



# **Colne Abstraction Licensing Strategy**

A strategy to manage water resources sustainably

February 2019

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# 1. About the licensing strategy

This strategy sets out our approach to managing new and existing [abstraction](#) and [impoundment](#) within the Colne [catchment](#) in the Thames river basin district. The Colne catchment covers an area of approximately 1018 km<sup>2</sup> to the north-west of Greater London. The catchment covers Hertfordshire in the north, and Buckinghamshire and Middlesex in the south.

The Chilterns are designated as an Area of Outstanding Natural Beauty (AONB) in recognition of its exceptional landscape qualities. Approximately half of the Chiltern AONB is located within the Colne ALS Area. The unconfined Chalk dominates the geology, overlain by London Clay along the southeast boundary of the catchment

The Colne catchment contains six main rivers and their tributaries: the Colne, Ver, Gade, Bulbourne, Chess and Misbourne. The catchment lies predominantly on unconfined Chalk which provides much of the flow to support these watercourses. Flow rates can be influenced at different times by abstraction pressures along with seasonal and annual climatic variations.

These rivers drain in a south-easterly and southerly direction. Southerly sections culminate in a complex network of rivers before the Colne flows into the River Thames upstream of Teddington Lock, with the recreationally important Grand Union Canal interlinking throughout the catchment with the Colne, Gade and Bulbourne Rivers.

Our approach ensures that River Basin Management Plan objectives for water resources activities are met and we avoid deterioration within this catchment.

We apply this approach to the [water body](#) in which the abstraction is located. It also applies to all downstream [surface water](#) bodies that may be affected by any reduction in abstraction-related flow, or adjacent [groundwater](#) bodies affected by any reduction in groundwater level.

Please see [Managing Water Abstraction](#) for the technical explanation, legal and policy requirements behind the Abstraction Licensing Strategy ([ALS](#)).

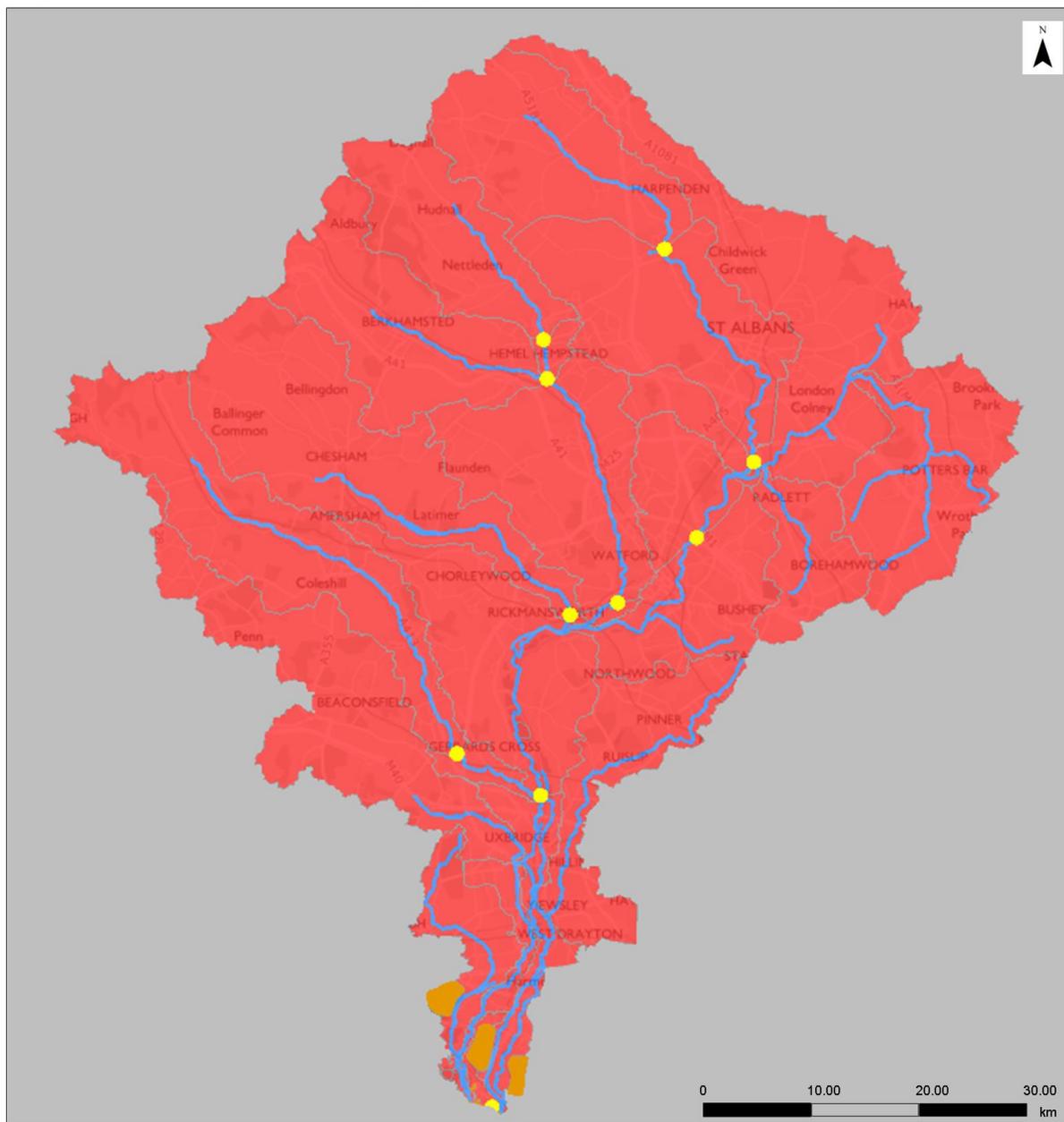
Please see [abstraction pages on gov.uk](#) for advice on who needs an abstraction or impoundment licence, and how to apply.

