

Long Preston

Infiltration Reduction Plan

Last Updated: July 2025



Executive summary

Long Preston in Lancashire is currently in the monitor stage (see Figure one) to address infiltration and reduce spills at the Long Preston Wastewater Treatment Works Storm Overflow (017160041SO). A desktop assessment concluded that infiltration was possible, CCTV surveys confirmed the presence of infiltration in the network and interventions 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.

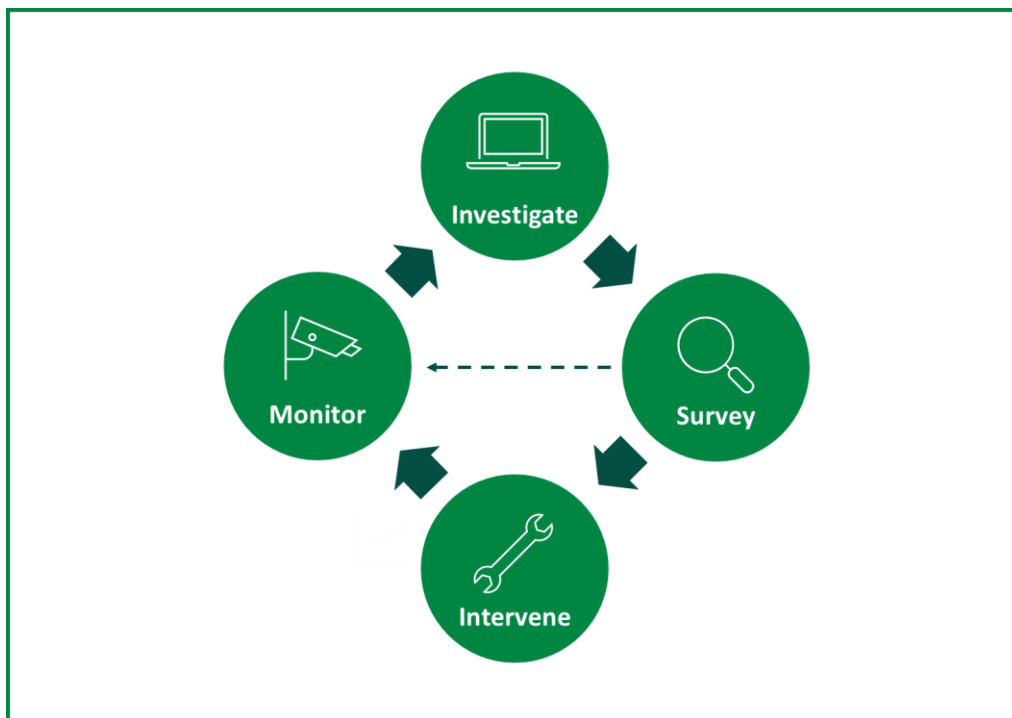


Figure 1: Iterative process to investigate, identify and address ground water infiltration

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 Northwest, our Infiltration Reduction Plans demonstrate our efforts to date and next steps to address infiltration and inflows in the catchment. This plan covers the Long Preston drainage area and the associated overflow the Long Preston 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 further investigate and address this.

