Groundwater Impacted System Management Plan

Ashampstead, River Pang

November 2021

Thames Water

It's everyone's water

Version control

Version	Date	Amendment	Author	Checked	Reviewed
1-d1	29/10/2021	Draft for EA	SS/NW	AJ	SE
1-V1	22/11/2021	Version 1	SS/NW	SE	DJ
Annual Update 2022	October 2022	Addition of Annual Update 2022	MB/JH	DJ	DJ
Annual Update 2023	October 2023	Addition of Annual Update 2023	MB	DJ	DJ
Annual Update 2024	October 2024	Addition of Annual Update 2024	MW/CW	DJ	DJ

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Introduction

This document sets out Thames Water's approach to the management of groundwater infiltration in sewerage systems where the influence of groundwater infiltration is viewed as significant likely leading to the sewerage system, on occasions, to become overwhelmed.

All sewerage systems combined and separate will experience some groundwater infiltration[1] and a nominal allowance in design will be made for this. However, in some catchments the impact of groundwater infiltration can be considerable leading to impacts on service during periods of high groundwater, typically during the winter.

Groundwater can enter the sewerage system through the pipes and manholes, this may occur at a defect (crack, hole, displaced joint) or on a normal joint on the sewer or in the manhole. A key point to note is that where infiltration occurs it is not necessarily an indicator that the sewer is in poor structural state simply that jointing techniques used are not completely watertight.

Ingress of groundwater is not limited to the public system that Thames Water owns and maintains but potentially the private drains, manholes and sewers that connect to our system.

Preventing and reducing the impact of groundwater infiltration is predominately achieved through the lining of sewers and sealing of manholes. This entails the application of a synthetic liner within the pipe that creates a contiguous membrane for the length of the pipe or possibly section if the source of ingress can be narrowed down. For manholes it will typically entail sealing in a similar manner.

To line all sewers and manholes within most catchments would be prohibitively expensive to do so. Our approach to date has been centered on a 'find and fix' basis which has involved monitoring and investigating the networks in periods of high groundwater to identify sources of ingress and fix as we find them. This approach is constrained for the reason that investigations are typically limited to periods of high groundwater and when high groundwater occurs there are limited windows of time in which investigations can be successfully undertaken before flows either subside or the system is fully surcharged meaning CCTV surveys are not possible[2]. Once sections of sewers have been lined, it will be a case of waiting until high groundwater levels reoccur to assess the effectiveness of the work undertaken, which may not be the subsequent winter but several years later.

It is recognised that the 'find and fix' approach to date lacks a degree of certainty of resolution and for this reason Thames Water in 2020 undertook a different approach for the medium to long-term management of groundwater, which is covered within this

[1] Sewers for Adoption makes an allowance for 10% of peak wastewater flow to allow for unaccounted flows such as groundwater infiltration.

[2] On occasions it is possible to over-pump between manholes to isolate sections of sewer to survey, this is not always feasible when the flows involved are simply too great to over-pump or the location prohibits this approach.

document under the plan section. These plans require significant investment which Thames Water will seek to secure through the price review process as service enhancement. In the meantime, we will continue to investigate sources of infiltration when it occurs and where feasible, undertake the work through our capital maintenance budgets. We refer to these as ‘minor works’ opportunities i.e. where we have high degree of certainty of reducing point sources of infiltration and can do so with reasonable costs and time.

The structure of this document has been created with input from the Environment Agency. Sections covered in this document include our ‘Outline Plan’ with timescales, Mitigation i.e. how we intend to manage the risk until our plan is fully implemented and when we will publish future updates on progress against this plan.

Brief description of Ashampstead catchment

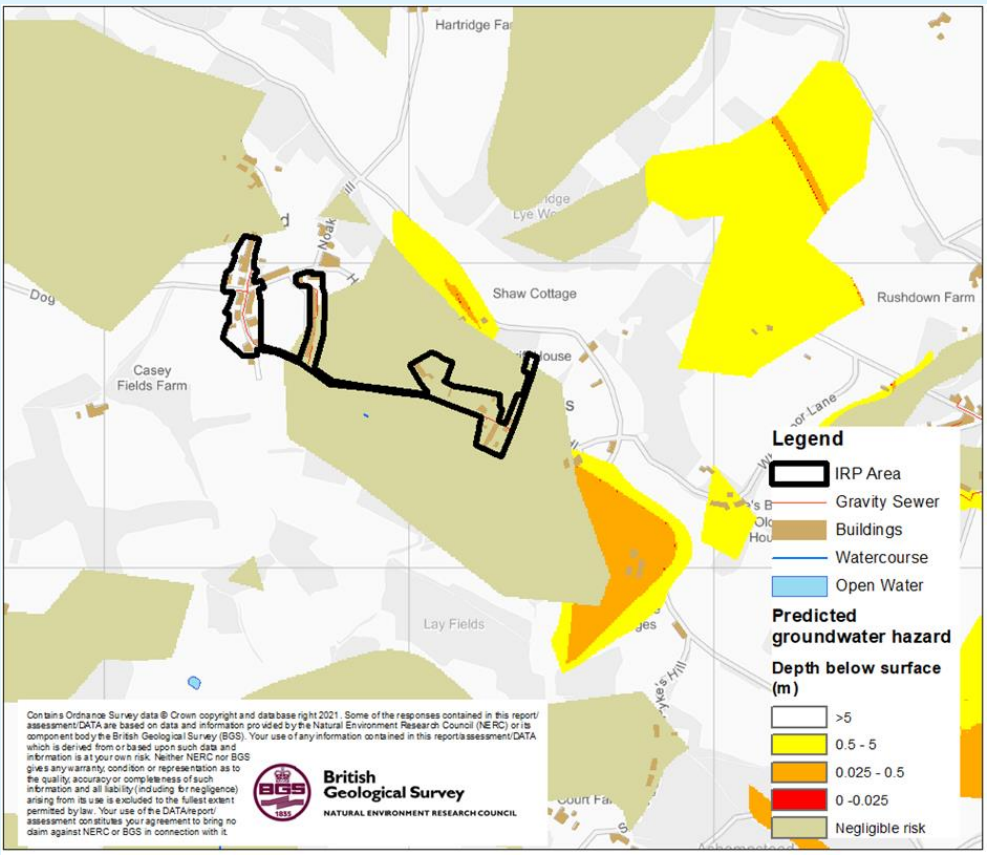

Figure 1.0 – Ashampstead catchment

Ashampstead is located in West Berkshire, England, approximately 10 miles north-west of Reading. Ashampstead serves a population equivalent[3] of 168 with a partially separate sewerage network totaling some 2.5 km in length excluding private drains and sewers. The extent of the catchment is shown in Figure 1.0 above.

Problem characterisation

Groundwater has the potential to enter our sewers when levels are high and a positive head above the soffit of the sewer is created. Significant groundwater ingress can impact sewer capacity and increase the risk of the sewage system becoming overwhelmed.

[3] Population equivalent based on unit per capita loading, (PE), in waste-water treatment is the number expressing the ratio of the sum of the pollution load produced during 24 hours by industrial facilities and services to the individual pollution load in household sewage produced by one person in the same time.

The sewerage system is identified on the public sewer records as being a partially separate foul system, rather than a combined system.

In recent years, there have been no recorded issues at the sewage treatment works or issues with surcharges at manholes in Ashampstead. However, this does not negate the need for additional survey and understanding. The system has not yet had any surveys but these will be conducted via a priority list over the next few winters.

A number of our sewerage systems include for overflows, these structures are there to protect against sewer flooding as a result of rainfall or equipment failure where appropriate. Discharges from these structures should not be impacted by excessive infiltration as detailed by the EA Regulatory Position Statement on groundwater impacted sewerage systems. The use of storm sewage overflows is accepted by our regulators, subject to conditions.

Ashampstead STW is a 'treat all' site so does not have storm separation or a storm permit.

The Flood and Water Management Act 2010 places a responsibility on Lead Local Flood Authorities (LLFAs), to manage flood risk from surface and groundwater, plus a duty on all Risk Management Authorities (RMAs), to cooperate regarding flood risk. In our role as an RMA, Thames Water will work with West Berkshire Council as the Lead Local Flood Authority and Planning Authority, in addition to the Environment Agency to ensure that a collaborative approach can be developed to address the problems.

Thames Water also has a statutory obligation to comply with environmental legislation. The Water Framework Directive establishes a strategic approach to managing the water environment, which the Environment Agency achieves through River Basin Management Plans and setting environmental objectives for groundwater and surface water. The environment is also protected from adverse effects of discharges of urban wastewater through the Urban Wastewater Treatment Directive, which requires us to improve and extend the sewerage system according to section 94 of the Water Industry Act (1991).

Anticipated unavoidable discharges

We do not believe there to have been unplanned or unconsented discharges in the network as a result of groundwater infiltration.

General outline plan & timescale

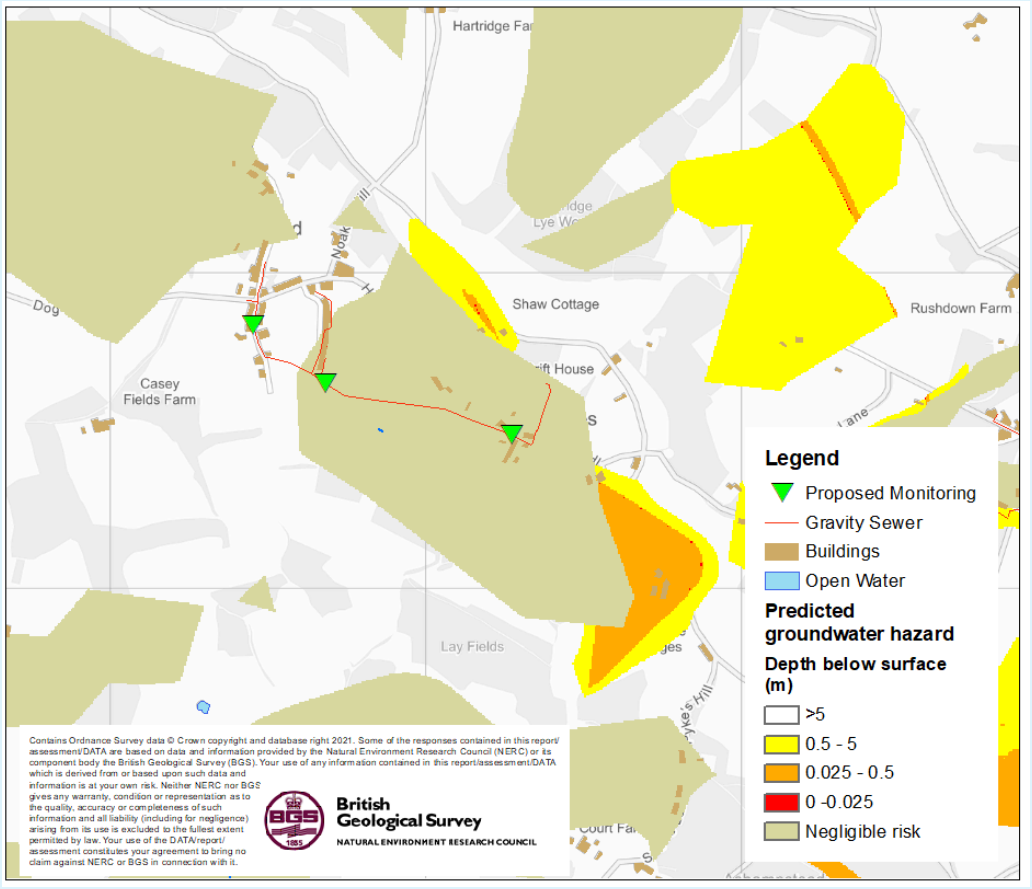

Figure 2.0 – Ashampstead monitoring plan area and infiltration zones

Key to bringing the impact of groundwater infiltration under control is an enhanced monitoring regime. We have identified zones and areas over which telemetered depth monitoring will be installed. Figure 2.0 presents a plan of currently proposed installation locations.

