Bradford Peverell 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 local groundwater level shows a correlation with increased pump run times at the sewage pumping station however, no incidents attributed to inadequate hydraulic capacity were reported during this time suggesting the system was able to cope with increased inflow.

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.

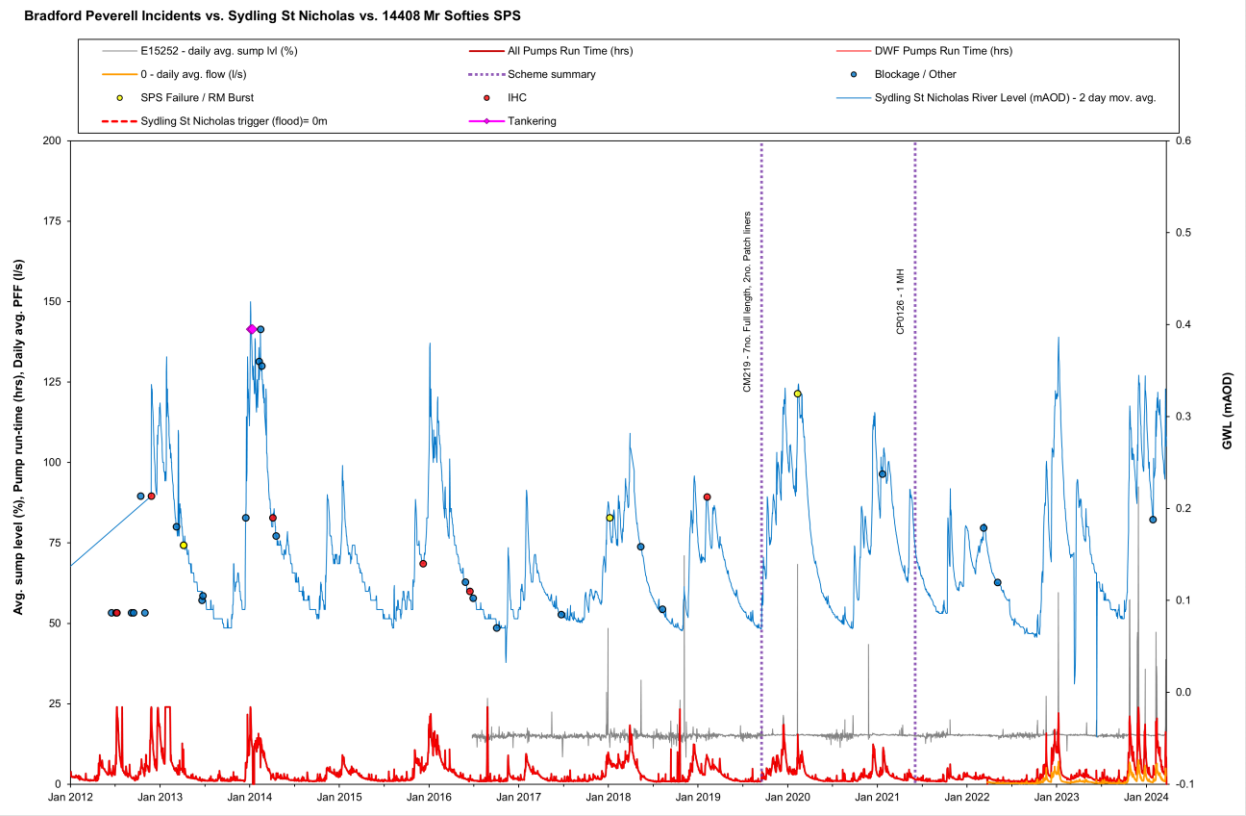
Completed
Used machine learning to predict flows in sewers and proactively identify blockages and other issues.
Installed in-sewer monitors at key locations to better understand flows in the network.
Installed permanent flow meters at key pumping stations to continuously record pump performance.
Inspected public sewer network to identify points of infiltration.
Sealed sewers and manholes to prevent groundwater infiltration.
Inspected private gullies, drains or manholes to identify points of infiltration.
Undertook remedical works at a property-level.

Long Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

When Necessary
Analyse flows in sewers using pumping station surveys, flow surveys and/or hydraulic modelling.
Undertake review of incidents of sewer flooding suspected to be affected by groundwater infiltration.
Undertake pro-active cleaning (jetting) of sewers to maximise capacity.
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 compares operational incidents with representative local groundwater levels and flow at Mr Softies Sewage Pumping Station (SPS). There is a clear correlation between the telemetry and the local river level indicating the presence of infiltraiton in the network. However, the network is typically only affected during very high groundwater levels, such as in January 2014 when tankering was required to alleviate the network.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	3,310	-	-	-	329
Length of sewer sealed (m)	224	-	-	-	-