

# Bagstone and Tytherington 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 Bagstone and Tytherington catchments were inundated for the majority of winter 2024/25. The Operational Mitigation Action Plan (OMAP) at Bagstone was required for the majority of the autumn and winter until March 2025, with brief interludes in November, December, January and Febuary. The Stidcott and Tytherington OMAPs were required in November and December 2024, and then Tytherington once again in January.

## 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.

Undertake pro-active cleaning (jetting) of sewers to maximise capacity.

Use specialist cameras to visually monitor critical assets.

Proactive inspections and maintenance of sewerage assets.

### Completed

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

Reviewed incidents of sewer flooding.

Sealed sewers and manholes to prevent groundwater infiltration.

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

### Completed (cont.)

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

Inspected public sewer network to identify points of infiltration.

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

Investigated nature-based solutions in the catchment.

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

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.

Inspect private gullies, drains, and manholes where applicable.

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

### Medium Term

Investigate nature-based solutions in the catchment.

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

### Long Term

Identify road gullies and other impermeable areas that are connected into the foul sewers.

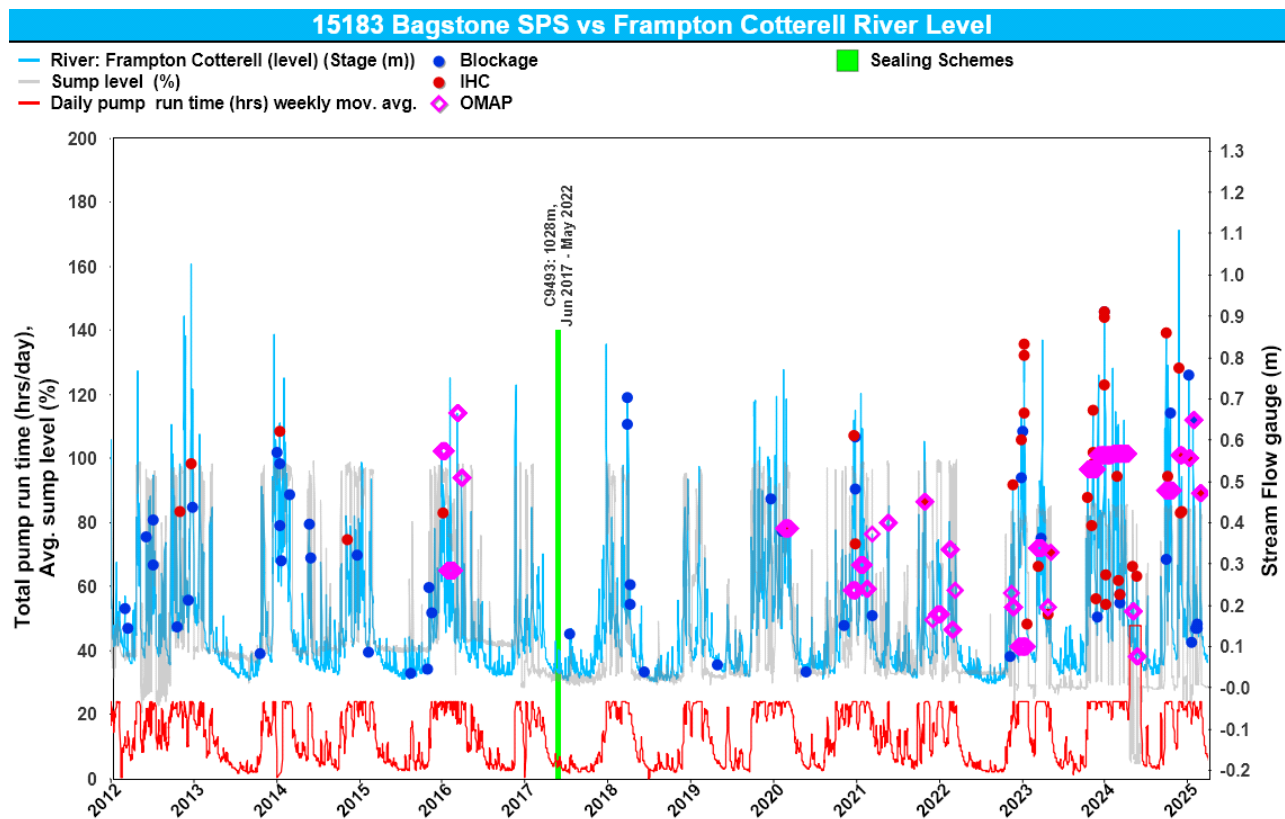
### When Necessary

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

This graph shows incidents against the river level (as measured at Frampton Cotterell) and the flow at Bagstone Sewage Pumping Station. Despite extensive infiltration sealing taking place in 2017 (continued until 2022), the pumping station continues to become inundated when the river level is high.



## Inspection and sealing since 2011

|                               | 2011-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|-------------------------------|---------|---------|---------|---------|---------|---------|
| Length of sewer inspected (m) | 7,955   | 1,606   | 167     | -       | 1,403   | 3,171   |
| Length of sewer sealed (m)    | 2,769   | -       | -       | -       | -       | 746     |