Newbiggin

Infiltration Reduction Plan

Last Updated: October 2026



United Utilities

Water for the North West

Executive summary

Newbiggin in Cumbria is in the survey stage (see Figure 1) to address infiltration and reduce spills at the Newbiggin Wastewater Treatment Works Storm Tank Overflow. An initial desktop assessment found indicators of seasonal infiltration. Two stages of CCTV surveys found no infiltration requiring intervention. A third stage of surveys has been completed, and a fourth phase of surveys is underway.

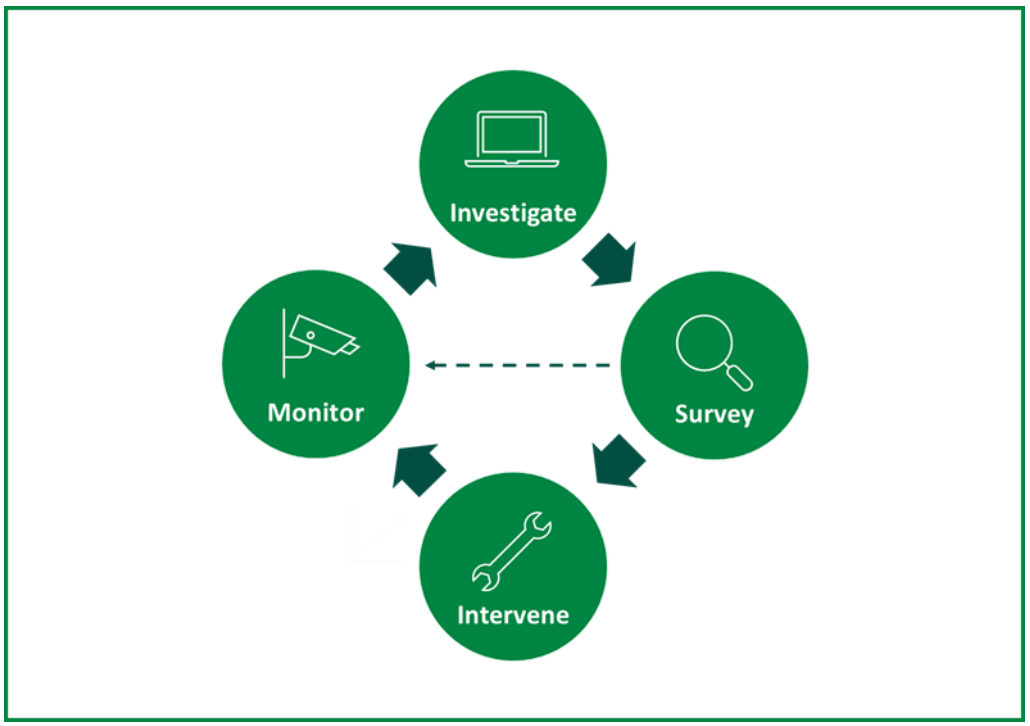


Figure 1: Iterative process to investigate, identify and address groundwater infiltration

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 Newbiggin drainage area and its associated overflow, Newbiggin Wastewater Treatment Works Storm Tank 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.

