Withnell Fold

Infiltration Reduction Plan

Last Updated: October 2026



United Utilities

Water for the North West

Executive summary

Withnell Fold in Lancashire is currently in the monitoring stage of our plan to identify address infiltration and reduce spills at the Withnell Fold Pumping Station Storm Overflow (Figure 1). An initial desktop assessment indicated that groundwater infiltration was unlikely. However, subsequent CCTV surveys identified evidence of infiltration, and remedial works to address this were completed in spring/summer 2025.

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 2024 surveys. As more is known on the results of the interventions, this Infiltration Reduction Plan will be updated accordingly.

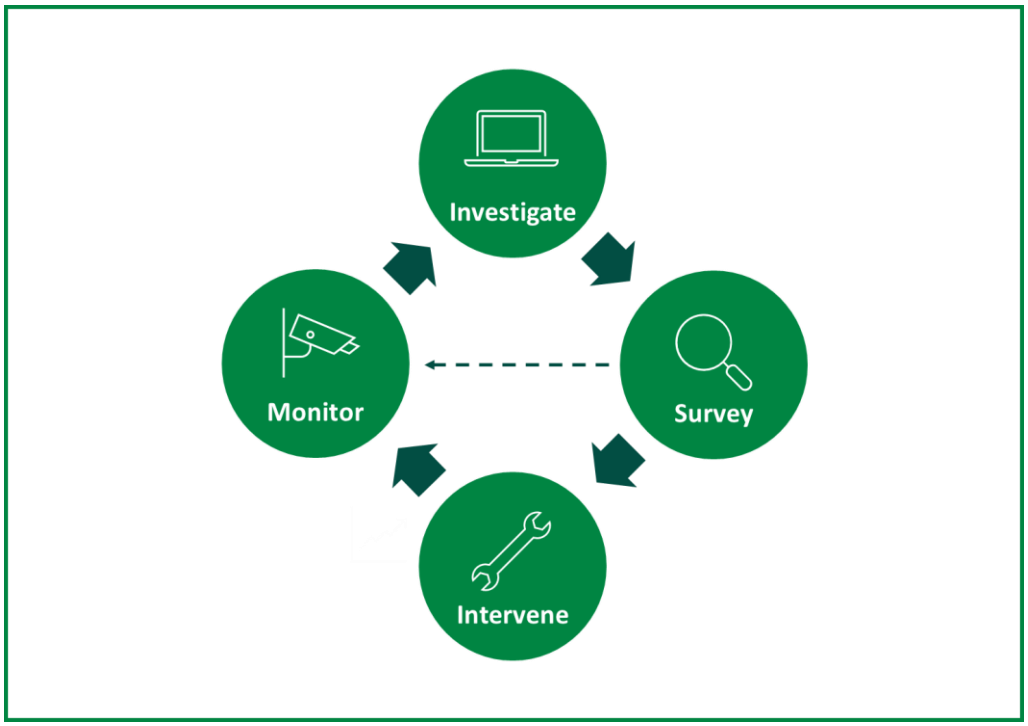


Figure 1: Iterative process to investigate, identify and address groundwater infiltration

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 Withnell Fold drainage area and its associated overflow, Withnell Fold Pumping Station Storm Overflow. In 2023, 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.

