Clapgate Wimborne 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 Clapgate Wimborne catchment reached critical levels during 2023/24 and there were multiple reported incidents attributed to inadequate hydraulic capacity. The pumps at Clapgate Sewage Pumping Station (SPS) were unable to cope with the increased inflow and tankering had to be carried out to relieve the network.

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.
Proactive inspections and maintenance of sewerage assets.

Completed
Inspected public sewer network to identify points of infiltration.
Sealed sewers and manholes to prevent groundwater infiltration.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Reviewed incidents of sewer flooding.
Implemented a scheme to address capacity issues in the sewer network.

Short Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
Use machine learning to predict flows in sewers and proactively identify blockages and other issues.

Short Term (cont.)
Install in-sewer monitors at key locations to better understand flows in the network.

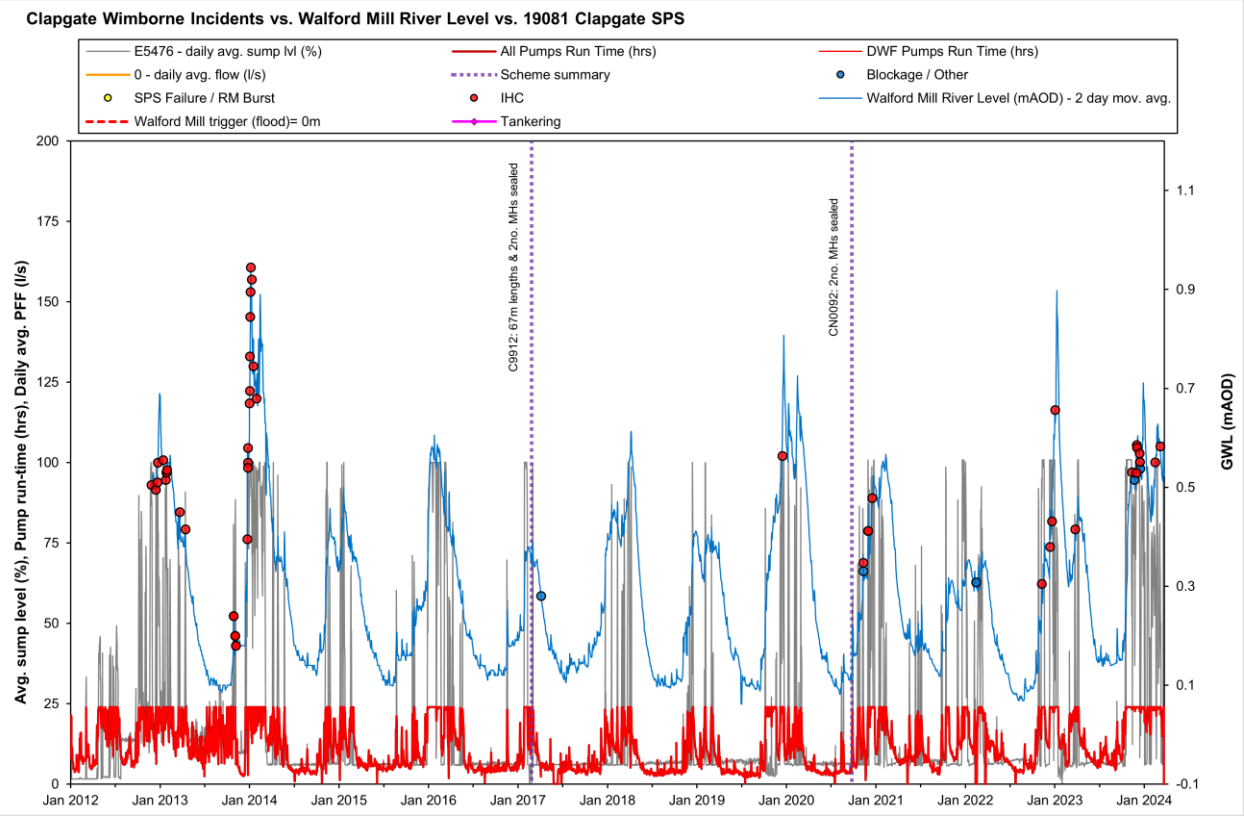
Medium Term
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

Long Term
Identify road gullies and other impermeable areas that are connected into the foul sewers.
Inspect private gullies, drains, and manholes where applicable.
Install permanent flow meters at key pumping stations to continuously record pump performance.
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 shows incidents against river level (as measured at Walford River Gauge) and the flow at Clapgate Sewage Pumping Station. Incidents caused by inadequate hydraulic capacity only occurred when river levels are high in the area, suggesting groundwater inundation to be the main cause of flooding in Clapgate Wimborne as evident during winter 2023/24. Sewer and manhole sealing was undertaken in 2017 and 2020, however the network continues to become inundated during high groundwater levels.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	2,045	-	-	1,443	-
Length of sewer sealed (m)	67	-	-	-	-