Charlton Adam 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. Two incidents attributed to inadequate hydraulic capacity (IHC) were reported in the area during December 2019 following heavy rainfall and at a time of elevated groundwater levels.

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.
- Communicate with other authorities during times of elevated groundwater levels and promote a multiple agency approach.

Completed to date

- Procedure for recording, investigating and resolving incidents in place.
- Undertook pro-active inspection using CCTV of vulnerable public sewers.
- Undertook infiltration sealing where cost effective.
- Sewage pumping station surveys completed, and assets updated where necessary.
- Reviewed historic telemetry and rainfall records.
- Educated some residents on mechanisms of sewer overloading.
- Reviewed existing boreholes in the area.
- Reviewed telemetry and compared it with data collected from the area to assess residual levels of infiltration.
- Wessex Water infiltration video added to website.
- Consider the construction of local boreholes in order to monitor groundwater levels.

	2015-16	2016-17	2017-18	2018-19	2019-20
Length of sewer inspected (m)	10,895	-	-	-	-
Length of sewer sealed (m)	-	-	608	-	-

Short term

- Undertake rehabilitation work based on the survey findings where cost beneficial.
- Liaise with the Environment Agency about their groundwater warning service.
- Investigate watercourse monitoring in the local area.
- CCTV and targeted infiltration studies according to analysis from previous surveys and telemetry data.

Medium term

- Identify road gullies and other impermeable areas connected into the foul sewers and remove them where cost effective.
- CCTV and targeted infiltration studies according to analysis from previous surveys and telemetry data.
- Commission pump station surveys where necessary.

Long term

- Inspect private drainage networks and remediate where appropriate.
- Monitor and regulate the surface water to prevent surface water to foul misconnections.
- Consider sustainable solutions to surface water management such as above ground attenuation.

Current Performance

This graph shows incidents against the regional groundwater level and the telemetry at Charlton Adam Sewage Pumping Station. Prior to the sealing, there was a strong correlation between groundwater and pump run times at Charlton Adam. Since sealing, to prevent infiltration, there has been one flooding incident reported due to groundwater infiltration recorded as inadequate hydraulic capacity (IHC). Groundwater levels this winter reached levels comparable to winter 2013/14, two incidents due to inadequate capacity occurred during December following heavy rainfall.