Revitalising the River Ivel Frequently Asked Questions (FAQs)

River Support (Augmentation) Scheme

What is a river support (augmentation) scheme?

A river support (augmentation) scheme is where groundwater is pumped from the chalk aquifer from a borehole and then piped into the river. This provides a support flow to the river when groundwater levels are below the riverbed and when the spring is not flowing naturally.

Groundwater levels fluctuate seasonally, typically reaching the highest level in spring following rainfall over the autumn and winter period which recharges the aquifer. Groundwater levels typically reach the lowest level in late summer, as during the summer months when temperatures are higher evaporation and uptake of water by plants reduces the amount of rainfall that can soak into the ground and recharge the aquifer.

Why are you proposing a river support (augmentation) scheme?

We have been monitoring the River Ivel's headwaters since 2015 to understand any impacts of our local public water supply groundwater abstraction.

The monitoring and investigation work was included in our AMP6 Water Industry National Environment Programme (2015 to 2020) programme of works, with the aim of assessing the impact of groundwater abstraction against Water Framework Directive (WFD) requirements.

The investigation identified that local groundwater abstractions have the potential to influence groundwater levels in the Ivel Springs area, and consequently under certain conditions the river baseflow. The river was assessed as meeting the WFD requirements (at the formal WFD assessment point located downstream) but following an options appraisal and in recognition of the potential impact at the head of the river, we agreed with the Environment Agency to implement a river support (augmentation) scheme to mitigate the influence of the local abstractions on the Ivel headwaters.

We already operate a number of river support schemes in the neighbouring Hiz, Oughton and Rhee catchments and therefore have experience of successfully operating augmentation schemes.

Can you reduce your local groundwater abstractions?

We have committed to reduce our local groundwater abstraction licence by approximately 228 million litres per year from 2025 and support flows in the river.

Our Water Resources Management Plan sets out how we will balance supply and demand, taking into account housing and population growth. A copy of our latest plan (WRMP19) can be found here. We have also been working with the regional water resources planning groups Water Resources South East (WRSE) and Water Resources East (WRE), where long term supply and demand issues are considered, taking into account regional needs rather than individual water company needs.

Can you import water from Grafham rather than abstracting from the local groundwater?

Our import water from Grafham will be fully utilised by the end of AMP7 (2020 - 2025) to meet demand requirements as set out in our WRMP19, this means that we cannot use this import to replace the local groundwater supplies.

Where will the new river support (augmentation) borehole be located?

We are planning for the new river support (augmentation) borehole to be located on an Anglian Water site at the southern end of Ivel Springs Nature Reserve.

What will the pumping capacity be for the new river support borehole?

The final yield of the borehole will be determined following construction and testing, as this will directly depend on the local aquifer yield and drawdown characteristics.

Will the river support (augmentation) borehole have an impact on the natural springs in the area?

We need to ensure that the river support (augmentation) scheme will not impact on the natural springs in the area by drawing down groundwater levels and reducing spring flow.

The area of influence from pumping a borehole is known as the cone of depression. This is influenced by the volume of abstraction; the higher the abstraction volume the larger the cone of depression. We need to test and identify the optimum operating regime to ensure we can meet the, yet to be formally defined, baseflow target of 0.55 Ml/d support flows in the river without impacting the natural springs.

How much water can we expect to see in the river at Ivel Springs when the river support scheme is operating?

The target river baseflow to be maintained at Ivel Springs is yet to be formally defined with our regulator, the Environment Agency (EA). Initial estimates on the target baseflow, based on Environment Agency assessments and monitoring data, suggested a target value of 0.55 Ml/d.

The river support borehole will be located within close proximity to where the river support (augmentation) flows will be discharged into the river so there is a risk of aquifer recirculation. The risk of aquifer recirculation depends on the volume of abstraction because the higher the volume of abstraction the larger the cone of depression. If the cone of depression extends to the river support (augmentation) flow discharge location, this may cause the river support (augmentation) flows to soak back down through the riverbed into the chalk aquifer without any benefits to the river.