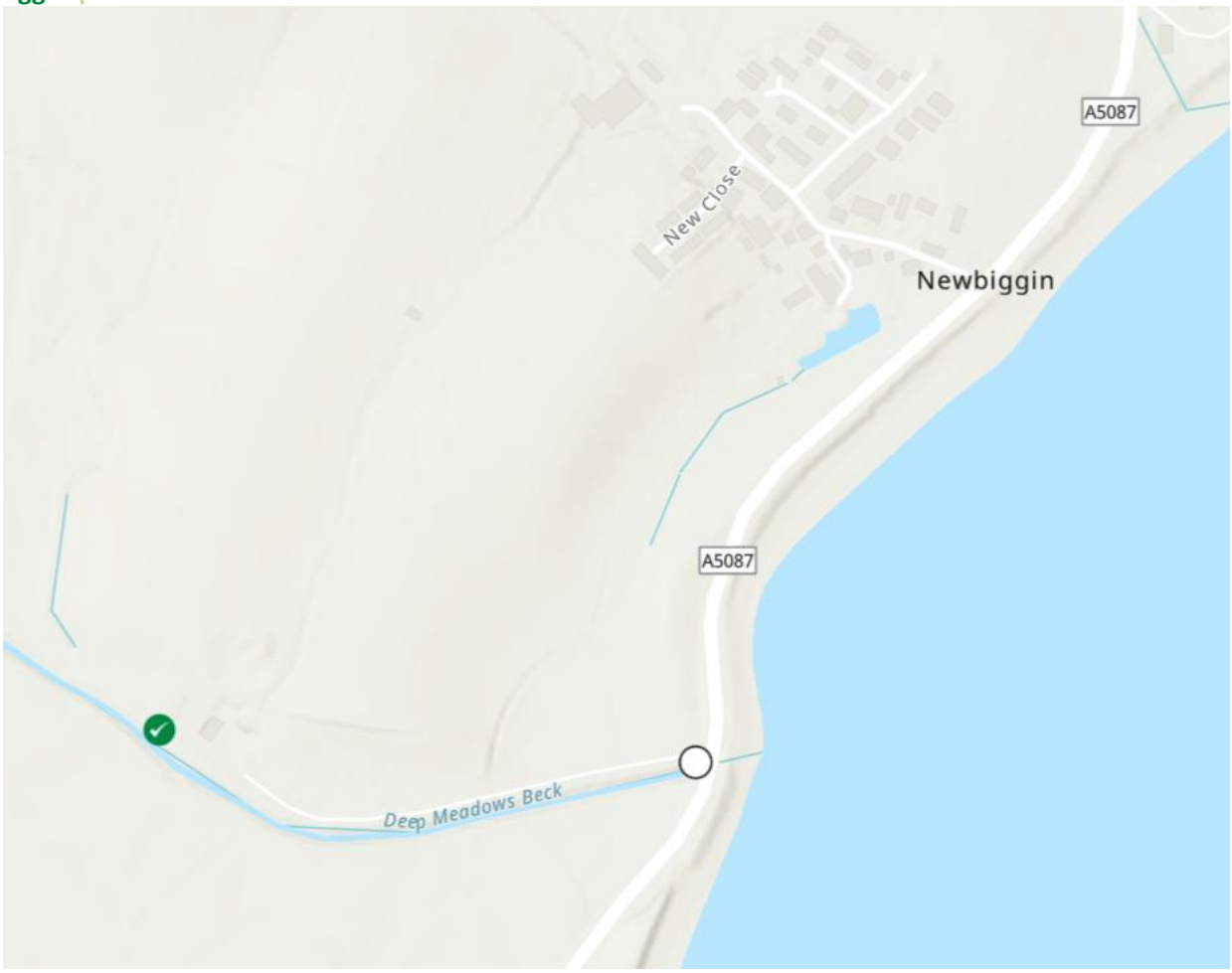


Figure 2: United Utilities – Better Rivers – Storm Overflow Map (January 2026). The green dot marks the Newbiggin Wastewater Treatment Works Storm Tank Overflow

Newbiggin is a village in Westmorland and Furness. It is situated on the coast next to Morecambe Bay.

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 found indications of seasonal infiltration, with the possibility of seasonal high groundwater levels influencing flows. It also found points where sewers crossed watercourses; flows from these watercourses could enter the sewer network.

From these findings, it was recommended that CCTV surveys be completed to check that there was no infiltration from the watercourses into the sewer network. The CCTV surveys could also identify if there was land drainage connected into the sewer, which would be assessed for removal.

Survey

979 metres of the sewer network draining towards Newbiggin was surveyed in autumn/winter 2024. An additional 734 metres of the sewer network draining towards Newbiggin was surveyed in winter 2025. The CCTV surveys were assessed using artificial intelligence (AI) to rapidly identify and locate points of infiltration. The surveys were then reviewed by an engineer to assess for any required remedial works. No interventions were recommended following both surveys.

The network was also checked for any unexpected inflows, and no lateral connections were identified as receiving water they were not intended to receive.

A third phase of survey work has now been completed within the network draining towards Newbiggin, covering 869 metres of sewer. A fourth phase of surveys is currently underway to further investigate potential sources of groundwater entering the network.

Next steps

Newbiggin is currently in the survey stage of our plan to identify and address infiltration (Figure 1). The findings from the surveys will be reviewed to determine whether any remedial work is required. The site will then continue through the iterative process shown in Figure 1, allowing us to identify and address any new sources of infiltration should they arise.