

# Sturminster Marshall and Shapwick 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

- Review data and update reports.
- Regular meetings with lead local flood authority and other risk authorities where appropriate.
- Pro-active maintenance of vulnerable sewers including 6 monthly and annual routine jetting.
- Promote a multiple agency approach to managing situations during high groundwater levels.
- Monitoring of system performance using telemetry data within the area.

### Completed to date

- Pro-active inspections using CCTV of vulnerable sewers.
- Analysis of inspection data to identify infiltration.
- Manhole sealing works during the dry weather months where it is most effective.
- Reviewed and analysed flow in the sewers using historic telemetry, rainfall and modelling.
- Long term depth monitoring installed at key "hot spot" locations.
- Raised awareness of sewer overloading and the need for a risk-based approach to improvements.
- Overflow at Sturminster Marshall sewage pumping station (SPS) provided with pumped assistance.
- Major scheme to upsize sewers and significant sewer lining to make public and private sewers watertight.
- Asset surveys of Shapwick & Sturminster Marshall SPSs.

	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Length of sewer inspected (m)</b>	-	-	-	-	-
<b>Length of sewer sealed (m)</b>	1,400	900	-	-	-

#### Short term

- Liaise with the Environment Agency with regards to their groundwater warning service.
- Undertake pro-active inspection of public sewers as set out in Sewerage Risk Management Manual.
- Identify infiltration using CCTV.
- Commission pump station surveys where necessary.

#### Medium term

- Pro-active maintenance of telemetry at sites in the area.
- Appraise options to increase capacity of the River Winterbourne, for example dredging.
- CCTV and targeted infiltration studies according to analysis from previous surveys of s105a sewers.
- Where areas of infiltration in private drainage systems are found, pass information on to the council for further action. Wessex Water to consider funding private improvements.
- Continued sewer and manhole sealing of the public system where proven to be cost effective based on proactive inspections.
- Appraisal of flooding incidents.
- Investigate and put a scheme in place to improve land drainage at Shapwick Cross, which may include pumping to the river if cost beneficial.

#### Long term

- Monitor and regulate the surface water to prevent surface water to foul misconnections.
- Inspection of private gullies, drains and manholes.
- Remedial works of private assets where beneficial.
- Review long term options for monitoring and improving data collection for example EDM.

### **Current Performance**

This graph below shows operational incidents against regional groundwater level and the flow at Stewards Lane SPS. Prior to the sewer sealing and maintenance works in 2015-2016 there was a clear correlation between groundwater levels and the number of flooding incidents recorded as inadequate hydraulic capacity (IHC) incidents. Post sealing and pump station improvements, incident reports have reduced in number; however, there is still evidence of infiltration.

Groundwater levels during 2019/20 were the highest since 2014 and no incidents due to IHC were recorded, suggesting that sealing work to prevent infiltration has been somewhat successful and improved the network's capacity during periods of elevated groundwater. The ongoing mitigation measures and action plan are still in place due to there still being a clear correlation between groundwater level, rainfall and the sump level and pump run time at Stewards Lane SPS.