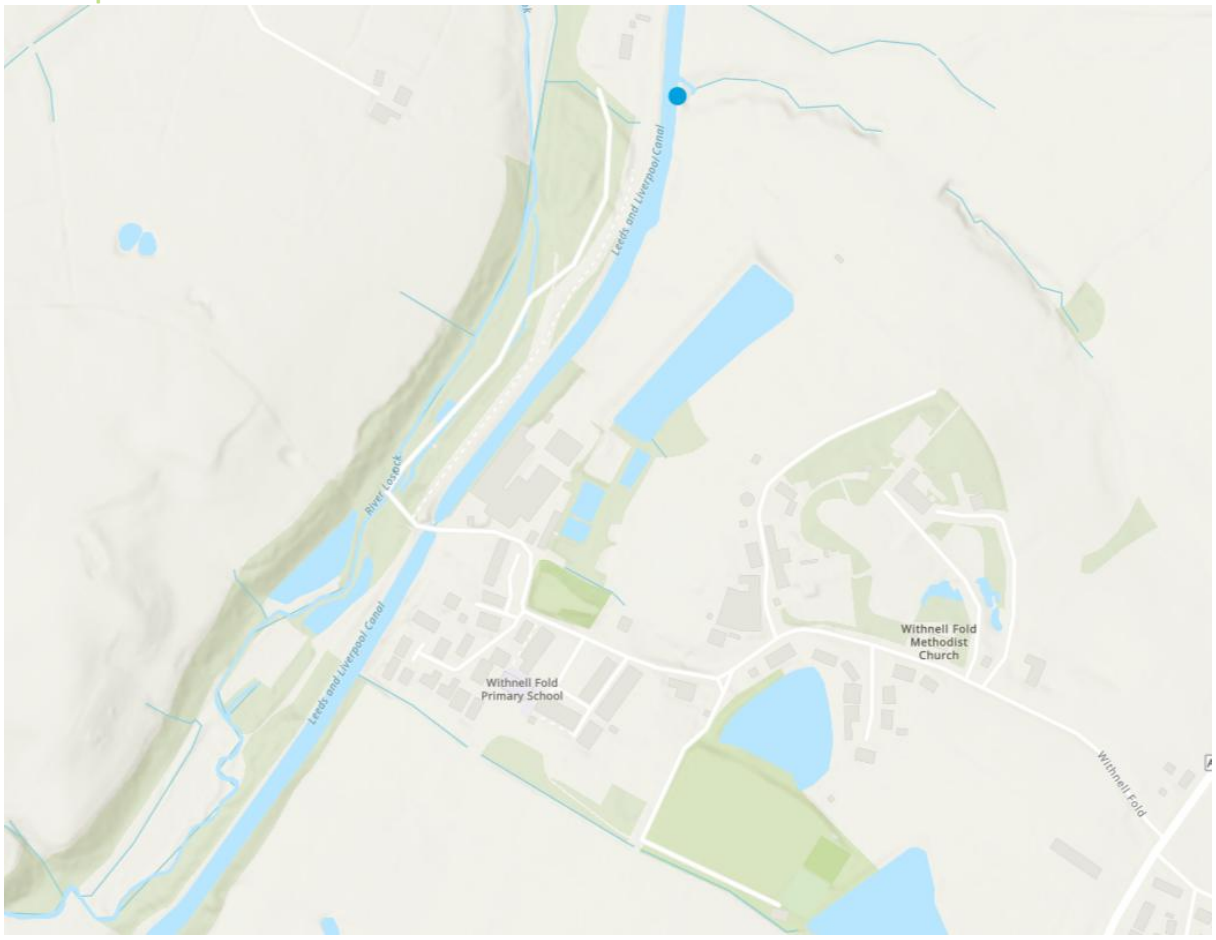


Figure 2: United Utilities – Better Rivers – Storm Overflow Map (October 2024). The blue dot marks the Withnell Fold Pumping Station Storm Overflow

Withnell Fold is a hamlet in Lancashire situated between Preston, Chorley, and Blackburn. It lies on the Leeds and Liverpool Canal surrounded by undulating, low-lying farmland.

Investigation

An initial desktop assessment into the likelihood of infiltration at Withnell Fold determined that groundwater infiltration was unlikely but recommended that surveys be completed to verify this.

Survey

1,047 metres of CCTV surveys were completed in winter 2024. The CCTV surveys were assessed using artificial intelligence (AI) to rapidly identify and locate points of infiltration. The survey findings were then reviewed by an engineer to determine whether any remedial work was required. Multiple points of infiltration were identified, and interventions were recommended to seal the sewer network.

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

Intervention

As recommended, remedial works to address infiltration were completed in spring/summer 2025. This involved lining 172 metres of the sewer network to prevent infiltration. All points of infiltration identified in the 2024 surveys have been sealed.

Next steps

Withnell Fold is currently in the monitoring stage of the infiltration reduction process. The site will continue through the iterative process shown in Figure 1, with ongoing monitoring used to assess the effectiveness of completed improvement works and identify any new sources of groundwater entering the sewer network should they arise.