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 2019 – March 2020

Following above average rainfall in June, the summer of 2019 was relatively dry. However, in late Autumn 2019 regional groundwater levels rose sharply and remained high throughout the winter, reaching the highest levels since 2014. February 2020 was particularly wet with 151mm of regional rainfall equating to 228% of the monthly average, as well as the average annual rainfall for the preceding 12 months being 122% of the long-term average.

Action Plan

Annual activity

- Continue monitoring system performance using telemetry and flows at Cerne Abbas Water Recycling Centre.
- Promotion of multiple agency approach. Regular meetings with Lead Local Flood Authority and other risk authorities where appropriate.

Completed to date

- Appraised incidents of sewer and surface water flooding.
- Reviewed and analysed flows in the sewers, historic telemetry, rainfall and borehole data and used hydraulic modelling where required.
- Reviewed existing boreholes.
- Proactively inspected vulnerable sewers, assessed and surveyed the pumping stations and updated records where necessary.
- Carried out manhole and sewer infiltration sealing of the public network where deemed cost-effective.
- Identified road gullies and other impermeable areas connected to the foul sewer and separated where appropriate.
- Raised awareness of sewer overloading and the need for a risk-based approach to improvements.
- Investigated local watercourse monitoring as an indicator of groundwater levels and trigger for mitigation actions.
- Communication with other authorities during times of elevated groundwater levels.
- Undertake pro-active inspection of sewers using ElectroScan.

	2015-16	2016-17	2017-18	2018-19	2019-20
Length of sewer inspected (m)	535	-	-	-	-
Length of sewer sealed (m)	296	-	-	-	-

Short term

- Liaise with the Environment Agency regarding their groundwater warning modelling and service.

Medium term

- Targeted infiltration studies and CCTV informed by analysis of previous surveys and telemetry where cost beneficial.
- Commission a further pump station survey for Cerne Abbas Sewage Pumping Station.

Long term

- Inspect and remediate private drainage networks where appropriate.
- Investigate options for surface water separation if cost beneficial.
- If sewer sealing for infiltration is unsuccessful, investigate options for improving hydraulic capacity at Cerne Abbas Water Recycling Centre.
- If all other viable options have been explored and cost-effective measures implemented, investigate options for a pumped storm overflow.

Current Performance

This graph shows incidents against groundwater level (as measured at Barcombe Farm borehole) and the flow at Cerne Abbas Water Recycling Centre. Prior to sewer sealing, to prevent infiltration, in March 2015 and March 2016, there is a strong correlation between groundwater level and inflow to Cerne Abbas Water Recycling Centre. However, post lining, this trend is still evident but is significantly reduced, along with the number of flooding incidents due to groundwater infiltration recorded as inadequate hydraulic capacity (IHC). Groundwater levels in 2019/20 peaked very high, close to those experienced in 2014 and the inflow to the WRC was fairly consistent with previous years.