## 2. Water resource availability of the Colne ALS

### 2.1. Resource availability

River flows change naturally throughout the year, so we want to protect flow variability in our rivers from low to high flow conditions. We use flow statistics to help to do this. Flow statistics are expressed as the percentage of time that flow is exceeded. The water resource availability is calculated at four different flows, Q95 (lowest), Q70, Q50, and Q30 (highest). Where a Q95 is the flow of a river which is exceeded on average for 95% of the time. A Q95 value is normally taken as a low flow, a Q70 is considered a summer flow, a Q30 is a winter flow, and Q50 is the mean flow. The water resource availabilities for this ALS are presented and explained in Maps 1 - 4 and section 2.1.1.

Map 1: Water resource availability colours at Q30 for Colne ALS.



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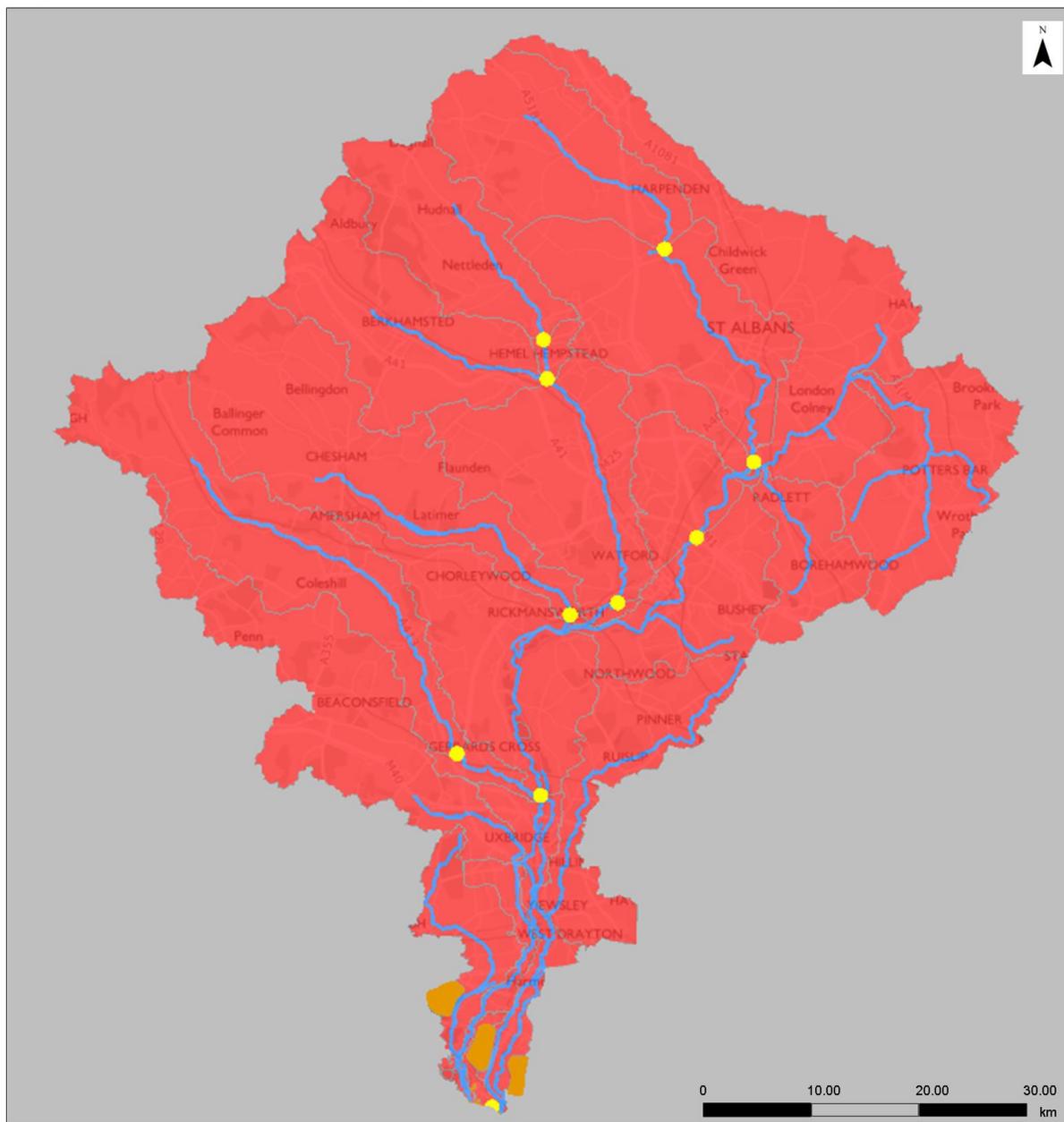
Legend:

-  Assessment Points
-  Heavily Modified Artificial lakes
-  Rivers

Water Availability at Q30:

-  Water not available

Map 2 Water resource availability colours at Q50 for Colne ALS.

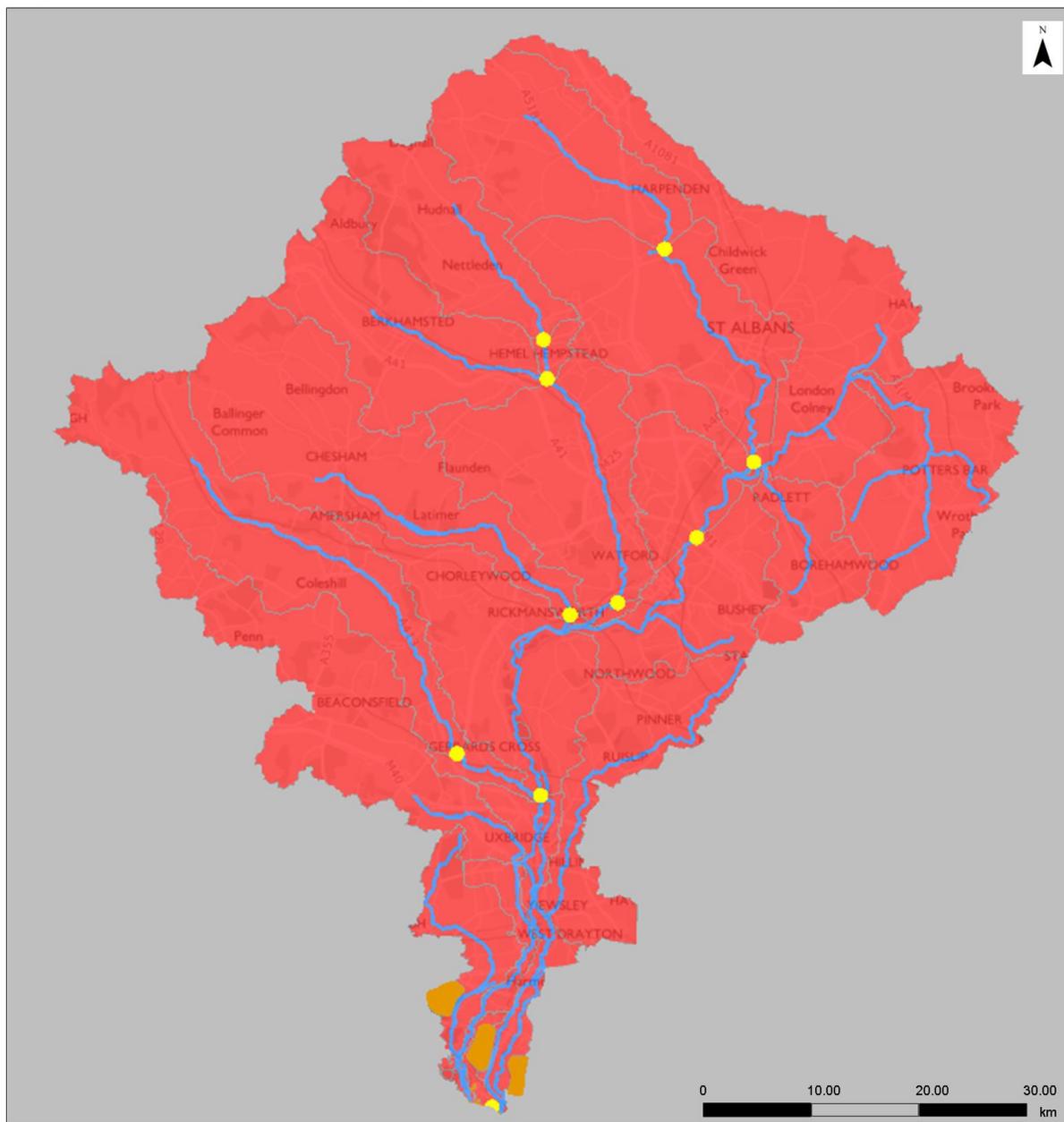


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Legend:

-  Assessment Points
  -  Heavily Modified Artificial lakes
  -  Rivers
- Water Availability at Q50:
-  Water not available

Map 3 Water resource availability colours at Q70 for Colne ALS.



