

Beechingstoke 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 Beechingstoke during the winter of 2023/24. One customer incident of external flooding at Beechingstoke Sewage Pumping Station was reported in January attributed to inadequate hydraulic capacity (IHC)

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

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

Inspected public sewer network to identify points of infiltration.

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

Reviewed incidents of sewer flooding.

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

Updated the catchment hydraulic model.

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.

Install in-sewer monitors at key locations to better understand flows in the network.

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

Medium Term

Analyse flows in sewers using pumping station surveys, flow surveys and/or hydraulic modelling.

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.

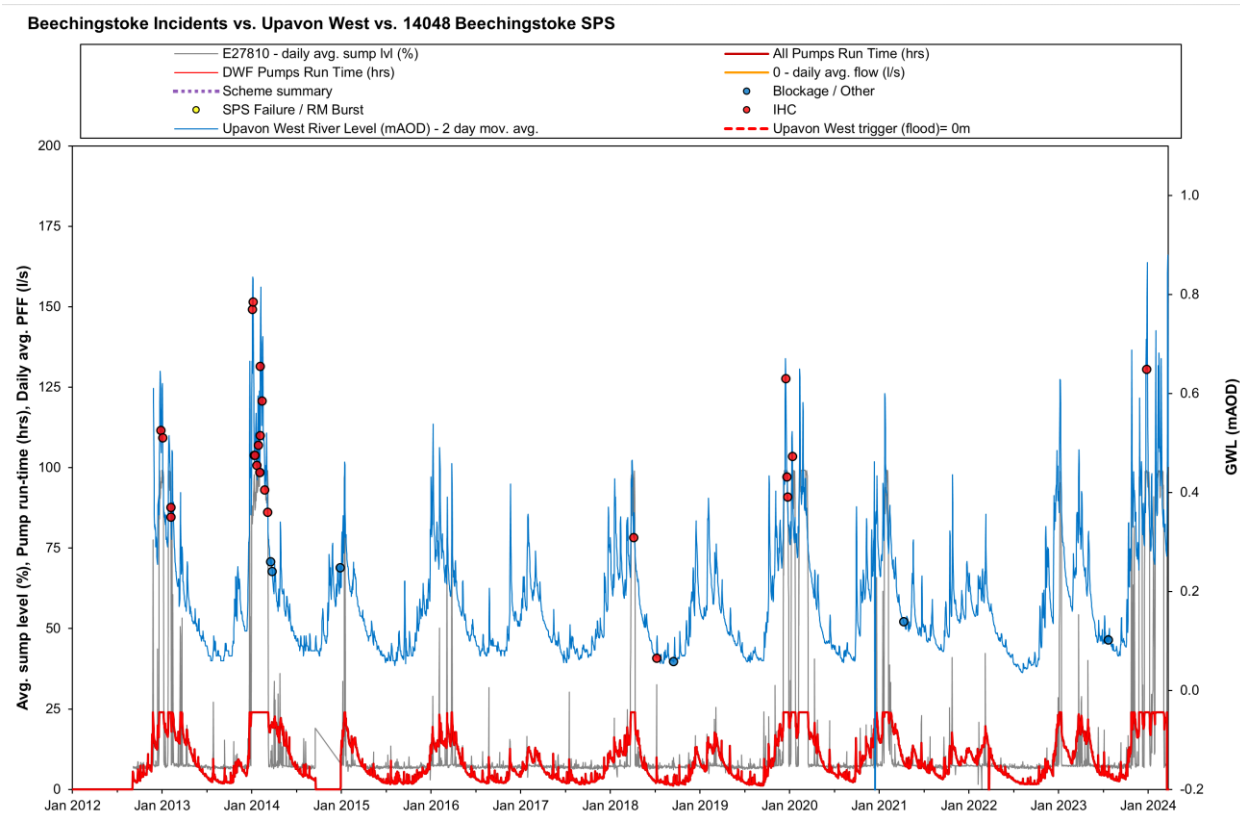
Implement Operational Mitigation Action Plan (OMAP) for discharging excess flows to the environment as a last resort, when tankering would not prevent restricted toilet use or sewer flooding, and public health is at risk.

Implement a scheme to improve the local water recycling centre (WRC).

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

Current Performance

The graph below displays the telemetry at Beechingstoke Sewage Pumping Station (SPS) against the river level as measure at Upavon West. The wet well level and pump running times coincide with periods of high groundwater levels demonstrating that the catchment is affected by infiltration. During the extreme highs of GWL, for example as seen in the winter of 2013/14, this has caused the network to become inudated and has led to incidents of backing up and flooding due to inadequate hydraulic capacity (IHC).



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	775	-	-	-	-
Length of sewer sealed (m)	0	-	-	-	-