Milborne St Andrew 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 2023 – March 2024

Regional Summary

The Wessex region experienced incredibly wet weather across 2023-24, with higher-than-average rainfall in nine months during the period. February 2024 was both the warmest on record and the wettest in 30 years, with the 12-month sequence to the end of February being the wettest since our records began in 1911.

Groundwater levels rose rapidly during the autumn, and whilst drier weather in January 2024 provided a brief reprieve, levels remained high for the majority of the winter.

Warmest February on record for England and Wales - Met Office

Local Summary

The Milborne St Andrew catchment was significantly affected by groundwater in 2023/24 and multiple incidents were reported relating to inadequate hydraulic capacity (IHC) were reported. Sewer and manhole sealing work was undertaken in the catchment in 2023/24.

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 pro-active cleaning (jetting) of sewers to maximise capacity.
Proactive inspections and maintenance of sewerage assets.

Completed
Installed permanent flow meters at key pumping stations to continuously record pump performance.
Updated the catchment hydraulic model.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Inspected public sewer network to identify points of infiltration.
Sealed sewers and manholes to prevent groundwater infiltration.

Completed (cont.)
Reviewed incidents of sewer flooding.
Upgraded pumping stations where appropriate, to improve the reliability and performance of the site.

Short Term
Analyse flows in sewers using pumping station surveys, flow surveys and/or hydraulic modelling.
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).
Investigate nature-based solutions in the catchment.

Medium Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

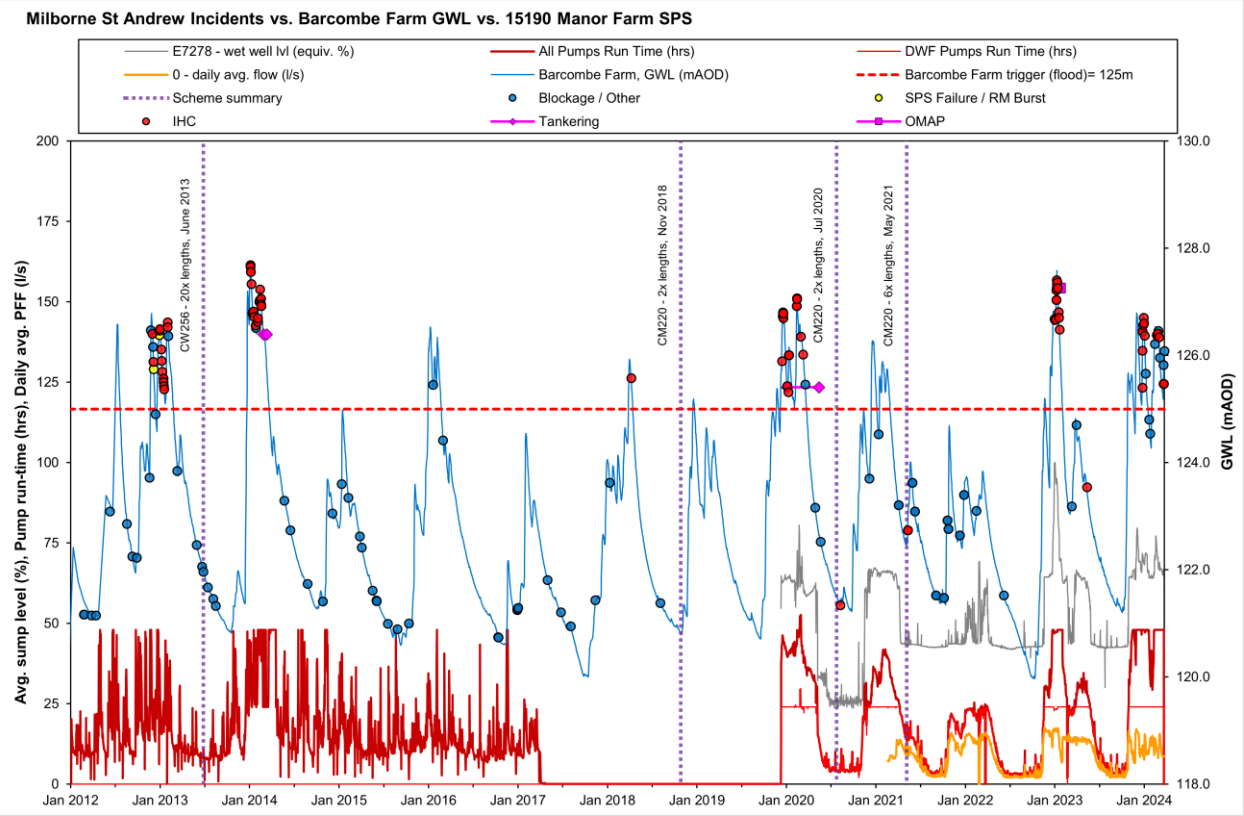
Long Term
Identify road gullies and other impermeable areas that are connected into the foul sewers.
Consider sustainable solutions to rainwater management, for example above-ground attenuation and property-level interventions.

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

This graph compares flooding caused by inadequate hydraulic capacity (IHC) of the network and blockage incidents with Barcombe Farm borehole ground waterlevel and the flow at Milborne St Andrew Water Recycling Centre (WRC) (13212). There is a strong correlation between groundwater level and inflow at the Water Recycling Centre (WRC), which shows the impact of infiltration in the network.

Multiple rounds of sewer sealing have had a positive impact, however much higher groundwater levels in the most recent two years has seen an increase in the number of reported incidents attributed to IHC. Groundwater infiltration remains a significant issue: tankering was required in winter 2019/20 and the OMAP was instigated in 2022/23, to protect public health and prevent loss of service.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	6,510	1,249	87	1,965	275
Length of sewer sealed (m)	756	16	152	-	186