Ringwood 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

Groundwater reached critical levels in Ringwood in winter 2023/24 and Bickerley Sewage Pumping Station (SPS) struggled to keep up with the increased flow. There were several incidents reported due to inadequate hydraulic capacity (IHC) and the operation mitigation action plan (OMAP) was activated twice; once for a week in November 2023 and then from the start of December 2023 through to the end of January 2024.

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

Completed
Installed in-sewer monitors at key locations to better understand flows in the network.
Installed permanent flow meters at key pumping stations to continuously record pump performance.
Implemented a scheme to address capacity issues in the sewer network.
Reviewed incidents of sewer flooding.
Sealed sewers and manholes to prevent groundwater infiltration.
Implemented a scheme to improve the local water recycling centre (WRC).

Completed (cont.)
Inspected public sewer network to identify points of infiltration.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Updated the catchment hydraulic model.

Short Term
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.
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.
Implement a scheme to improve the local water recycling centre (WRC).

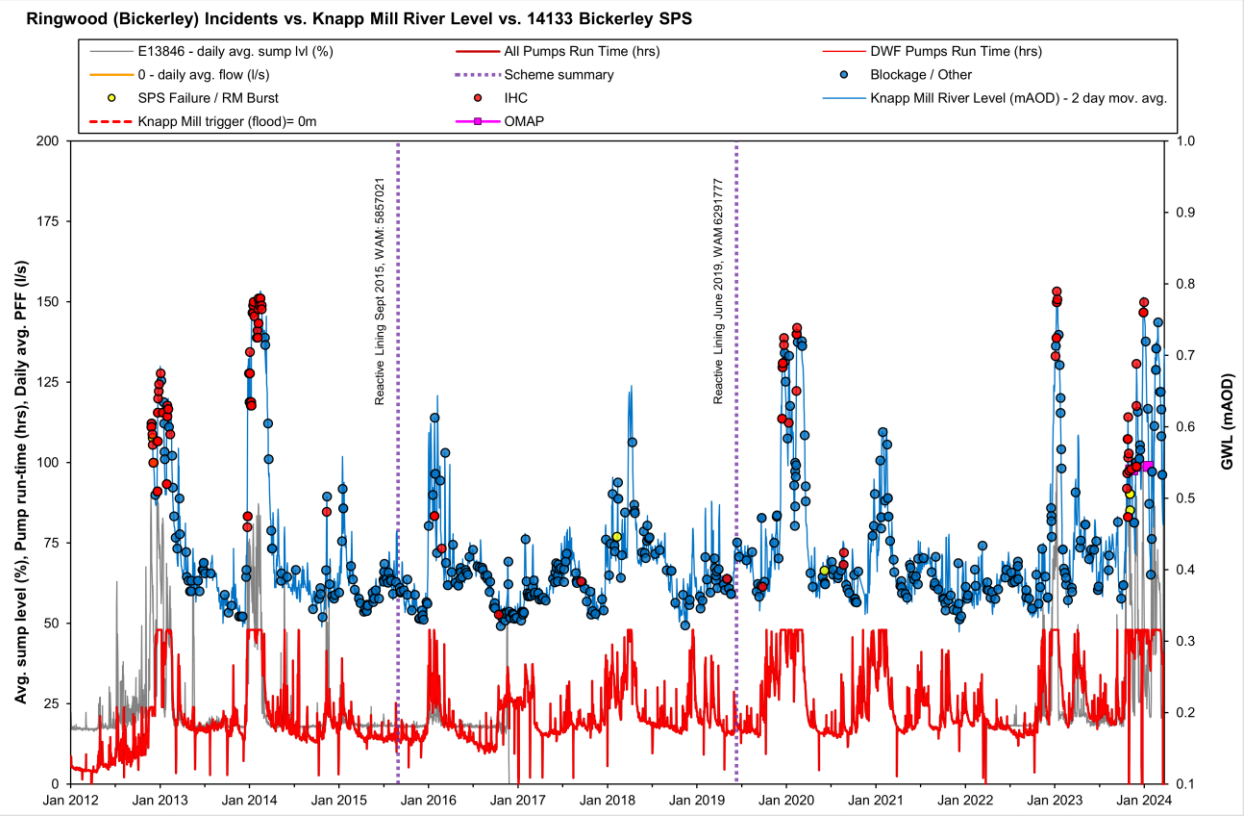
Medium Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.

Long Term
Identify road gullies and other impermeable areas that are connected into the foul sewers.
Inspect private gullies, drains, and manholes where applicable.
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.
Upgrade pumping stations where appropriate, to improve the reliability and performance of the site.

Current Performance

The chart below shows the river level at Knapp Mill plotted against telemetry for Ringwood Bickerley SPS (ID: 14133). There is a strong correlation between the river level (which is an indicator of local groundwater levels) and the pump run times, which shows the presence of infiltration in the network. The majority of incidents attributed to inadequate hydraulic capacity (IHC) have occurred when the river level has been extremely high.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	5,512	4,733	-	-	1,559
Length of sewer sealed (m)	15	250	20	-	-