

Muckleford 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.

Incidents due to inadequate capacity were reported during December 2019 and February 2020 following heavy rainfall and a sharp rise in groundwater levels. The sewerage network reached capacity in late February following a storm and overpumping from Muckleford sewage pumping station (SPS) took place to relieve 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.
- 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 proactive inspection using CCTV of vulnerable sewers.
- Sewage pumping station surveys completed, and assets updated where necessary.
- Analysed inspection data to identify infiltration.
- Analysed flows in the sewers using flow surveys and modelling.
- Undertook infiltration sealing where cost effective.
- Identified areas of infiltration in private drainage.
- 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)	-	-	-	9,627	299
Length of sewer sealed (m)	154	-	-	-	273

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.

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 regional groundwater level and the telemetry at Muckleford SPS. Further sewer sealing has taken place in 2019. A strong correlation between the pump run times at Muckleford SPS and the groundwater levels remains. There have been several incidents of inadequate capacity over the winter period following storms and heavy rainfall in December 2019 and February 2020.

