Wishford 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 groundwater in the Wishford catchment reached critical levels this year following prolonged rainfall. Many incidents attributed to inadequate hydraulic capacity (IHC) were reported in the catchment. In attempt to reduce the levels at Chequers Cottages Sewage Pumping Station (SPS) in Wylye, the site was tankered between November 2023 and February 2024. However the Wylye Operational Mitigation Action Plan (OMAP) was required in March 2024 in order to protect public health. The Stapleford OMAP was also operational between February and May 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.
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.
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.
Investigated nature-based solutions in the catchment.

Completed (cont.)
Updated the catchment hydraulic model.
Sealed sewers and manholes to prevent groundwater infiltration.
Inspected public sewer network to identify points of infiltration.
Inspected private gullies, drains or manholes 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.
Implemented a scheme to improve the local water recycling centre (WRC).
Implemented a scheme to address capacity issues in the sewer network.

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

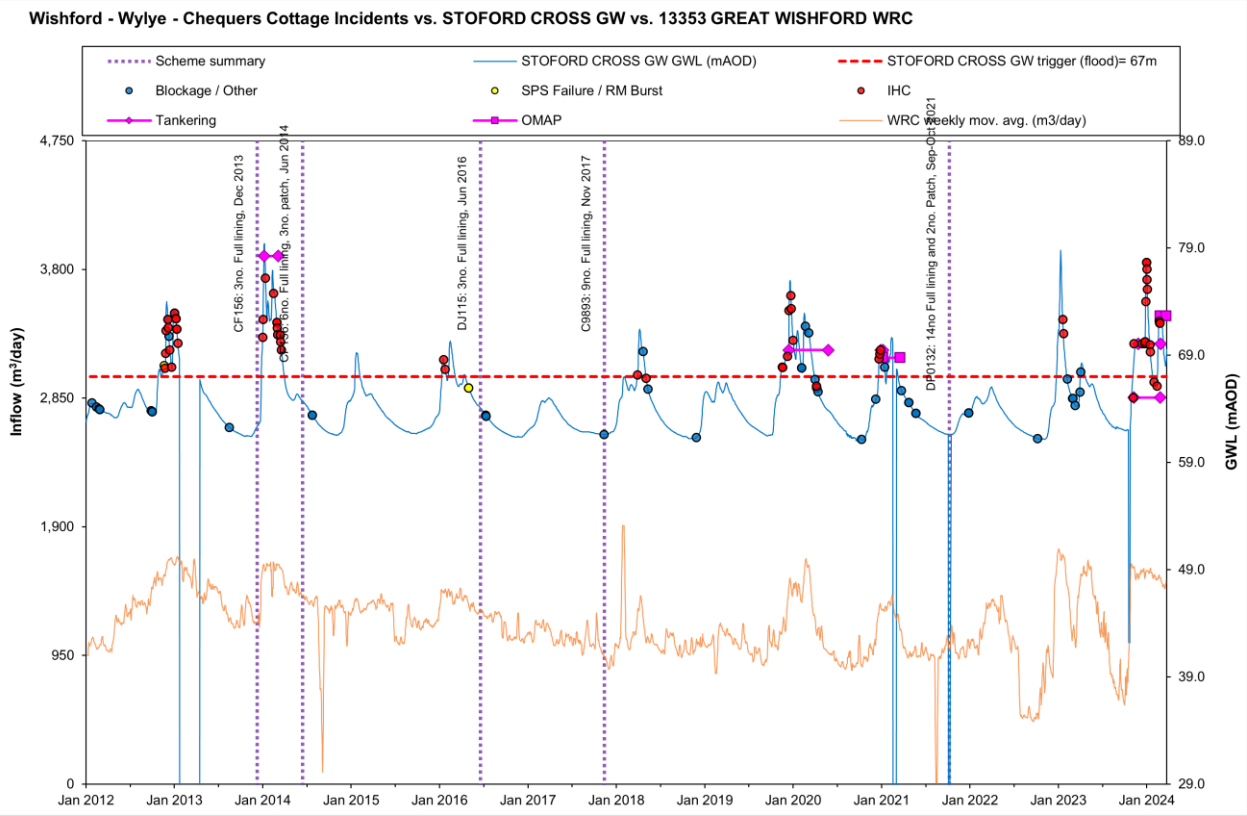
Medium Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.

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.

Current Performance

The graph below compares operational incidents with the flow at Wishford Water Recycling Centre (WRC) and groundwater at Stoford Cross. Groundwater levels were extremely high during the winter of 2023/24 and performance at various Sewage Pumping Stations (SPS) in the catchment coincided with the rise in groundwater levels. This indicates the area is still affected by infiltration. However, the general trend is that dry weather inflow at Wishford WRC has decreased, demonstrating the positive impact of the long-term sealing works. In particular, sealing in August 2022 dramatically reduced flow to the WRC.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	16,783	5,126	793	325	2,071
Length of sewer sealed (m)	1,754	-	652	22	-