

Arun Valley and Water Neutrality - Frequently asked questions (FAQs) - Developers



December 2021



How to use this FAQ Document

This document should be read in conjunction with the Natural England (NE) Statement for applications within the Sussex North water supply zone. These frequently asked questions (FAQs) are to developers in considering the Statement when applying for development in Sussex North.

This document will be updated periodically as the evidence base on water neutrality, the strategy and other material matters evolve and change.

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A: WATER NEUTRALITY SUMMARY

What is water neutrality?

The definition of water neutrality in Natural England's Statement is taken from that used in the final report of Water Neutrality Study: Part A – Individual Local Authority Areas¹;

“For every new development, total water use in the region after the development must be equal to or less than the total water-use in the region before the new development.”

How is water neutrality achieved?

Water neutrality is achieved through a combination of water efficiency measures for new developments to reduce the water use per person (called per capita consumption). The amount of water from new homes, offices and other developments that use public water supply in the Sussex North water supply zone is then calculated on an individual or cumulative basis to produce a predicted “demand” for water from growth. This total amount of water from growth is then offset by reducing the amount of water currently used in the Sussex North water supply zone.

Some examples of offsetting measures and the first part of the strategic solution evidence base can be found in [Water Neutrality Part A - Individual Planning Authority areas July 2021](#).

B: BACKGROUND

Why is water neutrality needed? – simple explanation

The existing water supply in the Sussex North water supply zone cannot be ruled out as contributing to the declines in wildlife within internationally protected sites in the Arun Valley, Sussex. The Arun Valley is legally protected for its wintering birds, its wetland habitats, a rare snail species, invertebrates and several rare and uncommon aquatic and wetland plants.

Evidence shows that wildlife within the Arun Valley site is declining. Some of the designated site has been shown to be linked hydrologically to a layer of rocks from which water is currently being abstracted, or in other locations the hydrogeological link cannot be ruled out.

Following case law on the Conservation of Species and Habitats Regulations 2017, where existing impacts are causing declines on designated sites, further impacts should be avoided where possible. Since the public water supply abstraction cannot be ruled out as one of the existing impacts making development water neutral prevents development increasing the impacts on the wildlife and therefore meets these legal tests. As an extra benefit, water neutrality improves the overall sustainability of the development by reducing water consumption and therefore also energy consumption and carbon.

¹ [Water Neutrality Part A - Individual Local Planning Authority areas July 2021](#).

Why is wildlife in the Arun Valley so important?

The Arun valley is one of the most biodiverse floodplain wetlands in England. It has several legal designations including:

- Arun Valley Special Protection Area (SPA) – classified for its wintering birds including Bewick swan, its assemblage of wintering wildfowl and the supporting wetland habitats.
- Arun Valley Special Area of Conservation (SAC) - notified for a rare and threatened snail called *Anisus vorticulus* or little whirlpool ram's horn snail and its supporting wetland habitats.
- Ramsar Site – listed for its wintering birds, rare invertebrates, rare aquatic and wetland plants, and the supporting wetland habitats.
- Three Sites of Special Scientific Interest (SSSI) that underpin the other designations. (Pulborough Brooks, Waltham Brooks and Amberley Wild Brooks). The SSSIs are notified for all the above and for the large peatland at Amberley.

What evidence is there that wildlife in the Arun Valley is declining?

Natural England first became alerted to issues in the area in 2019 when Southern Water started to look at changing its abstractions at Pulborough to increase supplies to Sussex North water supply zone, specifically in relation to the out-of-date information on the wildlife of the Arun Valley designated sites. At this stage, Natural England had some background information and survey data which suggested that there were concerns in relation to the condition of the wildlife on the site. The field work to update the condition assessment was due to start in April 2020 but was delayed until May 2021 due to COVID restrictions.

