

**Withnell Fold**

# **Infiltration Reduction Plan**

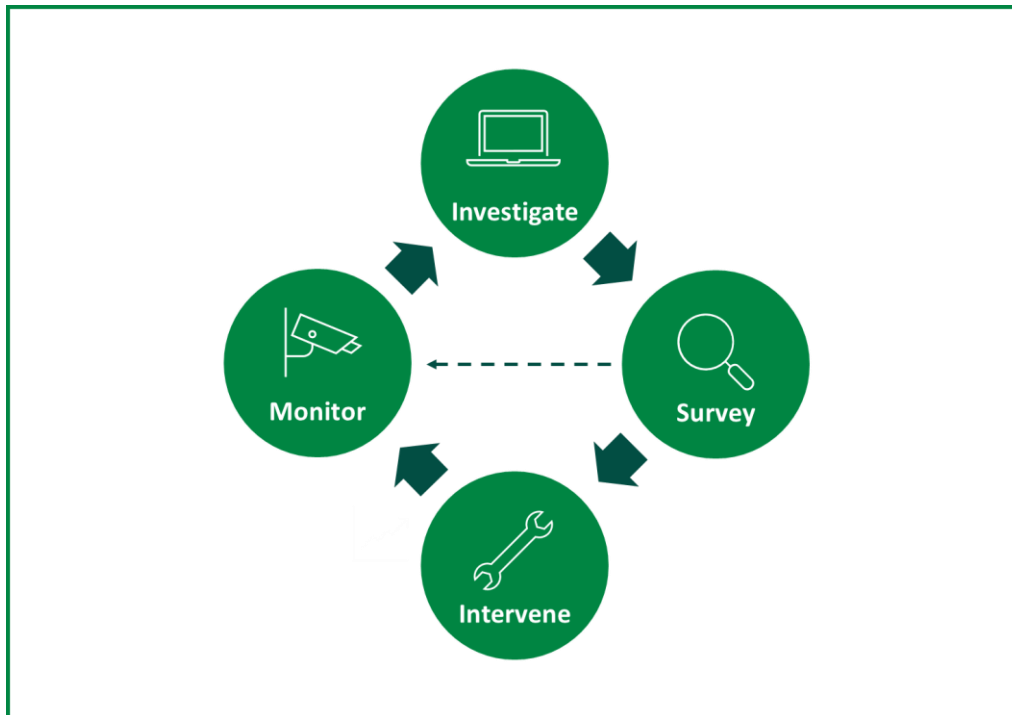
**Last Updated:** July 2025



## Executive summary

Withnell Fold in Lancashire is currently in the monitor stage (see Figure 1) to address infiltration and reduce spills at the Withnell Fold Pumping Station Storm Overflow (CHR0065SO). A desktop assessment concluded that groundwater infiltration is unlikely however, CCTV surveys confirmed the presence of infiltration. Interventions to address this were completed in May 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 Winter 2024 surveys. As more is known on the results of the interventions, this Infiltration Reduction Plan will be updated accordingly.