Complimenting the flow [at the treatment works] and depth measurement [in the sewer network] we will use pumping station run time data, rainfall data, river level data, and groundwater level data to create a full picture of movement and source of flows around the catchment.

Zones of Groundwater Risk

We engaged with JBA Consulting to develop plans for Ashampstead that identify zones of groundwater risk. These zones are modelled areas where the groundwater has been determined to be above the sewer and hence pose a potential risk for groundwater ingress. Within the Ashampstead catchment, no areas have been identified as being at risk of groundwater ingress, see Figure 2.0

The sewer depth monitors referred to earlier will be sited at strategic locations to verify and calibrate this.

If following the proposal to the sealing in part or wholly[4] of the high risk zones, should it be required, the system is found to be still experiencing excessive infiltration we would then look to potentially seal 'private' laterals and/or drains along with starting to seal the medium to low risk zones.

This document sets out an unconstrained approach to resolving the impact of groundwater infiltration within the system. Investment to address infiltration will be assessed and prioritised against other drivers e.g. STW upgrades, both in the catchment and across the region at each price review.

With this plan we remain committed to minimising the impact of groundwater on the sewerage system in Ashampstead.

Our general medium to long term plan is therefore to apply a hierarchy to sealing the sewer as follows:

Activity	When	Description
Model Zones	2020/21	JBA have been engaged to undertake modelling activities to identify the areas (zones) to be targeted for sealing in the 56 systems identified as being impacted by infiltration in the Thames Water region.
Install monitors	2021-2023	Monitor plans are being developed to help calibrate and validate the zones. Each year completeness / coverage monitors will be reviewed and added to / or modified as necessary.
Calibrate zones	Refined each year	Following each winter, we intend to review the data from the monitors and if necessary, redefine the zones.
Look & Lift	Each winter	The look & lift surveys have two purposes, firstly to compliment the monitoring and secondly to identify 'quick fixes' that we would address through our normal capital maintenance.
CCTV	2020-2023	Required to confirm sewer condition and provide information to assist with costing any sewer lining.

[4] Decisions regarding the extent of sealing will be based on outcomes of works undertaken to date, result of monitoring and successful submission of our plans for investment.

Activity	When	Description
Minor works	2020-2023	As mentioned, if we detect minor works being required, we will look to resolve these as and when we find them.
PR24	2023/24	Ideally through monitoring and on-going investigations work towards managing the infiltration risk, in AMP7, will be successful. However, in the absence of evidence justifying the need not to undertake sealing of the high-risk zone this is to be included as part of PR24 investment plan. This work will be subject to Cost Benefit Analysis and Best Technical Knowledge Not Entailing Excessive Cost (BTKNEEC assessments).
High risk zone sealing	2025-2030	Sealing of high-risk zone undertaken subject to need being demonstrated.

Ashampstead Infiltration Management Plan

As detailed above, the impact of infiltration has been limited in the Ashampstead catchment in recent times however, surveys to confirm the risk and reduce any infiltration impact will help to confirm this.

Our approach to the resolution of infiltration impacting the Ashampstead sewerage system is outlined below.

High level approach statement

For Ashampstead our approach to tackling infiltration will be undertaken as follows:

1. We will investigate the network further with a view to identifying sources of ingress of infiltration that are cost effective[5] to address. To investigate the network, we have:

- Undertaken a desktop analysis to determine infiltration high to low risk zones (October 2020);

To investigate the network, we will:

- Install monitoring to back up the analysis and to aid focusing of locations for identification of infiltration (2021 to 2023). Each year we will assess the completeness of monitoring and if required add to or modify the current locations.
- Undertake sample CCTV in the high to low risk zones to assess the general asset health of the sewers and manholes (ongoing).

We will also review results of Winter 2019/20 and 2020/21 with historic data to build up evidence to support interventions in the network (Autumn 2021).

2. Where interventions can be undertaken as part of normal sewer maintenance activities these will be communicated and progressed.

3. If significant investment is identified as being required, then this will need to be considered in terms of relative need compared to other systems being investigated for infiltration reduction. However, where viable opportunities are identified these will be included in our AMP9 (2030-35) programme of investment. Significant investment needs may need to be included in our future investment cycles.

[5] Assessment of cost effectiveness is based on assessment of the ratio of the cost of a solution to the monetised benefit gained from implementing the solution i.e. reduction in flood/pollution risk and/or reduced operating costs.

Investigations

As mentioned above, JBA Consulting have been supporting by undertaking an exercise involving assessing groundwater elevation data to determine which areas of the network are potentially below the groundwater table during high groundwater periods.

Site investigations, undertaken by Dene-Tech and our Customer Field Services (Thames Water Operations) will include 'look & lift' surveys, CCTV and where necessary dye tracing to confirm connectivity.

A table of the work undertaken is included in the appendix to this report.

Monitoring

Sewer Depth Monitors will be installed in the catchment in between 2021 and 2023. These devices are telemetered and provide real time data on the level of flow in the sewer.

The purpose of these units is to act as alerts for high groundwater impact in the sewer, calibration of the zones of infiltration risk and to demonstrate benefit gained from work undertaken to reduce infiltration. They will also provide evidence in the future of further need to manage the impact of infiltration.

Mitigation

On occasions to avoid flooding of properties or to manage the risk of damage to the environment we may undertake tankering from (manholes) points on the network, make use of pumps to manage flows or deploy settlement tanks to part treat sewage before release to the environment.

With regard to Ashampstead we do not envisage needing to undertake mitigation work beyond tankering within the network if required.

Updates

Work on the Groundwater infiltration management plan will continue, and we will aim to provide updates annually by the end of October each year.

Appendix

Groundwater infiltration potential analysis

The sewer network classified by the groundwater infiltration risk zones. The lengths of sewers within these zones are presented in the table below.

Risk category	Description	Length (km)	Percentage
High	Predicted groundwater extreme >1m above pipe invert	0	0.0
Medium	Predicted groundwater extreme 0-1m above pipe invert	0	0.0
Low	Predicted groundwater extreme 0-1m below pipe invert	0	0.0
Very Low	Predicted groundwater extreme >1m below pipe invert	1.75	100.0
Total		1.75[6]	100.0

In addition, the table below presents the surface water flood risk classification for manholes within the catchment.

Manholes by Surface Water Inundation Risk Category

Risk category	Description	Number	Percentage
High	Inundation risk in 3.3% AEP fluvial or pluvial event	0	0.0
Medium	Inundation risk in 1% AEP fluvial or pluvial event	0	0.0
Low	Inundation risk in 0.1% AEP fluvial or pluvial event	4	11.8
Very Low	All other manholes	30	88.2
Total		34	100.0

[6]Total of sewer length is for length of mapped sewers only and will not include unmapped S105a transferred sewers in all cases.

Investigations & remedial work undertaken since 2019/20 and future plans

Lift and Look and CCTV surveys have not yet commenced in the Ashampstead system. A summary of findings will be provided in the next update of this report.

Glossary of terms

AEP – Annual Exceedance Potential

AMP – Asset Management Plan

CCTV – Closed Circuit Television

EA - Environment Agency

IRP – Infiltration Reduction Plans

MH – Manhole

STW – Sewage Treatment Works

WINEP – Water Industry National Environment Programme

Addendum – Annual Update 2022

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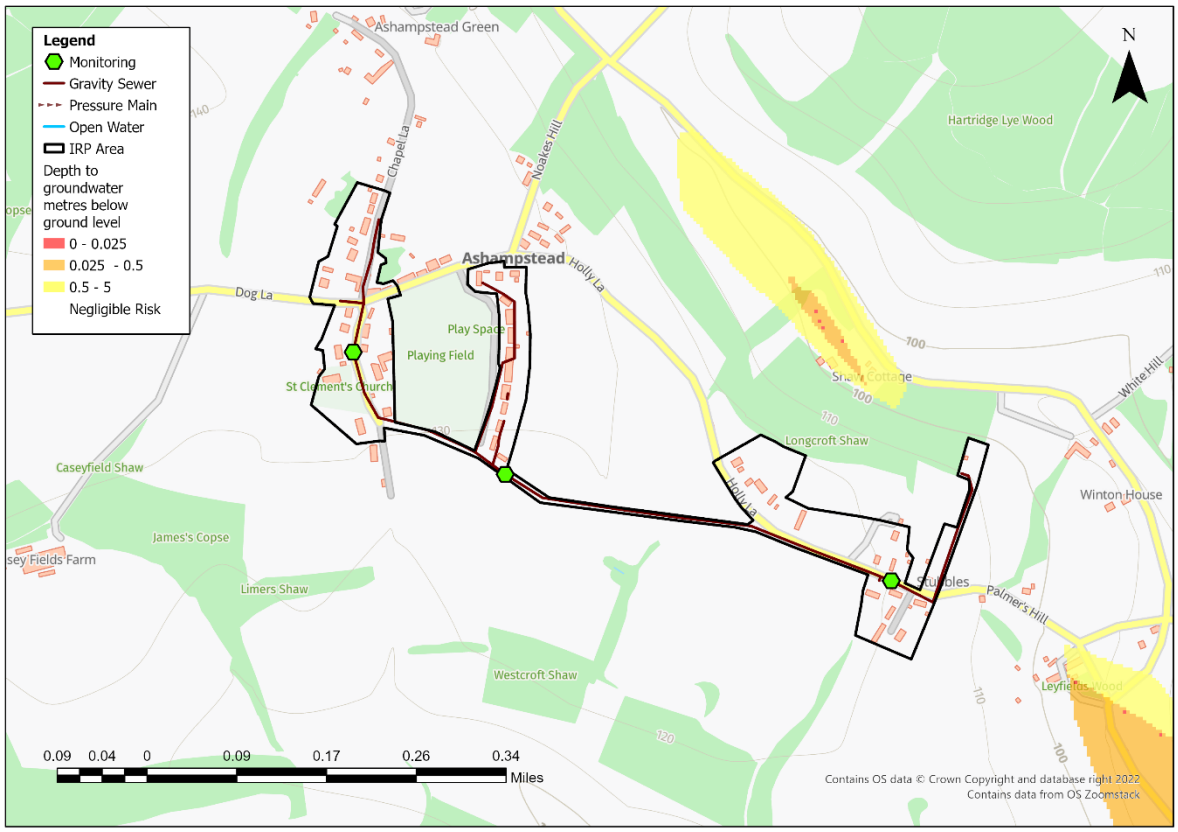
Overview