A full Natural England condition assessment survey of ditches, plants, wetlands, invertebrates has now been completed with the final survey undertaken in October 2021. The full condition assessment data analysis will be completed by March 2022. The accompanying report is expected to be published by Autumn 2022, pending the results of the water quality monitoring. Water quality data must be collected for a full year and will be complete in June 2022. This will provide additional data for the assessment of the supporting habitat, reasons for declines in the snail and bird features and information on the Ramsar plant, invertebrate and wetland/ditch habitat features as well as for the SSSI features.

The review to-date has shown (with source of information in brackets):

- The SAC feature (*Anisus vorticulus*) has been reduced to a small population around a single ditch (in Oct 2021 survey) in Amberley Wild Brooks having been moderately widespread previously and has gone entirely from south of Pulborough Brooks where it was present, if uncommon, previously. This is a loss of up to three quarters of its former range within the SAC. This former range was a quarter of the species UK population. The SAC is therefore failing its conservation objectives for range and distribution and the species is at risk of going extinct on the site. (various studies including Natural England commissioned October 2021 Survey of *Anisus vorticulus* - in preparation).
- SPA and Ramsar wintering bird features – only teal are meeting their conservation objective population targets (wetland bird survey (WeBS) data BTO).
- A peer reviewed paper (Hicks *et al* 2019²) shows statistically significant changes in the vegetation community, including those that form part of the Ramsar and SSSI features, in the north of Amberley Wild Brooks, indicative of slowly drying conditions.

² [Hicks, D., Abraham F., Bardsley L., Cousins M., Webster E. & Whitman J. \(2019\)](#) Spatial and temporal vegetation analysis of Amberley Wild Brooks over two decades *British & Irish Botany* 1(4):309-326

- Environment Agency (EA) water quality monitoring is limited – but shows ditch water quality is exceeding nutrient targets for total phosphorus -TP values) National guidance recommends more stringent total phosphorus values for sites with groundwater input and total nitrogen (TN) targets on still waters and ditches with aquatic plant and invertebrate interest. [Groundwater](#) that is abstracted is less nutrient rich than surface water on which the site must rely currently and the drying on the site makes the impacts of the high nutrients in the surface water greater by reducing the dilution.
- A technical study into habitat management for the SAC snail (as part of back from the brink partnership work) shows water quality, in particular suspended solids, are issues for the SAC snail. These suspended solids are likely to be from the clay in banks when they collapse and/ or from overtopping. The water turbidity is exacerbated by the very shallow or dry ditches in summer on Pulborough Brooks
- All the impacts on designated sites appear to be exacerbated by climate change. (Hicks et al 2019)

Why do Natural England think Southern Water’s abstraction is affecting the protected sites and wildlife?

In early 2019 Southern Water set out its draft plans for reconfiguring (moving) its abstraction wellfield at Pulborough so it could make better use of its existing abstraction. This would bring the abstraction boreholes closer to designated sites. Over the following months Natural England reviewed the water companies’ data as they submitted it, including their draft Habitats Regulations Assessment for the borehole reconfiguration, new water resource models and some of the data that had underpinned the EA review of consents in 2008.

Combining all this data with the emerging evidence indicating the sites were slowly drying (e.g., Hicks *et al* 2019³) led Natural England to find that it was not possible to conclude no adverse effect on integrity for the Arun Valley designated sites, should the abstraction go ahead as proposed. The reasons for this were set out in a letter to Southern Water in December 2019.

The December 2019 letter is of a highly technical nature and in part redacted for legal reasons but has been provided to the LPAs with this FAQ.

The information on ecological decline provided in the December 2019 letter is summarised in “What evidence is there that wildlife in Arun Valley is declining?” above. The key sections from the December 2019 letter which set out the hydrological links on the site are provided below:

- Based on detailed reviews of superficial and underlying geology, new and old boreholes logs and new Southern Water and Natural England ground water modelling data, the area that shows the significant community change in the Hicks *et al* paper (2019) on Amberley Wild Brooks is consistent with the area that is connected to the aquifer and therefore, theoretically, the abstraction. Though this drying may also be climatic, NE does not have sufficient evidence to rule out any combined impact of the climatic drying and the abstraction.