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Legend:

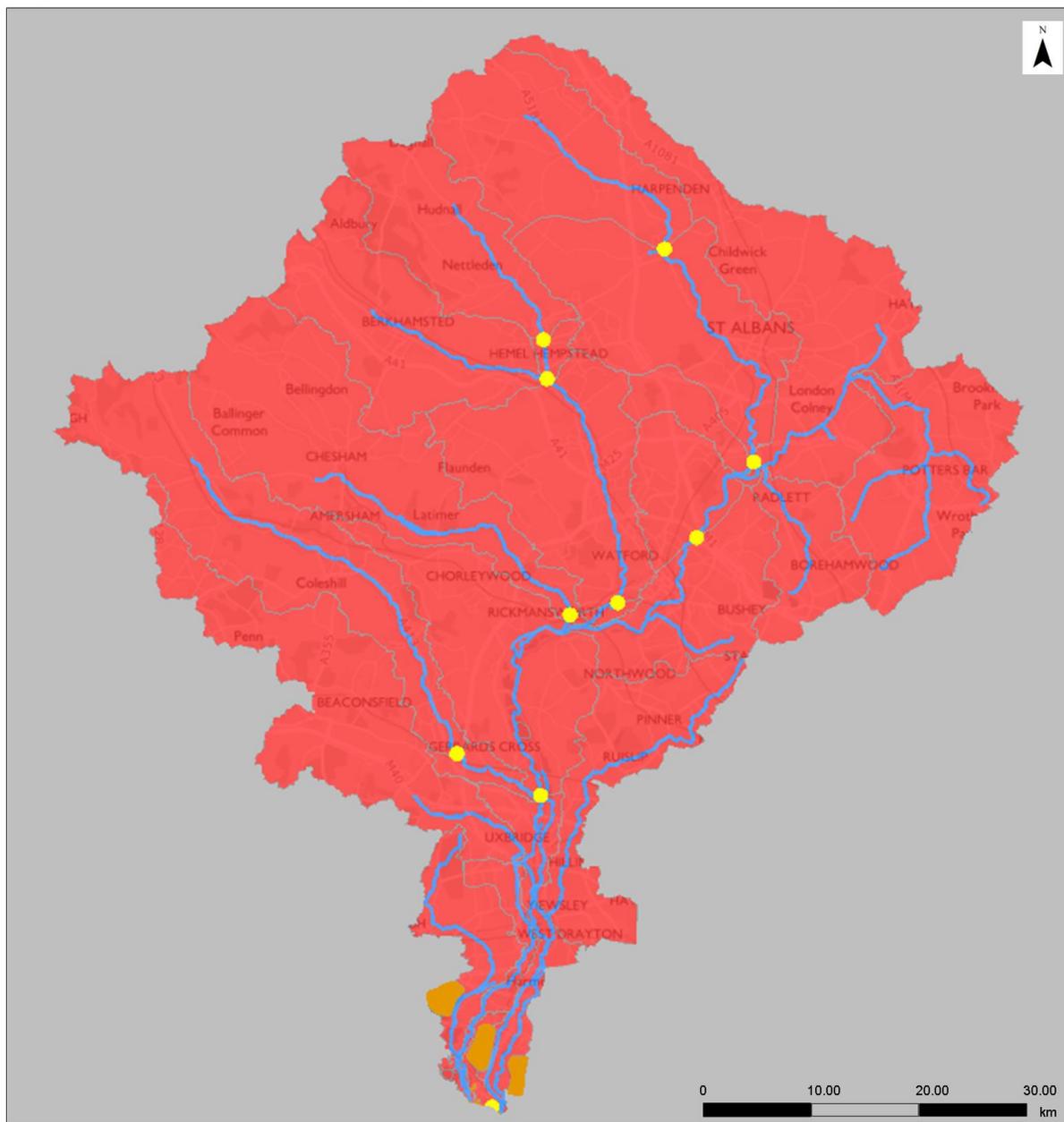
- Assessment Points
- Heavily Modified Artificial lakes

Rivers

Water Availability at Q70:

- Water not available

Map 4 Water resource availability colours at Q95 for Colne ALS



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Legend:

- Assessment Points
- Heavily Modified Artificial lakes
- Rivers

Water Availability at Q95:

- Water not available

## 2.1.1. Water resource availability colours and implications for licensing

### Water available for licensing

Green 

There is more water than required to meet the needs of the environment.

New licences can be considered depending on local and downstream impacts.

### Restricted water available for licensing

Yellow 

Full Licensed flows fall below the [Environmental Flow Indicators EFIs](#).

If all licensed water is abstracted there will not be enough water left for the needs of the environment. No new consumptive licences would be granted. It is likely we'll be taking action to reduce full licensed risks. Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder.

### Water not available for licensing

Red 

Recent actual flows are below the EFI.

This scenario highlights water bodies where flows are below the indicative flow requirement to help support a healthy ecology in our rivers. We call this 'Good Ecological Status' ([GES](#)) or 'Good Ecological Potential' ([GEP](#)) where a water body is heavily modified for reasons other than water resources.