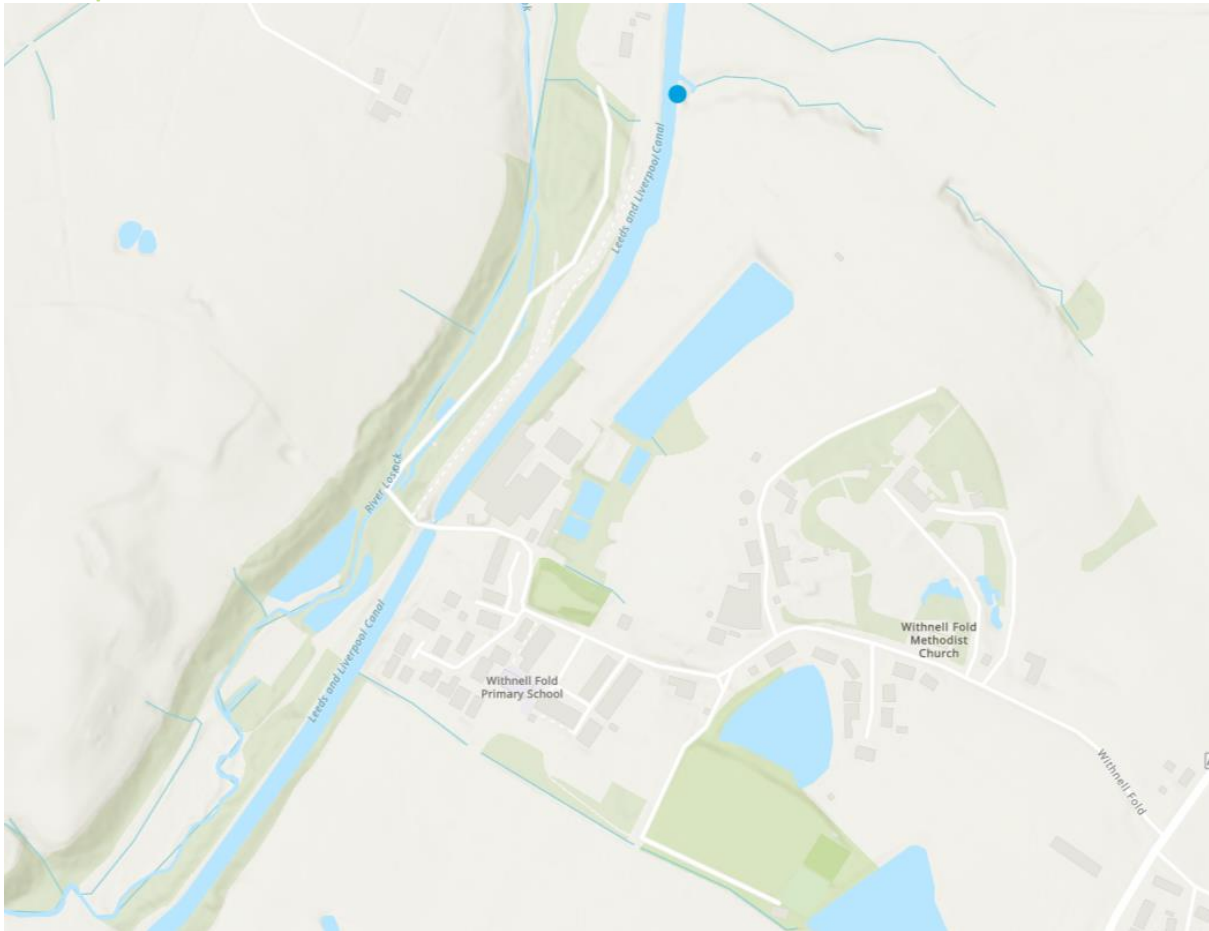


**Figure 1:** Iterative process to investigate, identify and address groundwater infiltration

## Context

Sometimes, water can enter our wastewater pipes that 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 PS drainage area and the associated overflow the Withnell Fold Pumping Station Storm Overflow (CHR0065SO). In 2023, infiltration was identified as a potential leading cause of the storm overflow discharging. The purpose of this plan is to further investigate and address this.



**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 between Preston, Chorley and Blackburn. It lies on the Leeds Liverpool canal surrounded by undulating, low-lying farmland.

## Investigate

Investigations into the likelihood of infiltration at Withnell Fold determined that groundwater infiltration was highly unlikely, but surveys should be completed to verify this.

## Survey

As recommended, 1047m of CCTV surveys were completed in Winter 2024. The CCTV surveys were reviewed by an engineer and assessed using Artificial Intelligence to rapidly identify and locate points of infiltration requiring remedial works. Multiple points of linear infiltration were identified on 2 specific lengths of sewer, confirming the need for interventions to seal the network.

Checks were also carried out on all lateral connections, none of which were suspected of receiving flows not bound to receive other than those already known of in the area.

## Intervention

Remedial works to address infiltration were completed in May 2025. The two lengths of sewer, 89m in total, were lined with CP308 specification liner and infiltration specific end seals to seal the sewer and prevent infiltration. Both points of infiltration identified in the Winter 2024 surveys have been sealed.

## Next steps

Withnell Fold is currently in the monitoring stage of identifying and addressing infiltration. 3 monitors have been installed to work in conjunction with monitors already deployed in the local network, and 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.