Barton Lane Ruishton 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

Although the groundwater levels reached critical levels in the Barton Lane catchment in 2023/24, and there was one incident due to Inadequate Hydraulic Capacity (IHC) reported, the sewage pumping station (SPS) was generally able to cope and mitigation was not implemented.

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.
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.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Sealed sewers and manholes to prevent groundwater infiltration.
Updated the catchment hydraulic model.

Short Term

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.

Medium Term

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

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

Undertake review of incidents of sewer flooding suspected to be affected by groundwater infiltration.

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

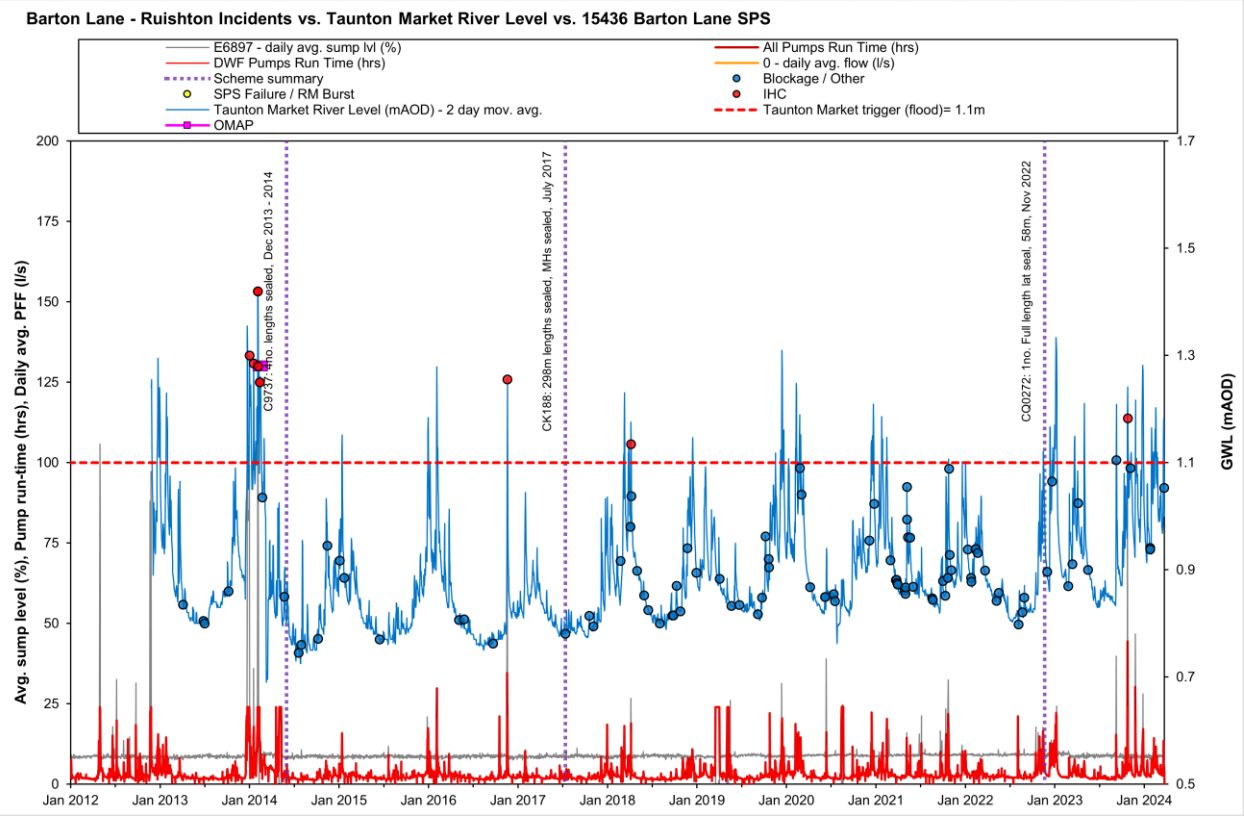
Implement Operational Mitigation Action Plan (OMAP) for discharging excess flows to the environment as a last resort, when tankering would not prevent restricted toilet use or sewer flooding, and public health is at risk.

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

Install sealed covers on manhole chambers vulnerable to overland flow or river water entering through the cover.

Current Performance

The graph below compares inadequate hydraulic capacity (IHC) flooding and blockage incidents against Taunton Market River Level and the flow at Barton Lane Sewage Pumping Station (SPS site ID 15436). Since 2014, IHC flooding incidents have significantly reduced with no reports during the exceptionally wet winters of 2019/20 and 2022/23. This shows that infiltration sealing within the catchment has had a positive impact.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	3,733	188	-	59	66
Length of sewer sealed (m)	369	12	54	95	2