This addendum to the Ashampstead Groundwater Impacted System Management Plan 2021 (GISMP) provides an update on performance/work undertaken in the Hydrological Year October 2021 to September 2022. The key points covered include:

- Hydrological conditions
- How the sewerage system has performed over this period
- Mitigation / remedial measures progressed over the last year and being planned
- Summary and plan for 2022/23

Figure 1 – Ashampstead Monitoring Plan



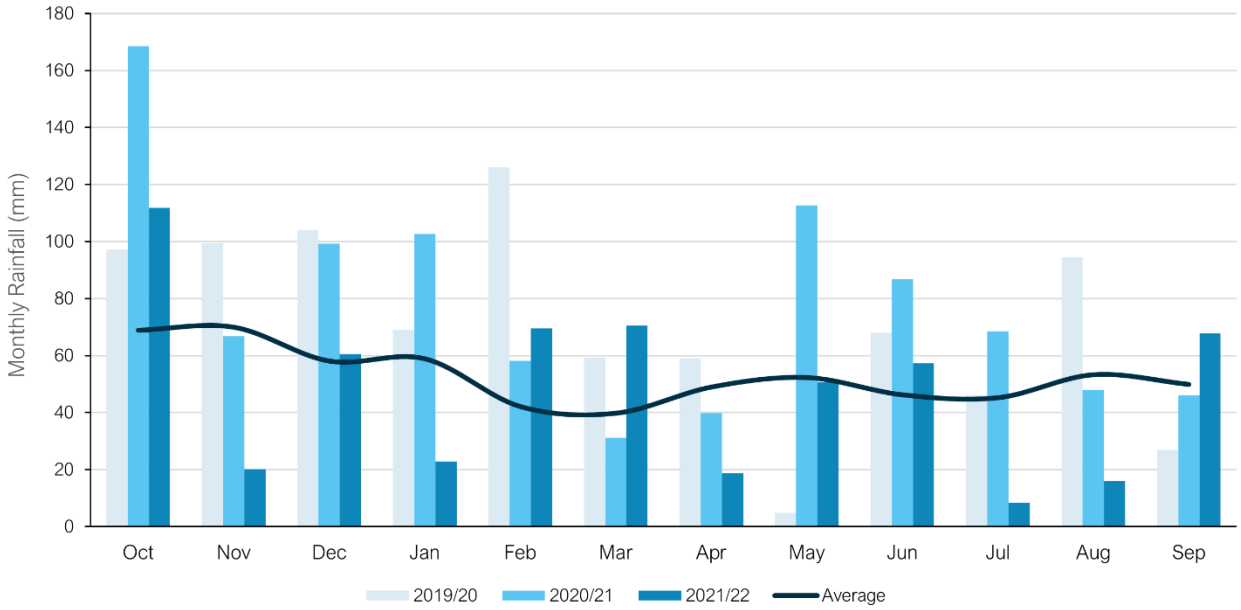
Hydrological Review – 2021-2022

This section summaries the hydrological conditions within the Ashampstead catchment within the period under investigation and provides comparison against previous year's performance to put the annual performance into context. The hydrological review has been undertaken based on the Hydrological Year which runs October 1st to September 30th.

Catchment Rainfall

Representative Radar rainfall has been used to generate monthly data at catchment level for comparison with average data generated by local Met Office Weather Station Records. Figure 2 presents the comparison of this data for the last three hydrological years to support longer term trends within the local system.

Figure 2 – Monthly Rainfall Performance



Average Values taken from Met Office Weather Station at Benson based on the period 1991-2020

The total rainfall for the 2021/22 hydrological year is 8% below the annual average total. Total rainfall values are presented in Table 3 below.

Table 3 –Total Rainfall Based on Hydrological Year

Average (mm)	2019/20 (mm)	2020/21 (mm)	2021/22 (mm)
634	854	928	583

Groundwater / Local River Level

The Ashampstead catchment is situated in the Berkshire Downs water resources areas. It sits in the Seaford Chalk Formation of carbonate material, forming distinctive beds of chalk. This is a designated principal aquifer within the UK.

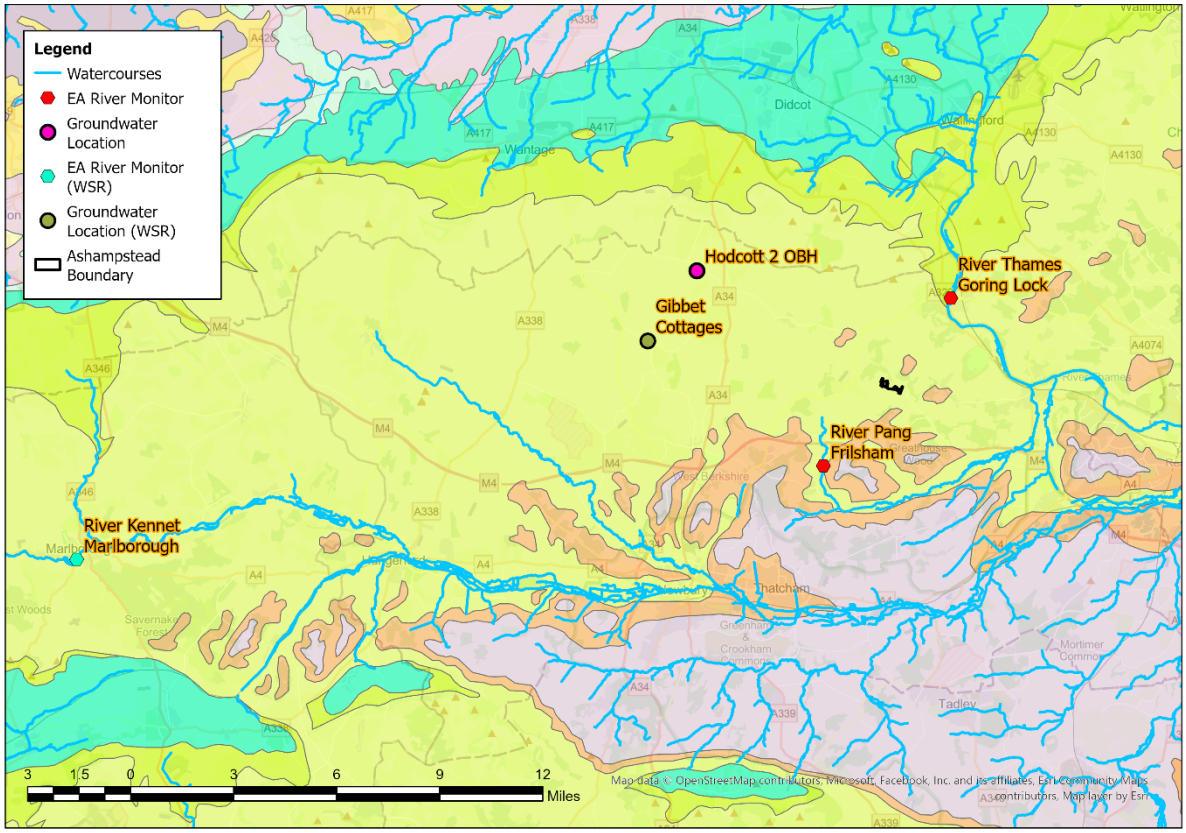
The Environment Agency has gauging stations on local watercourses measuring stage and observation boreholes measuring groundwater levels locally to the catchment which can be used to provide indicative local groundwater performance.

From previous investigations we have identified the following sites are good indicators of groundwater levels within the catchment.

- River Pang, Frilsham
- River Thames, Goring Lock.
- Hodcott 2 OBH.

These sites are illustrated in the figure below, alongside the closest groundwater reference station and closest gauging station from the Water Situation Report.

Figure 4 – Local Monitoring Stations



The following figures represent the last three hydrological years of level information at the indicator sites to build a picture of the relative conditions prevalent in the current year. It is presented against both the daily total rainfall values for the catchment and a rolling 15 day total rainfall.

