Brent Knoll 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

The groundwater in Brent Knoll did not reach critical levels in 2024/2025 and the sewer was able to cope, therefore no mitigation works were carried out by Wessex Water in this part of the catchment.

Action Plan

Annual Activity
Review asset and operational data and update annual reports.
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
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.
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.
Sealed sewers and manholes to prevent groundwater infiltration.

Completed (cont.)

Highway outfalls inspected and cleared of silt build-up

Inspected private gullies, drains or manholes to identify points of infiltration.

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.

Consider sustainable solutions to rainwater management, for example above-ground attenuation and property-level interventions.

When Necessary

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

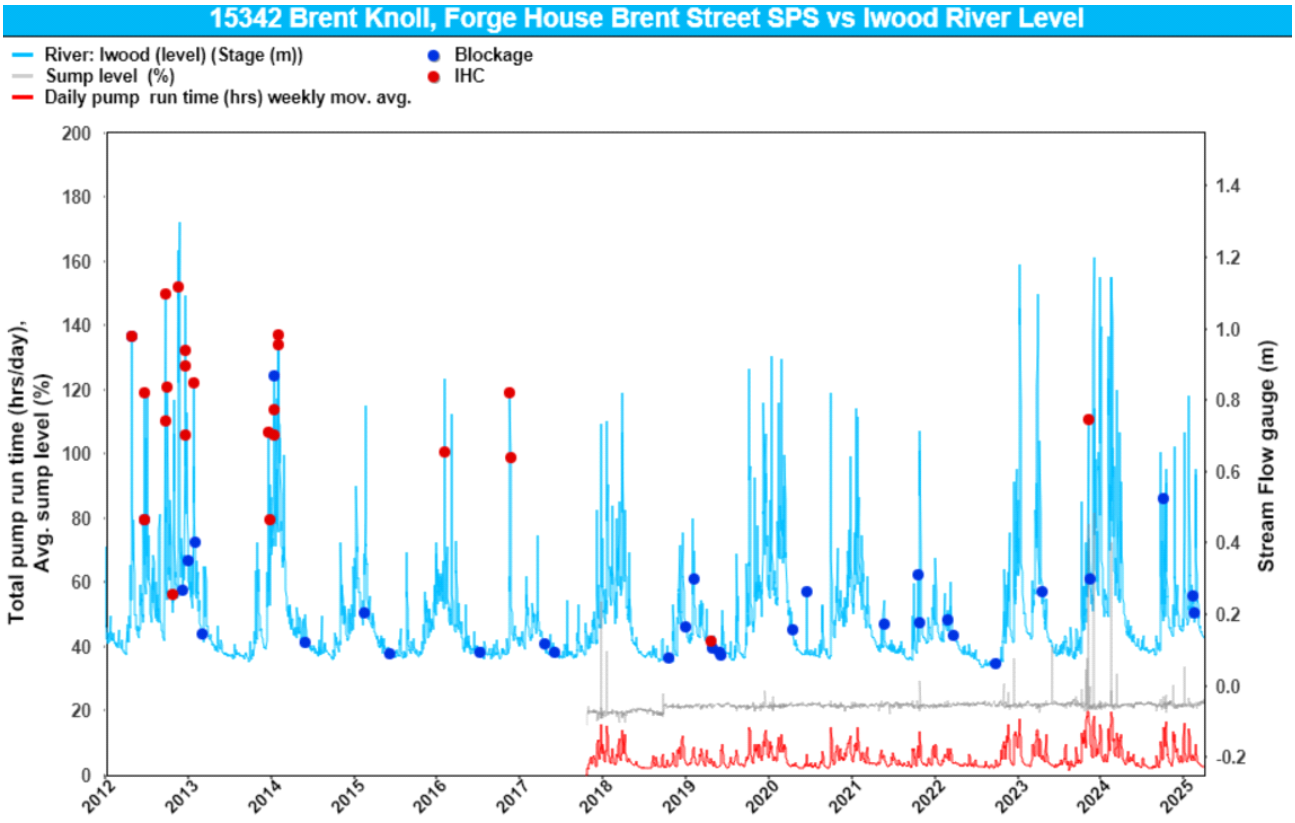
Implement emergency tankering procedure for preventing restricted toilet use and sewer flooding during high groundwater periods, in order to protect public health.

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 Inadequate Hydraulic Capacity (IHC) flooding and blockage incidents against Iwood River Level and the telemetry at Forge House Sewage Pumping Station (SPS) (15342). Data from the pumping station is recorded from October 2017 onwards.

Before 2018 many incidents attributed to IHC have been reported during periods of high groundwater levels. A flood alleviation scheme was completed in March 2018 and further infiltration sealing in catchments upstream of Brent Knoll has also been carried out since. In the winter of 2023/24 torrential rainfall and high groundwater levels resulting in a flooding incident attributed to IHC.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24	2024-25
Length of sewer inspected (m)	18,161	-	394	1,083	377	-
Length of sewer sealed (m)	853	-	408	-	192	-