³ [Hicks, D., Abraham F., Bardsley L., Cousins M., Webster E. & Whitman J. \(2019\)](#) Spatial and temporal vegetation analysis of Amberley Wild Brooks over two decades *British & Irish Botany* 1(4):309-326

- The hydrogeology of the designated sites is complex. The underpinning geology varies spatially and is overlain by a range of drift deposits that vary in their permeability across the three designated sites. It is uncertain what the significance of groundwater supply from the abstracted aquifer to the designated sites would be without the abstraction. The British Geological Survey (BGS) maps and national peat mapping show there are significant areas of peat on the northern area of Amberley Wild Brooks, on the south eastern area of Pulborough Brooks and on the eastern margin of the north of Pulborough Brooks. These areas of peat are also reflected by the Amberley citation and by local knowledge. These areas of peat are coincident with areas of the sites underlain by the aquifer and potentially permeable superficial deposits that potentially provide a pathway for groundwater discharge to the edges of the designated sites. The presence of peat suggests considerably wetter conditions than currently and could be indicative of significant groundwater connectivity in the past.
- The potential for hydrological connectivity between the peat areas at the wetland surface and the aquifer beneath cannot be ruled out. Combined with the evidence of vegetation community changes indicative of drying, the uncertainty of the impact of the wellfield proposals and existing abstraction remains for Amberley Wild Brooks.
- Results from Southern Water's numerical groundwater modelling in 2019 predicted the without abstraction height of water (naturalised head) is predicted to be 4-6 metres above ground level whilst abstraction generates a water level (head) that hovers around ground level at Pulborough Brooks, In the absence of the abstraction, the model predicts the site would be much wetter than it is now, with significant groundwater input.

Will the Statement change or be updated?

NE's Statement will be updated periodically as the evidence base on the water neutrality, the strategic solution and other material matters evolve and change.

How long will water neutrality be required?

It is likely that achieving water neutrality will be important for as long as the adverse effect risk from water supply abstraction continues. This may well remain the case until the Habitats Sites in question are restored to favourable conservation status. Though there is an investigation to try to resolve the uncertainties this is not thought likely to remove the adverse effect risk with certainty.

It should be possible to phase out the requirement for water neutrality once a sustainable long-term water supply has been secured for the region, and this is close enough to being delivered that the commencement of use of any development being assessed is not likely to occur before delivery of this supply. Current expectations are for alternative water supplies to be delivered circa 2030, although there is significant uncertainty in this timetable. For this reason and for the purposes of strategy development, it is understood that LPAs are including housing up to 2036 in the water neutrality budget calculations.

C: LOCATION AND TYPE OF DEVELOPMENT

Where does the Natural England Statement apply?

The Natural England Statement applies to development that requires a public water supply from Southern Water's Sussex North water supply zone.

Does the Statement only apply to new dwellings or development with overnight stays like nutrient neutrality in the Solent?

It applies to all new development that could increase water consumption therefore development other than dwellings including office, commercial and new educational use and supplied by public water supply should be assessed. Water consumption is a directly measured attribute so does not require the application of assumptions used in nutrient neutrality, and so the risk of double counting is removed.

Does the Statement apply to existing public water supply uses?

Existing water uses are not covered by the Statement as they are covered by the existing permissions and the abstraction licence which are being dealt with separately via Southern Water's licence amendments.

These existing uses can only be used to offset new development if they are supplied by public water supply from Sussex North and they are able to reduce ongoing water consumption.

Does the Statement apply to other abstraction licence holders in Sussex North?

Existing abstraction licence holders are not affected by this Statement as they are not using the public water supply abstraction that is contributing to the adverse effect. Natural England are not aware of any other abstraction licences from the relevant aquifer.