It is important during the testing period we can identify the optimum operating regime to ensure we can meet the yet to be formally defined baseflow target of 0.55Ml/d, without causing aquifer recirculation.

Where will the river support (augmentation) enter the River Ivel?

We are planning for there to be a river support (augmentation) discharge at the southern end of Ivel Springs Nature Reserve, downstream of the seasonal wetland.

When will the river support (augmentation) be operated?

It is proposed that we set a river support (augmentation) trigger level to operate the river support scheme when local groundwater levels reach 54.4 mAOD. This corresponds to 0.55 Ml/d baseflow in the river, measured through our monitoring programme.

We will look at the requirement for an associated river flow trigger, by calculating the relationship between measured groundwater levels and river flows using data from the river flow measuring point immediately downstream of Ivel Springs Nature Reserve.

We will assess the trigger level and revise it, in agreement with the Environment Agency, should this be required.

Will the river support (augmentation) volumes be linked to your local abstraction licence?

Yes, the volume of water used for river support (augmentation) will be taken from our local groundwater abstraction licence volumes and will not be additional abstraction.

How long will the project take to be implemented?

We are planning for the river support (augmentation) scheme to be fully operational by December 2024 but we will endeavour to deliver the scheme as quickly as possible.

What are the environmental benefits of implementing a river support (augmentation) scheme?

The river support (augmentation) scheme will benefit the local river habitat by extending the wetted length of river channel through Ivel Springs Nature Reserve under low groundwater levels. This will ensure the Ivel headwaters are more resilient against low flows during low groundwater periods.

Seasonal Wetland Enhancement

Where is the seasonal wetland located? And why is it seasonal?

The seasonal wetland to be enhanced is located at the southern end of Ivel Springs Nature Reserve, currently within the fence line of the Anglian Water site.

The outline design proposes relocating the fence line to allow public access to this area.

This area is a seasonal wetland because it is predominantly fed by flows from a surface water outfall, the volume and frequency of water input is determined by rainfall patterns.

The seasonal wetland water levels will vary significantly over time. Based on the current outline design, It has been calculated that the seasonal wetland will become dry 25% of the time (based on surface water flows between 2017 and 2021).

What is a surface water outfall?

A surface water outfall is an infrastructure system where rainfall (surface water runoff) is collected and discharged into the environment. The volume and quality of the water discharge, which might typically come from hardstanding, roads and rooftops in the Baldock area may vary.

Why are you proposing to enhance the seasonal wetland?

We are proposing to enhance the seasonal wetland to allow natural processes to regulate the surface water runoff entering the Ivel headwaters and improve the local habitat.

What is the water quality of the surface water outfall discharge?

The outfall is a surface water system whereby Anglian Water maintain the infrastructure only. The volume and quality of the water discharge, which might typically come from hardstanding, roads and rooftops in the Baldock area may vary.

We have undertaken a series of samples from the surface water outfall to inform the design of the seasonal wetland area.

What are the environmental benefits of enhancing the seasonal wetland?

The enhanced seasonal wetland will provide environmental benefits through natural process, 'filtering' the water before it enters the River Ivel. Enhancing the seasonal wetland will also improve the local habitats.

How long will the project take to be implemented?

We are planning for the seasonal wetland enhancement to be constructed by December 2023 but we will endeavour to deliver the scheme as quickly as possible.

What is the plan for maintenance following project implementation?

Following the enhancement of the seasonal wetland, a suggested maintenance plan will be provided to the landowner. It has been agreed that large maintenance tasks such as periodically removing sediments from the seasonal wetland will be arranged by the landowner. Smaller maintenance tasks such as vegetation management will be carried out with the support of local volunteer groups.

River Restoration

Why are chalk streams important?

Chalk streams are globally rare habitats. Of the 260 chalk streams in the world, 224 of them are in England and 10% of those are located within our supply area.