Figure 5A – Pang at Frlisham

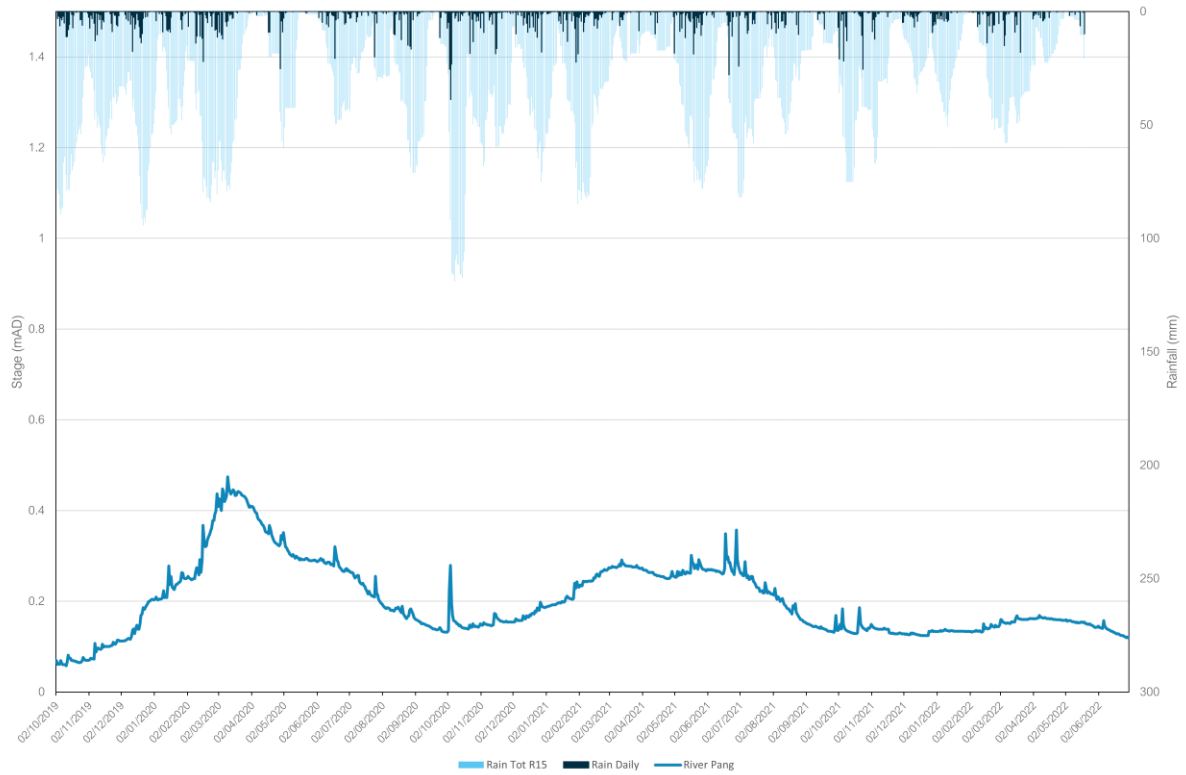


Figure 5B – Thames at Goring Lock

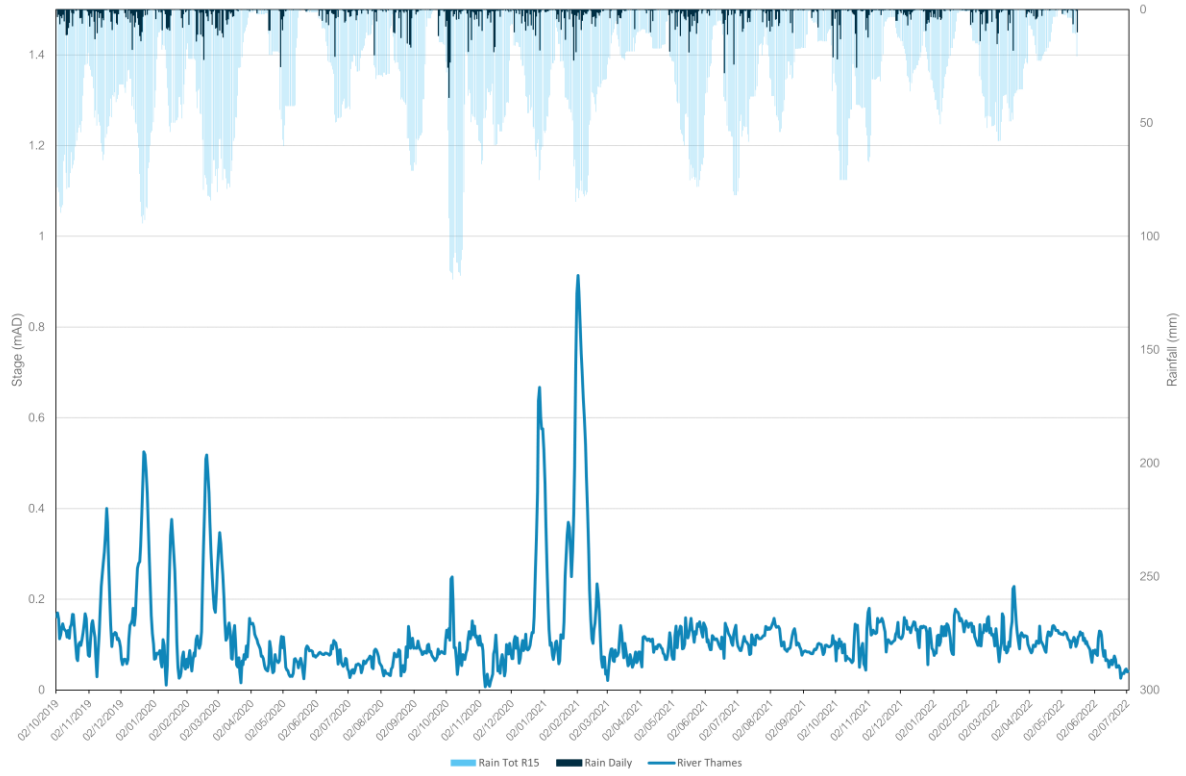
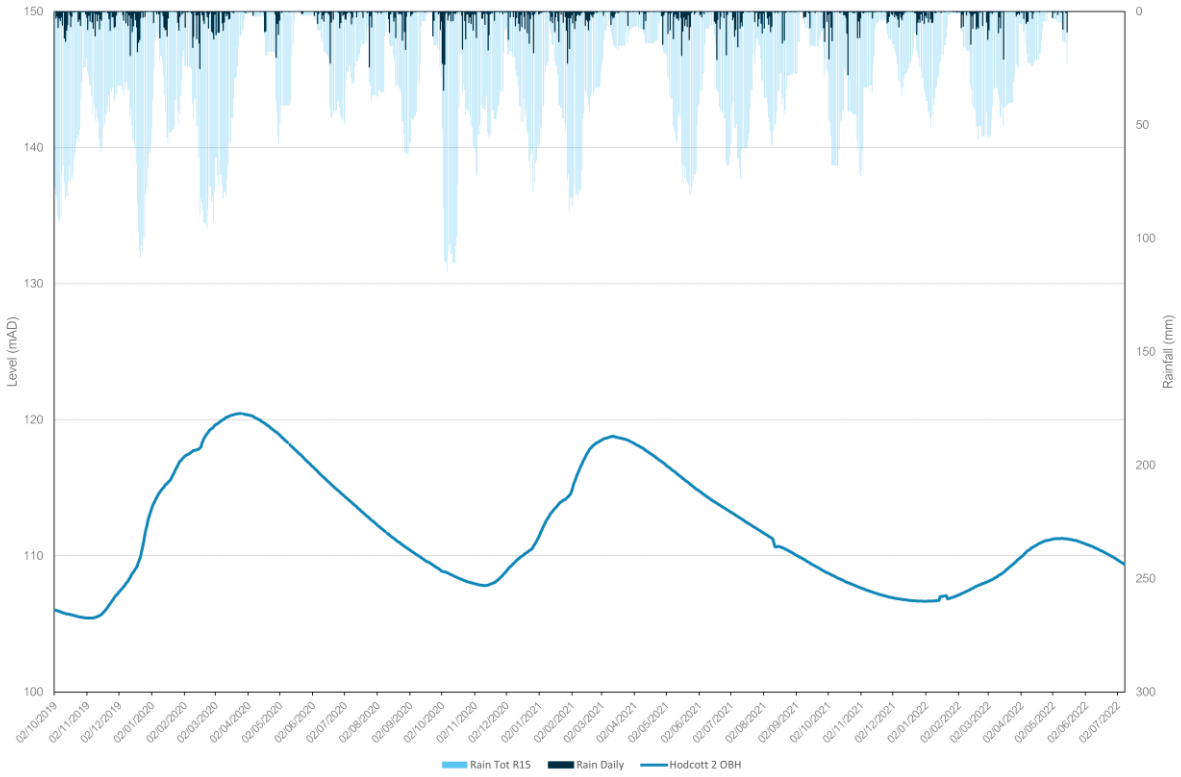
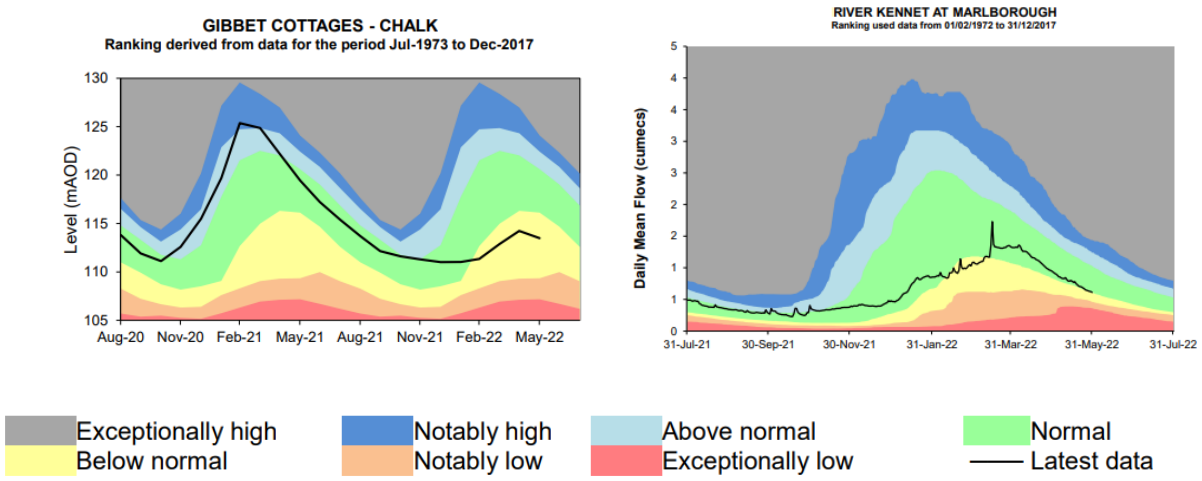


Figure 5C – Hodcott 2 OBH



In addition to these specific stations, the wider groundwater context is illustrated in the Water Situation Report for the Berkshire Downs. The nearest groundwater reference station is Gibbet Cottages. This site shows significantly lower overall groundwater than the previous year. This can be seen in the figure below alongside the river indicator location at Marlborough on the River Kennet.

Figure 6 – Water Situation Report



Extract from - [Water Situation Report (publishing.service.gov.uk)]

Network Performance

Within the Ashampstead catchment there are no sites detailed within the Environment Agency Consents Database which have an Event Duration Monitor (EDM) fitted. Therefore, the last 2 years of overflow performance for the Ashampstead catchment have not been detailed.

Investigations & Interventions

This section details the activities that have been undertaken within the catchment within the Hydrological Year 2021-22.

Monitor Installations

The sewer depth monitor (SDM) programme supports long term groundwater understanding within GISMP catchments. Currently, there are a total of 3 monitors installed within the Ashampstead catchment. There are currently no further monitor installs planned.

The data from these will be cross-referenced with other long-term records (where available) within the catchment.

Remediation Works Undertaken this Hydrological Year

Table 7 below provides a summary of the investigations and remediation works undertaken or planned within the Ashampstead catchment in the 2021-22 Hydrological Year.

Table 7 – Works Undertaken in the 2021/22 Hydrological Year

Investigation/ remediation type	Number/ length undertaken
CCTV survey	N/A
Look and lift survey	N/A
Sewer lining	N/A
Patch lining	N/A
Manhole sealing	N/A
Manhole sealing plates	N/A

With the seasonal trends in groundwater being low in comparison with previous years, the larger scale survey, identification and remediation of the sewerage network has not been possible within the 2021/22 hydrological year.

Summary

Rainfall in the Ashampstead catchment over the 2021/22 hydrological year has been below average, with groundwater levels in the aquifer beneath Ashampstead not reaching the levels seen in previous years which triggered groundwater ingress into the sewerage network and elevated flow/depth readings at monitoring sites.

Lift and look and CCTV surveys will continue throughout the remaining wet winter periods with the aim of finding further priority locations for remediation and investigating/justifying the need for future larger scale lining as part of our Price Review (PR) process if required.

