

**Cartmel**

# **Infiltration Reduction Plan**

**Last Updated: November 2024**



## Executive summary

Cartmel in Cumbria has been identified as having groundwater infiltration in the catchment. Remedial works were completed but did not realise the expected benefit. Therefore, an alternative solution to address spills at the relevant overflow (formally Cartmel In Cark Pumping Station Storm Overflow, (LAK0099SO) has been implemented. Following a recent capital project, the pumping station has been replaced with Cartmel in Cark WwTW (017380400).

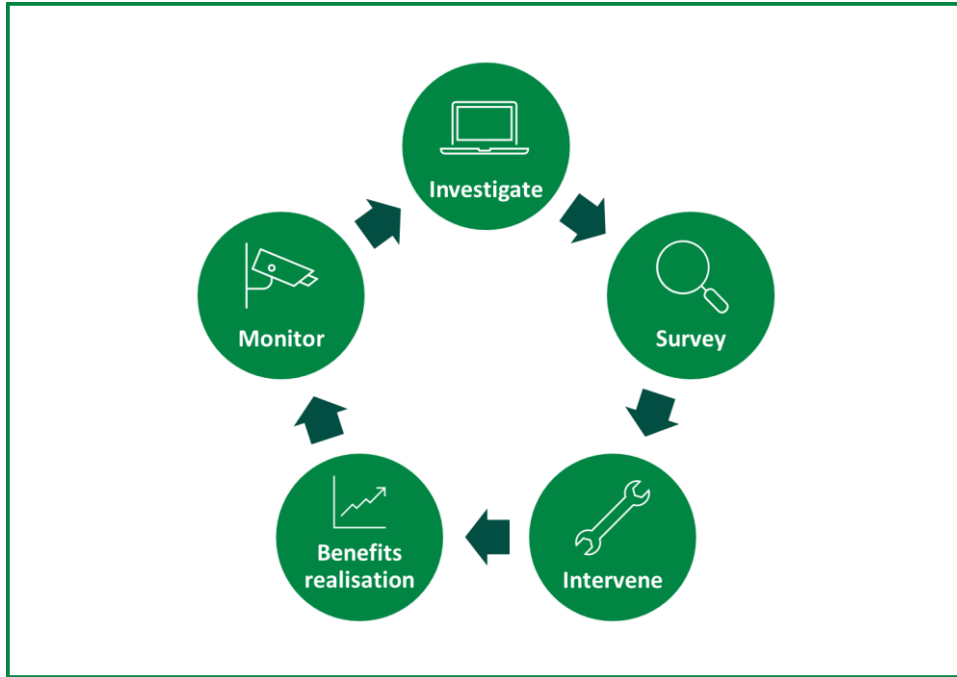
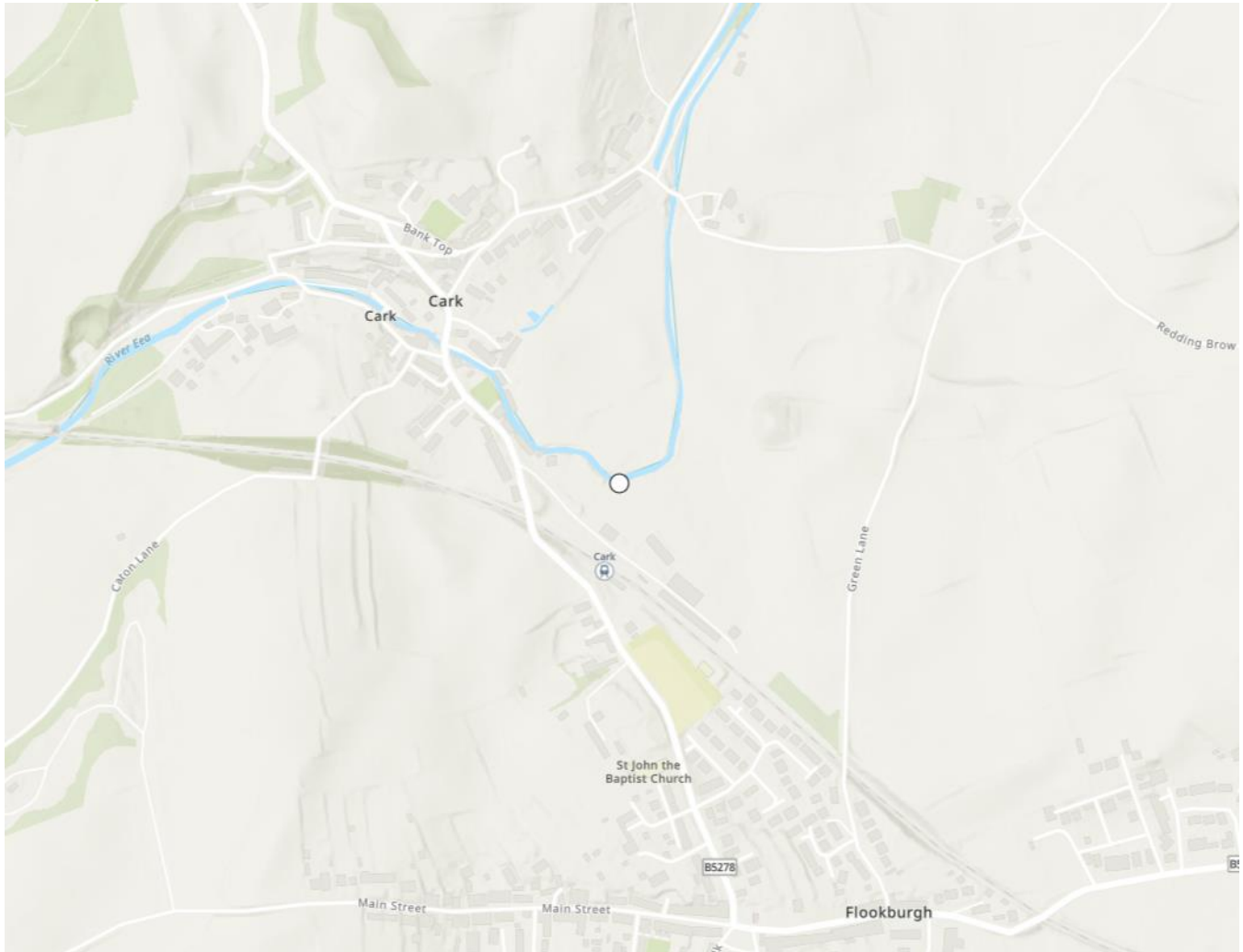


Figure 1: Iterative process to investigate, identify and address groundwater infiltration

## 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 Cartmel In Cark Pumping Station drainage area and the associated overflow. Although located in Cark, the pumping station (now WwTW) receives flows from Cartmel and is therefore referred to as Cartmel-In-Cark. 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 white dot marks the Cartmel In Cartmel Pumping Station Storm Overflow.

The village of Cartmel is located approximately 3km to the west of the coast, at the north side of Morecambe Bay and to the south of the Lake District National Park, in Cumbria. Cartmel lies in a shallow valley between Hampsfield Fell and Ellerside. Land use in the village is largely residential, surrounded by agricultural fields and occasional farm buildings. The population is seasonally variable due to tourism and events held at Cartmel racecourse. The River Eea flows south westerly through Cartmel village at a high level and receives tributaries from the north.

## Investigate, Intervene and Monitor

In 2022, the process (Figure 1) was followed for this area to investigate, identify and resolve groundwater infiltration. Lining of areas in the catchment did not realise significant benefits for infiltration reduction on the network. Therefore, an alternative, sidestream treatment solution was installed in Autumn 2024 to manage spills.

## Next steps

No further investigation is recommended for this site. The efficacy of the sidestream treatment solution will be monitored.