Would non-consumptive use of water be captured by the need for water neutrality e.g., fracking, mineral site pumping, washing gravel, WWTW applications?**Environmental permitting for minerals and waste sites assesses water usage. How do the County Council consider water consumption at the planning and land use stage?**

The water neutrality approach applies to all development that uses water from the Sussex North water supply zone and specifically the Pulborough abstractions it is not restricted to new residential dwellings and may include other forms of development that use the public water supply. Whether an application is included would depend on what water supply is chosen. Only development that uses public water supply from Sussex North water supply zone is included in the Statement. Many of the types of development that use water that the County Council permit do not use public water supply and would therefore not be covered by the Statement. It is for the local planning authorities including the County Council to identify which types of development they believe may be captured.

Abstraction licences that take water from another water supply would be assessed in the usual way for the environmental impacts of those abstraction types. Those developments that use public water supply in Sussex North and could therefore add to the risk of adverse effect and may be subject to an appropriate assessment. It is Natural England's advice that any such assessments should consider water neutrality as an important tool to aid determination of no adverse effect on site integrity.

D: SOUTHERN WATER'S LICENCES AND RESPONSIBILITIES**Is anything being done to make the abstraction licences in Sussex North more sustainable and help remove the need for water neutrality?**

The Environment Agency is the competent authority with regards to Southern Water's licences. Natural England has been working with the Environment Agency and Southern Water to clarify and reduce the impacts of the licence since 2019 when data first began to emerge that the existing abstraction was a cause for concern. The licences are being reduced voluntarily by the company via a variation to remove any headroom, which limits the ability to increase abstraction from the impactful licence. This process is underway and has been driven by Natural England's work with the Environment Agency.

Natural England and the Environment Agency are helping to ensure that Southern Water does all it can to reduce the use of the licences especially the groundwater licence in the interim period. For example, Southern Water is required to mitigate the impacts of the licence in the short term to try to prevent further deterioration although the risk of adverse effect will not be removed until the long-term water supply is replaced. Natural England is also working with Water Resources South East, Southern Water, and the Environment Agency to encourage Southern Water to move as quickly as possible to the long-term water supply solution. The need to support local planning authorities on water neutrality is also included in the set of measures Natural England are seeking in the licence amendments process.

Why is water neutrality being sought through planning now, when Southern Water has a statutory responsibility to ensure an adequate water supply balance considering future growth?

Southern Water's licence is for existing developments it will continue to supply water to existing users. As set out above it is being amended, minimised, and mitigated to help protect the designated sites. The company is also being encouraged to progress the long-term water supply as rapidly as possible. Since Southern Water has a duty to supply new developments, they do not have power to minimise demand from new developments.

How does water neutrality relate to Southern Water's Target 100 strategy?

Target 100 is a strategy to reduce water consumption in Southern Water's whole water supply area in the long term (not just Sussex North), as set out in their Water Resources Management Plan. Water neutrality only applies to Sussex North water supply zone. Therefore, whilst two strategies to reduce water exist within the single supply zone, the strategy that is being developed is making sure double-counting of water saving measures is avoided and Southern Water are inputting into the water neutrality strategy.

If applicants connect to an alternative supply/provider (SES Water or South East Water) would there still be a need for water neutrality?

If development is not supplied by the abstractions in Sussex North water supply zone that are contributing to the existing risk of adverse effect on integrity, then there would be no need to demonstrate water neutrality.

How can connection to other service provider/water company be secured?

The mechanisms and potential for use of alternative water suppliers is a matter for the water companies, the Environment Agency with Ofwat as the sector regulators. The process may not be straightforward as the new service provider must have surplus water in their supply demand balance and the water types must be compatible.

What are the long-term water supply alternatives?

The key long term alternative water supply option in Southern Water's Water Resources Management Plan 2019 is a water recycling scheme from a treatment plant near Littlehampton transferred via a new pipeline that would be discharged into the river Rother upstream of the surface water abstraction at Pulborough. This is understood to be scheduled for delivery between 2028 and 2030.

E: DEVELOPMENT CONTROL DEVELOPMENT CONTROL - GENERAL

Does Natural England consider nature-based solutions an appropriate and acceptable means of offsetting, and if so, is there guidance or examples that can be shared on what/how to secure such offsetting?