Addendum - Annual Update 2023

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Overview

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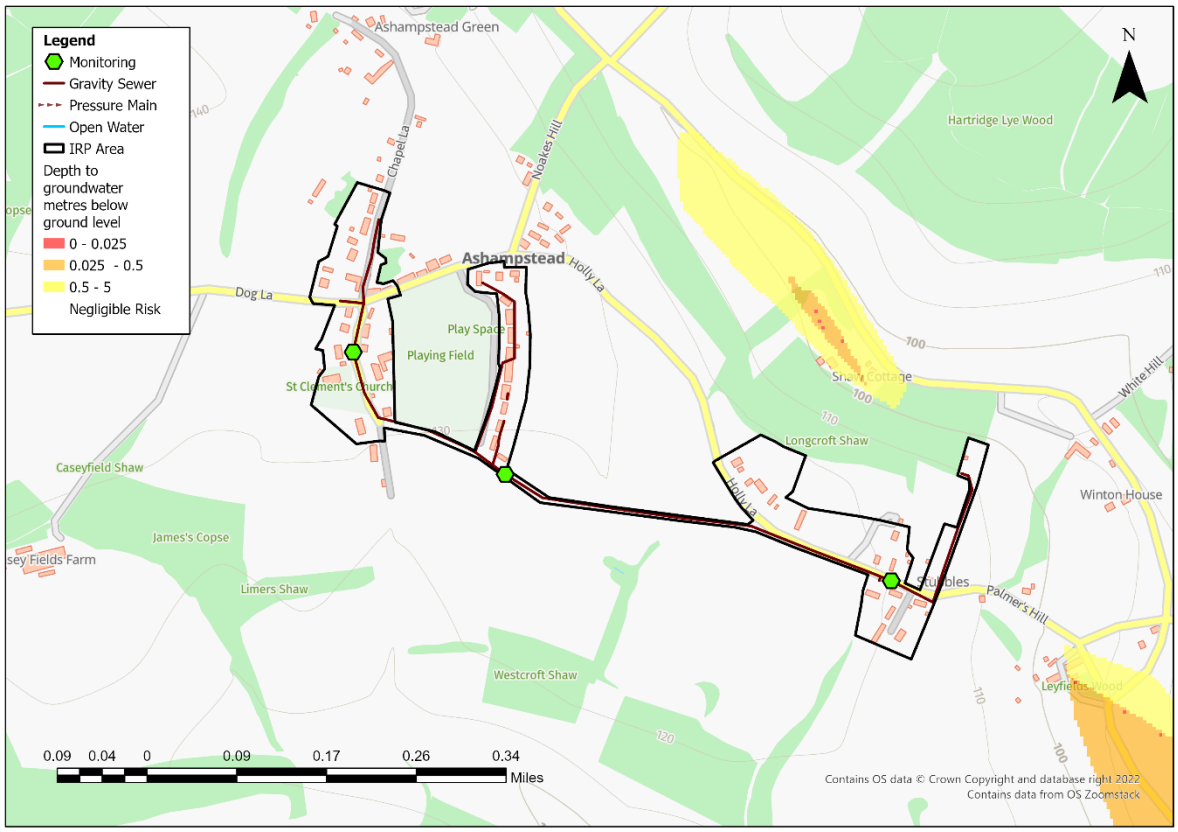

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Catchment Rainfall

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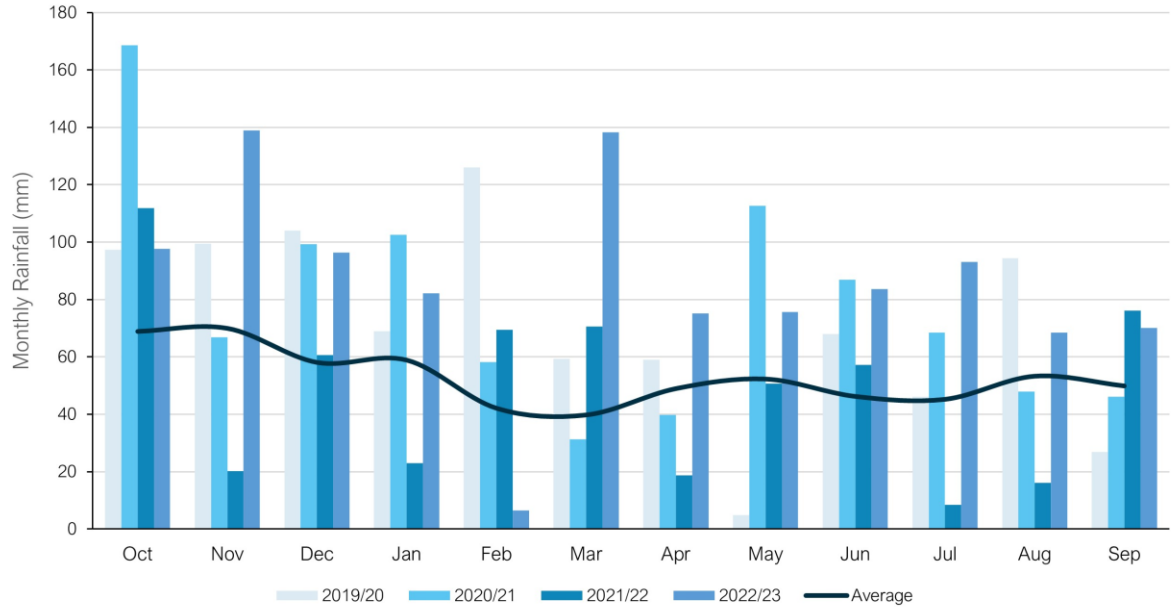

Average Values taken from Met Office Weather Station at Benson based on the period 1991-2020

The total rainfall for the 2022/23 hydrological year is 62% above the annual average total. Total rainfall values are presented in Table 3 below.

Table 3 –Total Rainfall Based on Hydrological Year

Average (mm)	2019/20 (mm)	2020/21 (mm)	2021/22 (mm)	2022/23 (mm)
634	854	928	583	1026

Groundwater / Local River Level

The Ashampstead catchment is situated in the Berkshire Downs water resources areas. It sits in the Seaford Chalk Formation of carbonate material, forming distinctive beds of chalk. This is a designated principal aquifer within the UK.

The Environment Agency has gauging stations on local watercourses measuring stage and observation boreholes (OBH) measuring groundwater levels locally to the catchment which can be used to provide indicative local groundwater performance.

From previous investigations we have identified the following sites are good indicators of groundwater levels within the catchment.

- River Pang, Frilsham
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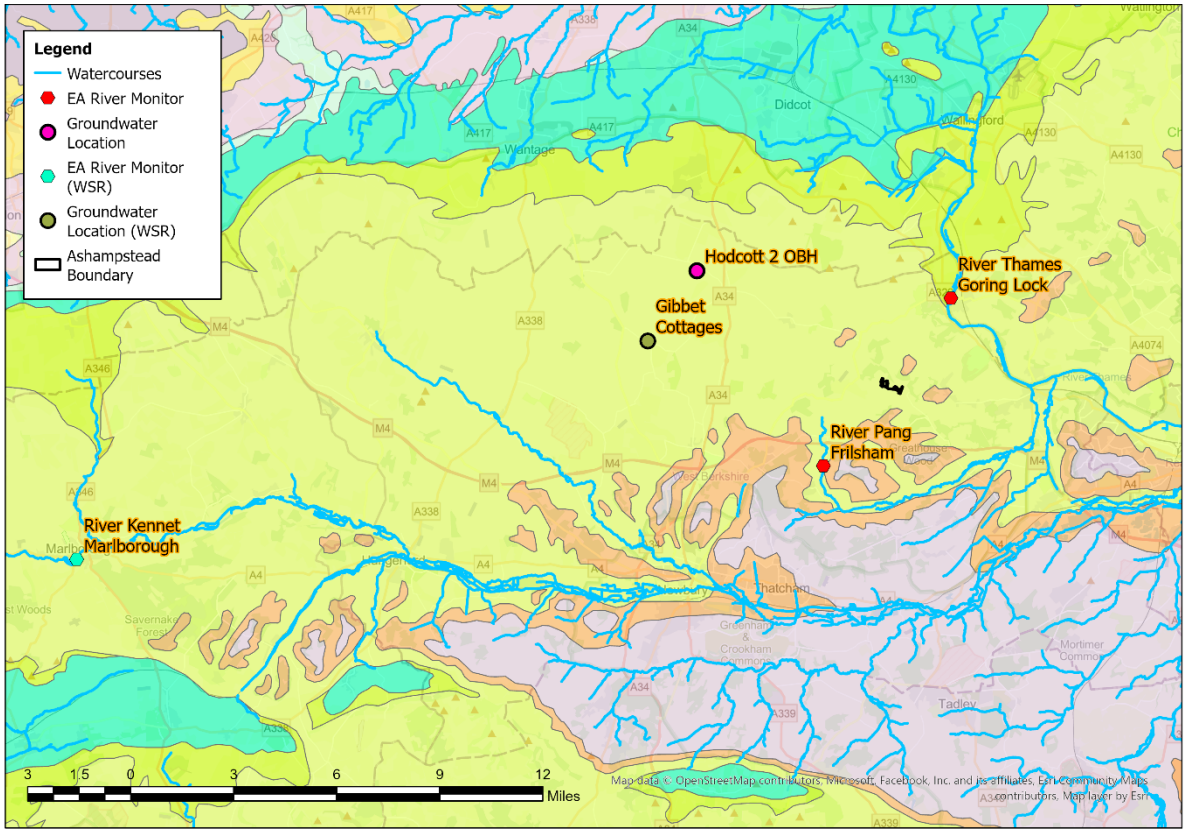

The following figures represent the last three hydrological years of level information at the indicator sites to build a picture of the relative conditions prevalent in the current year. It is presented against both the daily total rainfall values for the catchment and a rolling 15 day total rainfall.

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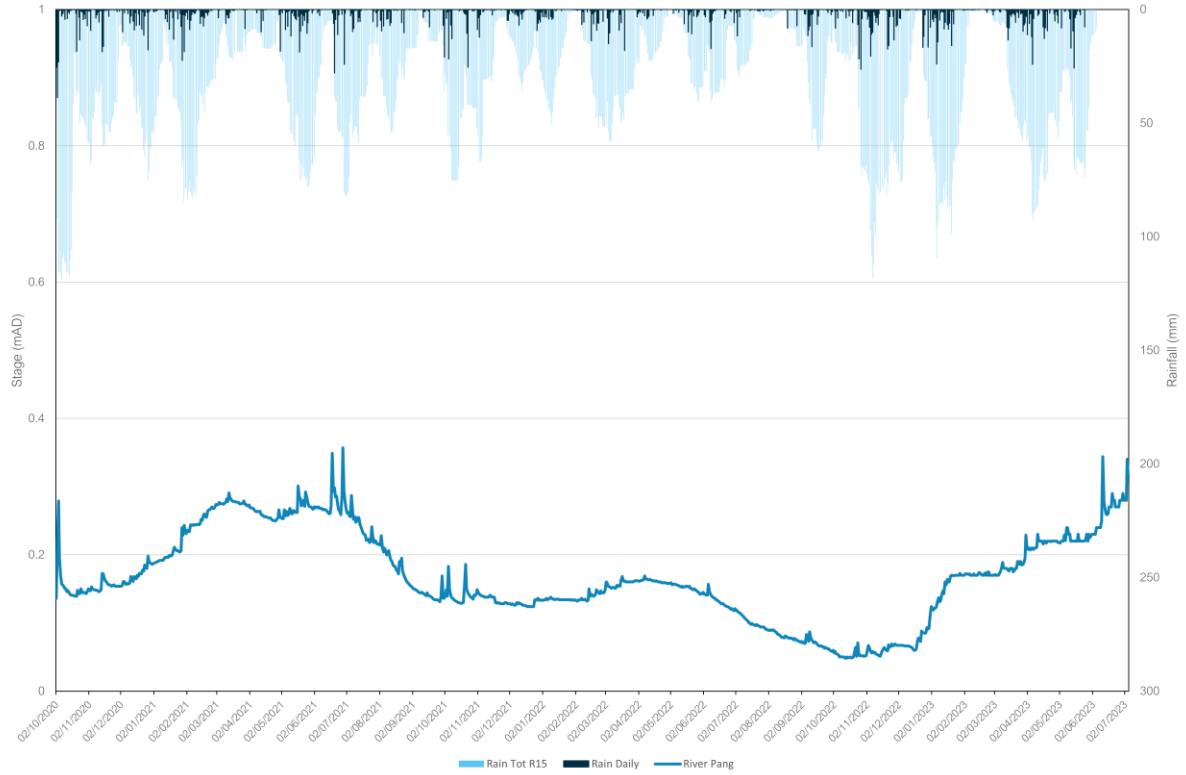

