

Sturminster Marshall 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 level in the Sturminster Marshall Sewage Pumping Station (SPS) catchment reached critical levels during the winter of 2023/24. This resulted in several incidents attributed to inadequate hydraulic capacity (IHC) being reported. The OMAP was instigated intermittently between November 2023 and April 2024 to alleviate the network.

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.

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.

Reviewed incidents of sewer flooding.

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

Updated the catchment hydraulic model.

Used machine learning to predict flows in sewers and proactively identify blockages and other issues.

Sealed sewers and manholes to prevent groundwater infiltration.

Completed (cont.)

Inspected public sewer network to identify points of infiltration.

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

Highway outfalls inspected and cleared of silt build-up

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

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.

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

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

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

Inspect private gullies, drains, and manholes where applicable.

Investigate nature-based solutions in the catchment.

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

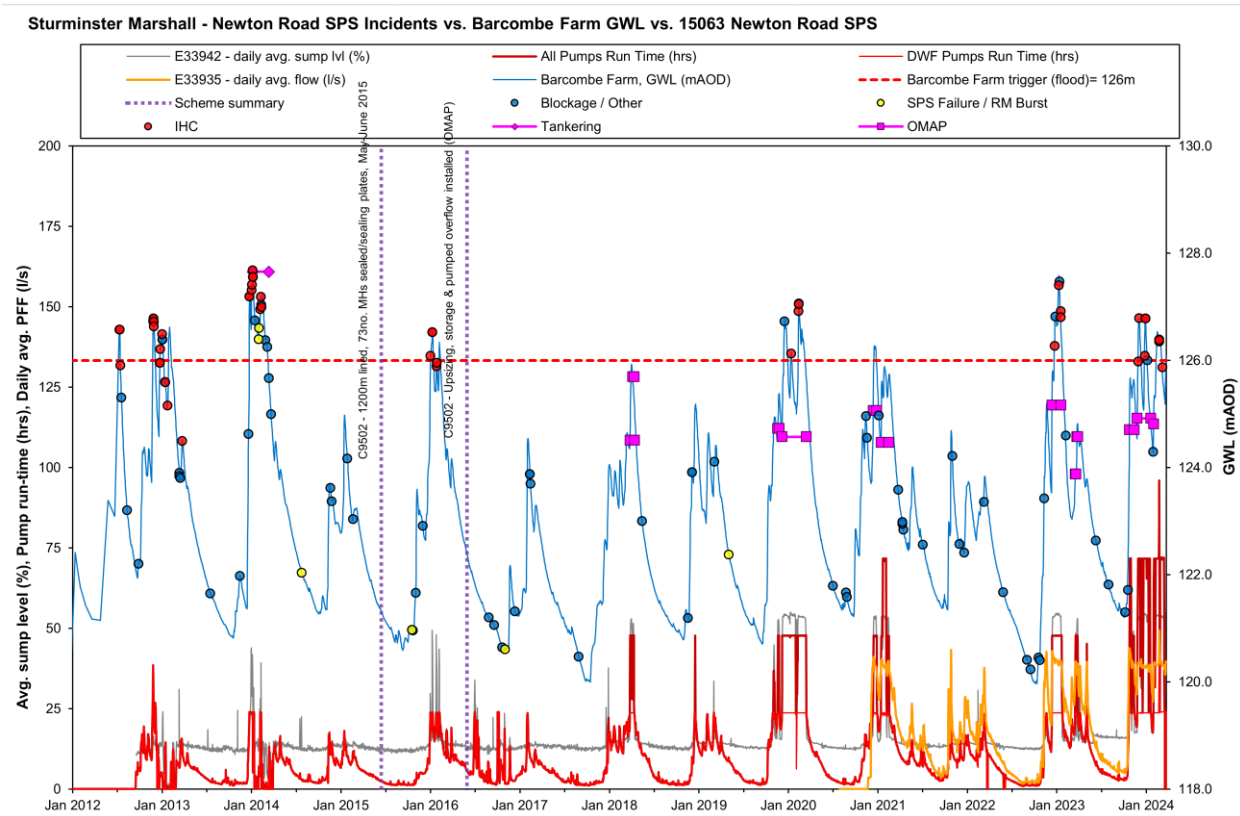
When Necessary

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 graphs below show operational incidents against Barcombe Farm groundwater level (GWL) and the flow at Newton Road Sewage Pumping Station (SPS). Prior to the sewer sealing and maintenance works in 2015-2016 there was a clear correlation between GWL and flooding incidents reported caused by inadequate hydraulic capacity (IHC). Following sealing and SPS improvements, the number of incidents reported have decreased, however there is still a clear correlation between GWL, rainfall and Newton Road SPS performance.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	5,136	-	-	4,292	-
Length of sewer sealed (m)	2,002	2	-	-	-