

## Downton 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 a relatively dry period. However, in late Autumn 2019 regional groundwater levels in the winter rose sharply and remained high throughout the winter, reaching the highest levels since 2014. Groundwater levels first began to rise in December, falling slightly in January and then peaking in February 2020 following an unusually wet month. 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

- Proactive maintenance of vulnerable sewers including 6 monthly routine jetting.
- Continue monitoring system performance using telemetry.
- Promotion of multiple agency approach. Regular meetings with the Lead Local Flood Authority and other risk authorities where appropriate.

#### Completed to date

- Reviewed existing asset and operational data, infiltration reduction report produced.
- Proactively inspected public sewers using CCTV.
- Analysed inspection data to identify infiltration.
- Analysis of flows in sewers using flow survey and modelling.
- Commissioned pump station survey and asset update.
- Appraised incidents of sewer and surface water flooding.
- Reviewed historic telemetry and rainfall records.
- Carried out Infiltration sealing of sewer and manholes where deemed cost-effective, targeting work according to study findings.
- Raised awareness of the mechanisms of sewer overloading and need for a risk-based approach to improvements.
- Routinely reviewed telemetry, comparing borehole, watercourse, rainfall data with customer incidents to assess critical infiltration levels.

	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>
<b>Length of sewer inspected (m)</b>	887	-	-	1,540	-
<b>Length of sewer sealed (m)</b>	-	-	1,050	630	-

Short term

- Liaise with the Environment Agency about groundwater warning service.

Medium term

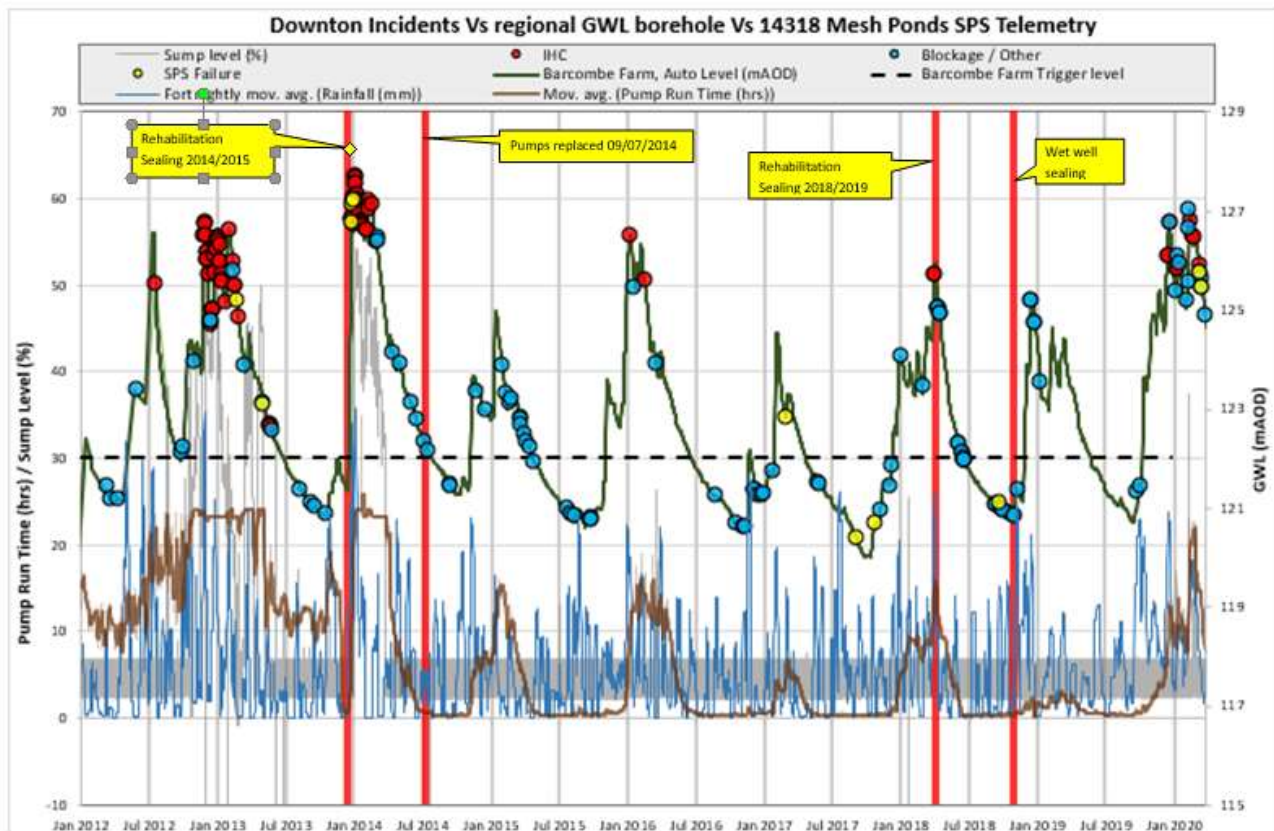
- Further targeted infiltration studies and CCTV informed by analysis of previous surveys.
- Further sealing where cost beneficial.
- Commissioned pump station survey and asset update.

Long term

- Inspect and remediate private drainage networks where appropriate.
- Monitor and regulate surface water disposal to prevent misconnection of surface water and foul sewers.
- Identify road and gullies and other impermeable areas connected to the foul sewer and separate where appropriate and cost effective.

**Current Performance**

This graph below compares operational incidents with the flow at Downton Water Recycling Centre and regional groundwater (measured at Barcombe Farm borehole). There has been a significant reduction in the number of flooding incidents post pump replacement in July 2014 at Mesh Ponds Sewage Pumping Station (SPS) allowing for improved hydraulic capacity. Improved maintenance such as jetting has been put in place to try and reduce the number of incidents caused by blockages.



Several flooding incidents were recorded in the catchment in 2019/2020 due to SPS failure, blockages and inadequate hydraulic capacity (IHC). The Mesh Pond SPS and South Lane SPS sumps remained high during the winter month with the pumps running constantly. Groundwater levels were the highest they have been since January 2014 but not as extreme as the winter of 2013/14, it appears that infiltration reduction schemes have had some impact on the catchment as the incidents due to IHC post rehabilitation occur at higher groundwater levels. Pump activity and wet well levels also confirm that the rehabilitation has reduced the inflow into Mesh Ponds SPS.