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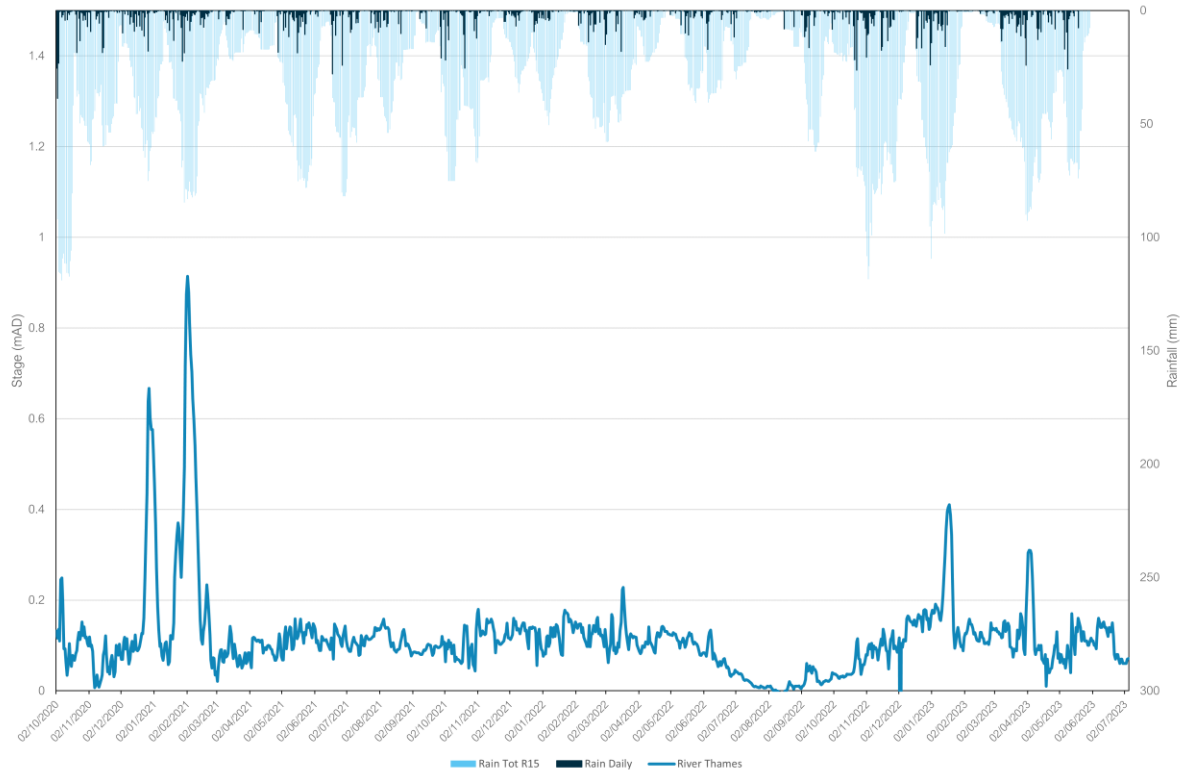
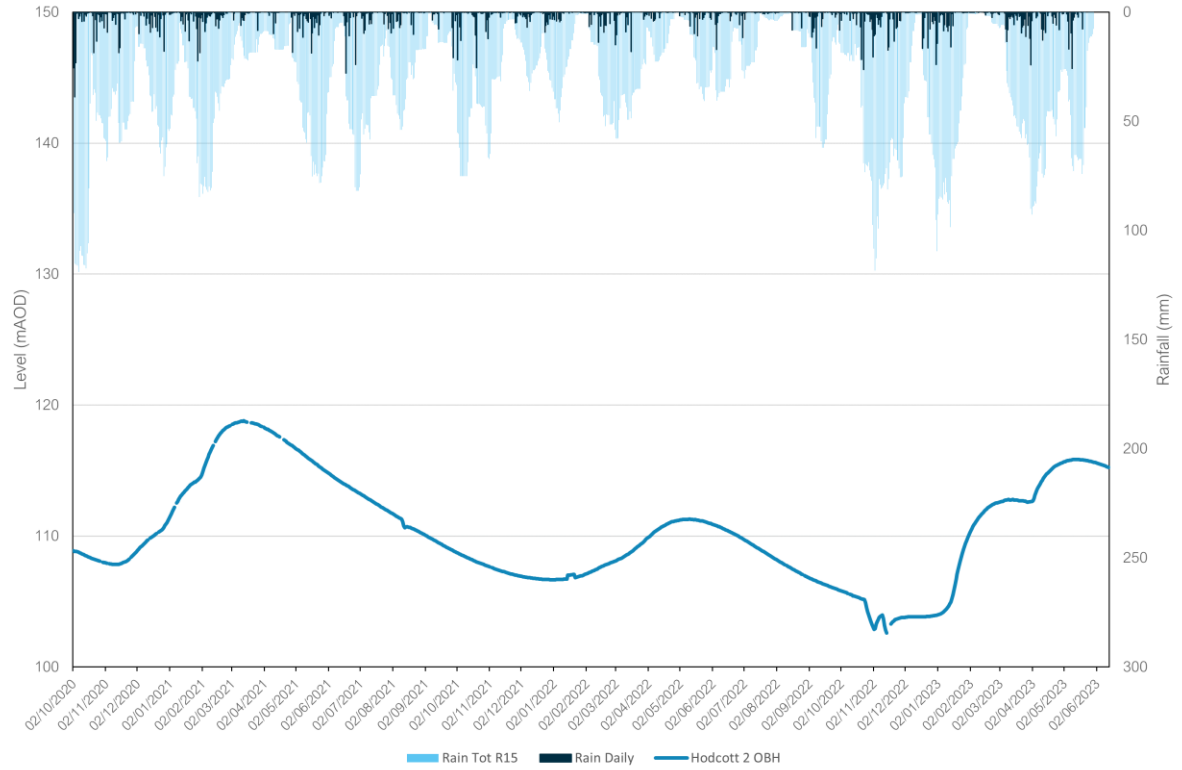
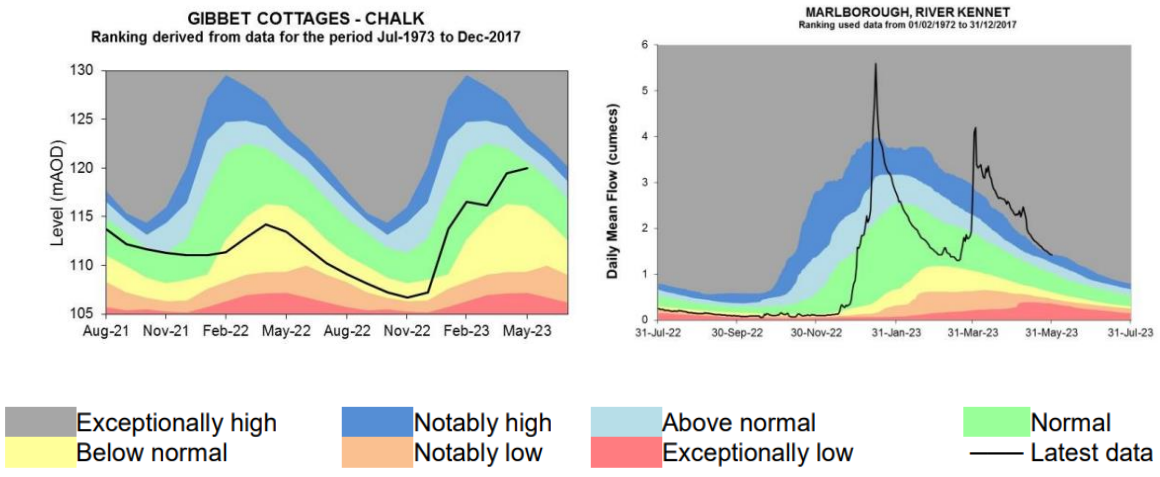


Figure 5C – Hodcott 2 OBH



In addition to these specific stations, the wider groundwater context is illustrated in the Water Situation Report for the Berkshire Downs. The nearest groundwater reference station is Gibbet Cottages. This site shows consistently below normal groundwater levels for the year 2022. Groundwater levels rise towards the end of 2022 and are observed at normal levels from the start of 2023. This can be seen in the figure below alongside the river indicator location at Marlborough on the River Kennet.

Figure 6 – Water Situation Report



Extract from - [Water Situation Report (publishing.service.gov.uk)]

Network Performance

Ashampstead STW is a ‘treat all’ site and there are no consented overflows located in the catchment. Therefore, overflow performance for the Ashampstead catchment has not been detailed.

Unwanted flow is evident in the Ashampstead catchment based on pumping station energy usage, and high flows at Ashampstead STW have been causing compliance issues at the site , which is why the catchment is classified as a GISMP system.

Investigations & Interventions

This section details the activities that have been undertaken within the catchment within the Hydrological Year 2022-23.

Monitor Installations

The sewer depth monitor (SDM) programme supports long term groundwater understanding within GISMP catchments. Currently, there are a total of 3 monitors installed within the Ashampstead catchment. There are currently no further monitor installs planned.

The data from these will be cross-referenced with other long-term records (where available) within the catchment.

Remediation Works Undertaken this Hydrological Year

Table 7 below provides a summary of the investigations and remediation works undertaken or planned within the Ashampstead catchment in the 2022-23 Hydrological Year, as well as works undertaken in the 2021-22 Hydrological Year.

Table 7 – Works Undertaken in the 2022/23 Hydrological Year & in the 2021/22 Hydrological Year

Investigation/ remediation type	Number/ length undertaken 2021/22	Number/ length undertaken 2022/23
CCTV survey	N/A	N/A
Look and lift survey	N/A	N/A
Sewer lining	N/A	N/A
Patch lining	N/A	N/A
Manhole sealing	N/A	N/A
Manhole sealing plates	N/A	N/A

No interventions/ investigations have been carried out in the Ashampstead catchment in the 22/23 Hydrological Year, due to groundwater levels not reaching trigger levels for meaningful surveys. However, the system will continue to be monitored and future investigations/ interventions carried out as appropriate and as conditions allow.

Summary

Indicator site data suggests groundwater levels in the Ashampstead catchment were consistently below normal in 2022 and lower than in 2021. This hydrological year (October 2022- September 2023), groundwater levels have generally been higher than the previous hydrological year, and available data for the catchment e.g. pumping station data, will continue to be analysed to examine the relationship between groundwater levels and flows in the system.