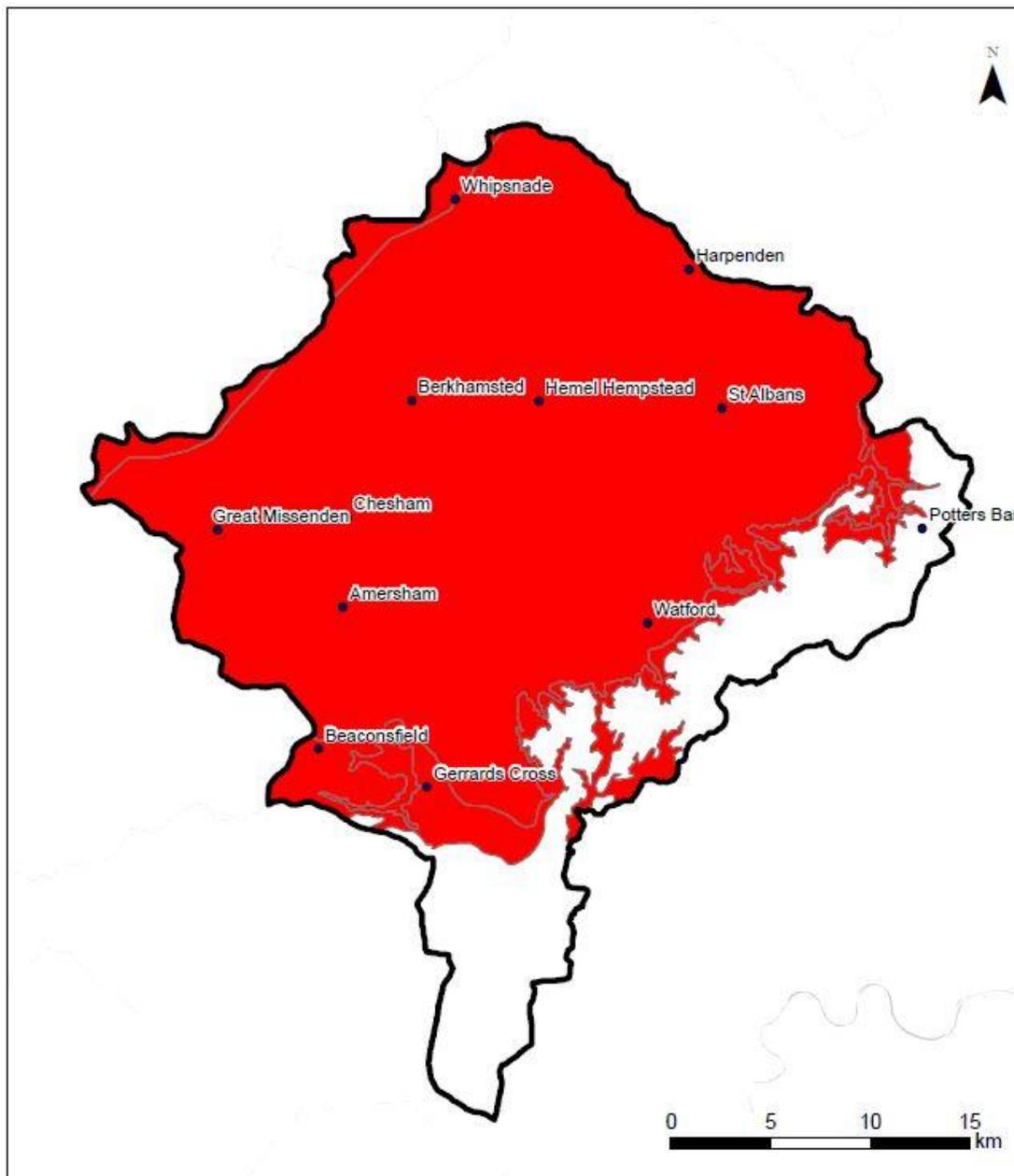
Note: we are currently taking action in water bodies that are not supporting GES or GEP. We will not grant further licences. Water may be available if you can buy (known as licence trading) the amount equivalent to recently abstracted from an existing licence holder.

There may be water available for abstraction in discharge rich catchments, you need to contact the Environment Agency to find out more.

## 2.2. Groundwater resource availability

Water availability is the same for surface water and groundwater in the Colne ALS with the exception of the southeast chalk aquifer, which is overlain by clay. This confined part of the chalk aquifer is covered under the [London ALS](#). Map 5 shows the boundary of unconfined and confined aquifers within the Colne area.

Map 5 Groundwater aquifer split for the Colne catchment.



