CCTV surveys can also identify if there is land drainage connected into the sewer, which would be assessed for removal.

Next Steps

Hellifield is currently in the survey stage of identifying and addressing infiltration. The site will follow the iterative process displayed in Figure 1 to confirm whether significant groundwater infiltration is present and, if so, address it.