Lift and look and CCTV surveys will be undertaken in remaining wet winter periods if conditions allow. The aim of this is to find further priority locations for remediation and investigating/justifying the need for future larger scale lining as part of our Price Review (PR) process if required.

Addendum - Annual Update 2024

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Overview

This addendum to the Ashampstead Groundwater Impacted System Management Plan 2021 (GISMP) provides an update on performance/work undertaken in the Hydrological Year October 2023 to September 2024. The key points covered include:

- Hydrological conditions
- Performance of the sewerage system
- Mitigation / remedial measures progressed over the last year and being planned
- Summary and plan for 2024/25

Figure 1 – Ashampstead Monitoring Plan

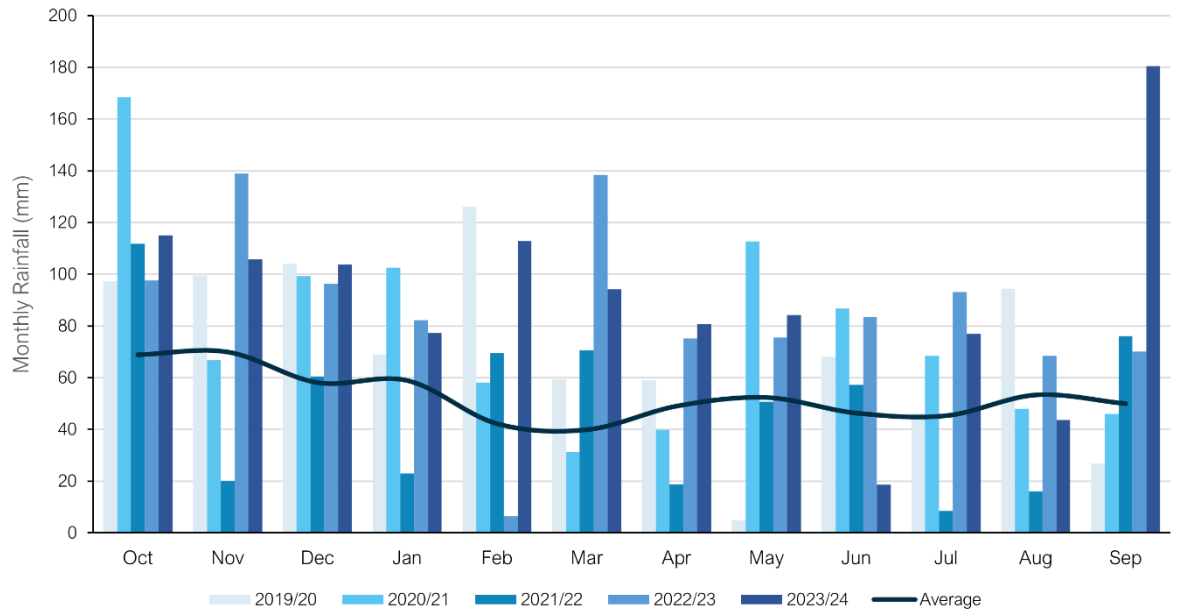
Hydrological Review – 2023-2024

This section summaries the hydrological conditions within the Ashampstead catchment within the period under investigation and provides comparison against previous year's performance to put the annual performance into context. The hydrological review has been undertaken based on the Hydrological Year which runs October 1st to September 30th.

Catchment Rainfall

Representative Radar rainfall has been used to generate monthly data at catchment level for comparison with average data generated by local Met Office Weather Station Records. Figure 2 presents the comparison of this data for the last five hydrological years to support longer term trends within the local system.

Figure 2 – Monthly Rainfall Data



Average Values taken from Met Office Weather Station at Benson based on the period 1991-2020

The total rainfall for the 2023/24 hydrological year is 73% above the annual average total. Total rainfall values are presented in Table 3 below.

Table 3 –Total Rainfall Based on Hydrological Year

Average (mm)	2019/20 (mm)	2020/21 (mm)	2021/22 (mm)	2022/23 (mm)	2023/24 (mm)
634	854	928	583	1026	1093

Groundwater / Local River Level

The Ashampstead catchment is situated in the Berkshire Downs water resources areas. It sits in the Seaford Chalk Formation of carbonate material, forming distinctive beds of chalk. This is a designated principal aquifer within the UK.

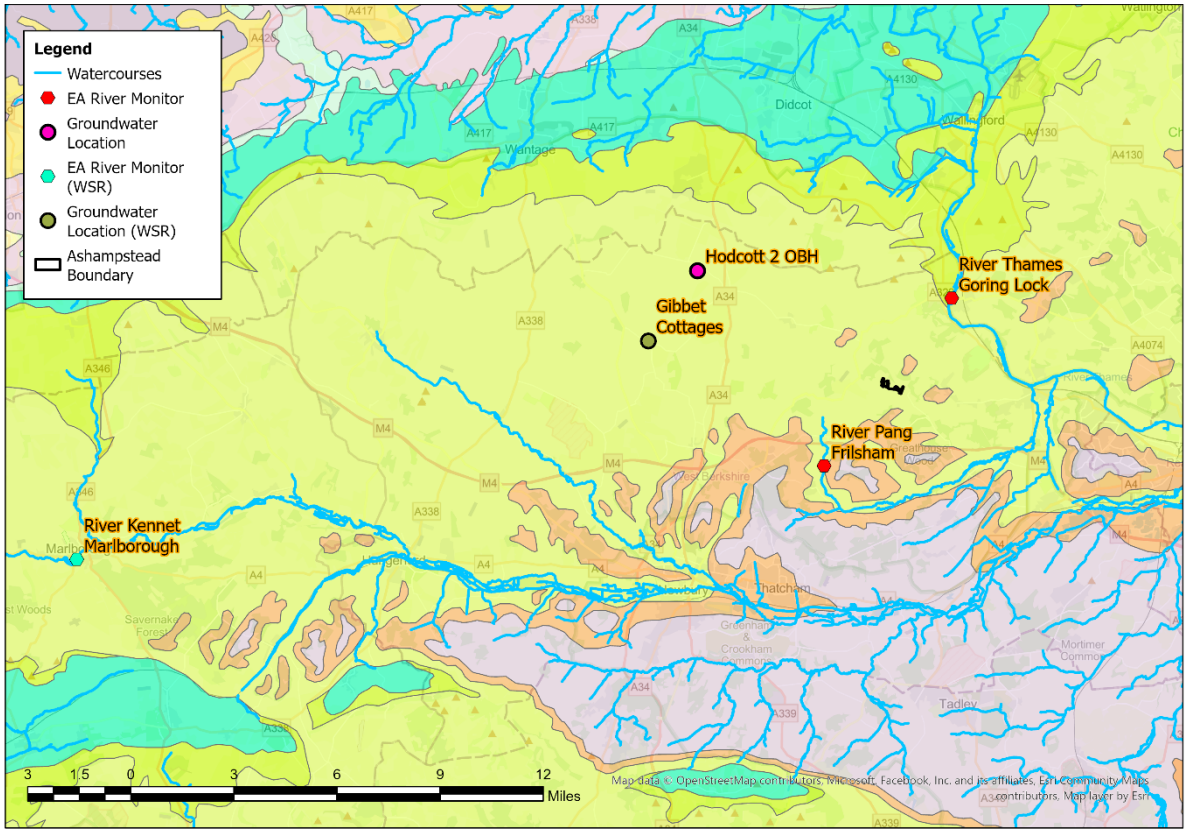
The Environment Agency has gauging stations on local watercourses measuring stage and observation boreholes (OBH) measuring groundwater levels locally to the catchment which can be used to provide indicative local groundwater performance.

From previous investigations we have identified the following sites are good indicators of groundwater levels within the catchment.

- River Pang, Frilsham
- River Thames, Goring Lock.
- Hodcott 2 OBH.

These sites are illustrated in Figure 4, alongside the closest groundwater reference station and closest gauging station from the Water Situation Report.

Figure 4 – Local Monitoring Stations



Figures 5A-5C represent the last three hydrological years of level information at the indicator sites to build a picture of the relative conditions prevalent in the current year. It is presented against both the daily total rainfall values for the catchment and a rolling 15 day total rainfall.

