Crosby Garrett

Infiltration Reduction Plan

Last Updated: June 2026

United Utilities

Water for the North West

Executive summary

Crosby Garrett in Cumbria is currently in the monitoring stage (see Figure 1) to address infiltration and reduce spills at the Crosby Garrett Wastewater Treatment Works Storm Overflow. An initial desktop assessment concluded that there was a low likelihood of groundwater infiltration. However, CCTV surveys confirmed the presence of infiltration, and interventions to address this were completed in Summer 2025.

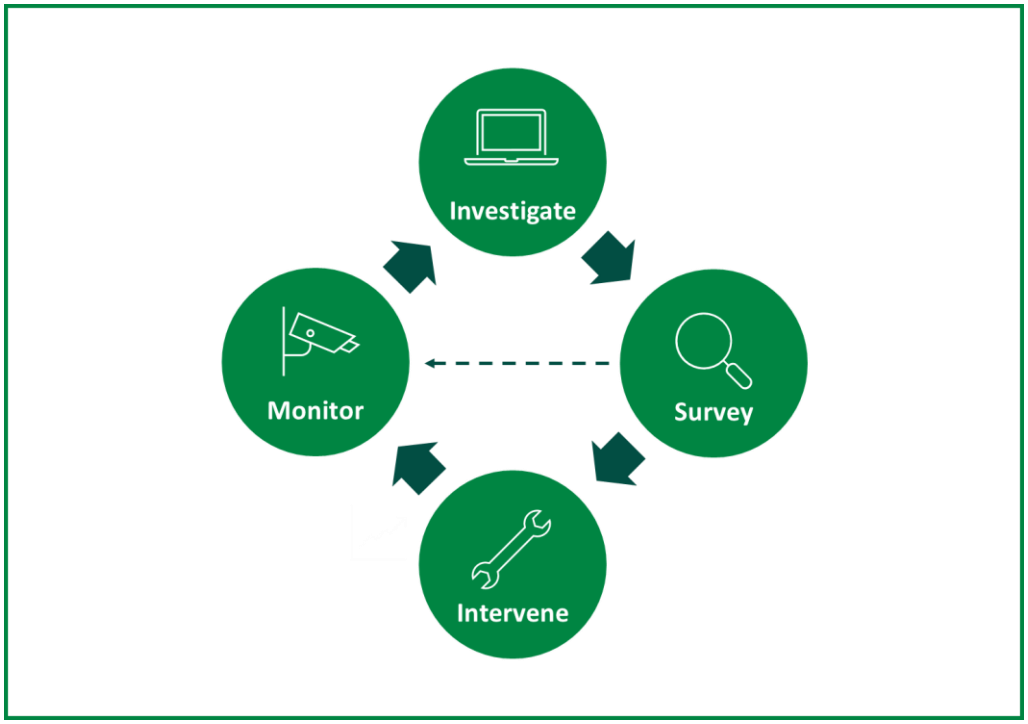

Figure 1: Iterative process to investigate, identify and address groundwater infiltration

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 Crosby Garrett drainage area and its associated overflow, Crosby Garrett Wastewater Treatment Works 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.

