Compton Dundon 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

Groundwater reached critical levels in the Compton Dundon catchment with multiple incidents of backing up and external flooding reported attributed to Inadequate Hydraulic Capacity (IHC). The Operational Mitigation Action Pan (OMAP) was instigated between February and April 2024 at Moor Close Sewage Pumping Station (SPS) to prevent further loss of service and protect public health. Tankering of flows to relieve the system was also carried out at Ham Lane SPS through the winter.

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.
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.
Implemented a scheme to address capacity issues in the sewer network.
Updated the catchment hydraulic model.
Reviewed incidents of sewer flooding.

Completed (cont.)
Sealed sewers and manholes to prevent groundwater infiltration.
Inspected public sewer network to identify points of infiltration.
Undertaken pumping station or flow surveys to analyse flows in sewers.
Inspected private gullies, drains or manholes to identify points of infiltration.
Upgraded pumping stations where appropriate, to improve the reliability and performance of the site.

Short Term
Identify road gullies and other impermeable areas that are connected into the foul sewers.
Install in-sewer monitors at key locations to better understand flows in the network.
Undertake review of incidents of sewer flooding suspected to be affected by groundwater infiltration.
Infiltration sealing of sewers and manholes, where deemed cost-effective, targeting work according to study findings.

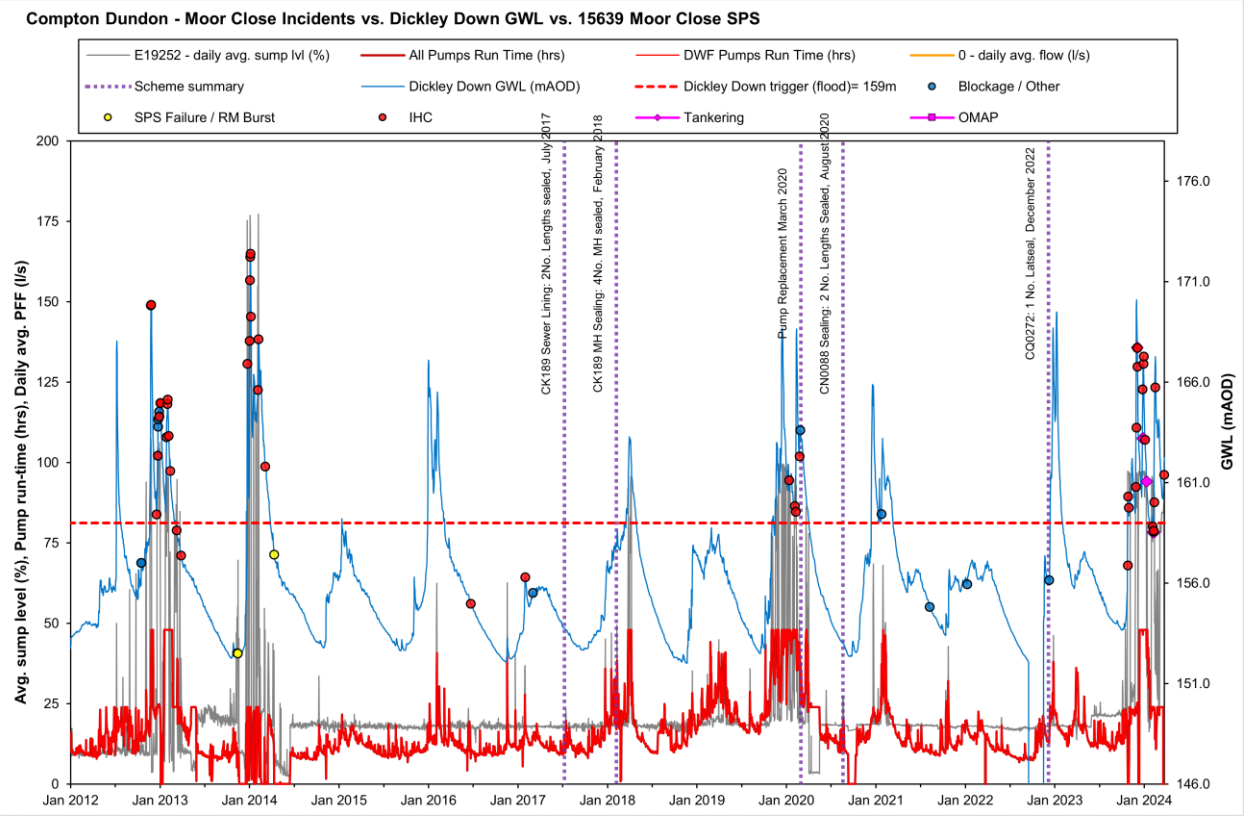
Medium Term
Undertake pro-active inspection of public sewers and manholes using CCTV to identify points of infiltration.
Analyse flows in sewers using pumping station surveys, flow surveys and/or hydraulic modelling.

Long Term
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
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 below displays incidents against groundwater levels (GWLs) as measured at Dickley Down and the telemetry at Moor Close Sewage Pumping Station (SPS). Sealing in 2017/18 and the installation of new pumps at Moor Close in March 2020 appears to have had a positive impact on the catchment between 2020 and 2023, however following extreme GWLs in 2023/24 further incidents attributed to Inadequate Hydraulic Capacity (IHC) were reported.



Inspection and sealing since 2011

	2011-20	2020-21	2021-22	2022-23	2023-24
Length of sewer inspected (m)	4,778	417	-	712	13
Length of sewer sealed (m)	184	414	-	2	-