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Legend:

- Unconfined Chalk Aquifer
- Confined Chalk Aquifer

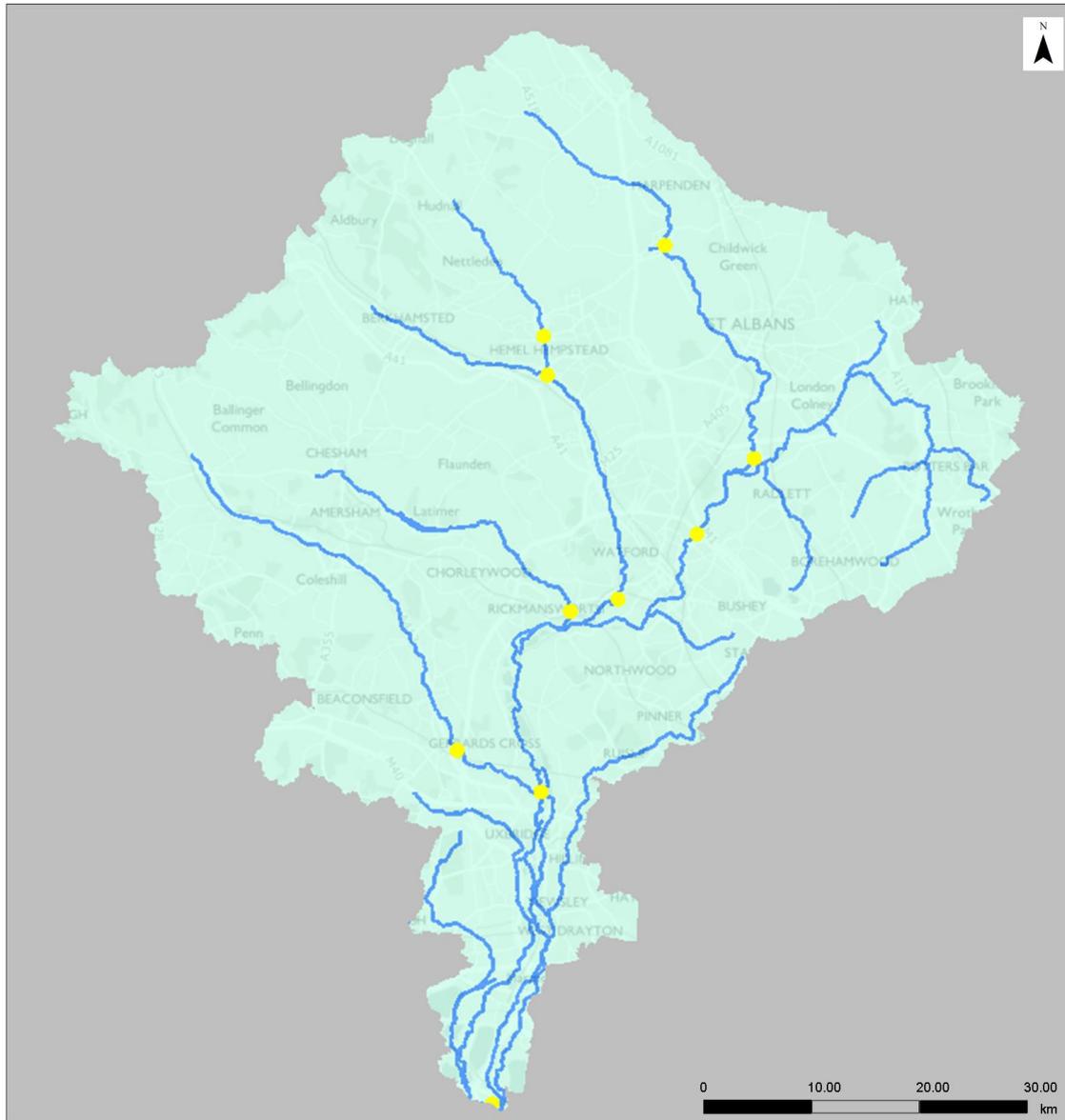
### 2.3. Resource reliability

If you want to apply for a licence, it's worth considering the reliability of your abstraction.

By assessing the quantity of water available at different flows it's possible to see when there is a surplus or deficit of water and the associated reliability of an abstraction. This is an indication only; actual reliability of a licence will be discussed when you apply.

Map 6 gives an indication of the resource availability for [consumptive abstraction](#) in Colne area expressed as a percentage of time.

Map 6 Water resource reliability of the Colne ALS expressed as percentage of time available



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Legend:

 Assessment Points

 Rivers

Percentage of the time additional consumptive resource may be available:

 Consumptive abstraction available less than 30% of the time

## 2.4. Other considerations for availability and reliability

We may have to add constraints to licences such as '[hands off flow](#)' (HoF) conditions to protect the environment and the rights of other abstractors. As a result, when we grant a licence, it doesn't mean that we guarantee a supply of water. These conditions specify that if the flow in the river drops below what's needed to protect the environment, abstraction must reduce or stop. So, in dry years, restrictions are likely to apply more often, which will affect the reliability of supply.

The resource assessment indicates there is no meaningful water availability for consumptive based abstraction proposals. This is because existing abstraction licences have all but taken the available resource. The level of water availability is mentioned in Section 3.1. Even where proposals are received that meet the availability criteria, local factors may mean we are either unable to grant a licence as applied for, or even at all. Early dialogue is advised to understand these constraints.

