

Eaglesfield

Infiltration Reduction Plan

Last Updated: September 2026



Executive summary

Eaglesfield in Cumbria is currently in the monitoring stage (see Figure 1) to address infiltration, with the aim of reducing spills at the Eaglesfield Wastewater Treatment Works Storm Tank Overflow. An initial desktop assessment concluded that infiltration was likely, although most probably induced by rainfall.

CCTV surveys confirmed infiltration in the sewer network, and remedial works were completed in Spring 2025. Further remedial works were completed in Spring 2026.

As groundwater infiltration has been found but is yet to be confirmed as a leading cause of spills to environment, interventions have been completed to address the localised infiltration identified during the survey stages.



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 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 Eaglesfield drainage area and its associated overflow, the Eaglesfield Wastewater Treatment Works Storm Tank Overflow. In 2022, infiltration was identified as a potential leading cause of the 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 marks the Eaglesfield Wastewater Treatment Works Storm Tank Overflow

Eaglesfield is a small village just outside the Lake District National Park boundary, south-east of Cockermouth. Surrounding Eaglesfield are scenic landscapes with the River Derwent flowing nearby to the north.

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 that there was evidence of base infiltration in the system, as well as rainfall-driven infiltration. The assessment also indicated that spills may be partly driven by rural runoff and identified areas of the catchment where public sewers ran next to or across watercourses.

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

Survey

As recommended, 645m 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 assess for any required remedial works. Infiltration was found entering the pipe via multiple joints along the length of the sewer. We investigated the suspected source of the infiltration and believe it to be entering from a watercourse running adjacent to the sewer length. Point infiltration was also identified at a manhole.

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

Intervention

Remedial works were completed in Spring 2025. 92m of the sewer network was sealed to prevent infiltration. Remedial work also included grout injection to seal a manhole.

Additional interventions were completed in Spring 2026. These works included lining 180m of the sewer network and sealing one manhole chamber.

Next steps

Eaglesfield is currently in the monitoring stage of identifying and addressing infiltration. The site will then follow the iterative process displayed in Figure 1 to monitor the efficacy of the completed remedial works and identify new points of infiltration, should they arise.