Figure 5A – Pang at Frilsham

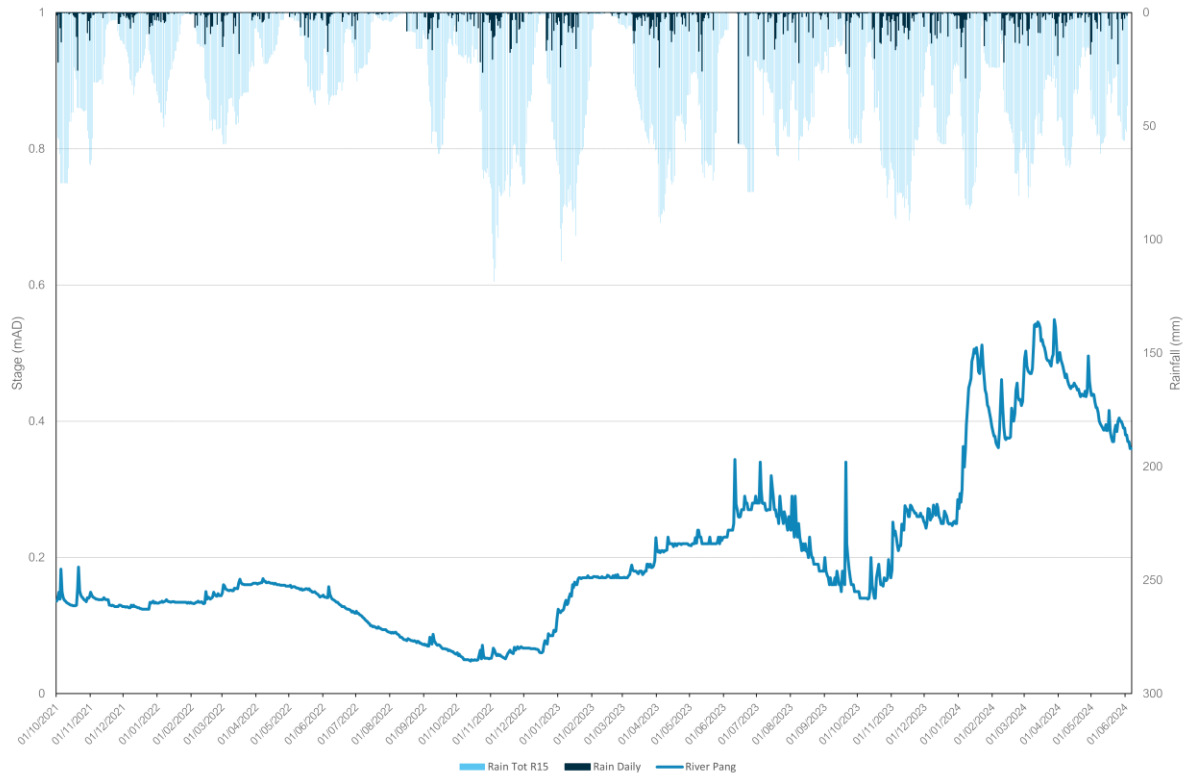


Figure 5B – Thames at Goring Lock

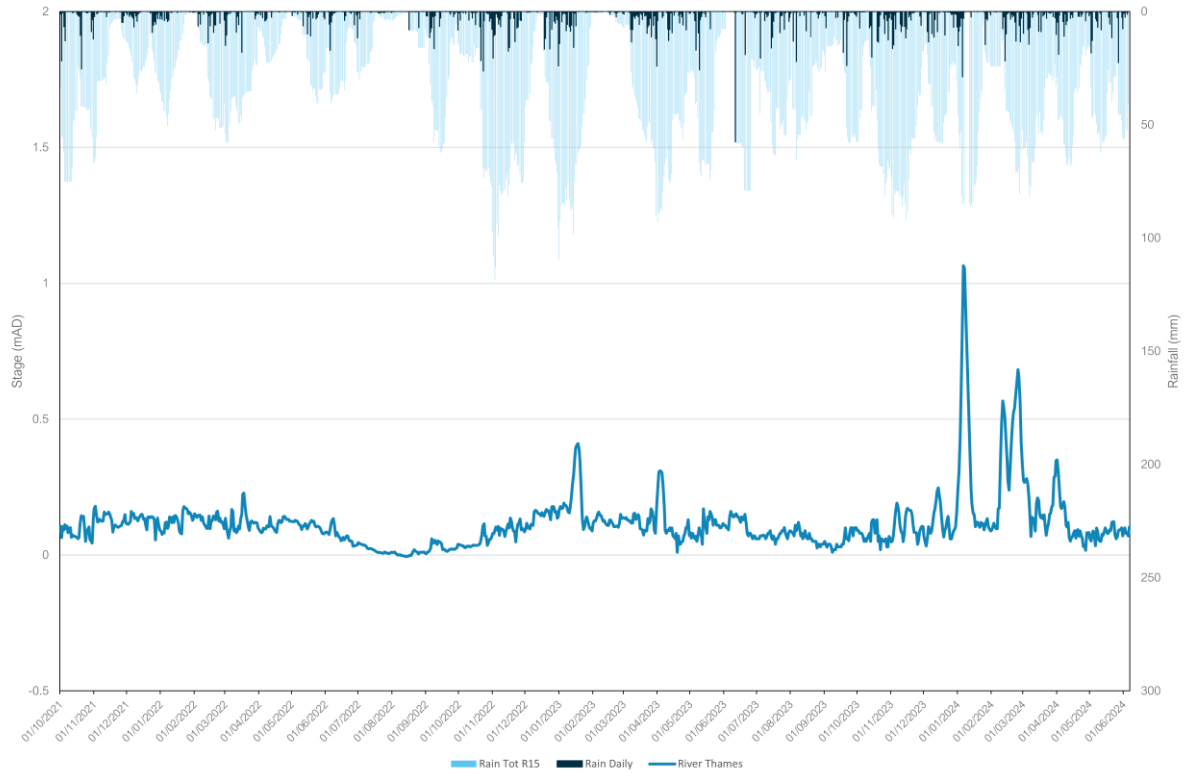
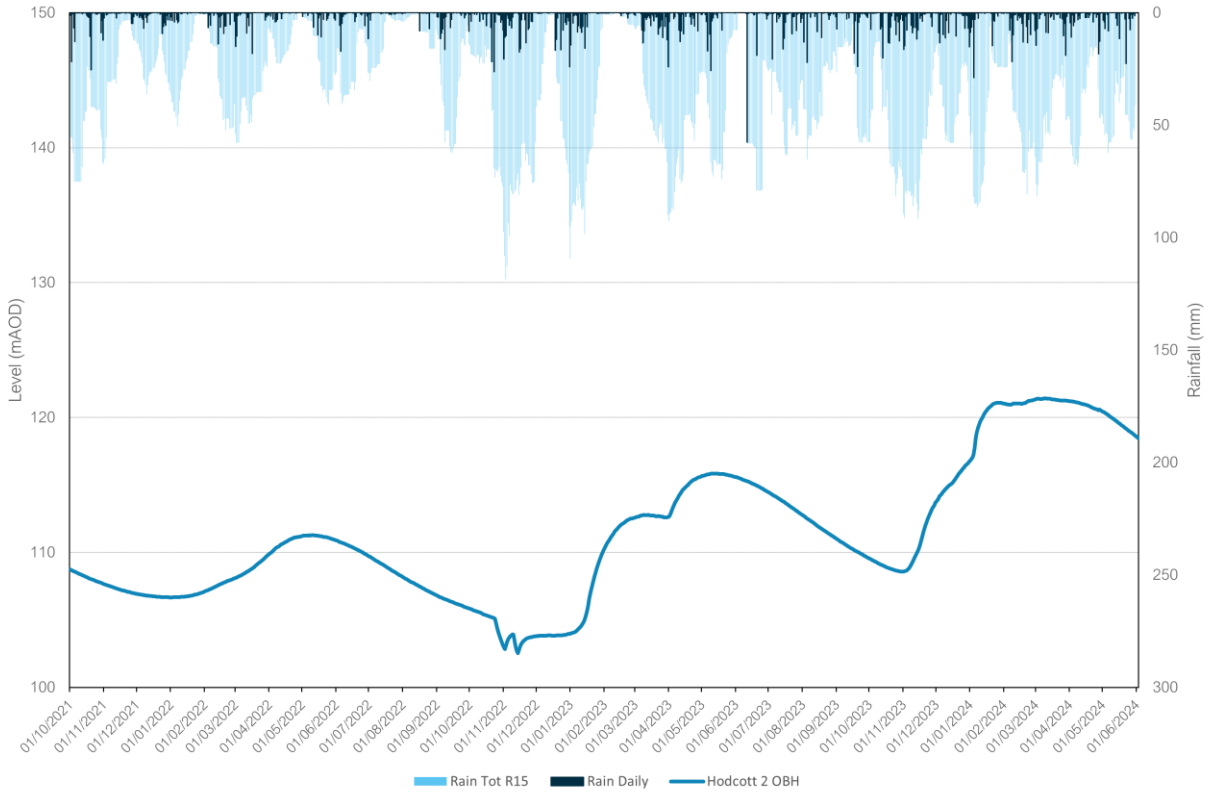
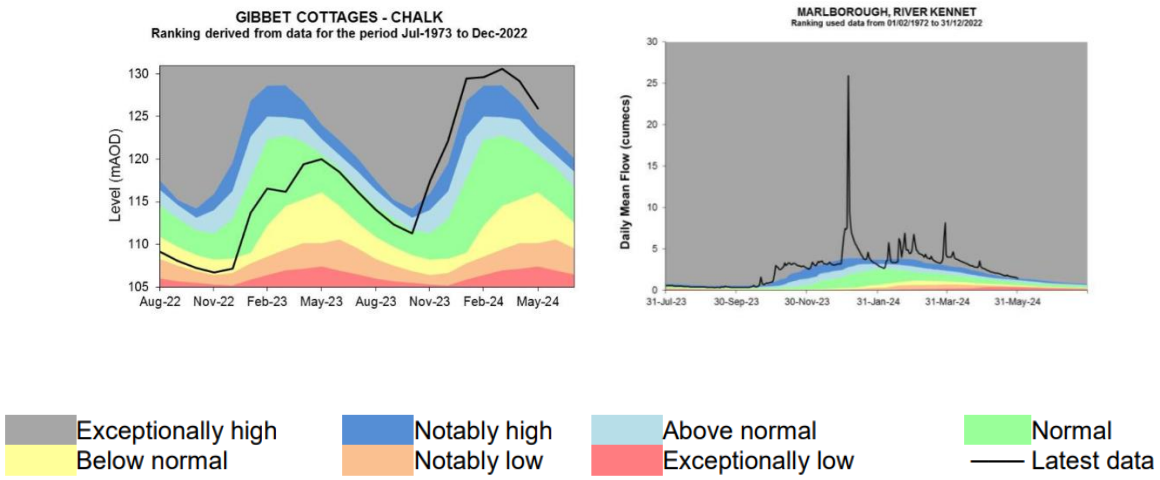


Figure 5C – Hodcott 2 OBH



In addition to these specific stations, the wider groundwater context is illustrated in the Water Situation Report for the Berkshire Downs. The nearest groundwater reference station is Gibbet Cottages. This site shows groundwater levels generally at normal levels in 2023, before rising towards the end of the year to reach exceptionally high levels. Groundwater levels have remained exceptionally high in 2024. This can be seen in Figure 6 alongside the river indicator location at Marlborough on the River Kennet.

Figure 6 – Water Situation Report



Extract from - [Water Situation Report (publishing.service.gov.uk)]

Network Performance

Ashampstead STW is a ‘treat all’ site and there are no consented overflows located in the catchment. Therefore, overflow performance for the Ashampstead catchment has not been detailed.

Unwanted flow is evident in the Ashampstead catchment based on pumping station energy usage, and high flows at Ashampstead STW have been causing compliance issues at the site , which is why the catchment is classified as a GISMP system.

Investigations & Interventions

This section details the activities that have been undertaken within the catchment within the Hydrological Year 2023-24.

Monitor Installations

The sewer depth monitor (SDM) programme supports long term groundwater understanding within GISMP catchments. Currently, there are a total of 3 monitors installed within the Ashampstead catchment. There are currently no further monitor installs planned.

The data from these will be cross-referenced with other long-term records (where available) within the catchment.

Remediation Works Undertaken this Hydrological Year

Table 7 below provides a summary of the investigations and remediation works undertaken or planned within the Ashampstead catchment in the 2023-24 Hydrological Year as well as in the previous two hydrological years.

Table 7 – Works Undertaken in the 2023/24 Hydrological Year, 2022/23 Hydrological Year & 2021/22 Hydrological Year

Investigation/ remediation type	Number/ length undertaken 2021/22	Number/ length undertaken 2022/23	Number/ length undertaken 2023/24
CCTV survey	N/A	N/A	N/A
Look and lift survey	N/A	N/A	N/A
Sewer lining	N/A	N/A	N/A
Patch lining	N/A	N/A	N/A
Manhole sealing	N/A	N/A	N/A
Manhole sealing plates	N/A	N/A	N/A

No interventions/ investigations have been carried out in the Ashampstead catchment in the 23/24 Hydrological Year. However, the system will continue to be monitored and future investigations/ interventions carried out as appropriate and as conditions allow.

Summary

Indicator site data suggests that groundwater levels in the Ashampstead catchment were generally at normal levels in 2023. This hydrological year (October 2023 – September 2024), indicator site data suggests that groundwater levels have been significantly higher than the previous hydrological year, with exceptionally high groundwater levels observed. Available data for the catchment e.g. pumping station data, will continue to be analysed to examine the relationship between groundwater levels and flows in the system.

Lift and look and CCTV surveys will be undertaken in remaining wet winter periods if conditions allow and subject to funding and available capacity. The aim of this is to find further priority locations for remediation and investigating/justifying the need for future larger scale lining as part of our Price Review (PR) process if required.

It's everyone's water