Martinstown 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

Groundwater reached critical levels in the winter of 2024/25, with incidents attributed to inadequate hydraulic capacity (IHC) being reported.

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.
Undertake review of incidents of sewer flooding suspected to be affected by groundwater infiltration.
Proactive inspections and maintenance of sewerage assets.

Completed
Installed permanent flow meters at key pumping stations to continuously record pump performance.
Investigated nature-based solutions in the catchment.
Updated the catchment hydraulic model.
Inspected public sewer network to identify points of infiltration.

Completed (cont.)
Inspected private gullies, drains or manholes to identify points of infiltration.
Installed in-sewer monitors at key locations to better understand flows in the network.
Implemented a scheme to improve the local water recycling centre (WRC).
Sealed sewers and manholes to prevent groundwater infiltration.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Undertaken pro-active cleaning (jetting) of sewers to maximise capacity.
Upgraded pumping stations where appropriate, to improve the reliability and performance of the site.

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.
Install in-sewer monitors at key locations to better understand flows in the network.
Implement a scheme to improve the local water recycling centre (WRC).

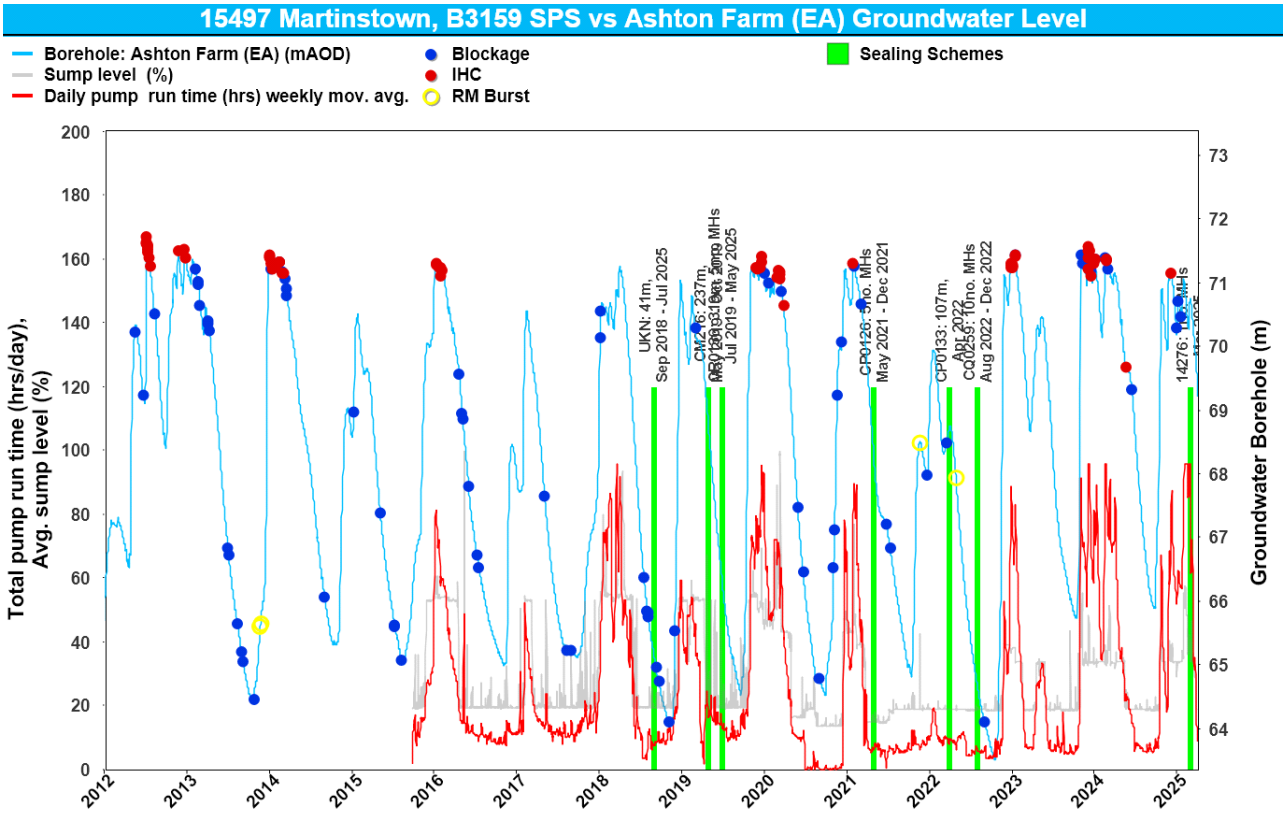
Medium Term
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.
Implement Nature-based Solutions in the wider catchment.

Long Term
Implement a scheme to address capacity issues in the sewer network.
Consider sustainable solutions to rainwater management, for example above-ground attenuation and property-level interventions.

When Necessary
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.

Current Performance

The graph below shows telemetry at Martinstown Sewage Pumping Station (SPS), incidents reported in the catchment, and the groundwater level measured at Ashton Farm. The graph shows that there is a clear correlation between groundwater levels and flows with the sewer network, indicating the impact of groundwater infiltration. When groundwater levels exceed ~70mAOD, the network is at risk of inundation due to groundwater infiltration, resulting in incidents attributed to inadequate hydraulic capacity (IHC) being reported.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24	2024-25
Length of sewer inspected (m)	0	-	-	-	-	-
Length of sewer sealed (m)	0	-	-	-	-	-