New licences within an ALS are usually given a Common End Date (CED), which allows them to be reviewed at the same time. The next CED for this ALS is 2026 and the subsequent one is 2038. When the CED is less than 6 years, new licences will be given the 2038 date. As these licences will have a licencing period of over 12 years, they will require a Minimum Value Condition (MVC), to be applied to the licence as per the legislation. A Minimum Value Condition will state a value to which abstraction may be reduced when we notify a licence holder. We will not be liable to pay compensation to the licence holder for implementing the reduction. Where we are uncertain about the long term impacts of an abstraction we will grant a short term licence during which time potential impacts are monitored and reviewed.

## 2.5. Impoundments

Applications for impoundments will be dealt with on a case by case basis. More information may be found on our [water management web pages on gov.uk](#).

# 3. How we manage abstraction in the Colne ALS

## 3.1. Assessment points

We assess surface water flows at [Assessment points](#) (APs), which are significant points on a river, often where two major rivers join or at a gauging station. APs cover multiple surface water bodies.

Where groundwater abstractions directly impact on surface water flows, the impact is measured at the surface water AP.

In the Colne catchment the river flow is well below the EFI at all assessment points. The critical AP is AP10, Lower Colne. In order to protect the ecology of the river at this point the HoF is set at the level equal to 1% of the time or 3 days in an average year. These flows will occur infrequently and cannot be relied upon to occur every year or even in alternate years. An abstractor will need to fully understand the implications of these limitations before pursuing a proposal.

Licence variations that could result in an increases in actual abstraction, but remain within existing licensed volumes will be considered in line with our licencing strategy for surface or groundwater abstractions, and subject to a local impact assessment.

Abstractions that are considered to be [non-consumptive](#) or small scale consumptive licences that result in an overall net benefit to the water environment may be considered, subject to local impact assessment.

## 3.2. Groundwater

Similarly to the surface water, the unconfined groundwater aquifer is closed to consumptive licences. New consumptive groundwater licences may be available from within the confined chalk aquifer. Applications for abstractions from this source will be assessed as part of the [Management of the London Basin Chalk Aquifer](#).

Local assessment will be used to decide how to classify proposals that sit at the boundary between the unconfined Chalk and where the Chalk begins to dip beneath the London Clay. This assessment will indicate which groundwater licensing policies an abstraction proposal in this area should be assessed against.

## 3.3. Protected areas

UK law provides a very high level of protection to two types of designated sites due to their special environment. These are:

- Special Areas of Conservation ([SAC](#)), which contribute to biodiversity by maintaining and restoring habitats and species;
- Special Protection Area ([SPA](#)), which provides protection to birds and their nests, eggs and habitats

Ramsar sites and Sites of Special Scientific Interest ([SSSI](#)) also carry a high level of environmental importance.

There is one Special Protection Area (SPA) in the Colne CAMS area: South West London Water bodies SPA. This is also a Ramsar site. South West London water bodies is located at the bottom of the catchment and comprises a series of gravel pits and reservoirs, which are internationally important for supporting wintering wildfowl. The predominant species of interest are Gadwall and Shoveller. These sites are dependent on the water resources of the area and will be affected by a change to water levels and water utilisation.

In addition to this there are nine water dependent SSSIs in the Colne CAMS area. These provide a variety of important habitats and support species many of which are nationally important.

# 4. Managing existing licences

## 4.1. Water rights trading

We want to make it easier to trade water rights. A water rights trade is where a person sells all or part of their water right, as defined by their abstraction licence(s), to another person on a permanent or temporary basis. In the majority of cases a trade will involve a change in abstraction location and/or use which we will need to approve through the issue or variation of abstraction licences.

In licensing trades, as with new abstraction licences, we need to make sure that we don't cause any deterioration in water body status both within the water body / bodies where the trade will take place and to downstream water bodies. The section below provides a guide to the potential for trading in water bodies of a particular ALS water resource availability colour, as shown on map [number field].

To find out more about licence trading please go to our [water management web pages on gov.uk](#)

## Guide to the potential trading in water bodies of a particular ALS water resource availability colour

### Water available for licensing

Green 

Allow trades of recent actual abstraction and licensed abstraction, but little demand for trading expected within water body as water available for new abstractions.

### Restricted water available for licensing

Yellow 

There may be opportunities for licence holders to trade up to their full licensed quantities, but the quantities of water available to trade may be restricted once levels of actual abstraction reach sustainable limits. We will not permit licence trades in water bodies where we are taking action to prevent deterioration unless the trade is consistent with achieving water body objectives.

### Water not available for licensing

Red 

We will only trade recent actual abstraction but no increase in recent actual abstraction is permitted in water body. Licensed abstraction will be recovered for the environment.

## 4.2. Taking action on improving flows in rivers

### 4.2.1. Action being taken on improving flows in rivers in the Colne ALS

Actions are necessary to improve rivers where flows are not sufficient enough to support a healthy ecology. Under the Water Framework Directive ([WFD](#)), the aim is to ensure rivers and coastal waters achieve 'good ecological status or potential', and that there is no deterioration from their current status. We have sought to reduce or cease certain groundwater abstractions demonstrated to impact the environment. This is aimed to improve groundwater aquifers and the surface waterbodies which are fed by these aquifers.

