Hayton

Infiltration Reduction Plan

Last Updated: October 2026

United Utilities

Water for the North West

Executive summary

Hayton in Cumbria is currently in the monitoring stage (see Figure 1) to address infiltration and reduce spills at the Hayton Pumping Station Storm Overflow. An initial desktop assessment concluded that groundwater infiltration in the catchment was possible. CCTV surveys confirmed the presence of infiltration, and interventions were completed in Summer 2026.

As groundwater infiltration has been found but is yet to be confirmed as the leading cause of spills to the environment, interventions have been completed to address the localised infiltration identified during surveys. As more is known on the outcome of the interventions, this Infiltration Reduction Plan will be updated accordingly.

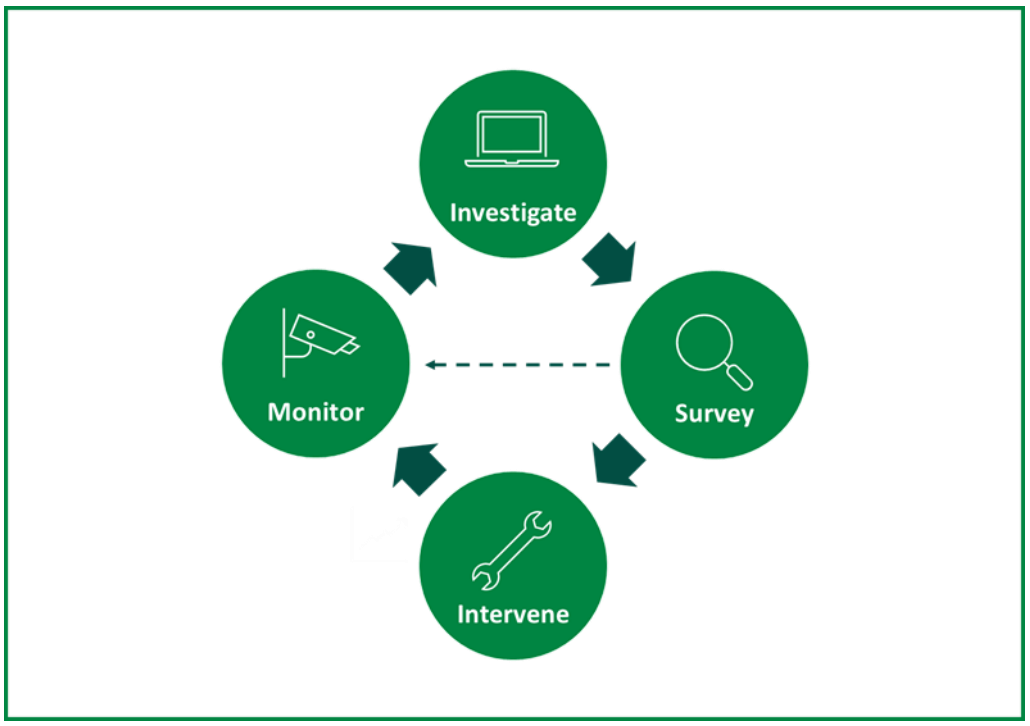


Figure 1: Iterative process to investigate, identify and address groundwater infiltration

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 Hayton drainage area and its associated overflow, Hayton Pumping Station Storm Overflow. In 2022, 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.

