Cerne Abbas 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 ground water in Cerne Abbas was high throughout the 2023/2024 winter. The pump activity increase in the winter months, and two customer incidents attributed to inadequate hydraulic capacity were reported.

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.
Proactive inspections and maintenance of sewerage assets.

Completed
Installed in-sewer monitors at key locations to better understand flows in the network.
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.
Updated the catchment hydraulic model.

Completed (cont.)
Inspected public sewer network to identify points of infiltration.
Sealed sewers and manholes to prevent groundwater infiltration.
Highway outfalls inspected and cleared of silt build-up
Identified road gullies and/or impermeable areas connected to the foul network.
Undertaken pumping station or flow surveys to analyse flows in sewers.

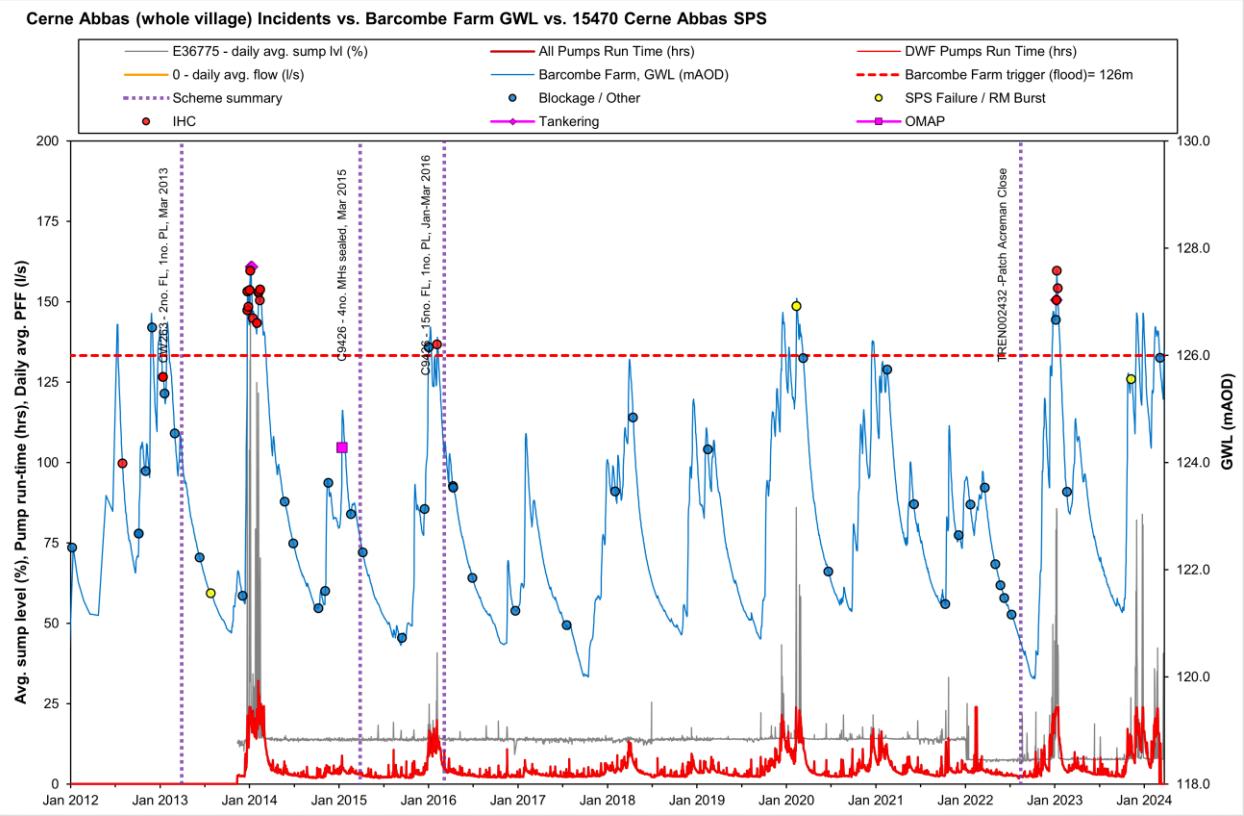
Medium Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

Long Term
Identify road gullies and other impermeable areas that are connected into the foul sewers.
Inspect private gullies, drains, and manholes where applicable.
Install permanent flow meters at key pumping stations to continuously record pump performance.
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

This graph shows incidents against groundwater level (as measured at Barcombe Farm borehole) and Cerne Abbas Sewerage Pumping Station (SPS) telemetry. There iss a strong correlation between groundwater level and telemetry data. Sewer sealing in 2015 and 2016, has reduced the infiltration in the catchment as the number of flooding incidents recorded as due to inadequate hydraulic capacity (IHC) has reduced significantly. However, the network can still become inundated during very high groundwater levels.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	5,016	-	1,959	-	-
Length of sewer sealed (m)	596	-	-	1	10