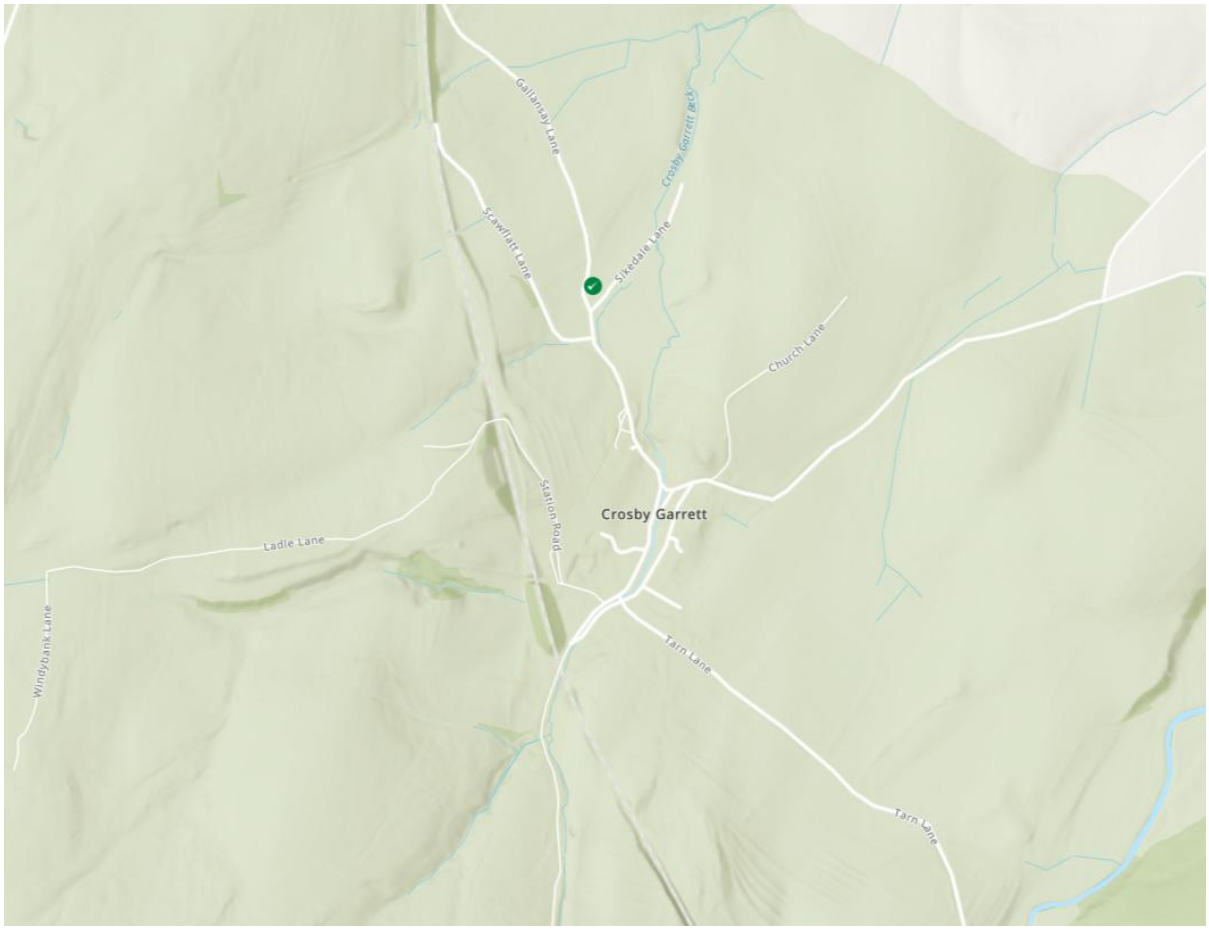

Figure 2: United Utilities – Better Rivers – Storm Overflow Map (October 2024). The green dot in the marks the Crosby Garrett Wastewater Treatment Works Storm Overflow

Crosby Garrett is a hamlet and civil parish which sits in the Westmorland and Furness Unitary Authority area of Cumbria. It is situated south-west of Penrith and three miles north-west of Kirkby Stephen. Crosby Garrett Beck flows through the area, flowing north to the River Eden.

Investigate

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 found significant evidence of rainfall-induced infiltration. Results also indicated that spills may have been partly driven by rural runoff. The assessment identified areas of the catchment where sewers ran alongside or crossed a watercourse.

From these findings, it was recommended that CCTV surveys be completed to identify potential sources of infiltration. The CCTV surveys would also identify if there was infiltration from watercourses into the sewer network.

Survey

As recommended, 329m of CCTV surveys were completed in Winter 2024. The CCTV surveys were assessed using Artificial Intelligence to rapidly identify and locate points of infiltration. The surveys were then reviewed by an engineer to identify any required remedial works. Several points of infiltration were identified. This confirmed the need for an intervention to seal the network.

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

Intervention

Remedial works to address infiltration were completed in Summer 2025. 84m of the sewer network was lined, and a section was patch-lined (including a lateral connection repair) in order to seal the network. A manhole chamber was sealed using grout injection.

Next steps

Crosby Garrett 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 remedial works and identify new points of infiltration, should they arise.