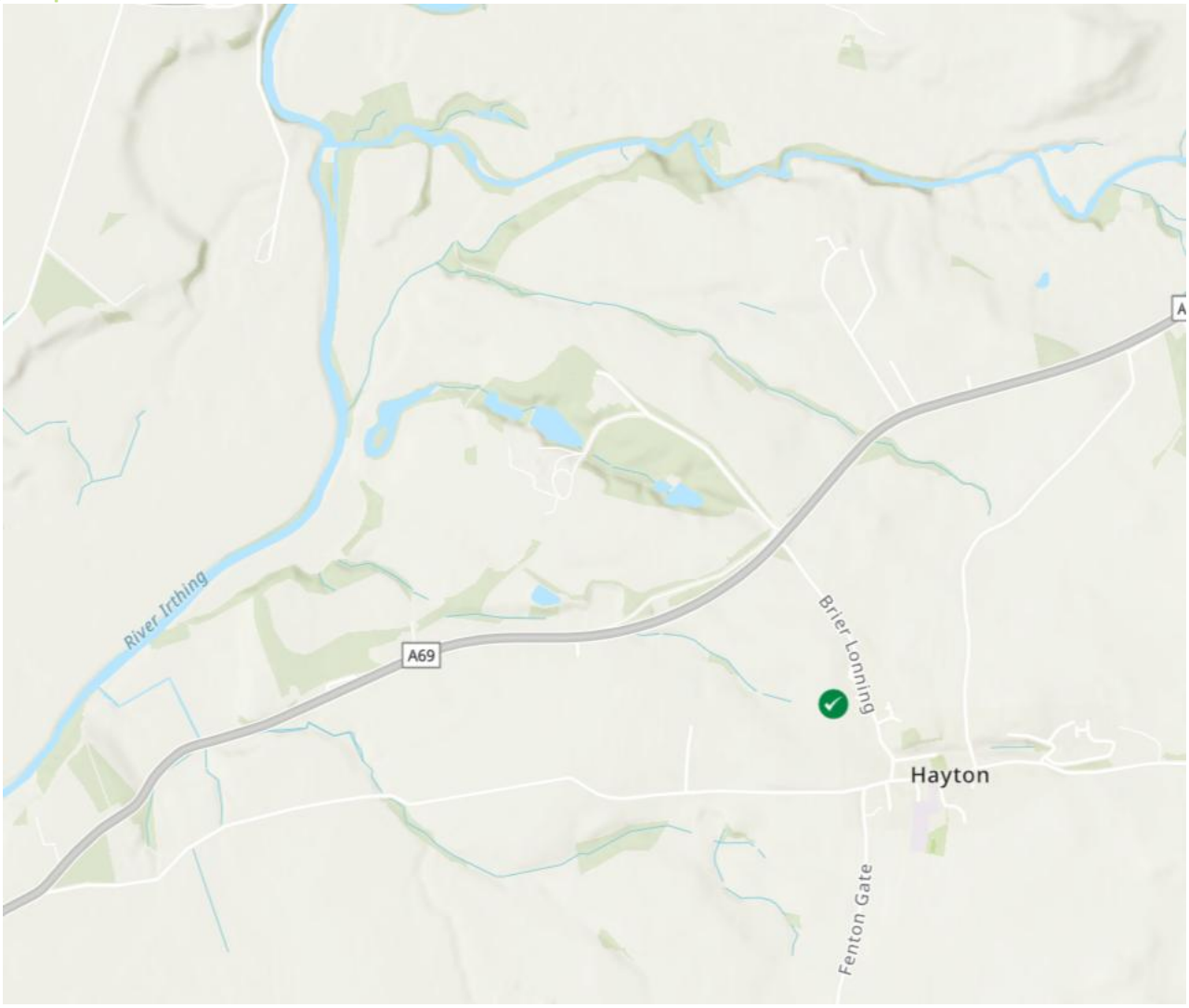


Figure 2: United Utilities – Better Rivers – Storm Overflow Map (January 2026). The green dot marks the Hayton Pumping Station Storm Overflow

Hayton is a historic village situated 8 miles east of Carlisle and a couple of miles south of Brampton. The nearby Bye Gill flows into the River Irthing.

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 some seasonal variation in nearby groundwater levels was present which may be indicative of seasonal infiltration. CCTV surveys were recommended to confirm any presence of infiltration.

Survey

267m of CCTV surveys of the sewer network were completed in Autumn/Winter 2024. The surveys were assessed using Artificial Intelligence to rapidly identify and locate points of infiltration. They were then reviewed by an engineer to assess for any required remedial works. The presence of infiltration was confirmed, and interventions were recommended as a result.

Checks were also carried out on all lateral connections; none are suspected of receiving flows not bound to receive.

Intervention

As recommended, interventions were completed in Summer 2026. This included lining 68m of the sewer network and the renewal of two manholes.

Next steps

Hayton is currently in 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 completed interventions and identify new points of infiltration, should they arise.