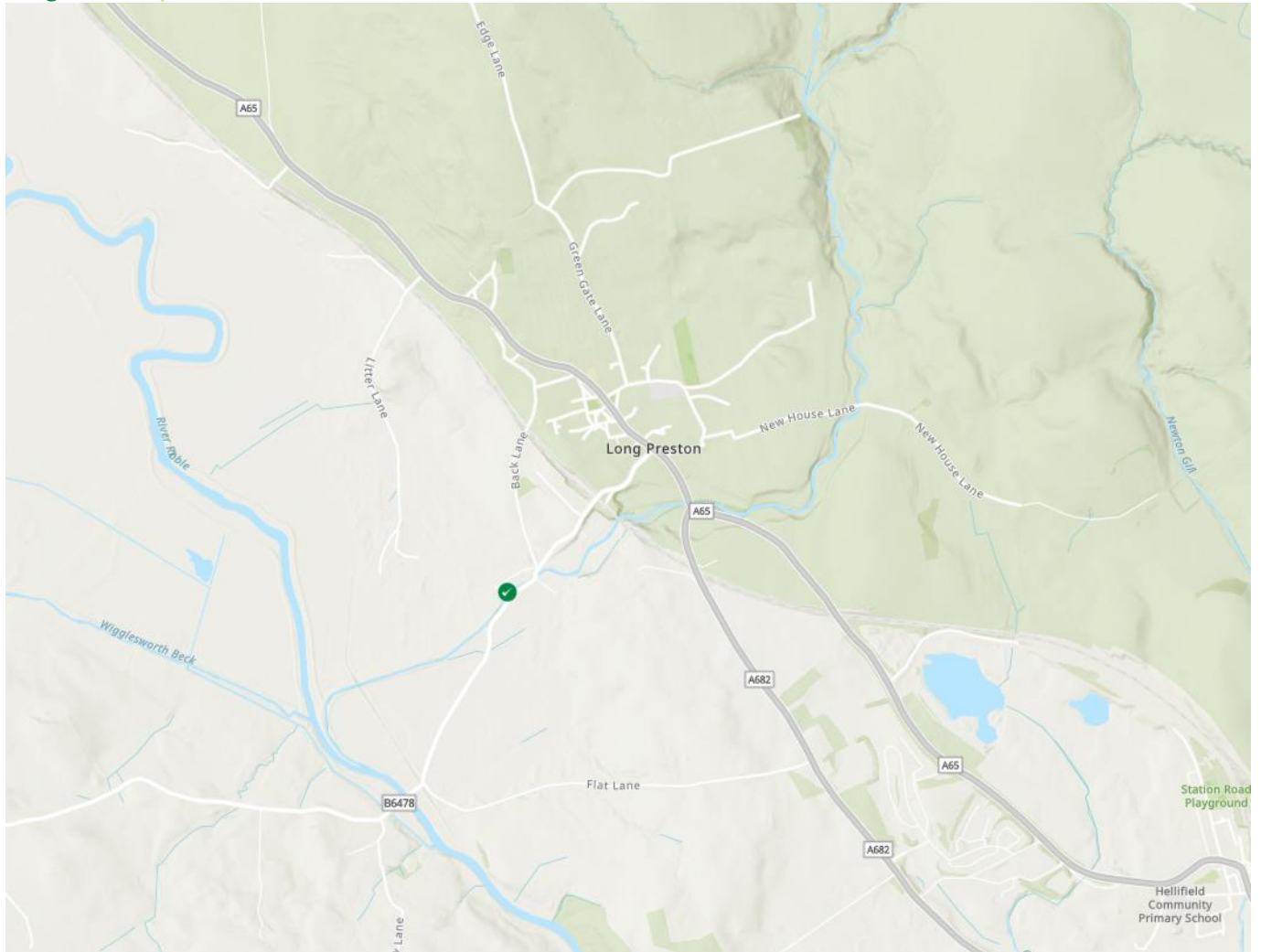


Figure 2: United Utilities – Better Rivers – Storm Overflow Map (October 2024). The green dot marks the Long Preston Wastewater Treatment Works Storm Overflow.

Long Preston is a village located in North Yorkshire near the Lancashire border. It lies in the Ribble Valley, East of the Forest of Bowland and near the River Ribble.

Investigate

A 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

There was limited data available for this site however, MCERTS data was indicative of seasonal baseflow indicating rainfall driven flow.

Further observations also identified a sewer crossing Long Preston Beck. It is possible that flow from these water sources can enter the sewer system through structural defects.

From these findings, it was recommended that CCTV was completed to see if there was infiltration of the water course into the sewer. CCTV surveys can also identify if there is land drainage connected into the sewer, which can be removed.

Survey

As recommended, we completed over 300m of CCTV surveys in Winter 2024 which identified points of infiltration. The CCTV surveys were reviewed by an engineer and assessed using Artificial Intelligence to rapidly identify and locate points of infiltration requiring remedial works. Running infiltration was found as well as indications of previous groundwater infiltration (encrustation).

The network was also checked for inflows and no lateral connections are suspected of receiving flows not bound to receive.

Intervention

Remedial works to address infiltration were completed in May 2025. Over 138m of the sewer network was lined with UV cured CP308 specification liners and infiltration specific end seals to prevent infiltration at all points identified in the survey. As well as this, one manhole was found to have a leaking slab, this was replaced with new and a sealing plate was also added to prevent both groundwater infiltration to the chamber and also run off entering through the slab or cover and frame.

Next steps

Long Preston is currently in the monitor stage of identifying and addressing infiltration (see Figure 1). Monitors have been installed to more accurately measure the efficacy of the solutions and the site will follow the iterative process displayed in Figure 1 to identify any more significant areas of infiltration, should they arise.