Muckleford Infiltration Reduction Plan Summary

This provides an update on the last year's groundwater situation, what mitigation actions, if any, were taken and a summary of our action plan to prevent flooding due to groundwater infiltration of our sewer network.

April 2024 – March 2025

Regional Summary

2024 continued to be a very wet year in the Wessex Water region, with above average rainfall in the majority of months. In particular, groundwater levels rose dramatically in September 2024, where the region recieved over 250% of the monthly average rainfall. This resulted in many catchments experiencing inundation from groundwater much earlier than usual.
Whilst December was relatively dry, above-average rainfall for the remainder of the autumn and winter meant that groundwater levels remained elevated until March, at which point the drier weather enabled the majority of catchments to recover.

Record-breaking rainfall for some this September - Met Office

Local Summary

The groundwater reached critical levels in December 2024 following a significant rainfall during the autumn, with two reported incidents attributed to Inadequate Hydraulic Capacity (IHC). For the remainder of this period no further incidents due to IHC were reported. The Operational Mitigation Action Plan (OMAP) was not instigated.

Action Plan

Annual Activity
Review asset and operational data and update annual reports.
Continue monitoring system performance using telemetry, rainfall records and local groundwater levels to inform the operational response during high-groundwater periods, and to monitor changing infiltration levels in the catchment.
Use machine learning to predict flows in sewers and proactively identify blockages and other issues.
Proactive inspections and maintenance of sewerage assets.

Completed
Installed in-sewer monitors at key locations to better understand flows in the network.
Reviewed incidents of sewer flooding.
Inspected public sewer network to identify points of infiltration.
Inspected private gullies, drains or manholes to identify points of infiltration.
Highway outfalls inspected and cleared of silt build-up
Sealed sewers and manholes to prevent groundwater infiltration.

Completed (cont.)

Undertaken pumping station or flow surveys to analyse flows in sewers.

Installed sealed covers on manhole chambers vulnerable to overland flow or river water entering through the cover.

Short Term

Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.

Inspect private gullies, drains, and manholes where applicable.

Long Term

Identify road gullies and other impermeable areas that are connected into the foul sewers.

Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

Consider sustainable solutions to rainwater management, for example above-ground attenuation and property-level interventions.

When Necessary

Install permanent flow meters at key pumping stations to continuously record pump performance.

Implement emergency tankering procedure for preventing restricted toilet use and sewer flooding during high groundwater periods, in order to protect public health.

Implement Operational Mitigation Action Plan (OMAP) for discharging excess flows to the environment as a last resort, when tankering would not prevent restricted toilet use or sewer flooding, and public health is at risk.

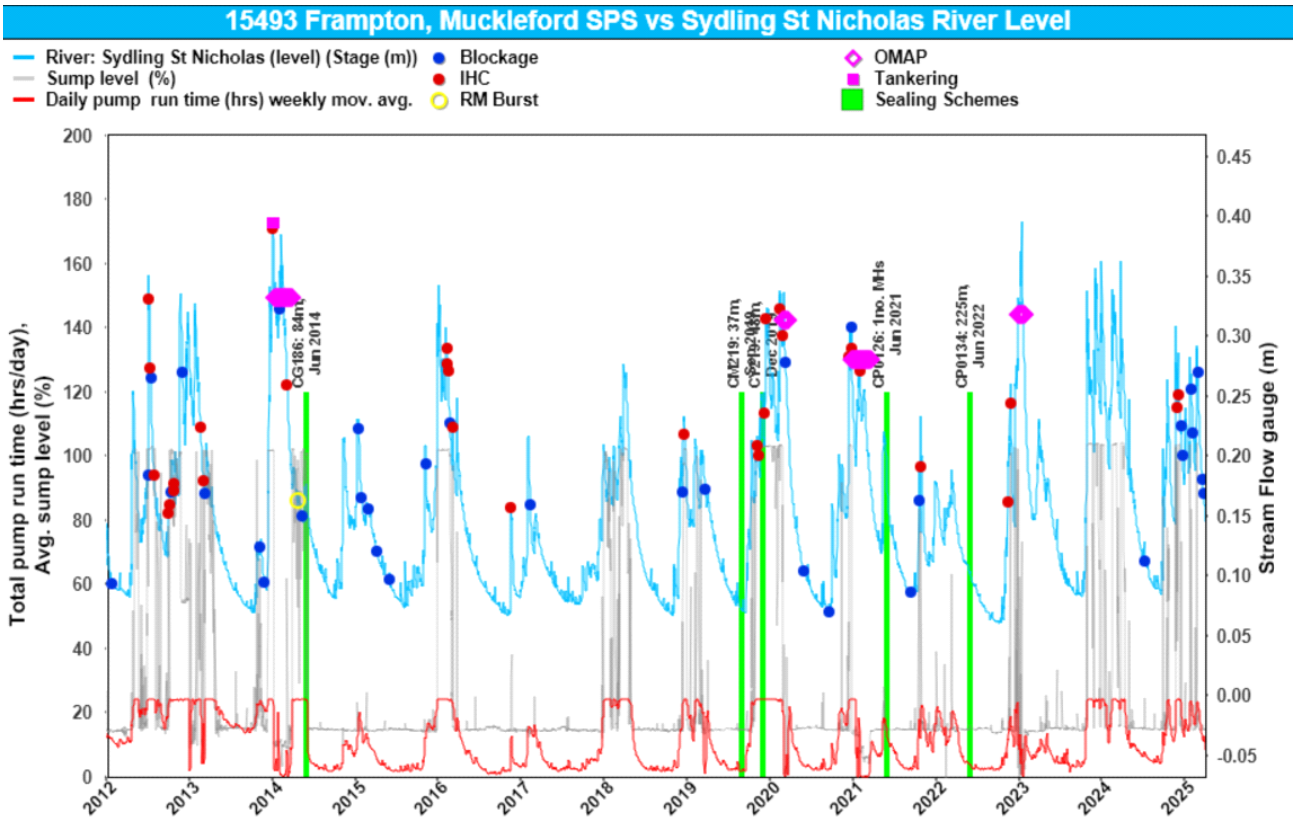
Upgrade pumping stations where appropriate, to improve the reliability and performance of the site.

Implement a scheme to address capacity issues in the sewer network.

Update the catchment hydraulic model.

Current Performance

This graph shows incidents against Barcombe Farm groundwater levels and the flow at Muckleford Sewage Pumping Station (SPS). Incidents caused by inadequate hydraulic capacity (IHC) have occurred when groundwater levels are high, indicating groundwater infiltration to be present in Muckleford. This is particularly evident during the winters of 2014/15, 2019/20 and 2020/21.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24	2024-25
Length of sewer inspected (m)	14,553	-	-	191	592	293
Length of sewer sealed (m)	179	-	-	215	-	-