Natural England always welcome nature-based solutions to land use challenges. Any proposed nature-based solution for abstraction impacts from growth in Sussex North would need to demonstrably reduce the current water demand from the abstraction or demonstrably provide more good quality groundwater to the peat on the designated sites. Due to the complex hydrogeology of the area in particular the semi-confined nature of the aquifer this may be complex to evidence. Natural England is not currently aware of examples that would apply in this case but will be encouraging Southern Water to undertake nature-based solutions where possible.

Can I just pay an offsetting charge?

Once the water neutrality strategy has been agreed it is hoped that this option will be available.

How does water neutrality relate to draft policies in the Horsham and Crawley Plans asking for 100 l/p/d or 80 l/p/d for strategic development?

The developing strategy will include guidelines for water consumption requirements for new development within Sussex North water supply zone. It is intended that these will be transposed into Policies and accompanying tools within each Local Plan within the Sussex North water supply zone.

Are there other areas of the country that have water neutrality strategies?

This is the first location that Natural England are aware of where water neutrality has been linked to Habitats Regulations requirements. Natural England is working with Defra to confirm whether there are other areas in the country that might have water neutrality issues in the future but there are a range of specific circumstances which have resulted in the need for a water neutrality in the Sussex North water supply zone.

DEVELOPMENT CONTROL – PREAPPLICATION

Where would a prospective developer start to achieve neutrality?

The first step is to calculate a water budget for the new development.

The second step is to assess if the existing site uses water, subtracting the existing use from the new development budget. This could be evidenced by water bills from historic uses or from the generic assumptions from the water calculator when developed.

The final step would be to identify suitable offsetting and secure this.

A Water Neutrality Statement will be required to support applications. What should this demonstrate and how will it be assessed?

The neutrality statement should include a water budget for each application and should demonstrate how it has achieved overall neutrality, and will, therefore, not add to the existing risk of adverse effect. This is achieved through a combination minimising water use within new developments and offsetting of residual water (identified within the budget). Any scheme will also need to be sufficiently certain if it is to meet the tests set out in the Conservation of Habitats and Species Regulations 2017. Examples of offsetting measures are in [Water Neutrality Part A study](#).

Can NE provide advice for developers e.g., through pre-application advice services or advice on to local planning authorities on water budgets submitted with development?

Natural England is not resourced and has insufficient numbers of people with relevant expertise to undertake this work and it would all be chargeable. Natural England recommends that the development control tools to enable these assessments to be undertaken are developed as part of the strategy work.

DEVELOPMENT CONTROL – CONSIDERATION OF EXISTING USE

How should existing land uses be considered in water neutrality calculations? Can existing uses on sites be made more efficient as a means of offsetting development? For example, where greenfield land is currently subject to irrigation.

Existing water consumption can be used to offset new build in the water budget if it is supplied by Sussex North public water supply. Irrigation of agricultural land is rarely supplied by public water supply and Natural England is not aware of any irrigation boreholes into the Pulborough groundwater aquifer from which Southern Water abstract. It is therefore unlikely that farmland on greenfield would have much offsetting potential for water neutrality.

Where there is a proposed change of use between non-residential uses is it acceptable to calculate the existing water consumption and proposed water consumption using the BREEAM Wat 01 calculation tool, assuming full occupancy for both uses, with a development being ‘water neutral’ where consumption stays the same or falls?

This is a matter for the LPAs to decide. Any assessment methodology on water consumption for non-residential development must be consistent between authorities across the supply zone but also is consistent with the assumptions for non-residential water consumption used in the calculation of the strategic water budgets. The alternative to using the strategic solution assumptions is to provide evidence from the meter readings from historic use where these are available. The data, for example the use of full occupancy for the historic use needs to be justified by evidence. The most important point to consider in the choice of methodology is to ensure the assumptions applied are sufficiently precautionary to meet the legislative test.

Where a building has been demolished prior to an application for planning permission is it possible to offset the water use of the demolished building against the proposed water use when calculating the net water demand of the development?