We're taking the following actions to improve flows in the rivers in the Colne ALS.

#### **Name of River Catchment: Ver**

The water body WFD classification: Moderate

Abstraction near Redbourn was switched off by Affinity Water, an overall reduction of 5.82 MI/d.

#### **Name of River Catchment: Gade**

The water body WFD classification: Bad

- Abstraction near Hemel Hempstead was reduced by Affinity Water, by 6.4 MI/d.
- Upper Gadebridge Park Restoration Park - morphological works have been carried out to improve river habitat in the River Gade between Link Road and Gadebridge Lane. Affinity Water funded scheme in partnership with the Environment Agency and Dacorum Borough Council.

## **Name of River Catchment: Bulbourne**

The water body WFD Classification: Poor

Channel Restoration, Box Moor near Hemel Hempstead - morphological works restored 1km length of the river between Grand Union Canal and the Two Waters Road, Hemel Hempstead. (Box Moor Trust in partnership with the Environment Agency, and Chilterns Chalk Streams Project.)

To find out more information about the above projects please visit the [catchment partnership website](#).

### **4.3. Regulating currently exempt abstraction**

As the abstraction licensing system in England and Wales developed over the past 50 years, certain abstractions have remained lawfully exempt from licensing control. This meant that unlimited supplies of water could be abstracted, even in areas that are water stressed.

This means that those exempt abstractions could potentially take unlimited amounts of water, irrespective of availability and without regard to impacts on the environment or other abstractors.

Following two public consultations Government have introduced new Regulations to take effect from 1st January 2018. The Water Resources (Transitional Provisions) Regulations 2017 have removed the majority of previous exemptions from licensing control, and current exempt abstractors will now require a licence to lawfully abstract water.

The main activities affected are:

- transferring water from one inland water system to another in the course of, or as the result of, operations carried out by a navigation, harbour or conservancy authority;
- abstracting water into internal drainage districts;
- dewatering mines, quarries and engineering works, except in an emergency;
- warping (abstraction of water containing silt for deposit onto agricultural land so that the silt acts as a fertiliser);
- all forms of irrigation (other than spray irrigation, which is already licensable), and the use of land drainage systems in reverse (including transfers into managed wetland systems) to maintain field water levels;
- abstracting within currently geographically exempt areas, including some rivers close to the borders of Scotland; and
- abstractions covered by Crown and visiting forces (other than Her Majesty the Queen and the Duchies of Cornwall and Lancaster in their private capacity).

Where we have details of these abstractions, we've included them in our assessments to consider how they impact on the catchment.

## 5. List of abbreviations

### **ALS**

Abstraction Licensing Strategy.

### **AP**

Assessment Point.

### **CED**

Common End Date.

### **Defra**

Department of Environment Fisheries and Rural Affairs.

### **EFI**

Ecological Flow Indicator.

### **GEP**

Good Ecological Potential.

### **GES**

Good Ecological Status.

### **GW**

Groundwater.

### **HMWB**

Heavily Modified Water Body.

### **HoF**

Hands off Flow.

### **HoL**

Hands off Level.

### **MI/d**

Megalitres per day.

### **SAC**

Special Areas of Conservation.

### **SPA**

Special Protection Areas.

### **SSSI**

Sites of Special Scientific Interest.

**UKTAG**

United Kingdom's Technical Advisory Group.

**WB**

Water body.

**WFD**

Water Framework Directive.

## 6. Glossary

### Abstraction

Removal of water from a source of supply (surface or groundwater).

### Abstraction licence

The authorisation granted by the Environment Agency to allow the removal of water.

### Assessment point

A significant point on a river, often where two major rivers join or at a gauging station.

### Catchment

The area from which precipitation and groundwater will collect and contribute to the flow of a specific river.

### Consumptive abstraction

Abstraction where a significant proportion of the water is not returned either directly or indirectly to the source of supply after use. For example for the use of spray irrigation.

### Discharge

The release of substances (for example, water, treated sewage effluent) into surface waters.

### Environmental flow indicator

Flow indicator to prevent environmental deterioration of rivers, set in line with new UK standards set by [UKTAG](#).

### Groundwater

Water that is contained in underground rocks.

### Hands off flow

A condition attached to an abstraction licence which states that if flow (in the river) falls below the level specified on the licence, the abstractor will be required to reduce or stop the abstraction.

### Impoundment

A structure that obstructs or impedes the flow of inland water, such as a dam, weir or other constructed works.

### Non-consumptive abstraction

Abstraction where all the water is returned to the same source of supply after use. There can only be a relatively short environmentally acceptable distance between the abstraction and discharge points.

### Surface water

This is a general term used to describe all water features such as rivers, streams, springs, ponds and lakes.

## **Water body**

Units of either surface water or groundwater which we use to assess water availability.

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