Chalk streams are rivers that receive baseflow from underneath, from the underground chalk aquifer (water bearing rock). As the water bubbling up through the riverbed has been naturally filtered by the chalk, it is often described as being 'gin clear' and is full of dissolved minerals that support many species of plants and animals.

Over the centuries, chalk streams have been altered for many reasons including: moving them from the lowest point on the landscape to higher up to work with field boundaries or create a bigger area for agriculture, being straightened to act as mill races for industry, or relocated for housing development.

These changes mean that the rivers are less resilient to extreme climatic conditions such as flood and drought, as they no longer operate in a natural way.

Do you abstract directly from the river?

We do not abstract water directly from chalk streams. We abstract water from the chalk aquifer which is also known as groundwater. Chalk stream flows are the strongest when groundwater levels are high as this contributes to their baseflow.

Why are you proposing to carry out river restoration through Ivel Springs Nature Reserve?

The course of the River Ivel has been heavily modified along its length, and the wetland area around the springs and the headwaters of the river are an example of this.

For around 100 years, up until the 1940s, a large part of the site was used as commercial watercress beds, extending across much of the area adjacent to the river channel. The river channel is largely straight and wide which is not the natural characteristics of a chalk stream headwater which should be narrow and meandering.

What are the environment benefits of implementing river restoration?

The river restoration will benefit the environment by improving the local chalk stream habitat and restoring natural chalk stream processes.

By narrowing the channel it will help to improve river velocity, keeping gravels clear and creating suitable habitat for fish and macroinvertebrates. This work will also help to make the river more resilient to a range of hydrological conditions.

How long will the project take to be implemented?

We are planning for the river restoration to be constructed by December 2023 but we will endeavour to deliver the scheme as quickly as possible.

What is the plan for maintenance following project implementation?

Following the construction of the river restoration, a suggested maintenance plan will be provided to the landowner. The aim is to make the river as self sustaining as possible by restoring chalk stream processes. Small maintenance tasks such as vegetation management will be carried out with the support of local volunteer groups.

What can I do to help my local chalk stream?

We always ask our customers to save water where they can. Not only is this good for the environment, it can also save on water and energy bills too.

The average water use per person in our central area is 158 litres per person per day, compared to the national average of 141. This is still higher then countries such as Germany, where average use is just 121 litres per person per day.

Everyone can play their part by reducing their water use, we will then be able to leave more water in the environment for our globally rare habitats, such as chalk streams.

What are you doing to help customers reduce demand for water?

We continue to offer customers advice, free water saving devices and practical help all year round to help reduce the demand for water. For free devices and water saving tips, please visit www.affinitywater.co.uk/savewater

Our metering programme is also an essential part to help us reduce demand as it empowers customers to save water, energy and money.

In May 2021, we launched an innovative new approach to reduce customer demand for water through a unique campaign – Save Our Streams. We know our customers are passionate about their local environment, especially our region's globally rare chalk streams. We know we must do more to protect these precious habitats, which have been described as England's 'Amazon', from the effects of climate change, population growth and demand for water.

Working effectively with our customers is a key part of this and the launch of Save our Streams seems to have grown into a genuine movement that people are keen to get behind to start their water saving journey.

Since the Save Our Streams launch, customers have signed up to our SOS website. Through the sign ups we are able to capture individual household water use habits so we are able to provide tailored water saving advice to fit their needs. Through the SOS journey, we are also able to offer customers free Home Water Efficiency checks either face to face or virtually and offer free water saving devices.

What are you doing to improve leakage?

We want to follow up our success from the 2015-2020 period in having the largest reductions in leakage of all UK companies. That was a 15% reduction in leakage and we have committed to doing even more by committing to achieve a 20% reduction by 2025.

Whilst we have driven leakage down to its lowest level we have achieved as a company, it's not as much as we planned to deliver for our year end target. We take leakage very seriously as we know it matters to our customers and the environment. However, with the new measures we have in place using cutting edge technology and data science, we are confident that we will meet our five-year target to 2025.