This will depend on when the building was last in use and if evidence of recent water consumption (e.g., within the last 3 years) can be provided. If the building has not been in use for many years and has been demolished the use of offsetting is not considered precautionary. It is important to consider the designated sites are already drying and concerns are from actual use not theoretical or licenced amounts.

DEVELOPMENT CONTROL – OFFSETTING

What types of offsetting measures will/will be acceptable?

Any offsetting that reduces existing water consumption from the Sussex North public water supply can be used provided it is able to meet the following requirements:

- The existing development is supplied by existing supply from Southern Water's Sussex North water supply zone.
- Can provide evidence of consumption (e.g., Water bills/ meter readings or use generic values when these are agreed by LPAs in strategic solution)
- A route to securing the measures is provided and deliverable so that the LPAs are satisfied they are sufficiently certain.
- The reductions are likely to be secured until at least when the long-term water supply alternative will be available.

Types of development that could be used include: (but are not restricted to)

- Offsetting on private occupied property with Southern Water supply in Sussex North
- Offsetting on Council owned property with Southern Water supply in Sussex North
- Offsetting on Registered Provider property with Southern Water supply in Sussex North
- Offsetting on commercial property with Southern Water supply in Sussex

Offsetting on unbuilt homes on developer's existing approved development sites within the water supply zone are **not** likely to provide offsetting as they are not currently using water and therefore are not currently adding to the existing risk of adverse effect. In fact, ideally there would be an allowance for such homes in the strategic water budgets as they will add to the existing risk of adverse effect.

Reasoning: Offsetting can only occur where an existing water supply is in use. Developments that are not yet occupied are not currently drawing water from Sussex North and therefore cannot be used as offsetting. Furthermore, for these developments, permission has already been granted with no water restrictions and therefore the development can legally proceed within the conditions granted at the time of permission. The impact to Arun Valley is an existing impact and therefore developments with extant permission will add to the existing adverse effects. A way of accounting for this is at a strategic scale where LPAs add an allowance for these homes in their strategic water budget thereby achieving water neutrality at the strategic level.

Can I propose a solution to offsetting for my or another development? What if we can collectively provide offsetting?

Yes, these can potentially be secured in order to demonstrate water neutrality subject to LPA approval.

How can offsetting be secured through the planning system?

Water neutrality is best secured by a strategic solution through the local plans using a water budget. That is what local planning authorities are already attempting to undertake and Natural England recommends that all local authorities in Sussex North including the County Council work together on the strategic solution partnership.

When should offsetting be delivered in relation to the development delivery?

Like all forms of mitigation, offsetting should be delivered before the impact from the development has occurred. The pathway for impact is via increased abstraction driven by increased water consumption. The water consumption only occurs on occupancy. It is therefore logical that the offsetting for specific development should occur before occupancy.

What are the short, medium, and long-term approaches to offsetting and how is consistency being considered?

The approach to offsetting is being developed through the strategic solution to the local plans. This is a collaborative approach including Southern Water and all affected LPAs. To be successful the approach should become a delivery partnership with all affected LPAs and the Southern Water.

What are the relevant industry standards against which to judge the efficacy of the offsetting proposed?

Overall, the efficacy of offsetting will be judged on the annual water consumption allowing for weather variations across the water supply zones.

Can private water supply bore holes enable water neutrality when you must have a connection to Southern Water to meet building regulations?

If a proposed abstraction is over 20m³ per day, it will be subject to the usual licensing requirements and assessment of water availability. This will be informed by the abstraction licence strategy for the area. In many cases water availability would be limited. A licence would not be granted if there could be an impact on a protected site. Abstractions of less than 20m³ per day do not need a licence.

A developer would have to consider the reliability of the water supply, the rules for becoming a private water supplier and any water quality requirements. Drinking Water Inspectorate (DWI), Ofwat and the local authority will be able to help with this. Further advice can be found in the DWI Website. <https://www.dwi.gov.uk/private-water-supplies/>.